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READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral; Heart and Cardiac; Liver and Hepatic; Renal and Kidney; Cancer and Epithelioma, Malignant Disease, New Growth, Sarcoma, etc.; Child and Infant; Bronchocele, Goitre, and Thyroid; Diabetes, Glycosuria and Sugar; Light, Roentgen, Radium, *X* Rays; Status Lymphaticus and Thymus; Eye, Ophthalmia and Vision; Bicycle and Cycle; Motor and Automobile; Association, Institution, and Society; Paris, France; Berlin, Prussia, Germany; Vienna, Austria, etc. Subjects dealt with under the various main headings in the JOURNAL have been set out in alphabetical order under their respective headings—for example, "Correspondence," "Leading Articles," "Literary Notes," "Memoranda," "Reviews," etc.; while under "Original Articles," will be found a list of those who have contributed papers on scientific and clinical subjects, with the titles of their contributions.

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THE PRINCIPLES AND PRACTICE OF THE LOCALIZATION OF FOREIGN BODIES BY X RAYS.

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[WITH SPECIAL PLATE.]

SOME recent experiences have led me to realize that sufficient attention is not always paid to the methods which must be followed by the surgeon in order to interpret correctly the information which *x* rays, properly applied, can afford with regard to the precise position of a foreign body. At the present time, when such large numbers of wounded are returning from the seat of war with bullets, fragments of shrapnel, etc., embedded in their tissues, it seems advisable that the writer, who has had many years of experience in *x*-ray localization, should put on record certain methods which are likely to be of some special service in existing circumstances.

THE MISLEADING SINGLE RADIOGRAPH.

At the risk of being too elementary, it may be remarked, what sometimes appears to be forgotten, that space has three dimensions, and that an *x*-ray picture on the fluorescent screen or an *x*-ray photograph is merely a shadow or silhouette. This single shadow-picture tells us little more than that a foreign body is present, and gives us no certain knowledge about its relation to the surrounding structures. Indeed, if these limitations are not realized, the *x*-ray method becomes a positive danger to the patient as well as to the surgeon. Almost every surgeon has experienced the annoyance and disappointment brought about by failure to find, even after a prolonged search, the bullet or needle which was shown to him so clearly in a single *x*-ray photograph. Quite recently the writer had brought to his notice the case of an officer who had undergone an operation of nearly three hours' duration for the extraction of a shrapnel bullet, which even at the end of that time could not be found. It had been photographed several times, and was supposed to have been localized by a layman. When, however, the case had recovered from this quite unnecessarily prolonged operation and the bullet was again localized—this time properly and precisely—the same surgeon cut down upon it, and removed it through a small incision in a space of time not longer than three minutes.

A very simple illustration may be given of the different kind of *x*-ray picture which may be produced showing, say, the relation of a bullet to the femur, by a shift in the position of the tube. The femur, for the purposes of this illustration, is supposed to be maintained in an upright position, and behind it, a little removed, is suspended a bullet. The bone is held close to a sheet of opal glass, or against a white wall, and an ordinary candle or a small electric lamp may be used to cast a shadow of these objects, this light representing the *x*-ray tube. If, now, the candle is held horizontally, level with the bullet, and a little to the left, the bullet may be made to appear as in Fig. 1, *a*. If the candle be lowered in position, then the bullet appears as in Fig. 1, *b*, and if the source of illumination be moved to the right, we get the picture shown in Fig. 1, *c*. Now, these apparent positions of the bullet in relation to the bone, all of them different, do not show, even approximately, the actual position which the bullet occupied in relation to the femur. This seems so simple and obvious that one feels diffident to describe it, and yet many times I have seen my colleagues, on looking at an *x*-ray photograph, imagine that they see at once exactly where the foreign body is situated, at the same time describing what is only its apparent position. Having said so much as to the misleading inferences which are liable to be drawn from the study of a single *x*-ray photograph, it becomes necessary to describe some methods of overcoming the difficulty, and to demonstrate what very precise and useful information may be obtained if only sufficient care and attention are bestowed upon the subject.

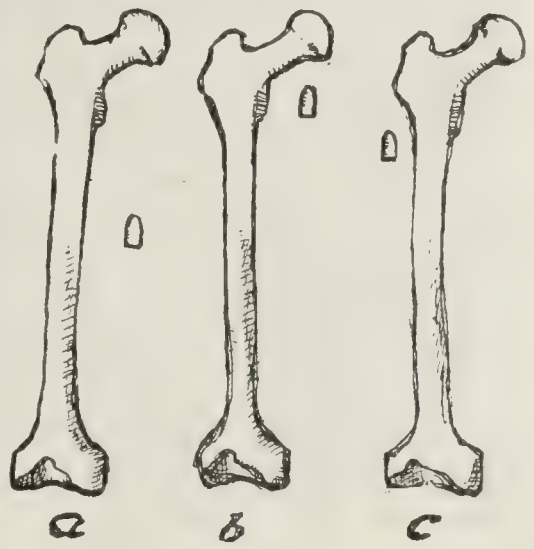


Fig. 1.

In a recent paper on "The Wounded in War,"[1] Mr. D'Arcy Power, after pointing out the difficulty which arises from the fact that the patients are strong muscular men, adds: "The shadow only gives an approximate idea of the position and depth of the projectile." Again, in a recent clinical lecture[2] Sir John Bland-Sutton relates a case in which an *x*-ray examination revealed a bullet lying in relation with the internal condyle of the left femur. "It required several plates to determine accurately whether the bullet was lying in front of or at the back of the bone. . . . When the parts were exposed in the course of an operation the bullet was found firmly embedded in the condyle near the adductor tubercle." With the adoption of a precise system of localization, such as has been in vogue for many years, the idea furnished with regard to the position and depth of the shadow would not have been approximate but exact, nor would it have been necessary to use "several plates" to determine accurately whether the bullet was lying at the front of or at the back of the femur.

The general subject of *x*-ray localization is too wide for the limits of this paper, and only the most sketchy description of the method can be given. At the present time, when so many wounded have to be examined, it is essential that the method employed should be as speedy as possible compatible with accuracy. Unnecessary refinements, therefore, shall be eliminated in the course of this description, and the attempt shall be made to fix attention upon the points which are really essential. Nothing need be said about the *x*-ray apparatus such as coil, tube, and interrupter, as these remarks are intended for those who are already familiar with the electrical installation.

THE X-RAY COUCH.

Whatever method is adopted the first essential is to have some means of determining the exact position of the point of emergence of *x* rays from the tube in relation to the patient's body. The most convenient plan, when dealing with large numbers of wounded, is to have some form of couch or stretcher on trestles which enables the tube to be placed below the patient. In this way a screen examination can be made conveniently; the photographic plate also, being placed upon the patient, is not subject to the damage which might occur from pressure if the plate were placed below the patient and the tube suspended above. The details of the couch can be varied, of course, according to the means and the desire of the worker, but, generally speaking, I should advise some arrangement of rails running below the couch for its whole length and upon the carrier, some short rails at right angles to the others, which would allow the holder or box supporting or containing the *x*-ray tube to be moved from side to side. By this arrangement the tube can be moved readily up and down and also crosswise, and thus brought into any desired position beneath the patient. The vertical position of the *x*-ray anode may be determined most conveniently by means of an attachment consisting of some form of upright to the tube holder or box, so that they move together. This upright, which may project 3 ft. or 4 ft. above the couch, is furnished with a horizontal arm, and a slot and thumbscrew provide for its adjustment on the top of the upright.

One of the simplest methods for carrying out the whole of this arrangement takes the form of a structure such as can be made by any carpenter. At the top of each of two trestles a couple of **V**-shaped notches may be cut so as to admit the poles of an ordinary army canvas stretcher. This stretcher being placed upon the trestles, we have the rudiments of the *x*-ray couch. Two thin pieces of wood, sufficiently long to stretch between the bases of the trestles, are then placed on the floor below, each of them having a raised **V**-shaped ridge which forms a line of rails. A flat board, having along its under surface a couple of indentations so as to fit upon the **V**-shaped rails, is then placed upon these parallel pieces of wood and made to slide up and down, thus corresponding with the length of the couch above. The use of French chalk makes the sliding very easy and smooth. Upon this board two other lines of **V**-shaped rails, this time horizontal, carry the tube-holder or box at right angles to the long axis of the couch. By this arrangement of ridges and grooves, and both a lengthwise and a crosswise movement, the tube can readily be placed at any desired spot under the patient. If the top of the couch is movable, a plumb-bob, dependent from the arm of the upright, can always be arranged so as to be vertically above the anode, and as the upright above and the tube below have a single movement, this device is quite close enough for the ordinary localization of large foreign bodies.

If, however, it is desired to be very accurate, one can have cross wires arranged horizontally across a small celluloid vessel, like a powder box, and suspend a small plumb-bob from the intersection of the wires. It is convenient to put a little paraffin or glycerine at the bottom of this vessel so as to steady the plumb-bob very quickly. If this is placed upon the couch, with a small fluorescent screen on the top of it, and the tube is excited, it is a matter of a few seconds to move it into position so that the shadow of the plumb-bob comes to be vertically below the intersection of the cross wires. It is then left in this position, and the plumb-bob attachment from above the couch adjusted to be vertically over the cross wires. Such an adjustment having once been made, it remains constant unless disturbed. With the couch more or less on a level surface the plumb-bob invariably indicates the path of the vertical ray passing through from the *x*-ray tube beneath. Once a couch of this sort is obtained, it is extraordinarily useful in a variety of ways to enable the position of foreign bodies, etc., to be ascertained with extreme accuracy.

STEREOSCOPY.

The enormous advantage of stereoscopic *x*-ray photographs is that they give a realistic view of the true and relative positions of all the parts concerned in the picture. The method of taking a stereoscopic picture with a couch such as has been described is exceedingly simple. Having decided the point of view from which the *x*-ray picture is to be taken, one brings the plumb-bob vertically over the spot, places a photographic plate (in its cassette or black envelope) upon the patient's body in such a way that the edge of the plate is parallel with the side of the couch, marks with a skin pencil the outline of the plate upon the patient's body, and makes the one exposure. The tube is then displaced for the stereoscopic distance; it is of no consequence whether the displacement takes place on the length or on the breadth of the couch, the matter being one purely of point of view. A simple plan adopted by the writer is to place a little block of wood, exactly 6 cm. in length, against the carrier, then to hold up against its edge another block of wood, remove the first and slide the carrier up against the second, which is held firmly by the hand. This ensures an accurate displacement of 6 cm. Another plate is then placed in exactly the same position on the patient as was the first, and an exposure made. These two plates are developed, and the combined image is truly stereoscopic.

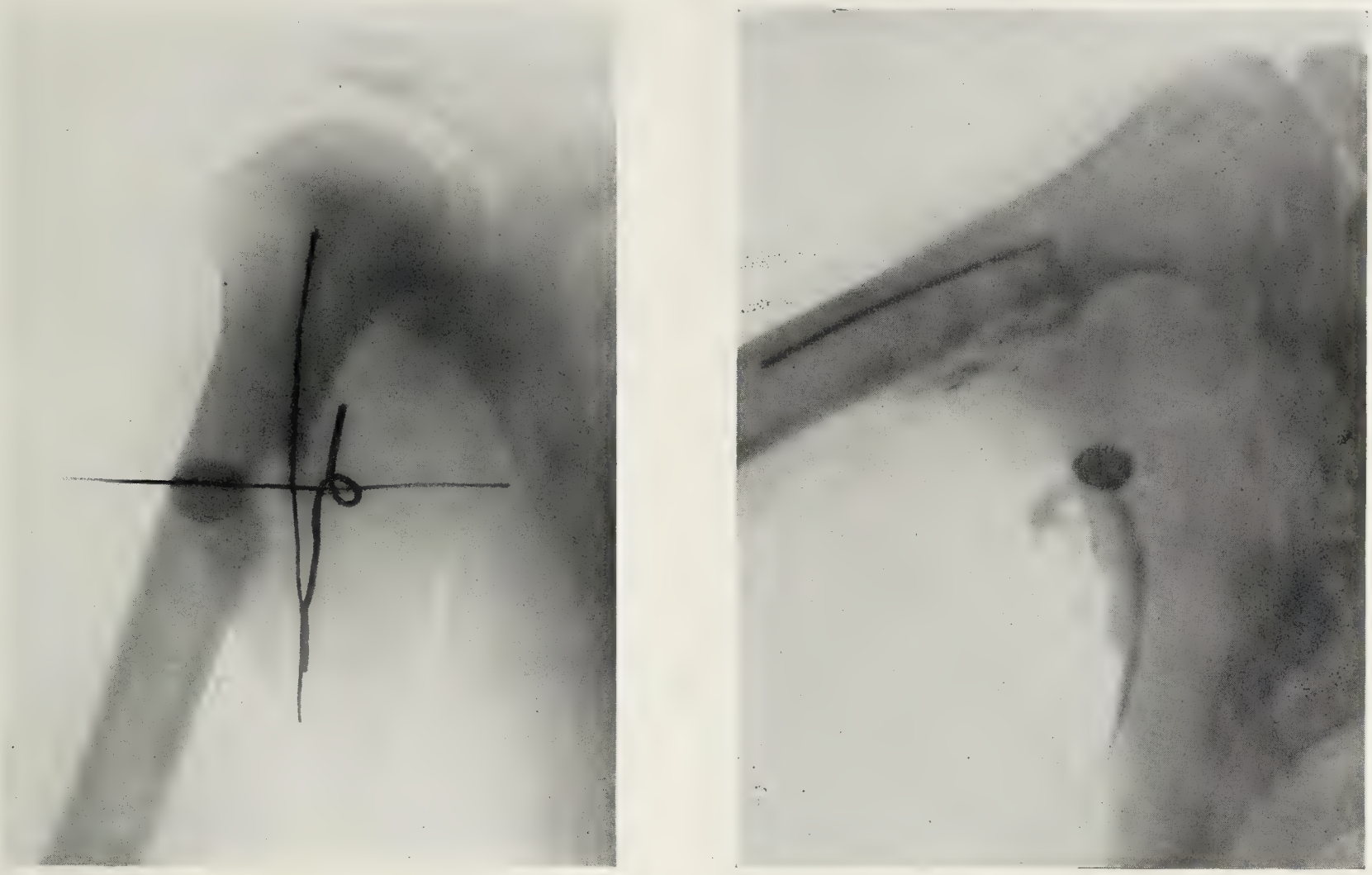
Various methods are available for viewing the stereoscopic result. One of the most convenient is the examination of the plates in a Wheatstone stereoscope, but if there is time it is much more satisfactory to have them reduced to the ordinary stereoscopic slide size ($6\frac{3}{4} \times 3\frac{1}{4}$ in.), and the slide can then be viewed in an ordinary lenticular stereoscope. In this form it is very convenient for the surgeon to look at it during the operation if he wishes to do so. For purposes of localization, an additional advantage is obtained by placing fine fuse-wire on any part of the skin, say on the wound of entrance of a bullet, or on a scar; or in some cases bismuth compound can be applied to the skin as an ointment, which has the effect of making it visible, and by this device the relations of the skin markings to the deeper parts can be readily seen, and the surgeon's work facilitated.

PRECISE LOCALIZATION.

For more precise localization in which exact measurements can be obtained, it becomes necessary, of course, to make certain special arrangements. If the maximum amount of accuracy and information is desired, the method which the writer devised and described seventeen years ago[3] will meet the case. It depends upon the use of cross wires. Having decided what part of the body has to be examined, one places upon the skin of the patient as he lies on the couch a frame carrying thin cross wires at right angles to each other. One of these wires runs parallel to the length of the couch and the other to the breadth. The position of these wires is traced on the skin with nitrate of silver, so that the position they occupy leaves a permanent mark, then the distance of the anode to the plane of the cross wires is accurately ascertained and noted. This can be done with ordinary inspection by means of a foot-rule, one end of the foot-rule being placed on a level with the central point of the anode of the tube, and the height of the cross wires above this point being read off. Sometimes it may be more convenient to fasten the wires on the patient's skin with plaster. The next procedure is to adjust the plumb-bob carefully so that it falls upon the intersection of the cross wires, and, as a further assistance, fuse wire in the shape of an arrow can be placed upon the wound of entrance, or a wire circle placed upon the wound of exit, or a similar indication upon any landmark one may wish to note. The plate is then laid upon the top of the cross wires and a photograph taken, care being taken in the meantime that the patient does not move in the slightest degree. The tube is displaced in the manner already described when dealing with the purely stereoscopic aspect of the subject, and the displacement is of the same extent—namely, 6 cm. from the former position, either along the couch or across the couch. It is advisable in the notes of the case to record in which direction the displacement was made.

When these photographs are developed, each of them shows white lines corresponding to the position of the wires. As these were closely in contact with the plate, they suffer no displacement—that is, there is no effect of parallax—but all other objects, in accordance with their distance from the plate, do suffer more or less displacement. It should be pointed out, in the first place, that

SIR J. MACKENZIE DAVIDSON: LOCALIZATION OF FOREIGN BODIES BY X RAYS.



A B

FIG. 5.—Captain D., wounded by a shrapnel bullet in the right arm. The loop in the looped wire marks the wound of entrance. The length of this looped wire indicates the length of the incision the surgeon made in order to extract the bullet. The bullet was considered to be embedded in the humerus. The *x* ray (photograph A) is one of a pair of stereoscopic plates which showed the bullet to be far back behind and quite outside the humerus. To confirm this the patient's arm was abducted and another stereoscopic pair of *x*-ray pictures taken. One of these is reproduced (B), a single wire being placed on the scar of the operation wound to mark its position. It was obvious that the bullet was in the axilla. It has since been extracted.

The skiagrams well illustrate the misleading appearances that result from a single *x*-ray picture. The bullet appears larger in A than in B, because in A the plate was placed in front and the tube behind the patient; the bullet being further away from the plate produced a larger shadow than in B, where the plate was placed behind and the tube in front.

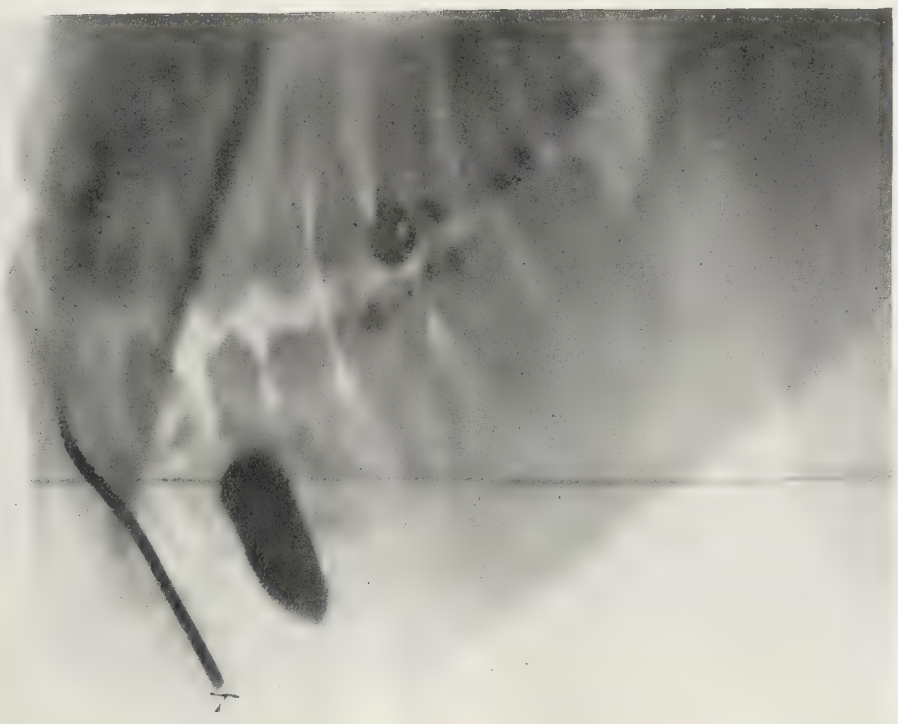


FIG. 6.—Skiagram of a case in which a German rifle bullet entered at a point marked by the lower point of the wire (×), and lodged on the inner side of the bone point downwards. This is one of a stereoscopic pair which clearly showed the position of the bullet in relation to the bone and teeth.

G. LENTHAL CHEATLE: GREY HAIR AND DISEASE LIMITED TO NASO-LABIAL AREA.

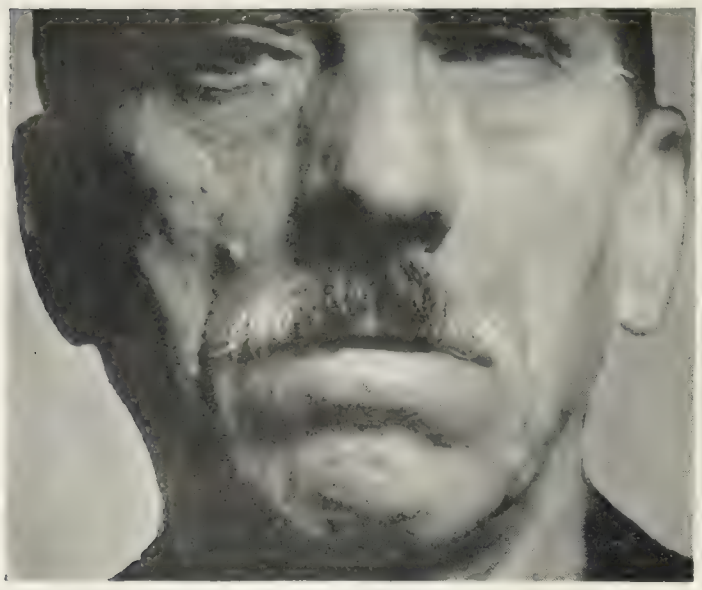


FIG. 1.—Greyness.



FIG. 2.—Loss of Hair.



FIG. 3.—Greyness.

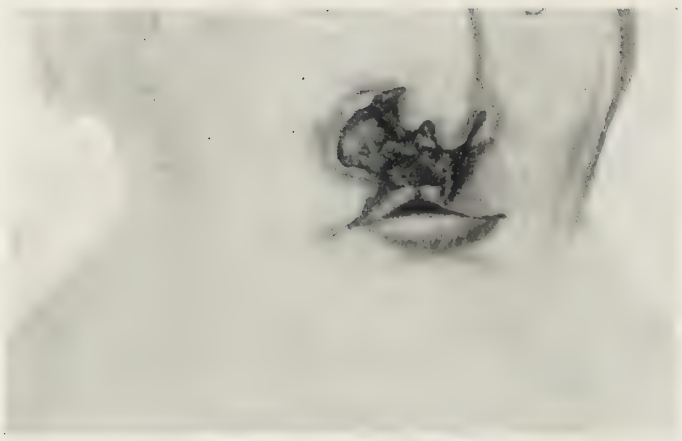


FIG. 4.—Rodent Ulcer.



FIG. 5.—Rodent Ulcer.



FIG. 6.—Rodent Ulcer.



FIG. 7.—Syphilis.

For full descriptions see text.

these negatives are stereoscopic, and when viewed stereoscopically they show the cross indicating the level of the skin, and all the other parts in their true relation to it. But, apart from this, it is very simple to ascertain by measurement the exact position of any foreign body or bodies, and also the size of the foreign body, the direction or angle in which it is lying in the tissues, and its distance from the skin, and from each cross wire, and from any other points which may be required.

The method of interpreting these negatives may now be briefly described. A tracing paper, or tracing sheet of gelatine, has cross lines drawn upon it. One of these negatives is held up against a light source, and the tracing sheet is placed preferably upon the glass side of the negative, with the cross lines in accurate register with the white image of the cross lines on the negative. This position can be maintained with little pieces of rubber plaster while the bullet or other object is traced with pencil. A similar procedure, on the same tracing paper, is carried out with the other negative, and it is convenient to use black pencil for the tracings in one instance, and red pencil in the other. In this way one obtains on the tracing sheet a single cross with duplicate tracings of the bullet, the outlines being displaced as between the two negatives, in accordance with the direction of previous displacement of the tube.

THE CROSS-THREAD LOCALIZER.

In order to enable measurements to be made by reconstructing geometrically the conditions of the exposure, an instrument devised by the writer, and called the cross-thread localizer, is employed.

The principles upon which it depends are illustrated in the accompanying diagrams, reproduced from my paper published in the issue of the JOURNAL for January 1st, 1898. The negative is placed under exactly the same conditions as it occupied when it was being taken, and the part of the *x* rays which produced the negative is ascertained in the following way: In Fig. 2 the negative is seen lying on a table with its glass side uppermost; above the table is fixed a scale at a height equal to that at which the anode was when the negative was taken. Silk threads are introduced into notches in the scale 6 cm. apart, and kept taut in the notches by small weights. The other ends of the threads are threaded into fine needles weighted by being fixed into small lead weights in shape resembling a mouse (M, M, Fig. 2).

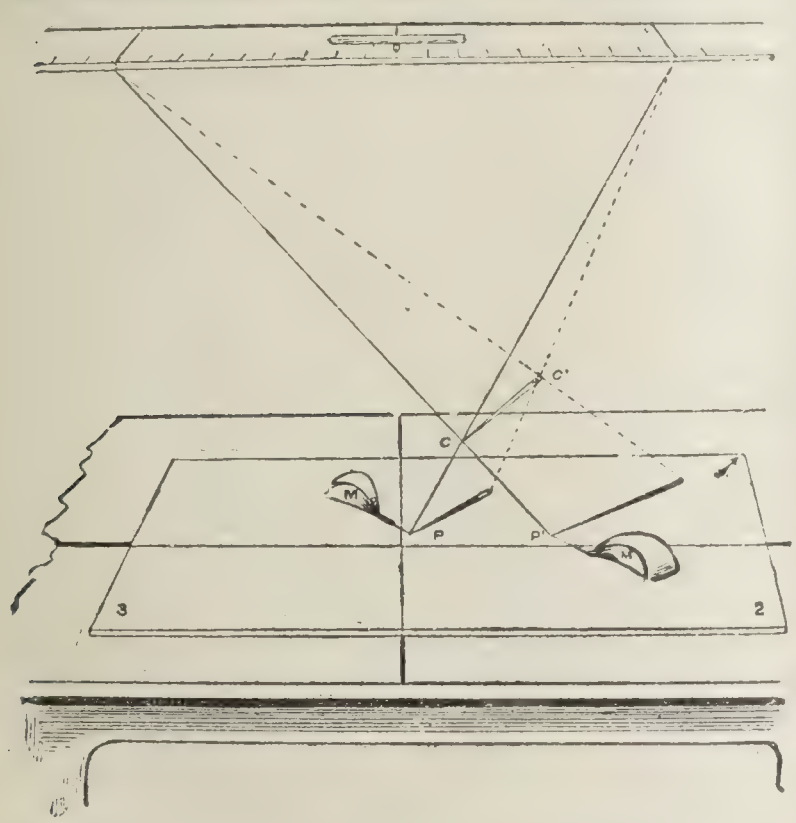


Fig. 2.

Now these threads can be used to show the path of the *x* rays which produced the negative. Suppose we are dealing with a needle in some part of the body. On looking down on the negative we find two needles, and it is not difficult to see that as the Crookes's tube was displaced horizontally in a line running right and left, the shadow of the needle to the left was produced by the tube when displaced to the right, and *vice versa*. Thus, if we place one of the threads on the point of the needle in one shadow correctly, it will indicate the path of the *x* ray that produced the shadow of the needle point (P, Fig. 2). Now, if the other thread is placed on the corresponding point of the other needle shadow (P', Fig. 2), then it must follow that the position actually occupied by the point of the needle in question is precisely where the two threads cross at *c* in Fig. 2.

If we can measure the perpendicular distance of a point from three planes which are at right angles to each other—in short, if we can get the *x*, *y*, and *z*, we then know all about the position of the point in question. This we can do at once for the point *c* in Fig. 2. First, the vertical distance from the negative to where the threads cross each other is measured. This is the distance of the point of the needle beneath the skin (of the patient), which rested on the photographic plate. We can measure this with an ordinary pair of compasses, or with a surface gauge. The small arrow (Fig. 2) indicates the marked quadrant, and 1, 2, 3, 4 mark the corners of the negative.

We next measure the vertical distances from the two vertical planes represented by the shadows of the cross wires to the

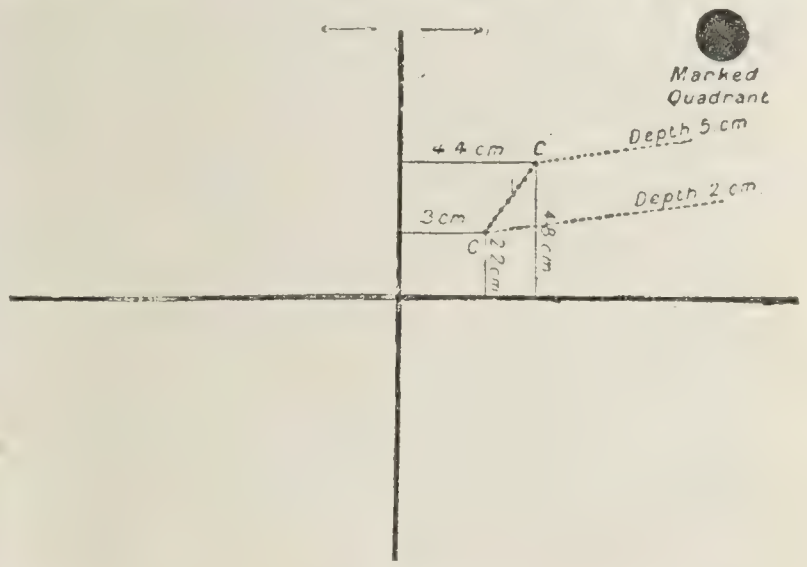


Fig. 3.

point where the threads cross. An upright square is placed with its edge coincident with the shadow of one of the wires, and the perpendicular distance is measured with compasses from it to the point where the threads intersect. We have now obtained our *x*, *y*, and *z* of the point of the needle, and we note the result down as shown in Fig. 3. The arrows in Fig. 3 indicate the direction of the displacements of the Crookes's tube. We then proceed in a similar manner to ascertain the position of the eye of the needle (C' in Fig. 2), and the distance between C and C' in Fig. 2 gives the direction and actual length of the needle.

From the measurements jotted down, as shown in Fig. 3, we can mark a line on the patient's skin in the same plane as the needle, and give the surgeon the exact depth at which each of its extremities can be reached by a vertical puncture.

The apparatus I now use consists of a small flat table surface, which again has the two black lines drawn upon it at right angles to each other. From the middle of one of the sides of this table there rises a sliding upright, with clamp, which can be used at any desired height. This is really a T-piece, and the arm reaches above the middle of the table. A central notch on this arm is adjusted so as to be exactly above the point where the two lines intersect below, and on either side, at distances of 3 cm. from this central notch, are two other notches, which in their distance from each other represent the distance of the tube displacement. The tracing is placed flat upon the table, with its cross lines in register with those already marked on the table, and the central notch of the T-piece is adjusted by means of a plumb-line to be exactly the same distance from the intersecting point below as was the anode of the tube from the centre of the cross wires when the photographs were taken.

As *x* rays travel in straight lines from their point of origin to their destination, the path of any ray can be conveniently traced by means of a stretched thread. Accordingly two slightly weighted silk threads are passed in the little side notches on the T-piece, 6 cm. apart, and are attached to weighted needles on the stage below. In this way they can be used to trace any ray as desired. To take an example, one of the simplest cases is that of a round bullet, represented on the tracing paper by a couple of outlines side by side. It is evident that the outline to the left must have been produced by the tube when it occupied the right-hand position, and vice versa. The thread from the right notch, therefore, is brought down to a point on the tracing which represents the left-hand shadow, and the thread from the left notch to a corresponding point on the tracing which represents the right-hand shadow. It follows that the foreign body, or

the part of it thus indicated, must have occupied a position corresponding to some point along the line of these threads, and the actual position is immediately denoted by the point where the threads intersect. The distance from the tracing below to this point of intersection above furnishes us with the precise depth of the bullet below the skin.

The cross lines may now be looked upon as the bases of vertical planes, just as the lines marked out on a building site indicate the walls which presently will be laid upon them. A millimetre scale, attached to a base so that it can stand vertically, is brought into register with one of these cross lines, and by means of a pair of compasses the distance of the point of intersection of the threads from this vertical plane is measured. The same procedure is followed in the case of the vertical plane corresponding to the other cross line. Furnished with these distances of the two vertical planes from the point of intersection of the threads, one is enabled to measure on the skin of the patient, from the marks that have been left upon it, the distances from the planes at which the foreign body is situated, and once this point in relation to the planes represented by the cross wires is found on the surface, one knows that the bullet is situated at a distance vertically below this point corresponding exactly to the distance between the intersection of the threads and that of the cross lines marked on the table. An important precaution is to have some means of identifying one of the quadrants formed by the cross wires; this can be afforded by means of a mark made on the skin at the time of exposure, corresponding to the shadow of a fragment of lead on the plate. This precaution is necessary in order to avoid the possibility of mistaking the quadrant owing to the effect of reversal.

This method, while apparently elaborate, is simple, and gives the maximum amount of detail. A saving of time can be effected by making the two exposures on a single plate and thereby avoiding the tracing. Should a diagrammatic stereoscopic picture be desired when the two exposures have been taken on the one plate, it can be obtained by making a tracing of each image on separate pieces of glass or tracing material, and these, when combined by the stereoscopic method, give a faithful diagram of the relation of the foreign body to the cross wires. For cases where the screen is available a very speedy and simple method of ascertaining the position and depth of a foreign body is at hand. The patient lies on the couch, and is examined with the screen; the tube is moved until the plumb-bob is brought vertically above the shadow of the foreign body. This position is marked on the skin beneath, and also on the glass of the fluorescent screen. The tube is then displaced in any direction to a known distance, and then the distance the shadow has moved is measured and noted. The distance of the tube having been ascertained and noted, it becomes a matter of extreme simplicity to determine the exact depth of the bullet below the mark made on the skin. This is carried out by the well-known formula of similar triangles. If x be the distance of the foreign body beneath the skin at the point marked, then as the displacement of the tube is to the height of the tube above the screen, minus x, so is the distance between the displaced shadow to x (Fig. 4).



Fig. 4.—A B, Distance of x-ray tube from screen or photographic plate; A C, distance between the two positions of the x-ray tube; D B, distance between two shadows of bullet; X, distance or depth below skin of the bullet. To ascertain x by similar triangles the formula is:

$$D\,B : x :: A\,C : (A\,B - x)$$
$$D\,B\,(A\,B - x) = A\,C \times x$$
$$X = \frac{D\,B}{A\,C}\,(A\,B - x)$$

The method of cross-thread localization has been applied, with more precise and rigid apparatus, to the localization of the minutest foreign bodies in the eye, and in the course of an experience covering some years it has been found to give the most astonishingly accurate results.

Surgical Precautions.

Thus far I have dealt with the information which the x-ray worker can place at the disposal of the surgeon. I now venture to make some remarks on the proper precautions which ought to be observed by the surgeon in dealing with these foreign bodies. In the first place, he should be careful to take the trouble to place the patient in precisely the same position as he occupied at the time the x-ray photograph was taken. In the second place, he should be very careful to ascertain the exact position occupied by the foreign body which he proposes to remove. If the cross lines and their markings made at the time of the x-ray examination have been carefully preserved on the patient's skin, this information can be given to the surgeon with the minutest accuracy, and at the same time the result is stereoscopic, and, reduced to the stereoscopic size, can be viewed by the surgeon during operation.

As an adjunct to the operative measures, I should like to mention a method which I have recently adopted with considerable success. It consists in the use of a telephone—preferably one with double receivers—such as is used in wireless telegraphy. One end of the telephone wire is attached to a small piece of platinum. This is placed upon any part of the patient's skin, which has first been moistened in the usual way with salt water. Plaster or bandage is used for holding the small disc of platinum in position. The other end of the telephone wire should be in the form of a disinfected thread of silver (preferably), because this can be readily attached to any of the surgeon's instruments—knife, probe, needle, or forceps. The only precaution necessary is that the attachment of the terminating wire to the instrument shall be firm. If the surgeon then attaches the telephone receiver to his ear, and begins to use his instrument upon the patient's tissues, he may possibly distinguish some slight sound on first making contact, but this is so faint as to be negligible. What he will hear with great distinctness, however, is the characteristic microphonic rattle the instant his instrument touches any metal embedded in the patient's tissues. The convenience of this adjunct to the operative instruments of the surgeon, when used carefully and intelligently, is not easy to over-estimate. One of the most regrettable habits of many distinguished surgeons is that of searching the wound with their fingers; this is the more regrettable because the use of the modern rubber gloves makes their tactile impressions rather imperfect. The writer's experience is that it is extremely difficult for him to persuade the surgeon to take great pains in going directly to the position at which the foreign body is situated. Almost the moment after the incision the surgeon invariably begins to search about in the same old way as he would have done if no information as to the position of the foreign body had been placed at his disposal at all. On several occasions these manipulations have actually resulted in pushing the foreign body out of the position which it had occupied and in which it had been carefully localized. Perhaps this criticism from one who for many years had a large operative experience in the removal of foreign bodies from the eye and orbit may be pardoned, and the use of the telephone attachment to surgical instruments, combined with precise measurements of the position of the foreign body may be a means of preventing the large incisions one often sees made, and the great disturbance of tissue and loss of time involved in extracting comparatively small foreign bodies which results.

Some cases illustrated by skiagrams are given on a Special Plate, Fig. 5 (A and B), Fig. 6, and Figs. 7 and 8, but before concluding I should like to state my firm conviction that a great many bullets are removed, sometimes from difficult positions, which, if they had been left alone, would have given no trouble whatever. As an example of the tolerance of foreign bodies, even in very movable parts of the human frame, one need only instance the great number of people who are known to have small shot in their orbits, sometimes very close to the eye, which remain there absolutely unnoticed for the remainder of their lifetime. There seems to be an impression abroad among officers that their chance of employment is diminished if they are known to have a bullet embedded somewhere in

their bodies. If this is so, the sooner this erroneous idea is removed the better.

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[1] *Lancet*, November 7th, 1914, p. 1084. [2] BRITISH MEDICAL JOURNAL, December 5th, 1914, p. 953. [3] BRITISH MEDICAL JOURNAL, January 1st and December 3rd, 1898.

SOME PRACTICAL HINTS ON THE LOCALIZATION OF BULLETS AND SHELL FRAGMENTS.

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SINCE the publication of my short note on a method of bullet localization,[1] I have received numerous letters asking for further information on the subject, and referring to various practical difficulties met with in the course of such work. These difficulties are mainly the result of two causes: inability to get the limbs into the position desired, and the presence of large suppurating wounds. Pain may prevent a limb being flattened out on the couch-top, preparatory to obtaining the vertical line. For example, it may be possible to straighten a knee only to within 30 to 40 degrees of full extension. The limb may, however, be held in position and two marks, one beneath the other, obtained; these will form a perfectly good guide to the surgeon, provided that the knee be operated on at the same angle. The lateral marks are, of course, obtained as usual.

Again, the patient's wounds or general condition may prevent him from being rolled on to his side so as to get lateral markings. This difficulty may be got over by using a second tube in an upright stand, so arranged that its normal ray is at right angles to that of the one beneath the couch. The procedure is exactly as before, the only inconvenience being that the tube is not so readily manœuvred into position as in the case of one resting on a carriage with universal movement (Fig. 1).

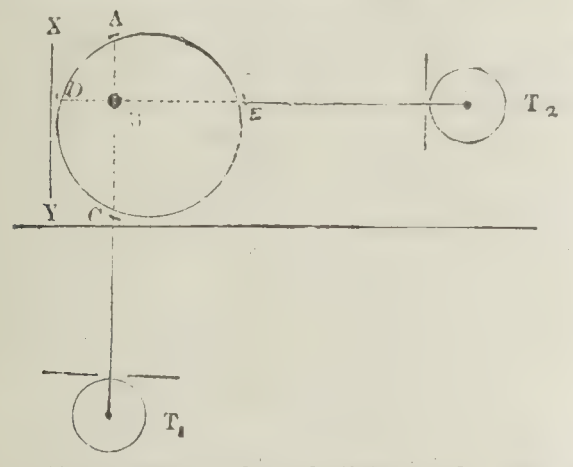


Fig. 1.—T, Tube under couch; B, bullet; A and C, first markings; T2, tube in adjustable stand, with diaphragm; D and E, cross markings; X Y, position of screen while obtaining the latter.

The use of a second tube has, however, one small advantage. The "cross markings" are made without the limb having been moved. When a patient is shifted so as to obtain a lateral view, care should be taken that the muscles of the limb are not thrown into action. If a bullet is lodged in the belly of a muscle, it may move relatively to the skin mark when the muscle contracts. Therefore the patient should always be instructed to remain absolutely passive; he must be rolled over, not allowed to turn over himself.

Patients with large suppurating wounds near the parts where the skiagrams must be taken may be prepared by having the limb wrapped in sterile gauze, covered by a layer of thin waterproof material, the whole being secured by a well-fitting bandage. Localization marks are made on the bandage. Afterwards the bandage is snipped with scissors at the points indicated, and nitrate of silver marks are made on the skin. It may be that one of the markings is directly over an open wound. The surgeon will then have to be content with three points only.

The discharge from some of these wounds is so copious that unless very stringent precautions are taken some of it is apt to escape. The screen, couch, and localizer are soiled, and infection may be transferred to other cases. A localizer made entirely of metal is undoubtedly an advantage, as it can be boiled after each case. If, in addition, a square of sterilized waterproof is spread on the couch, and another is interposed between the screen and the limb, the precautions are complete.

In numerous instances localization can only be carried out properly under an anaesthetic. By arrangement with the surgeon and the anaesthetist the patient is anaesthetized on the *x*-ray couch, and the operation is performed immediately afterwards. As the localization can be carried out before surgical anaesthesia has been reached, this procedure does not prolong the operation. It is necessary to have the room in darkness only for a few seconds at a time, but if the anaesthetist is troubled by this, a fluoroscope may be used in all but very difficult cases.

Those cases in which bullets or shell fragments have lodged in the neighbourhood of the hip-joints, pelvis, and shoulder girdle, require special consideration. Where powerful apparatus is at hand, where the bullet is of full size and the patient thin, cross markings may be obtained in these regions, but they cannot be counted on as a rule. The vertical line, on the other hand, can always be ascertained, and various means are employed to ascertain the distance of the bullet below the surface along this line.

In the region of the hip and shoulder stereoscopy is very valuable. The vertical line of the bullet should, however, be found in the usual manner. The diaphragm is then opened, and the plates taken by moving the tube 3 cm. on either side of the original position. If this plan is followed, the true vertical relationship of bullet and bony landmarks will be seen in the stereoscope. For instance, if the bullet appears to be directly over the middle of the acetabulum, this represents what will actually be found at operation. Some people have an idea that because a stereoscopic image gives an appearance of solidity therefore the exact position of the tube does not matter. That this is a mistaken view a very little thought will show. Suppose, for instance, we desire to centre an *x*-ray tube which has no plummet over any particular part of the body. It is necessary to get into a position from which one can look directly down on the desired spot, as it is not possible to be sure of the correct centering of the bulb from any other view-point.

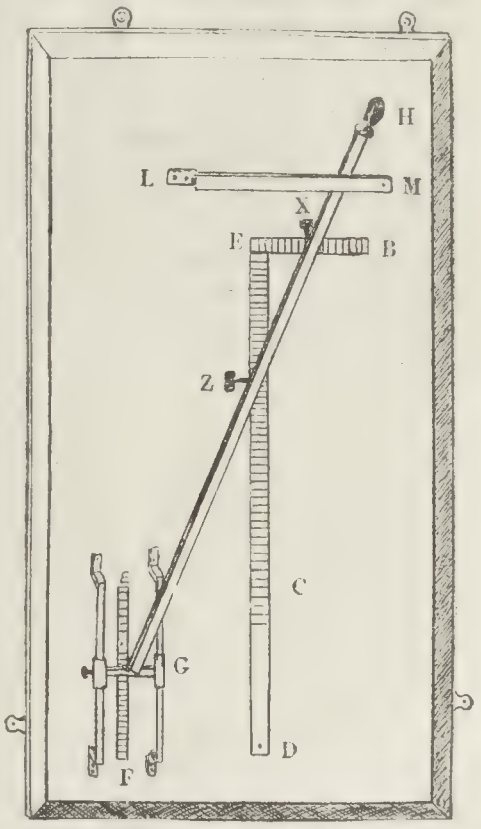


Fig. 2.—A board, 36 in. high, 18 in. wide, and ½ in. in thickness, is screwed to the wall of the *x*-ray room. On it, in the position shown, is drawn a vertical scale, 26 in. in length. Of this the portion E C represents the distance between the anticathode and the top of couch. Five inches to the left is a parallel scale, E F, 10 in. long. E B is a scale running to the right, perpendicular to E D; it is 3 in. long. G H is a rigid arm, 32 in. long, pivoted at G. The pivot G can be moved vertically between E and F, and clamped in any desired position. The lever is steadied at the top by the bar L M, behind which it can move freely except when clamped by a screw at M.

Where cross markings cannot be obtained, and where it is desired to localize without the necessity of taking plates, or to gain information additional to what is given by the stereoscope, some modification of the well-known method of triangulation must be employed. Of such modifications there are several, and the choice between them must be largely a matter of personal preference. For my own use I have designed a simple apparatus which I call a "depth indicator," shown in the appended rough diagrammatic sketch (Fig 2), which, however, makes no pretensions to exact scale.

To ascertain the depth at which a bullet lies, the tube is, as usual, manœuvred into a position vertically below the

bullet, and the position of the latter marked on the skin by means of the ring localizer, which for this purpose should be provided with two wires crossing in its centre at right angles, as great accuracy is necessary. The diaphragm is then fully opened and the tube moved a distance of 5 in. If the bullet is at any depth, its image, of course, moves in the opposite direction to the tube. The new position is marked on the skin by the ring localizer, care being taken that the same part of the bullet shadow is used as a guide in each case. The distance between these two points is measured. Next, the distance between the upper surface of the patient's body and the couch top must be found. The overhead compressor attachment supplied with the Ironside Bruce couch by some firms can be readily utilized for this purpose; otherwise some simple form of calipers must be used, or an arrangement such as used for measuring the height of recruits can be employed. Finally, the second dot should be rubbed out, the tube replaced in the vertical position, and the mark made under the body by the localizer in the usual way.

Suppose the measurement between the two surface marks is 1 in. The sliding pointer X is moved along E B to the right for that distance and clamped. Suppose, further, that the measurement from couch top to surface of patient is 6 in.; G is moved that distance below C and clamped (that is, E C + 6 in. = the total distance between target and upper surface of patient). The lever G H, which has been resting against M, is now brought to the left till it is stopped by X. The pointer Z is moved downward till it meets the lever, and the distance E Z is the vertical depth of the bullet.

The above instrument is designed to enable the depth of a bullet to be gauged with a maximum of convenience, speed and accuracy. The principle may, however, be employed in a home-made fashion as follows:

Paste on to the wall at a convenient height a sheet of white paper of suitable dimensions. Draw scales as described. Mark off E C to the length of the couch you work with and number E F in inches and quarters from above downwards. Take a two-foot rule (which is long enough in most cases), place its lower and left-hand corner against the proper scale mark, and, holding it in place by the left hand, bring the upper right-hand edge to the required distance along E B. Then read off the distance E Z. The rule must be kept flat against the wall, and one must see that the lower end is still in place before making the final reading. Be sure to interpret the distance E X liberally, so as not to underestimate the depth.

The above method of calculating the position of a bullet is recommended only where cross markings cannot be readily obtained. The latter are greatly preferred by most surgeons, as they serve as guides after the vertical relationships have been disturbed by the progress of the operation. In the case of limbs it is a good plan to make corresponding marks on the sound side. This is readily done by means of the band of flexible metal referred to in my previous paper. Where cross markings are impossible, as on the lower abdomen, we should never neglect to mark the patient below as well as above. In addition, the surface on which the incision is to be made should be marked by a cross consisting of lines 4 to 5 in. in length, cutting each other at right angles, the point of intersection being the original dot. By this precaution the position of the latter can be judged even after considerable "sagging" has taken place; and by the aid of the opposing dot the line in which the bullet lies can be reconstructed. It has been objected that it is difficult to make a mark beneath a patient by means of the ring localizer; but, if a little care is used, the latter can be quite easily held in place while the patient is tilted sufficiently for the purpose. An all-metal ring localizer, sterilizable by boiling, is made by Messrs. W. Watson and Sons, Great Portland Street, W. It has cross wires, and also an arrangement for making a mark beneath a patient's body without disturbing him. They are also prepared to supply to order for immediate delivery "wall-diagrams," and have in preparation a mechanical device based on the principles shown in Fig. 2.

Many operations for the removal of bullets are difficult, even when they have been clearly seen on the screen, and properly localized by cross lines. Where bullets are lodged in the fleshy parts of limbs screen localizing is usually the only method of value. By this I mean that no additional information of value can be obtained from plates. But in the case of a bullet which has lodged near a joint or entered a bone, the whole resources of the radiographic art should be placed at the surgeon's disposal. I have seen a surgeon of much experience fail to extract a rifle bullet which had lodged in the astragalus, although he had a lateral radiograph and exact cross markings on the skin. In this case stereoscopy might, perhaps, have turned failure into success.

As to the relative value of stereoscopic views and those taken at right angles to each other, whenever the latter can be properly obtained they are of more assistance than the former. The vertical line of the bullet must be first found by the screen. The bullet image on the plate can then be fitted over the skin marks if desired.

If for any reason it is not practicable to take photographs where in reality they should be taken, the surgeon's presence at the screen localization is desirable. It is very important that the operator should understand the principles on which his colleague works. This would often avoid the making of impossible requests. On the other hand, the radiographer ought certainly to attend operations. He will then realize better the practical problems which have to be confronted, and perhaps be able to devise further means of help.

If the radiographer values his reputation, he will endeavour himself to do all localizations. Lay assistants may often be trusted to turn out good plates, but prognostications as to the position of bullets are quickly put to the test of surgery, and when failure occurs, as sometimes it will, it is comforting to have the conviction—not always shared by the surgeon!—that no fault can be laid at the door of the *x*-ray department.

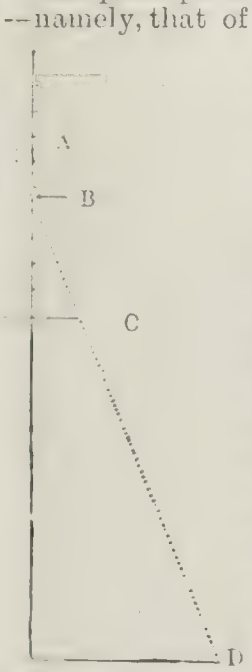
REFERENCE.
[1] British Medical Journal, October 31st, 1914.

A RAPID METHOD OF LOCALIZATION BY X RAYS.

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In order to supply the need felt for a means of localizing foreign bodies which could be applied during the screening of a case, and without the loss of time involved in changing the tube to the overhead position and developing a plate for the Mackenzie Davidson method, the following method was devised, with the assistance of Lieutenant P. Ferguson, F.R.C.S., R.A.M.C.

The principle is that of the Mackenzie Davidson method—namely, that of reconstructing the passage of the rays after a deflection of the tube. The necessary data are the height of the table from the tube, and of the screen from the table; the amount of the deflection of the tube and the amount of movement of the shadow on the screen following the movement of the tube.



A, screen; B, foreign body; C, table; D, tube.

The method is as follows: A chart is prepared, and on it is ruled a vertical line about a metre in length. On this line is marked off the height of the table from the tube, which it is convenient to make constant. Above this mark a centimetre scale may be set out for convenience in calculation. At the foot of the vertical line another is drawn at right angles to it, representing the amount of deflection of the tube. It is convenient to make this constant also—say, 10 cm. long.

The part is now screened, the foreign body distinguished, and its position marked on the skin with an indelible pencil. Care has now to be taken that the tube is vertically under the foreign body, and this should be done by careful measurement. The screen is placed as horizontal as possible on the part, and one edge of the foreign body is marked by means of a metal pointer (that supplied with the Mackenzie Davidson apparatus is very convenient). The tube is now moved a measured distance — say, 10 cm.

—and the pointer pushed on to measure the amount of movement of the foreign body on the screen.

The only remaining measurement is that of the height of the screen from the table. This height is now marked on the centimetre scale on the chart; the amount the shadow of the foreign body has moved is measured out at right angles to the vertical line from this point. If the point thus obtained be joined by a straight-edge to the end of the line representing the deflection of the tube, it will cut the vertical line at a point which represents the vertical depth of the foreign body from the screen and from the table. This measurement and the mark upon the patient usually gives the surgeon all the information he requires.

The method has been found to work admirably, and to form a very efficient substitute for more elaborate means in many cases. The saving of time is an added consideration in a military hospital.

If a more permanent instrument be required it would be a simple matter to substitute a wooden upright with sliding-scale pieces to take the place of the chart.

The Bradshaw Lecture

ON

ACUTE HAEMORRHAGIC PANCREATITIS;

WITH REMARKS ON THE ETIOLOGY OF CHRONIC PANCREATITIS.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

BY SIR FREDERIC EVE, F.R.C.S.,

CONSULTING SURGEON TO THE LONDON HOSPITAL, AND TO THE EVELINA HOSPITAL.

[WITH SPECIAL PLATE.]

TEN years have passed since Mayo Robson, who had made this subject his own, discoursed in this theatre on pancreatitis. During that period so much light has been thrown on the subject by the experimental pathologist and the clinician that no excuse is required for reopening it.

ACUTE PANCREATITIS.

The macroscopic changes of acute haemorrhagic pancreatitis are extremely characteristic and find no counterpart in any other organ.

Macroscopic Appearances.

In the earlier stages the pancreas is swollen, friable, and mottled red or brown to black with haemorrhages, which lie chiefly near the surface or in the interstitial connective tissue. Areas of opaque white or yellow fat necrosis are observed in the peripancreatic fat and in that of the septa. They are also commonly met with in the fat of the omentum and mesentery. In some cases their distribution is very wide, and fat necrosis may be seen in the subperitoneal fat of the abdominal wall, retroperitoneal adipose tissue, and even in the subpericardial and subpleural fat. A sanguineous or sero-sanguineous effusion is encountered in the lesser cavity of the peritoneum. This fluid is at first often sterile and contains products of pancreatic secretion, but it soon becomes infected; and in cases of some duration, or even at an early stage in some very acute cases, septic peritonitis exists.

If the patient survives, varying degrees of necrotic and of suppurative changes are observed in and around the pancreas. Cases have been recorded in which the pancreas was necrosed and sequestrated in its entirety. This may have occurred, but Dr. Turnbull informs me that the sequestered necrotic masses he has met with were composed of blocks of peripancreatic adipose tissue, and not of the pancreas itself. In two cases the house-surgeon assured him that the whole pancreas had sloughed through a laparotomy wound; but in both instances the pancreas was found in its normal position at the necropsy.

Suppuration of a diffuse character occurs mainly in the tissue around the pancreas; at times, in less acute cases, a localized abscess forms in the pancreas itself.

The original subdivision by Fitz of acute pancreatitis into haemorrhagic, gangrenous, and suppurative, merely represents the outstanding pathological features of different cases exhibiting varying stages and degrees of the malady. The haemorrhages are always associated with necroses, although one may be more conspicuous than the other; and they are both the primary result of the same morbid process. This, of course, does not imply that a primary haemorrhage into the pancreas from changes in the blood or blood vessels never occurs; but such an apoplexy would be distinct from acute haemorrhagic pancreatitis.

Histology.

The specimens I have studied confirm the description of the histological appearances given by Opie.[1] The chief features are: Areas of necrosis involving the parenchyma and also the interlobular septa; haemorrhages most abundant about the periphery of the gland and around the necrotic areas; in addition, a diffuse infiltration of the septa, and, to a less extent, the gland substance with red corpuscles; there are also patches of fat necrosis involving the periglandular fat and the adipose tissue in the septa (see Plate, Figs. 1 to 4).

Of six specimens in the Pathological Institute of the London Hospital all but one showed definite evidence of inflammation, such as masses of polymorphonuclear leucocytes and areas of purulent infiltration around patches of necrosis (see Plate, Fig. 2), in the septa, and beneath the peritoneum. The veins in some instances contained red or mixed thrombi, and occasionally the arteries were thrombosed.

In one case only (see Plate, Fig. 1) out of six the leucocytic infiltration was very restricted, and limited to a few areas around necroses, although the patient died on the sixth day, while in all the others death occurred on or before the fourth day. Opie, among five specimens examined microscopically, observed one in which there was little or no inflammatory reaction.[2]

Some writers regard all the changes in acute pancreatitis as the result of the action of the pancreatic secretion on the gland. Chiari[3] describes it as a tryptic autodigestion; others (Fitz, Körte) regard the disease as an acute haemorrhagic inflammation leading to necrosis. Guleke recognizes two forms of the disease—a necrotic form, which he calls "pancreatic necrosis"; and an inflammatory form, provoked by bacterial inflammation, which he names "acute pancreatitis." He considers that the two forms are not sharply defined.

I propose to show that both the digestive and the inflammatory hypotheses are in part true, in that the process in the initial stage is due to aseptic or bacterial infection, which not only lowers the resistance of and damages the gland tissue, but also liberates trypsin. The action of this proteolytic ferment, together with that of the steapsin, give to the morbid process its characteristic changes.

The pancreatic juice presents this peculiarity, that when secreted its principal digestive agent is inert. The trypsin or proteolytic enzyme is secreted as an inactive substance—trypsinogen—and this is activated or transformed into trypsin by enterokinase, a substance said to be an enzyme, which is produced by the intestinal mucous membrane. The activation of the pancreatic secretion takes place after it is poured into the intestine, and therefore under normal circumstances the pancreas runs no danger of self-digestion.

According to Professor Starling, the juice obtained from the pancreatic duct by the use of secretin contains only trypsinogen. And Dr. H. M. Vernon, whose work on the pancreatic secretion is well known, writes to me that "probably under ordinary circumstances enterokinase is the only agent that can start the activation of trypsinogen; but both juice and extracts contain also another ferment in zymogen-form, which, when set free, is much more powerful than enterokinase. So long as this ferment is present as zymogen the juice will remain inactive, whether in the ducts or elsewhere, and it is only when it is rendered active by the slow action of free trypsin that it is able to exert its rapid activating influence on trypsinogen."

This new fact, just discovered by Dr. Vernon, would appear at first sight to have no bearing on the etiology of acute pancreatitis, for the trypsin is, under normal

conditions, developed outside the pancreas by the action of the enterokinase of the succus entericus.

It must be taken in conjunction with an observation by Mellanby and Woolley,[4] that *Bacillus coli* and other intestinal flora are capable of activating pancreatic juice. These bacteria, according to Dr. Vernon, secrete powerful proteolytic ferments similar to trypsin, and he holds that the ferments secreted by them liberate an activator from the zymogen above referred to, and that it is this, and not enterokinase, which produces the effect observed.

To put the matter shortly, there is, on physiological grounds, good reason for believing that bacteria, and especially the *B. coli*, are capable of activating the pancreatic secretion independently of enterokinase. This, as we shall subsequently see, is entirely in accord with the results obtained by experiments on the artificial production of acute pancreatitis.

In addition to an amylolytic enzyme, the pancreatic juice also contains a fat-splitting enzyme, steapsin, capable of splitting neutral fats into fatty acids and glycerine, and it is this ferment which causes the fat necrosis. Bile increases the activity of steapsin two-fold (Neucke and Bremo). This is corroborated by Mellanby and Woolley, and, as we shall see, is another fact having an important pathological bearing.

Experimental Pathology.

Opie was the first to show that there was a definite relation between cholelithiasis and acute pancreatitis. In an autopsy on a case of Halsted's he found a gall stone impacted in and filling the diverticulum. In a subsequent case a small stone blocked the orifice of the diverticulum but did not fill it, so that a direct channel was formed between the biliary and the pancreatic ducts (Fig. I). That bile had flowed into the pancreatic duct was demonstrated by the duct being stained bright green. Acting on this hint he injected bile into the pancreatic duct of dogs, and found that the injection of 5 c.cm. caused death with haemorrhagic inflammation and fat necrosis. This at first sight conclusive fact was only the starting point of a long series of experiments. So many have been made with various substances that time will only permit allusion to a few of them.

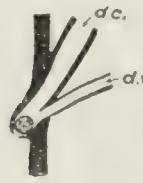


Fig. I. — Diagram, after Opie, to show a calculus blocking the papilla, and permitting of a free channel between the ductus choledochus and the duct of Wirsung.

At the outset it may be remarked that many of these experiments, although resulting in a condition resembling acute haemorrhagic pancreatitis, do not reproduce the conditions existing during life. The pressure of the secretion of the bile and pancreatic juice is very low, even supposing, as Flexner suggests, that the bile pressure is accentuated by contraction of the gall bladder; whereas in experiments the injection is made with a syringe, and considerable amounts, 5 or 10 c.cm., were often used. That the amount injected has a relation to the result was shown by Opie and many others with bile. Death did not follow the use of smaller amounts than 5 c.cm., and the changes produced in the organ were less widespread and severe. The pancreas is a very loose gland, the walls of the terminal ducts extremely thin, so that fluids under slight pressure would readily be extravasated into the gland tissue.

Many of the substances employed in experiments—zinc chloride, nitric and chromic acid—would act as irritants to the walls of the blood vessels and gland cells, and produce haemorrhages and necrosis. Flexner showed that the action of bile, which will dissolve red blood corpuscles, is due to the cytolytic property of the biliary salts. Olive oil, injected with positive results by Hess and others, owes its action to the liberation of fatty acids, which are extremely irritating to the tissues.

Other substances employed are not only irritants, but may also activate the pancreatic juice; for example, solutions of hydrochloric acid to imitate gastric juice. Dr. Vernon informs me that if pancreatic juice be partly neutralized by hydrochloric acid it spontaneously activates itself. Mellanby and Woolley also state that removal of the alkali of pancreatic juice by neutralization with hydrochloric acid produces rapid activation. To the same category belong solutions of various species of bacteria injected by a number of experimenters. Inert substances, such as blood, blood serum, glycerine, paraffin, agar-agar, gave a negative result.

Starling failed to induce any change in the gland by injecting enterokinase into its duct. He used succus entericus freed from micro-organisms by filtering through porcelain. Ligature of the duct of Wirsung causes no change beyond fibrosis, probably a fibrotic atrophy. By an exhaustive series of experiments on dogs, Polya[5] conclusively proved that the pathological picture of acute haemorrhagic pancreatitis can be reproduced by injecting solutions of active pancreatic extract and pancreatic juice.

Among 33 dogs injected, 19 died within twenty-four hours and 4 others within six days. In most of these animals punctiform haemorrhages appeared on the surface of the pancreas immediately after the injection; these quickly extended over the greater part of the gland. The animals died in an apathetic condition with laboured and rapid respiration, and cramps were often observed. Autopsies showed effusion of blood-stained serum into the peritoneal cavity and widespread fat necrosis. The pancreas was greatly swollen and more or less infiltrated with blood. Microscopically there were varying degrees of parenchymatous digestion up to complete necrosis, in addition to haemorrhages.

Trypsin completely destroyed by heat gave negative results. The intensity of the lesions depended on the proteolytic activity of the trypsin, not on the quantity of solution injected; 2 or 3 c.cm., or even 1 c.cm., of an active solution caused death. The action of trypsin is a local one, producing oedema, haemorrhages, and necrosis.

Other experimenters found that the same changes ensue on injecting solutions containing trypsin into various structures, as peritoneum, skin, subcutaneous tissue, and the tongue of frogs.

Polya also injected intestinal contents, cultures of bacteria, and bile infected with bacteria. He arrived at the following conclusions:

Typical pancreatic necrosis with haemorrhages, fat necrosis and a rapidly fatal course, may be originated most certainly with strongly active trypsin solution, less constantly by duodenal contents and by bile mixed with bacteria, rarely by the contents of intestinal fistulae and extract of intestinal mucous membrane, and only exceptionally by bacteria alone. His experiments with infected bile showed that in *small* quantity it gave rise to as extensive changes (that is, pancreatitis and fat necrosis) as a *large* quantity of normal bile.

After the injection of cultures of bacteria or filtrates of cultures, suppurative interstitial inflammations without necrosis were for the most part observed, and in one-third of the cases the pancreas remained normal.

The inconclusive results obtained by the injections of bacteria probably, as Nordmann suggests, were due to the fact that he did not occlude the orifices of both pancreatic ducts before making the injection (see Fig. II). Nevertheless, Polya concluded that bacteria are capable of activating the pancreatic secretion and that their activating power is increased by bile. With regard to the latter point, Professor Starling assures me that bile is not an activator; and it may be noted that Polya does not mention having tested the activating power of bacteria experimentally with juice from pancreatic fistulae.

Polya's experiments, however, demonstrate in a striking manner the master rôle played by auto-digestion in the production of acute haemorrhagic pancreatitis, although the changes induced by the injection of trypsin differed from the majority of cases of acute pancreatitis in man, in that no leucocytic infiltration was observed.

As regards the possibility of duodenal secretion causing acute pancreatitis the evidence is all against the assumption that it regurgitates, except in very rare instances, into the pancreatic ducts. The papilla is provided with a sphincter. Hess failed to produce pancreatitis by putting a cannula in the papilla unless the duodenum was actually occluded on the distal side. And the device of inserting a silk thread from the duodenum through the papilla into the pancreatic duct also failed.

Nordmann[6] instituted some further experiments with the object of explaining the relation between cholelithiasis and acute pancreatitis. He demonstrated that two factors are necessary for the production of acute haemorrhagic pancreatitis: (1) There must be complete stasis of the pancreatic juice within the ducts. (2) Bacteria with or without admixture of bile, must gain access to the stagnant secretion and multiply in it.

To understand these experiments it must be explained that in dogs the pancreas has two ducts which anastomose

freely in the gland (Fig. II). The upper and smaller duct opens with the common bile duct into the ampulla as in man. The chief duct opens on the duodenum 3 to 5 cm. lower down

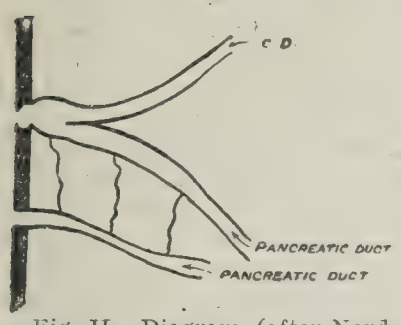


Fig. II.—Diagram (after Nordmann) to show the arrangement of the pancreatic ducts in a dog. C.D. Ductus choledochus.

In order to produce any change as the result of injecting bacteria, it was necessary that both ducts should be occluded. If the lower duct were left open the result was negative. Nordmann closed both ducts by running a suture of silkworm gut around their orifices. Bile was thus allowed to regurgitate from the ampulla into the pancreatic duct, yet no morbid change resulted although the pancreatic secretion and the pancreatic duct were both stained with bile. But when, after closure of the pancreatic ducts, bacteria were injected into the gall bladder, typical haemorrhagic pancreatitis was produced.

The ampulla of dogs is often so small that a suture which closes the papilla also occludes the ampulla and shuts off the communication between the bile and pancreatic ducts. Nevertheless, even when this occurred the introduction of bacteria into the gall bladder was followed by positive results. Evidently bacteria were able to wander through the intrapancreatic portion of the bile duct into the duct of Wirsung. Nordmann in his experiments injected into the gall bladder 0.5 c.cm. of a twenty-four hours' broth culture of mixed bacteria from the faeces of a dog. In other cases streptococci, staphylococci, or *Bacillus coli* from man were used, but the results were not so generally positive.

The animals died in forty-eight to sixty-five hours, and the clinical course of the malady, together with the macroscopic and microscopic changes, corresponded with those of acute haemorrhagic pancreatitis. In nearly half the cases there was a yellow colouring of the pancreatic duct. Collections of leucocytes were observed at the margins of the necrotic patches, but never in the middle of them. This corresponds with the description given above of the histological changes in acute pancreatitis in man. Wherever a haemorrhage was found he always observed near it a necrosis. Nordmann can find no reason for believing that there is ever primarily a digestion of intact tissue, as he never observed pure aseptic necrotic patches in the gland tissue. He "believes that an alteration of the tissue of the gland, possibly of a chemical nature, resulted through the dammed up pancreatic secretion, containing bacteria and sometimes mixed with bile, and that the typical necrosis takes place on the basis of these antecedent local tissue damages, which are found especially in the interstitial tissue, but also in the glandular lobules." He further thinks that "these tissue disturbances can possibly be produced by very different causes—namely, by injuries, by haemorrhages in consequence of angioneurotic disturbances, ischaemia, etc." This conclusion, although necessarily vague, as he does not take into account the activating properties of bacteria, is very near the mark.

To sum up, the experiments and facts brought forward warrant the assertion that acute haemorrhagic pancreatitis is, in the majority of cases, due to a bacterial infection. The bacteria appear to have a double action; they lower the resistance of the tissues by their toxins and by their proteolytic ferments activate the pancreatic juice, which in its turn digests the damaged tissues. Obviously the process is largely due to the action of the pancreatic juice, or it would not be so constantly associated with fat necrosis. It must also be remembered that in certain cases in which diffusion of pancreatic secretion takes place without activation, fat necrosis only ensues. This is seen conspicuously in certain cases of injury.

The infective organism is most commonly a bacillus of the colon group. This, according to Egdahl,[7] is usually found in acute pancreatitis. It is also that most frequently isolated from bile in infective conditions of the biliary passages. It may be noted that colon bacilli were found in the pancreas and blood of one of Mayo Robson's[21] cases, in which an autopsy was performed three hours after an operation for acute pancreatitis. A specimen of acute pancreatitis, due to obstruction by a round worm of the papilla and the ducts of Wirsung and Santorini, showed very large numbers of *Bacillus coli* in the necrotic parts, especially in the septa, and enormous numbers under the peritoneal surface. Purulent infiltration was in this case well-marked. Dr. Twort, to whom the sections were shown, agreed that the bacilli were of the colon group. It would be difficult to devise experimentally conditions more favourable than those existing in this case for the production of acute pancreatitis, or which more completely fulfil Nordmann's premisses.

It has often been assumed that the haemorrhages are due to digestion of the walls of the blood vessels. The researches of Rickes, Natus, and Knape, conducted on rabbits, show that they are the result of stasis in the blood vessels, and are of the nature of diapedesis haemorrhages. Trypsin produces similar effects on the blood vessel walls, as does a solution of salt of the same concentration as the pancreatic juice.

The infective theory of the origin of acute pancreatitis explains peculiarities pointed out to me by Turnbull. In many necropsies in which there was no evidence of pancreatitis the terminal portion of the duct of Wirsung has been noticed to be stained by bile. Further, cancerous obstruction of the papilla of Vater may lead to extreme dilatation of the common bile duct and duct of Wirsung without causing fat necrosis; therefore, neither obstruction to the pancreatic ducts nor entrance of bile into the pancreatic ducts do by themselves produce acute pancreatitis.

Lymphatic Origin of Pancreatitis.

It has been shown that a free communication exists between the lymphatics of the pancreas and those of the gall bladder by means of the glands about the head of the pancreas, and Deaver[8] has observed in pancreatitis striking evidence of inflammatory changes in these glands. Both he and Arnsperger have therefore developed the idea that infection may be conveyed from the gall bladder to the pancreas by the lymphatics without any mechanical obstruction at the papilla. This appears to be excluded by an experiment of Nordmann. After closure of the pancreatic ducts, he ligatured the common bile duct distal to the gall bladder and then injected bacteria into it. A cholangitis followed but no pancreatitis.

Etiology.

Let us now consider how the facts obtained in the laboratory fit in with those observed in disease.

Clinical experience bears out the conclusions that stasis and infection are the main elements in the causation of acute pancreatitis, and these are most commonly brought about by cholelithiasis. Egdahl, in an analysis of 105 cases, found that in 44 (42 per cent.) the disease followed gall stones or suspected gall stones. But in only three of these cases was the stone in or near the ampulla. In 44 cases of Körte cholelithiasis existed in 21 (47 per cent.), and in 16 consecutive cases analysed by Dietrich[9] cholelithiasis was found at the operation or autopsy in 8. Calculi occupied the common bile duct only twice, and in both of these they were small and not impacted. Dietrich states that in his cases gall stones were certainly excluded only three times (18.75 per cent.).

At the London Hospital during the five years 1907–12 there were eleven autopsies on cases of acute haemorrhagic pancreatitis. Gall stones were present seven times (63.6 per cent.), and a round worm (in a case of Mr. Rigby) occluded both pancreatic ducts in an eighth. In only one of these cases did the stone occupy the ampulla. In the remaining 6 cases the calculi were in the gall bladder and were invariably multiple and small. In 2 cases there was a duodenal ulcer, and in one of these a constriction of the common bile duct with dilatation of the pancreatic duct was noticed; therefore gall stones or obstruction at the papilla existed in nearly 82 per cent. of the cases. The duct of Wirsung showed evidence of stasis of secretion, or of infection in 7 cases out of the 11. It may be observed that a true estimate of the causes at work is more likely to be obtained from autopsies than from operations performed under conditions of grave illness, when the condition of the patient may preclude a careful examination of the bile passages.

The exact mechanism by which the pancreas is infected evidently varies. The figures quoted above show that the direct regurgitation of infected bile into the duct of Wirsung, owing to the impaction of a small calculus in the ampulla, occurs only in a small proportion of cases—about 20 per cent. The requisite anatomical conditions are shown in Fig. I, and exist only in 20 per cent. of subjects. According to the measurements by Opie of the diverticulum and of the orifice of the papilla, a stone sufficiently large to become impacted in the papilla would in 70 per cent. of cases also completely fill the diverticulum, so that no communication between the two ducts would be possible. This leaves 30 per cent. of cases, and from these must be deducted 10 per cent. in which the duct of Santorini is the larger (Fig. III), and opens at the lesser papilla independently of the bile duct.

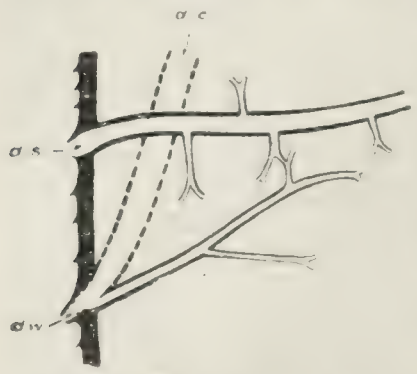


Fig. III.—Diagram after Opie. *d.s.*, Duct of Santorini; *d.w.*, duct of Wirsung; *d.c.*, ductus choledochus.

The experiments of Nordmann having demonstrated that bacteria can wander from the common bile duct into the duct of Wirsung through their contiguous walls, the complete blocking of the diverticulum by a calculus would be pathologically effective to produce the disease without regurgitation of bile. Acute pancreatitis may presumably follow if the calculus remains sufficiently long in the diverticulum to cause stasis and infection of the pancreatic juice. This appears to have occurred in some cases of pancreatitis where a small stone has been found *post mortem* in the duodenum close to the papilla (Opie, also Balch and Smith).

In this connexion the frequency with which small stones are found in the gall bladder is significant, as shown in the London Hospital autopsies. The clinical histories of such cases tell of repeated attacks of biliary colic of short duration, coincident with the passage of small calculi down the common duct. Even when the diverticulum is absent and the two ducts open by separate orifices upon the summit of the bile papilla (Fig. IV) a calculus impacted in the termination of the common bile duct might also occlude the pancreatic duct, as indicated in Fig. V. For example, in New's case (quoted by Egdahl) gall stones were present, but the duct of Wirsung had a separate opening.



Fig. IV.—Diagram after Opie. Ductus choledochus and duct of Wirsung open by separate orifices.

It has been suggested that the passage of a stone may cause obstruction at the papilla from congestion. It is also probable that such a swelling and congestion may arise from a cholangitis, due to the passage of infected bile. In this way a cholecystitis without cholelithiasis may bring about acute pancreatitis; and it is quite clear that chronic pancreatitis, the causes of which are allied to those of the acute variety, is frequently due to cholecystitis without calculi. Balch and Smith[10] record a case of acute pancreatitis in which the ampulla was plugged with inspissated mucus.



Fig. V.—Diagram to show how a calculus lodged at the orifice of the ductus choledochus may obstruct the duct of Wirsung when the two ducts open by separate orifices.

Egdahl believes that, next to cholelithiasis, gastro-intestinal diseases are the most common cause of acute pancreatitis. He thinks that retrojection of bile may be caused by intestinal disorders closing the papilla. As we have already seen, the retrojection of bile is not essential provided there is closure of the papilla with infection of the bile.

An ascending infection of the biliary ducts would be likely to occur in gastro-duodenitis; 30 per cent. of Egdahl's cases belonged to this group, and 17 out of 32 gave a history of alcoholism. Three of his cases were associated respectively with duodenal perforation, gastric ulcer, and poisoning by oxalic acid. In two of the eleven London Hospital autopsies a duodenal ulcer was present.

Acute pancreatitis may occasionally be due to regurgitation of duodenal secretion. This is more likely to occur through the orifice of the duct of Santorini, which is not provided with a sphincter. Opie quotes (p. 153) a striking case of a man in whom pancreatitis was preceded by alcoholic gastritis and vomiting. The duct of Santorini was the principal outlet of the gland, as in Fig. III. Almost the entire gland was the seat of haemorrhagic inflammation, and the part about the small duct of Wirsung was apparently the least changed part of the organ. The orifice of the duct of Santorini readily admitted a probe about 2 mm. in diameter. In another case (Bassett's) the lesion was limited to a small area in the head of the gland, drained by a small duct of Santorini.

In two of Egdahl's cases acute pancreatitis was associated with enteric fever and in fourteen with mumps. The tendency of the typhoid bacillus to infect the biliary tract probably explains the association of acute pancreatitis with this disease. I operated successfully on a case of abscess of the head of the pancreas during convalescence from enteric fever.

Sex and Age.

A collection of 295 cases from literature shows that 63 per cent. of the cases are males and 37 per cent. females; the males therefore outnumber the females by nearly one-third. Deaver states that the number of males is twice as great as the females, but this is evidently an overestimate. The point is of importance, as it involves the relation of cholelithiasis to acute pancreatitis, the former being much commoner in women. The preponderance of males in acute pancreatitis is probably due to the fact that gastro-duodenal catarrh—especially the alcoholic form—and duodenal ulcer are more frequent among them.

The larger number of cases occur between the ages of 45 and 65. The addition of Dietrich's cases to those of the London Hospital shows that over 53 per cent. occurred during this period. In Körte's cases the greater number had reached the fourth or fifth decade. As an unusual circumstance it may be mentioned that 8 (30 per cent.) of the London Hospital patients were in the third decade.

Chronic Pancreatitis.

Although we are mainly concerned with the subject of acute pancreatitis, it will not be out of place if we discuss briefly the pathology and etiology of chronic pancreatitis in the light of our review of the pathology of the former.

The relation of these two affections is far closer than would appear at first sight from a study of their morbid anatomy. Both are mainly the result of infection of the biliary and pancreatic ducts. Although they usually originate independently, yet a subacute pancreatitis may prove the starting-point of the chronic variety; and, on the contrary, the acute may be engrafted on a gland long affected with sclerotic changes. Two microscopic specimens from the Pathological Institute of the London Hospital illustrate the close relation as regards causation between acute and chronic pancreatitis. The first demonstrates an acute pancreatitis supervening on a chronic. The patient, a woman aged 49, had suffered for six months from biliary colic, and was jaundiced after the last attack. At an operation two large stones were found in the cystic duct, some smaller ones in the gall bladder, and some gritty matter in the common bile duct was pushed down by a probe which freely entered the duodenum. The gall bladder was much thickened and was removed; the dilated common duct was drained. The patient became weaker, jaundice appeared with vomiting, and she died on the twelfth day after the operation. At the autopsy two calculi, which had probably receded during the operation into the hepatic duct, were found in the common bile duct, and there were acute haemorrhagic inflammation and fatty infiltration of the pancreas. On microscopic examination the ducts showed marked mucous catarrh. In parts were extensive haemorrhages with destruction of the parenchyma from digestion—in fact, acute haemorrhagic pancreatitis (Plate, Fig. 5). In addition there was considerable interlobular and interacinar fibrosis (Plate, Fig. 6) with infiltration of the fibrous tissue with lymphocytes, neutrophile leucocytes, and some eosinophile leucocytes.

In this case the occurrence of jaundice after the operation suggests that obstruction of the common bile duct took place with acute infection of a pancreas already damaged by chronic infection due to calculi in the common bile duct.

The following case demonstrates an acute purulent inflammation of the ducts of the pancreas associated with extreme fibrosis of its tail.

The patient, a man aged 30, died with diabetes after exhibiting symptoms of it for three months. Fig. 7 (Plate), from the head of the gland, shows a portion of a septum which is thickly infiltrated with leucocytes. Fig. 8 (Plate), from the tail, exhibits extreme fibrosis both inter-lobular and inter-acinar. The inference drawn from this case is that a chronic infective catarrh of the pancreatic ducts had given rise to fibrosis and ultimately culminated in an acute suppurative inflammation.

The work of numerous experimenters proves that an acute pancreatic lesion which does not end fatally may terminate in chronic pancreatitis or in sclerosis. To quote only one set of experiments, Whipple, Chaffee, and Fisher[11] found that the injection of 3 to 5 c.cm. of bile into the pancreatic duct produced primarily an acute haemorrhagic lesion, and, secondarily, a chronic fibrous pancreatitis resulting from the healing of the acute inflammatory process. The pathological changes were controlled by exploratory laparotomies made respectively three and five weeks after the injection, at each of which a portion of pancreas was removed for microscopic examination; and some time subsequently an autopsy was made.

Nordmann, whose experiments have already been detailed, thought that in certain circumstances an inflammatory oedema was produced, which cleared up with complete recovery, but when cell infiltration was abundant the inflammatory changes gave rise to sclerosis—in other words, to chronic pancreatitis. I have observed clinically such a clearing up of an inflammatory oedema of the head of the pancreas. In the course of an operation for removal of a calculus from the common bile duct in a woman of 72, I found the head of the pancreas greatly swollen and softer than usual. A drainage tube was placed in the common bile duct. The patient died two weeks later of purulent bronchiectasis and pneumonia. Dr. Bartlett, who made a special examination of the pancreas for me, could find no microscopic change in the head of the gland. The gall bladder and ducts contained muco-pus, and bile obtained at the operation gave cultures of colon bacilli.

Etiology.

Like acute pancreatitis, the chronic form is closely related to cholelithiasis, especially to stones in the common duct, which would cause intermittent stasis of biliary and pancreatic secretion, and be associated with biliary infection. The often-quoted figures of the Mayos give 2,611 operations on the gall bladder and bile tract, with involvement of the pancreas in 200 cases (7.6 per cent.), and in 325 operations on the common and hepatic ducts the pancreas was affected in 22 per cent. Mayo Robson estimated that chronic pancreatitis existed in 60 per cent. of cases of calculi in the common bile duct.

Apart from the cases of chronic pancreatitis associated with cirrhosis of the liver, which I do not feel competent to discuss, a considerable number are unaccompanied by gall-stone disease. In many of these, however, cholecystitis exists, for in 73 cases of chronic pancreatitis in Deaver's[12] practice cholelithiasis existed in 35, and in 38 no calculi were present at the time of the operation. But of the non-calculus group 12 had demonstrable changes in the gall bladder, or, in other words, cholecystitis was present. The results of the operation of draining the gall bladder for chronic pancreatitis show that in a definite proportion of cases the operation fails on account of a chronic form of cholecystitis which is not cured by drainage alone, although complete relief is obtained by cholecystenterostomy (W. J. Mayo[22] and Guerry[23]).

Morbid conditions of the duodenum play as important a rôle in the causation of chronic pancreatitis as in the acute form, and it has already been pointed out that gastro-duodenitis and ulcers favour the occurrence of an ascending infection of the biliary ducts, and that intermittent stasis may result thereby from congestion at the papilla.

Cancer of the head of the pancreas is in rare instances a cause of chronic pancreatitis. This is more readily understood when it is stated that Turnbull's records at the London Hospital show that practically all cases of so-called carcinoma of the head of the pancreas originate in the biliary or pancreatic ducts, and therefore from an early stage must cause stasis of the secretions in these ducts.

Certain cases of chronic pancreatitis coincident with gastric and duodenal ulcers are evidently due to direct microbic infection, either by extension from the base of the ulcer when it is adherent to the pancreas, or perhaps in some instances by the lymphatics.

Cammidge[13] gives the following summary of the causes of chronic pancreatitis from his notes of 414 cases. Fifty-one per cent. were secondary to some morbid condition of the digestive tract; 37 per cent. were associated with diseases of the biliary apparatus, chiefly gall stones; 8 per cent. were due to deposits of malignant disease from a primary deposit in some other organ; and 4 per cent. were probably dependent upon disease of the circulatory system. The proportion of cases due to diseases of the biliary apparatus is probably too low. The experiences of surgeons would probably show a larger number of cases dependent on this cause, many examples of chronic pancreatitis being discovered at operations for the relief of obvious biliary disease.

SYMPTOMS OF ACUTE PANCREATITIS.

In order to avoid the not uncommon error of repeating stereotyped descriptions of other authors, I have carefully analysed 24 consecutive cases at the London Hospital of which the notes were complete, together with the abstracts of 16 cases given as an appendix to Dietrich's paper, making a total of 40 cases.

Premonitory Symptoms.

Over one-half had premonitory symptoms of varying intensity. These consisted of attacks of pain in the upper abdomen, or occasionally over the abdomen generally (16 per cent.). As regards the cause of these attacks of pain, the symptoms and other indications lead to the conclusion that some of them were due to attacks of subacute pancreatitis. For example, in one London Hospital case several white spots, the remains of old fat necrosis, were observed in the subperitoneal fat at an operation for acute pancreatitis. This patient had suffered with attacks of pain for three years prior to the operation.

Körte observed fat necrosis, although its significance was not recognized, in a patient operated on for gall stones in 1895. At a second operation in 1896 for a stone in the common duct no signs of the former pancreatitis existed. Further, Körte saw four cases and Brentano three which were considered as examples of healed pancreatitis. The disappearance of fat necrosis in a short period has frequently been noted in experiments on animals. Polya observed after the injection of active trypsin into the pancreatic duct that, in those animals in which a relaparotomy was done for inspection, the areas of fat necrosis had disappeared between the laparotomy and their death. An animal which exhibited after laparotomy typical evidences of haemorrhage and fat necrosis showed on *post-mortem* examination, twenty-two days later, that all these changes had disappeared. In animals which lived for a week after the experiment fat necrosis was never found.

The premonitory attacks of pain were in a like proportion of cases (16 per cent.) referred to the right side of the upper abdomen. In many instances the pain resembled and might be referred to cholelithiasis, and in a few to duodenal ulcer. But a fair proportion of patients shown subsequently to have gall stone disease complained of no previous symptoms.

A few cases gave a history of indigestion and flatulence.

Symptoms.

These accord with the symptoms of the group of acute abdominal crises, and closely resemble those of perforation of gastric and duodenal ulcer, of the gall bladder, or the appendix. Many cases have been mistaken for acute intestinal obstruction. The onset is sudden, with very severe pain in the epigastrium, persistent vomiting, usually constipation, tenderness, fullness and resistance in the upper abdomen, and gradually increasing distension; the pulse is rapid and weak; the temperature lower than the pulse-rate, and not infrequently subnormal with collapse.

Körte, whose experience is probably unrivalled, says that the one symptom which gives the most probable insight into the condition is tenderness across the epigastrium, and resistance over the pancreas. He adds that the most distinctive sign is epigastric peritonitis, with subsequent swelling in the left lumbar region. This was present in 18 of his cases in which a diagnosis was possible.

There being no pathognomonic sign the diagnosis is admittedly difficult and uncertain, yet Dietrich states that in 16 cases admitted during the last five years to the Hamburg-Eppendorf Hospital, the nature of the malady was detected in the last 10. Obviously the difficulty must be greatest in very acute or in advanced cases, for in these there will be general abdominal tenderness and distension—in fact, the signs of general peritonitis. An analysis of the 40 cases mentioned above will indicate the frequency of the prominent symptoms.

Vomiting was almost a constant symptom (80 per cent.), and was often severe and incessant.

Constipation existed in 25 per cent., and was only marked in five cases. Diarrhoea was present in three cases, but in one of these the symptoms had existed fourteen days.

Pain was almost constant, and in 50 per cent. was situated in the epigastrium or upper abdomen. In the other cases it was localized in the right hypochondrium, the right side of abdomen, or right iliac fossa; in others on the left side or left iliac fossa.

Tenderness had much the same distribution as the pain. Distension existed in half the cases.

The most important fact resulting from this review of cases is that a swelling was only observed in 7 (17.5 per cent.)—twice in the right hypochondrium (in one of these being a distended gall bladder), thrice on the right side of the abdomen or to the right of the umbilicus, once on the left side of the abdomen, and once below the umbilicus. It may be observed that when pus forms around the pancreas it develops a retroperitoneal collection and presents in the left flank, or passes through the gastro-hepatic omentum and forms a left-sided subphrenic abscess. Occasionally, as in a London Hospital case, it tracks retroperitoneally to the appendix region; a collection may also occur in the right kidney pouch, as it did in this case. Shivering was noted only twice. Jaundice was present in 5 cases (12.5 per cent.).

Cyanosis, sometimes spoken of as a characteristic sign, was only present twice; one was an acute case of twenty-four hours' duration, while in the other the symptoms had lasted fourteen days. Glycosuria was once noted, a trace of sugar being found in one of Dietrich's 16 cases. It existed in 8 of Korte's 44 cases. One patient of Korte developed diabetes one and a half years after extensive necrosis of the pancreas, and died eight years subsequent to the operations.

The discovery of fat necrosis during the operation is often the first definite indication of the nature of the malady. Its presence is very constant, but it was absent in 2 of Dietrich's 16 cases, one of these being a case operated on after forty-eight hours, and subsequently subjected to a *post-mortem* examination. The other, also an acute case of haemorrhagic pancreatitis, recovered after an operation, performed twenty-four hours after the onset.

Fat necrosis was stated to be absent in 4 of 27 consecutive London Hospital cases and all were subacute. This sign was therefore absent only in 14 per cent. of cases.

Toxaemic Symptoms.

The general condition of patients with acute pancreatitis is indicative of an acute toxaemia.

Speese, Sailer, and Torrey performed experiments on dogs[14] to ascertain if the toxaemia was due to the presence of trypsin in the blood serum. Pancreatitis was induced by injecting 20 c.c. of oil. As a result they concluded that there is no reason to believe that the toxaemia of acute pancreatitis is caused by any absorption of the external secretion of the pancreas. But they succeeded in separating from the serum a substance lethal to guinea-pigs. They felt justified in saying that in acute pancreatitis the blood content in globulin is greatly increased and that either the globulin itself, or substances adherent to it, constitute the toxic element causing death in this disease.

Cammidge's Reaction.

Both clinicians and experimentalists have arrived at the conclusion that this reaction is of no definite value in the diagnosis of acute pancreatitis.

Körte found it negative in 7 out of 8 cases examined. Deaver, Ochsner, and Dietrich all state that it was of no assistance. Whipple, Chaffee, and Fisher[15] tested it in acute pancreatitis of dogs induced experimentally. They concluded that this test was of little value in establishing a diagnosis of acute pancreatitis in dogs. If the test is negative it is pretty strong evidence against an acute pancreatitis; but a positive Cammidge test is not infrequent in normal men and dogs. It is almost constantly present in chloroform poisoning in dogs, and may be present in cases of pneumonia, or in any condition where there are active cell destruction and autolysis. They add: "The method is open to various errors and too much depends on the personal equation, particularly in the interpretation of the various crystals."

TREATMENT.

There exists such a complete agreement as to the treatment of acute pancreatitis that this portion of the subject may be briefly dealt with.

Operation is indicated at the earliest moment that the disease is definitely suspected. Collapse should not be considered a legitimate cause of delay. Probably in the majority of cases this condition will only become deeper if operation be postponed; and our resources for combating shock have been considerably augmented during the last few years.

A median or right rectus incision is the direct channel for settling the diagnosis and exposing the pancreas. The biliary passages also require examination.

There are three routes by which the pancreas may be exposed and the lesser cavity of the peritoneum opened up (see Fig. VI, after Mayo Robson).

1. Above the stomach, through the lesser or gastro-hepatic omentum. This can only be conveniently employed when gastroptosis exists.

2. Below the stomach through the upper part of the gastro-colic omentum. This is the method of choice.

3. Through the transverse meso-colon. This is inadvisable as haemorrhage may ensue, owing to wounding of large vessels (see Dietrich, Case VIII). The general peritoneal cavity is also less readily shut off.

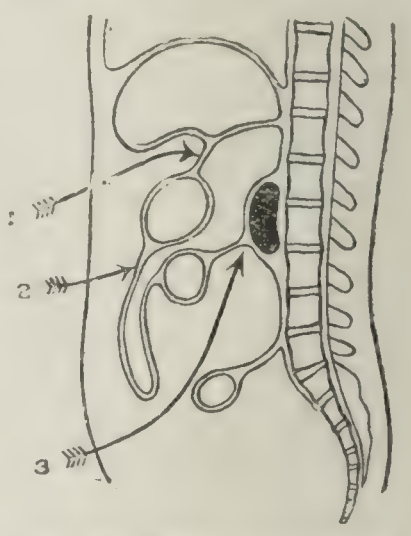


Fig. VI.—The peritoneal folds in relation to the pancreas. The arrows indicate three of the approaches to the gland. From *A System of Operative Surgery*, edited by F. F. Burghard.

4. In cases of localized abscess around or within the head of the pancreas, this may be exposed posteriorly by mobilizing the duodenum, or anteriorly by cutting through the peritoneum passing over the pancreas from the duodenum.

5. The tail of the pancreas may be reached by a transverse lumbar incision in the left costo-vertebral angle. This route should be adopted when the existence of a left lumbar swelling indicates the presence of a retroperitoneal collection of pus. After exposure of the gland through an anterior incision, it may also be used for the purpose of obtaining efficient drainage in cases of extensive necrosis, and it should never be omitted if there be a left lumbar swelling. In those cases where a left costo-vertebral incision is primarily employed for a swelling in the lumbar region, the anterior incision should not usually be dispensed with, for, as W. J. Mayo points out,[16] the head of the pancreas is most often involved. The justice of this advice appears evident from Körte's cases, which gave a mortality of 33 per cent. for those treated by abdominal incisions, and nearly 70 per cent. for cases in which a lumbar incision was adopted. The latter, however, were often cases operated on in the later stages. They included also those operated on by the transpleural method.

6. Finally, a left subphrenic collection of pus should be opened either through an epigastric incision or by the transpleural route.

The procedure generally followed after opening the abdomen is to pack off the lower part of the peritoneal cavity with gauze, open the lesser cavity of the peritoneum through the gastro-colic omentum, and mop up any collection of sero-sanguineous or sero-purulent fluid

within it. The covering of the pancreas is divided, and blunt scarification made along its whole length, or over the part affected, sometimes only the head. Bleeding is stopped by underrunning vessels with catgut, or a gauze plug is fixed in position with catgut sutures. A drainage tube is left in. If there is a quantity of fluid in the peritoneum a drain should be inserted above the pubes.

In those cases where a collection of pus exists, this should be drawn off by aspiration before the cavity is opened.

A careful examination of the biliary apparatus is an essential part of the operation. Cholecystotomy with drainage should be performed for calculi in the gall bladder or for cholecystitis; and choledochotomy with drainage should be carried out for calculi in the common duct, provided that the life of the patient is not imperilled by a prolongation of the operation. Cholecystectomy, if requisite, must be postponed till a later period.

RESULTS AND PROGNOSIS.

The mortality following operations for acute pancreatitis is still 40 to 60 per cent. But Ebner reports that of 20 cases not operated on only two recovered. In Dietrich's collection of 161 cases of various operators up to 1913, 98 died—a mortality of 61 per cent. These cases include 103 collected from literature by Körte in 1911. Körte's 34 personal cases in which the pancreas was exposed, gave a mortality of 47 per cent. (18 recovered and 16 died).

During the five years 1908 to 1912 inclusive, 17 cases were operated on at the London Hospital with 11 deaths, a mortality of 64.9 per cent.; while the series of 17 cases during the same period reported on by Dietrich gave a mortality of 77 per cent.

The prognosis depends mainly on the acuteness of the malady, and the period when operation is performed. Ultra-acute cases usually die with collapse in twenty-four to seventy-two hours; and extensive necrosis of the pancreas may be found as early as the third or fourth day.

Among the 6 London Hospital cases that recovered, 4 were definitely subacute, and one of them was not operated on till the fourteenth day of his illness; in this case and another there was no fat necrosis. But in the two remaining cases, operated on respectively on the second and fifth days, there was necrosis with sloughing.

Körte's cases give a valuable indication of the effect of their duration on the prognosis. The mortality in cases operated on in the first two weeks was 31 per cent.; of those operated on during the first three or four weeks 50 per cent.; of those operated on in the fifth and sixth weeks all died. In all cases operated on after the fourth week, necrosis of the pancreas and pus were found, and all died.

The prognosis in circumscribed abscess of the pancreas is favourable. Mayo Robson operated on 7 cases, with recovery in 6, though 2 of them succumbed later.

The patient may survive the operation and die subsequently from suppuration, chronic toxaemia, and exhaustion. One of my own patients died nine weeks after the operation, although a counter opening was made for drainage in the left loin, in addition to an anterior incision. At death very offensive pus and necrotic material were still discharging from the posterior opening. Fistulae exuding pancreatic secretion may remain for some time, but they usually close spontaneously. Another patient on whom I operated for pancreatitis occurring during convalescence from enteric fever still has a fistula some years after the operation. Haemorrhage is not an uncommon complication. It occurred in 7 of Körte's cases (20.6 per cent.). The haemorrhage always took place during the period of necrosis and pus formation, and was from the large arteries along the upper border of the pancreas—four times from the splenic artery itself. All Körte's patients died except one, who was saved by plugging the wound with gauze.

TRAUMA.

The results of injury to the pancreas are of particular interest on account of their bearing on the nature of acute pancreatitis and pancreatic necrosis.

These injuries are usually produced by a blow on the epigastrium from a kick, or a blow from a buffer, shaft, etc.; or from a wheel passing over the abdomen. Some are the result of stabs or gunshot wounds. Not infrequently other abdominal organs are also implicated. The symptoms for the most part resemble those of acute or subacute pancreatitis.

A study of the clinical history of uncomplicated cases appears to me to justify their division into three groups:

1. Cases with fat necrosis and sero-sanguineous, or serous effusion into the lesser sac. These, as a rule, recover after laparotomy.

2. Cases with necrosis of the pancreas itself, haemorrhages, fat necrosis, and, in some instances, peritonitis. These are often fatal even after a timely laparotomy.

3. Cases of injury followed by the formation of a pseudocyst.

The pancreatic juice within the normal gland possesses no active proteolytic ferment, therefore injuries causing extravasation of the juice might be expected to produce only fat necrosis. This expectation is borne out by the cases in Group 1 and by experimental injuries. Opie found that fat necrosis followed division between two ligatures of the pancreatic ducts of cats. The pancreatic tissue was evidently opened up in separating the pancreas from the duodenum, otherwise there could have been no escape of juice, for it may be remembered that simple aseptic ligature of the ducts produces only fibrotic atrophy. The extent of the distribution of the fat necrosis was proportionate to the length of life of the animal. The peritoneal exudate was sterile. Opie also produced fat necrosis by transplanting the duodenal end of the pancreatic duct into the subcutaneous tissue of the abdomen.

As examples of Group 1 the following cases may be quoted:

The wheel of a cart passed over the abdomen of a boy aged 6. Laparotomy ten days after the injury showed abundant localized serous effusion and fat necrosis, with a visible lesion of the pancreas. The fluid was sterile. Recovery.[17] Hagedorn observed two similar cases operated on respectively twenty-four hours and seventeen days after the injury. Both recovered. In Hahn's case laparotomy revealed disseminated fat necrosis six months after a fall from a wagon. Recovery followed.

In Group 2 necrosis of the pancreas results either from destruction of its vitality or from interference with the circulation, owing to the severity of the injury; or, again, as the result of primary or secondary infection of the injured tissue.

Selberg,[18] in a patient who died on the twentieth day after the kick of a horse, found microscopic evidence of necrosis of the entire pancreas.

In Opie's case of stab wound the patient died of streptococcic peritonitis, owing to a penetrating wound of the stomach, which was closed by operation. Around a puncture only of the pancreas there were found a haemorrhagic area with hyaline necrosis of the parenchyma and foci of fat necrosis, apparently due to the septic wound of the pancreas.

Levin,[19] as the result of numerous experiments, found that crushing of a part of the pancreas with artery forceps, or section of the gland at its middle between double ligatures, produced no effect. But if the vitality of the gland was seriously interfered with as by crushing and subsequent ligature of the main vessels, or by the application of six or seven ligatures around it, the animals died with "acute pancreatitis," and sometimes fat necrosis. Levin remarks that "peritoneal infection, which frequently occurs in these experiments, may be due to extraneous infection or to infection from the duodenum through the pancreatic duct."

On analysing Levin's experiments I find that nearly 50 per cent. of these very severe lesions of the pancreas were not fatal, and the autopsies showed only interstitial pancreatitis. Another element—almost certainly primary or secondary infection—must therefore have come into play, and determined the fatal issue in the remaining cases. This appears the more likely in view of our present knowledge that bacteria are capable of activating the pancreatic juice.

Treatment.

Exigencies of space permit me only to deal very briefly with this portion of my subject. The indication for operation is quite as definite in the case of serious injuries of the pancreas, whether from subcutaneous trauma or gunshot and stab wounds, as in acute pancreatitis. The diagnosis must necessarily be uncertain, especially as other organs may be injured. But this is of little importance, in consideration of the fact that in most severe abdominal lesions laparotomy will be indicated. Von Mikulicz, in an admirable article on this subject,[20] specifies increasing anaemia, the physical signs of blood in the peritoneum, peritoneal irritation, and especially a steady accentuation of symptoms, as the indications of a severe injury to the pancreas

After opening the abdomen haemorrhage from the pancreas must be stopped by deep sutures or by the use of the tampon, the injured area being packed off with gauze and drained. A break in the continuity of the organ may permit of a closure with deep sutures. A careful search for wounds of other viscera is necessary in all cases. The peritoneal cavity should be washed out with normal salt solution, for in the majority of cases pancreatic secretion will have escaped into it. The pancreatic juice, even when aseptic, is said to be highly toxic and to lower the resistance of the peritoneum to micro-organisms.

Von Mikulicz collected 45 cases of pancreatic injury; 21 were penetrating wounds, and 24 subcutaneous wounds from blunt force. Of the penetrating variety, 12 were gunshot and 9 stab wounds. Five of the gunshot wounds were operated on, with 2 deaths. The 7 that were not operated on died. The 9 stab wounds were all operated on, with only 1 fatality. These favourable results were due to the fact that the pancreatic injury was really a prolapse in 7 cases; and in some of these only a minor lesion of the prolapsed portion was present. Of the 24 subcutaneous injuries, 13 were not operated upon, and all died. Eleven were submitted to operation, and 7 recovered. The operations consisted in exposing the injured pancreas and in drainage.

In conclusion, I desire to express my indebtedness to Dr. Turnbull for much assistance and for generously placing the admirable records and the microscopic specimens of the Pathological Institute of the London Hospital at my disposal; my sincere thanks are also due to Professor Starling and Dr. H. M. Vernon for valuable information, and to Mr. E. C. Lindsay for making abstracts of hospital notes and records.

DESCRIPTION OF SPECIAL PLATE.

Fig. 1.—Microphotograph showing, above, necrosis of the parenchyma with red corpuscles diffused through the lobule. Below, a septum which is the seat of haemorrhage and necrosis. From a female, aged 62, who died on the sixth day of acute haemorrhagic pancreatitis.

Fig. 2 shows, down the centre of the field, a dense infiltration of leucocytes at the margin of an area of necrotic parenchyma seen below and to the right of the field. To the left is a small group of red corpuscles. From a female, aged 30, who died on the second day with a round worm blocking the ducts of Wirsung and Santorini.

Fig. 3.—Slide showing fat necrosis. Crystals of oleic acid in the fat lobules are shown. Stained with Weigert's glia-mordaunt Sudan III and haematoxylin.

Fig. 4.—Slide showing to the right an area of fat necrosis; in the centre is necrotic connective tissue.

Fig. 5.—Slide showing haemorrhage, partial digestion of parenchyma and inter-acinar fibrosis. From a case of gall stones in the common duct.

Fig. 6.—Slide from the same case, showing marked inter-lobular and inter-acinar fibrosis.

Fig. 7.—Slide showing purulent infiltration of the septa.

Fig. 8.—Slide showing extreme inter-lobular and inter-acinar fibrosis of the tail of the pancreas from the same patient, who died with diabetes. The dark patches towards the centre of the field are remains of acini separated by fibrous tissue.

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AT a meeting of the Section of Dermatology of the Royal Society of Medicine on December 17th, 1914, among other cases exhibited were two of arrested hair growth, shown by Dr. Graham Little; one was congenital, the other came on after an attack of "eczema" of the scalp at the age of 15. Dr. Pernet discussed the question of deficiency of secretion of the ductless glands in these cases. Dr. Dudley Corbett showed a man, aged 23, with numerous small raised tumours scattered over the body, and demonstrated sections of the growths. The question arose as to whether these tumours were of epithelial or granulomatous nature. The case was referred to the Pathological Committee.

GREY HAIR AND DISEASE LIMITED TO THE NASO-LABIAL AREA.

BY G. LENTHAL CHEATLE, C.V.O., C.B., F.R.C.S.,

SURGEON AND JOINT LECTURER ON SURGERY TO KING'S COLLEGE HOSPITAL.

[WITH SPECIAL PLATE.]

IN previous papers[1] published in this JOURNAL I have called attention to instances in which greyness or whiteness of the hair was to be observed only in certain nerve areas to which also certain disease processes may be limited. In continuation of this subject I now reproduce a series of figures showing greyness and whiteness of the hair, and certain disease conditions occurring within the area described by Dr. Head as the naso-labial region, and strictly limited to that area, except in the case illustrated in Fig. 9, which shows blanched areas below the chin occupying the superior laryngeal and inferior laryngeal areas as well.

In Fig. 1 is seen the photograph of a man aged 41, whose face, with the exception of the upper lip, had always been shaved; the hair had become grey at the extremities of the moustache only. This may be taken as the first sign of the greyness of hair due to advancing age in this case. Fig. 2 shows the mouth of a man, a portion of whose moustache fell out for no determinable cause at the right hand extremity only. The part remained bald

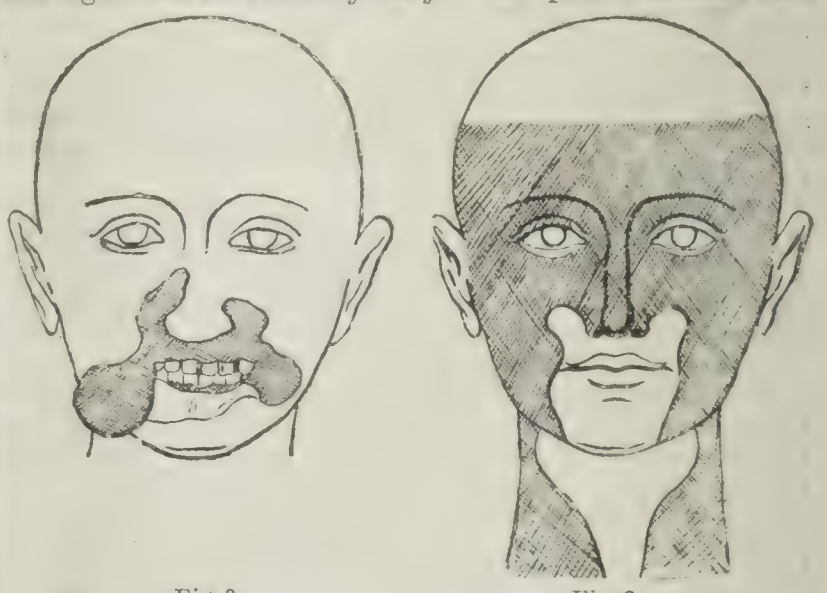


Fig. 8. Fig. 9.

Figs. 8 and 9 are diagrammatic. Fig. 8, Phagedaena; Fig. 9, blanching of same area (and below), the rest of the face being flushed.

for about three months; when hairs reappeared they were grey, and that portion of his moustache has remained so; the rest of it is normal. There was no disturbance of sensation. The area from which hair fell out, and grew again, is exactly the same as in Fig. 1, but the change is limited to the right side. Fig. 3 shows the picture of a man in whom it will be seen that the hair is grey everywhere on the face except the central portion of the moustache, which retains its normal colour as in Fig. 1. The hairs in the eyebrows and on the heads were normal in all cases, except the hair on the head of Fig. 3, which was grey.

These cases of greyness at this definite part of the upper lip are not exceptional; they are examples of a very common type, which can be seen by any careful observer. I have noticed cases in which the moustache was scattered with grey hairs, except at these lateral areas where it was all, or nearly all, grey.

Figs. 4, 5, and 6 represent cases of rodent ulcers. The disease in all cases shows a tendency to become arrested at the vertical line which marks the internal limit of greyness in Figs. 1, 2, and 3.

Further, an interesting comparison can be pointed out between the distribution of a syphilitic rash in Fig. 7 with the distribution of the rodent ulcer in Fig. 4. The clear space A free from disease in the upper lip in Fig. 7 is occupied by disease in Fig. 4.

Fig. 8 shows phagedaena of the lips, and Fig. 9 an area the mouth region of which is identical. This figure (9) represents the distributions of redness and blanching of a woman's face who was suffering from gall stones.

In previous articles I have pointed out that when certain infective diseases, rodent ulcer, and some cases of

squamous epithelioma begin in this region, they occupy it before travelling elsewhere, as if they were governed by a natural law.

The remarkable occupation by infective disease of an area in Fig. 8 and avoidance of it in Fig. 7 is so astonishing to me that I wonder more attention is not paid to this matter by others besides myself who interest themselves in the problems connected with local and general immunity.

Since writing this article I have seen that for which I have been on the look-out—a patch of grey hair on the scalp of a newly-born infant. In this case the patch of greyness was on the left parietal maximum point described by Dr. Henry Head. The rest of the scalp was well covered with hair of a natural colour.

REFERENCE.
[1] The Incidence of the Hair's Greyness, BRITISH MEDICAL JOURNAL, July 22nd, 1905; The Mental Nerve Area and its Relation to Greyness of Hair, ibid., July 4th, 1908; Grey Hair Associated with Nerve Lesions, ibid., August 31st, 1912.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A FAMILY WITH CONGENITAL DEFORMITY OF FINGERS.

IN the course of my work while medically inspecting school children I came across five interesting cases of congenital deformity of fingers occurring in one family, and affecting a mother and all her children, four in number. The following are the details of the fingers affected:

Mother: First, second, and fourth fingers.
Son (aged 16): First and second fingers.
Son (aged 12): First and second fingers.
Daughter (aged 10): First and fourth fingers.
Son (aged 8): First and second fingers.

Both hands are alike involved. The affected fingers are infantile in appearance, each phalanx being half the size it should normally be, and the nail correspondingly small.

The deformities are of practical importance, because in school the girl finds it difficult to learn sewing and the boys have difficulty with writing. I have no doubt that in later life the boys will have a similar difficulty in learning to use tools or agricultural implements.

The children are more or less dull, and the girl has an arched and narrow palate. The father and mother are cousins, but there is no history of similar or any defects in their relatives or family connexions.

Hartlepool. GEORGE JUBB, M.D., D.P.H.

HAEMORRHAGIC CHICKEN-POX.

A BOY of 3½ years developed chicken-pox, and in the course of the first three days successive crops of spots appeared on the neck, face, back, and chest. On the fourth day I was called to see the child because he was passing blood with the urine.

I found that all the spots which had become vesicular had haemorrhage in them, and in several instances there was discoloration of the skin around from extravasated blood; this was very noticeable in a spot on the palpebral conjunctiva, and one just behind the ear. There were numerous spots on the tongue and buccal mucous membrane, but none below the elbows or knees. The haematuria was considerable, and lasted three days. On the fifth day the child had epistaxis from a spot on the nasal septum; it lasted three hours, but stopped with the application of some tr. ferri perchlor. on a plug of gauze.

The previous history did not suggest that the child had a tendency to haemophilia.

This was the second case of chicken-pox in the family; the previous one, in an elder brother, was an ordinary mild case.

None of the children in the family had been vaccinated, and, but for the characteristic distribution of the rash and the other typical case, a diagnosis of haemorrhagic pustular small-pox might have suggested itself.

Evershot, Dorset. A. G. WHITAKER.

HERPES AND VARICELLA.

A RECENT case of herpes zoster in a mother being followed by varicella in her boy after an incubation period of sixteen days is reported in the JOURNAL of October 10th. In corroboration of Dr. Hepworth's view that coincidence does not explain these cases, it may interest him and others who have reported similar cases to know that the number of cases recorded now totals about forty. They will be found as follows:

Guy's Hospital Gazette (April 26th to June 21st, 1913, and April 25th, 1914): 9 cases.
BRITISH MEDICAL JOURNAL (May 24th to November 15th, 1913, and October 10th, 1914): 18 cases.
Medical Journal of South Africa (March, 1914): 2 cases.
International Congress of Medicine (1909): 9 cases, reported by Dr. Johann v. Bókay.
Berliner klinische Wochenschrift (December 9th, 1912): 1 case, reported by Dr. Paul Heine.

In addition to these, Bókay (loc. cit.) alluded to the fact that only one author had so far made any allusion to this type of case. This was Swoboda in his book on children's diseases published in Vienna in 1904.

May we hope that in future British authors will not be behindhand in this matter?

An analysis of 38 of the cases mentioned above will be found in the *Medical Journal* of South Africa for March, 1914.

Bulawayo. W. P. LE FEUVRE.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

STAFFORDSHIRE BRANCH.

THE first general meeting of the session was held at Stoke-on-Trent on Thursday, November 19th, 1914, when the President, Dr. JOHN RUSSELL, was in the chair, and thirty-three members were present.

Moles and Hirsuties.—Dr. MITCHELL SMITH showed a girl, aged 8, with very numerous hairy moles, much pigmentation, and hirsuties, scattered irregularly over the head, face, body, and extremities; there were also a few tumours of the nature of molluscum fibrosum; there were no mental symptoms. The case was discussed by Drs. RUSSELL, ALLAN, and HARTLEY.

Adenoids.—Mr. CARTER read a paper on the consequences of neglected adenoids, in which he urged that the correct attitude of the medical profession should be one of preventive medicine and education of the public to the necessity of early diagnosis and operation, and in nasal hygiene. The deep-rooted but erroneous idea that adenoids will shrink at the age of puberty was responsible for many cases being neglected until permanent damage had been done. Further, Mr. Carter maintained that the generally accepted symptoms of adenoids were not the symptoms, but the sequelae or late effects, and should never be allowed to develop, and said that the profession was accepting a terrible responsibility in allowing early cases to go unrecognized and untreated. Much could be done to improve the general development and personal attractiveness of the coming generations by the adoption of a more rational attitude. DRS. RUSSELL, DICKSON, DALY, ALLAN, ROWLAND, MITCHELL SMITH, and Mr. ALLARDICE took part in the subsequent discussion, and Mr. CARTER replied.

Spastic Constipation. — Dr. SOMERVILLE described a troublesome variety of constipation due to spasm of the colon. It generally occurred in neurotic persons, and followed a period of nervous tension or strain, or excessive smoking, and resulted in paresis of the sympathetic ganglia, which regulated the motor activity of the bowel, so that the normal intestinal stimulants produce enterospasm. The diagnosis was confirmed by an *x*-ray examination after a bismuth meal. The usual treatment of atonic constipation by aperients, and a diet including fruit and vegetables, etc., made this condition worse. The intestinal contents should be kept liquid, and all tendency to the formation of hard scybala avoided. An abundance of liquid should be drunk, and the food should consist of those articles of diet which leave little residuum in the bowel. All highly spiced foods, and pickles, etc., should

be avoided. The patient should have a complete rest from all business worries. He should live for a time in a bracing atmosphere, and should have regular daily exercise short of over-fatigue. Petroleum, taken either immediately before or after meals, was very useful. The paper was discussed by Drs. RUSSELL, ALLAN, and HARTLEY, and Dr. SOMERVILLE replied.

Military Training and Lead-workers.—Dr. F. SHUFFLEBOTHAM read a paper upon the effects of military training upon lead-workers. He said that since the beginning of August thirteen cases of lead poisoning had come before his notice among men who had joined the Territorial Forces. In North Staffordshire, where several thousands of male lead-workers were employed, it could safely be said that some hundreds had enlisted, and it was interesting to consider the effect of training and of the different mode of life upon those engaged in lead processes. The symptoms upon which the diagnosis of lead poisoning was made were the ordinary symptoms associated with this disease. In every case the patient was anaemic, had the characteristic blue line on the gums, complained of headache and feelings of sickness. In eleven cases there was definite abdominal colic, with marked constipation, and in one case the patient suffered from peripheral neuritis of the arms with wrist-drop. The symptoms and the results of examination of the blood in this case, which was severe, were fully described. The blue line round the anus was observed in two of the cases; in three others in which the blood was examined diminution in the amount of haemoglobin and the presence of basophilic granules were noticed. In two cases albuminuria was found. Dr. Shufflebotham said that the occurrence of these cases of lead poisoning was interesting from the fact that the altered conditions of life, especially the muscular exercise caused by route marches and physical drill, undoubtedly caused increased metabolism, with the result that lead compounds previously locked up in the muscles and organs of the body might become released and liberated in the blood stream, thus causing the symptoms from which the men complained. The exciting cause of the onset of symptoms of lead poisoning was not known, and while he did not wish to be dogmatic as to the cause of lead poisoning in these patients, he thought that the occurrence of so large a number was suggestive of the theory that the symptoms were caused by increased metabolism; he regarded these cases as similar in nature to those recorded by Dr. Kauffmann, where partial starvation was supposed to promote the rapidity of onset of the symptoms. The cases could certainly not be regarded as a local epidemic of lead poisoning due to impure water or to food contaminated with lead, for the men belonged to different battalions, and three of them had never left the head quarters dépôt. The symptoms of colic must be attributed to lead poisoning from the fact that they were associated with the other symptoms mentioned, and also because constipation was an invariable symptom. Had the colic been due to digestive trouble, he would have expected diarrhoea instead of the reverse condition. Further, there were no cases of lead poisoning found except among those who had previously worked in lead processes. A discussion followed, in which Drs. ALLAN, KING ALCOCK, ROWLAND, MOTT, MCMURRAY, DALY, PRENDERGAST, and RUSSELL took part, and Dr. SHUFFLEBOTHAM replied.

Exhibition of Pathological Specimens.—Mr. R. H. DICKSON showed two lacrymal sacs which he had removed entire.

Dinner.—The meeting was followed by a dinner, at which twenty-one members were present. Surgeon-General W. W. Kenny was present as a guest. A collection in aid of Epsom College realized £1 2s. 6d.

BIRMINGHAM BRANCH.

THE second ordinary meeting of the session was held on December 17th, 1914, when Dr. PURSLOW, President, was in the chair.

Cases.—Mr. JUSTIN J. BEKENN showed a case of uraemic convulsions treated by nitro-glycerine. Mr. FRANK BARNES showed a case of acute pancreatitis with fat necrosis. Dr. PURSLOW showed a specimen of placenta praevia treated by abdominal section.

Paper.—Mr. BERNARD J. WARD read a paper on frequent micturition in women, illustrated by the epidiascope. The PRESIDENT spoke; Mr. B. J. WARD replied.

Reviews.

A CENSOR OF SCIENTIFIC METHODS.

IN the most recent publication of the Department of Applied Statistics at University College, *Mendelism and the Problem of Mental Defect*,[1] Professor KARL PEARSON presents himself as a *censor scientiarum*, with many warnings against "appearances of knowledge where we are as yet in a state of ignorance," against "quackery in science," against "ignorance and dogma parading before the public as knowledge," and so forth and so on, and winding up with the warning that the only knowledge is that which is based upon figures. "New scientific methods, new standards of logic and accuracy [that is to say, statistical methods and arithmetical standards] have fought their way to the front, and both in pure science and in medicine much of the work which may be done in the future on the old lines can only be looked upon as dogma or as quackery." Alas! we are all on the wrong track. Medical students should discard their textbooks of anatomy and physiology, of surgery and medicine, and go back to the pure fountain head of Todhunter, Colenso, and Cocker. Figures are your only facts. Those enthusiastic but misguided investigators who pretend to have proved the transmission of the malaria parasite by the mosquito are parading ignorance and dogma as knowledge. They lived in a mosquito-proof hut in a malarial district, but they have no statistics to offer. They never counted the mosquitos that did not bite them, and therefore their observations are of no value. They did not get malaria themselves, and they sent mosquitos to England and procured them to bite people who did get malaria, but they never counted the people in England who did not get malaria, and so their teaching must be looked upon as dogma and quackery.

When Professor Pearson sought for information about feeble-mindedness, he "was at once struck by the extraordinary absence of accurate [by which he means statistical] investigation." He could find: "(1) No adequate anthroponiorphic measurement. . . . (2) No psychometric investigation of children in this country on any reasonable [that is, statistical] scale at all. (3) No work done worthy of the adjective scientific [that is, statistical] on either the heredity factor or the environmental factor."

Professor Pearson has no difficulty in quoting diametrically opposite opinions on the causation of feeble-mindedness, and he revels in exposing the absurdity of the extreme Mendelians, who look upon feeble-mindedness as due to the absence of a unit character that exists in the normal human being. We might as well, though Professor Pearson does not say so, look upon failure to attain the stature of six feet as due to the absence of a six-foot unit character that exists in the six-foot human being. No one has a keener eye for the absurdity or the weakness of an opponent's position than Professor Pearson, but surely no one was ever more blind to the weakness of his own. He never realizes that medicine includes the art of treating individual cases, or that in treating individual cases a knowledge of means and averages is useless, and if applied to individuals may be much worse than useless. The supposition that a person should be secluded as feeble-minded because he could not pass some anthropometrical test devised by Professor Pearson, or some psychometric test invented in a psychometric laboratory, is ludicrous. A feeble-minded person is, in Professor Pearson's own very appropriate term, a "social inefficient," and the test—the proper test, and the only test—by which he can be tried is his social efficiency. In other words, can he fend for himself? Can he so manage his affairs as to be a useful member of society and not a burden on it? If not, is his inefficiency due to mental defect? No anthropometric or psychometric measurement is of the slightest value beside this test, or ever will be.

Professor Pearson makes the mistake, which is not very uncommon, perhaps, but which comes ill from one who

[1] *Mendelism and the Problem of Mental Defect. III. On the Graduated Character of Mental Defect and on the Need for Standardizing Judgements as to the Grade of Social Inefficiency which shall involve Segregation.* By Professor K. Pearson, F.R.S. London: Dulau and Co., Limited. 1914. (S. roy. 8vo, pp. 51; 23 diagrams; 1 photo. 2s. net.)

poses as *censor scientiarum*, of confusing "mental" with "intellectual," and distinguishing "moral" and "instinctive" (in the sense of instinctive desire) from "mental." These are elementary matters of nomenclature in which we are prepared to find amateurs and the laity ignorant, but when a professor lectures us on our ignorance, our dogmatism, our quackery, our want of honesty and of logic, we may suspect that he is not omniscient.

GENITO-URINARY SURGERY.

THE appearance of a textbook on *Surgical Diseases and Injuries of the Genito-Urinary Organs*[2] by Mr. J. W. THOMSON WALKER is a notable event in the field of urology. Mr. Thomson Walker has long been known by his writings on the subject, and a textbook from his pen is sure of a wide welcome from the profession.

"It is hoped," says the author in his preface, "that the book will prove of value to those in general practice, and may also assist those on the threshold of a surgical career." We may add that it will also prove of value to all who take a special interest in this difficult subject, as it "bears the impress of the experience and individual views of the author."

To read an account of this experience and the author's matured opinions is very valuable to other surgeons. It is in this point that so many textbooks fail and especially some recent American textbooks on this subject. They have been models of clear printing and excellent book illustration, but they have been mere pickings gathered from the heaps of German and French literature; the chapters have been overloaded with detail and the authors have failed to lay down any clear cut policy for use in practice. This has always been the strong point of English writing, that it is founded on the experience of the author and in it the grain is winnowed from the chaff and served up for the nourishment of other minds.

Where all is good it is difficult to pick out special chapters for praise, but perhaps the best are those on renal function, on inflammation of the kidney, on tuberculosis of and stone in the kidney, on tumours of the prostate, and on urethritis. The problem of urethritis is very simply stated, and the modern methods of diagnosis and treatment described. This chapter should prove of great service to the general practitioner whose knowledge of the subject is often dependent on the teachings of the general surgical textbook. Perhaps sufficient stress has not been laid on the subject of prostatic massage, but the rest of the teaching is wholly modern, and would be found most efficient in practice.

We are sorry to find any fault with a book in most respects wholly admirable, but we do not understand the rationale of the scanty lists given of the literature on each subject. In a textbook of this kind either no references should be given at all or they should be adequate and complete. To quote striking instances: In the chapters on radiography and calculus no reference is given to Fenwick's remarkable book *Radiography in the Diagnosis of Urinary Stone*, and in that on renal injuries, though Küster's name is mentioned, no reference to his classical work on the subject is given. This is true of the whole book, the author being rather too reticent in his references to English workers. The references to writings later than 1910 are also very scanty; for instance, in the chapters on ureteric calculus one paper of 1911 is referred to, and one of 1910, but the other references are all rather ancient history.

Some of the opinions and practices described by the author are also open to criticism. For instance, he still holds firmly to the doctrine of Freyer that the whole prostate is removed in the operation of suprapubic prostatectomy. Yet recent investigations made in many countries all unite in showing that not the whole prostate but only the diseased part is removed. Another instance is the long description of how to sound the bladder. Sounding should be given up entirely for the cystoscope, and no loophole of excuse should be allowed the practitioner to say that he has seen it discussed in a modern book. If a practitioner is not fitted to use the cystoscope he has no right to sound a patient, but should leave examination of the bladder for some one who can use that instrument. Again, no mention is made of routine urethral irrigation before the passage of a catheter—a most necessary step, as Young's work has conclusively shown. The description of cystoscopy is very short, and it would be impossible for any one to teach himself the method from perusal of this book. It would be pertinent to inquire why the ureteric catheter now generally made by instrument makers is described in the figures as "author's" catheter.

Still these are small faults in what is otherwise excellent, and we can confidently recommend this book as a worthy addition to every practitioner's library.

[2] *Surgical Diseases and Injuries of the Genito-Urinary Organs.* By J. W. Thomson Walker, M.B., C.M.Edin., F.R.C.S.Eng. London, New York, Toronto, and Melbourne: Cassell and Co., Ltd. 1914. (Med. 8vo, pp. 897; 45 plates, 279 figures. 25s. net.)

BERI-BERI.

SINCE the appearance of Braddon's work in 1907 on the cause and prevention of beri-beri much attention has been given to the subject, and great advances have been made. These are excellently summed up by Captain E. B. VEDDER, M.D., of the Medical Corps of the U.S. Army, in his book entitled *Beri-beri*.[3] He spent two years in the experimental study of the etiology of the disease, and is therefore able to speak from first hand knowledge. The whole subject is critically reviewed, and a good deal of the confusion which exists on many points is cleared away—we hope for ever.

A very good account of the history of the disease is given, and then the distribution, prevalence, pathology, and symptomatology are dealt with. A discussion on rice and its preparation for food leads up to the consideration of etiology; the conclusion is contained in the brief statement that "beri-beri is caused by the deprivation of some substance which is deficient in certain kinds of food."

Polyneuritis gallinarum, which the author inclines to believe is the same as beri-beri in man, is discussed in full, and there are also chapters upon beri-beri in animals, infantile beri-beri, ship beri-beri, and epidemic dropsy. The concluding chapters deal with prophylaxis and practical considerations.

A careful perusal of the book demonstrates that it is no ordinary work but one very much above the average. The author shows himself to be an excellent special pleader, and the way he gains his points in his different arguments proves him a man of ability and acumen. As an example we may take epidemic dropsy and its relation to beri-beri. There have been serious doubts as to their identity, but after reading Dr. Vedder's arguments the reader wonders why he could ever have thought they were different. Critics will, we have no doubt, arise to question other points, but they will have to bring forward very decisive facts to upset the conclusions reached. There can hardly be any reasonable doubt now that beri-beri and the class of cases of peripheral neuritis to which it belongs is due to some deficiency in the food—call it vitamine or anything else. The fact that the disease has been so completely stamped out of Government institutions by substituting slightly milled rice for the old over-polished variety seems clearly to establish this point.

One of the most interesting chapters in the book is that dealing with the practical considerations, and here again the author handles his subject skilfully. He admits the difficulties in the way of getting the use of over-milled rice abolished, and of persuading the consumers that it is detrimental to their interests to eat such rice, but time will gradually change this. The volume is an excellent, well thought-out, well-written book by one who has the subject at his finger-tips, and is well qualified to summarize all the facts. Every worker on the subject must study its pages closely.

[3] *Beri-beri.* By E. B. Vedder, A.M., M.D., Captain, Medical Corps, U.S. Army. London: John Bale, Sons, and Danielsson, Ltd. 1913. (Roy. 8vo, pp. 435; 51 figures, 5 plates. 18s. net.)

NOTES ON BOOKS.

THE fasciculus of *The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago*,[4] for October, 1914, opens with a diagnostic talk on the symptoms and signs of renal and ureteral stone, and ends with a talk on the use of radium and the *x* rays in the treatment of cancer. In this last,

[4] *The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago.* Vol. iii, No. 5. W. B. Saunders Company, 1914. (Med. 8vo, pp. 1061.)

Dr. Murphy says that he believes that the *x* ray has some effect on malignant cells which have escaped from the primary focus into the neighbouring tissues, and that he uses the *x* rays, from a relatively hard tube, on practically all cases of carcinoma after operation. Radium is not, he thinks, an important additional means for the cure of cancer, but he believes that in superficial carcinoma of the skin radium acts more rapidly and is more easily controlled in its application to small lesions, and that it is also very valuable in the treatment of the angiomatous type of birth marks and of keloids. Rambler roses are among the best of all ornaments for the garden if the gardener has courage to prune them; we keep on wishing that Dr. Murphy would employ an experienced literary gardener to prune his *Clinics*.

The new edition of Mr. REYNOLDS-BALL'S *Mediterranean Winter Resorts*,[5] vol. i, South Europe, contains a section on Tunis, which the author considers to be a coming winter resort. It is said to have a climate almost as mild as Algiers, though not so sheltered. As is the case in Algiers, much rain falls in January and February. The city of Tunis has a good water supply, brought along the route of the old Roman viaduct, and is said to be now well drained. It contains hotels, large and small, bazaars, various mosques, and other objects of interest, and from it the excursion to ancient Carthage can be made.

Whitaker's Almanack[6] makes its appearance at the usual date and very much in its usual guise, but it has so far felt the effects of the war that the articles of last year on the world's peace and the proceedings of the Hague tribunal have been replaced by others on the origin and course of the great European war. The story of the war is brought down to November 7th, the date of the surrender of Tsing Tau; in addition there are two general articles on the war—the one on land operations by G. W. Redway, and the other on naval operations by Percival A. Hislam. The volume also contains a table dealing with the new rates of income tax and a summary of the War Budget introduced by the Chancellor of the Exchequer on November 17th. It is superfluous to praise the book, the merits of which have been so closely tested over so many years.

Whitaker's Peerage, Baronetage, Knightage, and Companionage[7] has also been issued. It contains appointments and promotions, more immediately due to naval and military operations, down to a late date. The names in the directory are arranged in one alphabet, which is, we believe, the most convenient plan. There is an introduction containing much interesting matter, including a list of peerages and baronetcies arranged in historical order. It contains also tables of precedence and an official glossary, including, incidentally, much curious information: for instance, who would be able to state offhand what are the functions of an Alnager and who is the Great Alnager?

DR. G. M. MAYBERRY has designed and Mr. E. K. Lewis has published a *Sanatorium Case Register*. It consists of a large sheet having on one side headings for entering a complete record of the patient, including family history, and present signs and symptoms; at the bottom of the page are diagrams of the thorax, front and back, and of the larynx. The back of the sheet affords space for notes. The sheets are bound into volumes containing 50, 100, 150, or 200 forms, with an index. The price of the first named is 25s., of the last 40s.

[5] *Mediterranean Winter Resorts.* Vol. i: South Europe. By Eustace Reynolds-Ball, F.R.G.S. Seventh edition. Kegan, Paul, Trench, Trübner and Co. (Foolscap 8vo; pp. 635. 5s. net.)

[6] *Whitaker's Almanack.* London. 1915. Price 2s. 6d.

[7] *Whitaker's Peerage, Baronetage, Knightage, and Companionage.* 1915. London.

IT is greatly desired to complete the set in the Library of the British Medical Association of the *Transactions* of the International Medical Congress held in London in 1913. Since the matter was last mentioned several additional parts have been received. The Librarian now acknowledges with thanks Part I of Section IV from Dr. Eder, Part I, Section III, from Dr. Bastian, and Part II, Section IV, from an anonymous donor. In all sixteen volumes have been presented, namely, Sections III (I and II), IV (I and II), V (I), VI (I and II), VII (I and II), VIIA (II), XI (I and II), XIII (I and II), XXIII, and the general volume. The Librarian will be grateful for any volumes not enumerated in the above list.

THE MILITARY MEDICAL SERVICES.

THE ROYAL ARMY MEDICAL CORPS.

THE normal strength of the R.A.M.C. has varied from time to time, but may be put at between one thousand and eleven hundred. The *Army List* for January, 1914, shows the strength of the active list of the corps as 1,054, of all ranks; and in addition to that number 65 retired officers were temporarily employed in England, of whom, however, only 22 were actually liable to recall to service. At the same time the Special Reserve of the Corps contained only 184 names. The Territorial Medical Establishment stood at about the same strength as the active list—1,142. Of that number 363 were attached to field ambulances (exclusive of non-medical officers, transport officers, quartermasters, etc.), 663 to general hospitals, and 116 were in the sanitary branch. The services of the great majority of those entered under the two last headings were, however, available only on a general mobilization.

With the outbreak of the war came an enormous increase in the strength of the corps, chiefly under the head of men temporarily employed, while the numbers of the Special Reserve were also more than trebled. The *Army List* for December shows the following figures:

Active list, 1099, the increase being chiefly due to the absorption into that list of the retired men shown in January as temporarily employed.

Retired officers temporarily serving, in addition to the former list, 102; these comprise all ranks, from an acting Director-General to a Captain.

Special Reserve, 661.

Officers holding temporary commissions, 1,138.

Territorials, 1,504, distributed as follows: Field ambulances (medical officers only), 609; general hospitals 745, sanitary service 119, clearing hospitals 31. The grand totals, of all classes and of all ranks, were in January 2,445, in December 4,504.*

The strength of the different classes and ranks is shown in the following table:

STRENGTH OF THE R.A.M.C., 1914.

Rank.	*January.*	*December.*
Surgeon-Generals	12	12
Colonels	29	35
Lieutenant-Colonels	130	151
Majors	332	381
Captains	422	399
Lieutenants	129	121
Total	1,054	1,099
Retired officers employed	40	87
Retired officers liable to recall employed	22	12
Retired officers late militia employed..	3	3
Total	65	102
Special Reserve.		
Lieutenant-Colonels	—	1
Majors	15	10
Captains	26	60
Lieutenants	143	590
Total	184	661
Temporary Officers.		
Colonels	nil.	7
Lieutenant-Colonels	,,	7
Majors	,,	10
Captains	,,	41
Lieutenants	,,	1,073
Total	—	1,138
Territorials, all Ranks.		
Field Ambulances	363	609
General Hospitals	663	745
Sanitary Service	116	119
Clearing Hospitals	nil.	31
Total	1,143	1,504
Grand Total	2,445	4,504

The R.A.M.C. has suffered heavily during the five months for which the present war has lasted, the names of its members having appeared with frequency in the casualty lists under every head—killed, wounded, and

* We cannot claim that these figures are absolutely accurate. They are, however, correct to within a few units in each case. It must also be stated that there is some overlapping, due to the names of a few officers being shown twice over in the *Army List*, under more than one heading.

missing. Such a loss is neither new nor unexpected. In every war in which our army has taken part—in the Peninsula, in the Maratha, Afghan, and Sikh wars, in the Crimea, in the Mutiny—the members of the medical department have freely given their lives in the performance of their duty and in the service of their country. The same, of course, applies to the medical corps of other countries; in the Crimea, indeed, the losses of the French and Russian medical departments were far heavier than our own. Statistics of the losses of the French and Russian medical corps in the present war have not been published, and are not likely to be available for a long time to come. The same remark applies to the losses in the German medical staff, which are known to have been very heavy. Our remarks must, therefore, be confined to the medical casualties of the British forces. That these should be heavy is only natural. Never before has so bloody a war as the present been fought. And the increased range of modern projectiles increases the risks of the medical services, as men are now killed by fire from a distance at which hospitals—still more individuals—are quite unrecognizable.

We think we are right in saying that, until August last, no officer of the R.A.M.C. had been killed in action since the South African war. That war lasted for two and a half years. The number of medical officers, including temporary officers, then called "civil surgeons," who were killed in action or died of wounds during that war was about a dozen. The number of medical officers killed in action, including those who have died of wounds, during the first five months (rather less) of the present war, has already doubled the number of fatal casualties in South Africa, amounting to 27 in the R.A.M.C. alone. And to these should be added 13 medical officers of the navy, 2 of the I.M.S., 1 of the West African Medical Service, and 1 of the Australian forces in the Pacific; a grand total of 46.

The following is a list of officers of the R.A.M.C. reported as killed in action or as having died of wounds up to date. Of these, the majority, 21, were on the active list of the corps, one belonged to the Special Reserve, four held temporary commissions, and one — Captain Angus Macnab of the London Scottish—was medical officer of a Territorial battalion.

Lieutenant-Colonel C. Dalton.
Major E. B. Steel.
Captains F. Forrest, T. Scatchard, H. S. Ranken, V.C., R. D. O'Connor, M. T. Lochrin, R. H. Nolan, R. G. Kinkead, A. Macnab (Territorials), T. McC. Phillips, C. P. O'Brien-Butler, C. T. Conyngham, E. M. Glanvill, M. Leckie, D.S.O.
Lieutenants H. L. Hopkins (temporary), A. K. Armstrong (temporary), J. L. Huggan, J. F. O'Connell, W. O. W. Ball, J. Crocket, D. W. Rintoul, R. E. Porter, H. J. S. Shields, G. H. Chisnall (temporary), M. Richardson (temporary), C. C. Iles (Special Reserve).

One striking fact in the above casualty list is the very disproportionate share of the loss borne by the junior members. This is only natural. The youngest and most junior officers are the most exposed; it is they who go into the trenches, and they who chiefly man the hospitals nearest the firing line. The fact is none the less striking. The number of Lieutenants on the active list is less than that of the Lieutenant-Colonels, and is small compared to those of the Majors and Captains. But only 1 Lieutenant-Colonel and 1 Major have been killed, as compared to 13 Captains and 12 Lieutenants. Most of the Captains have also been comparatively junior men. The temporary officers, and those of the Special Reserve, who have fallen, have all been Lieutenants, but in these branches subalterns form the great majority of the total strength.

Of the 27 officers of the R A.M.C. killed all were members of the British Expeditionary Force in France and Belgium, with one exception, Captain C. T. Conyngham, who fell in East Africa.

The number of other casualties among R.A.M.C. officers —wounded, missing, and prisoners—has, of course, been very much larger than the number of killed. The two last headings, however, overlap to a considerable extent. The number who have been reported as wounded, excluding those who have died of wounds, who are reckoned among the killed, appears to be 32, of whom a few, three at least, are also prisoners. No fewer than 53 have from time to time been included in the lists of missing—the majority during the first few weeks of the war, in the retreat from Mons, when several field ambulances remained behind in attendance on the wounded, and their personnel was returned as missing, most of them having been later on reported as prisoners. Out of the 53 reported missing, some 31 have subsequently been ascertained to be detained as prisoners, as well as 15 others, not previously shown as missing. The total number of prisoners is thus 46. Many of those at first shown as missing rejoined later on.

As regards the detention of medical officers as prisoners, this is clearly forbidden under Chapter III, Personnel, of the Geneva Convention, Rule 9 of which runs as follows:

Art. 9.—The personnel engaged exclusively in the collection, transport, and treatment of the wounded and sick, as well as in the administration of medical units and establishments, and the chaplains attached to armies, shall be respected and protected under all circumstances. If they fall into the hands of the enemy they are not to be treated as prisoners of war.

These provisions apply to the guard of medical units and establishments mentioned in Article 8 (2).

Long before the Geneva Convention was framed agreements were sometimes made, in civilized warfare, for both sides to release captured medical officers who had remained behind in attendance on the wounded. In the wars between England and France in India, in the Carnatic, during the third quarter of the eighteenth century, this rule was in force. It is useless, however, to complain of the Germans having broken the Geneva Convention in this respect, for they seem to have set at defiance *all* the rules introduced for the purpose of making warfare between civilized nations less inhumane.

The French appear to have succeeded in some cases in effecting the exchange of some of their captured medical officers. This, however, is not the intention of the rules of the Geneva Convention.

In *Reynolds's Newspaper* for December 20th, 1914, some statistics are given of the number of British officers whose names have appeared in the casualty lists up to that date. The figures given are: Killed, 1,133; wounded, 2,225 (of whom 216 were also missing or prisoners); missing and prisoners, 513; total, 3,871. Out of these numbers the Indian contingent in the British Expeditionary Force contributes just 200—killed, 83; wounded, 106; and missing, 11. The most striking feature of this list is the very high proportion of killed to other casualties —not far short of one in three—a much greater proportion of killed to wounded than has ever previously been recorded. Classified by rank, the killed are: Generals, 8; Colonels and Lieutenant-Colonels, 29; Majors, 103; Captains, 356; and Lieutenants, 637. In this list, as in the statistics given above for the R.A.M.C., the great proportion of casualties among the junior ranks is most noticeable. Information is not available as to the number of battalions of the various regiments which are on active service, which prevents any exact comparison between them. But among the corps which have suffered most severely may be mentioned R.F.A., 43 officers killed; Worcesters, 23; Coldstream Guards, 21; Connaught Rangers and Middlesex, 20 each. The number of officers in the artillery is, of course, immensely greater than that of any individual regiment.

THE ROYAL NAVY.

The latest available *Navy List* shows 536 officers on the active list, namely, 6 Surgeon-Generals, 11 Deputy Surgeon-Generals, 166 Fleet Surgeons, 182 Staff Surgeons, and 171 Surgeons. In addition to the above medical officers on the active list, 25 retired medical officers, of whom 11 are called reserve, and 14 emergency officers, are shown as serving; while the navy also employs 12 temporary consultants and 185 temporary surgeons, and the Royal Naval Volunteer Reserve has on its list 11 Staff Surgeons and 121 Surgeons, all of whom have been called up for service during the war. Unlike the R.A.M.C., the reserves and temporary appointments in the medical departments of the navy are far fewer in number than the regular establishment. The number of medical officers of the navy killed, up to the end of the year, was 13, all of whom perished in ships sunk with great loss of life, the *Good Hope* and the *Monmouth* leaving no survivers, the *Bulwark* very few. The names are:

Surgeons H. G. Hopps in the *Aboukir* and A. E. Turnbull in the *Cressy* on September 20th.

Staff Surgeon G. C. C. Ross, Surgeons G. W. M. Custance and J. F. D. Watson, in the *Hawke* on October 15th.

Fleet Surgeon J. J. Watson, Surgeons F. C. Searle and F. L. J. M. de Verteuil, in the *Good Hope*; Staff Surgeon H. Woods, and Surgeon A. J. Tonkinson, in the *Monmouth*; sunk in the battle off the coast of Chile on November 1st.

Fleet Surgeon P. K. Nix, and Surgeons W. Miller and R. T. Brotchie, in the *Bulwark* on November 26th.

Surgeons Turnbull and de Verteuil belonged to the Reserve, Brotchie to the Royal Naval Volunteer Reserve, and Watson was a temporary surgeon. Watson was the famous threequarter-back who distinguished himself in the English Rugby international football team last season. Few wounded survive naval disasters, and the only medical officer reported as wounded is Staff Surgeon T. A. Smythe, of the *Pathfinder*, mined or torpedoed in the North Sea on September 5th. Two medical officers who took part in the expedition of the naval brigade to Antwerp also failed to rejoin, Staff Surgeon L. L. Greig, taken prisoner, and Temporary Surgeon B. A. Playne, interned in Holland.

The Indian Medical Service.

The strength of the Indian Medical Service on January 1st, 1914, was 770, and as the outbreak of the war was much the same, the deaths and retirements during the first seven months of the year being just about balanced by the new admissions. Of these 770 officers, nearly 300 were in military and nearly 500 in civil employ, including in both instances those on leave. When the war began over 150 officers of the I.M.S. were on leave in England, and all rejoined in India without delay, with the exception of a few who were too ill to do so.

The civil branch of the I.M.S. has always, since the earliest times, been kept up as a reserve to the military branch; and the Government of India has always, since the service was formally founded, 150 years ago, insisted that the whole service is primarily military, and that those members of it who are in civil employ are only lent to the civil Governments, and are always liable to recall to military duty when required. It has sometimes been objected that the civil officers are of no use as a military reserve, because they cannot be spared from their civil duties. This objection was sufficiently refuted by the large number of medical officers recalled from civil to military employ for the Chitral expedition of 1895, the Tirah frontier war of 1897–98, and the China war of 1900. The numbers recalled on these occasions were, however, small compared to those who have reverted to military duty during the past five months. The *Army Lists* are silent on the point, but we think that it would be within the mark to say that the number of civil medical officers recalled to military duty since August last is now nearly 300.

Where these officers are now serving it is impossible to say, as the *Army Lists* give no information. The number now serving in France, including regimental medical officers, and those employed in field, general, and base hospitals, must be fully 100. The eight hospital ships probably employ from 40 to 50 more, while considerable numbers must have accompanied the troops sent from India to East Africa, the Persian Gulf, and Egypt. Some 50 retired officers of the I.M.S. have also volunteered and been accepted for duty, and are now serving in the base hospitals for Indian wounded at Brighton, Brockenhurst, and elsewhere, and in various other capacities; many of them have also served for a time on the hospital ships.

Two officers of the I.M.S. have fallen in action in France, Major P. P. Atal and Captain K. I. Singh, both regimental officers, and both Indians. For just sixty years men of Indian birth, who have taken British qualifications, have been admitted to the I.M.S., and many have served therein with credit and success. The number of Indians who have joined the service during these sixty years is about 150. This is the first occasion on which an Indian member of the I.M.S. has been killed in action; and nearly twelve years have elapsed since any officer of that service met his death in the field, the last having been Captain F. Syme, who was a member of the small force which was annihilated at Gumburru, in Somaliland, on April 15th, 1903.

Two members of the I.M.S. have been wounded, Major T. G. F. Paterson in the Persian Gulf, and Captain A. E. Grisewood in East Africa; while a third, Lieutenant N. Mehta, was reported as missing, but rejoined.

Other Medical Departments.

The West African Medical Staff is, officially, not a military but a purely civil service, though many of its members have served as military surgeons in the numerous small expeditions which have taken place during recent years in West Africa. This service has lost one member in the fighting in the Cameroons, Dr. T. P. Fraser, killed on September 5th. Two others have been taken prisoners in the same campaign, Dr. J. A. Lindsay and Dr. W. A. Trumper.

Captain B. C. A. Pockley, of the medical corps of the Australian forces, was killed while serving in the Australian expedition which captured German New Guinea.

A large number of medical men have joined the army as combatants, either holding commissions in various ranks, or having enlisted for the war. Many of them must have lost their lives. We can, however, give only one name, that of Dr. S. N. Crowther, of the Surrey County Asylum, killed on October 18th whilst serving as a motor cyclist dispatch rider.

CIVIL MEDICAL PRACTICE AND THE WAR.

A meeting of practitioners in Glasgow and district, presided over by Dr. John Barlow, President of the Royal Faculty of Physicians and Surgeons of Glasgow, was held in the Faculty Hall on December 16th, 1914, to consider the difficulties arising in connexion with civil practice as a result of the war.

Dr. Norman Walker, convener of the Scottish Medical Service Emergency Committee, delivered the following address.

Address by Dr. Norman Walker.

I am very glad to have an opportunity of speaking of the work of the Scottish Medical Service Emergency Committee, for there are a good many things about its work and the war which the profession ought to know. I have not come to Glasgow as a missionary—for I have evidence that you have made excellent local arrangements—but because Glasgow is the largest centre of medical as well as general population in Scotland, and because I hoped—and I see successfully—that I might have the support of the President of the General Medical Council, whose wise advice has been of much value to the Committee.

The Committee arose out of the action of Dr. Hamilton, Chairman of the Scottish Committee of the British Medical Association, who very early in August summoned a meeting to consider what steps should be taken to meet the medical difficulties arising from the war. At that meeting it was arranged to invite the presidents of the medical corporations of Scotland, the deans of the faculties of medicine in the four Scottish universities, the Scottish members of the General Medical Council, and the members of the Scottish Committee of the British Medical Association to meet to consider further action. These gentlemen met, and after discussion appointed a Committee of which the following is the composition:

The President of the Royal College of Physicians.
The President of the Royal College of Surgeons.
The President of the Royal Faculty of Physicians and Surgeons.
The Dean of the Faculty of Medicine, University of St. Andrews.
The Dean of the Faculty of Medicine, University of Glasgow.
The Dean of the Faculty of Medicine, University of Aberdeen
The Dean of the Faculty of Medicine, Edinburgh University.
Dr. John Adams, Glasgow.
Dr. G. C. Anderson, Methil.
Dr. J. R. Currie, Edinburgh.
Dr. John Gordon, Aberdeen.
Dr. J. R. Hamilton, Hawick.
Dr. J. C. McVail, Edinburgh.
Dr. John Playfair, Edinburgh.
Dr. John Stevens, Edinburgh.
Dr. Norman Walker, *Convener*.

This Committee issued a memorandum which was widely quoted in the medical press, and a copy of which had been sent to all inquirers. I propose now to go over that memorandum and to refer to its various proposals in succession.

First, we said that it should be generally agreed that the fee offered to a locumtenent taking the work of a practitioner engaged in military duty should not exceed

5 guineas a week. I am rather glad of the opportunity—which, indeed, I have been wishing for for some time—to refer to the way in which the fees of locumtenents have in the last few years steadily mounted upwards. In my day we were content with 2 guineas a week; now I am afraid to say how high the fees sometimes go. Every one will agree that some locumtenents are worth more than others, but I think it is too often forgotten that the fee is one charged not to a public body, not to the public, but to a member of one's own profession. The day will come when the locumtenent will himself be a practitioner, and he will then find that 5, 6, and 7 guineas a week form a considerable addition to the expenses of his annual holiday. That, however, is a digression. This recommendation of the Committee has, I believe, been very generally accepted, and, indeed, I have definitely refused to give the approval of the Committee in cases where larger sums were asked.

Our second suggestion was that retired practitioners willing to relieve their professional brethren, and so enable them to serve their country, should send their names to the Emergency Committee for registration and ultimate allocation to temporarily vacant practices. We got a good many names. The spirit was undoubtedly willing, but when we came to definite proposals, it was not so easy for a practitioner in the neighbourhood of 60 to face a hard country or colliery practice. I hope I entirely appreciate the difficulties of the situation, and I am not uttering a word of criticism. Indeed some men have heroically undertaken work which will tax their strength. But I think there is room for these retired men who are unable for the whole work of a practice. There are many districts where a large part of the work is done in the consulting-room, and this work can very well be done by such men as I have referred to, while the visiting is done by the younger men who have not been summoned to military duty. Of course, this wants some organization, but organization is just what we want just now. The difficulties are increasing, and though I believe they can be met by organization I am sure that they cannot be met without it.

Our third suggestion was addressed to the educational authorities, and was to the effect that school medical officers should be permitted to give at least part of their time to general work. This is not so easy as it sounds, and very little has been done in this direction. Still, something more might be done. I do not wish to interfere with the "business as usual" idea, but I think that by a little harder work, and by a little organization, two men might do the work of three; and Saturday and Sunday are available, even in Scotland, for works of necessity and mercy. I think I am justified in saying that the authorities will look with a sympathetic eye on any such arrangements as those suggested. It is the local educational bodies from whom the proposals must come.

Our fourth suggestion was that the visiting staffs of large hospitals, infirmaries, and asylums should consent to a reduction of the numbers of their medical residents and clinical assistants, and should themselves undertake a proportion of the work usually assigned to these junior officers. One of the medical journals said that was a very drastic proposal. I can only express the wish that all of our proposals had been as faithfully carried out. All hospitals have cut down their resident staffs. Perhaps I should say that the resident staffs have done the cutting down themselves, for in many hospitals every one of them desired to enlist, and some of them took French leave. Many hospitals cannot get residents now, and the visiting staff has to perform their duties. One very distinguished professor of medicine is acting as his own house-physician, and a well-known professor of anatomy for three months acted as house-surgeon in the hospital attached to the school in which he is professor.

Our fifth point was that, in the larger towns, young practitioners whose practices were not yet extensive should in pairs make an arrangement whereby one undertook the whole town practice for (say) two months, while the other acted temporarily in the country for a third colleague absent on duty; and so alternatively for successive periods. So far as I know, no one has taken our advice in this direction. It is interesting in this connexion to recall in Glasgow the example set by the famous Cullen, who is said to have made such an arrangement with his partner in Hamilton so that each might increase his knowledge by alternate periods of study in Glasgow. It is a method which I hope young men will seriously consider. Lord Kitchener has advised men whose work is necessary for the successful prosecution of the war that they are rendering just as good service to their country by continuing their work as by enlisting in his army. The men driving rivets on the Clyde to-day are in this position, and so is the young doctor who, by doing double work, enables another to go on active service.

Though I am speaking to-night as convener of the Emergency Committee and with the sanction and approval of its members, I take full personal responsibility for what I say, and that particularly applies to what I am going to say now. By all means let research go on, by the men whose life work is research; but I cannot bring myself to agree that working for membership or fellowship or M.D. examinations, or theses, is a man's duty just now. Like the country, the medical profession wants men, and every one should ask himself whether he is doing all he can. And we want women. What an opportunity women doctors have of demonstrating their fitness! I suppose I am old-fashioned, but I cannot think that the front, or very near it, is the place for them. But in filling the places of the men who have gone to the war, they have the chance of showing in spheres of work not as a rule easily open to them their real merit. I cannot say that my earlier offers of women locumtenents were received with enthusiasm, but I can say of those who were accepted that once the novelty wore off the value of their work was appreciated, and I have before me now a request for a locumtenent—a lady preferred. No woman doctor who has the woman doctor's cause at heart has any business to remain idle just now.

It is a pretty safe prophecy that in the next few months with the officering of the newly enlisted men the period of stress will be greater, and as the new graduates almost all immediately join the army, we shall have to depend largely on organization to cover the work. I make a special appeal to the recent graduates. By all means let them send in their names to the War Office at once. But they will not immediately receive commissions. I ask them not to idle away that waiting time but to give it to the civil community. They will not doctor the soldiers any worse from having some practice on civilians.

The most complete example of organization is found in Dundee, where a very martial spirit prevails, and an exceptionally large proportion of doctors are serving in some capacity with the colours. A very elaborate system has been designed, and I understand is working with remarkable smoothness. There is not really much difficulty in the large towns, though even there there is room for improvement. But in the smaller towns matters are not so easy. Many cases have been arranged; nearly all can be arranged provided goodwill is present. It nearly always is, but where it might be better I think we may claim that the silent influence of the Committee has been of considerable value. There are instances, which I shall not particularize, where men are now doing the work of absent colleagues with whom they were formerly not on cordial terms, to put it mildly.

In the real country districts matters are much more difficult. No one who is busy in his own practice can adequately do duty for an absent colleague whose centre is ten miles away. Patients are bound to be neglected, and it is our business to see that they are not. In such circumstances we must have locums, and I make a special appeal to those who have available colleagues to exhaust every effort to make arrangements with these colleagues and leave the locums for the places where they are absolutely necessary; or, if some extra assistance must be got, that they will accept one of the retired practitioners, who will do the consulting-room work.

There is one direction in which the executive of the Committee has been working silently for a long time. You are all here in Glasgow familiar with the martial appearance of some of the physicians and surgeons of the large hospitals, who, attached *à la suite* to your two general hospitals, are doing admirable work in caring for the wounded and sick in these hospitals, and are many of them at the same time attending to their ordinary hospital work, teaching, and carrying on their private practice.

I know they are working at high pressure, but so is everybody else just now, Now, it would be a great thing if we could have some similar arrangement in connexion with general practitioners. It is not quite so easy. In particular, a good deal of consideration from the public is required. Military duties must come first, but there are a good many hours in a day which, if a man were stationed in his own district, he could occupy in attending to the health of the civil population. I know some men on service say this cannot be done, and I am prepared to admit that there are cases in which it cannot, but I am perfectly certain that there are many in which it could, if a little adjustment were made. Let me take a simple illustration which should appeal to Glasgow doctors. I take your Glasgow civic battalion, and though I know nothing of its medical arrangements, I know something of it, for my son is a private in its ranks. The medical officers, if they are, as I assume they are, from Glasgow, are not able to do any work here. But why should not they exchange with the doctors at Troon and Irvine, who could do the military duty as well as at least some private practice?

I know one town in Scotland where there are normally two doctors. One is away with his regiment in another town, while a doctor from a third town is in town No. 1 in charge of a comparatively small body of troops. In another, of three doctors, one is away; the population is increased by 75 per cent. by troops in training, and they have four doctors brought from other parts of Scotland. Probably you could all quote similar cases. It has been represented to the authorities that by a sort of general post men could get back to their own homes, and, while still discharging military duty, do at least some of their own work as well.

I am glad to be able to say that the Director-General gave these representations most sympathetic consideration, and that an Order has been issued, which will, I think, very considerably ease the strain in many instances. It is as follows:

To the General Officer Commanding-in-Chief Command.
All Commands at Home.

War Office, London, S.W.
10th December, 1914.

Royal Army Medical Corps.

Sir,—I am commanded by the Army Council to acquaint you that in order to mitigate as far as possible the inconvenience to the civil population and to Territorial Force Medical Officers owing to enforced changes of station, the following measures will be adopted; the object in view being that these officers may be able, as many medical officers attached to general hospitals are at present able, to give part of their time to civil practice in their own districts:

1. When a mobilized Territorial unit is moved from its own locality in Great Britain, the medical officers may be allowed:

(*a*) To effect exchanges, direct or indirect, with Territorial medical officers in the new locality when possible.

(*b*) If the above is not feasible, the places of medical officers not desiring to accompany their units may be taken by junior medical officers willing to take temporary commissions and serve with such units; the original medical officers being demobilized until the return of the units to their own localities, or until their services can be otherwise utilized there.

2. When a mobilized Territorial unit volunteers for imperial service abroad the medical officer will be given the option of accompanying it or of serving with the reserve unit raised for home defence in its stead, vacancies in both units being filled up by junior medical officers with temporary commissions.

To facilitate such exchanges a list is kept at the War Office of junior practitioners willing to accept general service either at home, in the field, or abroad, from which substitutes can be detailed as occasion arises.

The medical officers themselves might be of assistance in procuring substitutes to take their places possibly from their own neighbourhoods, whose names would be placed on the list.—I am, Sir, your obedient servant,

B. B. CUBITT.

The first paragraph provides for exchanges, either direct or indirect. It will suit a certain number of cases, and will, I hope, be as freely accepted as it is genuinely offered.

In cases where exchange is not feasible it will be rendered so by the appointment of a junior officer with a temporary commission, the original medical officer being temporarily demobilized. This is not so easy as the simple exchange, and at the first men may be reluctant to take advantage of it. No one likes to seem to shirk work, and it does take some courage to admit that a younger man may be more fitted for the harder physical work that is required in some camps, though he is not nearly so well fitted for the private practice which he is endeavouring as a locum to carry on. I am convinced that there are many cases where the general good would be served by such an exchange, and I very earnestly hope that some one will have the courage to give a lead by early application.

Lastly, provision is made under which, when a regiment is ordered abroad, the medical officer will have the option of accompanying it or of serving with the reserve unit raised for home defence in its stead.

When men joined the Territorials they never for a moment contemplated the possibility of having to go, say, to India for a year or eighteen months. And yet till this week that was more than a possibility in many cases. But thanks to this order of the Director-General it will not only be possible but easy for arrangements to be made to avoid this. I do not counsel any shirking of work, but I do question the wisdom of a medical man over 50, with heavy responsibilities at home, both to his own family and to the patients who love and trust him, who from a mistaken sense of duty exposes himself to the risk of such a serious change.

I could say something about service at the front, but will refrain. Any one who has heard from an eye-witness of the state of things in Belgium has great difficulty in advising any one who has the chance of going there to make other arrangements. And yet even for that we who are middle-aged must admit that, always excepting expert surgeons, the younger men are more useful than we should likely be. It is always easier to go; the real duty often lies at home.

The general spirit among the profession reflects that of the community, and we are all anxious that those who have answered the call of duty should not unduly suffer. I do not think that the men who may be away for a year or more can expect that *all* their patients will come back to them when they return. In most cases nearly all will, for those who are doing the work usually make it very clear to the patients (they all should) that they are attending on behalf of their absent colleague.

Nearly every one has refused to accept the transfer of insured persons on an absent colleague's list. I regret that I have to use the qualifying word "nearly." Obviously the patient has the right to free choice of doctor, and if a patient of his own will and of *his own initiative* thinks it patriotic to transfer his "patronage" from his doctor who has gone to serve his country, good and well. I hope I shall be understood, and that I shall not be misunderstood, when I read here one of the warning notices of the General Medical Council:

Whereas it has from time to time been made to appear to the General Medical Council that some registered medical practitioners have, with a view to their own gain and to the detriment of other practitioners, been in the habit of issuing or sanctioning the issue of advertisements of an objectionable character, or of employing or sanctioning the employment of agents or canvassers, for the purpose of procuring persons to become their patients: And whereas in the opinion of the Council such practices are contrary to the public interest and discreditable to the profession of medicine: The Council hereby give notice that any registered medical practitioner resorting to such practices thereby renders himself liable to be charged under the 29th Section of the Medical Act.

Every one who has anything to do with medical politics bemoans the unbusinesslike habits of the medical profession, but I must say that even I have been astonished to find in how many cases no definite arrangements at all have been made. Men went off on twenty-four hours' notice. They asked a neighbour over the telephone to do their work for them, and he said, "Certainly." It was all right in August—there was not much to do, the roads were dry, and the days were long; but it is a different matter now. There is more work; the roads are heavier, and the man who is doing the work at home finds the days not long enough. He is late for dinner every day; he is nearly twice as often out of bed; his tyre

and petrol bills are going up; his chauffeur's temper and usual cheerfulness give way, but he does not like to open the subject with his colleague, who is away serving his country, though perhaps only thirty miles from home. It seems so commercial. The man who is away is in such different surroundings that he seems to forget all about the sordid details of practice at home, or if he does think the thought soon passes from his mind. Neither opens the subject. A feeling of injustice develops in the mind of the man on whom the work falls, and it does not get less as the work gets harder. This state of matters must not go on. It is not fair to either party, and it is laying up certain trouble for the future. And yet in most cases it is quite easy to arrive at an equitable arrangement. It is not possible to lay down conditions universally applicable, but the Committee has under consideration the advisability of issuing two or three model plans, one of which will generally be found suitable. The general principle is for the man who is away to sum up his new conditions. On one side he should place his pay and allowances and the diminution in his expenses, especially car expenses. On the other, his income from appointments and practice, all of which is now being earned by his substitute. As an illustration in round round figures, let us suppose some one whose pay amounts to £400. Car expenses £200, total £600. On the other side put £800 as the gross receipts from practice. If that amount is divided equally, the man away has a clear £800. The man at home has a gross addition of £400 a year to his income—say £300 net—to cover a very great deal of additional work. In some cases on which my advice has been asked, the car expense element has been forgotten altogether by both parties. The Committee has indicated its readiness to help in the adjustment of such cases, and I can say from my own experience that the intervention of a neutral third party greatly facilitates amicable settlement. Two business men can thresh out a burning arrangement keenly and remain perfectly good friends all the time; two doctors too often cannot. As I am on the subject of finance, let me refer to another matter. The supply of locumtenents is very short, and they are not all very experienced. Where circumstances permit, I think it is wise to make arrangements with a neighbour to be ready to lend the advantage of his greater experience to the young locumtenent, and I think it would be better for all if that arrangement, too, were on a sound financial basis.

I have put before you some of the difficulties which have come before the Committee, and on its behalf I ask the help of every member of the profession in solving them. I repeat that I am convinced that they will be greater in the next few months than they have been in the past, that they will be difficult to solve, but that they can be solved by goodwill and co-operation.

Discussion.

Dr. DREVER, Secretary to the Local Medical and Panel Committees, stated that over thirty doctors on the panel of the Glasgow Insurance Committee had gone on service, and more were going soon. There had been no difficulty in getting their work done. Many had been able to make private arrangements with neighbours, and for those who were unable to do so, as well as for those who might contemplate going away, the Committees had devised a scheme for doing their work and conserving their interests. A list of volunteers willing to do work had been drawn up, and arranged in districts. When a practitioner asked the Committees to arrange for doing his work, his list of insured was analysed into municipal wards, and then distributed among the volunteers most conveniently situated. The insured were notified individually that they were on the list of Dr. X. until the return of their own doctor, and an address slip was sent to each volunteer for every person he became temporarily responsible for. Records were kept in the usual way. The arrangements for transference and payment were made by the Clerk to the Insurance Committee, who gave his services willingly. The absent doctor received each quarter a cheque for 60 per cent. of the money due to him, and the remaining 40 per cent. was paid to the volunteer. Every effort was made to discourage permanent transference of patients. For private work, payment was at the rate of half the fees received, including midwifery. Accounts were sent out on the absent doctor's forms, either by the substitute who had done the work or by the absent doctor's representative. Visits and consultations were distributed among the volunteers by the absent doctor's representative, strictly in rotation, bearing in mind geographical convenience, or a list of the volunteers might be given to the patient, who might then exercise a choice. Steps were taken to notify patients that the work was being done, so as to prevent patients drifting. The scheme had been foued to work very well.

Sir DONALD MACALISTER, Principal of the University of Glasgow, said that at the time the Committee was organized he was invited to become a member, but he was detained in Germany. He had, however, been in close touch with it throughout. He thought that the steps it initiated had not been taken too soon, as there was a distinct danger of the breaking down of civil practice in Scotland. An important point for consideration was the dislocation of civil practice due to the transferring of practitioners at the shortest possible notice to their military units on mobilization. This was not such a serious matter in Glasgow and Edinburgh and Dundee, where organizations to meet the difficulty seemed to have been carefully carried out; but it was a serious matter in districts where the civil practice depended on a single practitioner. In the Highlands and Islands a practitioner had often no colleague to whom his work could be handed over, as the whole district was under the care of one man. In Orkney and Shetland one man might be in charge of a whole island, sometimes two or three islands, and when he was called away to military duty the medical care of the people absolutely ceased. It was found that in the Highlands country places were actually being denuded of doctors, and the civil population were, to that extent, in serious danger. In the interests of the civil population the Executive Committee of the General Medical Council felt it necessary to make some representation to the War Office on the matter. It found that men were taken from their practices and sent to take charge of Territorial troops in towns at a distance, leaving their civil work in the hands of neighbouring practitioners at exceedingly short notice. The Executive Committee had suggested that arrangements might be made whereby a man so placed might, by a suitable system of transfer to military duty nearer home, go back to his own town for at least a short period on each day, and so assist to some extent in the conduct of his own practice. If the war were to go on for a very long time, practitioners who had undertaken military duty might, on returning, find such a serious dislocation of their work that they would be constrained to show some shyness and hesitancy in undertaking Territorial service hereafter. Another point of importance was the great difficulty in obtaining a locumtenent. He strongly supported Dr. Norman Walker's plea that no strain should be put on the supply in the big towns, because in single practice areas there was no means of carrying on the work except by utilizing the man who was completely free. In this connexion he cordially endorsed the remarks of Dr. Walker as to the loyal way in which seniors in Edinburgh, Glasgow, and elsewhere, had liberated junior members of the staffs of hospitals, and had been doing the work of house-physician and house-surgeon themselves. The General Medical Council had been asked to sanction the employment of fourth year students on something like the old apprentice system, to take over from practitioners the work required for insurance patients. But that could not, in the interest of the public, be permitted. No unqualified student could be allowed to take charge of a practice as if he were a qualified man. He spoke strongly against the senior medical students being urged to take any course at this time other than as quickly as possible to complete their medical curriculum and become qualified. There were three ways in which the senior medical student could waste himself at the present time: the first was by enlisting as a private in the Royal Army Medical Corps, the second was by occupying the ambiguous position of "surgeon probationer" in the navy, and the third was by acting as assistant in a private practice. He knew of instances where such senior students were the sole quasi-medical officers on board vessels of the navy; that was fair neither to them nor to the service. He mentioned

incidentally that he had ascertained that there were over 1,000 fewer students of all years attending the various medical schools this session than at the corresponding time last year. Of these over 500 were of the fourth or fifth years. He attributed this in large measure to the readiness with which men had been induced to drop their medical studies in order to take up service of a non-medical kind for which they were not trained and which others could do as well. It was evident that it might, in the years following the war, mean that we must face a very serious shortage of the number of qualified men. The drain due to losses on active service would be intensified by the failure of the normal supply of recruits. The profession was greatly indebted to Dr. Norman Walker and his committee for their efforts to promote in the medical profession the same solidarity that had been shown in politics during this time of national emergency.

MEDICAL STUDENTS IN THE TERRITORIAL FORCE.

The following letter, the substance of which has already been given in the JOURNAL by Dr. Henry Hick (New Romney), may be conveniently reproduced here as having a direct bearing on the subject discussed at the meeting reported above:

War Office, London, S.W.,
November 28th, 1914.

Sir,—I am directed to acquaint you that in view of the importance of allowing medical students to continue their studies in order to qualify as medical practitioners at the earliest possible date, it has been decided that any students who have joined medical units of the Territorial Force and wish to immediately resume their studies shall be released from service.

I am, therefore, to request that you will cause a list of any such students serving in the medical units in your command to be sent to this office as soon as possible.—I am, Sir, your obedient servant,

M. W. RUSSELL,
Surgeon-General,
for Director-General, Army Medical Service.

The General Officer Commanding-in-Chief,
——— Command.

PROPRIETARY MEDICINES IN THE UNITED STATES.

As an example of the different treatment given to quacks and nostrum mongers in this country and abroad, it is pointed out by the Select Committee of the House of Commons in their recent report that the quack Macaura is reported to have made £60,000 in his "campaign" in England a few years ago, but that when he tried a similar performance in Paris he was sentenced to a fine of £120 and a term of three years' imprisonment. A scarcely less striking contrast is supplied by some information recently issued by the Department of Agriculture of the United States. It may be recalled that under the Pure Food Act of a few years ago the labelling of proprietary medicines in the United States was the subject of considerable interference by the authorities, and many prosecutions were successfully carried out on charges of misbranding or misrepresentation when exaggerated claims for the therapeutic value of proprietary medicines were made. A check, however, was given to these activities by a decision of the Supreme Court, which ruled that statements as to therapeutic value were so much a matter of opinion that they could not form the grounds for a prosecution for misbranding. This led to an amendment of the Act in which this matter was settled much more specifically, and the Department of Agriculture, through the Bureau of Chemistry, has recently issued the following suggestions to makers and proprietors of medicinal preparations for their guidance in regard to the wording of labels which shall be permissible under the amended Act. We take these recommendations from the *Chamber of Commerce Journal*, December, 1914.

1. *Claims of Therapeutic Effects.*—A preparation cannot be properly designated as a specific, cure, remedy, or recommended as infallible, sure, certain, reliable, or invaluable, or bear other promises of benefit unless the product can as a matter of fact be depended upon to produce the results claimed for it. Before making any such claim the responsible party should carefully consider whether the proposed representations are strictly in harmony with the facts; in other words, whether the medicine in the light of its composition is actually capable of fulfilling the promises made for it. For instance, if the broad representation that the product is a remedy for certain diseases is made, as, for example, by the use of the word "remedy" in the name of the preparation, the article should actually be a remedy for the affections named upon the label under all conditions, irrespective of kind and cause.

2. *Indirect Statements.*—Not only are direct statements and representations of a misleading character objectionable, but any suggestion, hint, or insinuation, direct or indirect, or design or device that may tend to convey a misleading impression should be avoided. This applies, for example, to such statements as "has been widely recommended for," followed by unwarranted therapeutic claims.

3. *Indefinite and Sweeping Terms.*—Representations that are unwarranted on account of indefiniteness of a general sweeping character should be avoided. For example, the statement that a preparation is for "kidney troubles" conveys the impression that the product is useful in the treatment of kidney affections generally. Such a representation is misleading and deceptive unless the medicine in question is actually useful in all of these affections. For this reason it is usually best to avoid terms covering a number of ailments, such as "skin diseases, kidney, liver, and bladder affections," etc. Rheumatism, dyspepsia, eczema, and the names of many other affections are more or less comprehensive, and their use under some circumstances would be objectionable. For example, a medicine should not be recommended for rheumatism unless it is capable of fulfilling the claims and representations made for it in all kinds of rheumatism. To represent that a medicine is useful for rheumatism, when as a matter of fact it is useful in only one form of rheumatism, would be misleading; such statements as "for some diseases of the kidney and liver," "for many forms of rheumatism," are objectionable on account of indefiniteness.

Names like "heart remedy," "kidney pills," "blood purifier," "nerve tonic," "bone liniment," "lung balm," and other terms involving the names of parts of the body, are objectionable for similar reasons.

4. *Testimonials.*—Testimonials, aside from the personal aspect given them by their letter form, hold out a general representation to the public for which the party doing the labelling is held to be responsible. The fact that a testimonial is genuine and honestly represents the opinion of the person writing it does not justify its use if it creates a misleading impression with regard to the results which the medicine will produce.

No statement relative to the therapeutic effects of medicinal products should be made in the form of a "testimonial" which would be regarded as unwarranted if made as a direct statement of the manufacturer.

5. *Refund Guarantee.*—Statements on the labels of drugs guaranteeing them to cure certain diseases or money refunded may be so worded as to be false and fraudulent and to constitute misbranding. Misrepresentations of this kind are not justified by the fact that the purchase price of the article is actually refunded as promised.

It is quite clear that the principles laid down in these suggestions indicate a determination that the intention of the Act shall not be evaded by any ingenuity in wording which might convey one impression to the public and yet be capable of defence in a law court as really conveying a different meaning. Such a statement as that referred to, that a preparation "has been widely recommended for" various diseases, is one which is not infrequently made, and which, literally, is doubtless true, as the proprietors are always ready to recommend their nostrums widely; but it is here laid down that such statements are to be avoided, and even any "hint, or insinuation, direct or indirect, or design, or device that may tend to convey a misleading impression."

Another important principle is that a medicine is to be termed a remedy for a particular disease only if it is actually

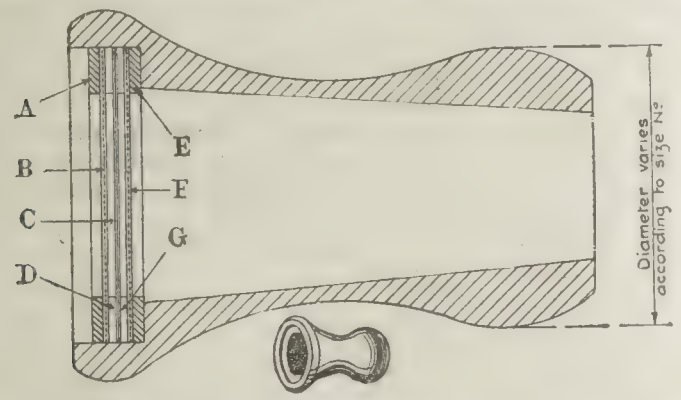
a remedy for the affections named under *all* conditions, irrespective of kind and cause. If this is strictly carried out in practice, it must have the result—very desirable in the interests of the truth—of preventing the advertising of practically any medicine as a *remedy* for a particular disease.

It is interesting to note that a number of names, like "kidney pills," "nerve tonic," "lung balm," etc., are specifically mentioned as objectionable, whereas some of these, such as "kidney pills," are by British law not merely permitted, but are actually held not to constitute the article liable to stamp duty. Satisfaction must also be felt at the ruling that statements in a testimonial are to be treated exactly as though they were statements made by the proprietor. The importance of the ruling in regard to a guarantee to refund money will also readily be appreciated as involving a matter of general interest and far-reaching effect.

It is to be hoped that when parliamentary business in this country resumes its normal course, the recommendations of the Select Committee will form the basis of early legislation; meanwhile the case for drastic curtailment of the freedom of quack medicine vendors will be strengthened by this evidence of what is being done by our cousins in America.

THE MALLOCK-ARMSTRONG EAR DEFENDER.

WE have received samples of the Mallock-Armstrong ear defender. These "ear defenders" are the invention of Mr. Arnulph Mallock, F.R.S. The group of parts forming the protective ear drum is fitted in a cylindrical ebonite holder and consists of seven components, the sensitive diaphragm enclosed between two wire gauzes being the most important of these. The diaphragm, as shown in the accompanying illustration, is held securely near its periphery, and isolates the inner from the outer portion of the "defender"; by reason of its lightness it transmits ordinary sounds freely and can move within the narrow limits permitted by the proximity of the wire gauzes. When a



A, Outer washer; B, outer protection gauze; C, vibrating diaphragm; D, outer spacing washer; E, inner washer; F, inner protection gauze, or "stop"; G, inner spacing washer.

great or rapid change of pressure occurs in the outer air, such as at the moment of the explosion of a shell, gun fire, or even rifle fire, the diaphragm is momentarily pressed against the inner gauze, and further vibration of the diaphragm is checked while the pressure lasts. No pneumatic pressure can at any time extend from the outer air to the air within the "defender," and consequently it is claimed that the ear is completely protected against the injury which may be occasioned by the rapid change of atmospheric pressure set up by the explosion of modern shells and by gun fire. The "defender" is made in four sizes, in order to meet the variation there is in the shape and size of the opening of the ear canal. The size is denoted by the number of rings outside the stem of the ebonite container.

The necessity for making the cylindrical container in different sizes at once suggests possible disadvantages the Mallock-Armstrong Ear Defender may have as compared with the ear plugs at present in use for the prevention of concussion and injuries to the ear through gun firing. The ear plugs commonly in use are made of a plastic material which can readily be kneaded and moulded between the fingers to meet the requirements of any shape or size of the opening of the ear canal, and thereby supply more efficient protection against concussion. For many years the material used for this purpose was "jeweller's wax." This was superseded by a mixture of clay and fibre, and more recently this has been still further improved upon by being impregnated with an antiseptic. The importance of keeping the ear canal as free from sepsis as possible, in view of the contingency of suppurative disease ensuing upon rupture of the drum, can hardly be over-estimated.

The plastic ear plugs have advantages over the hard circular ebonite plugs formerly in use, not only in being more adaptable to the elliptical opening of the ear canal but also in being less liable to cause irritation and injury to the lining of the canal.

Both the Mallock-Armstrong "Ear Defender" and the plastic ear plugs have this in common that they do not interfere with the hearing of ordinary conversation or the words of command; but so far as we have been able to test them—and the tests have been conducted not only upon civilians but also upon soldiers from the trenches—the plastic ear plugs afford more protection than the Mallock-Armstrong "Ear Defender" against very loud and sudden sounds. However, we are informed that since 1895 this principle of "defender" has been used by the inventor at Woolwich, Whale Island, and many other places where gun trials are frequently held. During all this time Mr. Mallock has felt no injury from wearing these "defenders" in his ears and it has enabled him to make a close study of the true dynamic conditions of gun fire.

The fact to be borne in mind is that to-day many hundreds or thousands of men are suffering acute injury, and perhaps increasing and lasting deafness, from repeated concussions of the ears from gun fire; this renders it necessary that all means of preventing these consequences should be considered. The price of the Mallock-Armstrong "ear defenders" is 3s. a pair, whereas the plastic ear plugs are 1s. a pair, the latter possessing the virtue of simplicity. In the box containing the "ear defenders" an ear scoop is supplied for the purpose of mopping out the ears. The scoop might be advantageously omitted as being, when roughly or unskilfully used, as much a possible source of injury to the ears as the gun firing itself.

THE DEPARTMENTAL COMMITTEE ON SICKNESS CLAIMS UNDER THE NATIONAL INSURANCE ACT.

(*Concluded from the* JOURNAL *of December 26th, 1914, p. 1108.*)

WOMEN'S INSURANCE.

DEALING next with women's insurance, it is stated that before the Act there were no adequate data on which to base any trustworthy estimate as to the premium necessary to cover the insurance of women, and the amount actually expended considerably exceeds the actuarial estimate. The causes for this excess are (1) the widespread ignorance among women of what is involved in insurance, leading them to feel that they are losing something if they do not get out more than they have paid in; (2) the large proportion of ill-paid and ill-fed women; (3) the fact that the sickness benefit is often equal to or more than the woman's earnings when working; (4) the great difficulty of supervising their behaviour during sickness, so that it is possible for them to do ordinary housework, or even extraordinary housework, while they are supposed to be incapable of work; (5) the loss of wages by women is generally less serious than in the case of men; and (6) illness accompanying pregnancy.

With regard to this last cause, it is noted that many societies in the past have excluded liability to pay benefit during pregnancy, and some of the approved societies have argued that as pregnancy is a natural process and not in itself a disease, it ought not to entitle to benefit. The Committee is very emphatic that this distinction cannot be maintained. The only test that can be applied is, Does pregnancy disable a particular insured woman from work? If so, she is entitled to sickness benefit, and the question whether the incapacity is, in popular language, due to pregnancy is irrelevant. The incapacity to work is the essential element, and pregnancy alone, without incapacity, confers no title to benefit.

Beyond these contributory causes for the excessive claims by women, the Committee is convinced that the main cause of the excess is that the incidence of sickness

among women employed in industrial occupations is much heavier than was anticipated, or than could have been calculated when the actuarial estimate was made. This opinion was expressed by most of the medical witnesses. In many cases the excessive predisposition to disease arose from conditions of past child-bearing, but the evidence fully substantiates the view that "experience exceeds the provision made under the Act."

Among the remedies for this state of affairs, the Committee suggests the more general employment of women in the active work of administering women's societies. It should also be made quite clear that pregnancy that disables from following usual employment ought to give a title to sickness benefit. The Committee goes even a step further, and recommends that an automatic payment should be made in every case when a medical certificate is given that a woman is in her last month of pregnancy, as it should be assumed that she is then incapable of following her usual employment. As this is, of course, a great extension of the benefit granted under the Act, the Committee suggests that it would be necessary for the National Exchequer to make a special grant which should be kept quite separate from the other society funds, and should be allocated as to cover only the actual cost to which each society is put in carrying out the recommendation. The suggestion that this payment should be made to pregnant women through the public health authorities is rejected, as it is held that so long as women are within the scope of the Insurance Act, such a proposal would lead to overlapping and involve fundamental alterations in the Act.

To meet the excessive claims due to the higher sickness incidence among women, the Committee does not recommend any further State grant, but rather that such portion of the sums which now go in redemption of reserve values as an actuarial investigation shows to be necessary, should be diverted to the funds of societies. This would postpone the period when additional benefits under the Act might be expected, but it is urged that in the interests of the women, and thus indirectly in the interests of the community, the whole insured population might justly be asked to submit to this postponement.

Capitation and Attendance Systems.

Among miscellaneous matters, many of the societies expressed a lack of confidence in the Medical Service Subcommittees, which prevented them making even justifiable complaints. The societies are reminded, however, that on the Insurance Committees they themselves have a majority of representatives, so that "it is idle for societies to represent either by their words or their actions that they cannot expect to receive sympathetic consideration from Insurance Committees."

The question of the scope of medical benefit received some attention, but as it was scarcely within the reference of the Committee, it simply recommended that a Special Departmental Committee should be appointed to consider the question. Many of the medical witnesses stated that they found no difficulty in obtaining for their insured patients specialist treatment at hospitals, but it was shown that in some parts of the country, where hospitals are few and far between, the delay in obtaining institutional treatment, and particularly the absence of provision for treatment of the eyes and teeth, may have led to a drain on the funds of societies.

On the relative advantages of the capitation system and payment on an attendance basis no definite opinion is expressed, as the system of payment by attendance is only in operation in Manchester and Salford, but the report adds that though it would be unfair to state a conclusion without a detailed inquiry, "it may, however, be observed that the general view of those who have given evidence on this question is that a system under which a doctor is financially interested in increasing the number of attendances given tends to produce longer claims for sickness benefit, and that this tendency, inherent in any system of remuneration by attendance, is intensified in the areas under consideration by the peculiar facilities offered for the transfer of an insured person from one practitioner to another."

Medical Referees.

The report finally deals at some length with the desirability of providing medical referees, first, because the doctors may be in a state of honest doubt and may desire a second opinion, and secondly, because there is evidence of hesitation on the part of practitioners to declare persons off the funds through fear that proper action may result in financial loss. The Committee is satisfied that immediate steps need to be taken to produce a firm attitude by the profession with regard to improper claims for sickness benefit. It is not held that approved societies any longer aim at getting the administration of medical benefit into their own hands, and Dr. Cox, on behalf of the British Medical Association, told the Committee very clearly that whatever else the profession may be divided on, they are absolutely united in refusing to go back to the old friendly society system under which the societies would control the doctors. The Committee does not conceal from itself the fact that the present conditions of certification are defective and looks for a remedy in the establishment of a system of medical referees. The three possible bodies named that could appoint such referees are the approved societies, the Insurance Committees, and the Commissioners. The arguments in favour of each of these are fully considered, and the Committee, backed up by the bulk of the witnesses, considers that the appointments should be vested in the Commissioners alone, and rejects the suggestion that Local Medical Committees should have a right even to nominate. To fulfil the conditions properly it is held that the referees should be whole-time officials, with districts large enough to keep them occupied. Some difficulty, however, is foreseen in appointing a sufficient number of whole-timers immediately from an administrative point of view, but it is held to be necessary that those appointed should have had experience of general practice and should be of high standing in the profession. It is urged that a system of part-time referees involves a danger that practice as a panel doctor or as a private practitioner might conflict with the duties as referee, and this would equally arise if consultants were appointed as part-time referees. In any case, in order to keep the referee in touch with the active work of the profession he should be expected not only to give an opinion as to the fitness for work of persons referred to him, but also, if required, to give an opinion as to the nature of the disease and the treatment likely to be beneficial, and as, in course of time, this last duty might become the chief part of his work, it should be kept in mind in making the appointments. The Committee is convinced that to secure efficient administration of sickness benefit, referees should be appointed as soon as feasible, but that the system should be as flexible as possible so as to obtain experience as to the relative advantages of whole-time and part-time appointments, and to admit of the adoption of any other well-considered system where local conditions or the desire of practitioners or societies render this possible.

As to the source of the funds for the payment of the referees, it is suggested that the societies might be charged a small sum, say 2s., for each case referred, but as the appointment is partly "to enable practitioners to discharge with an easier mind the duties which they have undertaken to perform, it appears to the Committee equitable that some portion of the expense should be borne by practitioners." . . . "We are, however, satisfied that it would not at present be practicable to defray any part of the cost of medical referees out of the medical benefit fund. In so far as the cost is not met by the contributions of those parties in whose interests the appointments are made, we recommend that the cost should be met out of moneys voted by Parliament."

The report concludes with a long summary of the Committee's findings and recommendations, the principal of which have been given above. Several memoranda by individual members of the Committee who desired to lay emphasis on particular points are appended.

Comments on the Report.

It is impossible to regard the report in any other light than as a most serious indictment of the profession, and though the Committee in several places admits that the faults of a small number of practitioners in an area may have raised a prejudice against the remainder, the fact still remains that the profession is blamed for a large proportion of the excess expenditure on sickness benefit. Without in the least excusing any neglect to do their best for the insured.

or for the system, by a small minority of practitioners, it is difficult to avoid feeling that the profession has been made the scapegoat for a system whose faults have been repeatedly pointed out. For example, something like the new system of certification ought to have been adopted long ago; the present chaotic system, or rather want of system, not only invites but actually compels irregularities. The failure even yet to provide medical referees, in spite of the urgent demand for them long before the Departmental Committee issued its recommendation, shows a failure by the authorities to realize one of the most obvious necessities of the system. But to recommend that the profession should in any case bear part of the cost of providing referees, is practically the same as saying that when a general practitioner suggests or agrees to calling in a consultant for a private patient, the practitioner should pay part of the consultant's fee out of his own pocket.

It is more than probable that a committee differently constituted, with a fuller and more intimate and personal knowledge of the peculiar difficulties experienced under a system whose imperfections must be experienced before they can be realized, would have taken a fairer and far less condemnatory attitude towards the profession. The profession as a whole has a right to protest strongly against the wholesale condemnation passed on it, which ought to a large extent to have been directed to imperfections of the system, which might have been corrected long ago.

Nova et Vetera.

ONE HUNDRED YEARS AGO.

A NAVAL SURGEON OF 1814–15.

THE autumn of 1814 was a lull between two storms; it was a short time of peace between two wars. There was peace, at any rate, in Europe; in America there was strife, if not exactly fratricidal, at least between kinsfolk, and it was not till December 24th that peace reigned both in east and west, for on that day at Ghent the British and American Commissioners concluded a peace which has remained since then unbroken as between their respective countries.

Although peace reigned in these autumn months in Europe, the echoes of the clash of arms were still to be heard in the medical literature of the time, and a glance through the professional journals of the day, not very numerous, serves to show that war had in a curious fashion brought together the doctors of different lands, and had in a sense internationalized the science of medicine by making the diseases of one country and the means taken to combat them known to the medical men of another. Britain had been at war all over the world, and her naval and army surgeons had brought back with them much information about maladies and a great experience in wounds. Experiences on the Continent, and even in more distant lands, had widened the outlook of the British surgeon and physician and made him aware of many things in the philosophy of his profession of which he had scarcely dreamed.

The July and October parts of the *Medical and Surgical Journal*[1] for 1814 yield several examples of articles which grew out of the wars which had been raging. There are three cases of gunshot wounds of the thorax, with annotations, by Joseph Arnold, M.D., surgeon, H.M.S. *Alcmene*. There is the fatal case of hydrothorax, with appearances on dissection, by Mr. Archibald Robertson, surgeon of H.M.S. *Cydnus*; there is the letter from Joseph D. A. Gilpin, M.D., inspector of army hospitals at Gibraltar, to Colin Chisholm, M.D., F.R.S., etc., on the fever which occurred at Gibraltar in 1813; and there are letters from Dr. Chisholm on yellow fever, and answers by Dr. Bancroft, written with some degree of heat; there is a report on the use of charcoal powder as a substitute for cinchona by R. Calvert, physician to the forces; there is a case of hemiplegia in a soldier in His Majesty's 1st West India Regiment, treated with tinctura lyttae (cantharides) and cold shower-bath, by Robert Hartte, surgeon to the forces; there are observations on pemphigus (in Russian sailors) by Dr. Dickson, physician and inspector of the fleet, etc., on the North American Station; and there are observations on the use of ipecacuanha and opium in dysentery, by Mr. William English, surgeon. In all these articles military matters are prominent; in fact, the atmosphere is that of war—war with its traumatisms and its subsequent plagues, pestilences, and famine diseases; war *matribus detestata*, but ameliorated, and with some of its worst sufferings mitigated by medical knowledge and surgical skill.

Of Dr. Arnold's cases the second[2] was interesting, both from its medical and its general aspects. The wounded man was Christofolo Rodomere, a Venetian, rich in goods, and the owner of a vessel bound in May, 1812, from Venice to Bocca di Cattaro, passing therefore from Napoleon's "Kingdom of Italy" to the Province of Illyria. Unfortunately for the vessel and for Rodomere, who was on board, one of His Britannic Majesty's frigates, cruising up and down in the Adriatic with her sailors on the look-out, sighted the Venetian. To be seen meant to be captured, "not before her crew," adds Dr. Arnold, with evident regret, "which consisted of about a dozen persons, had killed or wounded twenty-seven of the frigate's men." The frigate, one may judge, pretty nearly caught a Tartar on this occasion. Poor Rodomere, in a desperately wounded condition, was handed over to the surgeon, and he found that whilst his left thumb was badly shattered and his left side from hip to ribs was much bruised, a leaden ball had also entered near the tenth rib, three fingerbreadths from the spine, and had come out about an inch below the nipple of the left breast. When he received the wounds he fell and spat up blood by coughing, "but after this he became quiet, his pulse was moderate, his breathing free, and he did not complain of pain." This happened on the night of May 22nd. He took three laxative pills, had cataplasms applied to his thumb and to the wound in the side, and saturnine lotion to the anterior wound. For the next few days he went on nicely; but on May 30th the anterior wound began to be tender, and a full inspiration gave pain, and Dr. Arnold was led to take stronger measures. These, in the Latin tongue, into which the surgeon was wont to diverge on such occasions, were as follow: "Fluat ex templo sanguis ad ʒxx; capt. etiam pilulas laxantes tres; pergat in usu cataplasmatum et aliorum." On the next day he was worse, so Dr. Arnold again took steps: "Iterum fluat sanguis ad ʒxx; bibat ad voluntatem aquam succo limonum gratam redditam; sumat pilulas laxantes duas," and so on. The patient got no better; indeed, on June 1st, when the dressings were removed, nearly 2 lb. of watery lymph tinged with blood and slightly fetid were discharged from the wound in the vicinity of the heart. On June 2nd he was very low, and expressed a "desire of a visit from a priest for his spiritual concerns." Dr. Arnold takes this opportunity to make some remarks on the prognosis, which he regarded as uncommonly bad. "The patient was in years" (he was 50), "he was labouring under the misfortune of losing his all, had seen his brother and other relatives killed beside him"; and, worse still, he was a prisoner of war, in the hands of his enemies, "in whose charity alone he could hope for assistance." His thumb had to be amputated, his body was black with a contusion, a musket ball had passed through his chest, and Dr. Arnold could not suppose but that a great vessel, if not the heart itself, had been wounded. It does not seem to have come into his mind that the bullet may have been deflected and have passed round the chest under or alongside of a rib. And yet, comments the surgeon, for eight days there was not a single unfavourable symptom! He is at pains to explain that he did not bleed the patient more heroically because he was always afraid of internal haemorrhage, and also because he expected a large amount of discharge from the wound. The wounded man was at length put on shore among people speaking his own language; he had the services of a priest and of an Italian surgeon, and thereafter Arnold only saw him at intervals; but after July 22nd he began markedly to improve, and by the end of August he was so much better that he was able to start for his native place, helping to pull an oar in an open boat across the Adriatic.

An interesting part of Dr. Arnold's article is that in which he describes the Italian surgeon's method of treating

1. *Edinburgh Medical and Surgical Journal*, vol. x, pp. 265, 295, 311, 313, 325, 403, 419, 451, 458.

2. *Edinburgh Medical and Surgical Journal*, vol. x, p. 274, 1814.

the wound under the breast. He was evidently of the opinion that it opened into the pleural sac, for he stated that three times a day a strong decoction of the leaves and heads of the *Plantago lanceolata* (ribwort plantain) in wine were injected into the cavity of the thorax. Dr. Arnold thought that the *rationale* of the treatment depended upon the astringency of the liquor, which tended to contract the sides of the cavity and promote adhesions between the previously inflamed pleurae; "it might also tend to thicken the included fluid by the tannin of the liquor uniting with the gelatinous part of the effused matter, and thus act by an antiseptic principle." It is hardly necessary to remark in passing that the word "antiseptic" had not at all the same relation in Arnold's mind as in the modern surgeon's.

The other two cases reported in this article were that of an Albanian, Cameranovitch by name, wounded in the chest whilst serving in the boats of a Spanish corsair in the Gulf of Venice, and that of a British sailor who was shot in two places in the thorax during the taking of the Venetian vessel belonging to Rodomere. In each of them Arnold found the symptoms difficult to reconcile with preconceived notions; in the second case in particular it seemed to him inconceivable that a musket ball and two considerable pieces of cloth could be carried through the lungs without haemoptysis following. He does not, however, seem to have entertained the idea of the missiles being deflected from their course by the ribs. He takes occasion to animadvert in strong terms regarding the errors contained in a certain anonymous Surgeon's Vade Mecum, "cheap and portable" indeed but most inaccurate, which he had found sadly wanting in the matter of wounds of the lungs. "Such a book," he adds, "on its first appearance ought to be so severely handled as to render its noxious import of no avail, which is a duty that belongs to the reviewers." His annoyance helps him to a very good definition of what such a book ought to be: "A book which pretends to be a Vade Mecum, a compendium of a compendium, ought to be a collection of sentences so accurately considered, so true in their import and uniform in their veracity, that no one should be capable of controversy unless of itself a doubtful matter." So it should.

It is time now to ask who was this Joseph Arnold, surgeon on H.M.S. *Alcmene*, cruising about in the Adriatic between Venice and Cattaro, treating gunshot wounds of the chest, and putting his experiences and reflections into print in the short term of peace between the campaigns of the spring of 1814 and the summer of 1815. He was a comparatively young man, having been born at Beccles in 1782, a naturalist by inclination, although he had graduated M.D. at Edinburgh in 1807;[8] doubtless, hearing his country calling for his aid, he had entered the British navy in 1808. Even on active service Arnold's instincts as a naturalist peeped out, as has been seen, in the interest he took in *Plantago lanceolata* in the treatment of hydrothorax; and, after the war was over and the navy reduced, he gratified his love of research, and at the same time occupied his professional talents by taking medical charge of the *Northampton*, bound to Botany Bay with convicts. During his travels he made a collection of insects from South America, New Holland, and the Straits of Sunda, and also wrote several journals of notes on zoological matters; but unfortunately all these were lost in the burning of the ship (the *Indefatigable*) by which he was proceeding to Batavia. Not daunted he made several excursions with Sir Stamford Raffles in Sumatra. He returned home in 1816, but only that he might the better prepare for further travels and zoological research in the East. Sir Stamford Raffles was by this time (1818) governor of Sumatra, and Arnold obtained employment as naturalist under him. During his second visit to this island he discovered the strange parasitic plant which grows on the wild vine, has neither stem nor leaves, but possesses a flower of great weight measuring 3 ft. in diameter. Sir Stamford and Arnold are to this day associated together in the name which this plant bears, the *Rafflesia arnoldi*. Arnold also made a fine collection of fossils and shells, which he bequeathed to the Linnean Society, of which he had been made a Fellow in 1815. He fell a victim to fever, however, at Padang, in Sumatra, in July, 1818; and so, "devoted to science and the acquisition of knowledge, and aiming only at usefulness," to quote the words of Sir Stamford Raffles's encomium, Arnold passed, at the early age of 36, "to where beyond these voices there is peace."

[8] *Dict. Nat. Biogr.*, ii, p. 110, 1885.

Our naval surgeons now have a better status than those of Arnold's day, and they have, let it be hoped, more reliable Vade Mecums than he was equipped with; they have also the inestimable boons of anaesthesia and aseptic surgery to offer to the wounded they may be called upon to succour. Like him, however, they have still "the wide world as a parish," they have opportunities and experiences outside the range of the civil surgeon; and if they have real scientific enthusiasm they have the chance of enriching not only the subject of medicine proper, but also the allied subjects of botany and zoology with their researches and observations. They have indeed already, along with their companions of the army, stepped into a high place in the honour and respect of their professional brethren by their work, fruitful and beneficent, in the discovery of the cause and in the successful prevention of such scourges as Malta fever and sleeping sickness. In every department of life in these past years the medical man has become increasingly prominent, and his influence has ever pointed in the direction of progress achieved through sane measures of sanitation and wise means of prevention. It may well be believed that in the day of battle likewise his presence on the field and at the base hospital will not only bring immediate comfort and healing to the wounded, but will also provide stores of experience which shall add materially to the knowledge and skill of the surgeon and enlarge the scope and effectiveness of the surgery of the future.

ROYAL MEDICAL BENEVOLENT FUND.

At the last meeting of the Committee twenty-nine cases were considered and grants amounting to £237 voted to twenty-five of the applicants. The following is a summary of the cases relieved:

Widow, aged 74, of M.R.C.S.Eng. who practised at Braintree. Husband died twenty-three years ago and left her without means. She has managed to support herself until incapacitated by old age. Lives with married son who has three children and only a small salary. Voted £2 and referred to the Guild.

M.R.C.S.Eng. and L.R.C.P.Lond., aged 48, who practised in Lancashire. Has become blind. Married. Two children. Wife and children live with relatives. Wants a little help to obtain some training in massage. Voted £10 and referred to the Guild.

Widow, aged 56, of L.S.A.Lond. who practised at Bournemouth. At her husband's death in 1913 was left without any income and unable to obtain suitable employment. Only income 10s. per week from the Society of Apothecaries. Voted £12 in six instalments and referred to the Guild.

Daughter, aged 45, of M.D.Edin. who practised at Southampton. Trained as a midwife, but recently had to undergo a serious operation and has been ten weeks in bed. Voted £10 in two instalments and referred to the Guild.

Daughter, aged 40, of M.D.St.Andrew's who practised at Swinton, Lancs. Was a teacher but underwent a severe operation in September, 1913, and has not been able to work since. Mother has only a small annuity and has to keep an invalid son. Voted £18 in twelve instalments.

Daughter, aged 68, of M.R.C.S.Eng. who practised in London. Has been a teacher for forty years in England, Russia, and Germany. On account of the war had to return from Moscow four months ago, where she had been in one post for seven years. All her savings were in the Deutsche Bank, Berlin, and she could not obtain any. Voted £12 in twelve instalments and referred to Guild.

Widow, aged 66, of M.R.C.S.Eng. who practised at Heywood, Lancs. Has endeavoured to earn a living by acting as housekeeper and cook, but owing to age and the war finds it impossible at present to obtain a suitable post. Voted £2 and referred to the Guild.

Daughter, aged 74, of M.R.C.S.Eng. who practised in London. Up to quite recently has acted as a Church visitor at £35 per annum, but owing to age has had to give it up. Has a small pension from the Mercers' Company. Voted £12 in twelve instalments.

Daughter, aged 47, of M.D.St.And. who is too old to practise and too poor to help. Earned her living as teacher until three months ago, when, owing to internal trouble, had to enter a nursing home, and now all her savings are gone. Voted £5, and arrangements to be made to have the applicant operated upon.

(To be continued.)

Contributions may be sent to the Honorary Treasurer, Dr. S. West, 11, Chandos Street, Cavendish Square, London, W.

British Medical Journal.

SATURDAY, JANUARY 2ND, 1915.

CIVIL PRACTITIONERS AND WAR NEEDS.

THE publication of the report of the meeting in Glasgow to consider the effect of the war on civil medical practice affords an occasion for recurring to a topic which we have already discussed several times of late—the position in which the medical profession at home is being placed by the war. All callings have been affected, but none quite so immediately and acutely as the medical profession. Foreseeing the difficulties that would arise, Dr. Hamilton, the Chairman of the Scottish Committee of the British Medical Association, with commendable promptitude summoned early in August a meeting at which it was arranged to invite the presidents of the medical corporations and the deans of the university faculties of medicine in Scotland, the Scottish members of the General Medical Council, and the members of the Scottish Committee of the British Medical Association, to consider what action should be taken. At the meeting held in accordance with this arrangement, a committee was appointed, with Dr. Norman Walker, the direct representative of the profession in Scotland on the General Medical Council, as convener. This committee drew up a memorandum, and Dr. Norman Walker's address at Glasgow, which is reproduced in full elsewhere, was mainly directed to a review of the results of the suggestions then made.

The mobilization of the Territorial Force immediately affected a large number of medical men who had accepted commissions, and the effect of their withdrawal from civilian practice was at once perceptible. It was felt, for instance, in the increased demand for locumtenents, and the Scottish Committee has used its influence successfully in inducing medical men willing to accept such engagements to agree to a maximum fee, having regard to the fact that they were taking the place of men who were discharging a national obligation by undertaking military medical duty. In the towns—as for instance, in Dundee, where the system has been extremely well organized—civilian practitioners who remained were able by combination to undertake the work of their absent colleagues, and the Committee was of great use in adjusting the arrangements throughout Scotland and arranging equitable financial terms.

It has happened in Scotland as in England that Territorial medical officers mobilized with battalions or divisions have been taken away from the towns in which they practised, while others from other districts have been brought into the same towns, and that an amount of dislocation of medical practice was thus produced which was in excess of the actual needs of the situation. In consequence of representations made by the General Medical Council to the Director-General a circular was issued by the War Office on December 10th to general officers of commands at home, pointing out this difficulty and indicating that it might be met by permitting exchanges, direct or indirect, between Territorial medical officers, the object in view being that these officers might be able, as many medical officers attached to Territorial general hospitals are at present, to give part of their time to civil practice in their own districts. We believe that this reasonable rule with regard to the medical officers attached to Territorial general hospitals is usually observed, but we have reason to know that there are exceptions, and that in some instances such medical officers are kept to a rigid time-table, whether work is heavy or light, to the serious disadvantage not only of themselves but of the public. In this matter much must depend upon the character of the administrator and the manner in which he interprets his regulations and instructions. As a rule, however, we believe that the interpretation has been reasonable, and the work of the Territorial hospitals which has always been well done, has in all such cases been done without friction or irritation.

The profession must be prepared for further military calls upon it, not only to replace the wastage of war, but also to furnish a medical staff for the new armies now in course of formation. As we ventured to point out some six weeks ago, we believe that there is an obligation upon younger medical men who have no urgent domestic duties and are not yet established in practice to put their names on the waiting list kept by the Director-General, Army Medical Services, at the War Office, and to make up their minds to bide their time until the War Office requires their services, filling in the interval, if possible, by holding resident medical appointments, or, failing that, acting as locumtenents or assistants in civil practice.

But it is necessary to look further ahead and to take note of the results of the statistical inquiry reported by the President of the General Medical Council in our columns last week, and briefly summarized by him in his speech in the discussion on Dr. Norman Walker's paper. Upon the basis of the information received from schools of medicine, he calculates that, unless the present tendency to leave medical study be checked, the number of young qualified medical practitioners added yearly to the ranks of the profession will, during the next few years, be from 200 to 300 less than before; this is equivalent to a diminution of about 25 per cent. of the average number annually added to the *Medical Register* on qualification. It is necessary to take steps to prevent the continuance of a tendency which, if not arrested, must have a detrimental effect not only on the medical profession, but on the nation and its armed forces. This is a subject on which Sir William Turner touched in his address, as Vice-Chancellor of the University of Edinburgh, at the graduation ceremony, a report of which was published last week. At the beginning of the war a number of medical students joined medical or other units of the Territorial Force, and others became dressers under the British Red Cross Society. The letter from the War Office, which is reproduced in full on page 24, shows that the importance of allowing medical students to return to their schools in order to become qualified is understood. We believe that these young men will generally recognize that it is a patriotic duty to accept the advice offered to them, and we hope that the authorities will not only invite them to give up their present active service, but will make their position as easy as possible. The public should have means of knowing that they are not shirkers, but have already given service, and are

only at home because they are anxious that the services they intend to give in the future as fully qualified medical men shall be of the greater value to the country. The grant of commissions, which would entitle them to wear uniform, would, we believe, go a long way to meet their wishes and at the same time be an earnest of their intention to enlist as medical officers as soon as they are fully qualified for such appointments.

Public opinion in all ranks has been stirred by the call of this war as it has not been stirred for many generations, and it is not easy to foretell how it will work when it comes to the readjustments that will have to be made when peace is won again. The public often sees and understands much better than some short-sighted persons suppose, and has its own way, with which no man may quarrel, of expressing its judgement. It may be that public trust will go out to the men who are making sacrifices now, to an extent which will surprise them as much as those small souls who yield to the temptation to snatch an advantage to-day. We believe that this is what will happen, but there are more ways than one in which a medical man may just now make sacrifices. His duty may take him to military service, or it may hold him to do his own and his colleagues' work at home in some of the ways indicated by Dr. Norman Walker. Both are serving the country and deserve, and we believe will have, honour from the people of all ranks.

THE MISSION OF GERMANY.

The scientific temper in its highest form, as seen in Darwin and Pasteur, is marked by modesty, tolerance, and balance of judgement. In its lower forms, as displayed particularly in Germany, where science is imitative rather than inventive, it is arrogant, boastful, and too often seeks other ends than what John Goodsir called "God's own truth." This is the character of the people, but it might have been expected that its natural deficiencies would have been remedied, or at least mitigated, by education. Instead of this, they seem to have been increased to the highest expression by the intensive culture of scientific training. We are not surprised to see Major-General von Disfurth glorying in the fact that he and his fellow-countrymen are barbarians, but it is another matter when men of science agree in justifying the ways of Germany to her enemies and denying facts in the face of the most positive and palpable evidence. This seems to confirm the opinion expressed by Houston Stewart Chamberlain in his *Foundations of the Nineteenth Century*, that "nothing probably is more dangerous for the human race than science without poetry, civilization without culture." This opinion is all the more remarkable as coming from one who has devoted himself to the glorification of Germany and in whose writings the Kaiser himself is said to find inspiration. Written before the war, its truth has been manifested in a way that may have surprised its author.

A striking illustration is found in some recent utterances of Professor Ostwald, formerly of the University of Leipzig, to whom the Nobel Prize for Chemistry was awarded in 1909. He was sent to Sweden to enlighten the minds of Scandinavian neutrals as to the mission of Germany in an uncultured world. This "intellectual"—in whose laboratory, by the way, inflammable pastilles for the burning of houses are said to have been made—said that the militarism which was made a reproach to Germany was one of the most powerful expressions of that country's organizing power. France and England had reached the stage of cultural development from which Germany had emerged half a century ago. That, he explained, was the stage of individualism. Beyond that was the stage of organization, to which Germany had attained. "If you ask me," he went on to say, "what Germany wants, I reply that she wishes to organize Europe, which has not yet been organized." How is this to be done in the west? Nothing more simple. Germany is to have the same rights of acquiring property in France as Frenchmen; similar rights are to be graciously conceded to Frenchmen in Germany, but the professor naïvely adds that Germany will, owing to her organization, profit so much by the arrangement that "war will in future become impossible." This, we take it, means that Germany will absorb France. We note that nothing is here said of England, but doubtless German organization will have the same result here. Possibly Professor Ostwald thought it unnecessary to say anything about this country because in an industrial sense it is already—or was till lately—largely overrun by German invaders. In the east, Germany proposes to create a Baltic confederation which is to include the Scandinavian States, Finland and the Baltic provinces, and Poland is to be made a new independent State. In short, the German race had discovered the "factor of organization" which was to make them masters of the world.

Verily the learned professor must think the Scandinavians a simple folk. He added that the "intellectuals" who signed the notorious manifesto are organizing a propaganda for the defence of German culture against its enemies. We gather that these enemies are the perverse people who regard the destruction of ancient monuments, the burning of dwellings with incendiary pastilles and bombs, the shooting of harmless and helpless citizens, and the violation of women as acts of vandalism which place their perpetrators outside the pale of civilization. Much learning has surely made the great chemist mad. Ferdinand Brunetière spoke of the "bankruptcy of science" because, he held, it did nothing for the development of the moral sense. But even he did not go so far as to say that science actually engendered savagery. The saddest part about the manifesto and about Professor Ostwald's deliverance in explanation of that amazing document is that it gives some colour of truth to such a charge as far as German men of science are concerned.

Professor Ostwald's exposition of the mission of Germany as the propagator of the "factor of organization" recalls Artemus Ward's attempt to reorganize his wife Betsy Jane after he had been to a public dinner: "I hed somehow gut perseschun of a hosswhip on my way hum, and rememberin some kranky observashuns of Mrs. Ward's in the mornin, I snapt the whip putty lively, and in a very loud voyce I said, 'Betsy, you need re-Orgunizin! I have cum, Betsy,' I continnered, crackin the whip over the bed—'I have cum to re-Orgunize *yer!* Ha-ave you per-ayed to-night?' I dreamed that nite that sumbody had layd a hosswhip over me sevril conseckootive times, and when I woke up I found *she* had."

The application is so obvious that no explanation is required even for the benefit of a mind clouded by *Kultur*. It may not be out of place, however, to recall the warning of Mommsen to his fellow-countrymen: "Have a care lest in this state, which has been a power of arms and a power in intelligence, the intelligence should vanish and nothing but the

pure military state should remain." There are signs that some at least of the German people are awakening to the fact that the "intelligence" has vanished already. The *Berliner Tageblatt* referred only the other day to the "intellectual neurasthenia," which it describes as a nervous disorder to which professors are especially liable. It says unkind things about their want of tact and ignorance of practical things. It tells them to take lessons from the youngest attachés. But has German diplomacy anything to teach the men of science? It has failed so conspicuously that we should have thought it politic not to remind the world of its talent for blundering.

UNIFORMS AND OUTFITS.

WHEN the British troops had been a few months in the field in the South African war, wide departures from the regulations in the matter of uniform gradually began to be seen, and a like statement would apply equally well to the present operations. The foundation is in all cases a costume of one of the many shades of khaki, but in the matter of detail and addenda the variations are numerous. At home and in peace time the authorities are esteemed worshippers of red tape, but in the field they are above all things practical, and the tendency is for both officers and men to fit themselves up in the way that seems to them best suited to the needs of their individual occupation, and most likely to ensure them protection from wind, rain, and cold. If this were not the case, every medical man accepted for service in France would perforce have to provide himself with the whole of the officially prescribed impedimenta.* As things are he can, within limits, decide for himself what sort of outfit he will take abroad. If he is a wise man he will decide to bring out as little as possible, and certainly to regard as superfluous many of the things likely to be pressed upon his notice by outfitters at home. Among positive superfluities may be written down revolvers, swords, and whistles, and many changes of garment. The purchase of anything in the way of camp equipment, or elaborate provisions against cold, can as a rule be deferred, sometimes with a practical certainty that they will never be required. Occasionally however, the want of them may be the cause of a certain amount of discomfort in an emergency, as there may be a little delay in obtaining them locally. Under the terms of the usual agreement with both the War Office and the British Red Cross Society, a medical man accepted for service in France may be called upon to serve in any part of the field of operations. In other words, he is liable to be posted for duty either at a base hospital or on a hospital ship, at a convalescent dépôt or other stationary camps, on an ambulance train or at a clearing hospital, as medical officer of a regiment, or with a field ambulance. These are the main initial possibilities, but at the present stage of the war a man can generally learn in advance where he is to be sent; if to a base hospital or its equivalent, it is only as a result of repeated endeavours on his part that he is likely to find himself elsewhere. The authorities receive so many applications for work in other parts of the field, that as a rule they have no occasion to employ away from a base a man who has not asked that his services should be utilized elsewhere. A man attached to a base hospital usually lives in lodgings or at a small hotel, though it is possible that he may be called upon to take up his quarters—or find it suit his purse to do so—in some part of the hospital itself. In the latter case he may find the possession of a sleeping bag and a canvas bath a convenience, but commonly everything he absolutely needs in the way of bedroom furniture will be provided for him. He will also find it useful to possess a couple of linen overalls of his own, in which to do his ward work, and perhaps a small surgical dressing case containing scissors, dressing forceps, and the like. Otherwise his requirements, so long as he is employed at a base hospital, will be limited to an adequate supply of suitable clothing, a small writing case, a good stylograph or fountain pen, and an ordinary supply of toilet articles. His wardrobe will be best made up as follows: Two suits of pyjamas, and some bedroom slippers, two or three vests and drawers such as he usually wears in winter, half a dozen pairs of merino socks, a couple of khaki flannel shirts, four turn-down khaki flannel collars, two khaki-coloured silk ties, a gilt safety-pin, two or three tie-clips, a neutral coloured cardigan waistcoat, a lined khaki tunic, a Brodrick cap, a Sam Browne belt, without either sword or revolver attachments, a plain walking-stick with crook handle, a pair of dogskin gloves, two pairs of brown boots, an overcoat, and leg gear. As the boots will have to be worn in the wards, they should not be too heavy nor be studded with nails. The question of the choice of an overcoat and of leg gear is largely a matter of personal taste. A long overcoat, reaching well below the knees, is the most common and affords the most protection from rain, but those who like quick walking prefer a "British short warm." Even men who do not wear overcoats at home require them when on duty abroad, because it is a common practice to stand about in the open air, even in wet and windy weather, and a man in a wet coat adds nothing to the amenities of ward life. Indeed, it often rains sufficiently heavily thoroughly to soak an ordinary cloth overcoat in the course of a half-mile walk, and an overcoat of some rainproof kind may therefore well be added to the list of necessaries. As for leg gear, trousers are really the best suited for hospital work, but they show wear very quickly; it is probably best to take one pair for use in the evening and breeches and gaiters or breeches and putties to be worn in the daytime. Gaiters are the commoner, perhaps, but many men find them uncomfortable and prefer putties. These are much warmer than gaiters, and, provided that they are well put on, and that a man's leg is not too muscular, they look neat. A man appointed to a hospital ship requires much the same outfit as one on duty at a base hospital, though he may well add to his list a muffler and a cheap set of oilskins. Those told off for other posts in the field, or who wish to prepare themselves in advance for such an eventuality, had better provide themselves with a somewhat larger outfit. To the list of articles already given had better be added a pair of india-rubber leg boots large enough to wear over ordinary boots, a knitted body-belt, a stocking cap which can be pulled down over the ears, or a fisherman's helmet, a pair of woollen gauntlets or fur-lined gloves, large enough to wear over ordinary gloves, a plain or fur-lined leather waistcoat, a coat made of real mackintosh, reaching nearly to the heels, and large enough to wear over an ordinary overcoat, and a waterproof cap-cover with a flap at the back to prevent rain streaming down between neck and coat collar. A sleeping outfit is also very desirable; it is not, perhaps, absolutely essential, because at present billets in villages or elsewhere can usually be found for the staffs even of field ambulances. The billets, however, are often in very small and poorly equipped dwellings of dubious cleanliness, and a man may well feel more comfortable if he is independent of the bedding provided. This will be the case if he secures an air pillow, a waterproof ground sheet, a sleeping-bag, or, better still, a Wolseley valise and cork mattress, and a couple of blankets. If he rounds this equipment off with a collapsible drinking cup and a jack-knife, furnished with

* Field Kits, issued with Army Orders dated October 1st, 1913. To be purchased through any bookseller or from Wyman and Sons, Fetter Lane, E.C.; His Majesty's Stationery Office, 23, Forth Street, Edinburgh; or E. Ponsonby, Limited, 116, Grafton Street, Dublin. Price 1d.

a tin-opener and a corkscrew, he can consider himself reasonably well armed against all present possibilities. He must, of course, provide some means of carrying his things about; it should include a haversack to carry odds and ends which may be required at a moment's notice when travelling, and a light kit-bag legibly inscribed with the owner's name, and furnished with a good lock, so that if need be it can safely be left for a long time at a station or elsewhere.

GERMANY AND THE GENEVA CONVENTION.

IN the Paris *Journal* of December 5th, 1914, there is an article on the clauses of the Geneva Convention relative to army medical officers and the other personnel whose work it is to minister to the sick and wounded. It is there stated that whilst from the outbreak of war France has scrupulously observed these rules, Germany has deliberately violated them. The members of the medical service who have fallen into the hands of the enemy have, in the vast majority of cases, been stripped of their private property, then sent into the interior. Some of them, after a longer or shorter stay in a hospital—apparently chosen with care, in order to give them a good idea of the sanitary organization of the German army—were sent back to France, but most have been kept interned in a fortress or in a camp with other prisoners of war, and treated on the same footing. Many of them figured on the official list of prisoners communicated by the German Government. The French Government therefore asked the Spanish Ambassador at Berlin to present a formal protest. This protest was also communicated to the United States Ambassador, who was looking after German interests in France. The Ambassador was at the same time informed that by way of security all the sanitary material captured from the Germans by the French troops would be retained until a satisfactory answer had been received. The International Committee of the Red Cross also intervened with a demand that the Geneva Convention should be respected. This action has already had some effect. On November 17th seventeen surgeons and some forty orderlies were sent back to France; on November 19th two other surgeons were returned; then two further convoys were announced on November 24th and 27th. In these circumstances, and, although it has not yet received an answer to its protest, the French Government has decided to take into account the measure of satisfaction in point of fact received so as to show that it depends on Germany alone whether France shall once more observe the rules of the Geneva Convention which for the time had been suspended. Orders have accordingly been given that some of the German medical staff retained in France shall be sent back to the Swiss frontier. It is added that as soon as the German Government shall have furnished assurances of complete reciprocity for the future all the personnel and material retained in France will be given up. The Amsterdam *Handelsblad* of December 6th states that thirty-five Belgian doctors and pharmacists had been arrested, notwithstanding the promise of a safe conduct by the German authorities. They were taken to Heidelberg, where they were informed that they would not be allowed to leave Germany. The Germans state, in explanation of this action, that many cases of ill-treatment of German doctors made prisoners by the French authorities have been notified to them. The remarkable logic, by which Belgian doctors are punished for the alleged wrongdoing of the French Government, is another example of the intellectual fruits of German *Kultur*.

THE ABOR AND MISHMI ARROW POISON.

AT the meeting of the Edinburgh Royal Society on December 21st, the chairman, Sir Thomas R. Fraser, read a communication on the poisoned arrows of the Abors and Mishmis of North-East India, and discussed the composition and action of their poisons. After touching upon the restless and warlike characteristics of these tribes, which had resulted in at least six punitive expeditions, Sir Thomas stated that poisoned arrows had been the chief weapons with which these expeditions had had to contend. From various officers in India he had received quivers, bows, arrows, arrow-heads, and some of the substances said to be used in preparing the poisons. These had all been carefully examined. The first fact which emerged was that the same poison was not present in all the arrows; in those chiefly used by the Mishmis it was found to be aconite, from an unknown species resembling in pharmacological action *A. ferox* or *A. heterophylloidis*; whilst in those employed principally by the Abors it was an oil resembling that got from the *Croton tiglium*. With regard to the former, their death-dealing power varied considerably; a single arrow in a few cases carried enough aconite to kill three men (if it were all absorbed), whilst in some other instances there was only enough poison on an arrow-head to kill the fifth (so to say) of a man. In respect of the Abor arrows, Sir Thomas Fraser pointed out that the oil upon them had been found to be incapable of killing warm-blooded animals when injected subcutaneously, but was highly lethal to frogs; wounds from these arrows, therefore, were not fatal on account of the poison, but might cause death from the inflammation set up in the tissues traversed by them, unless, of course, ordinary surgical precautions were adopted.

THE ETIOLOGY OF A COMMON COLD.

ALTHOUGH in certain cases, and possibly also in certain small epidemics, acute colds and coughs may be traced to visible micro-organisms, the cause of very many cases of coryza, perhaps the majority, has not hitherto been elucidated. Professor W. Kruse of Leipzig was therefore induced to institute a series[1] of experiments based on the supposition that in many cases, at any rate, infection is due to an ultramicroscopic virus which passes through filters. His assistant, Dr. Hilgers, having caught a cold in the head, the nasal discharge from this source was diluted fifteen times with physiological saline solution, and then placed in a small Berkefeld filter. Twelve members of the Hygienic Institute of the University of Leipzig were each inoculated with a few drops of the filtrate dropped into the nostrils. The efficiency of the filtration was proved by culture experiments. Four of the persons thus inoculated developed colds in the head after an incubation period, varying from one to three days. Somewhat later the experiment was repeated on a larger scale, the nasal discharge following an acute cold in the head, again developed by Dr. Hilgers, being diluted twenty times and then filtered. Thirty-six members of the author's bacteriological class were inoculated with the filtrate, and fifteen, or 42 per cent., developed typical colds in the head, which in some cases were accompanied by coughs. The incubation period varied from one to four days, the usual period being two to three days. It is a striking fact that twenty-nine other members of the class, and seven members of the staff, who were not inoculated, showed no signs of colds in the head, with one exception, the incubation period in this case being one day. In this experiment, also, a bacteriological examination of the filtrate was negative. The author suggests that an ultra-microscopic virus is possibly responsible for the most common forms of coryza, and that other diseases of the mucous membranes, including sore throats and influenza, will ultimately be traced to this source of infection. He does not, however, insist that the pneumococcus, the *Micrococcus catarrhalis*, and the influenza bacillus can be excluded as causes of acute colds and coughs. Indeed, investigations in Leipzig have shown that pneumococci may play an important part in this respect.

[1] *Muench. med. Woch.*, July 14th, 1914.

THE ENUMERATION OF MENTAL DEFICIENTS.

A PRELIMINARY report by Dr. Meredith Young, M.O.H. to the Cheshire County Council, on the Mental Deficiency Act states that as the result of inquiries 583 cases of persons alleged to be defective (not on medical or expert opinion) were reported in the county, of whom about three-quarters were between 7 and 16 years old. Of these cases, 112 were reported by the local education authority, and 90 were in prisons, reformatories, industrial schools, lunatic asylums, etc., making, with other cases, 254 subject to be dealt with under the Act. This number will probably be increased when the guardians' returns are received. The Act does not authorize the medical examination of defectives so reported except under certain specified circumstances. Dr. Young suggests the appointment of an inquiry officer to deal with the large amount of clerical work required. He points out that the fee of one guinea for a medical report covering the mental condition and a complete medical examination of practically every system in the body, with an examination of the urine for albumin and sugar, will at least be well earned, in which opinion we may concur. He states that the institutional accommodation in the county will be seriously strained and urges the county to secure beds without delay; the maintenance rate suggested as reasonable by the Board of Control is £35 per annum.

MUTILATION MYTHS.

AT a time like the present, when national feeling is inflamed to the pitch of frenzy and we not only sup, but breakfast and lunch, full of horrors, the scientific training of the medical profession should enable it to keep its judgement steady. The air is full of exaggerations, hysterical inventions, and deliberate lies. Charges of the most abominable kind are flung about, and it is curious to note how strong the family likeness is between them. One side replies to the other like the men firing in the trenches. One of the many tales current in the early days of the war was that the Germans mutilated the wounded, especially by gouging out their eyes. The atrocities which carefully conducted inquiries have already brought home to them might be thought to make such a charge not incredible in itself, but we know of no case in which the fact has been proved. Exactly similar charges are brought by the Germans against the Allies. It is therefore highly satisfactory that some of these have been investigated by persons whose testimony cannot be dismissed as biassed and have been shown to have no foundation. As an example we quote a statement made by Dr. Fr. Kaufmann, archpriest of Aix-la-Chapelle, under date November 26th. It had been stated in the *Cologne Gazette* that a medical man, Dr. Saethre, had alleged that there could be no doubt about the cruelties committed by the francs-tireurs, and that he had himself seen at Aix-la-Chapelle, a Red Cross sister one of whose breasts had been cut away by them, and an officer whose eyes had been put out while he lay on the battlefield. The archpriest said he had made inquires in the thirty-five hospitals of the town and had found that nothing was known of these cases or of any others of the kind. Nevertheless, the statement was repeated. Dr. Kaufmann then made further investigations; the reply received by him from the hospital directors was that they knew nothing of the atrocities mentioned. Neither the Red Cross sister nor the officer said to have been mutilated had been seen in any hospital at Aix-la-Chapelle. Dr. Kaufmann concluded by repeating in the most positive manner his statement that there is not in the hospitals of Aix-la-Chapelle any wounded man whose eyes have been put out nor any Red Cross sister who has suffered the mutilation mentioned. Further evidence is supplied by the *Vorwaerts* of December 6th, which publishes the results of an inquiry made in the hospitals of Hanover and the Charité Hospital of Berlin. The managers of the Hanover hospitals replied: "After making inquiry of the medical staff of the different sections of hospital No. 3, we are in a position to inform you that we have not at present in the hospital any wounded man whose eyes have been put out. Nor have we ever had any." The directors of the Charité replied to the same effect. The result in the case of the girl recently found guilty in the High Court, Edinburgh, of forging and publishing letters purporting to show that her sister, a nurse, had been mutilated by the Germans, is an equally satisfactory explosion of a myth manufactured on our side. In summing up, the judge, Lord Strathclyde, said there could only have been one motive for the writing of the letters—"to create sensation and alarm and to horrify people by allegations of atrocities of an unspeakable and savage character." That is a motive which, we fear, is inspiring not a few people at the present moment. Much that is allowed to appear in the press in default of authentic news is simply the invention of morbid fancy or a wish to cause sensation. Charges of atrocities made by either side should be received with the critical scepticism we have learned to apply to claims of great victories and statements as to the fighting qualities of our enemies.

MILK AND DAIRIES ACT, 1914.

UNDER the Milk and Dairies Act it is enacted that the Act shall come into operation on January 1st, 1915, or at such later date, not being later than October 1st, 1915, as the Local Government Board may by order appoint. In this connexion an order has been issued by the Local Government Board, dated December 17th, 1914, directing that the Act shall come into operation on the last available day, namely, October 1st. This is no doubt due to the fact that municipal authorities have found their work so much disorganized in connexion with the war that the Local Government Board is giving them as long a time as possible to make the necessary preliminary arrangements.

WORK FOR EDUCATED WOMEN.

A PROBLEM of the near future is the employment of educated women. It has indeed been familiar for some time, but one immediate effect of the war will inevitably be to increase its acuteness. Many senior officers who are killed leave daughters almost, if not completely, unprovided for, while the mortality in the junior ranks must obviously decrease the number of prospective marriages. It is therefore more than ever the duty of parents to give their daughters some training which will enable them to lead useful and independent lives. A career which promises well for women is that of sanitary inspector, health visitor, or some similar appointment in public health work. It is one in which we believe there is ample scope. We are informed that there is in fact an absolute shortage of suitably trained candidates. The career offers a fair competence at the commencement with opportunities for advancement, and congenial work, giving power to alleviate and prevent suffering, and of doing valuable and patriotic service, which must appeal to many women. A proper training is necessary. This can be obtained in the course arranged to meet the requirements of the Sanitary Inspectors' Examination Board by the National Health Society. The fees for the course are moderate, and those who obtain the certificate are recognized as eligible for appointments under the Local Government Board, to act as teachers and lecturers on the laws of health and sanitary subjects under county councils, and for various other offices. The Secretary of the National Health Society states that the call for women in these ways is increasing month by month, and that she frequently receives more applications for workers than she can supply. The training course is only intended for women of good general education, as are the posts subsequently open to them. Past students of the National Health Society now hold positions as sanitary inspectors under nearly all the metropolitan boroughs, as inspectors

under the Infant Life Protection and Shop Hours Acts, as lecturers for many county councils, as relieving officers under boards of guardians, as well as four appointments as inspectors of workshops and factories under the Home Office. Full particulars of the training course can be obtained on application to the Secretary, National Health Society, 53, Berners Street, W.

THE NEW BRITISH PHARMACOPOEIA.

THE new *British Pharmacopoeia* came into force on January 1st. Full details of all the changes have been given in a series of articles published during the last few months.[1] The articles omitted number 168, and only 43 new ones have been introduced. The omissions include some drugs still in common use, but not any, perhaps, of great therapeutic value. In the case of some important drugs which have disappeared—such as cantharides, coca, jaborandi, and physostigma—their active principles—cantharidin, cocaine, pilocarpine, and eserine—have been inserted. Of the additions the most interesting are the introduction, under official names, of certain substances which, during the sixteen years since the last edition of the *Pharmacopoeia* was issued, have largely been prescribed under trade names. Among these are acetylsalicylic acid, which has the same chemical constitution as the drug sold under the name "aspirin" by the German firm of F. Bayer and Co., barbitone, which is of the same chemical constitution as the substance sold under the trade name of "veronal" by E. Merck of Darmstadt, and F. Bayer of Elberfeld, hexamine sold under the trade name of "urotropine" by E. Schering of Berlin, and phenolphthalein, which has been sold under the trade names of "purgen" by H. Goetz of Frankfort-on-Main and "laxoin" by Messrs. Oppenheimer of London.

PENSIONS.

AT the beginning of another year many professional men will feel constrained to take stock of their financial position, more particularly during the present crisis. Especially is this the case with medical men who, during the full swing of their career, must consider what steps they are taking to provide for their old age and for their dependants. Some who have hardly begun to save are looking about for a sound form of investment, while those who have to deplore the loss by depreciation of considerable portions of their hard-earned savings are anxious to find an investment which, while neither speculative nor liable to depreciation, can be relied upon to secure for them in old age a pension and for widow and children a settled income. There are various schemes on the market, but probably one of the best is that which undertakes to provide (1) a pension for the insurer's declining years, (2) an income for his widow (if he should leave one) for the remainder of her life, and (3), incidentally, protection for his children for twenty years after his death, if that should take place before the pension age is reached. To gain the full advantage of this scheme it is desirable that a man should enter before attaining 50 years of age. The annual sum which has to be invested in order to secure these benefits varies according to the age of the insured, but up to one-sixth he is allowed to deduct this amount from his income assessable for income-tax, and this in itself constitutes at present a substantial saving. Full particulars will be forwarded on application to the Medical Insurance Agency, c/o British Medical Association, 429, Strand, London, W.C.

[1] BRITISH MEDICAL JOURNAL, October 10th, 1914, p. 634; 17th, p. 672; 24th, p. 719; 31st, p. 758; November 7th, 797.

WE regret to notice the announcement that Lieutenant Christopher Francis Verrall, son of Dr. T. Jenner Verrall, Chairman of Representative Meetings of the British Medical Association, was killed in action on December 22nd. He was in his 26th year, and the deepest sympathy is felt throughout the profession with Dr. and Mrs. Verrall in their bereavement.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

COMMITTEE IN BRUSSELS.

A PROVISIONAL Belgian Committee of medical men and pharmacists has been formed in Brussels to attempt to deal with the terrible misfortunes which have overtaken their colleagues. This Committee, with which it is the aim of the British Committee to co-operate, is constituted as follows:

M. G. Bruylants, Professor at the University of Louvain, President of the Academy of Medicine.
Dr. O. Vanderlinden, Dean of the Faculty of Medicine, Ghent.
M. M. Delacre, Professor of Chemistry at the University of Ghent.
Dr. L. Frédéricq, Dean of the Faculty of Medicine, Liége.
M. A. Gilkinet, Professor of Pharmacy at the University of Liége.
Dr. Dejace, Editor of the *Scalpel*, Flemalle Grande, Liége.
Dr. A. Brachet, President of the Faculty of Medicine of Brussels.
M. A. Herlant, Professor of Pharmacy at the University of Brussels.
Dr. Herman, President of the Belgian Medical Federation.
M. Haazen, President of the National Union of Pharmacy.
*Dr. H. Coppez, Editor of the *Journal Médical de Bruxelles*, and Professor at the University of Brussels.
Dr. De Busscher, Editor of the *Belgique Médicale*.
Dr. Van Hassel, Surgeon at Paturages.
*Dr. C. Jacobs, Professor at the University of Brussels.
*Dr. V. Péchère, Professor at the University of Brussels.
*Dr. R. Sand, Professor at the University of Brussels.
*Dr. Dubois-Havenith, Professor at the University of Brussels.
*M. A. Delacre, President of the General Pharmaceutical Council.
*M. Breugelmans, General Secretary of the National Union of Pharmacy.
*M. Coels, Pharmacist.

N.B.—The names preceded by an asterisk denote the Executive Committee.

THE SCOTTISH COMMITTEE.

The Scottish Committee of the Belgian Doctors' and Pharmacists' Relief Fund has now been completed, and includes:

The Scottish representatives on the General Committee.
The Presidents of the three Scottish Medical Corporations.
Sir Thomas R. Fraser, M.D., Professor of Materia Medica, Edinburgh University.
David Gilmour, Dunfermline, Member of Council, Pharmaceutical Society.
J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.
Sir Donald Mac-Alister, K.C.B., Principal of Glasgow University.
J. Y. Mackay, M.D., Principal of University College, Dundee.
J. C. M'Vail, M.D., Crown Nominee on General Medical Council.
Wm. Russell, M.D., Professor of Clinical Medicine, Edinburgh University.
Norman Walker, M.D., Treasurer, Royal College of Physicians, Edinburgh.

Also the following medical men and pharmacists:

John Adams, M.B.Glasg., Member of Council, British Medical Association.
Sir George T. Beatson, K.C.B., Chairman, Scottish Branch, British Red Cross Society.
Sir Halliday Croom, M.D., Professor of Midwifery, Edinburgh University.
W. G. Dun, M.D., Treasurer, Royal Faculty Physicians and Surgeons, Glasgow.
James L. Ewing, LL.D., Member of Pharmaceutical Society.
J. P. Gilmour, Glasgow, Chairman of Executive, N.B. Branch of Pharmaceutical Society.
John Gordon, M.D., President, Aberdeen Branch, British Medical Association.
J. R. Hamilton, M.D., Hawick, Chairman, Scottish Committee, British Medical Association.
R. McKenzie Johnston, M.D., Treasurer, Royal College of Surgeons, Edinburgh.
Ashley W. Mackintosh, M.D., Professor of Medicine, Aberdeen University.
T. K. Monro, M.D., Professor of Medicine, Glasgow University.
John Playfair, M.D., President, Edinburgh Branch, British Medical Association.
J. Scott Riddell, M.V.O., Senior Surgeon, Aberdeen Royal Infirmary.
Ralph Stockman, M.D., Professor of Materia Medica, Glasgow University.
With as Honorary Secretaries (for Edinburgh and East of Scotland) R. Cranston Low, M.B., (for Glasgow and West of Scotland) J. Walker Downie, M.B., and J. Rutherfield Hill, Resident Secretary, Pharmaceutical Society.

Subscriptions should be sent direct, either to the Treasurers of the three Scottish Corporations, or to J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.

CANADA.

The Chairman of the British Committee, Sir Rickman Godlee, has received information that a Central Committee for the relief of Belgian medical men and pharmacists has been organized in Toronto.

UNITED STATES OF AMERICA.

In the United States there has been a most gratifying response to representations made by the British Committee, and the action which is there being taken promises large results. Among those who have already identified themselves with the movement are: Dr. Charles H. Mayo of Rochester, Minn.; Dr. Franklin Martin of Chicago; Dr. William L. Rodman, President of the American Medical Association; Dr. J. M. T. Finney of Baltimore, President of the American College of Surgeons; Dr. George H. Simmons, Editor of the *Journal of the American Medical Association;* and Dr. Thomas L. Stedman, Editor of the *Medical Record.*

THE BRITISH COMMITTEE.

A meeting of the Executive Committee of the British Committee was held at the offices of the British Medical Association on December 22nd, when the question of giving assistance in money to Belgian medical men or pharmacists now in this country was again discussed. It was felt that the Fund should not be depleted by providing for any refugees the assistance the Government had undertaken to supply, but that in proper cases assistance should be granted. The distribution of money has now commenced. A meeting of the subcommittee empowered for the present to make such grants was held at the *Lancet* office on the following day, when Dr. Clément Philippe attended and made applications, backed by the Belgian Medical Society in London, for relief of distress in certain cases. The subcommittee made all the grants requested by Dr. Philippe save one, and also guaranteed the ordering of clothes in certain cases in which it had been impossible to obtain the garments from charitable sources.

The following additional subscriptions were received by the Treasurer down to Tuesday evening last:

Sixth List.

	£	s.	d.
Dr. W. Haward ...	1	1	0
Dr. J. Elsdale Molson	5	0	0
Dr. J. Wm. Roberts .	1	1	0
Dr. G. I. Dudley ...	1	1	0
Dr. Alfred Brown ...	3	3	0
Dr. Edward Law ...	2	2	0
Dr. Chas. Buttar ...	1	1	0
Dr. Thos. McCririck	1	1	0
Dr. J. R. Currie ...	2	2	0
Sir James A. Russell	3	3	0
Mr. F. Guthrie ...	2	2	0
Mr. A. McMillan ...	2	2	0
Mr. J. B. McVital ...	2	2	0
Mr. G. S. Kitchin ...	1	1	0
Mr. W. McCallum ...	1	1	0
Mr. John Weir ...	1	1	0
Mr. J. H. Murphy ...	0	10	0
Mr. J. H. Smith ...	0	10	0
Mr. F. E. Bilson ...	2	2	0
Mr. F. E. Rowsell ...	2	2	0
Mr. C. W. Holmes ...	1	1	0
Mr. J. H. Bishop ...	1	1	0
"Secundo Curo" ...	1	1	0
Mr. J. R. Ball ...	0	2	6
M. J. Y. Fairweather	0	5	0
Mr. H. Jenkins ...	1	1	0
Mr. J. F. Harrington	5	0	0
Messrs. Beach and Co.	3	3	0
Mr. F. W. Monsell ...	1	1	0
Captain A. Falconer Hayden	5	5	0
Right. Hon. J. M. Wilson, P.C., M.P.	5	0	0
Shropshire and Mid-Wales Branch, B.M.A. (per Dr. A. G. Mackenzie, Hon. Sec.):			
Dr. R. de S. Stawell	2	2	0
Professor E. W. White	2	2	0
Dr. Willoughby Gardner ...	3	3	0
Mr. H. H. B. MacLeod ...	1	1	0
Mr. Arthur Jackson	1	1	0
Dr. E. H. O. Sankey	1	1	0
Dr. T. Orr ...	1	1	0
Dr. R. H. Urwick	1	1	0
Mr. Russ Wood ...	1	1	0
Dr. A. B. Blaikie...	2	2	0
Dr. S. W. Thompstone	2	2	0
Mr. F. Whincup ...	1	1	0
Dr. John Murray...	0	10	6
Dr. F. H. Pearce ...	1	1	0
Dr. Walter Hall ...	0	10	6
Dr. T. M. Cuthbert	0	10	0
Dr. R. G. C. Thornton	1	1	0
Dr. J. Wheatley ...	2	2	0
Dr. Leonard J. Godson	1	1	0
Mr. J. McClintock	2	2	0
Dr. A. G. Mackenzie	1	1	0
Dr. Albert E. Nicholls ...	2	2	0
Mr. G. D. Collins	0	10	6
Dr. W. Stanley Hughes... ...	1	1	0
Dr. Cecil E. Salt ...	1	1	0
Dr. A. Dean Roberts	1	1	0
Dr. H. C. Woodhouse	1	1	0
Dr. J. Peploe Cartwright	1	1	0
Northampton Division, B.M.A. (per Dr. P. S. Hichens, Hon. Sec.):			
Dr. P. White ...	1	0	0
Dr. Linnell ...	0	10	0
Drs. Turner and Stevenson ...	0	10	0
Dr. Byass ...	0	10	6
Mr. M. B. Odgers	0	10	0
Mr. J. H. Perceval	0	10	0
Dr. C. J. Evans ...	0	10	0
Dr. Baxter ...	0	10	0
Dr. Gainer ...	1	1	0
Dr. Wickham ...	0	10	0
Dr. Mason ...	1	0	0
Dr. Easte ...	0	10	0
Dr. Allinson ...	0	10	0
Dr. C. H. Wright...	0	10	0
Dr. E. T. Milner ...	0	10	0
Dr. Oldacres ...	0	10	0
Dr. Baird ...	0	10	0
Dr. Churchouse ...	0	10	0
Dr. E. A. Sanders	2	2	0
Dr. Greenfield ...	0	10	0
Dr. O. Harvey ...	0	10	0
Dr. Selby ...	0	10	0
Dr. D. Stewart ...	1	1	0
Dr. Audland ...	0	10	0
Dr. Hollis ...	0	10	0
Dr. F. J. Stewart...	0	10	0
Dr. Robb... ...	0	10	0
Dr. Hulbert ...	0	10	0
Dr. Vanvestraut ...	0	10	0
Dr. Wilkinson ...	0	10	0
Dr. Hichens ...	1	1	0
Dr. W. F. Addey ...	2	2	0
Dr. G. Crichton ...	1	0	0
Woolwich Division, B.M.A. (per Dr. B. W. Lacey, Hon. Sec.):			
Dr. S. R. Smith ...	1	1	0
Dr. G. Faris ...	1	1	0
Dr. A. E. Thompson	1	1	0
Dr. C. M. Greenway	1	1	0
Dr. F. L. Titley ...	1	1	0
Dr. C. F. Clarke ...	1	1	0
Dr. F. J. C. Blackmore	1	1	0
Dr. A. Mair ...	1	1	0
Dr. F. R. Patterson	0	10	6
Dr. J. B. Byles ...	0	10	6
Dr. F. L. Stephenson, C.B. ...	0	10	0
Dr. L. A. Barrow...	1	1	0
Dr. J. Clarke ...	1	1	0
Dr C. M. Smith ...	1	1	0
Dr. H. M. Wise ...	1	1	0
Dr. B. W. Lacey ...	1	1	0
Mr. E. Quant ...	1	1	0
Medical Insurance Agency	26	5	0
Dr. G. Basil Price ...	1	1	0
Dr. J. T. Rogerson...	1	1	0
Dr. J. P. Lusk ...	1	1	0
Sir Francis H. Champneys ...	10	0	0
Dr. Duigan... ...	1	1	0
Surgeon-Captain G. Sherman Bigg ...	1	0	0
Charles J. Heath ...	3	3	0
Dr. Charles Gibson...	1	1	0
Dr. Samuel Davidson	1	1	0
Staff-Surg. Douglas D. Turner ...	1	1	0
Medical Staff, R.N. Hosp., Dunskaith...	1	1	0
Mr. F. Slater ...	1	1	0
Dr. C. H. Vrooman...	5	0	0
Dr. J. T. Calcott ...	5	0	0
"Sincere Sympathiser"	1	1	0
West Herts Division, B.M.A. (second donation) (per Dr. K. J. Aveling, Hon. Sec.)	4	3	0
Dr. George Arthur ...	2	2	0
Dr. John McGregor	2	2	0
Dr. Walter Dodd ...	1	1	0
Dr. Howard S. Wilson	1	1	0
Dr. J. Sutcliffe ...	1	1	0
Dr. J. Troup ...	1	1	0
British Medical Association	105	0	0
Lieutenant B. H. Wedd, R.A.M.C. ...	10	0	0
Dr. C. W. Buckley ...	1	1	0
Miss M. H. Fraser ...	1	1	0
Mr. A. J. Couzens ...	5	0	0
Dr. Soden	2	2	0
Dr. A. W. Tuxford ...	1	1	0
Dr. H. H. I. Hitchon	2	2	0
Surgeon-General Sir Charles Cuffe, K.C.B.	2	2	0
Canterbury and Faversham Division (per Mr. Neil Robson, Hon. Sec.)—			
Dr. A. B. R. Sworn	1	1	0
Dr. R. A. Bremner	1	1	0
Dr. R. G. Wills ...	1	1	0
Dr. Brian Rigden...	1	1	0
Dr. Z. Prentice ...	1	1	0
Dr. F. Wacher ...	1	1	0
Dr. S. Wacher ...	1	1	0
Dr. H. Wacher ...	1	1	0
Dr. H. O. Preston	1	1	0
Dr. C. U. Ind ...	1	1	0
Dr. F. Noble ...	1	1	0
Dr. N. Robson ...	1	1	0
Dr. L. A. Winter	1	1	0
Dr. Norman Robinson	1	1	0
Dr. Hope Grant ...	1	1	0
Dr. Margaret Todd	1	1	0
Dr. Robert W. Nairn	2	2	0
Major C. E. Pollock, R.A.M.C.... ...	1	0	0
West Somerset Division, B.M.A. (per Mr. W. B. Winckworth):			
Dr. J. A. Macdonald	10	10	0
Dr. E. Liddon ...	5	0	0
Dr. R. L. Mead-King	5	0	0
Mr. W. B. Winckworth	5	0	0
Dr. Annie E. Clark	2	2	0
Dr. C. L. Tripp ...	2	2	0
Mr. W. H. Maidlow	1	10	0
Dr. H. T. S. Aveline	1	1	0
Dr. J. Codner ...	1	1	0
Dr. H. Downes ...	1	1	0
Mr. G. W. Edlington	1	1	0
Dr. A. R. Graham..	1	1	0
Mr. H. W. Husbands	1	0	0
Mr. A. R. Iles ...	1	1	0
Dr F. C. Joscelyne	1	1	0
Dr. C. G. MacVicker	1	1	0
Mr. W. H. Randolph	1	1	0
Dr. C. B. Stewart...	1	1	0
Mr. R. H. Vereker.	1	1	0
Mr. A. D. Willcocks	1	1	0
Dr. N. Burns ...	0	10	6

Subscriptions should be sent to Dr. H. A. Des Voeux, 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed "Lloyd's Bank, Limited."

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments, etc., kindly contributed by the following donors since the publication of the last list:

Dr. John Gordon, Finsbury Park
Mr. Edward Beaton, London.
Mr. Sydney G. Tibbles, London
Dr. Lawrence Baine, Hull.
Dr. C. W. Wilson, Bury St. Edmunds.
Anonymous.
Sir Lauder Brunton (second contribution), London.
Dr. Awdry, Berkeley.

THE late Mr. William Endicott of Boston has left £5,000 to Harvard University to be applied to cancer research.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

From a Special Correspondent in Northern France.]

Wounds of the Chest.

Christmas found the troops in the middle of a fresh burst of activity. For a fortnight or so previously things had been rather quiet at the front, and the ambulance trains were bringing down more sick than wounded. But last week the stream of wounded increased in volume, and some, if not very marked, difference was discernible in the general character of their injuries. In respect alike of the limbs, the head, and the body, they included a larger proportion of wounds due to rifle fire than previously. Hitherto most of the wounds of the body that have reached the base hospitals have been caused by shrapnel bullets and shell casing, with the result that very few of the medical men working in the military hospitals in France have had experience of any really considerable number of wounds in which a rifle bullet has passed right through a man's chest but without touching the heart or severing one of the great vessels, or producing any extensive fracturing of the thoracic cage. There has been a tendency to regard wounds of this class as benign in their course and simple in their nature, and it is true that the men suffering from them often recover with remarkable rapidity, and apparent completeness. For instance, in one of the earliest of these notes some description was supplied of ten consecutive cases of bullet wounds of the chest which had then recently been under treatment in one of the Paris hospitals. All but one of these patients were discharged from hospital as recovered within three weeks from the date at which they had been wounded, and meantime none of them had been seriously ill. In the tenth case the wound was penetrating but not perforating, and the bullet still remained lodged in the lung. All the men had been subjected to hardship after reception of their wounds, some falling into the hands of the enemy for a day or two, others having to find their own way little by little to a field ambulance, and none obtaining warmth, rest, and treatment for several days. The rapid and apparently complete recovery of nine of these cases seemed to justify the favourable view stated above, but later on circumstances suggested that the history of these ten cases was perhaps exceptional, and that probably in the rush of work in the early days there was a tendency to overlook some features of cases of this order, and to underrate their gravity. There was also the consideration that the mental attitude of the majority of the men through whose hands most of the wounded pass is surgical rather than medical. Consequently I mentioned the matter to Sir John Rose Bradford soon after his arrival in France to act as consulting physician to the forces, and learnt that there was much more in these perforating wounds than appeared on the surface. They afforded, in fact, so novel a clinical picture that he had already made arrangements for a special study of them in association with Lieutenant T. R. Elliott, F.R.S., and Lieutenant H. Henry.

Clinical Features.

A day or two ago I had an opportunity of asking him how the study was getting on, and then heard that though the work was by no means complete, it already justified certain initial conclusions, and had led to the collection of a good many interesting therapeutic and pathological data. In particular it would appear that the series of physical signs which may follow the reception of a perforating wound of the chest are quite peculiar in themselves and often very difficult to interpret. It is found, for instance, that while in some cases a considerable internal haemorrhage is overlooked altogether, in others the symptoms due to haemothorax are ascribed to lobar pneumonia or to pneumothorax.

Pneumonia is often diagnosed a few days after the injury because the patient is feverish with a temperature of 101° or 102° F. and dyspnoeic, while examination of the chest reveals a dull percussion note and tubular, distant breath sounds. The fever is caused by absorption of the effused blood, and the other physical signs are those of the collapsed lung. Pneumonia very rarely accompanies traumatic haemothorax. It is noteworthy that in cases of effusion of blood into the pleural cavity the jaundice from its resorption is always slight, and very much less than that from blood effused into the abdominal cavity.

Pneumothorax occurs in a relatively small percentage of wounds of the lung, and when it does so is an extremely serious complication. On the other hand, the tympanitic note of skodaic resonance over the upper part of the chest above a haemothorax often gives rise to the belief that air has escaped into the pleural cavity when the sign in reality is caused only by the unusual emphysema of the underlying lung.

Pathology.

From a pathological point of view interesting facts have been observed with regard to the clotting of the blood. In one example 50 oz. of blood were withdrawn sixteen days after the haemorrhage had occurred. It was still perfectly fluid and clotted to a solid mass a few minutes after the aspiration. In other cases the blood within a few days was found to have completely lost its power to clot, though the effused red cells were still fresh and apparently normal. Infection of the blood was found to occur in a small percentage of the injuries. The infecting microbes were almost always streptococci, and then the blood on aspiration was often completely haemolyzed and did not clot on withdrawal. Blood with an original streptococcal infection may still present its natural colour if aspirated eight or ten days after the wound has been received. Later, the increase of pus cells and the destruction of the haemoglobin leads to the formation of a chocolate coloured grumous fluid with an offensive odour. The change from the red to the purulent fluid in two successive aspirations has led to a general belief that these cases of haemothorax are very liable to be infected at an aspiration. There is no reason to regard this as a serious risk, and bacteriological examination in such cases has proved that the infection existed from the very beginning.

On the other hand, a fluid which on aspiration is obviously purulent, either dark brown or even greenish-yellow, may be found by the bacteriologist to be absolutely sterile. The infection, if the suppuration was caused by an infection, has completely died down. There are, therefore, four types of fluid which may be found on aspiration—simple sterile blood, infected red blood, purulent infected blood, and sterile purulent fluid. To distinguish between these it is absolutely necessary to make a bacteriological examination. Clinical features are insufficient for a correct opinion, because sterile effused blood itself causes fever and an inflammatory reaction from the pleural membranes.

Aspiration.

A few of the infected cases require resection of the rib and drainage. For the majority—and certainly for the non-septic cases—this was found to be inadvisable, because it led to an extensive collapse of the lung in the absence of limiting adhesions. When the haemothorax was small in quantity—less than 20 oz.—it could be safely left alone to be dealt with by the processes of simple absorption. But the observers found that the larger effusions, even though they were not so great as to cause much mechanical embarrassment, were better dealt with by aspiration on the seventh to the tenth day, for otherwise the retained blood caused a fever lasting from two to three weeks, which debilitated the wounded man as much as a mild attack of enteric fever. The danger of infection at such an aspiration was shown to be minimal, for the fear of it was really the outcome of a failure to appreciate the fact that the blood had been infected when the wound was first received.

A second objection to aspiration has a more real foundation. This is that it may lead to recurrence of bleeding. A spontaneous outbreak of fresh bleeding was observed in a few cases in the first week after the wound, and it therefore appears to be possible that the increased negative pressure caused within the chest by aspiration might lead to a renewal of bleeding, whether this initiative were from the lung or from an intercostal vessel. To obviate this, the method of gas replacement, in common use in civil practice for pleural effusions, has been employed with satisfactory results. Oxygen was

introduced by the same aspirating needle as soon as the patient commenced to feel discomfort and a desire to cough. By this means practically all the blood could be withdrawn, and the intrapleural pressure was left at the same or a higher level than it was at the beginning. The oxygen is quickly absorbed, and so the lung later expands. In cases of recent injury it is desirable that the pressure on the collapsed lung shall not be relaxed too early lest bleeding recommence, and for these nitrogen or simple atmospheric air was used. So far the results have been favourable, the fever being alleviated and the chest rapidly regaining its normal state. This method of treatment is still, however, on its trial. But the main point seems certain, that rib resection is rarely justifiable, and should be undertaken only when bacterial examination has proved the fluid to be still infected.

It is understood that at a later date a detailed report on this elaborate and highly useful study of wounds of the chest will be published by the officers whose names have been mentioned.

Zymotic Diseases.

In the fifteen or sixteen weeks that have elapsed since it first landed in France the Expeditionary Force has supplied a good many cases of the commoner infectious disorders, but in regard to the two zymotic diseases most likely to occur and chiefly to be feared among troops in the field the statistics remain eminently satisfactory. Down to the date on which this note is written there has been no case of dysentery, and the typhoid incidence, to the end of the third week in December, has been far below an annual rate of 2 per mille; the case mortality has been a little over 8 per cent. As to the possibility of the existence of unrecognized cases, it may be observed that medical officers in all parts of the field of operation are so keenly alive to the importance of cases of typhoid fever being segregated as quickly as possible that the tendency among them would seem to be to err on the safe side. The experience of the officers in charge of isolation wards is that a considerable portion of the suspected cases sent to them turn out eventually to be examples of some disorder other than typhoid fever.

With regard to the effect of antityphoid inoculation, it is to be noted that in this respect the men brought into the field fall into three classes: (1) "Fully protected" men, namely, those who have received two doses of Wright's antityphoid serum within the last two years; (2) "partly protected" men, namely, those who have not been inoculated within the past two years, or who have received only one dose; and (3) "unprotected" men, namely, those who have never been inoculated at all. It is amongst men of this latter class that all the deaths hitherto recorded have occurred. Furthermore, this same class has supplied about sixteen times as many cases as the fully protected class, and about six times as many cases as the partly protected class. These are figures which the advocates of antityphoid inoculation may certainly regard with satisfaction.

There are arrangements for temporary or permanent treatment in isolation of cases of zymotic diseases at all British hospital bases, but the principal institution maintained for this purpose is at Wimereux, near Boulogne. It stands on the edge of a sandy beach, and consists of a three-story stone building and about 100 bathing huts. On the upper floors of the main building are a series of small rooms opening one into the other; and on the lower floor several large rooms, most of them opening on to a terrace or broad balcony. With the exception of one room, which is used for the examination of patients on their first arrival, this main building is exclusively used for administrative purposes and for cases of typhoid fever. All other cases of infectious disease are treated in the bathing-box division of the institution. This consists of rows of small weather-proof, warmed, and well ventilated huts, each provided with windows and doors, and just large enough to contain a bed, a table, a commode, and a chair. They are by no means unattractive little hermitages, and as they can be disinfected with ease they lend themselves excellently to the treatment in isolation of cases of scarlet fever, diphtheria, measles, chicken-pox, and mumps. They are also suitable for the reception of typhoid cases which have reached a stage when ordinary food can safely be eaten and outdoor exercise taken—of men, in short, who are patients merely in name, and who would be discharged to their own homes from ordinary isolation hospitals. In addition to the bathing boxes there are several larger huts which are used for various purposes. One provides a general kitchen (the kitchen in the main building provides solely for the typhoid patients, and all its utensils are of a different pattern from those used elsewhere). Another large hut serves as a kind of guard-house for the section of the personnel in charge of the bathing-box division, and a third as a dining and recreation room for convalescent typhoids. At a short distance stand others which house the special incinerator of the hospital —an important part of its provisions—and the bed-pan or sanitary squad-room. The staff and general personnel live away from the hospital altogether, and are within its confines only during their hours on duty. Each section and subsection of the hospital is in the hands of a distinct personnel (all working, of course, under one administration), and the arrangements for dealing with infected linen, clothing, and excreta are carefully devised. The men's kits, if not incinerated forthwith on their arrival, are treated in a formalin chamber, and all soiled linen, waste food, and excreta from the typhoid wards are taken out on to the balconies which are within the domain of the sanitary squad, consisting of specially trained men. Apart from attending to the general sanitation of the institution, it is their duty to remove from the balcony the covered tins which receive everything brought out from the wards. Soiled linen they place in a bath of cresol solution, where it remains for an hour before removal for ordinary washing purposes. Unused food and general waste they take to the incinerator chamber, and all bed-pans, etc., they empty, cleanse, and return to the balconies. The contents of such utensils, with all cresol and water used in cleaning them, are emptied into covered buckets, which are removed at certain hours to the incinerator. In this there is a cresol bath and an incinerator of special construction. Below is a wide-mouthed furnace, and above it a large boiler; all solids are placed in the former, and liquids, including the contents of the bed-pan buckets, into the latter. The fumes both from furnace and boiler pass into a tall chimney. Every week the boiler is allowed to boil itself practically dry, and the residue is then scraped out and placed in the incinerator furnace.

The typhoid patients are separately warded, according as to whether they are in an acute, convalescing, or completely convalescent state, and great care is taken to avoid any risk of the institution acting as a focus of disease. The doors, for instance, of the ground floor enteric wards are habitually locked, partly to prevent unwarranted intrusion, partly to ensure that everything sent out of the ward shall leave it by the proper exit—which is the balcony—partly to impress on all concerned the importance of prophylaxis in regard to typhoid fever. The latter lesson is also taught by wall placards, each consisting of a series of "Don'ts," and by seeing that each member of the subordinate staff possesses and studies a card copy of certain rules regarding typhoid work.

For diagnostic purposes reliance is placed on a combination of methods, the observation of clinical phenomena, the Widal reaction, and the bacteriological examination of the excreta. The latter is done in a neighbouring laboratory by Major L. W. Harrison, R.A.M.C., who is well known to the profession by his work at Rochester Row in connexion with the *S. pallida* and the use of salvarsan.

When the primary diagnosis of a typhoid infection has been established, importance is attached to deciding to which branch of the typhoid family the organisms found belong. The general clinical features of typhoid and paratyphoid infections are similar, but the prognosis is better in the latter. The experience of this hospital also suggests that when the clinical phenomena are decidedly indicative of typhoid fever, several different strains of bacilli should be tried before the Widal reaction is finally declared to be negative. In all cases the general treatment adopted is symptomatic, but Sir Almroth Wright's serum is often used, and is considered to have a decidedly beneficial effect on the temperature range.

There are many other points of interest about this extemporized isolation hospital, but the foregoing details

suffice to indicate the general nature of its arrangements. Their thoughtfulness and completeness are remarkable. The administrator is Major C. W. Evans, who has been engaged in typhoid work in India for several years, and is therefore an expert in this particular subject.

It is possible that among the wounded and other men sent home to England there may have been some incubating case of typhoid fever, but the general principle adopted has been that of keeping all recognized cases on this side of the Channel, even after recovery. This rule, in fact, has only recently been relaxed owing to the completion of arrangements at home for the care of possible carrier cases. To those conversant with the subject this precaution alone will seem sufficient evidence that the Army Medical Service is dealing with the question of typhoid fever in a very commendable fashion.

A HOME WAR HOSPITAL FOR TYPHOID AND DYSENTERY.

Of the numerous sanitary problems which confronted the Army Medical Service on the declaration of war not the least important was that of making provision in this country for the care of such cases of fever, especially of typhoid fever and dysentery, as might occur in home camps, or as might be returned from the Continent for treatment. Closely related to this problem was that of protecting the healthy military and civilian population from the "carrier."

Owing to the fact that it is generations since British troops have fought so close to home, and owing also to the small number of home camps in times of peace, there has hitherto been no need for a special military fever hospital. The hopes entertained in the early autumn by the Army Medical Service as to the efficiency of its preventive measures against epidemic disease, measures which included antityphoid inoculation on a large scale, have been abundantly justified. The smallness of the number of cases of typhoid fever and of dysentery that have occurred in the British army at home and abroad under unprecedented conditions reflects the utmost credit on all concerned. Nevertheless, it was fully recognized by the Director-General and his staff as long ago as September that a fever hospital for the exclusive use of the troops must be provided at home to meet possible emergencies, and that arrangements must be made in advance to deal with the carrier problem. It was recognized also that, to achieve these ends, a fully equipped pathological laboratory, staffed by expert bacteriologists, must be in readiness before it was actually required.

An offer of civilian help to meet those needs was at once accepted by the Director-General, who, together with Sir Frederick Treves, has given the project every possible assistance.

A committee was formed to make the necessary arrangements, with Bishop Boyd-Carpenter as Chairman and Lord George Hamilton as Treasurer. Suitable hospital accommodation has been provided for about 150 acute cases, and, in order to reduce the danger from convalescent carriers to a minimum, the hut system is being installed on a sufficiently large scale to enable a practically unlimited number of convalescents to come under observation if the need for this should arise.

The house and grounds of Addington Park, the property of the late Mr. F. A. English, have been placed at the disposal of the Committee by the trustees, and the expenses of the undertaking have been mainly provided by the War Office, supplemented by generous contributions from the Red Cross and from private individuals.

The hospital was opened for the reception of patients on December 13th. The medical superintendent is Dr. W. J. J. Stewart, D.P.H., and the other members of the resident staff are: Dr. C. E. Lakin, pathologist; Mr. T. H. C. Benians and Miss Letter, M.D., assistant pathologists; and Mr. H. A. Williams, house-physician. Sir John Broadbent and Dr. Edward C. Hort are honorary physicians, and Mr. Hugh M. Rigby and Mr. Gordon Taylor honorary surgeons.

VOLUNTARY AID DETACHMENTS.

An Auxiliary War Hospital.

Voluntary Aid Detachments were a part of the general plan of the Territorial Force, and in many ways they are proving themselves very useful units. The rules for their constitution are elastic, and they have been able to do various sorts of work according to the needs arising in different localities and at different times.

The most important duty they have so far been called on to undertake has been the organization of auxiliary military hospitals to ease pressure upon the large military hospitals. Like the Territorial General Hospitals they are primarily intended to meet the needs of the Territorial Force, but like them they have been ready to receive also men from the British army in France.

The auxiliary hospitals established and worked by Voluntary Aid Detachments vary in the number of beds they provide. One of the largest, the best equipped and organized is that established at Southall, which is worked by the Ealing Voluntary Aid Centre, comprising the Acton, Chiswick, Ealing, Hanwell, Southall, Alperton, Perivale, and Greenford detachments. It is established in a recreation institute recently erected for their workpeople by Messrs. Otto Monsted and Co., a Danish firm. Not only did the workpeople give up their institute, but gave also ready help in fitting it for its new purpose; Messrs. Monsted have been most liberal in helping forward the enterprise, and its smooth working. The firm provides the cost of heating the building, and, in addition to giving current for the electric lighting, provides the services of a skilled electrician to attend to the lighting and the *x*-ray installation. Bedsteads, bedding, and the thousand and one things wanted in a hospital for 85 beds have been provided by local generosity, and members of the detachment give their services in various capacities. Fortunately, among them were a sufficient number of ladies, resident in the neighbourhood, who were fully trained nurses, to serve as night and day sisters for each ward. They are assisted by other members of the detachment possessing certificates in first aid and home nursing, who work under them as probationers, providing day and night services.

The building contains a large concert room, which has been divided by a wooden partition about 7 ft. high into two wards, each providing 24 beds for surgical cases; two other large rooms provide excellent wards for medical and surgical cases. There is a recreation room for convalescent patients, and the hospital has the use of the large and well laid out grounds in which the building stands. On the opposite side of the road on which the main entrance opens is a railway siding, so that wounded and sick can be brought by train almost to the door of the hospital. The hospital is linked to the army hospital at Woolwich, serving as its auxiliary for wounded men, but receives also Territorial sick from Windsor and the neighbourhood.

Dr. E. A. Chill, of Ealing, to whose initiative the formation of the Centre some years ago was due, is the Commandant of the hospital, which owes very much to his energy and organizing ability. He has got round him a very strong medical and surgical staff. The Honorary Consulting Surgeon is Sir Alexander Ogston, Surgeon to the King in Scotland, and President of the British Medical Association, who has gone to reside in the neighbourhood, and attends the hospital daily. The Honorary Consulting Physician is Sir R. W. Burnet, Physician to the King's Household, and the staff includes medical men residing in Ealing, Hanwell, Acton, Chiswick, and Southall. Dr. James A. Davidson, of Hanwell, is one of the Assistant Commandants, and gives a great deal of time to attendance on the surgical patients. The quartermaster is a lady, Miss Nora Blaiklock, who has mastered the intricacies of military book-keeping which have appalled many stout male hearts. The Lady Superintendent is Mrs. Chill, and the Assistant Matron, Miss Taylor, formerly of Guy's. General Greany, I.M.S., of Ealing, is Chairman of the Hospital Committee, and by his almost daily visits secures the smooth running of administrative matters.

Dr. David Arthur, of Ealing, is the radiographer; he has supplied an equipment for high-class radiographic work, and is indefatigable in his response to all demands

on his skill. Dr. Fenton, of Ealing, has given a small radiographic outfit for lesser *x*-ray observations, and a friend has placed in the hands of Dr. Davidson a sum of money to defray the cost of materials and appliances for this branch of investigation. Messrs. Otto Monsted have placed their materials, chemical laboratory, and photographic department at the disposal of the staff, who in these respects, therefore, are singularly well placed.

When one reflects on the amount of thought and time that has been so well given to the conversion of the building to its new purpose, and to the organization of its staff, and when one realizes how ladies have taken up again their calling or set themselves to learn, giving up their ordinary avocations to work in the hospitals for spells of twelve hours by day or night week after week, and have not grown weary in welldoing, one can only express the heartiest admiration for their patriotic self-sacrifice, and congratulate all concerned on the success of the work. The existence of so excellent an institution affords to the people of Ealing and the surrounding populous districts an opportunity of taking part in a national work of which they will doubtless be ready to avail themselves so soon as the need is made known. Not very much money is asked for. All the skilled work is done without fee or reward, but a certain small amount of ordinary labour is needed, and as the War Office allowance for maintenance is only 2s. a day for each wounded soldier in the hospital, something is needed to meet the actual cost, which is nearer 28s. than 14s. a week per patient. The appeal we have seen is singularly modest, for it is said that a sum of £1,200, towards which £200 has already been received, would be sufficient to cover the expenses for two years.

HOME HOSPITALS AND THE WAR.

3RD NORTHERN GENERAL HOSPITAL (T.F.), SHEFFIELD.

THE total number of beds under the charge of the commanding officer, Lieutenant-Colonel A. M. Connell, now amount to 1,450, and are comprised as follows: Central Hospital 520 beds, affiliated hospitals in Sheffield and the neighbourhood 278, voluntary aid hospitals, 94, and convalescent hospitals 562.

From the commencement of the war down to December 22nd just over 2,300 soldiers were admitted for treatment; of these 1,900 came from France and Belgium.

During the whole of October and the early part of November convoys of wounded arrived so frequently that the resources of the hospital were taxed to their utmost, and it became urgently necessary to find additional accommodation. Then succeeded a period of quiescence, which lasted nearly three weeks. We are now once more actively employed, and have received 580 wounded during the first three weeks of December.

A very pronounced change has been observed in the condition of the wounded who have arrived recently as compared with those received earlier. Formerly the bulk of them came straight from the fighting line, and many were in a deplorable state of sepsis. This was especially the case just after the fall of Antwerp. Now the majority —indeed, a very large majority—arrive from one of the base hospitals in France, where they have received treatment for periods ranging from days to weeks.

As was to be expected, the change has produced a gratifying improvement all round, and although it has necessarily reduced the surgical interest in the work on this side of the Channel, all will rejoice in the knowledge that our wounded soldiers are receiving earlier, and therefore better, hospital treatment.

After four months' experience one is in a position to criticize the working of the various departments of this hospital, and it is gratifying to be able to record that under the direction of its commandant everything goes like clockwork. This efficiency is all the more remarkable when it is remembered that Territorial hospitals are not allowed to possess any equipment until mobilized, so that the entire organization before the outbreak of war existed merely on paper.

Thanks to the generosity of the Sheffield people, a fleet of twenty motor ambulances is now available for the conveyance of patients from the railway stations. These are supplemented by motor omnibuses lent by the city authorities for the less serious cases, and it is now possible to transport an entire convoy in little over half an hour.

Huge stores of pyjamas, shirts, socks, ward suits, etc., made by the ladies of Sheffield, supply a welcome and very necessary addition to the hospital equipment, while gifts of game, fruit, and all sorts of eatables vary very agreeably the provision made by the commissariat department.

It is interesting to learn, and but just to relate, that among the recent convoys are several men, for a time wounded prisoners in the German camp, and afterwards rescued by the Allies, who speak highly of the kindness and care bestowed on them by German doctors and nurses.

Injuries of Large Vessels.

Injuries to arteries have been relatively common when contrasted with the statistics of civilian surgery. Two cases of traumatic aneurysm of the axillary artery have been dealt with successfully by ligation of the third part of the subclavian. In one of these a temporary ligature was applied and the aneurysmal sac exposed with the view to performing Matas's operation. The collateral flow of blood from both the distal end of the artery and from the long thoracic branch was, however, too profuse to permit of this precedure, and separate ligatures were applied.

An interesting case of aneurysmal varix of the femoral vessels is being watched. The loud bruit and startling thrill are still present, but the veins do not show evidence of distension, and the patient is quite free from pain, and has almost completely recovered the use of his leg. A highly realistic phonographic record of the bruit has been secured by Captain Mouat.

Secondary Haemorrhage.

In view of the prevalence of sepsis, often of a virulent type, it is not surprising that cases of secondary haemorrhage are common. Packing with gauze soaked in adrenalin, conjoined with elevation of the part, has been, as a rule, successful, but several cases have demanded operative treatment. One sad case was that of a gunner, who was shot in the left side of the neck. The rifle bullet entered just outside the carotid vessels, fractured the transverse processes of the third and fourth cervical vertebrae, and was thence deflected downwards into the anterior mediastinum, where it lodged. He was admitted six days after being wounded. He complained of intense pain in the neck and left arm, which was only partially relieved by full doses of morphine. Three days after admission smart haemorrhage took place, and was controlled for a time by gauze packing. Two days later the the haemorrhage recurred; it was profuse and obviously arterial. The track of the bullet was laid open in its upper half and the source of the haemorrhage traced to the suprascapular artery near its origin. This was ligatured. As he was very blanched intravenous saline infusion was resorted to, and he left the theatre with quite a good pulse, but collapsed suddenly a short time afterwards.

A Belgian soldier, in consequence of a bullet wound in the neighbourhood of the knee, had secondary haemorrhage and extensive cellulitis of the ham with threatening gangrene of the foot. In spite of conservative treatment the gangrene progressed, and it became necessary to amputate through the lower third of the thigh. The bullet had traversed the popliteal space and then fractured the upper end of the fibula, in which it was embedded. The patient recovered.

Two other cases of secondary haemorrhage of the tibial vessels have been successfully treated by ligature of the femoral artery, and in spite of the risk of gangrene following this procedure it is undoubtedly the best method of dealing with secondary haemorrhage of the calf when associated with diffuse cellulitis.

Injuries to Bones.

There have been numerous examples of injury to bones due to bullets. Several bad cases of compound fracture of the femur were included in a large convoy of Belgian soldiers from Antwerp. Provided with most rudimentary splints, and all extremely septic, they formed a pitiable spectacle. Nevertheless, all are doing well. Where extension has failed to bring the broken ends into apposition use has been made of two iron nails, 3 to 6 in. long

which are inserted into drill holes, passing through the fractured ends of the bone. Owing to the obliquity of most of the fractures, this is usually possible. The nails are passed from before backwards through the fragments, and are about 1 in. apart in the vertical line. One inch or more of the head of each nail projects beyond the skin. The nails are withdrawn at the end of three weeks.

The destructive action of bullets on the shafts of long bones is in striking contrast to their effect on cancellous bone tissue. This is well illustrated by the case of a Belgian in whom the right femoral neck, close to its base, was cleanly drilled by a shrapnel bullet, which, entering from behind, was found underneath the periosteum in front. He made a perfect recovery.

Haemothorax.

Several cases of bullet wounds of the chest have resulted in a haemothorax, and in two of these septic infection of the mass of blood has necessitated drainage of the pleura. Both are doing well.

Injuries to the Genito-Urinary System.

One very distressing case of injury to the urinary system is still under treatment. The patient was struck by a large piece of shrapnel casing on the right buttock. The fragment penetrated the pelvis and was removed from beneath the skin over the left inguinal region. There was at first severe haematuria followed by septic cystitis and complete retention of urine. After several weeks of treatment the cystitis has been arrested, but there is still complete retention, and as this is associated with paralysis of the rectal sphincters the prognosis is necessarily grave. A very painful and intractable neuralgia of the left leg and foot adds to the man's troubles.

A remarkable injury to the penis occurred to a fusilier. A rifle bullet cut clean through the corpora cavernosa and at the same time completely dislocated the penis from its sheath. The corpus spongiosum and urethra were uninjured. He arrived in a horribly septic condition and it was several weeks before restorative measures could be undertaken. The surfaces of the divided corpora cavernosa were refreshed and approximated by fine catgut sutures, and at a subsequent date the penis was replaced in its sheath and the large gap in the skin at the base of the penis closed.

Septic Neuritis.

One of the most serious problems we have had to deal with has been the acute and persistent pain in the areas supplied by nerves that have been injured. The pain is obviously in some cases agonizing, and only very imperfectly relieved by full doses of morphine. Wound sepsis has always been present in these cases, which are no doubt examples of infective neuritis.

WOUNDS OF SKULL.

Captain Graham Simpson, R.A.M.C.T.F., reports from the 3rd Northern General Hospital the following case of bullet wound of the skull attended by temporary paralysis as an example of a speedy recovery from what at first appeared to be a severe injury of the brain.

A Gordon Highlander, aged 28, a fortnight before admission, whilst advancing at the run, was hit in the head by a bullet which he said came from the right side. It "knocked him out," but he did not lose consciousness; when he tried to get up, he found he could not move his right arm or leg; he lay where he fell for three and a half hours, and during this time he vomited once, but felt very little pain or headache, and no vertigo. For two or three days after this he noticed that his right arm and leg occasionally twitched.

When admitted to the 3rd Northern Hospital his mental condition was quite clear, and he was extremely cheerful; there were two small scalp wounds, one on either side about 1 in. from the middle line; they were quite clean and nearly healed; they lay over the upper parts of the motor areas. There appeared to be no injury to the cranial nerves, and his speech was not affected; the right arm was very weak, but he could just move his fingers and his elbow; he could not move that shoulder at all; the right leg was paralysed except for some movement of the toes; the left leg was weak, but he could move the foot and leg. The knee jerks were exaggerated, and Babinski's sign and ankle clonus were well marked on both sides. He had never had any incontinence.

Since admission eighteen days ago, he has improved very rapidly; he can now walk without sticks, though rather unsteadily, and can sign his name with his right hand. His one complaint is that he feels very giddy when he bends down.

The injury appears to have been caused by a bullet striking the vertex of the skull and causing a fracture; probably some bleeding occurred from a tear of the superior longitudinal sinus or of one of its tributaries and was limited to the motor areas of the right and left legs and right arm; this would account for the twitchings he observed for the first few days after the injury and for his rapid recovery.

Skiagrams have been taken of the skull, but it is difficult to determine whether the fracture is depressed or not.

Captain Mouat, R.A.M.C. (T.F.) reports the following cases illustrating the necessity of radiographic and exploratory operation in all cases of gunshot wounds involving the cranium even where no evident depression is present.

1. Private C., 2nd K.O.Y.L.I., on furlough in Sheffield reported himself on November 25th, 1914, complaining of persistent headache. He had been struck on the right posterior parietal region by a fragment of shell at La Bassée on October 21st. A small sinus persisted in an otherwise healed scalp wound and led down to an apparently necrosed fragment of the outer table. On exploration and removal of the slightly depressed fragment of the outer table, several fragments of the inner table were found compressing the intact meninges.

The patient had been sent back on furlough; no depression could be made out on exploring the wound with a probe, and the only symptom complained of was headache, in spite of the fact that there was extensive injury with depression of fragments of the inner table.

2. Private C., 1st Lincolns. Admitted September 27th, 1914, with a suppurating shrapnel wound of the left frontal region. The frontal bone was exposed in the base of the wound, but was not depressed.

The patient complained of persistent headache and a radiogram showed depression of a large fragment of the inner table. On removal of the outer table a large depressed fragment of the inner table was found in an extra-dural abscess. The only symptom presented by this patient was headache.

Bullet Wound of Upper Jaw.

Private R., 2nd Battalion Welsh Regiment, was wounded at Ypres on November 8th, 1914, by rifle bullet, which, after striking the ground in front of a trench, entered the right orbit between the eyeball and the lower lid and traversed the right maxillary antrum, its point becoming embedded in the hard palate. An attempt to extract the bullet through the small aperture in the hard palate was unsuccessful, but the deformed bullet was finally extracted after opening up the antrum through the incisor fossa. The patient, when admitted to the 3rd Northern General Hospital on November 10th, had an effusion of blood into the anterior chamber of the eye; the tension was unaltered. The effusion of blood has now cleared up, and the patient is rapidly recovering the power of vision in the injured eye. Ophthalmoscopic examination shows the presence of a small haemorrhage on the inner side of the retina.

SECONDARY HAEMORRHAGE.

Captain Graham Simpson, R.A.M.C.(T.), has furnished the following notes of a case of bullet wound of the leg, followed by secondary haemorrhage, which was treated successfully by ligature of the femoral artery.

In this case the shot was fired at short range (about ten yards), and there was a tiny entrance wound and an exit wound the size of the palm of the hand: the latter was dirty and everted with pieces of tendon and muscle hanging out; the bullet had gone through the middle of the calf. He was admitted to the 3rd Northern General Hospital eight days after the injury, and two days later had a slight haemorrhage; the next day but one he had another slight bleeding; six days after that, a severe haemorrhage occurred which necessitated the use of a tourniquet and of saline infusion; two days later (twenty days after the receipt of the wound), a general anaesthetic was given, and the femoral artery tied with catgut at the apex of Scarpa's triangle. Three days after the operation the wound of exit again bled but not very much; the wound was packed, and he has had no bleeding since then; the wound rapidly became clean, and is now healing well. The usual precautions were taken against gangrene, but there never appeared to be any danger of this, and the patient's toes kept warm from immediately after the operation.

My object in publishing this case, Captain Simpson adds, is to raise the question whether the instructions given in modern surgical textbooks as to the treatment of arterial bleeding are not too absolute; in this case I felt certain that a search for the divided ends of the injured artery would have necessitated a very long incision in infected tissues, and I am not sure that I should have found the artery or, if I had done so, whether the tissues would have held a ligature. The ligature of the femoral artery was done through a small incision, which healed by first intention, and the patient was hardly at all upset by this operation. In future I should be inclined to prolong the anaesthetic sufficiently to open up the septic wound enough to be able to pack it.

AXILLARY ANEURYSM.

We are indebted to Captain I. H. Cobb, R.A.M.C., for the following notes of two cases treated in the military wards of the Sheffield Royal Infirmary:

1. J. H. was wounded at Ypres on October 20th, receiving a shrapnel wound below the outer third of the right clavicle. An *x*-ray plate showed a small piece of shrapnel lodged in the inner wall of the axilla. For the first few days he spat a little blood, but when he was admitted this had ceased. There were no abnormal signs in the right lung and the wound was healed. Underneath the point of entry of the shrapnel was a pulsating and expansile tumour, over which was heard a loud bruit. This bruit was conducted into the axilla and could be heard down to the commencement of the brachial artery. Compared with the left radial artery the pulse in the right was delayed and diminished in force. A sphygmographic tracing of the right radial artery showed a slight percussion wave and the merest attempt at a dicrotic wave. He had tingling and numbness of the two middle fingers.

The third stage of the right subclavian artery was isolated and a double ligature of twisted silk placed round it and tied. Now, nearly a month later, there is no sign of the aneurysmal swelling, and he has no disability at all in the limb.

2. The second was an almost precisely similar case. D. M. received a bullet wound on October 14th, the entry wound being below the outer third of the right clavicle and the exit wound on the left side of the chest. The wounds were healed when we received him. Just under the wound of entry was an expansile pulsating swelling. There was a marked thrill to be felt and a loud bruit to be heard over it. The bruit was conducted into the axilla. The right radial pulse was diminished and somewhat delayed. A sphygmographic tracing showed a slight percussion wave and practically no dicrotic wave.

A temporary ligature of fine rubber tubing was placed on the third portion of the subclavian artery. The aneurysm was then exposed by separating the fibres of the pectoralis major muscle. It was globular in outline and about the size of a Victoria plum. On incising it there was a fierce gush of blood coming from its distal end and from a large branch—the external mammary; both these were ligatured and the temporary ligature on the subclavian replaced by one of silk. Aseptic healing followed.

FRACTURES.

The following notes from the military wards of the Sheffield Royal Infirmary are furnished by Captain I. H. Cobb, R.A.M.C.(T.F.).

Compound Fracture of Forearm.

G. H. R. was wounded on September 14th, a rifle bullet passing through his left forearm. The *x*-ray photograph showed a fracture of the ulna near the elbow and a fracture of the radius near the middle of the shaft. There was large loss of substance in the case of the radius, causing a hiatus of about two and half inches between the upper and lower fragments. Loose pieces of bone were removed and the wounds healed quickly. Later an incision was made over the radius and a long Lane's plate was inserted bridging over the gap in the bone. The wound healed perfectly and he is now being treated by massage and passive movements.

Septic Compound Fractures of Thigh and Leg.

The following two cases illustrate the value of an open operation with the removal of foreign bodies and loose pieces of bone followed by the nailing together of the fragments.

1. J. C. was wounded on October 25th, a piece of shrapnel causing a compound fracture of the left tibia and fibula. On admission there was a profuse discharge of pus from the wounds and the position of the fractured bones was very bad. A long incision was made along the tibia and the fragments were exposed. Loose pieces of bone were removed and good alignment of the bones was obtained by extension of the foot and manipulation of the bones at the seat of fracture. A hole was then drilled through the tibia somewhat obliquely to include both the upper and lower fragments. A nail three inches and a half long was then driven in securing the fragments and the head of the nail was left projecting through the wound. The wound was then closed after making provision for drainage. Suppuration has now ceased and the wounds are practically healed. The bones are uniting in a very satisfactory position.

2. The second case is that of a Belgian who received several shrapnel wounds, including a compound fracture of the left femur. There was a profuse discharge and an *x*-ray plate showed comminution of the femur. A long anterior incision was made, the site of fracture was exposed, and loose pieces of bone were removed. By manipulation and extension good apposition and alignment were obtained, the fragments were drilled, and a long nail was driven in, the head of the nail being made to project through the wound. In this case a piece of silver wire was placed around the seat of fracture and the ends made to project through the wound, so that it also can readily be removed. Suppuration, at first profuse, is now lessening, there is good position of the fracture, and there is a very small amount of shortening.

3. *Comminuted Fracture of Lower End of Femur.*

A Belgian was admitted with a compound fracture of the lower end of the right femur. He was treated with extension and a long Liston splint. There was no sepsis, and the wounds healed rapidly. There was nearly 2 in. of shortening. An *x*-ray plate showed the lower end of the femur to be split into several pieces. A long incision was made anteriorly down to the bone and the site of fracture exposed. The fragments were manipulated into position and a Lane's plate was applied. The position of the fracture is now anatomically perfect and there is practically no shortening.

THE HOSPITAL FOR WOUNDED INDIANS AT BRIGHTON.

As was announced a few weeks ago, the War Office has decided to provide accommodation at Brighton for 3,000 wounded Indians from the Expeditionary Force serving in France and Belgium. In addition to the permanent hospitals in the town, including the Royal Sussex County Hospital, the Sussex Eye Hospital, and the Brighton Dispensary, all of which have provided accommodation for wounded men, the 2nd Eastern General Hospital provides nearly 1,000 beds, so that the total provision for wounded in this popular seaside resort will not fall far short of 5,000.

The General Hospital for Indian troops is to be located in three main blocks—first, the Dome, Pavilion, and Corn Exchange, generously placed at the disposal of the authorities by the Town and Corporation, whose property they are; secondly, at the York Place Secondary Council School, lent by the Education Authority, and, thirdly, at the Brighton Union, which the guardians have agreed, in most patriotic spirit, to vacate as soon as possible. The scheme provides for 3,300 beds, distributed as follows: 520 in the Pavilion Dome and Corn Exchange, 520 in York Place School, and 2,200 in the Poor Law institution.

The preparation of the two former blocks is well advanced, and they will shortly be complete in all respects. Already some six hundred patients have been admitted. The arrangements for converting the Poor Law institution into a military hospital will of necessity occupy a much longer time, for in the first place the guardians have to find accommodation for all the inmates, and as these number something like 1,200, this is a very considerable task. However, it is being well handled by those responsible, and the inmates are being transferred to suitable buildings as rapidly as possible. As soon as this process is complete, the necessary preparations for converting the old workhouse into a military hospital will be proceeded with at once. In the event of the institution not providing accommodation for the 2,000, an additional building will have to be found.

The Secretary of State for War at first sent to Brighton Sir Walter Lawrence, Bart., G.C.I.E., as the War Office Commissioner, to make the necessary arrangements with the town authorities, a task which he carried out with his accustomed tact and skill. Another celebrated Anglo-Indian officer, Colonel R. Neil Campbell, C.B., C.I.E., has been appointed as Administrator of the Indian General Hospital. He has seen service in the Naga Hills Expedition of 1879–80, and at Akha in 1883–4. He was appointed Inspector of Civil Hospitals, Assam, was made C.I.E. in 1909, and C.B. in 1912. The staff of the hospitals is by no means complete, but up to the present is as follows: The head quarters staff, in addition to Colonel Campbell, consists of Lieutenant-Colonel W. H. Elliott, D.S.O., Registrar and Secretary of the whole hospital, and Captain A. Irvine-Fortescue, R.A.M.C., Company Officer and Adjutant. The staff at the Pavilion Branch consists of Lieutenant-Colonel J. N. Macleod, C.I.E., in command, with the following assistants: Lieutenant-Colonel O. H. Channer, Lieutenant-Colonel J. G. Hulbert, Lieutenant-Colonel W. S. P. Ricketts, Lieutenant-Colonel H. R. Woolbert, Major M. Dick, Major Langston, Major C. L. Williams, and Dr. Morton in charge of the *X*-ray Department.

The staff of the York Place Branch is as follows: Lieutenant-Colonel T. H. Sweeny in command, with Lieutenant-Colonel Coates as Registrar. The other officers are Lieutenant-Colonel Joshua Duke, Lieutenant-Colonel D. G. Crawford, Lieutenant-Colonel Duer, Lieutenant-Colonel Greaney, Lieutenant-Colonel J. J. Pratt, Lieutenant-Colonel E. W. Young, and Major E. S. Peck, with Lieutenant-Colonel T. D. C. Barry as *x* ray specialist. All are members of the Indian Medical Service on the retired list, with the exception of Lieutenant-Colonel Macleod.

In addition there are several junior R.A.M.C. officers attached to each branch, and to about each fifty beds is appointed an Indian medical man and a senior Indian

medical student. About seventy convalescent Indian patients are acting as cooks and orderlies.

Later on it is probable assistance will be sought from medical men practising in the town.

The actual nursing is being undertaken by men of the R.A.M.C. and of the St. John Ambulance Association, who have come from all parts of the kingdom. The local detachment, under Dr. Eccles, has been much engaged in preparatory work. A supervising sister is attached to each section of each hospital—that is, about forty-two in all, and sisters also have charge of the operating theatres, of which there are to be two in each hospital. No women are to be employed in the actual nursing of th men.

.he Pavilion Hospital consists of those well-known Brighton landmarks, the Pavilion, the Dome, and the Corn Exchange. The Pavilion is a building in the Oriental style, from designs by the architect John Nash. It has numerous cupolas, spires, and minarets, and was erected in 1819 by George IV, when Regent, as a royal residence, in place of his former Marine Cottage. The interior, which is richly decorated, comprises a banqueting room 60 ft. by 42 ft., a music room of equal size, a round room, 55 ft. in diameter, decorated with Chinese paintings, etched in gold on a vermilion ground. There is also a corridor over 160 ft. long. This building, when no longer required as a royal residence, was sold by the Commissioners of Woods and Forests to the town of Brighton for the sum of £53,000. The Dome was built in Moorish style to serve as stables. It has a circumference nearly as great as that of St. Paul s Cathedral. The Corn Exchange was formerly the Regent's riding school.

The Pavilion block is already partly occupied by wounded Indians. The Dome itself holds over 100 beds, the Corn Exchange about 100, the rest of the 520 being placed in the rooms of the Pavilion—the music room, the banqueting room, and others. There is an operating theatre attached to the Pavilion and another to the Dome. The cooking and sanitary arrangements are the same as those referred to below in connexion with York Place block. The Pavilion Hospital is complete in itself, with its *x*-ray department, dispensary, stores, etc., and the same is true of the other two Indian hospitals.

The York Place Council School has been completely altered. Classrooms have been converted into wards, with varying numbers of beds; the gymnasium makes a fine ward capable of holding 60. Two operating theatres are being built, and a complete *x*-ray room is being equipped. A dispensary has been fitted up, and rooms have been reserved for the administrative staff and for the orderly medical officer.

The sanitary arrangements have been carried out to suit the necessities and habits of the Indians. Thus the baths are all shower baths, hot and cold. The closets are all stand up w.c.'s, with places for the feet, and a hole over which the native squats and defaecates

The language difficulty, which might appear at first sight formidable, has been met in the following way: The medical officers practically all speak the dialects; there are many Indian medical men and students engaged, and the patients can often talk a little English. Notices are posted up in Urdu and Nagri, so that the difficulty is not so great as it might at first appear.

The preparation and cooking of the food present a very much more complicated task than in an ordinary hospital, owing to the difficulties of caste, but everything possible has been done to meet the men's requirements. There will be two sets of cooking arrangements in each hospital, one for the Hindus and one for the Mussulmans. The Ghurkas and Sikhs will join the former. The utensils, etc., are kept strictly separate. The dietary is not very elaborate. Chupatties, which are made of plain flour and water, by hand on an iron plate, are a favourite food. When they have to a certain extent set, they are tossed from side to side by the cook, in pancake fashion. Other articles of consumption are curry and rice. The strict Mohammedans do not touch alcohol.

The organization of this immense hospital of over 3,000 beds reflects the greatest credit on those responsible, and Colonel Neil Campbell is to be congratulated on the provision he has already made for 1,000 beds, and for the arrangements for increasing these by another 2,000 in the near future.

THE BRITISH RED CROSS SOCIETY.

Help for Serbia and Montenegro.

Arrangements have been completed for sending Red Cross aid from the British Society to the Serbians and Montenegrins. Early in January a party of surgeons, nurses, and orderlies will leave Marseilles for the Adriatic, making the voyage in Sir Thomas Lipton's yacht *Erin*, which has been placed at their disposal. The party will be in the military charge of Captain Bennett, and will consist of 2 surgeons and 3 orderlies for Montenegro and 5 surgeons, 7 nurses, 7 women orderlies, and 3 men orderlies for Serbia. Attached to the Serbian unit are a mechanic, a motor lorry, and motor car, each with driver, and an ambulance with driver. Each party will be equipped with stores for a considerable period.

An interesting letter, dated December 6th, has been received in London from Dr. H. G. Barry, one of the surgeons attached to a Red Cross unit sent to Serbia some months ago. He writes:

> Our party has three large tobacco factories under its care, and these contain 1,400 wounded. It is obvious that we cannot go into detail in the matter of supervision, but we can do much. We have the assistance of a Russian doctor. With this unit we have in our first two weeks done 5,000 dressings—not a bad record! In addition I have succeeded in getting together a very presentable operating room, in which I commenced work by an amputation at the hip-joint. The Serbian doctor under whom we work, proves to be one of the most energetic and reasonable men I have known, so that we are most fortunate in this important respect. On the whole, we are extremely pleased with the work we are doing, and are entirely satisfied with the Serbian authorities under whom we work.

MOTOR AMBULANCES FOR WAR SERVICE.

By H. MASSAC BUIST.

The fruits of the work of the British Red Cross Society in revising its specification of requirements for motor ambulance construction in the light of experience gained at the front are beginning to appear. In various parts of the country I have lately seen a wide variety of chassis, including Napiers, Vauxhalls, and so forth, equipped with ambulance bodies according to the new specification which primarily aims at avoiding overhang. One observes that comparatively few of these bodies are furnished to secondhand chassis. Nearly all of them are fitted to newly manufactured chassis, which have the advantage of proportionally long wheelbase, and as low a centre of gravity as it has been practicable to achieve in motor engineering design to date. This movement should be considered in conjunction with the step taken by the War Office in authorizing the Red Cross Society to make its statement in regard to further voluntary hospital work at the front. In a phrase, the motor ambulance business, as in a sense a separate branch of enterprise, is gradually being regularized, with corresponding gain in organization and efficiency. The policy of individualism is to be discouraged, and the work centralized more and more.

Classification of the Chassis.

Practically all the new chassis used for ambulance work are driven by live axle. That method of power transmission has been so long tried that it may be taken that it is universal save for commercial motor vehicles. At the moment it is, of course, a moot point how to classify the motor ambulance chassis. The fact that to date pleasure car chassis have been adapted to this purpose in the ratio of quite 95 to 5 commercial motor vehicle chassis implies nothing. Likewise, high speed possibilities, or, again, great range of speed—qualities for which there is a high premium in pleasure car service—are of no particular use for the motor ambulance chassis. On the other hand, quietness of power transmission is particularly valuable in the interest of the patient. The absence of the necessity for high speed means that there is no occasion to provide easy means of varying the ratios of engine revolutions to those of the road-wheels other than is furnished in the ordinary gear-box. For example, in the early days of the movement, when nearly all chassis were chain-driven, the mere changing of two easily accessible sprocket wheels on a motor car enabled engines, which were then anything but flexible, to work quite satisfactorily either in a hilly or a

level country, and either with a light or with a heavy body.

To-day, and for some years past, there is and has been no necessity for making such changes in a properly designed car that is not deliberately geared too high. Manufacturers can drop or add a tooth or two in the back axle as may be necessary when varying from their standard touring vehicle to make a chassis suitable for motor ambulance work.

EXTRA LARGE *v.* STANDARD WHEEL DIAMETER.

Even if larger wheels than ordinary are required there is no need to have recourse to the chain drive if anything in the guise of a pleasure car chassis is being used. We all know that a larger wheel travels more smoothly over rough surfaces than a smaller one. But the difference is not so great as to make such a change desirable as a common practice, especially since by working out suspension details with care it is possible practically to equalize the riding as between extra large and ordinary diameter wheels.



Ambulance for four lying-down cases on special 16-22 h.p. Napier chassis, as supplied to the requirements of the British Red Cross Society. The body will take twelve sitting-up cases.

There are at least two disadvantages of a practical character as regards the use of extra large diameter wheels. The first is that the centre of gravity with which chassis are designed nowadays is so low that it is practically impossible to effect any further reduction because large wheels are employed. Therefore by the use of them the height of the body would be necessarily somewhat raised. That would not facilitate the work when placing loaded stretchers in position. Again, the higher centre of gravity involved by the use of larger diameter wheels would tend to increase lateral oscillation to an extent certainly as great as any reduction that might be effected in the matter of vertical shocks.

Of course, there is one mechanical way of overcoming lateral oscillation due to the increased size of the wheel, involving somewhat higher centre of gravity; I mean by widening the track. But a study of latter-day chassis of the medium and larger sorts reveals that the happy mean has been reached in this particular. Any further widening of the track at this juncture would result in exaggeration such as would prove awkward in many circumstances in which the vehicle might have to be used for war service. Further, extra large wheels would call for unusual sizes of tyres in greater numbers than those readily available either at home or abroad for the sized wheels generally used.

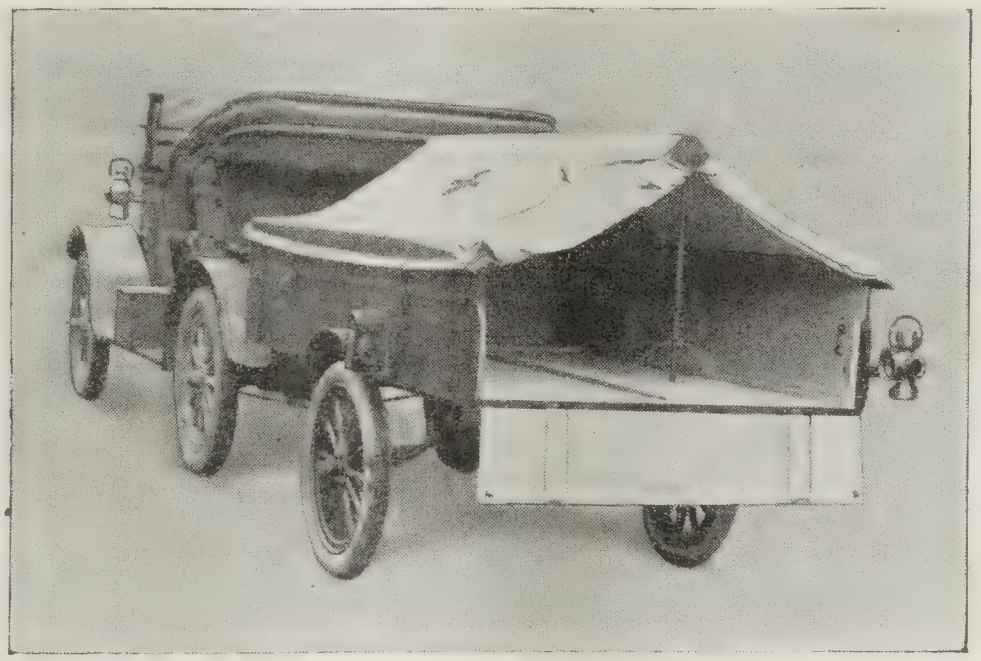
AMPLY LONG WHEELBASES.

Lastly, a study of the more modern chassis on the "market"—as instance the 16 to 22 h.p. four-cylinder Napier variety, which has been developed at short notice in a distinctly intelligent manner—reveals that there is comparatively a great length of wheelbase. This is a much more important factor in producing smooth riding than the employment of extra large diameter wheels. In this typical example of a motor ambulance produced in the light of the Red Cross Society's latest regulations, it will be seen that the problem of overhang has not been completely eliminated, though it has been reduced so greatly by comparison with the class of vehicle we were acquiring at the outbreak of war as to make the proposition entirely different.

Such chassis must be taken as representing about the limit in overall length of what is practical and convenient in the middle-power, handy vehicle. Were the problem of the disposition of the driver so settled, however, that he was not accommodated behind the bonnet of the car, the gain of that amount of space would enable the ambulance to be moved forward on the chassis so that the back axle would be behind the rearmost portion of the stretchers. In other words, while we have made a remarkable advance in a very brief space of time and are to-day producing really practical motor ambulances, nevertheless the ideal that can be achieved, even with the designing and manufacturing resources at present available, has not been reached.

A NEW ZEALAND AMBULANCE.

There are, of course, a wide variety of ways in which motor ambulances are elaborated beyond standard specifications, as instance one on a 15–20 h.p. four-cylinder Crossley chassis presented to the New Zealand Expeditionary Force. The lower portion of the four-stretcher body is fashioned of panelled mahogany. A thick waterproof material forms a permanent roofing, and is more durable than the twill ordinarily used. Waterproof covers designed to roll up are fitted alike to the sides and to both ends. From the roof there hangs a portable acetylene lamp. The exhaust from the engine serves, incidentally, to heat the water in a metal tank on the near side running-board, a companion tank for cold water being fitted on the off side. There is beneath the hot-water tank on the near side a tin and asbestos lined locker, with a rack containing a Primus stove, enamelled basins, and other gear for preparing warm stuffs for the wounded.



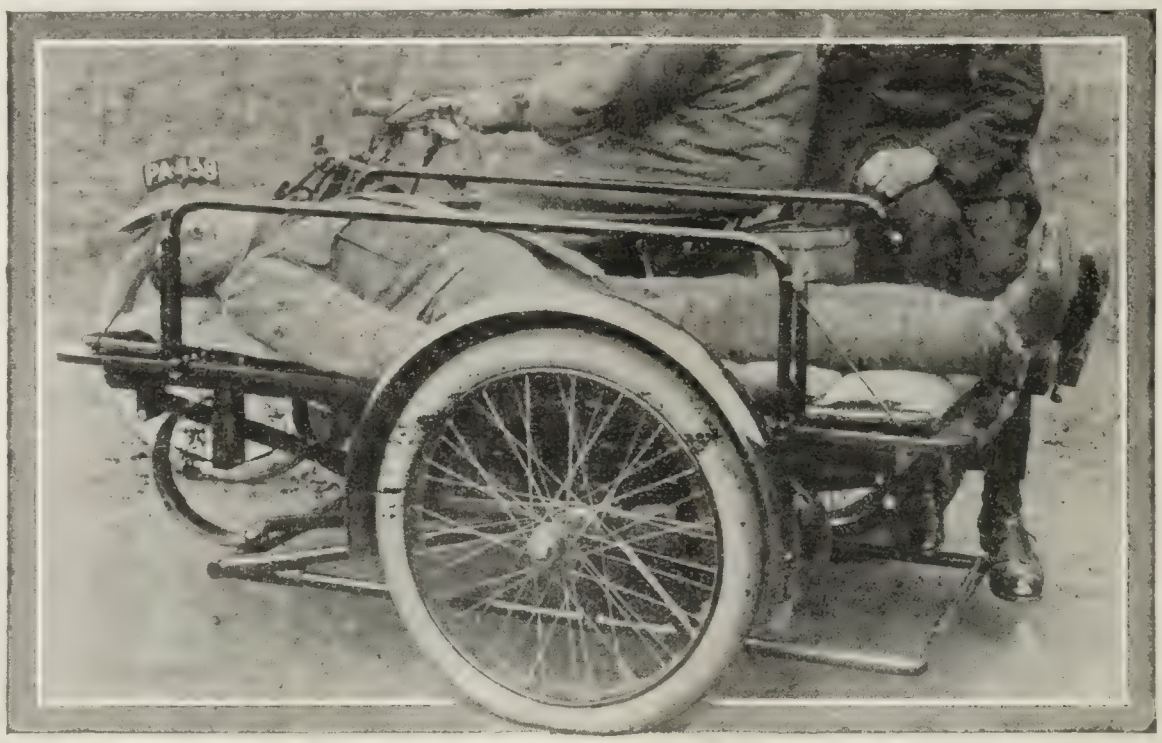
Trailer ambulance, as used at the 1st Southern General Hospital, Birmingham.

THE TRAILER IDEA.

The disadvantages of the converted motor car, especially of the old-fashioned and smaller types, are so well known as to need no labouring. Suffice it that sundry ingenious attempts are made to obviate these drawbacks. One of the methods exploited is the trailer ambulance designed by Mr. E. M. Tailby, of Birmingham, which has been considerably used by the 1st Southern General Hospital (Territorial) established in the University buildings of that city. Lieutenant-Colonel F. Marsh, the administrator

of this hospital and consulting surgeon to the Queen's Hospital at Birmingham, considers the trailer ambulance a great improvement on the converted motor car because it does not curtail the seating accommodation of the vehicle, besides which it can be made at comparatively little cost.

The ambulance is designed to carry two stretcher cases and to be attached to the rear of any motor car or transport wagon. The body of the trailer is 8 ft. long and the wheel track 4½ ft. It runs on artillery pattern pneumatic-tyred wheels. The axle is plain, no ball-bearings being employed. The covering is ordinary waterproof canvas centrally attached to a ridge pole and secured to the sides by means of straps.



Zenith side-car ambulance arranged for one lying down case.

One of the claims advanced for this design is that by using the trailer ambulance two-seater motor cars can immediately be made useful.

The example in question has been used in connexion with the work of transporting the wounded from the Birmingham stations to the 1st Southern General Hospital, also in the transport of special cases between that hospital and its section hospitals.

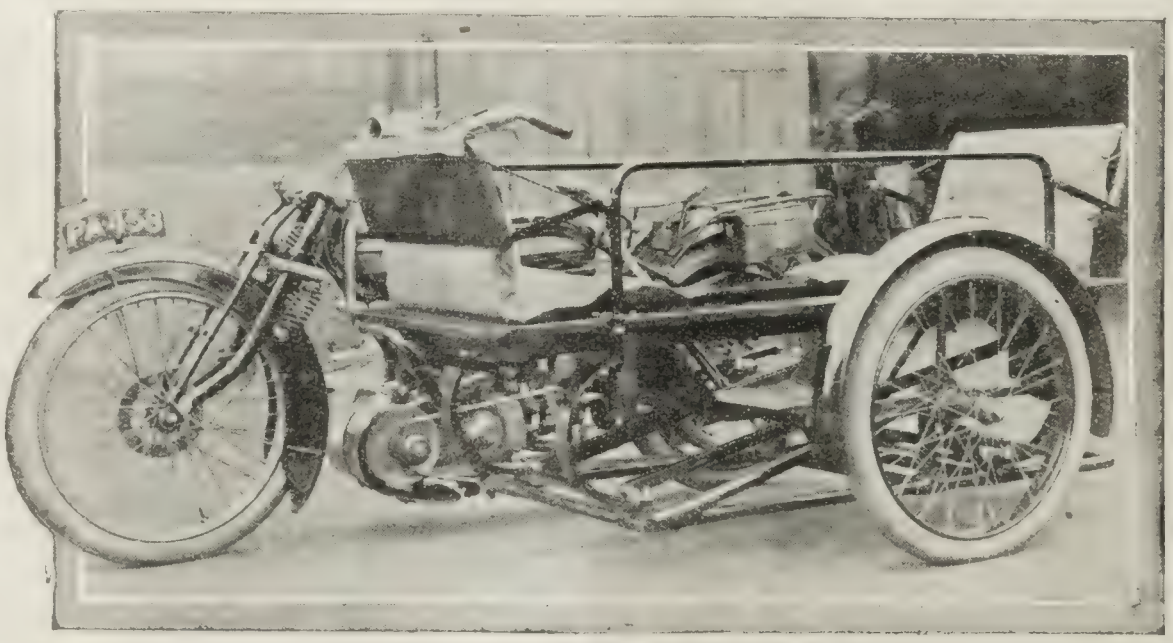
With due deference to authorities who may approve this method of ambulance, I can say only that it is better than none at all. Mechanically, the notion of trailers for motor cars is no novelty, also it is bad. For pleasure cars, trailers on practically this principle were brought forward some time ago with the notion of overcoming the difficulty of accommodating trunks when on tour. Trunks are inanimate, therefore it matters not how much they are bumped about, nor whether the oscillations are merely vertical or are also lateral. During the five months that war has been in progress we have seen how overhang has been the prime difficulty to be overcome in designing the comfortable-riding ambulance. In the two-wheeled trailer scheme you have proportionately a greater amount of overhang than with the worst examples of the earlier types of motor ambulances improvised at the outbreak of war. As for a claim put forward to the effect that by the use of plain axles "ball-bearings and complications" are altogether eliminated, one sees no advantage in this. Nowadays, ball-bearings are absolutely reliable, and need next to no attention.

The Side-car Ambulance.

Naturally, while there is such a demand for motor ambulance service of all sorts, the possibilities of the motor cycle with side-car are not being overlooked. In this connexion one might have expected a revival of the trailer idea. Whatever their faults, trailers were used more with motor cycles than ever they were with cars. But the trailer has been absolutely superseded in motor cycle practice by the side-car.

Quite one of the most ingenious of these is one that has been designed and patented by the well-known motor cyclist, Mr. F. W. Barnes, of the Zenith Company. This takes the form either of a one-man stretcher, wherein the patient lies prone, or it can be converted into a two-man stretcher, wherein the patients sit up but are not called on to bend their legs.

The point of interest in the device is the manner of suspension, since any one can design a stretcher and put it on wheels. The scissors principle of suspending the frame of the Zenith motor bicycle some years ago is here used in connexion with an ambulance side-car. The four parallel cross members have each one end bolted to the ambulance body and the other to the motor bicycle frame. C springs constitute the other connexion between the frame and the body. Small vibrations are taken up by supplementary helical springs attached to the extremities of the main C springs. The point of this scissors scheme of suspension is that wherever the patient's weight is placed, the springs work in the same manner as if the weight lay in the centre of the side-car ambulance.



The same arranged for two sitting cases.

By devices of this sort we do not, of course, achieve that dead level travelling possible with the largest types of expensively sprung car chassis; but we avoid the chief evil of cheaper devices, because there is no fault to be found on the grounds of the patient being subjected to jarring. The fault is all the other way; that is to say, the suspension is particularly plangent. Therefore, when driven with judgement over good surfaces the patient floats in the side car; while bad judgement in driving, especially over bad surfaces, can cause him discomfort only by reason of his bouncing too much and therefore feeling a great part of the time that there is nothing underneath to support him.

The notion of well-designed side-car ambulances is quite

a practical one; albeit, little originality has been manifest so far, this Zenith model being quite an exception.

In the case of all side-car ambulances strict attention should be paid to silencing effectively the engine of the motor bicycle employed. According to the British law, machines have to be marketed with adequate silencers as standard. So far, however, the law has never been put into force. Indeed, since the outbreak of war motor cyclists as a class seem to travel about more noisily than ever. In face of the distress this sort of thing is calculated to cause the wounded, who have already experienced sufficient shock from gun-fire, no motor cycle employed in connexion with ambulance work should be used either with an inefficient silencer or one equipped with any form of cut-out.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died of Wounds.

LIEUTENANT CHARLES COCHRANE ILES, R.A.M.C., who is reported as having died of wounds, was educated in the Universities of New Zealand, Edinburgh, and Liverpool. He took the M.B. and Ch.B. at Edinburgh in 1910, the M.D. in 1912, and the D.T.M. at Liverpool in 1911. He had acted as resident pathologist to the Royal Sussex County Hospital, Brighton, first assistant in the Bermondsey Tuberculosis Dispensary, and as assistant in the Yelverton Clinical Laboratory; he joined the R.A.M.C. Special Reserve on September 7th last.

Mr. Richard Vincent Bevan, Huxley Scholar, Charing Cross Medical School, died on December 12th of wounds received while serving in the ranks of the London Rifle Brigade. He was the son of Mr. Richard Bevan, of West Kensington.

Wounded.

Adams, Lieutenant H. F. W., R.A.M.C
Young, Lieutenant R. F., R.A.M.C.

NOTES.

THE LEGION OF HONOUR.

THE President of the French Republic has conferred the Croix de Chevalier of the Legion of Honour upon Captain J. J. O'Keefe, M.B., R.A.M.C., for gallantry during the operations between August 21st and 30th with the Expeditionary Force.

MEDICAL OFFICERS WANTED.

1st London Sanitary Company.

Captain H. S. Fremlin, 1st London (City of London) Sanitary Company, R.A.M.C.T., Duke of York's Head Quarters, Chelsea, S.W., requests us to state that medical men with sanitary qualifications are required as officers of this unit.

TETANUS.

MORTALITY.

WE are indebted to the Director-General, Sir Alfred Keogh, K.C.B., for the following tabular statement, prepared by Major H. G. Pinches, R.A.M.C., on the results of treatment in 39 cases of tetanus. The deaths numbered 28, so that the general mortality was 71.8 per cent. Major Pinches points out that of the 20 cases treated by the carbolic acid method (2 per cent. solution) there were 14 deaths, a mortality of 70 per cent.; only 5 of these cases were treated by carbolic acid only; all died. The other 15 were treated with carbolic acid and antitetanic serum; of these, 9 died, a mortality of 60 per cent. Of the 19 cases treated by antitetanic serum alone, 14 died, a mortality of 73.7 per cent. The figures do not throw much light on the value of either method of treatment. Apparently the result was determined, at any rate to a much larger extent, by the duration of the incubation period. It will be seen that of the 7 cases with an incubation period of five or six days, all died; that of the 6 with an incubation period of seven days, 1 recovered; and of the 8 with an incubation period of eight days, 2 recovered. Of the 14 with an incubation period of nine days or more, 7 recovered. Four cases were treated with injections of magnesium sulphate in addition to carbolic acid or serum or both; all died, with the exception of one, which was also treated with both serum and carbolic acid; in this case the incubation period was sixteen days.

Incubation Period.	No. of Case.	Treatment by 2 per Cent. Carbolic.	Treatment by Anti-tetanic Serum.	Result.	Remarks.
5 Days ...	1	No	Yes	Died	Serum subcutaneous.
,, ...	6	No	Yes	Died	Serum subcutaneous.
,, ...	15	Yes	Yes	Died	Serum intrathecal + inversion.
,, ...	34	No	Yes	Died	Serum intrathecal.
6 Days ...	3	Yes	Yes	Died	Serum subcutaneous.
,, ...	35	No	Yes	Died	Serum intrathecal.
,, ...	39	No	Yes	Died	Serum intrathecal.
7 Days ...	2	No	Yes	Died	Serum subcutaneous.
,, ...	4	Yes	Yes	Recovered	Serum subcutaneous.
,, ...	23	Yes	Yes	Died	Serum intravenous.
,, ...	26	No	Yes	Died	Serum intravenous.
,, ...	36	No	Yes	Died	Serum intrathecal.
,, ...	37	No	Yes	Died	Serum intrathecal.
8 Days ...	7	No	Yes	Died	Serum subcutaneous.
,, ...	11	Yes	Yes	Died	Serum intrathecal and subcutaneous.
,, ...	12	Yes	Yes	Died	Serum subcutaneous.
,, ...	16	No	Yes	Died	Serum intrathecal.
,, ...	20	Yes	Yes	Died	Serum subcutaneous.
,, ...	27	Yes	No	Died	
,, ...	29	No	Yes	Recovered	Serum intrathecal.
,, ...	33	No	Yes	Recovered	Serum intrathecal.
9 Days ...	9	Yes	Yes	Died	Serum intrathecal and intravenous.
,, ...	19	Yes	No	Died	
,, ...	25	No	Yes	Died	Serum intravenous and subcutaneous.
,, ...	32	No	Yes	Recovered	Serum intrathecal.
10 Days ...	18	Yes	No	Died	
,, ...	28	Yes	No	Died	
11 Days ...	5	Yes	Yes	Recovered	Serum subcutaneous.
,, ...	17	Yes	No	Died	
,, ...	30	No	Yes	Recovered	Serum intrathecal.
12 Days ...	8	No	Yes	Died	Serum subcutaneous.
,, ...	31	No	Yes	Recovered	Serum intrathecal.
15 Days ...	10	Yes	Yes	Recovered	Serum subcutaneous.
16 Days ...	21	Yes	Yes	Recovered	Serum subcutaneous.
22 Days ...	14	Yes	Yes	Recovered	Serum subcutaneous.
Unknown	13	Yes	Yes	Recovered	Serum intrathecal.
,,	22	Yes	Yes	Died	Serum intravenous and subcutaneous.
,,	24	Yes	Yes	Died	Serum intravenous.
,,	38	No	Yes	Died	Serum intrathecal.

PROPHYLACTIC USE OF ANTITETANIC SERUM.

M. Hartmann, in a communication to the Académie de Médecine on December 8th, states that during a recent tour of inspection he found that among 2,473 wounded received at Besançon 36 cases of tetanus occurred, with 33 deaths, and that at Bourg among about 900 wounded there were 7 cases of tetanus. At neither of these places did a case occur among the men who had received injections of antitetanus serum. He expresses the opinion that if in all wounds without distinction — soiled, anfractuous, and simple—the patients were given a prophylactic injection of the serum, and if this were repeated six or seven days later in anfractuous wounds, tetanus would almost entirely

disappear as a complication of wounds. Dr. Boquel, of Angers, in a report submitted to the same meeting, gave particulars of 31 cases of tetanus, in which the results seemed to be mainly governed by the duration of the period of incubation. In 10 cases the period was ten days, and all died; in 18 it was from eight to fifteen days, and 8 recovered; in 3 it was twenty days or more, and all recovered. M. Boquel used a 2 per cent. solution of carbolic acid, and injected 4 c.cm. every two hours—that is to say, approximately the same dose as that given by Drs. Purves Stewart and Laing in the successful case recorded in our last issue. Like them, Dr. Boquel did not observe pigmentation of the urine, nor albuminuria. Drs. Stewart and Laing mention a diffuse, red, punctate rash, and M. Boquel says that in two instances he observed small red measles-like spots, which lasted two or three days. M. Boquel attaches importance to encouraging diuresis, and, acting on Baccelli's original recommendation, caused his patients to take as much as 20 grams daily of sodium sulphate by the mouth or in enemata.

TREATMENT BY MAGNESIUM SULPHATE.

Schoute[1] gives an account of 3 cases of tetanus in Middleburg which came under his treatment recently. They were the only instances among 242 wounded Belgian soldiers, that is 1.2 per cent. Two of the 3 cases recovered, although in the preceding twelve years he had had 9 cases, all of which died in spite of every effort, including serum injections given in various doses and varying ways. He attributes this greater success to the adoption of Kocher's method of injecting magnesium sulphate intradurally. The patient was given 10 c.cm. of a 10 per cent. watery solution of the drug, the injection being made between the fourth and fifth lumbar vertebrae, and the dose repeated when indicated by the renewal of the symptoms. In the first case (which ended fatally), a dose was given on October 13th, and another on October 20th, and in the third case on October 20th, 22nd, and 24th. The effect was always immediately and strikingly beneficial, and in the third case no serum at all was given. The injections were made under anaesthesia, begun by ethyl chloride and continued with ether. As the excitation stage of anaesthesia was reached, a violent convulsion always occurred, with cessation of breathing and extreme cyanosis. This lasted for a few moments only, during which the narcosis was rapidly pushed and artificial respiration carried on, and, although alarming enough, left no ill effects. The only other unpleasant feature of the treatment was that twice out of six times an attack of acute mania developed some hours after the injection. Whether this was due to the magnesium sulphate, or to the morphine or veronal usually given some time after the operation, was not determined, but the attacks soon passed off completely. There was at no time any indication of such a stoppage of the respiration as has been recorded by others after similar injections. Schoute is inclined to attribute this to the higher concentration of the salt usually given—namely, 25 per cent.; and without any bad result he allowed the third patient to lie flat on the bed after the last injection without raising the upper end of the body and without any morphine. The first symptoms of tetanus were observed in the fatal case on the eleventh day, in the two that recovered on the tenth and twelfth days respectively.

[1] *Nederlands. Tijdschr. voor Geneeskund*, December 5th, 1914, p. 1840.

A NUMBER of wounded French soldiers have associated themselves to address to *La Dépêche Dauphinoise*, of Grenoble, their thanks to British doctors at Aix-les-Bains for the devoted attention they gave in the hospitals there. The English doctors were Dr. Rendall at the Hôtel Mirabeau, Dr. A. S. Gubb at the Hôpital Léon Blanc, and Dr. Townsend-Whitling at the other hospitals in the town.

WE have received by the courtesy of the President of the General Medical Council a copy of an address entitled Medical Ethics, by Dr. Francis Clark, Dean of the Medical Faculty of the University of Hong Kong. This address was delivered before the University Medical Society, and within its brief compass it was not possible to deal in detail with the manifold aspects of medical conduct, but Dr. Clark has succeeded in discussing the main points, and has given sound advice expressed with perfect clearness.

Canada.

[FROM OUR SPECIAL CORRESPONDENTS.]

TORONTO UNIVERSITY AND THE WAR.

THE University of Toronto has made a fine response to the demands of the war; it had nearly a hundred men in the first Canadian contingent and will have as many more in the second. In 1912 its requests to the Government for a Militia Ordinance to establish a permanent training corps in the university were at length granted, and on the opening of the university in 1914 the President made a strong appeal to the students and announced that recruiting would begin at once for the Officers' Training Corps. Already some 50 members of the university staffs had been drilling, and as soon as recruiting was opened 700 applications were received. By October 18th the Officers' Training Corps had enrolled 1,800 men in twelve companies. Of the totals, the medical faculty supplied 450, science 500, University College 360, Victoria 200, the dental faculty 160, Wycliffe 40, the education faculty 80, Trinity 60, and St. Michael's 40; at the same time McMaster University had 100 men enrolled. Of the staff of the university, 25 are acting as officers in the training corps, and 55 are enrolled as privates in the ranks. The training is under the charge of Colonel Lang, an officer in the regular militia and a professor in the university. In the first contingent the staff was represented by Drs. A. J. Mackenzie, C. C. Cole, P. K. Menzies, Wallace Scott, George Philip, and G. A. Cline. In addition there are three reservists from the staff with the French army—Professors de Champ, P. Babaud, and L. H. Bibet.

The women of the university are taking part in the general movement among Canadian women to supply comforts for the soldiers through the Red Cross Society, and in response to the appeal of the president have organized their work with the assistance of the wives of members of the staffs.

The university has also taken its share in instructing public opinion; a course of lectures on the war given at the university has been attended by thousands of citizens, and in addition lectures have been given before different organizations in Toronto. The Toronto *Daily News* in reporting these facts says: "It has been thought by the university that the Allies had a good cause, so good a cause that nothing further was necessary to justify it than a plain, unvarnished statement of the facts. This the university has given to the public, and it deserves for this the hearty thanks of the city and the nation."

THE CANADIAN RED CROSS SOCIETY.

Dr. Charles A. Hodgetts, medical adviser to the Commission of Conservation, Ottawa, has been appointed Commissioner of the Canadian Red Cross in succession to the late Colonel J. H. Burland. Dr. Hodgetts is well known throughout the Dominion. For many years he served in the capacity of secretary to the Ontario Board of Health; he then became chief medical officer for the province, a position which he gave up to accept his present post with the Conservation Commission.

CANADA MEDICAL COUNCIL.

At the October examinations of the Medical Council of Canada, held at the Medical Building of McGill University, Montreal, 49 out of 86 candidates passed the examinations and will be enrolled upon the Canada Medical *Register;* 22 were rejected, and 15 were referred back to take supplementary examination when occasion next offers. The next examinations of the Council will be held at Winnipeg next June.

Sydney.

[FROM OUR SPECIAL CORRESPONDENT.]

DEATH OF DR. B. C. ANTILL POCKLEY.

ALTHOUGH we in Australia have so far been spared the horrors of war, the military operations in the Pacific in connexion with the capture of some of the German colonies have not been conducted without loss of life. One of the most tragic events in the course of the fight to capture New Britain was the death of Dr. B. C. Antill

Pockley at the early age of 24 years. He was the second son of Dr. F. Antill Pockley, who was the President of the Australasian Medical Congress at its session in Sydney in September, 1911. He was born in Sydney, educated at the Church of England Grammar School, where he gained the senior scholarship and the Pockley Prize. He matriculated at the Sydney University in 1908, and was regarded as one of the most promising students of his year. He took the degrees of M.B., Ch.M. in March, 1914, and was appointed a resident medical officer at the Sydney Hospital. Both at school and at the university he proved himself a first-class athlete. He was in the university football team, and was elected secretary of the university athletic club. He was also secretary of the University Medical Society. At the outbreak of the war he volunteered for service as surgeon. He landed with a small force at Herbertshohe, New Britain, and while attending to a wounded soldier was shot and died very shortly afterwards. It is stated that he took off his coat with the Red Cross badge on it to cover the wounded man, and thus really sacrificed his own life. Widespread sympathy has been expressed with his bereaved parents and relatives, and resolutions of condolence have been passed by the Senate of the Sydney University, the University Medical Society, and several other public bodies.

ST. JOHN AMBULANCE ASSOCIATION.

The annual report of this association states that, despite the apathy of the public in regard to ambulance work during the first nine months of the year, the year's progress was in most respects satisfactory, no fewer than 240 classes being organized between August 3rd and September 30th. This abnormal increase, due to the European crisis, placed a severe strain on the resources of the association, for the average number of classes in a year is about eighty. For the past twelve months first aid and home nursing classes to the number of 114 were instructed and examined. One military sanitation class with a membership of thirteen was held, and all the candidates passed the examination. In October, 1913, the members of the St. John Ambulance Brigade held a camp of instruction at La Perouse for three days, the attendance being the largest yet recorded. The finances of the association are in a satisfactory condition.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH UNIVERSITY ROLL OF HONOUR.

THE Edinburgh University undergraduates' official organ, *The Student*, recently published a "roll of honour" containing the names of those who have given their lives for their country or have been wounded. Former medical students who have been killed are C. A. C. Bentley (Captain 1st Royal Warwickshire Regiment) and James C. B. Crozier (Second Lieutenant 2nd Royal Munster Fusiliers). The medical graduates who appear among the dead are John Crocket, M.D., E. M. Glanville, M.B., James L. Huggan, M.B., Angus Macnab, M.B., and J. D. Noble, M.B. Sir William Turner, Principal and Vice-Chancellor, has issued, in a pamphlet bearing the endorsement—"New Year, 1915—With the hearty greetings and good wishes of your comrades of all 'ranks' in the University of Edinburgh," a list of members of the university now serving or who have died or been wounded, or been taken prisoners while so serving. It is headed by the name and portrait of the Lord Rector, Earl Kitchener. It contains over 1,679 names but is admittedly still incomplete. The list of students of the various faculties shows that many of them have enlisted in the ranks or are serving the British Red Cross. The list contains the names of 487 medical graduates, of whom 438 hold commissions. To these figures are to be added 588 cadets in the University Officers' Training Corps, including 150 in the medical unit, and 350 in the university reserve. These numbers are exclusive of those serving with the 2nd Scottish General Hospital at Craigleith, which is equipped to hold between 500 and 600 patients. The university has also contributed 91 members to the Royal Navy, of whom 85 hold commissions in the medical service; of these, 4 have already given their lives—Surgeons Hugh J. Hopps (*Aboukir*), A. Turnbull (*Cressy*), F. L. de Verteuil (*Good Hope*), and James H. D. Watson (*Hawke*).

PROFESSOR WYLLIE'S RETIREMENT.

At the meeting of the Board of Managers of the Edinburgh Royal Infirmary last week, Sir James Affleck, speaking in the name of the managers, said that they had accepted Professor Wyllie's resignation with great regret. He had been elected pathologist to the infirmary in 1875, assistant physician in 1876, and physician in 1882. After the full period of fifteen years' service he retired in 1897, but in 1900, on his appointment to the Chair of the Practice of Medicine, he again became an acting member of the staff, and in the discharge of his duties there had shown great earnestness and assiduity. He had striven to train the students in methods of accuracy in the scientific investigation of disease, and by his genial personality and kindly interest in their troubles had brought hope and courage among the patients under his care. In grateful recognition of his long and valuable services Professor Wyllie was unanimously elected consulting physician.

AN EXAMPLE.

The Town and Country Medical Club of Glasgow, which exists for the promotion of social intercourse among its members, has this year, like some other similar organizations, foregone its winter dinner, but each member was offered an opportunity of sending his annual subscription, or some part of it, to a special fund. In this way the sum of 40 guineas was subscribed, and a like amount was added by the committee from the reserve funds of the club. The sum was divided into two equal parts, which were forwarded to the Directors-General of the Royal Navy and of the Army Medical Services respectively, with the intimation that the donors desired the gifts to be spent on the relief of distress or destitution which may occur amongst members serving the country in the medical departments of the forces. Letters have been received from Sir Alfred Keogh and Sir Arthur May expressing the gratification with which both have received the gifts. Sir Alfred Keogh said that he thanked the club not merely for the substantial sum sent, but for the kindly thought which selected for the benefit men of the Army Medical Service—a class so often forgotten. Sir Arthur May said that while the money would certainly be useful, he valued still more highly the kind thought for the medical service of the Navy shown by its civilian brethren. As Dr. Freeland Fergus, who sends us these particulars, says, he fears that Sir Arthur Keogh's statement that the Army Medical Service is often forgotten is too well justified, but there is no reason why this should be so.

PRESENTATION TO DR. DEUCHARS.

Dr. James McGavin Deuchars of Bonnyrigg, Midlothian, who graduated in 1908, and has recently been compelled to give up practice owing to ill health, was the recipient last week of a testimonial expressive of the respect and esteem in which he is held. Provost Brown spoke of the zeal and devotion to duty which had characterized Dr. Deuchars's work during the comparatively short time since he had practised in Bonnyrigg. In his reply Dr. Deuchars said it was a wrench to him to leave so many friends.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND SALFORD.

SALFORD INSURANCE COMMITTEE AND DISABLED SOLDIERS.

AT the monthly meeting of the Salford Insurance Committee an important question came up for consideration with reference to the effect which the war will have on the funds of approved societies and the panel and drug funds. The question was raised several months ago, and was then referred to the Medical Benefit Subcommittee, which had in turn drawn the attention of the Panel and Pharmaceutical Committees to it. It had been pointed out that practically the whole of the Salford panel practitioners and chemists had gladly expressed their readiness to give medical treatment with drugs to the wives and dependants of men who were engaged in the

army or navy, provided that they were recommended by the Relief Committee, and for that no recompense in any way was desired. In addition, a considerable number of wounded soldiers had already been treated freely. This was mentioned simply in order to show that the panel practitioners and chemists were actuated by no mercenary motives, but were ready to render what service they could in the present emergency. At the same time it was pointed out that something like 6,000 insured men belonging to Salford were now on active service, and as they were no longer eligible for medical benefit from the panel practitioners, the sum contributed on their behalf to the panel and drug funds, amounting in a year to between £2,500 and £3,000, would be withheld. These men might naturally be regarded as the best lives among the insured, who would not have required even the average amount of medical attention, so that the withdrawal of the sums contributed on their behalf was a serious loss to the doctors and chemists. But what made the matter still more pressing and justified attention being called to it was the fact that a large proportion of these best lives would at the end of the war, or on their discharge from the army or navy, be returned as chronic invalids who would require an excessive amount of medical treatment, for which the 9s. a head per annum which would be paid for them from their return to the medical benefit funds, would be altogether inadequate. Thus the panel doctors and chemists were not only suffering now from a reduction in their funds out of all proportion to any slight lessening in the number of cases of sickness which they had to attend; but in the future, for many years to come, the sickness incidence among what had been the best lives would be enormously increased. The approved societies would experience the same hardship, as their best lives who required very little sickness benefit were now being reduced by the war to the condition of bad lives, who would most certainly be a heavy drain on the sickness and disablement benefit funds.

The Clerk of the Committee read a letter from the Panel Committee calling attention to the injustice of reducing the amount provided in the Salford area for medical benefit, while there was no likelihood of material reduction in the sickness-rate, and pointing out that the withdrawal for military purposes of approximately one-fourteenth of the healthiest section of the insured population was responsible for this, and destroyed the expediency of the sickness-rate upon which was based the agreement between the Government and the medical profession. A letter was also read from the Salford Pharmaceutical Association stating that the association viewed with grave concern the serious situation created in the drug fund by the war, since thousands of good lives ceased to be contributories upon enlistment; when they were discharged from the army they would return to benefit, and a large proportion of them would be wounded and chronic invalids through hardship and exposure. The association therefore urged the Insurance Committee to bring the matter before the Insurance Commissioners, and ask for some special grant to meet the difficulty that was sure to arise.

Mr. Davies said the Government would have to be hard pressed with regard to the question of soldiers returning wounded and disabled to their societies; he feared that the effect on the approved societies would be most serious.

Mr. Roberts said he knew of one society from which 400 members had gone to the war, and already several had returned, and, having been discharged, had a claim for sickness benefit.

Mr. Speakman said the actuarial valuations were based on an average, and it would simply mean bankruptcy to the societies to take out the good lives and leave the bad lives.

Dr. J. H. Taylor said it was not only taking out the good lives and leaving the bad lives, but later it would go a step further by changing good lives into bad lives, and he thought the burden ought to be borne by the nation as a whole and not left to be borne by special sections under the Insurance Act, such as the doctors, chemists and approved societies. As far as he knew, however, the Commissioners were bound by the Act in the matter, and he did not see how they could make any grant. Any appeal would have to be made to the Treasury, though it might be as well to do so through the Commissioners.

The opinion of the Insurance Committee being unanimous on the question, it was resolved to request the Medical Benefit Subcommittee to draw up a suitable resolution, which the Committee could then urge on the Government and the Commissioners.

The same question has also recently been discussed at a well-attended meeting of the Trade Union Approved Societies Association in Manchester, representing over half a million State-insured trade unionists. The association suggested that soldiers and sailors incapacitated during active service should be a charge on the military and naval authorities until they recovered from such incapacity. The association was anxious to see the very best treatment given to soldiers and sailors, but it was felt that insured persons, who formed only a small part of the community, should not be called upon to bear a liability which the whole nation should accept. If the Government could not see its way to administer the benefits, the societies would be quite prepared to administer them, provided that the Government would guarantee that the increased amounts paid away should be repaid to their funds by the Treasury.

Correspondence.

COLOUR VISION.

SIR,—We all know that Mr. Devereux Marshall is a strenuous supporter of Dr. Edridge-Green's views on colour vision, and he tells us in last week's JOURNAL that he wrote to show his opponents "exactly how matters stand." On p. 1094 he says: "I am entirely unacquainted with a single person who has been convinced of the truth of the Edridge-Green facts having subsequently changed his opinion and adopted an attitude hostile to his theory and tests."

I submit that Mr. Devereux Marshall has not dealt in his paper with the Edridge-Green theory at all, but it is his *theory* that is a difficulty to many of us who do not dispute his facts. All honour to Dr. Edridge-Green for the introduction (1) of his signal lantern for practically testing colour blindness, and (2) of his spectrometer for the more refined investigation of such cases. We are all in agreement as to the superiority of these instruments over the old skeins of wool, which we found to be inefficient tests of the condition even when clean, and absolutely useless when soiled or discoloured.

Most of us are indebted to him, and thank him most heartily for emphasizing certain facts, as, for instance, the occasional occurrence of blindness at one or the other end of the spectrum, or, again, the occasional inability to recognize the difference of colour between one patch of the spectrum and the adjoining patch.

We are not, however, equally ready to accept his theory of colour vision. As far as I know, Dr. Edridge-Green, in all his voluminous papers on the subject, has never been able to bring forward a satisfactory explanation on his theory of the colour-equation phenomena that we have all learnt in a physical laboratory, or of the still more curious phenomena of Benham's top. Some five years ago,[1] after due notice had been sent to all the members, I brought forward the subject of Benham's top before the Ophthalmological Society. I submitted that it presented a difficulty to the acceptance of the Edridge-Green theory, and pointed out that in this case Young's theory provided an easy explanation of the phenomena. I asked for an explanation from those who supported the new theory. Dr. Edridge-Green, although present at the meeting, was found to have left the room when called upon to reply, and no other of his supporters, not even Mr. Devereux Marshall, would take up the cudgels for him.

One must distinguish between Dr. Edridge-Green's *theory* of colour vision and his tests for detecting colour blindness. Colour vision is an exceedingly difficult subject. To my mind every theory that has yet been proposed is inadequate to account for all the facts, but all who know anything about the subject are unanimous in praising Dr. Edridge-Green's tests. It is extraordinary that they were not used long ago. It is required to test the competency of men to distinguish red and green lights at sea or on the railway in clear or foggy weather; surely

[1] January 28th, 1909 (*Trans. Ophthalm. Soc.*, vol. xxix, p. 119).

the simplest, most obvious, and best way is to test them with a lantern, the light of which by appropriately coloured glasses can be made to approximate to the actual lights they are required to distinguish in their calling. I endorse most heartily all that Mr. Devereux Marshall says about the inadequacy of the lantern at present used by the Board of Trade.

Why do the Board of Trade neglect the railways? Any railway company can now institute what tests it likes on its employees. Surely this is a matter involving the safety of the travelling public, and it is essentially the duty of the Board of Trade to see that the tests of colour vision on every railway in the kingdom are efficient, and that the instruments used for the detection of dangerous colour blindness are those recommended for the purpose by experts on the subject, such as Dr. Edridge-Green.—I am, etc.,

Newcastle-upon-Tyne, Dec. 26th, 1914. A. S. PERCIVAL.

THE PROGRESS OF A PEACEFUL CAMPAIGN.

SIR,—I was particularly interested in your leading article under this heading in the JOURNAL of December 12th, 1914, and especially with regard to the proposals for the treatment of surgical tuberculosis.

Doubtless it is very proper that there should be an effort to provide some remuneration for those whose work in charitable institutions is steadily increasing on account of recent legislation, but I feel sure that the method proposed for dealing with surgical tuberculosis is not likely to lead to the best results.

For the cure of tubercle in any form *continuity of treatment* is absolutely essential if the results are to be commensurate with the expenditure of effort. In surgical tuberculosis there are many conditions in which an operation is necessary, and there are some few in which one operation may be curative, but in the majority of cases an operation is but an incident in the process of cure.

What is required for the treatment of surgical tuberculosis is some institution in which patients can be kept not only for an operation, but for everything appertaining to their cure, and *where they can remain until cure is complete, irrespective of the time necessary*, whether it be weeks or months or years. In such an institution the treatment must be along some definite line, and supervised by some one person or one set of persons from beginning to end.

According to the scheme proposed by the Durham County Council, a patient, say, with a tuberculous hip, may be admitted to hospital for the opening of an abscess, but there is nothing which makes it essential for that patient to be kept under the observation of the hospital until such time as the disease in the joint is cured and no further operation necessary. And though the operative treatment of such an abscess is exceedingly important, it is not nearly so important as the long-continued rest under good hygienic conditions which is essential for the cure of the disease in the joint.

It may be necessary for a patient suffering from such a disease to undergo many operations before cure is brought about, but in many cases the multiplicity of operations is the result of the inefficient treatment which the patient receives between various periods spent in hospital.

If cases of surgical tuberculosis could be admitted to proper institutions, and kept there until well, the number of operations would be immensely diminished, and the permanent cures would be immensely increased. If these patients are kept in the general hospitals for a sufficiently long time to make their cure complete, they occupy too many of the already too few beds available in this country. Further, there may be a tendency on the part of hospitals whose finances are sorely tried to accept and to retain patients whose maintenance will be paid for at the rate of 30s. a week, to the unfair exclusion of others, more easily cured, whose stay would be shorter.

I am not in a position to say how far the six or eight thousand pounds a year would go towards the payment of the interest on a capital sum necessary to build and equip an institution for surgical tuberculosis for the needs of the County of Durham, and to pay the necessary expenses of its annual upkeep; but I do very strongly feel that if this sum is available, it would be very much better expended in treating, as I suggest, even a small proportion of the surgical tuberculosis in a proper institution than if spent in the way proposed.

It may be that in the first instance such an institution could only deal with tubercle of bones and joints, taking children, say, up to 14 or 15 years of age. It would in this way be doing an enormous amount of good, and the forms of surgical tuberculosis excluded would be the sort that could at least be dealt with more easily in general hospitals than those selected for the special institution. But, above all things, it must be clearly realized that it can only be continuous treatment that is likely to be useful, and the public must be led to understand that a sanatorium for surgical tuberculosis is no more a panacea for the disease than a sanatorium for pulmonary tuberculosis, and that a short residence in such an institution is no more likely to do permanent good in the one case than in the other, or than a Thomas's hip splint worn for a few months, or an operation which leaves a discharging tuberculous sinus.

I venture to say that it would be better to undertake the thorough cure of a limited class of surgical tuberculosis, or a limited number of patients of all varieties of surgical tuberculosis, than to attempt to pay for a little more patchwork on a larger number of cases than are at present accommodated in our very much limited available space.

I have the greatest admiration for the Durham County Council and for Dr. Eustace Hill in their endeavours to attack this very important social problem, but I feel so earnestly convinced that there are better ways of dealing with it, that I should not feel myself quite honest if I let the matter pass without comment. My excuse for entering the field at all is because I have had ample opportunities of noting the very frequent failure of the treatment of surgical tuberculosis as those of us who are hospital surgeons to overcrowded institutions are able to carry it out at the present day.—I am, etc.,

Newcastle-upon-Tyne, Dec. 21st, 1914. G. GREY TURNER.

GOVERNMENT RESEARCH GRANTS.

SIR,—I was disappointed not to find in the BRITISH MEDICAL JOURNAL of December 12th, 1914, any comments on the welcome scheme of the Government for financial encouragement of research, as described in your previous issue. My only criticism is that cities with large hospitals but without universities are left entirely out of the scheme.

Such cities are Norwich, Nottingham, Southampton, Hull, and many others, where abundant clinical material is largely wasted and where men of great ability exist and would do good work if only some stimulus or encouragement were given them.

I think that the most effective stimulus to original work is the interest and appreciation of fellow men, and this already exists in university centres, where any investigator and his work are encouraged and appreciated. But in non-university medical centres the reverse is true, and a heavy weight of passive discouragement checks and oppresses the would-be investigator financially and in other ways. Even the local medical societies do not care to listen to anything which has not an immediate practical applicability.

Of course, if grants were given there would be the difficulty of supervision, but original work by its nature is seldom capable of effective supervision, because the investigator must soon know more about his subject than his supervisor. At any rate this difficulty could be got over by giving grants only for work actually accomplished and in accordance with its merit. Current expenses for actual apparatus can (or could) be met by the British Medical Association fund for that purpose.

Grants of this kind would be a great encouragement to the intellectual life of such medical centres; and since rich and poor depend for their consultants on the men produced by the knowledge and experience derived from the local hospitals, the taxpayers of these large centres would feel that they were getting some return for their research taxes. And I believe they would get very good value, because sounder men would be available for consultation when they were seriously ill. Also the undertaking of serious investigations in a hospital would inevitably have a good effect on the general standard of work in that hospital. All this is in addition to the average value to the community of the researches themselves.

I trust that others will give their views on this subject.—I am, etc.,

Hull, Dec. 21st, 1914. FRANK C. EVE.

NUTRITION AND MEAT EXTRACT.

SIR,—I am sorry to be forced to write again on this subject. In my previous letters I have shown from the published protocols of our experiments that Mr. Sohn's inferences regarding the nutritive effects of meat extracts observed by us, are not borne out by the facts, and I have invited, nay, urged him, to put his theory to the test of experimental proof. But he only reiterates and enlarges upon what he has already said, as if nothing had happened. He also complains that I show little disposition either to meet his criticism or to admit the illusory character of my doctrine. He then goes into a dissertation, "in the interest of prescribers and consumers of meat extract," as he says, . . . "to show that the theory is untenable." To what theory he refers I know not; none was advanced by my co-workers or by myself. Nor is it clear why he should confine his solicitude to a section of the public if his views have any scientific value. Our statements were strictly limited to facts established by the experiments.

Mr. Sohn apparently objects to these facts and chiefly to the validity of our observations on the increase of body weight, though we ourselves attach importance to this result only so far as it is an index of improved nutrition. To show, however, the slender foundation he has, and (as I have previously stated) that "our conclusions were drawn from a consideration of the whole facts, not from a few minor deviations," I have placed below the mean weights of the animals and of the human subjects in three parallel columns which give the particulars before, during, and after the period of feeding with meat extract—5 to 10 grams daily.

Table showing the Weights in Kilograms and Grams, Before, During, and After Feeding with Meat Extract.

No. of Observation.	Before.	During.	After.
	K.g.	K.g.	K.g.
3	6.706	**6.800**	6.700
4	5.140	**5.185**	Not taken.
5	5.150	**5.240**	5.160
6	10.495	**10.560**	10.550
7	10.550	**10.660**	10.670
8	10.770	**11.000**	10.965
9	6.413	**6.452**	6.393
10	6.383	**6.426**	6.435
11	6.587	**6.727**	6.782
12	6.930	**7.100**	7.135
13	83.991	**84.288**	84.032
14	84.032	**84.248**	Not taken.
15	61.000	**61.284**	61.661
16	61.661	**61.790**	Not taken.

N.B.—The details of observations 1 and 2 were never fully published, I have therefore omitted them from the table. The results agree with those of the majority.

A glance at this table is sufficient to show the effects, and from these any one can draw his own inferences. In the fourteen observations published (four of which were made on two human subjects, the remainder on five dogs) th weight increased during the period of taking the meat extract, and remained higher than it was in the previous period. In the majority it fell (though not always to the original level) when the extract was left off. These weights represent in each case the mean of several days. The observations all started (with two exceptions) from a practically constant weight—that is, one which did not fluctuate more than 10 grams ($\frac{1}{3}$ oz.) above or below the mean from day to day. The exceptions are Numbers 8 and 16, and here the fluctuations went as high as 70 and 50 grams respectively. But these are small in comparison with the effect of the extract in the experiments in question.

Our published conclusion, drawn from these results, was that "the beef extracts used (commercial and self-made) led to an increase of body weight both in the case of animals and of man." The statement is a mere truism, and I do not see how anything can alter it short of experimental data to show that our results are wrong. These are not forthcoming. We might have added that in a considerable proportion of cases there was a beneficial after-effect as well.

Basing his reasoning on false premisses, Mr. Sohn attempts to show that a continuous daily increment ought to have occurred during the meat extract period. Under the conditions of our experiments this would be a physical impossibility. To obtain a continued increment of weight, it would be necessary to add continuously to the daily ration. Assuming, however, that the initial diet was just sufficient to keep the weight constant and that all its nutriment was utilized, any increase arising from a fixed addition to the ration could only show itself by the establishment of equilibrium at a higher level, which is what occurred in our experiments. Does Mr. Sohn imagine that if he added an extra slice of bread-and-butter to his diet every day for a week it would have a cumulative effect on his weight? This is what his reasoning amounts to.

As to retention of water, we have stated from the outset that there was such. There could, in fact, be no increase of weight without it, since three-fourths of the animal body is composed of water, and three-fourths of the increase must likewise be composed of it. But in our experiments there was also a retention of nitrogen, a better assimilation of other food, and a general improvement of the nutritive condition, which go to show that the increase of weight was not solely due to a retention of water.

If Mr. Sohn's interests in the matter are purely scientific, he will now set his house in order by enlarging his knowledge of the fundamentals of nutrition, and I would suggest to him that he should then lose no time in correcting the errors in his book on this subject. Some of these have incidentally been referred to in one of my earlier letters, and others have been pointed out elsewhere, but some of the choicest inexactitudes in the book have hitherto escaped notice. The following are two instances in point. Speaking of the tongue (p. 7) he describes its surface as bearing a number of "tastebuds or papillae" of different kinds which he goes on to mention. Again, speaking of pancreatic juice (pp. 24 and 25), Mr. Sohn states that the body *enterokinase* was detected by Delezenne, that it excites the action of the pancreas, and that it is a "hormone," not an enzyme. No one of these statements is correct. Enterokinase was discovered in Pavlov's laboratory by Schepovalnikov; it does not excite a flow of pancreatic juice, and it is not a hormone, but, on the contrary, an enzyme.

It is difficult to conceive the degree of laxity which allows a writer to put into cold print statements of this kind on an important matter without being sure that they are correct. I am sorry to have to say these things, but Mr. Sohn has misinterpreted the consideration with which I hitherto treated his criticisms.—I am, etc.,

Dublin, Dec. 17th, 1914. W. H. THOMPSON.

⁂ We cannot undertake to continue this correspondence.

FLIES AND DISEASE.

SIR,—The recent articles headed "Insects and War" in the BRITISH MEDICAL JOURNAL are interesting and of value, as bringing home to many of us instruction that may not have been come across elsewhere.

But there is danger when the writer leaves the field of fact for the realm of fancy; and in the paper of October 17th we are faced rather strongly with what I have heard described alliteratively as the "fly lie." The writer says: "There is absolutely no doubt that typhoid is largely conveyed by the agency of these insects" (*Musca domestica*).

"Infantile diarrhoea is another disease intimately connected with the *Musca domestica*."

"The tubercle bacillus is another germ conveyed by flies. They are particularly fond of feeding on saliva."

The potential and the actual deserve to be seriously delimited: the results of artificial experiment carefully

compared with living conditions. With the writers of such statements the facts elicited from artificial infections are assumed to be true of natural conditions, simply because satisfactory proof to the contrary has not been brought forward.

The danger lies in the emphasis of a plausible and popular possibility, with the obscuration of a less obvious and unpopular actuality.

How many epidemiologists of better understanding have had to issue at the behest of their corporations vulgar cartoons of fly and phlegm, who could not perhaps make any headway when vested interest was threatened by the incrimination of a polluted water supply?

I speak from the tropics, more especially and feelingly, where nearly everywhere there is distinct evidence that typhoid, dysentery, and diarrhoea, endemic and epidemic, are maintained by polluted water; where the chances of typhoid being "largely conveyed" by the fly are highly improbable; and where at the same time the fly belief is rampant as in England.

Epidemic typhoid ("typhoid largely conveyed") has not been proved against *Musca domestica*, either in war or in peace, in spite of the possibility of fly infection. Therefore do not let us think that the whole of sanitation consists of "swatting" flies, in the camp or in the town.

That *Musca domestica* is a nuisance and a possible source of trouble that should be eliminated, every sanitarian will agree. But I ask for scientific recognition of facts; and appeal for help in fighting the giants that are well entrenched with all the energy that is now devoted to the pigmies.—I am, etc.,

ANGUS MACDONALD,
Medical Officer in Charge,
International Health Commission, Grenada.

November 6th, 1914.

PREVENTION OF TETANUS.

SIR,—With reference to the postscript to Sir Victor Horsley's letter, published on November 7th, 1914, under the above heading, in which he refers to what he calls Sir Rickman Godlee's "terrible proposal" to swab out recent wounds with pure carbolic acid, may I say that for years this has been our practice here in cases of lacerated wounds and compound fractures? Tetanus, as all know, is extremely prevalent in Calcutta and difficult to prevent. Our hospital funds do not permit the use of prophylactic injections of antitetanic serum, and we have found this mode of sterilization very effective in preventing the development of tetanus. Our rate of its incidence has been as low as, and sometimes lower than, that of some hospitals where the serum is used in every similar case. In fact I am inclined to think that when serum is used as a matter of routine it is relied upon too much, and efficient sterilization is not always as carefully attained. The pain is not great, as phenol is an analgesic. Tincture of iodine or biniodide and spirit are as painful, and the pain lasts longer. Of course, free drainage is necessary. We long ago gave up using antitetanic serum as a useless mode of treatment for developed tetanus. Sir Rickman Godlee's appeal to combine prophylactic serum with vigorous *antiseptic* purification is urgently needed.—I am, etc.,

F. P. MAYNARD, M.B., F.R.C.S.,
Lieut.-Col., I.M.S.

Mayo Hospital, Calcutta, Nov. 30th, 1914.

POPULAR FREUDISM.

SIR,—It was to be expected that the uncommonly sensible method advocated by "H. B. D." in dealing with "the abounding nonsense of the Freudian 'philosophy'" should evoke a storm of antagonism. It appears from the correspondence on the subject in your issue of December 19th that it is not "rational argument" to expose the "absurdity patent to all who think about it for a moment" of the so-called "explanation" of momentary forgetfulness. Most of your readers who have not yet absorbed the "virulent pathogenic microbe" will agree with the statement of a distinguished exposer of fraud that the words "unconscious painful idea" convey no meaning whatever to the ordinary student of medicine. When, however, Dr. B. H. Steen gathers that "it is the study of the unconscious' generally that merits 'H. B. D.'s' disapproval" he is clearly labouring under a wrong impression.

We, as a profession, have accepted, on poetic and other authority, the dictum that "the proper study of mankind is man"—that is, we practically have devoted ourselves to investigate the affairs of an unlimited company that includes the abnormal as well as the normal, the healthy and the diseased, the criminal and the honest, the crank and the sane. It follows then, since *nihil humani alienum est* to the physician, that we should investigate man as a whole; as, however, the field is so wide specialism is permissible. Thus one concerns himself with cranks and criminals, and another with the victims of self-deception, whether conscious or unconscious, who may be otherwise honest and sane. The tyranny of words is such that it is perfectly possible for their use, whether brief or tedious, to obscure instead of to enlighten ideas; the former may actually take the place of the latter, so that meaningless "shibboleths" abound. To counteract this tendency it is necessary that we should have some court of appeal to which resort may be made in time of difficulty or discord; the recognized tribunal in such a case is the common sense of the community allied with the generally accepted definitions of speech. The law of this court is that words should be used to display, not to conceal, meaning; if an appellant is convicted of a "contradiction in terms" the penalty usually inflicted is laughter in court. It has never been laid down as a rule that it is *contra bonos mores* to study the unconscious; on the contrary, it has been held that it is to the benefit of society generally that humbugs, whether conscious or unconscious, should be exposed in all their hideous nakedness.

Dr. J. A. Ross, ignoring the notorious facts of history, which show that no fraud or imposture is too crude to lead astray the multitude if only it be advocated with sufficient insistence and impudence, is of opinion that "Freud's teaching could not have claimed such widespread attention if there was nothing in it at all." He also sees clearly that "the German mind has exaggerated the sexual part of the theory." As the German theologian said of the Apostle Paul, "Paulos was a learned man, but I do not agree with him."—I am, etc.,

London, W., Dec. 21st, 1914. H. SELFE BENNETT.

SIR,—Dr. Forsyth asks us to notice the implicit admission in "H. B. D.'s" letter that rational argument and open discussion are not to be relied on to kill the Freudian "system" of psychology. For my part, I do not make the admission implicitly: I declare and proclaim it. Rational argument and open discussion have never had the slightest effect on flat-earth cranks, or circle-squarers, or Christian Scientists; nor would they have any effect on a "system" of physics founded on the effect of an irresistible force upon an immovable body. A contradiction in terms cannot be confuted by rational argument, nor is a person who can adhere to a contradiction in terms open to conviction by rational argument.

Dr. Steen begs us to continue the study of unconscious consciousness because there are many writers on the subject. True, there are; and there are many writers on astrology, on the Manichaean heresy, on Esoteric Buddhism, on Rosicrucianism, and other "systems."

Dr. Ross admits that the words "unconscious painful idea" have no meaning in ordinary English, and in this he agrees with "H. B. D.," who calls them jargon; but, says Dr. Ross, they have a perfectly definite technical meaning—in extraordinary English—and assuredly represent a fact.

It is quite open to these gentlemen to assert that my house, or my hat, belongs to them, but if they make this claim in a court of law, they will find, to their astonishment, that it is not enough to make the assertion. They will have to substantiate it. The court will not put me upon my defence until, and unless, they make out some sort of a case. They will have to produce evidence; and, again, they will be astounded to find that their evidence will not be accepted on the mere *ipse dixit* of the witness. The court will explain to them that upon them, as assertors, lies the burden of proof; and, until this burden is discharged, their claim will not be allowed—will not even be considered. Unfortunately this is not the case in the Court of Science. It is not so, but it ought to be. Dr. Forsyth and his co-Freudians assert that there is an unconscious realm of consciousness, or mind, or idea, or motive—they all in this connexion mean the same thing—

and, when we ask for evidence, they repeat their assertion over and over again, louder and louder, more and more emphatically, and they seem to think that to repeat an assertion is the same thing as to prove it. I can scarcely say they bring forward no evidence. They do adduce one witness. "It *is* so," they say; "it must be so, for Freud says it. He says it himself. He says it in writing. Surely you will not doubt his word? You will next question the purity of Krafft Ebing, the pellucidity of Hegel, the humane benevolence of Nietzsche, the diplomatic shrewdness of Bethmann-Hollweg, the originality of Kraepelin, or the modesty and humility of the Kaiser!"

Well, Sir, I shall not live to see it, but as sure as I live there will come a day when the doctrine of the *onus probandi* will be adopted from Law by Science. There will come a day when any tomfoolery will not be accepted and lauded to the skies merely because it has been asserted by a German. Evidence will be demanded. Proof will be required. *Sic volo, sic jubeo, stet pro ratione voluntas Germani* is a writ that will not always run in the realm of science, however valid it may still be in Belgium.

This is a day of subscription to funds. Every post brings a call for subscriptions. I am open to receive subscriptions towards a fund for establishing a school to instruct medical practitioners in elementary logic; a fund to found an institute for the gratuitous supply of anti-Teutonic serum to medical psychologists; a fund for the publication of some important scientific works, such as *Why Want Evidence?* or *The Self-sufficiency of Assertion and of the Assertor*, by Dr. Forsyth; *How to Change the Nature of Things by Changing their Names*, translated from the German of Kraepelin, with a chapter by Dr. Steen on *The Difference between a Mental Hospital and a Lunatic Asylum; The Meaningless Meaning*, or *The Perfect Definition*, by Dr. Ross.

When we have accepted unconscious consciousness, it will be easy to project a new universe, composed of immaterial matter and non-existent force; a world in which all the liquids are solid, the centre of circles are in the circumference, all compound substances are elements, gravity acts as a repulsion, and German systems of psychology are worth attention.—I am, etc..

Parkstone, Dorset, Dec. 24th, 1914. Chas. A. Mercier.

ARTIFICIAL PNEUMOTHORAX.

Sir,—Some of the practices adopted by Dr. Woodcock and Dr. Clark, as stated by their article on artificial pneumothorax in the Journal of December 12th, p. 1016, seem to me to call for comment. I will refrain from trespassing upon much of your space, because I have already dealt fairly adequately with the subject.[1] But, in view of the article I am criticizing, I consider reiteration of the following points advisable:

Two out of three of the types Dr. Woodcock selects as suitable for the treatment are unsuitable. In my practice I eschew artificial pneumothorax both for "early cases with localized unilateral disease and few constitutional symptoms," and for "severe bilateral cases."

It is a bad plan to give a hypodermic of morphine the evening before an injection of gas; it is more likely to upset the patient during the following morning than to soothe him.

Dr. Woodcock writes, "the shock of the operation is always severe." Perhaps, as appears to be the case, he here refers only to patients with early disease, for whom I have never attempted nitrogen treatment. But in any case I submit that the procedure can and should be successfully accomplished without any shock.

The writers of the article refer to inches on the manometer and cubic centimetres of gas. Why do they not use either the metric system or the English?

Finally, they write: "Should there be any doubt as to the position of the needle, or should the manometer not oscillate freely, then no more than 30 c.cm. of gas should be introduced. The entry of this small amount of gas will not cause embolism." I am surprised that physicians with so much experience of "compression therapy" should be ignorant of the fact that a few small bubbles of gas are capable of causing instant death not only in rabbits in a laboratory but in human beings, and should light-heartedly preach administering gas in the absence of proper readings on the manometer.—I am, etc.,

Mundesley, Dec. 12th, 1914. S. Vere Pearson, M.D.

[1] British Medical Journal, October 12th, 1912; *Tuberculosis Year Book*, 1914, p. 150, and elsewhere.

THE "ELDERTON" CONTROL METHOD OF TESTING THE VALUE OF NEW TUBERCULIN.

Sir,—Dr. Batty Shaw's objections to vaccine therapy in general, and tuberculin in particular, are apparently based upon three points: (1) A theory of the action of tuberculin, which he holds and regards as inconsistent with a beneficial effect; this is a provisional theory concerning a very obscure subject, and not generally held. (2) The absence of experimental cure in animals and an *a priori* belief that attempts to cure human beings are bound to be failures. (3) That statistics of the so-called "control" method of testing the value of tuberculin have so far given inconclusive results.

Theoretical objections have no value if the treatment in practice proves successful. The case for tuberculin must rest on clinical evidence. Dr. Shaw's third point has an air of reasonableness, and deserves more attention. Before examining his data to see how far they are worthy of mathematical expression, one would like to know what treatment he himself adopts for tuberculosis, for it cannot be supposed that he uses any method which has not fulfilled the conditions laid down for tuberculin. Indeed, his therapeutical resources for diseases generally must be remarkably small.

Assuming for the sake of argument that the question is one which can rightly be subjected to statistical treatment the quality of the data becomes of importance. We must ask the questions: Were the patients suitable or unsuitable for tuberculin treatment? Was the tuberculin administered skilfully in adequate doses and for a sufficient length of time? How was the effect of treatment estimated? If the data fail in these respects the statistics will be valueless, however carefully the cases were "controlled." Dr. Shaw objects to the selection of cases and leaves them to chance. He gives tuberculin to febrile as well as afebrile patients, and persists in using it even when it is making them worse. With what other remedy is it regarded as necessary for statistical purposes to use the same indiscrimination? We select cases of syphilis for salvarsan treatment and cases of heart disease for digitalis. Selection must always occur in the treatment of human beings, and no statistics are valid if suitable and unsuitable cases are lumped together. Tuberculin has its limitations, and we want to know how far it is of value when used within those limitations and with common sense. Dr. Shaw gives the results in 84 patients. Of these only 23 were afebrile, and of these only 11 received tuberculin. I am far from saying that tuberculin should never be given to febrile patients, but I do maintain that it should not be given to them without discrimination and according to a routine method.

A more important criticism concerns the manner in which the tuberculin was administered. If Dr. Shaw had deliberately set out to depreciate tuberculin he could not have adopted a method more suited to his purpose. It is as though a surgeon with *a priori* objections to the operation of gastro-enterostomy requested his house-surgeons, who had no previous experience of the technique, to perform the operation on certain cases of dilated stomach chosen by lot. Statistics by the control method might well show that the cases not operated upon had a greater chance of survival. An analysis of Dr. Shaw's procedure will show that this criticism is not too severe. His patients were treated by successive house-physicians whose experience of tuberculin is not stated. Internal evidence suggests that these were the first cases they had so treated. As they worked under Dr. Shaw's guidance we must regard their methods as representing what he considers the best. These methods I consider entirely inadequate and futile, or, to adopt his own phrase, "suggestive tinkering."

1. *The Tuberculin Chosen.*—Only T.R. was used. This is estimated by some authorities at about one-fortieth of the strength of old tuberculin. It is the weakest preparation, and is not used for pulmonary tuberculosis by experienced workers.

2. *Dosage.*—The initial dose was 0.00001 mg., and in febrile cases 0.000005 mg., or in modern nomenclature

0.000,001 c.cm. and 0.000,000,5 c.cm. These doses seem absurdly small. I can find no record of any authority beginning his treatment with a dose which in strength is equivalent to about 0.000,000,025 c.cm. old tuberculin. The maximum dose is given by Drs. Stockdale and Hodson as 0.01 c.cm., and this was reached by only one patient. Dr. Watkin's largest dose was 0.003 c.cm. in the afebrile and 0.0005 c.cm. in the febrile. Not every case reached these. Dr. Rigg gives his maximum as 0.07 c.cm., but does not say in how many patients.

3. *The Increase of Doses.*—A routine scheme of increases was laid down at the beginning, and seems to have been persisted in whether or not it was the most suitable for a particular patient. The only departure allowed was that if a reaction occurred the same dose was repeated; but in the only case in which the actual doses given to a patient are recorded, the dose was not repeated after a reaction, but was actually trebled after an interval of eight days. The two schemes of doses given are the series 1, 3, 5, 7, and 10 in one paper, and 1, 2, 3, 5, 8, and 12 in another. It is difficult to understand the principles by which they were chosen, for the increases are uneven, and vary from 50 per cent. to 200 per cent. Fortunately they were using very small doses of a weak tuberculin or they would have met disaster. Dr. Rigg injected every second day up to 0.1 mg., then every fourth day; Drs. Stockdale and Hodson every second or third day. That tuberculin was injected for several weeks every other day is again evidence that the doses were too weak to do any good.

4. *Length of Treatment.*—In all cases this was three months. No proper course of tuberculin can be given in this time, and one wonders why the results were published.

Dr. Shaw quotes with approval Dr. Bardswell's report. Many of the criticisms brought forward above apply equally here. A fixed scale of dosage was too rigidly followed; doses were increased in spite of reactions and interruptions of treatment. The maximum dose reached in most cases was far too small and the length of treatment too short.

No data on the tuberculin treatment of pulmonary tuberculosis are worth giving unless the administration has been skilfully adapted to the needs of each patient, the stronger preparations have been used and large doses reached. Even then the course may have to be partially repeated, perhaps more than once, after an interval of some months. A final judgement can only be arrived at by comparing the condition of treated patients with untreated controls after the lapse of some years. Routine treatment is particularly out of place with tuberculin, and with an experienced administrator no two patients receive the same sequence of doses.

It is difficult to believe that Dr. Shaw seriously brings his results forward as data for statistical purposes. They are unworthy of his reputation as an able physician. They have no bearing upon the value of tuberculin, but do show the worthlessness of his particular method of administration.—I am, etc.,

Birmingham, Dec. 12th, 1914. W. H. WYNN.

THE STOPPAGE OF ALCOHOL IN DELIRIUM TREMENS.

SIR,—In your review of Dr. Mercier's work on "Insanity" you say he "is scarcely justified in his assertion of the great frequency with which an attack of delirium tremens is brought about by cutting off, and cured by administering, alcohol." Experience has unwillingly forced me to adopt the views proclaimed by Dr. Mercier, and I think it would be most fruitful to elicit the views of practitioners generally on the point—whether we do not often precipitate attacks of delirium tremens by cutting off our patients' alcohol, and whether we do not lose their lives by resuming it too tardily and too timorously in the treatment.—I am, etc.,

Dublin, Dec. 19th, 1914. J. C. MCWALTER, M.D., LL.D.

THE *Journal of the American Medical Association* states that on account of the rapid increase of the membership of the American Red Cross and the expansion of the sphere of usefulness of the society, the *American Red Cross Magazine* will, from the January number, be issued monthly instead of quarterly.

Obituary.

SIR ROBERT MICHAEL SIMON, B.A., M.D.CAMB., M.D.BIRM., F.R.C.P.LOND., M.R.C.S.ENG.

WE deeply regret to announce the death of Sir Robert Simon, which occurred at his residence, Penshurst, Edgbaston, on December 22nd, as the result of a relapse after a severe attack of influenza.

Robert Simon was born in 1850, entered at Caius College, Cambridge, graduated M.B. in 1876, and M.D. two years later. He studied medicine at Guy's Hospital and afterwards in Berlin. He was admitted M.R.C.P.Lond. in 1879, and became a Fellow in 1895. After graduating he settled in Manchester, where for three years he was honorary physician to St. Mary's Hospital for Women and Children. In 1879, on the removal of the late Dr. G. A. Gibson to Edinburgh, Sir Robert Simon was appointed in his place as assistant physician to the General Hospital, Birmingham. In 1891, on the retirement of Sir Walter Foster, afterwards Lord Ilkeston, Sir Robert was appointed honorary physician, a position he held with much success until April, 1914, when he retired. The distinguished services which he had rendered to the hospital during thirty-five years were recognized by the presentation of his portrait to be hung in the hospital board room, and by an illuminated address while a diamond tiara was at the same time given to Lady Simon.

Sir Robert Simon, in addition to his post as physician to the General Hospital, was for a short time professor of forensic medicine, and for the last three years had been professor of therapeutics in the University. He was physician to the General Dispensary, consulting physician to the Dental Hospital, the Tewkesbury Hospital, the Nuneaton Hospital, Lichfield Cottage Hospital, and the Sutton Coldfield Dispensary. He served a term as examiner in medicine at the University of Cambridge, and was an examiner in clinical medicine at the University of Birmingham. He had held the offices of president of the Birmingham Branch of the British Medical Association and of the Birmingham Medical Benevolent Society.

In 1910 Sir Robert Simon received the honour of knighthood as a recognition of his professional position and of the services he had rendered to the city of his adoption. Fifteen years ago he was placed on the Commission of the Peace for Warwickshire, and more recently he was added to the list of magistrates for the City of Birmingham.

His published contributions were not numerous, but he wrote a chapter on the diseases of workers in brass and copper for Oliver's *Dangerous Trades;* it was the outcome of an earlier paper on Brass Founders' Ague, published in the BRITISH MEDICAL JOURNAL for 1888. He also issued in book form his Ingleby Lectures on the Treatment of the Common Diseases of the Skin.

In 1887 he married Emily Maud, a daughter of the late Mr. W. H. Willans of London and Seaton, who survives him; he leaves one daughter.

Professor SAUNDBY writes:

It is with great grief that I respond to the request to furnish a few appreciative lines about my old friend Sir Robert Simon. We have been closely associated ever since he came to Birmingham to join the General Hospital in succession to the late Dr. Gibson in 1879. He was a man of very remarkable ability, and one always had the feeling that he failed to do himself justice by publishing so little. He wrote and spoke admirably when he chose to do so, and as a clinical teacher in the wards he was highly appreciated by the students of this school. He cannot be said to have settled to the work of the Chair of Forensic Medicine, which I believe he held for one year only, and his tenure of the Chair of Therapeutics has been too short for him to have made any strong impression.

He had a genius for friendship, and the success and happiness of his life were in a large measure due to this fortunate gift. He was very fond of, and had much aptitude for, games of all sorts, for tennis and golf as well as for chess, whist, and bridge; his capacity as a player of both chess and bridge was of a high order.

He has not had good health for the last three years, and

his friends noticed with regret that he was showing signs of age. His retirement from the General Hospital was probably induced by his feeling that the demands made upon him were more than he could adequately fulfil. In his illness he was attended with the utmost devotion by his friend Dr. J. Hazelwood Clayton, whom I met in consultation daily, and during the last few days we had the advantage of Mr. Barling's co-operation. For the first week he went on fairly well, except for a small patch of pneumonia, so that on Saturday, December 12th, 1914, when his friend Dr. Frederick Taylor kindly came to see him with us, there appeared to be every prospect that he was about to enter upon convalescence. The chest cleared up, the temperature became normal, and for a few days this hope was entertained, but a relapse was ushered in by a most severe rigor, which recurred daily with less severity up to the end, the temperature never becoming absolutely normal. On the night of Monday, December 21st, 1914, the nurse called Dr. Clayton, who was sleeping in the next room; he found that the respiration had stopped and the pulse was scarcely perceptible. After using artificial respiration breathing and pulse returned, but when Mr. Barling and I saw the patient a little later he was quite unconscious, and he never rallied.

Mr. GILBERT BARLING, M.B., B.S.Lond., F.R.C.S.Eng., Vice-Chancellor of the University of Birmingham, writes:

From the time when I came to Birmingham some thirty-five years ago I have known Sir Robert Simon intimately, but especially so during the last twenty-two years, during which time we were both on the senior staff of the General Hospital, and were almost without intermission corresponding colleagues. In cases of interest and difficulty on the border lines of medicine and surgery we constantly sought each other's help, and I can say emphatically that it was impossible to have had a more generous-minded colleague or one who was more ready to seek surgical help in his cases. He always took a very broad view of the conditions, was never finicking or transcendental, but always went to the heart of things. Simon was a man of great intellectual capacity, and the philosophical views of life which he held permeated his medical work, and so the passing fashions and eccentricities of medicine made no impression upon him. At the General Hospital we all found him a valuable and good-tempered colleague, never in collision with other members of the staff, very kindly to his juniors, especially to his house-physicians, upon whom with deliberate intention he threw a good deal of responsibility believing that this was the best way to ensure their education. His method of teaching was admirable, and any old student of the school would acknowledge that his medical education owes a great deal to the broad-mindedness and deep insight of this teacher. His treatment of the nursing staff was always very courteous and considerate, and no one was more able than he to get the best out of them. It is only a few months since he took leave of his colleagues on giving up the hospital service; this separation from the hospital was undoubtedly a great regret to him, and I cannot help feeling that the depression which followed this great change in his life did something to lower his resistance and so bring about the fatality which followed his severe attack of influenza. If anything could enhance one's respect for the subject of this note, it would be the remembrance of the courage and control he exhibited some three years ago when he was the subject of severe Ménière's disease; the way in which he faced this attack was a lesson worth remembering.

I shall miss him sorely, not only as medical colleague, but as a friend to whom I have been indebted in many other ways.

COLONEL WILLIAM JOHNSTON, C.B., M.D.,

ARMY MEDICAL SERVICE (RETD.).

COLONEL WILLIAM JOHNSTON, of Newton Dee, Murtle, Aberdeenshire, who died on December 26th, 1914, had a distinguished career as a medical officer of the army, and was well known as an antiquarian. He was born at Aberdeen in 1843, and received his general education at the Grammar School of that city, and afterwards at Marischal College, where he graduated M.A. in 1863. He began his medical studies at Aberdeen, completing them at the University of Edinburgh, where he obtained the M.D. degree in 1865. In the same year he entered the army as assistant surgeon, becoming surgeon in 1873, and surgeon-major in 1877. He was promoted brigade-surgeon-lieutenant-colonel in 1892, and retired in the same year. During the Boer war he accepted temporary employment, from 1899 to 1901, at the War Office as assistant director-general of the Army Medical Department. He saw active service in South Africa in 1878 and again in the Zulu war in 1879. He was mentioned in dispatches, and received a medal and clasp. He commanded a bearer company in the Newcastle Field Force in the first Boer war of 1881. For his services at the War Office during the South African war he was made a C.B. and promoted to the rank of colonel in 1902. On his retirement he took up his residence at Newton Dee, and devoted himself to administrative work in connexion with the Royal Infirmary and other Aberdeen hospitals. He also gave much attention to historical research, mainly in the direction of genealogy and biography. He compiled the *Roll of Graduates of the University of Aberdeen*, which was published about the time of the quatercentenary of the university in 1906. For this work and for his activity as a member of the Library Committee the honorary degree of LL.D. was conferred upon him in 1908. Colonel Johnston was also the author of *The Last Bajans of King's and Marischal Colleges, 1858–60 and 1860–1863*, and of a *Calendar of the University of Aberdeen for the Sessions 1860–61 to 1863–64*. Among the biographies written by him was one of his collateral ancestor—Arthur Johnston, the Latin poet, rector of King's College, and physician to James VI and Charles I. At the time of his death he was engaged on a history of the Army Medical Service, for the reform of which he had done much. Colonel Johnston was heir presumptive to the baronetcy of Johnston of Caskieben, created in 1626. He married in 1882 a daughter of James Arnott, of Leathfield, Kincardineshire, Writer to the Signet, but leaves no issue.

COLONEL WILLIAM PHILIP WHITCOMBE (T.D.).

WE regret to announce the death of Colonel William Philip Whitcombe, J.P., R.A.M.C.(T.F.), a well-known and very popular medical practitioner in the Midlands. Dr. Whitcombe came of an old Shropshire family, members of which had practised medicine for five generations; he was a brother of the late Professor E. B. Whitcombe, for many years the superintendent at Winson Green Asylum. He was born at Cleobury Mortimer on June 16th, 1853, and educated at Shrewsbury School. He studied medicine at Queen's College, Birmingham, from which he qualified in 1877. He was one of the founders of the Birmingham and District General Practitioners' Union, and at an early period became its president. For many years he was an active member of the local Branch of the British Medical Association, and at one time was chairman of the Ethical Committee, which, in conjunction with Dr. Langley Browne and Dr. Messiter, he was largely instrumental in establishing. His many services to Birmingham and Aston were recognized in 1905, when his name was added to the Commission of the Peace. It was, however, by his work as a Volunteer and Territorial officer that Colonel Whitcombe was best known. After a few years' service as a young man in a local volunteer battalion, he was gazetted in November, 1890, surgeon to the 1st Volunteer Battalion of the Royal Warwickshire Regiment, and rose through the ranks of surgeon-captain and surgeon-major to be surgeon-lieutenant-colonel. When the Territorial Army Medical Corps was organized, Birmingham raised three field ambulances and a general hospital. Colonel Whitcombe was the first administrative medical officer (or, as he was later designated, assistant director of medical services) for the whole of the South Midland Division. On his retirement in 1912 he was awarded the Territorial Decoration for long and efficient service. Colonel Whitcombe was 61 years of age, and he leaves a widow, three daughters, and a son who is also engaged in the medical profession.

Colonel Whitcombe was a nephew of the late Philip Whitcombe, M.R.C.S., L.S.A., of Gravesend, who at the time of his death, at the age of 98, on January 24th, 1914, was the oldest doctor in the country. His remarkable pedigree was briefly referred to in an obituary notice which appeared in the BRITISH MEDICAL JOURNAL of

February 7th, 1914. Colonel Whitcombe's son, Dr. H. A. Whitcombe, of Dudley, has kindly sent us the following note:

He belonged to an old Shropshire family formerly situated at Berwick Mavesyn, and latterly at Cleobury Mortimer. His family, who have held the honour of freedom of Shrewsbury for 500 years (my father took the oath in 1878), is a cadet of the ancient Counts of Boulogne which settled at Whitcombe in Matlock, co. Somerset, soon after the Conquest. In the thirteenth century Sir Pharancus de Bolonia (Boulogne), lord of Whitcombe, adopted the name of his estate as his patronymic, and a descendant of his in the reign of Henry IV, Thomas Whitcombe, married the heiress of the family of Mavesyn of Mavesyn, Berwick, co. Salop. William Philip Whitcombe, through this descent, was thirty-ninth in legitimate male descent from St. Angilbert, chancellor of France circa 800 and Bertha his wife, daughter of the Emperor Charlemagne.

WE regret to announce the death of Professor Fournier, the famous authority on venereal diseases, which occurred at his residence in Paris, at the age of 88 years. He was a member of the Académie de Médecine and of many foreign scientific and learned societies.

LIEUTENANT-COLONEL EDWARD BUTLER RUTTLEDGE, Bengal Medical Service (retired), died at Woking on December 5th, aged 70. He was born in 1844, educated at the London Hospital, and took the diplomas M.R.C.S. in 1865 and L.S.A. in 1866. He entered the Indian Medical Service as assistant surgeon on October 1st, 1869; he became surgeon on July 1st, 1873, surgeon-major on October 1st, 1881, and reached the rank of lieutenant-colonel on October 1st, 1889. He retired on October 1st, 1895. Most of his service was spent in civil employ in the North-West, now the United, Provinces.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Rudolf Emmerich, professor of bacteriology and hygiene in the University of Munich, aged 61; Dr. J. S. Gibb, emeritus professor of diseases of the throat and nose to the Philadelphia Polyclinic, and laryngologist to the Episcopal Hospital in that city, aged 55; Dr. C. Sedgwick Minot, professor of comparative anatomy and director of the anatomical laboratories at Harvard, aged 62; Dr. George Livingstone Peabody, of New York, sometime lecturer on medicine, and afterwards professor of materia medica and therapeutics in Columbia College, aged 64; and Dr. John Shrady, of New York, for many years editor of the *Medical Register*, brother of the late Dr. George F. Shrady who was for nearly forty years editor of the New York *Medical Record*, aged 85.

The Services.

MEDICAL OFFICERS OF THE TERRITORIAL FORCE.

SIR DONALD MACALISTER, President of the General Medical Council, writes under date December 30th, 1914, as follows:

At the instance of the Executive Committee of the General Medical Council, proposals were recently submitted to the Military Authorities, the object of which was to improve the existing arrangements for Territorial Force Medical Officers. Many of these, owing to enforced changes of station, have been prevented from devoting part of their time to ordinary practice in their own districts; and in some localities the civil population has suffered from the resulting deficiency of medical services. Senior medical officers attached to Territorial General Hospitals in their own towns are able to combine, in some measure, their consulting, operative, or specialist practice with their local military duties; but regimental surgeons must accompany their units to training or other centres, which are often far removed from the parts of the country in which they practise, for service duties which do not always occupy their whole time.

It was suggested that, when a mobilized unit is moved from its own locality in this country, the Territorial medical officer might be allowed to effect an exchange, direct or indirect, with a Territorial medical officer in the new locality; or that, when such an exchange is not feasible, the place of the medical officer, who does not desire to accompany his unit, might be taken by a junior practitioner willing to accept a temporary Commission, and to serve with the unit in question. In the latter case the original officer might be demobilized until his unit returned to its own locality, or until his military services could be otherwise utilized.

Again, numerous cases have occurred in which a mobilized Territorial unit has volunteered for Imperial service abroad (not necessarily at the front or even in Europe). In the absence of any provision for exchange, the medical officer of such a unit would naturally feel constrained to follow it overseas, though his age and previous experience might be such as to render him less fit than a junior colleague for the special service required. It was accordingly proposed that, in this instance, the medical officer should have the option either of accompanying his unit or of serving with the corresponding reserve unit raised for home defence instead.

It was known that at the War Office a list is kept of junior practitioners who are willing to accept Commissions for general service either at home or abroad, and the suggestion was offered that from this "waiting list" of practitioners who are eagerly desirous of "seeing service," substitutes for senior practitioners engaged in civil practice at home might be detailed as occasion arose. In this way it seemed practicable to minimize the inconveniences experienced both by practitioners and by their civil patients; and at the same time to utilize without delay the numbers of junior qualified men who have applied for Commissions, and are more or less idly awaiting a call for their services.

I have the satisfaction to state that the foregoing proposals have now been officially approved, and that arrangements are being made by the Army Medical Authorities to bring about the results desired by the Executive Committee of the Council.

INDIAN EXPEDITIONARY FORCE.

THE Government of India has sanctioned the continuance of Indian rates of pay to officers and men of British units serving with the Indian Expeditionary Force; and it has also been decided that Indian rates of pay shall be admissible to officers of British units proceeding *vid* England for employment under the War Office.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have passed in the examination indicated:

FIRST M.B. (*Part I, Chemistry*).—H. S. Allen, W. B. Arnold, W. E. H. Banks, M. G. Begg, W. Breakell, H. B. Bullen, C. Dunscombe, L. P. Garrod, H. J. H. Hendley, G. W. Karunaratna, S. Orchard, P. Richardson, R. E. R. Sanderson, F. G. Spear, R. C. Thorp. (*Part II, Physics*).—W. B. Arnold, W. E. H. Banks, M. G. Begg, H. B. Bullen, C. Dunscombe, M. W. H. Evans, L. P. Garrod, S. Orchard, J. L. Potts, P. Richardson, R. E. R. Sanderson, F. G. Spear, J. S. Williams, D. W. Winnicott. (*Part III, Biology*).—J. C. Ainsworth Davis, H. Barbash, H. B. Bullen, R. Hilton, S. Orchard, R. E. R. Sanderson, R. L. Williams, D. W. Winnicott.

SECOND M.B. (*Part I, Anatomy and Physiology*).—E. V. Beale, W. T. Beswick, H. R. Bickerton, J. M. Bickerton, G. E. Birkett, C. N. Carter, T. L. Crawhall, H. T. Cubbon, W. L. Dandridge, J. C. Davies, S. R. E. Davies, H. B. Dodwell, F. N. V. Dyer, G. H. Gidlow Jackson, H. H. Ginsburg, G. A. Harrison, L. B. Hartley, L. G. Higgins, J. M. Higginton, S. M. M. Jabir, M. H. Jupe, J. G. Lawn, J. B. S. Lewis, E. I. Lloyd, A. G. F. McArthur, C. J. Penny, G. W. Pratt, E. D. Spackman, C. Suffern, H. J. R. Surrage, M. B. R. Swann, W. E. Vaudrey, H. W. C. Vines, W. J. Walters, W. G. Wernicke, W. G. Woolrich.

THIRD M.B. (*Part II*).—F. L. Cassidi, C. L. Gimblett, N. Gray, J. H. Jordan, F. D. Marsh, H. G. Oliver, A. G. Shera, G. D. Sherwood, W. S. Soden.

UNIVERSITY OF LONDON.

THE following have passed the examinations indicated:

M.D.—BRANCH I (*Medicine*): L. A. Dingley, T. P. Edwards, E. L. Horsburgh, J. H. Lloyd, J. N. Mehta (University Medal), J. Tattersall.

BRANCH III (*Mental Diseases*): G. W. B. James, J. C. Woods (University Medal).

BRANCH IV (*Midwifery and Diseases of Women*): Florence M. Edmonds, Alice E. Sanderson.

BRANCH V (*State Medicine*): W. Berry.

SECOND EXAMINATION FOR MEDICAL DEGREES (*Part I: Organic and Applied Chemistry*).—A. L. Abel, Mary R. Barkas, M. Ba-Thin, C. C. Bennett, C. G. Coombs, H. C. Cox, D. A. Dyer, H. E. K. Eccles, C. E. E. Herington, C. P. Hines, O. H. Hyman, H. C. C. Joyce, Margaret H. Kingsford, L. K. Ledger, G. E. MacAlevey, N. Synn.

UNIVERSITY OF LEEDS.

A CONGREGATION of the university was held at the School of Medicine on Saturday, December 19th, 1914, when the Vice-Chancellor conferred the degrees of Bachelor of Medicine and

Bachelor of Surgery on the following who had passed the recent examinations:

W. D. Anderton, S. N. Cohen, T. Elliott, H. Foxton, C. M. Gozney, A. S. Hebblethwaite (second-class honours), E. Hesterlow, F. King, J. J. Digges La Touche, H. W. Robinson, J. Wilkinson (with second-class honours), J. Wright.

The following candidates passed the examination indicated:

FINAL M.B., CH.B.—*Part I (Pathology and Bacteriology)*: Z. P. Fernandez, Miriam Hutchinson, C. R. Knowles. *Part II (Forensic Medicine and Public Health)*: H. Foxton, F. King, J. J. Digges La Touche, C. H. Seville.

SECOND M.B., CH.B.—*Part I (Anatomy and Physiology)*: S. Adler, G. R. Baxter, H. E. Charles, H. V. Horsfall, G. F. Hurst, J. H. Parker, N. Pick, C. Riley-Watson, W. H. Rowden, P. Shillito, C. H. Smith. *Part II (Pharmacy)*: G. R. Baxter, A. P. Bertwistle, Marion Draper, H. Goodman, J. Gordon, K. Jaidka, F. H. Smith.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

PRACTICAL MATERIA MEDICA.—E. H. Ablett, J. Aitken, Janet C. P. Alison, L. G. Allan, A. Badenoch, Dorothea I. Baird, G. Balsillie, R. E. Batson, I. A. Beckles, C. G. Booker, J. S. Bow, Sarah Boyd, W. D. Brunton, J. C. Burns, E. Chapelle, D. Colombos, A. C. C. Craig, R. C. Crawfurd, P. C. Datta, T. S. Duncan, A. J. A. Edwards, J. W. C. Fairweather, M. J. Gibson, K. Gillis, J. T. Godfrey, G. W. Grant, S. D. Gupta, Elizabeth Harper, F. J. Hauptfleisch, C. S. van Heerden, A. N. Homewood, N. Jennings, A. Joe, J. T. Johnston, D. A. Knight, H. S. Lucraft, Anne L. MacDonald, D. M'Eachran, J. M'Garrity, A. G. Mackay, I. C. Mackay, R. Mailer, A. R. Matheson, F. H. van der Merwe, J. H. Neill, J. G. Nel, S. D. Nurse, D. J. T. Oswald, D. H. Paterson, H. Patlansky, W. T. Patterson, J. E. Purves, A. Robertson, Susan A. Robertson, Joan K. Rose, S. S. Rosenthall, A. O. Ross, J. Schneider, F. W. Simson, J. M. H. Smellie, J. O. Smith, R. B. Smith, S. L. Smith, J. A. Stirling, D. G. Stoute, Johan H. Sypkens, H. W. Y. Taylor, J. Thompson, J. M. Tyrrell, J. I. de Villiers, T. C. Wakefield, R. Walker, Mary G. S. Wallace, G. R. Waller, J. M. Watt, W. A. Weatherhead, W. Williams, J. Wolfson, A. T. Woodward.

UNIVERSITY OF ST. ANDREWS.

THE following candidates have been approved at the examination indicated:

FOURTH M.B., CH.B.—J. Black, Lal Cupta Panne.

THIRD M.B., CH.B. (*Pathology*).—Flora M. Macdonald, Alice Rattray, R. N. Bhandari, M. C. Madhok, P. V. Paul, W. P. Starforth, G. Verghese. (*Forensic Medicine and Public Health*).—R. N. Bhandari, T. P. Buits, M. C. Madhok, Alice Rattray, W. P. Starforth, J. L. Paton, J. M. Stalker. (*Materia Medica*).—S. Bridgeford, Mary M. G. Ferguson, Jeannette M. Manzie, P. V. Paul, A. E. W. Sandelson, G. Verghese.

D.P.H.—Mr. Gilbert Norman Anderson, M.B., Ch.B., has passed the second examination.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST PROFESSIONAL.—R. E. Connolly, B. Epstein, Miss E. Gleeson, S. J. Halpin, C. E. Herbert, F. R. Humphreys, E. D. Nolan, J. Power, R. A. Scott, A. A. Townsend.

SECOND PROFESSIONAL.—G. G. C. Adams, R. J. Bassett, J. J. Campbell, I. B. Culhane, Miss E. H. H. Lloyd Dodd, W. Evans, L. Finnegan, P. J. Flood, C. K. T. Hewson, F. L. Macdowel, D. J. O'Flannagan, G. W. Pope, M. M. Price, D. E. Young.

THIRD PROFESSIONAL.—H. Gerrard, J. Hegarty, D. L. Kelly, W. A. Malone, L. P. O'Connor, J. Ryan, P. K. I. Ryan, W. G. Thompson, H. R. Wright.

FINAL.—H. J. Cotter, G. S. Douglas, M. Fitzgibbon, T. F. Higgins, E. Harnett, C. F. Dillon Kelly, D. Kelly, L. C. Dillon Kelly, W. J. A. Laird, A. McCawley, F. P. B. McTavish, J. D. MacCormack, T. N. Neale, T. F. O'Donoghue, J. Purcell, C. Roche, G. P. Sheehan, C. J. P. Stack.

D.P.H.—*A. W. Forrester, *Miss J. J. M. Morton, D. T. Lewis, G. C. Sneyd, J. H. Walsh.

*Passed with Honours.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*†D. Havard, *†H. R. Ibbotson, *J. G. Lewis, *†C. H. Philips, *†G. Robinson, *†W. C. S. Wood.

MEDICINE.—*†R. N. Cozier, *C. J. G. Exley, *†A. E. Gravelle, †D. Havard, †D. M. Hunt, *†T. J. R. Scholtz.

FORENSIC MEDICINE.—L. Bennet, R. N. Cozier, R. Curle, A. E. Gravelle, R. A. Holmes, C. H. Philips, T. J. R. Scholtz.

MIDWIFERY.—R. N. Cozier, C. J. G. Exley, N. Hoffmeister, R. A. Holmes, R. Quesada Jiménez, T. J. R. Scholtz.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. D. Havard, H. R. Ibbotson, C. H. Philips, G. Robinson, T. J. R. Scholtz, and W. C. S. Wood.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates were approved at the examination held at the end of the forty-sixth session:

*†W. I. Escoffery, †G. C. S. Perera, A. E. Schokman, C. Deuntzer, E. F. Wills, †J. E. Moffatt, †E. B. Bate.

*Passed with distinction. †Colonial Service.

The "Duncan Medal" has been awarded to Dr. Escoffery, who obtained the highest aggregate of marks during the session.

Medical News.

WE regret to announce the death, on December 30th, 1914, in his 87th year, of Mr. Thomas Bryant, F.R.C.S., past president of the Royal College of Surgeons of England, and consulting surgeon to Guy's Hospital.

MESSRS. CHURCHILL inform us that in the issue of the *Medical Directory* for 1916 the list of practitioners resident abroad will be reinstated.

THE new radium laboratories established in response to the appeal of the Manchester Radium Committee, as related in the JOURNAL last October, were formally opened by the Lord Mayor on December 30th.

THE first sessional meeting of the Women Sanitary Inspectors' Association will be held at 7.45 p.m., on Wednesday next, at the Royal Sanitary Institute, 90, Buckingham Palace Road, when Dr. Louis Parkes will give an address on antenatal hygiene and what it may be expected to do.

THE governing body of the Lister Institute has decided, in view of the vote taken at the meeting of members on November 18th, not at present to take any further steps in the matter of the amalgamation of the Lister Institute with the organization for medical research established under the Insurance Act.

ON December 7th the Supreme Court of New York gave judgement in a case in which a recently married wife sued for divorce on the ground that her husband had concealed from her before marriage the fact that he was suffering from tuberculosis. An annulment of the marriage contract was granted.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CHILBLAINS.

E. G. B. asks for advice in the treatment of intractable chilblains in a strong, healthy lady, accustomed to hunting and an outdoor life, who has never had any serious illness, but from October till May she is constantly troubled with chilblains. She, he writes, has been treated with ol. morrhuae, tonics, and calcium salts in the form of syr. calcii lactophosph. (*B.P.*), which latter in other cases he has found to be an absolute specific, but without any effect on her.

ANSWERS.

POUDRE DU DR. BURGRAEVE.

M. C. C.—The sample of Poudre du Dr. Burgraeve examined consisted of magnesium sulphate, and a careful examination of the small quantity available did not show the presence of any other substance.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks
ON
CASES OF NERVE CONCUSSION DUE TO BULLET AND SHELL WOUNDS.

BY A. H. TUBBY, M.S.,
MAJOR R.A.M.C.(T.)

THE following notes of nerve injuries of this description are from cases which have been under my care at the 4th London General Hospital, and I beg to acknowledge the permission of the Commanding Officer to publish them, and to express my thanks to Lieutenants C. E. H. Milner and D. E. D. Davis for their reports of the cases.

The block of conduction of nerve impulses may be either anatomical or physiological. If it is the former, it is due either to severance of the nerve, to destructive pressure on it, or to crushing. By physiological blocking is meant such a condition of the nerve as arises from a lesion the effects of which are only temporary. It may be that the nerve is deflected out of its course and slightly stretched, or is pressed upon by effusion of blood, or receives a blow transmitted to it through a portion of muscle, or is itself jammed against a bone for a short time. Whatever the cause, it results in such a temporary disintegration or temporary disturbance of that portion of the neuron which renders it incapable of allowing impulses to pass through upwards or downwards. The point, however, to be remembered is that it is a state of affairs in which recovery of power usually ensues.

CASE I.—*Concussion of the Posterior Tibial Nerve: Recovery in Four Weeks.*

S. R., private, was wounded at the Marne, and was admitted to the 4th London General Hospital on September 20th, 1914. A bullet had passed through the right calf from side to side, just about the middle of the leg and posterior to the bones. The track of the bullet was exactly transverse to the line of the posterior tibial vessels and nerve. There were no evidences of injury to the former, and the bleeding had not been severe. On admission, it was noted that he could not flex the right toe, and this remained in hyper-extension. There was no loss of sensation in any part of the toe or on the sole of the foot, neither was there any complaint of pain in the course of the nerve. The toe was placed in a fully flexed position on a splint, and on October 1st it was noted that when the toe was held straight passively there was just a flicker of movement in the direction of flexion. Gradually this range of movement increased, and on October 25th, that is about five or six weeks after the injury, full movement had returned.

CASE II.—*Concussion of the Musculo-spiral Nerve: Recovery in Four Weeks.*

A. B., private, wounded by a fragment of shell on September 16th, 1914, was admitted September 27th. A piece of high velocity shell had passed through the soft parts of the outer part of the left arm, at a spot exactly corresponding to the musculo-spiral groove. He could extend the middle finger of the left hand only; the other fingers were in flexion, without any capacity for extension. It was, however, ascertained that the inability to extend the last two phalanges of the index finger was owing to a severance, some years previously, of the extensor tendon, which had failed to unite. The digits, therefore, which had lost the power of extension owing to the shell wound, were the thumb, the ring and little fingers. There was also some loss of complete supination, to the extent of 15 degrees. On October 2nd electrical tests were carried out; there was no evidence of reaction of degeneration, and a good prognosis was given. Sensation in the affected fingers was described as "woolly." On November 3rd, the little finger had recovered, but he could not yet supinate fully. From the time of admission he had been put up in a bent malleable iron splint, so that the wrist and the affected fingers were hyper-extended (Fig. 1). On November 20th all power had returned. There was full supination, and he was able to extend all the digits, except the last two phalanges of the index finger, which, owing to an injury long previous to the shell wound, prevented full extension.

CASE III.—*Concussion of the Great Sciatic Nerve: Recovery of Movement in Eleven Weeks.*

W. H., private, was wounded in three places by a shell on September 14th, 1914, and was admitted on September 27th. One piece of shell smashed the lower end of the right humerus and the upper end of the ulna, and the ulnar nerve was involved there. Another piece passed along the other side of the thigh inflicting merely a skin wound, and a third entered the posterior surface of the thigh 2½ in. below and behind the great trochanter and came out at the lower end of Hunter's canal. There was apparently complete paralysis of the great sciatic nerve and its branches below the middle of the thigh. The limb lay flaccid in bed, and there was distinct foot-drop. On the fourteenth day after admission, the muscles were tested electrically; no reaction of degeneration was present. I was fortunate in having the opportunity of a consultation with my colleague Major Mott, and he expressed the opinion that this was a case of nerve concussion and not of gross lesion. It was observed at this time that there was great tenderness on digital pressure along the course of the posterior tibial nerve. It is to be noted that in many of these cases pain of this description is a very prominent feature. Major Mott advised that he should have very light massage and hot air treatment. On November 1st it was seen that there was a beginning of recovery of movement in the toes and that sensation was commencing to return in the affected area. He continued to complain a great deal of burning and darting pain during this period. On November 27th, however, the movements of the toes and foot were complete, the foot-drop had disappeared, and localization of touch and pain was perfect. On December 8th there was complete recovery of all the movements below the site of the lesion, and sensation had returned. He still, however, felt much tenderness when pressure was made along the course of the posterior tibial nerve in the calf.

CASE IV.—*Concussion of the Facial Nerve: Recovery in Three Weeks.*

A. W. R., private, was wounded at the Aisne by a fragment of shell, which caused laceration of the soft part of the vertical ramus of the lower jaw, exactly in the course of the facial nerve. The wound was one-third of an inch deep. In this case the only sign of paresis was a difficulty in closing the left eyelid firmly. This, however, passed off in three weeks, and he made a complete recovery.

CASE V.—*Bullet Wound in the Upper Arm, exactly over the Musculo-spiral Groove.*

W. C., private, was wounded at the Aisne on September 21st, 1914, and admitted on October 1st. There was no paralysis of the musculo-spiral nerve, although the bullet had passed through the outer part of the upper arm exactly over the musculo-spiral groove. An *x*-ray examination showed that the humerus had escaped entirely, and there was absolutely no sign of paralysis of the nerve. His arm was thick, and there were plenty of soft tissues over the bone, so that this may explain the absence of nerve symptoms.

CASE VI.—*Wound below the Mastoid Process: Late Effects from the Sympathetic Nerve.*

J. J., a Belgian, was wounded on October 21st, 1914, at Dixmude and admitted on October 29th. There was a bullet wound just below the right mastoid process. He told us that the bullet had passed into the tonsil and had lodged there, but on the third day he had vomited, and as he put it, he had brought up his tonsil with the bullet in it; this was confirmed by the existence of a large, ragged wound occupying the site of the right tonsil. He was only able to swallow fluids, but articulation was quite clear. From the direction which the bullet had taken, an injury might have occurred to any one of the following nerves: the facial, glosso-pharyngeal, vagus, hypoglossal, spinal accessory, and sympathetic. Yet at the time of admission there was no evidence of injury to any one of these nerves. The difficulty in swallowing, which disappeared entirely before he left the hospital, could fairly be ascribed to the large faucial wound; and the probability is that none of the nerves supplying the pharynx were involved, as his articulation was perfect from the first. However, on November 3rd, it was evident that the right sympathetic nerve was slightly affected, for that pupil was smaller than the left, although it reacted to light. This condition continued until November 12th, when he left, and we could not trace him further.

Case VII.—*Injury of the Posterior Cord of the Brachial Plexus.*

G. R., private, was wounded by a bullet on September 22nd, 1914, and was sent to the Auxiliary Hospital No. 173 in the Champs Elysées, Paris. The wound was situated just below the clavicle and had healed completely. He brought with him an excellent report from Miss Grace Judd, M.B., B.S., which I quote verbatim:

> There was some general wasting in the right arm, most prominent on the under surface of the forearm, but in the biceps and about the shoulder the wasting was moderate. Complete paralysis of the following muscles was present: The extensor communis digitorum, the extensor carpi radialis longior, the three extensores pollicis, the supinator longus and brevis, and the triceps. Partial loss of power existed in the flexor carpi radialis, the deltoid, biceps and brachialis anticus, teres minor, latissimus dorsi, and supraspinatus. The muscles which had escaped were the adductor pollicis, flexor brevis minimi digiti, flexor carpi ulnaris, the pronators, pectorales, trapezius, rhomboids, and the serratus muscles. As to sensation, subjective numbness was felt particularly on the internal surface of the arm and the dorsal surface of the forearm. Pain was present in the arm, especially at night, and the loss of sensation of touch was co-extensive with the muscular distribution of the affected nerves. So, too, was the loss of sensation of pain and temperature. The appreciation of vibration was completely lost in the centre of the most anaesthetic area.

The limb was flexed at the elbow, placed in a sling, and the wrist and fingers were hyperextended and put on a malleable iron splint, which was applied to the anterior surface of the forearm and hand. Improvement continued slowly, and on November 27th he could extend fully the second and third phalanges, but the first only half way. On December 16th there was further improvement in the extension of the first phalanges, and sensation to touch and pain in the affected areas had completely recovered. A radiogram showed that there were four small pieces of shell in the subclavicular region. By an electrical examination of the muscles made on November 27th it was found that the triceps, deltoid, supinator longus, and extensors of the wrist and fingers did not react to faradism, whereas the pectoralis major, latissimus dorsi, serratus magnus, trapezius, levator anguli scapuli, biceps, finger and wrist flexors, and the muscles of the thenar eminence reacted fully. There was no reaction of the extensors of the wrist and fingers. It may be observed, by way of parenthesis, that in nerve-grafting cases which I have undertaken, partial recovery of motor power has taken place before any reaction to galvanism and faradism, and this recovery of movement has preceded the reappearance of electrical reactions by two or three months. In this case the reactions were those of degeneration, but of a temporary nature in some muscles. On December 25th there was observed further improvement in extending the fingers.

Case VIII.—*Compound Fracture of the Left Elbow: Injury to Musculo-spiral Nerve: Drop Wrist: Slight Recovery of Movement Three Months Afterwards.*

Lance-Corporal J. was wounded at the Aisne and sent to Paris. He was admitted to the 4th London General Hospital on October 31st, 1914. There was a compound fracture of the left elbow due to a shell wound, drop wrist, complete loss of extension of the fingers, and of sensation on the back of the forearm, hand, and fingers. The limb was put into a sling, and a bent malleable iron splint applied, so as to keep the parts in extension. On November 27th there was found a flicker of extension movement in the last phalanges, but no superficial sensation of touch on the extensor surface of the forearm, the hand, or the fingers. He felt the prick of a pin, and could localize it on the back of the forearm and on the first phalanx of the ring finger. On December 15th the last phalanges could be extended about half way. Reaction of degeneration was present in the muscles supplied by the musculo-spiral nerve.

It is a little difficult to gather what is the general acceptation of the vague term "concussion of nerve." Perhaps the following definition may prove acceptable: It is damage done to a nerve trunk without actual destruction of the axis cylinders; and the damage may consist of an effusion of blood between the fibres, following compression of the nerve against a bone by the rapid passage of a foreign body in the immediate neighbourhood of the nerve. In other cases the actual lesion may not amount to haemorrhage, but to a temporary anaemia, or its opposite, hyperaemia of the nerve, and we require specimens for microscopical examination before we can be quite precise. It is also possible to conceive that in certain large nerve trunks, such, for instance, as either of the popliteal nerves, where the motor fibres can be split up for a very long distance from the sensory, either a motor or a sensory bundle may be injured, so that in one case motor paralysis alone may exist and in another sensory symptoms be present.

When a patient suffering from a projectile wound is admitted, presenting nerve symptoms, the condition of the wound should be noted, whether suppurating, healing, or healed. If the first, and if the case presents symptoms of nerve concussion, we should bear in mind the probability of the strangling effect of scar tissue upon the nerve and the possibility of paralysis of long duration. When, however, the wound is healing or has healed, then that possibility is much less. In all the cases which have been quoted here the state of the wound was most satisfactory; in fact, several had healed almost by primary union. And, if I may say so, these facts reflect the greatest credit upon the completeness of the organization "at the front" for the immediate treatment of the wounded and the skilful arrangements made by the Army Medical Staff for the subsequent care and dressing of the patients.

In all cases a stereoscopic skiagram is taken, on admission, for fragments of shell, or a bullet may, if allowed to remain, compress the nerve trunk, or may produce exudation and subsequent organization into scar tissue. In these events, whenever possible, the fragments should be removed after accurate localization, especially if this shows them to be in the immediate neighbourhood of a nerve trunk, and an opportunity may then be taken of examining into the condition of the latter. If a bone has been splintered or fractured, the probability of fragment pressure is greater and should be adequately dealt with. The sooner all sources of pressure and irritation are removed the sooner will the contused nerves recover. Generally, these cases come to us some days after the injury, either with partial paralysis or anaesthesia, or both, and it is important to determine whether we are dealing with a physiological or an anatomical block—meaning by physiological, interruption of the conductivity of the nerve due to temporary abeyance of its functions, and by anatomical a gross lesion, such as partial or complete division or absolute compression by a bullet or fragment of bone.

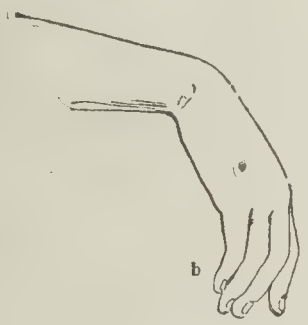
Briefly, I may indicate the following points, which are helpful. A partial and irregular paralysis or paresis of muscles supplied by one nerve trunk, such as occurred in the patient described in Case II, some of whose fingers were incapable of extension, is indicative of physiological blocking, such as arises from a small haemorrhage amongst the fibres or around the nerve, or bruising. The electrical reaction of muscles and loss of the sensations of superficial and deep touch, pain and temperature should be inquired into; and from about the tenth day onwards the muscles should be periodically tested for the signs of reaction of degeneration (R.D.). This should be done by an expert, because many fallacies may arise. Total loss of electrical conductivity is conclusive of complete block, whilst the diminution of reaction to the electrical test is of small importance, unless the polar reactions are reversed. The continued presence of R.D. is symptomatic of serious and organic injury to a nerve trunk, but in some cases of concussion R.D. disappears and the muscles respond normally. Persistence of R.D. constitutes, in my opinion, a legitimate cause for exploration of the nerve. Nevertheless, there may be voluntary movements of the affected muscles long before there is reaction to faradism. In differentiating between concussion and gross injury the matter of pain is of great importance. If it be constant in the distribution of the nerve below the lesion, and if there be great tenderness of the nerve trunks, then the probabilities are that we are dealing with a concussion which has been followed by a traumatic neuritis. Pain is often extremely obstinate to treatment in these cases, and is felt long after recovery of movement and the establishment of normal tactile sensation. An absence of trophic lesions of the skin is indicative of absence of gross lesions of the nerve of a destructive nature.

My friend, Major Mott, tells me that he finds light massage and hot air very helpful in such painful cases, and my

experience in other forms of traumatic neuritis has been that the static current of high voltage is very useful. Drugs do not appear to be very successful, but a combination of codeia, dimethyl-amido-antipyrin (so called in the Japanese *Pharmacopoeia*, also known by the name of the German brand, pyramidon) and caffeine may be tried.

One word as to the significance of early recovery of movement. If within a few days after the wound there is ever so slight a flicker in the parts which have been paralysed, then we shall not be far wrong in concluding that we are dealing with concussion, and not with serious injury, likely to be very prolonged in its effects.

Reference may now be made more particularly to the treatment of these cases. If there is an open wound it should be treated antiseptically and thoroughly drained; the essential point is not to be in haste to operate merely because a nerve or nerves appear to be injured, but to wait until it is evident that R.D. is persistent, and that the usual measures such as massage and electrical stimuli have had no effect. An important principle which must be insisted upon here is that, in dealing with paretic or paralytic muscles, they must be always kept relaxed, and this can be done by suitable splinting. The best splint is a malleable iron splint well padded and bent so as to fix the limb, with the affected muscles relaxed; thus, if we are dealing with drop wrist or paralysis of the extensors of the fingers, the splint should be bent at one end so that the hand and fingers lie on it in hyper-extension (Fig. 1), and this position should never be relaxed, even when the splint is taken off for massage and electrical applications. Similarly, in foot-drop the splint



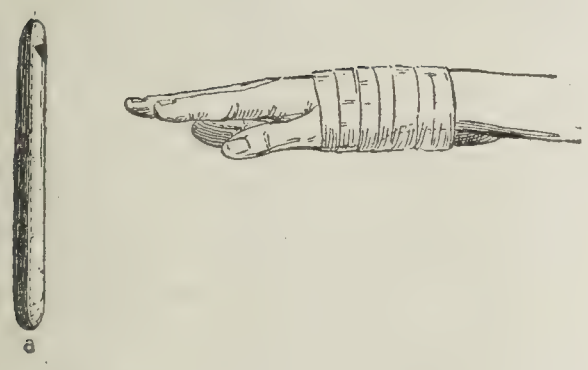


Fig. 1.—Three figures showing the method of securing hyper-extension of a dropped wrist. *a*, Malleable iron splint; *b*, dropped wrist.

should be so applied to the posterior surface of the leg and foot that the leg is in dorsiflexion (Figs. 2 and 3). This is, in my opinion, one of the greatest aids to recovery.

As to the time taken, this depends essentially upon the degree of nerve disturbance; thus, it varied from twenty-one days in Case IV to nearly three months in Case III, and it may be longer. The variations in sensation should be carefully watched and a significant sign is recovery of sensation from above downwards, just as if a stocking were being peeled off down the leg. So long as we are satisfied that recovery of movement and sensation are proceeding, however gradually, we should hold our hands and not operate.

Naturally, there are cases in which it is difficult to be sure at first of the nature of the nerve injury, whether it is concussion, bruising or pressure, or complete destruction of the nerve fibres. Here again, in the absence of a patent cause such as a bullet-laceration of a nerve, it

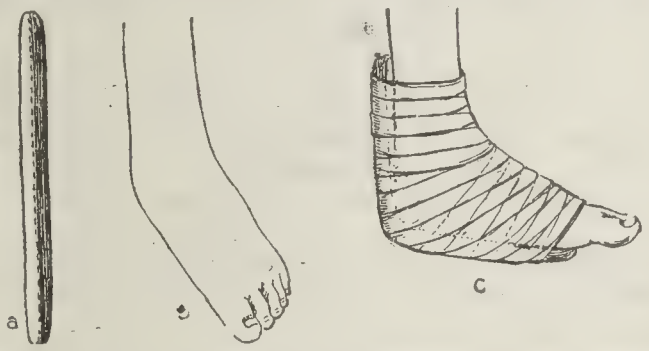


Fig. 2.—Showing the use and the application of the malleable iron splint for foot-drop. *a*, Malleable iron splint, before bending; *b*, dropped foot; *c*, the splint bent to a right angle and bandaged to the foot, now at right angles; later, the splint may be bent acutely so that the foot is dorsiflexed.

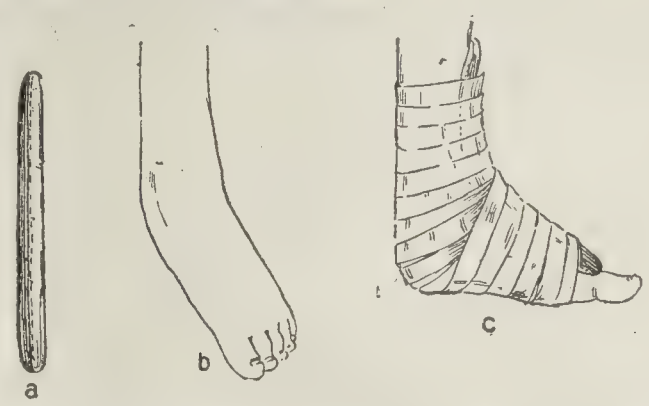


Fig. 3.—A second method of using a malleable iron splint for foot-drop. *a*, Malleable iron splint; *b*, dropped foot; *c*, splint bent and applied to the dorsum of the foot, so that it is held at a right angle.

is most important to wait. When all progress has ceased, we are then sure of the degree of residual paralysis and can plan and carry out suitable operation. Many so-called successful operations on nerves have been fallacious, because sufficient time has not elapsed to allow the degree of residual paralysis, after every form of palliative treatment has been tried, to become evident.

A few words in conclusion as to the treatment of gross lesions. Whenever we have cause to suspect from an *x*-ray examination that such exists, then the nerve should be explored. When, however, we have waited for the residual paralysis to declare itself, we can operate with a view of removing the pressure of scar tissue or we can decide upon a secondary suture, nerve transference, or nerve anastomosis. These all have their appropriate place in the treatment of nerve lesion from bullet and shell wounds, when the indications are quite clear. The subject of nerve injuries arising from projectiles is an interesting and fascinating one, and some of the extraordinary possibilities which cases present may be inferred from the accounts given of those which have recently come under my notice.

THE Cambridge University Press will shortly publish *An Introduction to the Study of Colour Vision*, by Dr. J. Herbert Parsons, of University College Hospital.

MESSRS. CASSELL AND CO., LTD., announce a fifth edition of Luff and Candy's *Manual of Chemistry*, revised and enlarged by Mr. Candy. Much of the additional matter relates to the theory of ionization and some of its consequences. The section on volumetric analysis has now been extended to include the volumetric aqueous solutions of the new *British Pharmacopoeia*.

ACCORDING to the *New York Medical Journal*, the annual report of the Surgeon-General of the United States Army, which has just been issued, states that during the past year fifty-two army surgeons have published contributions on medical topics, including three books, two prize essays, and one hundred and ten separate articles, some of which have been republished in book form. Among them are a series of articles on the medical aspects of the Civil War, a report of a trip to China, a review of the medical work in Porto Rico by the United States Government, and a number of articles giving the results of original research carried out by the members of the corps.

A Lecture
ON
THE TREATMENT OF INFANTILE PARALYSIS:
A STUDY IN BIOLOGY.

Delivered to the Melbourne Medical Students' Society,

BY

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I hope to recount the results of my work on infantile paralysis carried on during the last eight years. The disease is widespread in its incidence, and essentially of the first few years of life. It attacks apparently the most healthy types, and, unless the correct treatment is recognized, it ruins physically those it is unable to slay, converting perhaps in a night the healthy child into a cripple.

Pathology.

The essential feature of this disease is an inflammatory affection of the cells of the anterior cornua of the spinal cord resulting in a paralysis of corresponding muscle groups. The inflammation may not be limited to the anterior cornual cells, but may affect other portions of the cord and the meninges, but in infantile paralysis *per se* these other effects are transient. The onset may be sudden, or preceded by a period of general malaise lasting several days, or as long as two or more weeks.

During the stage of inflammation, as evidenced by rise of temperature or pain, the treatment advocated was that of an ordinary feverish attack, antipyretics and purgatives being advised. On the subsidence of the feverish symptoms the accepted treatment was directed to maintain the tone of the muscles found to be paralysed by means of massage and electricity; but if in spite of these measures the muscles did not recover, the explanation given was not a recognition of improper treatment, but that the case was hopeless because the anterior cornual cell itself had not recovered and never would. Such a line of treatment largely left everything to chance, and apparently the cell did not often recover, since cripples from this disease are to be found in practically every city and town in the world.

The question of the muscle itself as even a factor in the treatment was never considered, and yet we know that biologically it preceded nerve tissue. No tests were ever applied to the muscle except the ones of extreme muscle function—namely, asking the child to raise its arm above the head when standing or sitting up, or standing the child on the affected leg to test the action of the quadriceps; and if the patient could not perform these extreme movements the anterior cornua cells were generally regarded as hopeless.

With the pathology I agree; with the deductions drawn from it I wholly disagree. Round the question of the action of muscles lies the whole principle of treatment. Though anatomically we speak of a muscle as being a flexor or extensor, we really refer to the maximum function of the muscle, and the question arises of the recognition of the minimum of muscular function for any particular muscle; for it is only by the recognition in treatment of its minimum function that the muscle may ultimately be coaxed up to its maximum—the ideal.

Hence when we speak, as have the authorities of the Rockefeller Institute, of an anterior cornual cell having been "irreparably damaged," we can only recognize this through the degree of paralysis present in the corresponding muscle group, a factor which altogether depends on the nature of the test applied.

For example, this statement as to "irreparable damage" might be applied to the cell condition, when the quadriceps failed to contract sufficiently to enable the patient to elevate the limb in one piece when lying on the back; yet such a quadriceps tested from zero might show every other function to be present, and the cell, if these further tests only were applied, would necessarily be regarded as recovered. "Irreparable damage" and "paralysis" are really referable not to the muscle itself, but only to loss of part of its function, the restoration of which follows a simple biological law. So-called irreparable damage of the cell must be judged by loss of all the functions of a muscle—all must be tested, not some or any. This simple biological point is the basis of scientific treatment.

Acting on this principle in an old case of so-called cell destruction, as evidenced by paralysis and deformity of many years' standing, I found that such apparently paralysed muscles would often recover. One of my first cases was a boy from a neighbouring State with an acutely contracted knee owing to paralysed quadriceps and over-action of the hamstrings of nine years' standing. The boy was absolutely dependent on crutches. This knee was straightened by gradual continuous pressure, and the muscles were re-educated so that the boy was able finally to stand on the leg without support—an example of a muscle recovering its function whose controlling anterior cornual cells were supposed to be irreparably damaged, and which itself had been overstretched for nine years by powerful hamstrings. Such a result is explained by Jones[1] as due to the fact that relaxation of the quadriceps has allowed of the "taking in of the slack." Relaxation is but part of the treatment, and I may mention that I have relaxed many such quadriceps for twelve months and longer, and this particular case for three months, without result till I recognized biological re-education of muscle.

Relaxation means muscle stagnation—nowhere more than in relation to the quadriceps—and is a fallacious doctrine, since it is really leaving the muscle in the zero position, the starting point and not the end of treatment. Mere relaxation does not train a muscle to functionate; the mechanical interference with function from contracted antagonistic muscles is not the only factor to contend against. Such results were difficult to understand, viewed in the light of the deductions we were taught from the old pathology, and I began to wonder whether the chief affection might not perhaps lie in the muscle itself and the anterior cornual cell be secondarily affected, and therefore not such an important factor. With the assistance of Dr. Stapley of the Melbourne University, I carried out various experiments at the Melbourne Zoological Gardens and also numerous comparative studies on muscles at the Veterinary School.

My conclusions were:

1. That as a primary pathological factor the muscle by itself could scarcely be considered.
2. That biologically, however, it was all-important for the purposes of treatment.

I ascertained that through the muscle treatment could be directed towards the restoration of function of what I regarded as the partially damaged anterior horn cell or towards the bringing of new nerve control factors into play, remembering always cell adaptability and the precedence in biology of function over structure.

The Immediate Treatment of a Case of Infantile Paralysis.

The treatment for any paralysed muscle is immediate rest; but that alone is not sufficient—it must not only be immediate, but also anatomical.

It must be immediate, because the disease at once destroys muscle adjustments; and so fine are these that immediately the nerve cell governing the action of a flexor, for example, is affected, its extensor opponent begins to overact, and this overaction must be prevented for three reasons:

1. It does not allow complete rest of the affected anterior horn cell, being a constant source of irritation.
2. By overstretching the affected muscle it interferes with its recovery.
3. Even though the nerve cell and affected muscle may recover their power, deformity is inevitably produced, interfering with future utility—for example, recovered extensors of leg unable to act owing to a talipes equinus due to a contracted tendo Achillis.

The rest must also be anatomical because, as I stated in the *Australasian Medical Journal* (June, 1911): "Since rest is the basic treatment of inflammation, only by the

zero or anatomical position can the door be closed on all sources of irritation, and cord, nerve, receptive substance, and muscle be placed at physiological rest; that is, only through the zero position can you offer the greatest physiological opposition to the sources of inflammation."

A muscle is rested only when it is placed in a position in which its work is zero and its origin and insertion are as nearly as possible on the same horizontal plane, for the resumption of function, which should be gradual, is always easiest along a straight line. The zero position is the position of anatomical rest in which the individual muscle itself is relaxed, and both its own action and that of its opponent prevented.

My practice when re-educating a muscle is to begin each day at zero, and gradually to work up to and beyond the highest point achieved the day before. If, for example, the knee be contracted owing to a paralysed quadriceps and overacting flexors, it is obvious that the former being at a disadvantage for functionating, equilibrium has been destroyed. Hence we place the quadriceps in a position of relaxation (knee extension), prevent the overaction of its opponent when resting by means of a splint, or when exercising by means of position, then daily work at it to restore the lost equilibrium, by recognizing that it is incorrect to flex the knee beyond the point from which extension is possible—that is, at which effort becomes manifest—thus recognizing the cessation of its opposition to its opponent flexor.

There is relatively a much higher organization and specialization of the upper limb with an enormously greater correlation with intellectuality and natural and acquired skill. The upper limb of man, with its fine intrinsic and extrinsic adjustments, is in marked contrast to that of *Macropus*, in which, in spite of a dependent forelimb, we have defective muscle development and absence of a pollex. In man, so even is the adjustment that the loss of function of the adductor pollicis or pronator teres or supinator brevis may be sufficient to ruin the utility of the upper limb. Furthermore, the more tendinous the muscle the less its power of recovery, and the less the utility of a muscle or its importance in the animal economy the greater the liability to affection.

For the upper limb the anatomical position is as follows: The thumb is adducted because opposition to the fingers is essential, fingers slightly flexed, wrist slightly dorsiflexed on account of the grip, hand placed midway between pronation and supination, elbow slightly flexed to relieve the biceps and brachialis anticus, and the arm abducted to a right angle, or even higher, to help the flexors, deltoid, and trapezius. The biceps is not rested by mere flexion for the long head crosses the shoulder-joint; and not only should we have flexion of the forearm, but the arm raised as in deltoid cases. In other words, to speak of relaxing a biceps by means of a sling—that is, by merely flexing the forearm—is anatomically unsound.

Rest I effect by means of a special arm splint introduced some six years ago, and simple both in its construction and application. The basis of the splint is a stem of malleable iron $\frac{1}{2}$ in. wide by $\frac{3}{8}$ in. thick. This runs up the mid-axillary line from costal edge to the axilla, and follows the contour of the under surface of arm and forearm to wrist, being bent to the requisite angle at the axilla and elbow. A piece of aluminium or tin shaped to the hand is attached at wrist to allow of the median position above stated, and the fingers rest on a pad of wool. Wings $\frac{1}{2}$ in. by $\frac{1}{16}$ in. are attached at wrist, elbow, and upper arm, and two wings two-thirds round the chest; the ends, being connected by a strap and buckle, are attached to the stem, one at costal edge and other below axilla. The limb is lightly bandaged on, and a piece of bandage over each shoulder from the front to back is sufficient to hold the splint well up against axilla. If no splint be at hand, nevertheless the limb must be placed at rest by some simple appliance—as, for example, with the child lying in bed, one pillow can be placed in the axilla, and, with the limb resting on another pillow, safety pins attach the sleeve of dress to it at arm and wrist so that the limb is abducted, elbow flexed, and brachial plexus rested.

As regards the lower limb, it is important to remember that not only is it a question of muscular movement but also of the support of the superincumbent body weight. The great point in beginning treatment is the relation of the two anterior superior spines to the umbilicus; the spines should be on the level; the feet should be at a right angle to the leg, and possible inversion or eversion guarded against. If the flexors are affected with overacting extensors (an extremely rare condition), it is best to flex the foot in the equinus position. The knee should be extended, as the quadriceps is the great muscle for the erect posture, but one must be careful not to overstretch the flexors, so it is best also to apply a slight cushion of wool under the knee. The hip should be slightly flexed to rest the ilio-psoas muscle. It is a good rule at the outset, if only one limb is affected, to rest the two until the paralysed one has recovered, as pelvic tilting, the result of overaction of one side, may easily occur, and, once having occurred, is never overcome. It is also difficult to make quite sure at the beginning whether the abdominal muscles are affected, but if the two spines are on a level tilting will never occur. Furthermore, only in this way can we prevent undue rotation of the hip, either external or internal, and especially the former, to which there is so great a tendency.

This may be effected in various ways. A double Thomas splint, with slight flexion at hip, or the lower part of a Thomas, namely, from the thigh wings to the leg wings, and a cross bar, or simplest of all, a piece of padded board behind each knee from the middle of thigh to middle of leg and a connecting piece across the middle, a pillow under the feet allowing flexion at the thigh. As regards the feet, trouble is likely to arise from deformity even after the first day, and this is largely due to the fact that lateral movements are not prevented. The ordinary foot-piece on a back splint is insufficient. A tin splint lined with chamois and extending to upper third of leg is best. The leg-piece extends half round the circumference of the leg and the foot-piece has its edges turned up for 1 in. on the inside and $\frac{3}{4}$ in. on the outside, thus forming lateral shields to keep the foot in position. By means of pieces of webbing and buckle suitably applied the foot can be held in perfect position. Immediate attention to this detail will repay you. If you have nothing at hand a pillow can be kept against the foot to maintain the right angled position. If, in addition to the limbs, the muscles of the neck and back are affected a double Thomas splint with head extension is best, but the point to remember is that these muscles, as a rule, recover spontaneously. My firm belief is that if cases of infantile paralysis were only regarded most seriously at the outset—on the level, say, of a gangrenous appendix—and not left until something developed, not only would subsequent treatment be rendered comparatively easy, but the splints might act prophylactically and actually abort an oncoming paralysis.

THE RE-EDUCATION OF THE "PARALYSED" MUSCLE.

No definite time can be stated when re-education should begin, but the two guides would be the temperature and pain; until the cessation of these the limbs are best rested as advised, and rested only. The difficult question then arises, to find some work the muscles can actually do; and although such work may be the minimum for a healthy muscle, it may be the maximum for the affected muscle. Again I would emphasize that it is not a question of paralysis of muscle, but the loss of certain functions of the muscle, and it is to obtaining the resumption of these that our energies are directed. In the upper limb I will indicate the method of re-education to produce elevation and the recovery of elbow flexion; and in the lower, that for the quadriceps, as these give most trouble.

A child with a presumably functionless deltoid, if tested sitting up, may be unable to elevate the limb to the slightest extent; but test the same child when lying down, and the deltoid may then show complete functional power. Hence the idea for treatment would be the re-education of the deltoid with the patient first lying down and then gradually working to the erect position, the child being elevated by means of pillows. Deltoid action can be first encouraged by slightly lowering the arm from the right angle and asking the child to raise it, also by rolling him slightly to the opposite side and elevating the elbow off the pillow and seeing if he can maintain it in this position. In this manner the patient is encouraged at first twice a day and later for half an hour four times a day to abduct the arm from the side with flexed and later extended elbows and also to raise it above the head. In a recent case after anatomical rest the rapidity with which

function returns in the lying down position is surprising. In the same way with regard to elbow flexion the patient commences work in the lying down position, gradually acquiring as in the case of the deltoid the erect position; with the limb worked in this manner it is surprising what an amount of function a biceps may have which we regarded as hopeless. The great underlying principle of the work is to pick up a minimum function and to use it as the commencement. Referring to this question of the upper limb I wrote some five years ago:

> The all-essential thing in this treatment is that it must be immediate. To me it admits of no delay. It is a recognition of the principle that the muscle will work, but to work it must be coaxed. It is antagonistic to the principle that whips the tired horse. The muscles are immobilized as soon as seen, and not left to hang till the splints are ready in perhaps a week's time. We would rest a fractured bone immediately or surgically clean a compound fracture, and why differentiate in the case of a nerve or muscle? . . . My belief is that with immediate anatomical rest the necessity for mechanical or operative treatment later will be minimized and, in the majority of cases, rendered unnecessary in the upper limb.

If the knee be bent when lying down the function of the quadriceps is to straighten it. It also permits of abduction or adduction of the limb in one piece. Further, with the normal quadriceps we are enabled to lift the heel off the ground with the knee extended. Unless this latter function can be performed there is inability to maintain the erect attitude, since the quadriceps, when we stand, maintains that stiffening of the knee which is essential for the erect posture. This further power of the quadriceps has been a late acquirement in man's physical evolution. With one quadriceps intact the erect position may still be maintained. Thus, quite apart from the action of the back and buttock muscles, the maintenance of the erect position really depends on this later acquired function of the quadriceps, for if this be lost, though every other muscle of the body be intact, we fall. Loss of this function is responsible for the large amount of crutchdom following this disease seen in any large city, and would be obviated by the conversion of the limb into one rigid piece, as by a piece of board behind the knee or by an extended knee splint.

Though similarly placed anatomically, the action of the quadriceps is vastly different in the *platypus* and in man. If we take a lower limb with a quadriceps that has been paralysed for some time, on flexing the knee with the patient reclining and taking away any support the limb still flexed falls usually in the abducted position, for if there be no quadriceps power not even the weight of the limb will be sufficient to straighten the knee. On flexing the knee for, say, 1 in., it may be noticed that the limb falls straight, or if bent, say, 3 in., the patient may be unable to straighten the knee, but can prevent it falling out; that to me is evidence of commencing recovery, and week after week the flexion is increased, the fall being gradually replaced by a definite push till finally the patient, holding the knee in the position of acute flexion without adduction or abduction of the thigh, is able to straighten the limb. In this early movement hip action is unhindered, and it may be necessary to commence with the patient on his side and not on his back. The patient is then encouraged to abduct and adduct the limb in one piece, the latter being usually more difficult; then, with the patient lying on the sound side, the thigh steadied, and the hip action prevented, extension is practised from the various degrees of flexion till full flexion is reached. This constitutes a pure knee action. But such a limb is not yet able to bear half the body weight. In ideal recovery the patient is able to raise the heel off the ground with the knee extended. Here again the principle of gradual acquisition of muscular power comes into play. Thus, if we alter the leverage by turning the patient to the opposite side, usually we find the limb can be lifted in one piece. That the quadriceps is the factor here, and not gravity and the knee ligaments as has been averred, is easily proved in a patient unable when on the side to lift the limb which remains flexed at the knee, but able when an artificial quadriceps is provided, that is, a piece of board behind the knee to stiffen it, not only to lift the heel off the bed on the side, but even on the back.

From the side gradually week after week the body tilt is altered till finally the supine position is reached. Then, and then only, is our patient ready for walking as far as the quadriceps is concerned, but it is best not to allow it without having the knee supported, otherwise the tendency is for the patient to acquire balance either by everting the limb or hyper-extending the knee, or both. Hence an ordinary knee splint with a hinge may be used. The knee hinge is locked at first, so that movement is obtained from the hip, and the knee rested in the extended position. Gradually slight flexion is allowed and increased till full flexion is reached, when the splint may be discarded.

Biological Principles in the Treatment of Deformities.

It is obvious that if the foregoing principles are carried out there will be comparatively little necessity for surgical interference, as pelvic tilting, buttock wasting, curvature of the spine, contracted knees and deformed feet, which go to make up the usually formidable and apparently hopeless picture, are all preventable. The usual surgical procedures are the overcoming of contractures, division or removal of deep fascia over muscles, muscle or tendon transplantation, nerve grafting, fixing a joint either by arthrodesis or excision.

Joint Fixation.

The scope of the two last named is extremely limited. Arthrodesis is useful, especially in an old case of flail shoulder where we have a good hand and biceps. It is necessary to remember that by arthrodesis a joint is condemned for life and even should muscles ever recover they will never have a chance for action. Hence, all possible means of recovery should be exhausted since opening a joint is a serious procedure. It is worth remembering that many cases of excision of the knee for disease in the young frequently return with contracture and in some cases backward dislocation necessitating a splint which the operation was designed to obviate. By means of a Thomas knee splint we can produce an artificial arthrodesis and with the boots properly built up and stiffened obviate the inconveniences of a flail ankle, and all the time we have the chance of improving the condition of the muscles.

Contractures.

Concentration of force, as Hunter taught us, may be regarded as the first principle in the treatment of contractures, especially in the young. In other words, given a pressure continuous and concentrated, contractures, even of the extreme and apparently hopeless type, will be found to yield without the aid of what should always be the last resort—the knife. If a muscle contracts, it will relax if coaxed, not forced to do so. I refer especially to contractures at the knee and elbow, which will often respond to the pressure of a bandage and straight splint. Operation is indicated in old contractures about the ankle, contracted pronator teres, and fascial contractures of the thigh, especially marked at the anterior superior spine and outer thigh above the knee, where I have known a fascial band to be nearly $\frac{1}{2}$ in. thick.

Operation on the Deep Fascia.

Although it is common enough to see that muscle thought most hopeless of all—the quadriceps extensor of the knee—after being condemned both on electrical and utilitarian grounds as hopeless, brought back into action, it may be stated that no muscle should be condemned till it has been properly tested, and this ensures that there be no mechanical interference with its working. It is usual to speak of the contraction of strong unaffected antagonistic muscles as the great bar to recovery; it is certainly an important factor, yet the deep fascia over muscle as a factor seems not to have been considered. An affected or paralysed muscle is one whose work has been interfered with, and in the animal economy diminution of work means atrophy of tissue. The deep fascia which in the forearm and over the extensors of the leg, for example, forms a little-yielding firm band, accommodates itself obviously to the muscle condition present; when later a call is made on the muscle for increased work it is found to be bound down, and this is as great a hindrance to recovery as a contracted tendon. Splitting the fascia and removing portion of it is an operation easy to perform and harmless, and it is surprising how what appears at first an anaemic mass of muscle will, with the application of warm saline, bulge out and assume a healthy appearance and later on functionate. I have performed this operation frequently, and rarely without result, over the extensors of the leg, and I think it should always

accompany the straightening of an acquired talipes equino-varus.

Muscle Transplantation.

In muscle transplantation there is the risk not only of failure to obtain function to the affected part but actually weakening the non-affected, and, in my opinion, by working on the re-education method, interference will very seldom be found necessary. It seems to me a fallacious argument to expect a flexor of the leg to act as an extensor if grafted on to the patella, when we know the complicated action of the quadriceps. The large percentage of failures seen in the after-results of nerve and tendon grafting is due to the fact that re-education methods have not been practised and persisted in. As in the case of recovery of a paralysed muscle, so with a reinforced one, working from zero must be insisted on. In the last six years I have never performed a muscle or nerve grafting. In foot eversion following "paralysis" of the tibials, the unaffected peronei pulling the foot out, the usual idea would be to strengthen the weaker group by grafting on to the tibials from unaffected or recovered extensors or flexors. But, biologically, one knows that eversion and inversion of the foot are diminishing, that the tibia is the dominant bone in the leg, and that the fibula is disappearing. Just as the appendix approaches the ileum, becoming finally incorporated in its wall as in *Phascolomys*, and the right adrenal the liver as in the true Phalanger (*Trichosurus*), so does the fibula the tibia, as evidenced by *Macropus*. A struggle exists round the ankle, as elsewhere, between individual muscles, not only for position, but for existence—a fact Hunter seemed to recognize. Hence the biological idea would be not to strengthen the weak, but to weaken the strong. The suggestion then might be made of division of the peronei since the tibials were "paralysed"; but, recognizing again that paralysis in this disease may denote merely loss of part of function, the abolition of eversion might mean recovery of inversion with deformity. Hence we wish to weaken eversion but not to abolish it. So, which is to go, the longus or brevis? Now, in *Phascolarctos* the peroneus longus adducted the big toe, and in *Phascolomys*, with a diminutive big toe, we have a relative diminution in size of the longus, seen more markedly in *Macropus*. The longus attachment is retreating, and a retreating muscle is a weakening one. Low down in the vertebrate scale the position of the brevis is fixed, and a comparison of these muscles in *Phascolomys*, *Macropus*, and *Phascolarctos** shows the greater belly muscularity of the brevis, which, and not the longus, is the principal everter. So, to weaken eversion without its abolition the brevis must go. Traction made with a forceps on the exposed peronei at the outer malleolus in the living subject in these cases demonstrates the comparative weakness of the longus in everting as against the brevis; further, the latter is usually very muscular there. Similarly with the tibialis posticus and anticus, the anticus is the selected muscle, and low in the vertebrate scale we may see a tibialis anticus even larger than the extensors. In *Macropus* a powerful inversion is noticed not to counteract the peronei, but to overcome the gravitational effect of a large body poised on practically one toe. The anticus, which is relatively enormous, is chosen, while the posticus has diminished to an almost tendinous thread, dependent for its diminutive pull on the flexors.

The Use of Serum.

In cases arising during epidemics it is conceivable that the use of a serum might be serviceable prophylactically. A serum could scarcely be expected to evolve lost muscle power, although occasionally as a prophylactic measure it might be applicable in a hospital where numerous cases were present. It would be impossible, however, even under those conditions, to foresee in every instance that the child was sickening for this particular disease, apart from the known difficulty in an infant with loss of muscular power of differentiating infantile paralysis from, say, rheumatism or epiphysitis; by the time the correct diagnosis has been made, the chances for a preventive or curative serum are gone. In this disease, then, it is not merely a question of prevention and cure, but prevention, cure, and restoration of function of paralysed muscles, or, to put it more correctly, the resumption of certain functions of muscle which have been lost.

The Use of Thymus Gland.

I have dealt recently with the biology of the thymus gland as evidenced by a study of the marsupials and monotremes; it is present throughout life in the *Ornithorhynchus*, *Echidna*, and *Dasyurus ursinus*. All, but especially the latter, have also well defined parathyroids. I have never found a trace in the "selected" marsupial, *Phascolomys*, nor in *Phascolarctos* (koala). It is absent in the "selected" macropod (*Mac. ualab*), but present in the kangaroo (*Mac. giganteus*). The correlated evidence as regards the muscles of these animals is extremely interesting; no one animal with a retained thymus represents a fixity of muscular development comparable with the supreme physical type—*Phascolomys*. We know practically nothing as regards the function of the thymus. It is a characteristic of early life; it begins markedly to disappear about the sixth or seventh year, and in the adult nothing is to be seen macroscopically; at birth it weighs ½ oz. or more, and is somewhat heavier at the end of the second year. Cases of a defined thymus being retained throughout life are recorded—a fact of no little importance. The gland is at its maximum when muscular action and co-ordination are developing; when these have been well established, it begins to disappear. Although it begins to disappear early in life, the question arises, Should it necessarily disappear then? Is its absence beneficial in all or some? Are conditions superimposed causing its too early disappearance in some to whom thymic secretion perhaps may be a necessity?

I regard its use as being indicated in infantile paralysis, particularly in the early stage; a child can take 15 to 20 grains in twenty-four hours. As I have written previously: "Its use is, of course, accessory to the basic treatment, rest—that is, the anatomical rest of muscle, and a recognition that poliomyelitis represents, not a paralysis, but a loss of part of muscular function; that the zero position of muscle must be found; and that the muscle must be re-educated along the lines of the acquisition of its muscular function; and, above all, that the rest be immediate."

Massage.

Until a muscle has recovered it should only be massaged in the zero position and in the mildest manner possible. It is erroneous to expect massage to initiate function, but it may undoubtedly strengthen function found to be present in the muscle. Thus in the upper limb, where there is an obvious gulf between the performance of muscular function when the patient lies down and sits up, there should be no exhibition of massage till at least the whole of the muscular functions can be performed lying down, and then it should only be used on the limb placed in a similar position to that occupied when in the splint. A paralysed limb should be handled as carefully as a fractured limb. Massage in a recent case is best avoided till the patient can elevate the upper limb when sitting up, and the heel when lying on the back. The muscle enlarges not from the amount of work done for it but from the amount of work it itself does. The importance of the mental factor in securing recovery of the affected muscle is of prime importance. In experiments on animals this factor explains their limitation, for no analogy can be drawn between results where guided mentalization governs volition, and where it is absent. The muscle cell has potentialities which it will not yield by force. It has been a big struggle from the monotremes to the marsupials, and up to man—functions and muscles striving for the supremacy. The erect position ultimately depends on a function of one muscle—the quadriceps—and is lost if that fails, though all else remains. The ourang in walking balances by means of the hand. We have advanced further, since we can dispense with the assistance of the upper limb, and, furthermore, are able when standing to elevate the hand above the head. But remember these functions are unstable; they came last, easily go, and are hardest hit in infantile paralysis. It can confidently be stated that the prognosis can be regarded as hopeful provided the zero position of the muscle be recognized. This is opposed to the old view, by

* These three members of their order I have chosen for the following reasons: In *Phascolomys*, without doubt the "selected" member, we have extraordinary muscular development for purposes of strength. In *Phascolarctos cinereus*, with a double pollux and the big toe acting as a pollux, we can study muscular co-ordinations and adjustments. And in *Macropus*, where we have the attempt at the erect position, we see the development of certain muscles and the retrogression of others, especially in the upper limb and leg and foot, thus enabling us to estimate selected members by survival results.

which the amount of work a muscle was asked to do was usually in excess of cell recovery; the resumption of work should be gradual—that is, presumably with cell recovery. The treatment of the muscle is all-essential in the disease. Instead of waiting for a chance recovery in the cornual cells and treating in a perfunctory way the muscles with massage and electricity, we recognize that every affected muscle will work, provided that a commencement be made from zero. It is recognized that an affected limb will retain its heat and show little waste provided that it be rested and worked within physiological limitations. Work must not be done for the muscle, it must itself work.

In conclusion, I would like to mention certain references that to me stand as landmarks—namely, Hunter's lectures on muscular motion, perhaps the master's greatest work; Hughlings Jackson, who taught us the application of Darwin's work to the nervous system; and Owen Thomas, who pointed out the significance of surgical rest. It is to the credit of this great man that he placed his back against the tide that unfortunately the antiseptic system loosened, and Australia owes a no small debt to my teacher, Dr. Peter Bennie of this city, for his unswerving support during the last thirty years of Thomas's work.

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A FIELD HOSPITAL IN BELGIUM.

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THE opportunity of a surgeon in war depends more upon the rapidity with which the wounded reach him than upon any other circumstance. The downward progress of a man gravely wounded is so rapid that a few hours' delay may mean the loss of a life or a limb. For the past three months we have worked in a hospital which has always been within a few miles of the firing line, and we hope that our experience of surgery under these conditions may not be without interest.

The British Field Hospital for Belgium began its work in Antwerp with a well-equipped hospital of 150 beds and a staff of 8 doctors, 20 nurses, and 5 dressers. In five weeks 500 Belgians and 70 British were admitted to its wards, in addition to a large number of slighter cases treated and sent on to other hospitals. On October 8th, 1914, in view of the German occupation, the hospital had to leave Antwerp. We retired, however, in good order, bringing with us, on seven motor buses, all our wounded (73 Belgian and 40 British), all our staff of 40, and practically our entire equipment.

After a week in London to refit, a fresh start was made at Furnes on October 19th, and there the hospital is still at work, acting as the official field hospital of the Belgian army. Furnes is at the centre of the curve formed by the river Yser, and at a distance from the trenches varying from five to eight miles at different points (December, 1914). It is an old Flemish town of about 6,000 inhabitants, and the hospital is established in the large Episcopal College of St. Joseph. It has accommodation for about 100 patients, although by the use of straw wards we have housed as many as 150 on more than one occasion. Every day the military authorities visit the wards and transfer to base hospitals at Calais and Dunkirk every patient who can be moved. The turnover is therefore very large, and has reached as many as 100 in one day. These evacuation arrangements enable the hospital to deal with a very large number of patients, though they make it somewhat difficult to follow any but a few special cases throughout their course.

It will thus be seen that the hospital has enjoyed all the advantages, and some of the dangers, of a well-equipped establishment close behind the fighting line. It has also the immense advantage of a fleet of motor ambulances to bring the wounded direct from the trenches. Dr. Munro's Ambulance Corps works in conjunction with the hospital, and brings the wounded in with the least possible delay. Most of our cases are received within the first twenty-four hours and in some cases they have reached us in less than an hour from the time of injury. There can be few hospitals so fortunately placed.

Before proceeding to discuss the various injuries which we have been called upon to treat, we must consider for a moment certain general features common to all cases admitted to the hospital. All have been living in the trenches for some weeks, their clothes are sodden and caked with dirt, exposure and insecure sleep will have left some traces on the men themselves. In most cases they must have lain in the trenches for at least some hours after being wounded, for as a rule it is impossible to remove wounded during daylight. When fighting is at all severe they may lie for many hours before they can receive any attention at all. On one occasion we took in five Germans who had lain wounded in the trenches for five days with absolutely no attention at all, two of them with compound fractures of the femur. To physical exposure must be added the mental effect of the terrific bombardment at close range which has been such a prominent feature of the fighting in this neighbourhood The men seem dazed, stupefied, and apathetic to a degree with which we were not familiar in the less strenuous conditions of the fighting around Antwerp.

When we add to these general conditions the loss of blood and the actual shock which must be associated with any severe injury, it will be seen that the first efforts of the surgeon must be directed to the treatment not of the injury itself, but of the general condition of the patient. He must be got warm, his circulation must be restored, he must be saved from pain and protected from further shock. In other words, saline infusion and morphine form the starting point in every serious case. Bleeding rarely requires immediate attention. Unless it had been dealt with effectively on the field, the patient could not have reached hospital. But the means adopted were probably very primitive, and with improvement in the circulation bleeding may recur. This is a very real and serious danger which must on no account be overlooked.

We cannot urge too strongly the necessity for deferring any serious surgical procedure until all that is possible has been done for the general condition of the patient. It need not take long. Hot-water bottles, an enema of coffee and brandy, a quarter of a grain of morphine, and a pair of subcutaneous needles delivering really hot saline, will carry through a serious operation a patient who half an hour before was cold and pulseless. We are dealing with absolutely healthy individuals, and their rate of recovery is amazing.

Two features are common to practically all wounds produced by projectiles in the present war. All are septic and in all there is great destruction of tissue. These two facts are correlated, for the infection is certainly not due to the organisms with which one is familiar in ordinary surgical work in England, but in a large degree, at any rate, to saprophytes. The patients never show the phenomena of acute sepsis as seen in civil practice, but rather a condition of almost pure sapraemia. The wound may be a black and gangrenous crater, such as would under ordinary circumstances be incompatible with life, but its edges show no spread of infection, the patient is comfortable, and has no rise of temperature, and with suitable treatment the wound will become covered by healthy granulations and rapidly heal. In bad cases, it is true, ordinary sepsis may develop, but this occurs very late and is obviously due to a secondary infection bearing no relation to the original bacteriology of the wound. The recognition of this fact is of extreme importance, for all wounds must be treated with full surgical asepsis, whilst a liberal use of hydrogen peroxide will destroy most of the organisms primarily present. We do not here refer to the special infections of gas gangrene and tetanus.

The destruction of tissue is so great that each side has repeatedy accused the other of using dum-dum bullets. This is based on an entirely mistaken reading of the evidence. Our opponents do not use such bullets, for the very good reason that they have discovered something far more deadly at long range. Their pointed bullet is carefully constructed so that its centre of mass is far back. On striking any tissue, soft or hard, it at once turns over and

passes through backwards, the uncovered base mushrooming as it advances. The point of the bullet is under these circumstances unaltered. In the course of operations we have repeatedly met with specimens demonstrating the correctness of this view. The minute wound of entrance, the great internal destruction, the position of the bullet, and its mushroomed base, admit of no other explanation.

The injuries with which we have had to deal may be divided into those of the head, chest, abdomen, and limbs. The treatment required and its results in these four regions are in striking contrast. In the first two immediate operative treatment should be minimal, since the recovery of the head cases depends as a rule on factors beyond the surgeon's control, whilst the recovery of the chest cases depends on non-interference. In the other two regions we hope to show that the most radical forms of operative treatment are those which offer the greatest prospect of success.

Injuries of the Head.

The head cases with which one has to deal in a field hospital are certainly the most hopeless, for all the simpler cases will have been sent to the base. In most of the injuries to the skull by projectiles which we saw at Furnes the damage to the brain was so extensive as to be incompatible with life for any length of time. We saw no cases of clean-cut perforation of the skull. In all those in which the projectile had pierced the skull large areas of the cranium has been broken in, whilst the laceration of the brain itself was terrific. Even where the projectile has not entered the skull but merely cut a groove in its surface we found large fragments of bone at a distance of an inch or more below the surface of the brain. It was most unusual to find them in contact with the skull. In such cases we cannot expect from trephining results at all comparable with those of civil practice, and when we add the sepsis which universally prevails the hopelessness of these cases becomes apparent. These are, of course, very different from the more moderate cases which reach the base hospitals, where quite good results may be expected from skilful surgery. We had a number of these in Antwerp, and they did excellently. We conclude that it would be better to send all head injuries through to the base hospital rather than occupy the beds of a field hospital with cases for which immediate surgery can do so little.

Wounds of the Chest.

Wounds of the chest almost invariably do well, provided they are left to themselves. There is, of course, the immediate danger of death from haemorrhage into the pleural cavity, but in a patient who has been successfully conveyed from the battlefield this can be combated. With morphine and saline infusion most cases will cause little anxiety, though care must be taken not to raise the blood pressure by the latter method beyond what is absolutely necessary. Later on a haemothorax or an empyema may develop. The former should only be opened if it is accompanied by an effusion so extensive as to cause dangerous pressure, or if it becomes septic. An empyema must be opened in the usual way.

Abdominal Wounds.

The chief interest of our work at Furnes centres, however, round the treatment of abdominal wounds and of compound fractures of the humerus and femur. In these cases our opinion and our practice have been in direct antagonism to the views generally held—and, indeed, held previously by ourselves. After a very considerable experience of these conditions in circumstances where our opportunities were exceptional we are convinced that in every case where a wound of the intestines is suspected an immediate laparotomy is imperative.

In the South African war it was found that in bullet wounds of the abdomen the intestines frequently escaped injury, and that even when they were wounded the injury was often limited to minute punctures. Provided the intestine was not too full at the moment of injury, these punctures were rapidly covered with lymph and sealed off. In addition, the conditions of the country and the absence of water made abdominal surgery difficult, and it was, in fact, found that the chance of recovery was far greater if the patient was left alone, kept quiet with morphine, and starved. That experience has cost the lives of many patients in the present war. Here the conditions are utterly different. The bullets for the most part in use are really, as we have already explained, an ingenious advance on the dum-dum. They are so balanced that on impinging on soft tissues they turn over and pass through backwards, mushrooming as they go. The result is extensive laceration of all the tissues through which they pass, and the abdomen is no exception to this rule. In our experience it has been the exception to find punctures. In most cases the intestine was cut almost or completely across, and even where this was not the case the punctures were large, ragged holes, the closure of which by natural means would have been a mere surgical curiosity. The close range at which fighting has taken place is no doubt another factor, and that this is so was borne out by the much graver nature of the rifle wounds seen by us at Furnes as compared with those at Antwerp. In fact the only case of puncture we saw at Furnes was the result of shrapnel.

If these observations are correct it necessarily follows that very few cases of intestinal injury can recover spontaneously. On the other hand, in the present war it is an easy matter in a properly equipped hospital to carry out an abdominal operation with almost the safety of a London theatre. The difficulty at present is that, from a want of recognition of the above facts, the hospitals have for the most part been placed so far behind the lines as to be useless for the purpose. Unless abdominal cases can be brought in within six hours of the time of injury it would be much better to leave them in the trenches and to use the available transport for more practical purposes. It is our absolute conviction that to carry abdominal cases back to base hospitals is, to put it in the mildest terms, a grave mistake.

We do not propose to discuss in detail in the present paper the cases on which the above views are based. We would merely describe the general routine treatment which we adopted. In every case the preliminary treatment to which we have already referred occupied a very prominent place. Most of these patients came in suffering from severe shock, cold, and loss of blood. Many were icy cold and pulseless, yet with morphine, saline infusion, and coffee and brandy injections they always improved rapidly.

After perhaps half an hour of such treatment, the abdomen was opened under spinal anaesthesia, which for these cases offers immense advantages. Open ether was often given at the same time, partly to overcome the patient's nervousness and partly for the sake of its stimulating effect. Only a minute dose was of course required. The abdomen was opened by a rectus incision, right or left according to the side of the wound. In every case in which the intestine had been wounded an amount of blood and faecal material varying between one and three pints was found free in the peritoneal cavity. The injured portion of the intestine was drawn out and rapidly secured in soft clamps, care being taken to bring out no more than was absolutely necessary. The peritoneal cavity was then cleansed as far as possible with coarse marine sponges of moderate size. Gauze is useless for dealing with such a quantity of material. The whole cavity was invariably found to be full of blood and intestinal contents, and the sponges had to be swept widely round it in order to cleanse it properly. The intestine was now more carefully examined and such holes as permitted of simple suture were closed. As a rule, however, a portion had to be excised, usually about 3 ft. The *whole* injured portion was invariably taken—first, because a double anastomosis appeared to involve greater risk, and, secondly, because in double lacerations the mesentery between had not usually escaped. In one case this involved a resection of 20 ft. Whatever the condition, the operation was completed, for experience showed us that there was no case so desperate that it might not have a chance of recovery. The two edges of the mesentery were carefully brought together and end-to-end anastomosis was invariably used, except in cases involving resection of both small and large intestine. In no case was a Paul's tube used. An end-to-end anastomosis can be completed in ten minutes with absolute security, and is much more satisfactory. The anastomosis completed, a further attempt was made to cleanse the peritoneal cavity. The edges of the wound were held up and hot saline poured in from a jug. This was removed with clean marine sponges swept round the abdomen as

before, and, if necessary, the abdomen was filled again and the operation repeated. Finally, the abdomen was filled with saline and closed without drainage.

It will be noted that we are dealing with a peritoneum already completely involved, and that when its toilet has been completed it is perfectly normal in appearance and has been entirely freed from all visible contamination. We are, in fact, dealing with a case of peritoneal contamination and not of peritonitis in the ordinary sense of the term. In the ordinary case of infective peritonitis we should regard the treatment we have described as the most fatal which could be adopted.

The immediate results of this line of treatment are extraordinarily good. In every case the general condition of the patient on leaving the table has been good, although in almost every case he had reached us in a desperate state. In the ultimate result the one essential factor is the time that has elapsed since the injury. If a true peritonitis has become established the outlook is grave in the extreme, and certainly after twelve hours very few cases will recover. Even at Furnes we only received a limited number of cases in six hours, but in these cases the results were most encouraging. Shortly before we left Furnes we had a remarkable series of 7 cases, all received in a period of thirty-six hours and all wounded by rifle bullets from six to eight hours before admission. Of these, 5 were doing well when we last saw them five days after operation; 1 died fourteen hours after operation (20 foot resection); 1 died on the third day from a gas infection of the abdominal wall (resection of right half of colon). All were treated rigidly on the lines above laid down, with the exception of one, who had a retro-peritoneal injury of the caecum. Of the remaining 4, 3 involved extensive resections of the small intestine, and 1 the suture of a large hole in the caecum. With the one exception mentioned, the peritoneal cavity was in each case flooded with blood and intestinal contents, and it is inconceivable that they could have recovered apart from operation.

This group of cases has specially impressed itself upon our minds as exactly summing up our general experience, that with immediate operation in cases received within six hours there is a reasonable hope of the patient's recovery. Without operation we have never seen a case of undoubted intestinal injury recover.

We would add one word of warning—that it is useless to wait for the ordinary signs of intestinal perforation. We have always taken the passage of a bullet across the abdomen, except in its upper portion, as sufficient evidence that the intestine is wounded, and experience has amply justified this view. We have seen no case in which a bullet has crossed the abdomen without injuring the intestine. These patients often do not exhibit in any marked degree the rigidity and tenderness which are such infallible guides in civil practice, still less the Hippocratic *facies* and the general appearances characteristic of peritonitis. They far more resemble a ruptured ectopic gestation, with the fatal difference that delay means a faecal peritonitis. The risk of a laparotomy is nothing compared with the risk of delay.

In our opinion immediate operation is the only treatment of any case of suspected intestinal injury.

Compound Fractures.

Compound fractures of the femur and humerus constitute a problem of a very different order. Here there should be, as a rule, no question of immediate operation, for the general condition of the patient will render such a proceeding dangerous in the extreme.

It is after a few days, when he has recovered from shock and loss of blood, that the best course to pursue will have to be decided on. Unless the problem is given up in despair and the limb amputated some mode of fixation must be adopted which will allow the utmost freedom for dressing, for every wound is septic. The sepsis is not usually of a virulent nature and is largely due to saprophytic organisms, many of them anaërobes. The nature of the wound, however, encourages their development, for as a rule there is a small wound of entrance and a somewhat larger exit, whilst between the two is an amorphous mass of pulped tissue including the indistinguishable remains of perhaps six inches of bone. If left to itself for a few days the whole will be a seething mass of sepsis and gas will bubble from the bullet holes. The general rule as far as we can gather has been to dress these cases neatly on the field and to amputate them three days later when they have reached a base hospital. We do not wonder. But if from the first they had been treated on other lines in a very large proportion of cases the limb might have been saved.

In dealing with these cases we have to face two facts—first that the wound is septic, and second that a large section of the bone has been pulped. Obviously osteomyelitis must result and loose portions of the bone will finally come away as dead sequestra. The cases should, to our minds, be regarded as cases of osteomyelitis complicated by a fracture. If this complication of the disease could only be got rid of it could be treated on ordinary lines. We got rid of the complication by plating the fracture. It seemed to us that the introduction of a little more dead material in the form of a steel plate could make very little difference, whilst it reduced the nursing and dressing of the case to simplicity itself. But we had always been told that no plate would hold in a septic wound and that at the end of a few days the whole thing would break down. Whether this observation depends on the faulty application of the plates or whether the form of sepsis with which we dealt had other characteristics we do not know. Certainly, we have on no occasion seen a single screw work loose from the bone. Very large and heavy plates were used for the femurs, 10 in. × $\frac{1}{2}$ in. × $\frac{3}{16}$ in. being perhaps the most useful, fixed by six screws at each end. These were specially made for us by Messrs. Krohne and Sesemann. By this means the two end fragments were fixed together in their proper relative positions, the intermediate portions being left *in situ* if they appeared to have a blood supply. No external splint of any kind was used. The plate held the bone with absolute security and the fracture could be ignored.

Twice a day the wound was washed out with hydrogen peroxide through tubes introduced for the purpose during the operation. In most cases the wound in a few days showed clean granulations, and only a little discharge would be washed out of the deeper regions. The patient soon learnt to move the limb about for himself, and, in fact, in several cases we had some difficulty in persuading him to stop in bed. Radiographs show that in these cases callus forms in a perfectly normal manner, and that at the end of six weeks the small fragments have fused together into a uniform mass sufficient to ensure the union of the bone. By this time the wound will have closed completely or be reduced to a small sinus, which is washed out daily, and which is obviously closing from below. As to the ultimate fate of the plates it is impossible yet to speak. Their removal would in any case be an easy matter, and would be a small sacrifice to pay for the ease and comfort they have provided. Any one who has attempted to nurse one of these femurs on a splint, and then the same case after plating, can have only one opinion on the subject.

Conclusion.

We have written this brief account of our work in the hope that we may be able to save others from some of the difficulties which we ourselves had to face, and from the mistakes into which we fell in our attempts to reach a solution. We have written, above all, in the hope that others may attempt these terrible abdominal cases in hospitals as well equipped as that at Furnes, and as near to the fighting line. It has been said that skilled surgery is of no use at the front. We hope that our humble attempts may at least show that five miles behind the trenches there is room for the highest surgical skill that England can produce. We look forward to the time when the man wounded in the abdomen will reach the surgeon not in six hours but in sixty minutes, and when the results of abdominal surgery in the field will rival those of abdominal surgery at home.

The tenth annual meeting of the American National Red Cross Society was held at Washington on December 9th and the three following days. The report showed that more than 180 surgeons and nurses had so far been sent to Europe, and it was added that more were urgently needed.

ANOMALOUS CASE OF ENTERIC IN AN INOCULATED SUBJECT.

BY

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AND

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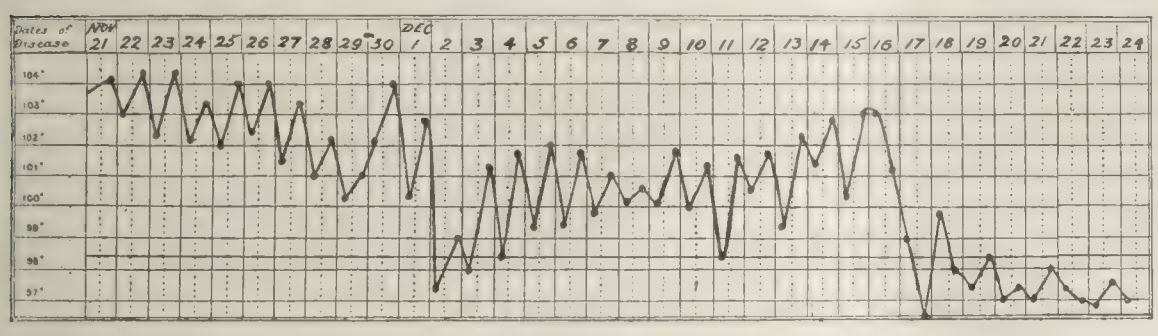
(From the Field Laboratory, General Head Quarters Staff.)

THE following case is interesting by reason of the impossibility of arriving at a diagnosis by clinical observation alone, and important from the possibility such a case presents, as long as it is undiagnosed, of proving a reservoir of infection.

It appears to us that the masking of the symptoms was in all probability due to the high degree of resistance by vaccination, the man having been vaccinated against enteric in March, and again just previous to admission.

Private V., admitted to No. 10 Stationary Hospital on November 13th, 1914, with a history of three days' malaise; the temperature was 100°. He had been inoculated against enteric on November 10th. Blood cultures on November 14th proved negative. A few days after admission temperature became normal. He was discharged from hospital on November 19th for observation.

On November 21st he was readmitted complaining of slight headache, slight cough, and pains in joints; he stated that he had had a shivering fit previous to admission. The temperature was 104°, pulse 92, and respirations 32. There was a slight patch of bronchopneumonia at the left base; this soon cleared up, and no other physical signs whatever, either on admission or subsequently throughout his illness, could be detected, though repeated examinations were made by the hospital staff and by Sir Wilmot Herringham, consulting physician.



For two weeks the temperature oscillated between 100° and 104°, when it dropped to 97°. It then rose to 99° to 102° for two weeks; after this it remained at 97° to 98°. During the last week he had several rigors followed by cyanosis and signs of heart failure. He had slight pyorrhoea which improved under treatment. During the second and third week of his illness he had slight diarrhoea which was not typhoid-like. Emaciation, especially towards the end, was a marked feature of his illness. During the first four weeks the pulse remained between 80 and 90, but for the last week it rose to 100 to 110. Blood cultures made on November 14th, 24th, and December 4th, were all negative.

The diagnosis was not established until December 21st, when examination of the urine showed it to be full of typhoid bacilli in agglutinated clumps. On December 22nd the patient had two haemorrhages from the bowel; the blood was bright red. There was never any abdominal tenderness or distension, no splenic enlargement and no rose spots; moreover, except during the first few days there was no headache and the tongue remained clean throughout. He died from heart failure on December 24th. The mind remained clear up to the end.

On *post-mortem* examination about a dozen typical typhoid ulcers, mostly healing, were found in the ileum; all other organs were healthy. Typhoid bacilli were recovered from the gall bladder, which contained a rich pure culture.

MESSRS. SMITH, ELDER AND CO. will publish on January 21st a work entitled *The Early Diagnosis of Heart Failure, and Other Essays on the Heart and Circulation*, by Dr. T. Stacey Wilson, senior physician to the General Hospital, Birmingham. The volume, which is illustrated by over 130 original diagrams, contains a great deal with regard to simple methods of diagnosis of heart failure.

APPENDICITIS TREATED WITH ANTI-COLON BACILLUS SERUM AND VACCINE.

BY A. COWAN GUTHRIE, M.B., C.M.EDIN.,

EDINBURGH.

THE possibility of appendicitis being due in some measure to infection by *B. coli communis* suggested to me that the serum and vaccine of the colon bacillus might be of service in this affection. I have tried it with success in no fewer than 22 cases, of which the following is a typical example:

Mr. L., 59 years of age, spirit merchant, had suffered for many years from indigestion and constipation; there was also a history of two previous attacks of appendicitis. Two months ago, while at work, he was suddenly seized with severe pain all over the abdomen. Under treatment by poultices the pain gradually subsided. Next day, however, the pain returned, becoming so severe that it was only by resting on the floor on his hands and knees that he could obtain slight relief; the pain was attended by sickness and some vomiting. Both recti were rigid, especially the right, and there was slight dullness in the right iliac region. On sacral percussion by Lewis's method a dull area could be detected on the right side.

I injected 10 c.cm. anti-colon bacillus serum into the right hypochondriac region subcutaneously. In a few hours the pain had entirely passed away and he was able to stretch his limbs, which up to this period had been kept flexed. There was entire absence of pain all the following day, but slight haematuria and haemorrhage from the bowel were present. Next day there was a slight recurrence of pain, the right rectus being still rigid with tenderness on pressure all over the abdomen, especially in the right iliac region. I again injected 10 c.cm. anti-colon bacillus serum, this time in the left hypochondriac region. This injection was followed in a few hours by complete relief from pain; the patient also expressed himself as feeling better generally. To prevent recurrence I injected 100 million colon bacillus vaccine into the deltoid region. The pain did not return, and the patient gradually passed on to complete convalescence, being quite well again in three weeks. His tongue became clean for the first time for years.

All the 22 cases of appendicitis in which I have adopted this method of treatment have recovered without the necessity of operative measures. Most of the cases were in the acute stage; a few showed symptoms of chronic appendicitis, and in one the symptoms were of a post-operative character—that is, there was pain in the region of the caecum simulating appendicitis two years after the appendix had been removed. In only one case has there been a recurrence; here, too, little serum was used and no vaccine. What struck one most was the wonderful effect of the serum in causing complete relief from pain, also the feeling of well-being and hopefulness of recovery—a feeling entirely absent before treatment.

In appendicitis, as has been shown, when the mucous membrane of the appendix is affected the sympathetic nerve is involved and the pain is general; but when the muscular and serous coats become involved the eighth to the tenth dorsal nerves are implicated, and the pain is then localized to the iliac region. It is therefore in the first stage, when the pain is general, that the serum should be used.

I have found that the most suitable dose is 20 c.cm. anti-colon bacillus serum; 10 c.cm. should be injected subcutaneously first in the right and then in the left hypochondriac region. A few days later 100 million colon bacillus vaccine should be injected in a similar way into the deltoid region. This is to prevent recurrence. As organisms other than the *B. coli communis* may be the determining cause of this disease, the "fixation of complement test" should be tried, using the patient's serum and the most probable organism (*B. coli communis, pneumococcus, streptococcus*), a corresponding serum or vaccine being used.

The anti-colon bacillus serum probably acts chiefly as an antitoxin, also as a counter-irritant, causing local leucocytosis. It has also probably a physical effect, changing the equilibrium in the surrounding fluids and thereby producing increased osmotic pressure and favouring phagocytosis of the bacilli, as has been shown by Leduc.

THE WARBLE-FLY—HYPODERMA.

BY

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"Infinite torment of flies."—TENNYSON.

BRITAIN wants many materials in this war, and as long as our back door is open we are getting them. Petrol, rubber, zinc, copper, molybdenum, vanadium, thorium, nickel, saltpetre, wool, cotton, are all coming to us in greater—immeasurably greater—quantities than they can filter through neutral countries into Germany. These things count. The shortage of leeches in Great Britain on which I have already dwelt is negligible, and is entirely overbalanced by the really serious shortage of sausage-skins in middle Europe. I am told that our meat salesmen at

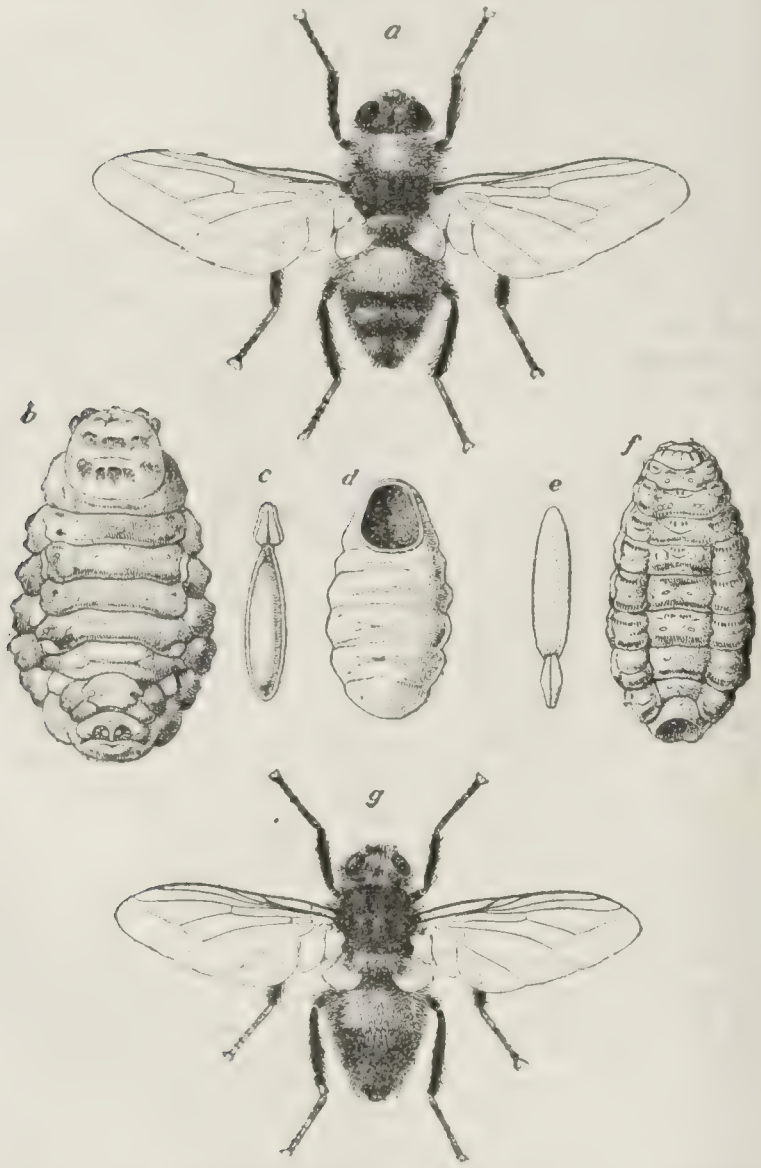


Fig. 1.—*a*, *Hypoderma bovis*; *b*, maggot of *H. bovis*; *c*, egg of *H. bovis*; *d*, puparium of *H. bovis*; *g*, *Hypoderma lineata*; *e*, egg of *H. lineata*; *f*, maggot of *H. lineata*. All the figures are magnified.

Smithfield have been offered an incredible advance on the normal rate for these products—so-very-necessary-and-under-no-circumstances-to-be-done-without-with-casements—but the meat salesmen at Smithfield are patriots. In their dire extremity the Germans are trying to make them of cellulose.

Amongst the things both combatants must want is leather. One of the most impressive efforts we non-combatants have been watching during the last five months is an army growing, near us and next us, with apparently an unlimited supply of leather belts, leather trappings, leather saddlery—leather harness for man and beast. Anything that seriously destroys the continuity of the integument of our oxen, which interferes with the "wholeness" of the hide which is the basis of leather, clearly affects—and affects detrimentally—an important munition of war. The warble-fly does this; but it does more; its attack materially lessens the value of the beef which potentially lies beneath the hide, and thus in a double sense the warble fly is the enemy of man whether he be soldier or sailor. Further, its attack materially lessens the milk supply of the country.

Amongst the numerous families into which the true flies (Diptera) are divided none are more harmful to human enterprise than that of the OESTRIDAE, inasmuch as every single species and every single member of this family passes its larval stage within the tissues of some vertebrate host, and most usually in those of domesticated cattle; sometimes even in man himself. One of the commonest genera of this family of flies is *Hypoderma*, which is represented in our islands and in many other parts of the world where domesticated cattle are reared by two species, *H. bovis* and *H. lineata*, both commonly known as Warble-flies.

The harm caused by these larvae, living as they do in the tissues of the body, beneath the skin, by piercing holes through the integument or skin, whereby they make their exit from the "warble" or subcutaneous tumour in which they have passed their latest larval stage, is almost incalculable.

Miss Ormerod, who for so many years kept alight the lamp of economic entomology in England, published some statistics on this subject towards the end of last century. In 1888, out of slightly over 100,000 hides dealt with in the Newcastle cattle and skin market 60,000 were "warbled," and the loss to the trade amounted to £15,000. The same year at Nottingham 8,500 out of 35,000 hides were largely spoiled; at Manchester 83,500 out of a quarter of a million suffered from the same cause, the losses in these towns being estimated for the year in question at about £2,000 and £17,000 respectively. Taking the average from all sources in England, Miss Ormerod estimated the fall in value at from 5s. to 6s. on every warbled hide. The most riddled hides—that is, those with the most punctures—come to the sale-room during April and May, but the trouble extends from February to September.

There is also the loss caused by the warble to the butcher—and through the butcher to the Army Service Corps. The presence of the fly-larva, which is quite a large creature, induces chronic inflammation in the tissues, and a state of things known to the trade as "licked beef," and unless the meat salesman cuts away the affected parts the meat is unsaleable in the market, or greatly depreciated in value. The average loss to the butcher on a warbled carcass is estimated at 6s. 8d.

Finally there is the loss to the stock raiser and dairy farmer. We shall have occasion later to refer to the curious psychological effect the warble-fly has upon the cattle, causing them to "gad" or stampede in wild gallops, which interferes with fattening, deteriorates the milk supply, and is especially injurious to cows with calf. Mr. Imms, in his most useful summary of the warble-fly, tells us that the loss due to *H. lineata* in America is calculated at 28 per cent. of their total value of all the cattle in the States. Some authorities place the total loss to the agricultural community in England at two, others at seven million pounds a year, whilst others estimate that the loss amounts to about £1 sterling on every head of horned cattle.

Curiously enough, the fly itself is rarely seen, and still more rarely taken. Mr. Imms records only two specimens of *H. bovis* in the collections of the British Museum, and but fifteen of *H. lineata*. A similar scarcity of imagos in public collections obtains on the other side of the Atlantic, where for many years the last-named species was alone recognized. Two years ago, however, Dr. Hadwen, working in Canada, established the widespread existence of *H. bovis* in the Dominion; almost certainly it also occurs in the States, but Dr. Hadwen had to send to Dublin for specimens with which to confirm his find. None existed in the collections in Ottawa, and "a request for a specimen . . . from the Bureau of Entomology at Washington, D.C., could not be granted owing to a scarcity of specimens"! These statements are interesting, since at present the tanneries of Canada are working night and day to help our shortage in leather at home.

H. bovis measures $\frac{5}{8}$ in. in length, *H. lineata*, somewhat less robust, $\frac{1}{2}$ in.; the colouring of the last named is lighter, white replacing the yellow, and yellow the orange-coloured hairs of *H. bovis*. The flies are most abundant during July and August, though they are believed to occur throughout the summer. They fly very rapidly, and are difficult to follow with the eye. They rejoice in warm, sunny weather, and remain in retirement during cold or cloudy days. Hadwen describes the egg-laying by

the female "as a sort of frenzied process, the fly striking" with its ovipositor twenty or thirty times rapidly, then leaving the animal for fifteen minutes or so, when the process was repeated. The eggs are attached one at a time to the hairs of the cattle and very close to the base of each hair, not near the tip of each hair, where the horse bot-fly deposits its ova. The favourite region for placing the eggs is on the hock and on the back of the knee, or on the flanks, and hence the American cowboys call the insect, "the heel-fly." Undoubtedly by standing with their legs in water the herd is delivered from the pest, at any rate for the time.

The eggs are large, 1.25 mm. in length, and enclosed in a whitish shell, which is prolonged behind into a brownish foot, and this foot, which exudes some sticky secretion, adheres to the ruminant's hairs. The foot of the ovum, in fact, consists of two lobes or valves, which clasp the hair between their sticky inner surfaces.

Within the egg the youngest of the four larval stages is maturing. Later we find such a stage hatched out and within the tissues of the host, embedded in its muscles and membranes, and now the question confronts us, which once confronted George III apropos of the apple in the apple dumpling, "How the devil did it get in?" There seem to be with *Hypoderma* but two modes of entrance into the body of its host, that is, domesticated cattle: (1) The eggs,

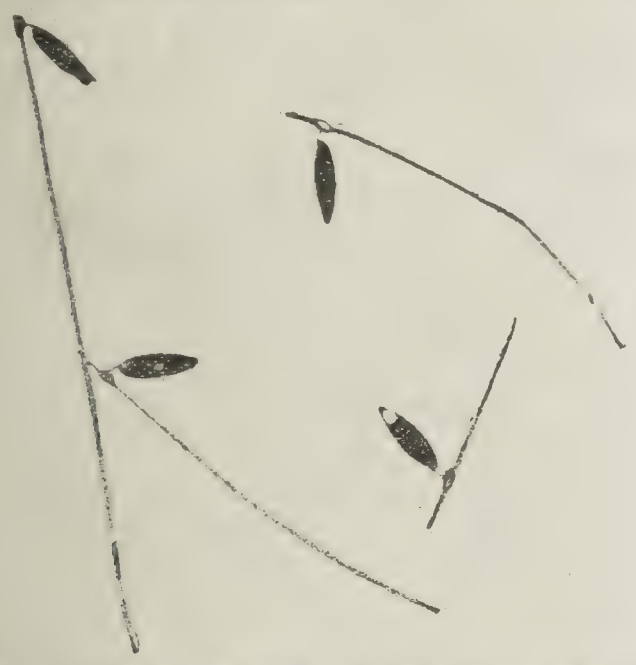


Fig. 2.—Warble-fly eggs attached to hairs. Note attachment near base. Slightly enlarged.

or the newly-hatched larvae, are licked up by the tongue, as are the eggs of the horse bot-fly—and this would explain the not infrequent occurrence of the younger larval stages in the walls of the oesophagus; or (2) the larvae bore their way directly through the skin.

Whatever be their mode of entrance, they seem in their second and their third larval stages to wander freely through the tissues, especially through the muscular tissues of the body of their host; usually working upwards, and not infrequently reaching the neighbourhood of the vertebral column, before taking up, in the fourth larval stage, their final position in the "warbles," or subcutaneous cysts.

It seems odd that an insect pest, which so seriously affects our supply of leather, of meat and of milk, should have been studied for over a century and yet conceal its chief secret from man. But the problem is much more difficult than the layman thinks. Professor Carpenter and his staff at Dublin have been trying to solve it for some years. After three years of careful experiment they state, with a good deal of diffidence, that "from experiments," carried on in 1906–7, "with muzzled calves, we conclude that the maggot bores through the skin, and does not enter the beast's body by the mouth." In the next volume of the *Journal* of the Department of Agriculture for Ireland they state: "The experiment with muzzled calves during 1907–8 seemed indeed to support rather strongly the theory of the maggot's entrance by the mouth; but those carried on during 1908–9 tend to confirm the results of 1906–7." The following year again they record: "We are forced to conclude that the prevention of licking in the previous muzzling experiments was less perfect than had been supposed, and to admit that these later trials support the view that the maggot (or the egg) may gain entrance to the calf's body by the mouth." We cannot yet regard this important step in the life-history of the warble-fly as definitely settled. It may be that both methods of entrance are used. It is so in the tunnel- or hook-worm (*Ankylostoma duodenale*); there the larvae enter both through the skin and by the mouth.

But, whatever be the mode of entrance, and whatever be the route it travels through the body of the calf or cow, by the spring the fourth larval stage, when it is about an inch long, and perhaps half as much in breadth, is reached in the "warble," or cyst, under the skin. Here, nourished by the products of the inflammation it sets up, and breathing by two spiracles at the hinder end of its body, which are directed to the opening of the "warble" which it has pierced through the skin, the larva rests until one fine night it pushes its way, aided by its stout bristles, through the opening and tumbles into the outer world.

Apparently it does not think much of its new environment, for it loses no time in hiding under some clod or stone or crevice in the soil, and straightways turns into a dark brown pupa or chrysalis. This stage lasts three to four weeks, and then the perfect fly emerges, and will soon be ready to lay her eggs on some new victim.

As a rule it is the yearlings who suffer most, and then the two-year-olds, the older cattle being comparatively immune. The inexplicable terror which the warble-fly induces in its victims is testified to on all hands, but has never been adequately explained. *Hypoderma* does not bite, neither does it sting. Many other blood-sucking insects, whose puncture must involve some pain, are tolerated by cattle with a flick of the tail, or are frightened off by a gesture of the head, but the presence of the warble-fly induces a mysterious fear which rapidly spreads through a herd, and results in a general stampede, often referred to by cattle breeders as the "gad." This terror communicates itself even to the "stalled ox," and cattle confined within cowsheds show symptoms of extraordinary unrest when the fly is abroad amongst their kin in the pastures. The resulting evils are, of course, far graver in the unlimited prairies of the West—the great cattle-breeding districts of the United States and Canada—than in our carefully hedged or fenced meadows. A great many "dips," ointments, and chemical solutions have been recommended for the prevention of the grubs in cattle, but none have proved really satisfactory. The tedious method of removing the grub from the tumour is the only safe one. This can be done by the mere pressure of the fingers when the grub is nearly mature and ready to leave its host, or by the use of small forceps should the grub be young and recalcitrant. Once removed, the grub should at once be destroyed, and some such antiseptic as coal-tar applied to the vacated tumour.

MEDICAL WORK IN THE EARLY SEVENTIES IN A COUNTY INFIRMARY IN ULSTER.

BY

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WHEN one, like myself, has come to be a superveteran, and has trod the *via medicalis* for almost half a century, one feels that one's feet have become inured to the hills and hollows and the hardships of the road. On looking back on those pre-antiseptic days the first impression is one of sorrow—sorrow for the many failures and for the many lives we now know were lost. That sorrow is, however, tempered by the thought that the work done was good work and that it was the best that could be done in those early days. It is well to remember that we were but the pioneers, doing rough work it is true, but still good work that laid the foundations for medical science as it is to-day.

Like all others of those times who elected to become doctors it was necessary to become apprenticed to some medical man and then learn the rudiments. I was apprenticed to Dr. Thompson of Lisburn, who was then surgeon to the Co. Antrim Infirmary. To attend at his house or

* An address delivered at the winter meeting of the Division.

the hospital I had to walk five miles and, when done with work, walk those five miles again. It might be well here to compare this with the modern mode of going through a medical education. Dr. Thompson was a man of most striking character. Though kindly at heart, he had a most aggressive and dogmatic manner. If he said a patient would not live, it was said in such a way that you felt the patient must die. There was no court of appeal, as it were. Dr. Thompson, by the way, was the first surgeon in Ireland to perform an ovariotomy.

The hospital itself was very primitive. There were 50 beds; mattresses were of straw and not of the best quality. Off each ward was a w.c. of sorts in a small room, the floor and walls lined with lead. Urinals were unknown. For the whole 50 beds there was one bath, which was situated in the basement, and consisted of a long wooden box lined with lead and let into the floor. To get into it one had to go down some steps. Few indeed were the baths taken. A room was set apart for operating in; there were shelves and presses for holding cases of instruments, dressings, etc. The operating table was a narrow wooden one; the instruments were few, but of good quality. There were no antiseptics of any sort. Pus was a laudable thing and looked upon as natural and therefore healthy. Plain water, not even boiled, was used to wash up any blood or discharge. A large tub, full of freshly dug earth, was always placed under the operation table before an operation. The equipment of the surgeon consisted of the oldest coat he had. Operation after operation did not tend to improve this garment, either as to cleanliness or appearance. The surgeon was careful to wash his hands after the operation, but not before. The ligatures were strong thread taken off a spool and rubbed over a piece of wax. Indeed, the important preparations for an operation were the tub of earth and the waxed thread. The staff of the hospital consisted of the doctor, two nurses, and a porter. It was the custom in those days for the doctor, when going round the wards, to keep his hat on. The wards were visited only in the morning. The two nurses were very much of the Sarah Gamp type. They were not characterized by either cleanliness or sobriety. So long as the intoxication remained in the early or mild stage it was overlooked. These nurses had to sleep in the wards, and, considering their sobriety—or want of it—it was not surprising that their sleep was sounder than most of the patients'. The porter slept in the male ward.

The first operation I attended was an amputation through the thigh. The patient was not allowed to lie down. The leg was brought well out over the edge of the table. The porter sat straddled-legged on the table and supported the patient, who had to stand the sight and pain as best he could.

This, then, is a small picture of a county hospital in those early days. When I compare it with what it is to-day, replete with all sanitary conveniences, electric light, *x*-ray installation, and modern asepsis, the comparison is awful.

In 1882 Dr. Thompson was killed, and I was appointed in his stead. It is with pardonable pride that I reflect that I have been in this hospital, boy and man, for so many years, and that these improvements have taken place under my care. Like all others, we passed through the pre-antiseptic days, the antiseptic, and now the aseptic.

The medical side was somewhat on the same lines. The constant treatment for all and sundry was large linseed poultices and a liberal amount of medicine. Comparing the past with the present, medicine itself has changed little save in the refinement of drugs, synthetics, and vaccines. Diagnosis is much altered for the better, though I doubt if the diagnostic power of the individual is much improved. It is in midwifery one sees the greatest changes. When I started practice nothing pertaining to the lying-in patient was to be altered, changed, or washed, and if water came near her skin it was looked upon as very bad management. The midwives were those of Charles Dickens's description—in most cases ignorant, unclean, and intemperate. The nightdress of the patient, no matter how soiled, was not to be changed before the eighth day. The same rule applied to the bed sheets, etc. As clinical thermometers were not in use a patient had to be bad indeed before much notice was taken of it. On one occasion, when called to a maternity case and finding labour tedious, due to an overfull bladder, I drew off the urine with a silver catheter. This must have impressed the women who were in to help the patient. Labour came on quickly after this, and the patient delivered herself. Shortly after this, when attending a breech case, I explained it would be slow and went home to wait. The women in the house must have had a consultation, for they sent one of their number to see if I would not "draw off the child" with the "wee horn" I had used on Mrs. X.

Such, then, are some of my experiences in hospital and private practice. From a scientific standpoint they may not amount to much, but they are worth recording to show the difficulties that had to be faced in those days.

To my younger colleagues I hope they will be interesting and also instructive—interesting, in that they will tell them of a period of which they have only read; instructive, in that they will see that though ignorant of the vast amount of present-day medical science, we yet managed to do work that has lasted and has been fruitful.

[Dr. St. George showed photographs of 3 cases operated on by himself in 1884: (1) Tarsectomy; (2) Macewen's operation; (3) rhinoplasty; and also referred to his having performed suprapubic cystotomy in 1883.]

Memoranda:

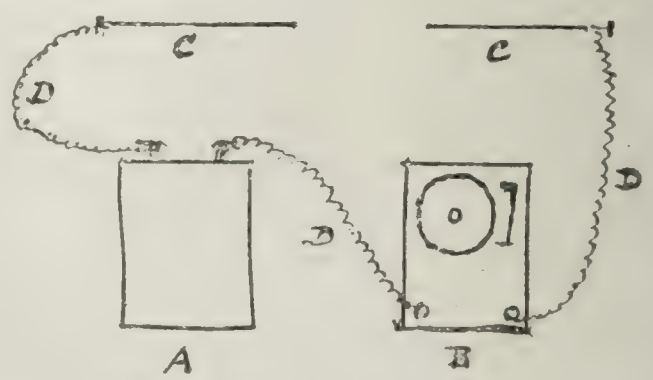
MEDICAL, SURGICAL, OBSTETRICAL.

LOCALIZATION OF BULLETS AND METALLIC FOREIGN BODIES.

THE importance of this subject cannot be over-estimated at the present time. Sir James Mackenzie Davidson's interesting experiments with a telephone attachment to knives, forceps, etc., described by him in the JOURNAL of January 2nd, reminds me of a piece of apparatus I designed and used with complete success a few years ago. My apparatus assists the surgeon to find a metallic foreign body with a minimum amount of incision, and is especially useful when the foreign body is lying among fragments of bone, or adjacent to bony prominences, such as the processes of the spinal vertebrae. It is so simple that it can be improvised by any one possessing a dry cell or a 2-volt or 4-volt motor-car accumulator, and a small electric bell.

Although my apparatus has probably been devised and used by others, I have never read a description of it in the press, and venture to send you the following description:

A is a dry cell or small accumulator; B, a small electric bell or voltmeter; C C, two steel needles 4 or 5 in. long; D, flexible insulated wire.



One piece of flexible wire is attached to one terminal of the dry cell or accumulator, and the other end of the wire is fixed to one of the needles by means of a brass screw terminal or by soldering. The other terminal of the dry cell or accumulator is connected up by a piece of wire to one terminal of the electric bell or voltmeter, and the other terminal of same to the other needle as above described.

The method of use is as follows: One needle is driven in either through the unbroken skin or from the bottom of an incision already made in the direction where the foreign body is suspected to lie. This is repeated until the needle is felt to hit something hard. When this takes place the other needle is inserted close to and parallel with the first, but not touching it until it strikes the same substance. If this substance is metallic the bell will at

once ring or the voltmeter pointer will swing over. This will not occur if the substance is bony. The surgeon must be quite sure that the two needles are not in contact in any part of their length.

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Reviews.

CEREBRAL LOCALIZATION.

THE new work of Professor MONAKOW of Zürich on cerebral localization[1] contains over 1000 pages, with 268 illustrations and two tables. It is a monument of accumulated knowledge concerning cerebral localization, based upon a comprehensive and profound study of the facts supplied by anatomy, comparative anatomy, embryology, experimental physiology, and lastly, and most important, of clinical observation correlated with anatomical investigation. The author, not only by his comprehensive study of the literature, but also by his own original investigations and contributions to our knowledge in all these various departments of neurological science, has specially qualified himself to speak authoritatively on the subject of cerebral localization.

His great work *Gehirn Pathologie* was published in 1905, and naturally much that is said in that work is contained in the volume under review. But since then the great discussion in Paris on aphasia, raised by Pierre Marie, has caused many neurologists to be doubtful of the correctness of our long-cherished notions of the localization of speech in Broca's convolution. The discussion that occurred between Marie and Dejerine is now an old story; it has led, however, to the division of neurologists into two camps: those who follow Marie and deny the existence of reliable clinico-anatomical evidence proving that destruction of the cortex of Broca's convolution suffices to cause motor aphasia;[2] and those who follow Dejerine and maintain that reliable clinico-anatomical evidence does exist in support of the original claim of Broca that motor aphasia ensues from destruction of the convolution that bears his name. Certainly, as Marie asserts, Broca's cases do not prove it; and it must be admitted that, whether Marie be right or wrong, he has done a signal service to neurology by insisting upon the necessity of approaching this question free from any bias, and also of rejecting all anatomical evidence based solely upon naked-eye appearances of the lesion and its extent. Marie rightly asserts that the correct correlation of clinical phenomena with anatomical changes can only be regarded as furnishing reliable evidence when a complete anatomical study of the brain has been made by appropriately stained serial sections whereby degenerated systems of fibres near to, and remote from, the naked-eye lesion can be observed. But it is only comparatively recently that this method has been carried out efficiently; consequently all the older recorded cases are more or less invalid.

Professor Monakow analyses and critically digests all the important experimental investigations upon animals which have a bearing upon cerebral localization; and he gives special attention to the published clinico-anatomical cases bearing upon this subject. We recognize in the author a searcher after truth who has given a great part of his life to the study of the structure and functions of the central nervous system by all the methods at his disposal in the clinic, the laboratory, and the library. The result is that he is not satisfied with all the accepted doctrines of cortical cerebral localization; and he puts forward a theory which, however much it tends to upset our cherished notions, must be carefully considered and impartially judged by the facts and arguments advanced in support of it.

Doubtless von Monakow, when surveying all the recorded cases of lesions of the speech zone, was struck by the varied clinical results as well as the variable severity and duration of the speech defects in apparently similar lesions. This probably led him to formulate his theory of "diaschisis" or "shock" on manifold systems and groups of neurones anatomically and functionally correlated with the cortical neurones damaged or destroyed at the seat of the lesion. The varied effects and duration of initial symptoms due to the diaschisis not only depend upon the severity and extent of the lesion, but also upon the power of recovery of the brain from the shock. But the power of recovery of the brain depends largely upon the healthy state of the organ, and especially of its vessels.

Now a large proportion of recorded cerebral lesions are caused by thrombosis of diseased arteries. Microscopic investigation shows that in the majority of cases all the vessels of the brain are more or less diseased, and not only that one which has become occluded. Of the importance of this factor there can be no question, for it is shown by the well-known circumstance that hemiplegia not infrequently happens as a result of ligature of the common carotid for aneurysm. The reason of this is, that all the arteries of the circle of Willis are probably more or less diseased, and an anaemia of the hemisphere occurs. In a healthy monkey both carotids can be tied without any appreciable effect.

But let us see what argument the author brings forward in favour of his theory of "diaschisis," or the influence of "shock" on cerebro-spinal neuronic groups and systems anatomically and functionally correlated with the cortical area actually destroyed or damaged. Three phases occur in hemiplegia arising as a result of a lesion, experimental or pathological, of the Rolandic area of the cortex or the internal capsule.

(*a*) Initial, the phase of flaccid hemiplegia.
(*b*) Regressive, the phase of return of tonus and of the reflexes.
(*c*) Residual, the phase of residuary phenomena destructive or irritative.

The initial symptoms vary greatly in different cases, and the purely anatomical theory of localization cannot satisfactorily explain them. Other dynamic conditions must account for the initial symptoms than those caused by the actual destruction of cortex or interruption of fibre systems, such as circulatory disturbances, reflex anaemia in subcortical structures of the central nervous system, changes of blood pressure (loss of blood in experimental lesions), swelling of the brain, toxic conditions—above all, conditions which may be included under the term "shock."

Von Monakow then gives the following description of the various well-recognized forms of shock in contradistinction to "diaschisis" (*διασχίζω*, to cleave through):

Commotio Cerebri: Shock with loss of consciousness, may occur from mechanical or physical causes, without the nervous elements showing any appreciable microscopic change.

Surgical Shock: In this form of shock consciousness remains to the end; the effect of the shock from peripheral excitation is upon the autonomic vital centres, cardiac, vasomotor, and respiratory.

Psychic Shock: This may be the result of a violent emotion of a terrifying character, but it may accompany surgical shock; the vital autonomic centres run down and, although consciousness is maintained, death occurs. It is of interest here to note the experiments of Cannon and Elliot, who have shown the profound influence of the emotion of fright on the medullary portion of the adrenal gland. Monakow does not note this, but says that this form of shock occurs on account of a harmful action on the sympathetic, as well as on the autonomic nervous system and their cortical representatives; thus not only may visceral disturbances arise, but marked peripheral sensory and motor paralyses—for example, in hysteria. He explains the excessive effects on the visceral nerves by the abnormal secretion in the blood secreting glands.

Apoplectic Shock: In this form of shock the effect falls upon the cortex, and consciousness is lost through damage to the brain and the sudden increase of intracranial pressure; the autonomic centre and the sympathetic nervous system continue to function. In contradistinction to "surgical shock," the medullary centres continue to function, and even show an increased activity. The pulse and respiration only fail when death approaches.

[1] *Die Lokalisation im Grosshirn und des Abbau der Function durch kortikale Herde.* By Dr med. C. v. Monakow. Wiesbaden: J. F Bergman; and Glasgow: F. Bauermeister. 1914. (S. roy. octavo, pp. 1045; 2 plates, 268 figures. £2 8s.)

[2] Strictly and more correctly the glosso-kinaesthetic aphasia of Bastian.

Monakow points out that a great number of the conclusions drawn by experiments on animals were undoubtedly vitiated by physiologists not taking into consideration the fact that the initial symptoms following ablation of a portion of cortex do not give the true significance of the functions of that piece of cortex which has been removed, because the initial symptoms may be due to diaschisis and all those conditions referred to as causing "shock" on the whole brain, the degree of shock depending upon the intensity of the causes mentioned. Many of the errors and discordances of the earlier experimenters were due to neglect to take into account the initial symptoms. Recently Sherrington and Graham Brown have removed in a chimpanzee the whole of the area of the cortex which when stimulated gave movement of the hand and arm; in a short time the animal recovered the use completely, then the same area in the opposite hemisphere was removed with the same results.

Von Monakow points out that there is a difference between the shock of apoplexy, in which there occurs rupture of fibres of the internal capsule associated with sudden increased intracranial pressure, and the shock produced by a cortical lesion of the Rolandic area. Although the initial symptoms of the shock on the whole brain caused by the haemorrhage may be much more intense in the former, the number of neuronic systems which degenerate and cause permanent residual symptoms is much fewer.

In the lesion of the internal capsule diaschisis affects, as a rule, only the efferent cortico-spinal system of fibres; there is no diaschisis affecting the *intercortical* and *commissural* neuronic systems; consequently, there are no residual symptoms pointing to impairment of intelligence, recollection, silent thoughts, language spoken or written (aphasia), except such as are caused by paralysis of the muscle of articulation (dysarthria), nor is there any impairment of the left hand in acquired movements usually performed by the right hand or in association with it (apraxia).

When hemiplegia occurs from an internal capsular lesion the cortico-spinal systems of fibres are damaged. The initial symptoms are loss of reflex tonus, and a flaccid paralysis with abolition of the spinal reflexes (akinesia). As soon as the initial symptoms have passed off the residual symptoms become definite—namely, voluntary paralysis with a return of reflex tonus, exaggerated deep reflexes, and extensor plantar response. The loss of the reflex tonus von Monakow attributes to cortico-spinal diaschisis. In the diagram explanatory of diaschisis, the author figures the cortico-spinal (crossed pyramidal tract) fibres and the cortico-rubro-spinal system of fibres terminating in a spinal metamere at the base of the posterior horn, and brought into relation with the spinal sensory motor reflex arc by the intervention of the *Schaltzellen*. By "shock" (diaschisis) through the cortico-spinal system of fibres the reflex tonus is for the time abolished. When the effects of the diaschisis have passed off, the normal cortical inhibitory influence being abolished by interruption of the path, the reflex tonus returns much increased, giving rise to exaggerated deep reflexes.

When hemiplegia is a result of a cortical lesion, not only are the cortico-spinal and cortico-rubro-spinal neuronic systems damaged, but an infinitely larger number of cells are destroyed, giving rise to the intercortical systems of fibres, the function of which is to associate and functionally correlate near and distant parts of the cortex of the same hemisphere. Again, association neurones by means of commissural fibres in the corpus callosum correlate similar functionally localized cortical areas. As a result of the cortical lesion and destruction of the cells of origin, intercortical and commissural systems of association fibres undergo degeneration. When the lesion occurs, it is assumed that a shock effect is transmitted along all these intercortical and commissural systems, which subsequently degenerate, to the groups and communities of neurones where the fibres terminate, functionally disordering or putting the same out of action for a variable time. Recovery of function in these groups and communities of cortical neurones affected by diaschisis depends upon a number of conditions—namely, the age of the patient, vital reaction, variable anatomical arterial distribution, and, most important of all, the healthy or diseased condition of the cerebral blood vessels.

The symptoms of mental impairment, aphasia and apraxia, are much more likely to pass off when the cortical lesion is the result of embolism of a branch of the healthy middle cerebral artery in a young person, than when due to thrombotic occlusion occurring in an aged person, or a person suffering from cerebral syphilis, in both of which conditions generalized and progressive disease of the cerebral vessels usually exists.

Possibly we shall come to believe that the cortex cerebri functions as a whole and that localization of motor efferent and sensory afferent projection systems is the only localization which exists. But undoubtedly in the majority of people there is an inborn aptitude to utilize the left hemisphere in the initiation of voluntary activities of the mind in articulate speech and handicraft. This does not imply that the right hemisphere is not always participating in the liberation of neural energy in speech. An infant may suffer from a destructive lesion of the left hemisphere and yet acquire perfect speech function; there is nothing more, therefore, than an inborn tendency in the great majority of people to right-handedness and the utilization of the left hemisphere for initiating articulate speech. Liepmann's studies show that many of the movements of the left limbs, habitually performed by the right hand, cannot be carried out by the left hand after certain lesions of the left hemisphere damaging the commissural connexions of the corpus callosum. Monakow explains this by diaschisis or the dynamic effects of commissural shock on the cortex of the right hemisphere. Liepmann maintains that these limb centres in the right hemisphere are dominated by the corresponding limb centres in the left hemisphere, and the former are directed by the latter through the commissural connexions in the corpus callosum. There is a close analogy between aphasia and apraxia, especially that form of apraxia which is termed "agraphia." There can be no doubt that the view of von Monakow will be energetically combated by many of the ablest neurologists, and Liepmann has already entered a strong protest by declaring that von Monakow's chapter of 100 pages on apraxia bristles with errors and misconceptions of his views. We do not intend to enter into the merits of this polemical discussion between two acknowledged authorities, but those of our readers who may be interested should obtain *Die Lokalisation in Grosshirns*, by H. Liepmann (Berlin, *Monatschrift für Pyschiatrie und Neurologie*, Band XXXV, Heft 6, 1914).

Whether the theory of "diaschisis" be accepted or not by neurologists generally, everybody will be willing to admit that von Monakow, like Pierre Marie, has done a signal service to neurological science by so ably putting forward a hypothesis to explain many of the difficulties presented to those who endeavour to found cerebral localization upon hitherto published clinico-anatomical records.

We can with confidence strongly recommend this book as a comprehensive and valuable work of reference on cerebral localization to all who are interested in neurological science and practice.

We cannot conclude this review without referring to the admirable illustrations and tables which this most valuable work contains, and especially we desire to call attention to the very complete bibliography and index.

NOTES ON BOOKS.

THE first volume of Mr. WILLIAM DICKIE'S translation of Professor LEJARS'S *Urgent Surgery*[3] has appeared; it is the third English impression and is made from the seventh French edition, a review of which was published in the JOURNAL last May. In his preface to the new edition Mr. Dickie says that he has scrupulously refrained from editing his original, being assured that points in which French methods differ from our own will be of peculiar interest to English-speaking surgeons. But he adds that it is remarkable how, in the few years which have elapsed since the appearance of the first English edition, pure national characteristics have tended to disappear, owing to the greatly increased intercourse between surgeons of different nations. It should be noted that the book does

[3] *Urgent Surgery*. By Félix Lejars. Translated from the seventh French edition by William S. Dickie, F.R.C.S. Third English impression. Vol. i. 1914. Bristol: John Wright and Sons. (Super roy. 8vo, pp. 614. Price 25s. net.)

not deal merely with injuries, but with a large number of clinical conditions demanding immediate surgical attention.

In the diet of the convalescent much depends upon the way in which the food is served, and an appetite believed to be non-existent will often return at the sight of a dainty and well-cooked meal set out on a prettily arranged tray. Miss ALYS LOWTH, in her *Invalid and Convalescent Cookery Book*,[4] lays especial stress upon the need for care and good taste in the arrangement and serving of meals in a sick-room, as well as upon the necessity for the most scrupulous attention to cleanliness in every detail of their preparation. Her book contains much excellent advice to those who find themselves called upon to prepare and supervise the patient's meals, and her numerous recipes are well calculated to tempt the appetite of the most capricious invalid.

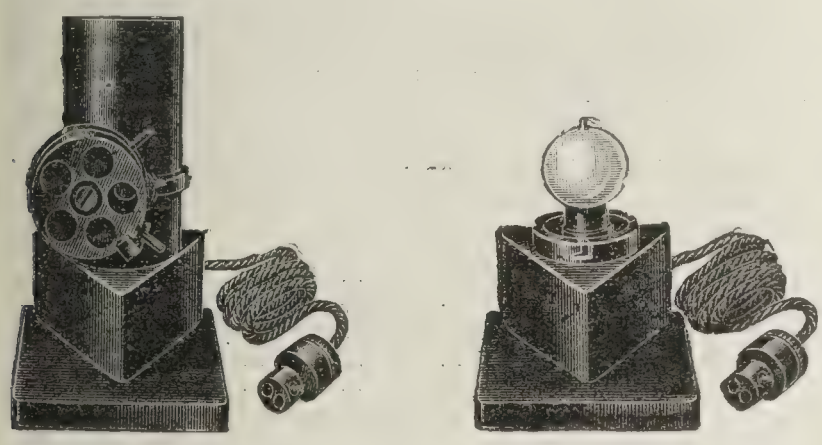
The papers contributed to various periodicals and transactions by workers in the Research Department of University College Hospital Medical School, University of London, during 1913–1914, have been collected into a volume by Dr. CHARLES BOLTON, who has prefixed a table of contents. A considerable number of the papers are concerned with the physiology and pathology of the circulation; many others deal with pathological and bacteriological subjects.

The *Transactions* and the second annual report of the London Dermatological Society, which is now in the third year of its existence, contain an account of the papers and discussions at the meetings during the years 1913–1914.

MEDICAL AND SURGICAL APPLIANCES.

A Simplified Edridge-Green Lantern.

MR. T. HARRISON BUTLER writes: The Edridge-Green Colour Perception Lantern is the best instrument upon the market for the detection of colour blindness. It is, however, expensive and complicated. I have, therefore, in conjunction with Mr. Potts, manager to Messrs. R. Bailey, of 14 and 15, Bennett's Hill, Birmingham, designed a simplified form which contains all the essentials of the parent lantern, but costs only 25s. The source of light is an ordinary commercial eight candle-power incandescent carbon filament lamp, which can be obtained for any usual voltage, and is easily replaced when worn out or fused. The general arrangement of the lantern is



shown in the illustrations, which demonstrate the portable forms, but the lamp can also be obtained fixed to a bracket. In front of the lamp is an iris diaphragm, and in front of this again are two metal discs, which carry respectively the glasses and modifying glasses. There are four colours and four degrees of smoked glass. A "click" is provided, which arrests the disc when a colour is centred before the lamp. One aperture in each disc is left free for the passage of ordinary lamp light. The chosen colours are red, blue, violet, and signal green. The blue is obtained by the use of carefully chosen green and purple glass discs placed in approximation. This mixture gives a very satisfactory blue by carbon filament illumination. The Edridge-Green lantern has no blue; it must be obtained by mixture. This is one reason why this lantern is a difficult instrument for the lay examiner to use. The new lantern is quite simple and can be managed by the non-medical examiner. It contains no fancy colours which confuse candidates. The examinee simply has to name white, red, and green, and if he can do so when the red is toned down by the deepest neutral tinted glass he is fit for the marine and railway services even if he be in other respects "colour weak." His duty will not be to match wool, but to distinguish between red, green, and yellow lanterns. The blue glass is necessary for testing for tobacco amblyopia. The subjects of this disease have a central scotoma for red and green, but easily perceive blue. The lantern can be employed for the muscle balance test with the Maddox rod; it is made and supplied by Messrs. Bailey. The London agents are Messrs. John Weiss and Son.

[4] *The Invalid and Convalescent Cookery Book.* By Alys Lowth. London, New York, Bombay, Calcutta, and Madras: Longmans, Green and Co. 1914. (Cr. 8vo, pp. 128. 1s. 6d. net.)

MEDICINAL AND DIETETIC ARTICLES.

Bovinine.

WE have recently examined a sample of Bovinine, made by the Bovinine Company of New York and submitted to us by the English agents, Messrs. W. Edwards and Son (157, Queen Victoria Street, London, E.C.). It is a clear red liquid, slightly sweet, but with very little taste at all. Our analysis showed it to contain 2.37 per cent. of nitrogen, corresponding to 14.9 per cent. of protein; this is principally present in the form of albumin, as is shown by the fact that the liquid becomes semisolid when heated, owing to the coagulation of this albumin. It is recommended as a nutrient in a great variety of cases.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee twenty-nine cases were considered and grants amounting to £237 voted to twenty-five of the applicants. The following completes the summary of the cases relieved, a part of which was published in the JOURNAL of January 2nd, p. 28:

Widow, aged 40, of M.R.C.S.Eng. and L.R.C.P.Lond. who practised at Norwood. Husband died quite suddenly of typhoid, leaving the applicant and three young children in straitened circumstances. Voted £5.

Daughter, aged 50, of M.R.C.S.Eng. who practised at St. Clears. Has double curvature of the spine. Lives with mother, who is a pensioner of the Fund, and two delicate brothers who cannot afford to keep her. Relieved once, £6. Voted £6 in twelve instalments.

Widow, aged 41, of M.R.C.S.Eng. who practised in N. Wales. Has two young children. Endeavours to earn a living by selling clothes on commission, but owing to the war the sales have greatly diminished. Relieved three times, £30. Voted £10 in two instalments.

Widow, aged 60, of L.R.C.P.and S.Edin. who practised in London. Present distress caused by death of only son who supported her. Earns a little by needlework. One daughter allows her 5s. per week; no other support. Relieved twice, £20. Voted £10 in two instalments.

Daughter, aged 56, of L.R.C.P.Lond. who practised at Hammersmith. Unable to work through ill health. Only income a little from the Guild and occasional gifts of food and clothing. Relieved seven times, £86. Voted £18 in twelve instalments.

Widow, aged 69, of M.R.C.S.Eng. who practised in Ireland and America. Suffers from muscular rheumatism. One son, who has not been heard of for a long time. No income, and unable to work. Relieved five times, £60. Voted £12 in twelve instalments.

Daughter, aged 68, of M.D.Edin. who practised at Cheltenham. Eyesight very bad, and ill health prevents her doing any work. Only income £13 10s. per annum and a little from friends. Relieved once, £12. Voted £12 in twelve instalments.

Widow, aged 68, of M.R.C.S.Eng. who practised at Yelverton. Takes paying guests, but owing to the bad season is in difficulties. Relieved five times, £52. Voted £12 in twelve instalments.

Daughter, aged 58, of L.R.C.P.Lond. and L.S.A.Lond. who practised at Brierley Hill. Health very bad, and unable to do any permanent work. Income a R. U. K. B. Association pension of £21 per annum, and from friends 10s. per month. Relieved seven times, £41. Voted £12 in twelve instalments.

Daughter, aged 52, of M.R.C.S.Eng. who practised in London. Has had several internal operations, and obliged to mortgage her small capital to pay for same. Lives with married sister, who gives her a home, but unable to keep her. Relieved five times, £54. Voted £10 in two instalments.

Daughter, aged 63 years, of M.R.C.S.Eng. who practised at Northampton. Health very indifferent. Has a small annuity, but not sufficient to live on. Relieved once, £5. Voted £5.

Daughter, aged 47, of M.R.C.S.Eng. who practised in India. Is bedridden and quite helpless. Only income an annuity from the British Home for Incurables. Relieved three times, £36. Voted £12 in twelve instalments.

Widow, aged 43, of M.D.Irel. who practised at Newcastle-on-Tyne. Health indifferent, but endeavours to make a little by

taking lodgers. Allowed £25 per annum for education of only child. Relieved four times. £30. Voted £5.

Daughter, aged 48, of M.R.C.S.Eng. who practised at Gillingham. Has very indifferent health, and unable to find suitable employment. Recently has been selling papers in the streets at a remuneration only sufficient to pay the rent of a room. Relieved once, £5. Voted £12 in twelve instalments, and referred to the Guild.

Widow, aged 56, of L.S.A.Lond. who practised at Limehouse. Endeavours to make a living by letting rooms, but not very successfully. Two daughters who are in service can only allow her 5s. per month. Health bad. Relieved nine times, £46. Voted £12 in twelve instalments.

Daughter, aged 66, of M.R.C.S.Eng. who practised at Great Torrington. Has acted as housekeeper and general help, but at present out of employment, as her age is against her. Relieved once, £12. Voted £1 and referred to the Guild for report.

In addition to the above the Committee appointed from the grantees six annuitants at £20 each. This brings the total of annuitants up to 142.

Contributions may be sent to the Honorary Treasurer, Dr. S. West, 11, Chandos Street, Cavendish Square, London, W.

THE METRIC SYSTEM IN PRESCRIBING AND DISPENSING.

In the *British Pharmacopoeia*, 1914, which is now official, the metric system of weights and measures has been employed not only for all pharmaceutical and analytical computations, but also for the specification of doses. This has been done, the preface says, in the expectation that in the near future the system will be generally adopted by British prescribers. As a transitional provision, however, doses have also been expressed in terms of the imperial system. The relation between the metric and the imperial dose is approximate only, although the approximation is very close. For convenience whole numbers have generally been employed in stating doses expressed according to the imperial system, with but small deviation from the doses already familiar by long usage, and whole numbers have in the same way been employed in stating doses expressed according to the metric system. As fractional differences are thus necessarily ignored, the two sets of whole numbers do not in general express exactly the same quantities.

At the annual meeting of the Representative Body at Birmingham in 1911 the Council, in accordance with instructions given at the preceding Annual Representative Meeting, presented a report on the use of the metric system of weights and measures by medical practitioners in prescribing and dispensing. This report was published in the SUPPLEMENT of the JOURNAL of April 29th, 1911.

The report stated that the advantages of the metric system were that all calculations and measurements were simplified when the measures were related by multiplication or division by 10, which is the basis of our system of notation; that the adoption by the medical practitioner of the same system of measures as is employed in laboratory work would tend to keep in closer touch the investigations of science and the applications of practice, and that the work of the British and other modern nations would gain by being stated in the same terms. The difficulties in the way of its adoption were stated to be, first, the difficulty which practitioners trained in the use of the imperial weights and measures find in adapting themselves to a new system in prescribing or dispensing, and, secondly, the difficulty of bringing about co-operation between doctors and chemists in cases in which doctors do not themselves dispense. The report recommended that medical practitioners should write their prescriptions in metric form; to facilitate this they were recommended to order mixtures in sixteen-dose bulk, and pills or powders in tens, and it was advised that the dispenser should be instructed that every prescription written without symbols was to be dispensed in metric measures. The Council further recommended as a transitional measure certain methods suggested by Dr. R. C. Buist and based on the actual conditions of British practice. The method gives automatically the conversion of the dosage in grains and minims into a prescription which the dispenser can measure in grams and cubic centimetres with an approximate exactitude well within the range of the variation of spoon measurements.

Mixtures.

The following sample of a prescription for an 8-oz. mixture, to contain sixteen doses, was given:

In the prescription of an 8 oz. mixture, of which each tablespoonful is to contain—

(*a*)	Tr. belladonnae	♏v
	Spt. aetheris	♏x
	Vin. ipecac.	♏xv
	Syr. scillae	♏xx
	Inf. senegae ... ... ad ½ oz. (that is, ♏ccxl),	

the metric prescription for the mixture would be—

(*b*)	Tr. belladonnae	5
	Spt. aetheris	10
	Vin. ipecac.	15
	Syr. scillae...	20
	Inf. senegae	ad 240

On comparing (*a*) and (*b*) it is evident that the numbers are the same in both.

In commenting on this the report pointed out that "the prescriber intends a mixture to contain certain substances in fixed proportions, which will be the same in the single dose and in the bulk, and will not be affected whether the measures be stated in minims or in cubic centimetres; the numbers of minims will be larger, but the proportions will be the same. The exact factors for the conversion of grams into grains and of cubic centimetres into minims are 15.4324 and 16.906 respectively. The procedure used in the above example is to take 16 as a near approximation to each of these numbers. (The extent to which this is inexact may be stated as 4 drops in a teaspoonful.) Now, in ordinary prescribing, 16 doses is the most common of all orders, as represented by tablespoonful doses of an 8 oz. mixture. If, therefore, in such a mixture the prescriber orders the numbers of minims of the drugs A, B, C, D, E, in each tablespoonful which he would order in a prescription in English measures, but omits the symbols, and if the dispenser measures in each case the same numbers of cubic centimetres into the bottle, the conversion from English into metric measures will be automatically completed. Thus it is recommended that the practitioner who wishes to write a prescription for metric measures should simply write without symbols the drugs with the number of grains or minims he intends to give in each spoonful, and that the dispenser be instructed that each prescription where no symbols are written is to be dispensed in metric measures. For teaspoonful doses the bulk would be 2 oz. or 60 c.cm., and for dessertspoonful doses 4 oz. or 120 c.cm."

Solutions.

In ordering solutions the proportions are evident, and the only point to be borne in mind is the total quantity desired. Thus:

(*a*)	Cocain hydrochlor.	3
	Aq.	ad 60
	Sig., 5 per cent. cocain hydrochlor.	
(*b*)	Argent. nitrat.	1
	Aq. destil....	50
	Sig., 2 per cent. silver nitrate.	

Pills and Powders.

The order for a pill or powder is based on fractions or small multiples of the grain. The prescriber should therefore become familiar with the equivalence 1 grain = 0.06 gram, which is sufficiently exact for practical purposes. To facilitate the work of the dispenser the number of pills or of powders ordered should be a multiple of ten. Thus:

Aloin
Podophylli resinae
Jalapae resinae
Ext. hyoscyami
... ... āā 0.015

M.; ft. pil. M. 10. Sig., One after each meal.

Each pill contains a quarter of a grain of each constituent; for his pill mass the dispenser simply shifts the decimal point of the prescription.

The following is the summary of the procedure recommended:

(*a*) The prescription is still to be based on the single dose.

(*b*) In the case of mixtures 16 doses are to be ordered by writing with figures only the number of grains or minims of each ingredient in one spoonful.
(*c*) In the case of pills and powders 10 are to be ordered and the prescription is to give in figures only the metric equivalent of the grains of each ingredient in the single dose.
(*d*) The dispenser is to be informed that every prescription written without symbols is to be dispensed in metric measures.

THE CHEMICAL CONSTITUTION OF CERTAIN PROPRIETARY DRUGS.

(*Continued from the* JOURNAL *of December 19th, 1914, p. 1069.*)

THE contraction *B.P.* with date is used for the *British Pharmacopoeia*, and *B.P.C.* is used for the *British Pharmaceutical Codex*, 1911.

Hazeline.

Liquor hamamelidis, *B.P.* 1914, is made by distilling fresh hamamelis leaves with alcohol and water, the product containing 16 per cent. by volume of rectified spirit. The trade name Hazeline indicates the product of Messrs. Burroughs, Wellcome, and Co., London.

Haemogallol.

Described as an organic iron compound, produced from blood by reduction of its haemoglobin by means of pyrogallol. The trade name Haemogallol indicates the product of E. Merck, Darmstadt.

Haemol.

Also known as Haemoglobol, Parahaemoglobulin, Reduced Haemoglobin, and Haemoglobin deoxidized by zinc. It is an organic iron compound produced from blood by reduction, and said to contain about 3 per cent. of iron. The trade name Haemol indicates the product of E. Merck, Darmstadt.

Hedonal.

This is a name applied to methyl-propyl-carbinol-urethane. It is put forward as a hypnotic, especially in neurasthenic and hysterical conditions. The trade name Hedonal indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Hegonon.

Described as silver nitrate ammonia albumose, a substance obtained by treating silver ammonium nitrate with albumose, and said to contain approximately 7 per cent. of organically combined silver. The trade name Hegonon indicates the product of E. Schering, Berlin.

Helmitol.

This is a name given to hexamethylenetetramine-anhydro-methylene citrate, or formamine-methylene citrate. The *B.P.C.* name for this substance is Formamol, and other names are Neurotropine (new urotropine) and Uropurgol. The trade name Helmitol indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Hemisine.

A name applied to the active principle of the suprarenal gland. The *B.P.* 1914 contains adrenalin; the *B.P.C.* name for this substance is adrenine, and it is also known as epinephrine, haemostasin, suprarenin, etc. The trade name Hemisine indicates the product of Burroughs, Wellcome, and Co.

Hetol.

A name applied to sodium cinnamate; this is described in the *B.P.C.* under the latter name. The trade name Hetol indicates the product of Kalle and Co., Biebrich, Germany.

Hexal.

This is a name applied to hexamethylenetetramine salicylsulphonic acid. The trade name Hexal indicates the product of J. D. Riedel, A.G., Berlin-Britz, Germany. The trade names Neo-hexal and Hexalet, which are the property of the same firm, are applied to modifications of the same compound.

Hopogan.

This is magnesium peroxide, described under the latter name in the *B.P.C.*, and is identical with Biogen (*q.v.*).

Hypnal.

This is a name applied to chloral-hydrate antipyrine. It is put forward as a mild hypnotic. The trade name Hypnal indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main.

Ichthyol and Derivatives.

Ammonium ichthosulphonate is described in the *B.P.C.* as "the ammonium salts of the sulphonic acids prepared from ichthyol—the oily product of the destructive distillation of a greyish bituminous schist. . . . The schist is composed largely of the remains of fishes and other marine animals, and yields from 1 to 10 per cent. of oil, which contains about 10 per cent. of sulphur; on treating the oil with sulphuric acid, ichthosulphonic acid is formed, and this, when neutralized with ammonia, yields impure ammonium ichthosulphonate, the substance which is known in commerce under various trivial names. It was introduced and first tested, pharmacologically and in clinical practice, under the trade name Ichthyol; similar preparations are known under the trade names Ichtammon, Ichden, Ichthyodine, Ichthosan, Isarol, Piscarol, Thiolin, etc." A synonym which is not a trade name is Ichthamol.

The trade name Ichthyol designates the product supplied by the Ichthyol Company, Hamburg; the name Ichden or Piscarol that supplied by Messrs. Lüdy and Co., Burgdorf, Switzerland, and Isarol that by the Gesellschaft für Chem. Industrie, Basle, Switzerland.

Ichthalbin is a name given to albumin ichthosulphonate or ichthamol albuminate. It is introduced for use in place of ichthamol internally and also as a vulnerary (pure). The trade name Ichthalbin indicates the product of Knoll and Co., Ludwigshafen on Rhine.

Ichthoform is a name applied to formaldehyde ichthosulphonate or ichthamol formaldehyde. It is put forward to be used chiefly as a wound antiseptic. The trade name Ichthoform indicates the product of the Ichthyol Company, Hamburg.

Ichthargan is described as ichthyol-silver, silver ichthosulphonate, silver sulphoichthyolate, and silver thiohydrocarburosulphonate. The trade name Ichthargan indicates the product of the Ichthyol Company, Hamburg.

Iodalbin.

This is said to be an organic compound of iodine with blood albumin, containing about 21.5 per cent. of iodine. It is intended to replace the alkali iodides. The trade name Iodalbin indicates the product of Parke, Davis and Co., Detroit, Mich.

Iodex.

A non-staining iodine ointment. A preparation of this kind given in the *B.P.C.* is a combination of iodine 1 part with soft paraffin 19 parts, made by heat. Iodex is made by Messrs. Menley and James, London.

Iodipin.

This is a name applied to an iodine addition product of the fatty acids of sesame oil. The trade name Iodipin indicates the product of E. Merck, Darmstadt.

Iodival.

A name given to mono-iodo-valeryl-urea. It is stated to contain 47 per cent. of iodine, and is offered as a substitute for the iodides. The trade name Iodival indicates the product of Knoll and Co., Ludwigshafen on Rhine.

NEW YEAR'S HONOURS.

THE New Year's list of honours, published on January 1st, is rather shorter than usual, and to a considerable extent consists of decorations conferred in connexion with the war. The most interesting feature in the list is the institution of a new decoration entitled "The Military Cross." The insignia consists of a silver cross, having on each arm the Imperial Crown, and bearing in the centre the letters G.R.I. It is to be conferred for military services on junior officers, captains, subalterns, and warrant officers. The inclusion of the latter rank is a new development and one of special interest, for decorations and orders, other than the V.C., have hitherto been very sparingly conferred on men of lower than commissioned rank. In fact, the only recipients of such decorations, we think, have been a certain number of warrant officers in India, who have been made Companions of the Indian Empire. The Indian Order of Merit, of course, has been freely bestowed on non-commissioned officers and men, but this Order is specially intended for all ranks of the Indian army.

The total number of medical names which appear in the list seems to be fifteen, besides six warrant officers of the R.A.M.C., as follows:

Privy Council.—Sir William MacGregor, G.C.M.G., C.B.
Knight Bachelor.—Herbert Lethington Maitland, M.B., Ch.M., of Sydney, New South Wales.
C.M.G.—Surgeon-Major-General Eugene Fiset, Canada.
C.I.E.—Colonel G. W. P. Dennys, I.M.S.; Major S. R. Christophers, I.M.S.
Kaisar-i-Hind Gold Medal.—Major J. Husband, I.M.S.; Dr. C. A. Bentley; Hakim Mahomad Ajmal Khan, Hazik-ul-Mulk, president, Anjuman Tibbia (Medical Association) of Delhi.
Indian Order of Merit.—Senior Sub-Assistant Surgeon Pandit Shankar Dass; Sub-Assistant Surgeon Harnam Singh.
C.V.O.—Dr. John Marnoch, Regius Professor of Surgery, Aberdeen.
Military Cross.—Captain H. Stewart, R.A.M.C.; Captain E. D. Caddell, R.A.M.C.; Lieutenant C. Helm, R.A.M.C.; Lieutenant (temporary) E. J. Wyler, R.A.M.C.; Captain J. F. Murphy, R.A.M.C., Special Reserve; Captain Kunwar Indarjit Singh, I.M.S. (killed in action); Sergeant-Major R. Cox, R.A.M.C.; Sergeant-Major A. T. Hasler, R.A.M.C.; Sergeant-Major T. E. Coggan, R.A.M.C.; Sergeant-Major H. J. Anderson, R.A.M.C.; Sergeant-Major E. R. Loft, R.A.M.C.; Sergeant-Major R. J. McKay, R.A.M.C.

We should also mention the knighthood bestowed upon Mr. Perceval Alleyn Nairne, Chairman of the Committee of the London School of Tropical Medicine.

Sir William MacGregor has been one of the most distinguished officers the medical profession has contributed to the ranks of administration. He took the diplomas of L.R.C.S.Edin. and L.F.P.S.Glasg., as well as the degree of M.B.Aberd., in 1872, and the degree of M.D. of the same university in 1874. A long list of honorary degrees and orders has since been bestowed upon him: D.Sc.Camb. in 1895, LL.D.Aberd. in 1895, LL.D.Edin. in 1902, Fellowship of the Faculty of Physicians and Surgeons, Glasgow, in 1908, the K.C.M.G. in 1889, C.B. in 1897, G.C.M.G. in 1907. After acting as resident surgeon and physician at Glasgow Royal Infirmary and resident medical officer of the Aberdeen Lunatic Asylum, he entered the Colonial Medical Service in 1873 as medical officer in the Seychelles Islands. In 1874 he was appointed surgeon of the civil hospital at Port Louis, the chief town of Mauritius, and in 1875 civil medical officer in the Fiji Islands. While holding that post he was appointed to act as Governor of Fiji and High Commissioner of the Western Pacific. On September 4th, 1888, he proclaimed Her Majesty Queen Victoria as Sovereign of British New Guinea, and became Administrator of the newly annexed colony. In 1899 he was transferred in the same capacity to Lagos, in West Africa, and represented the West African colonies at the coronation of King Edward in 1902. From 1904 to 1909 he was Governor of Newfoundland, and has since been Governor of Queensland. He holds the Albert medal and the Clarke gold medal for saving life at sea, the Watson gold medal, the Founder's medal of the Royal Geographical Society, and the Mary Kingsley medal (1910). He is also a Fellow of the Royal Geographical Societies of England, Scotland, and Berlin, and a Knight of Grace of St. John of Jerusalem.

Surgeon-Major-General Joseph Eugene Fiset, after taking the degrees of B.A., M.D., and M.S. in Canada, entered the medical department of the Canadian military forces. He served with the Canadian contingent in South Africa, when he was mentioned in dispatches, gained a brevet as Lieutenant-Colonel, and the medal with four clasps; in 1902 he received the D.S.O. He was Director of Medical Services in Canada from 1903 to 1906, when he was appointed Deputy Minister of Militia and Defence, a post which he still holds.

Dr. John Marnoch was educated at Aberdeen, where he took the degree of M.A. in 1888, the M.B. and C.M. with highest honours in 1891. After acting as house-surgeon and physician to the Hospital for Sick Children at Aberdeen, and assistant to the Professor of Physiology in the University, he was appointed Regius Professor of Surgery in Aberdeen University, and surgeon and lecturer in clinical surgery to Aberdeen Royal Infirmary.

Colonel George William Patrick Dennys was educated at St. Bartholomew's Hospital, took the M.R.C.S. and L.R.C.P. in 1878, and entered the I.M.S. as surgeon on October 31st, 1879. He became full Colonel on June 16th, 1910. He holds the post of Inspector-General of Civil Hospitals in the Central Provinces, and is also a member of Council for that province.

Major Samuel Richard Christophers took the M.B. and Ch.B.Vict. with first class honours in 1896, and held the Hill Scholarship in Pathology. He served as a member of the Malaria Commission of the Royal Society and Colonial Office from 1898 to 1902, and entered the I.M.S. as Lieutenant on September 1st, 1902, becoming Captain on September 1st, 1905, Brevet-Major on January 1st, 1911, and Major on March 1st, 1914. He holds the post of Assistant Director of the Pasteur Research Institute at Kasauli, and is the author of numerous reports on his speciality, malaria.

Dr. Charles Albert Bentley took the M.B. and C.M. at Edinburgh in 1898, and the D.P.H.Camb. in 1905. He is now Special Deputy Sanitary Commissioner for malaria investigation in Bengal, and has written numerous papers on malaria.

Major James Husband took the M.B. and Ch.B. at Edinburgh in 1899, the F.R.C.S.Edin. in 1909. After serving as house-surgeon to the Edinburgh and Glasgow Maternity Hospitals he went into the I.M.S. He is Medical Officer of the 59th Sind Rifles, and officiating Civil Surgeon of Wano, on the Baluchistan frontier, under the Indian Foreign Office.

Captain Kunwar Indarjit Singh, I.M.S., was recently reported as killed in action, and Lieutenant E. J. Wyler, R.A.M.C., as wounded.

The services of the two sub-assistant surgeons who receive the Indian Order of Merit are thus described in the Honours List:

47th Sikhs: Senior Sub-Assistant Surgeon Pandit Shanker Dass (attached). For cool courage in attending wounded under heavy fire at Neuve Chapelle.

34th Sikh Pioneers: Sub-Assistant Surgeon Harnam Singh (attached). On November 23rd and 24th, for great courage and disregard of danger in removing wounded under heavy shrapnel fire from the regimental aid post, and, with the help of one other man, carrying seven wounded men to a place of safety.

THE following three works embodying information contained in the *British Pharmacopoeia* 1914 will shortly be published by Messrs. J. and A. Churchill: Dr. W. Hale White, *Materia Medica* (fourteenth edition); Mr. E. W. Lucas (member of the British Pharmacopoeia Reference Committee), *The Book of Prescriptions* (tenth edition); Mr. E.W. Lucas and Mr. H. B. Stevens, *The Book of Pharmacopoeias;* this is a new book containing about 5,000 formulas, British and foreign, arranged on a comparative system. Mr. H. K. Lewis announces that a new edition—the sixteenth—of the *Extra Pharmacopoeia*, revised to be in conformity with the new *British Pharmacopoeia*, will be issued in a week or two.

AMONG the kind-hearted things that are being done for the wounded soldiers and sailors in hospital are the entertainments of the Union Jack Concert Party, which contrive to attain a double end. They provide entertainment for the wounded, and assist necessitous artists by giving them a small fee for their services. Concerts have been given lately at St. George's and St. Bartholomew's Hospitals, at the 2nd London General Hospital at Chelsea, and at the Queen Alexandra Hospital, Millbank. The concerts are arranged and organized by Miss Helen Mott and Miss Florence Castelle, to whom subscriptions may be sent at 25, Nottingham Place, W. Many of the leading artists give their services free, but among those less well known the war has caused much distress.

British Medical Journal.

SATURDAY, JANUARY 9TH, 1915.

SOME PROPRIETARY FOODS FOR INFANTS.

THE Local Government Board in England has recently added to its series of food reports a fasciculus[1] containing the results of an examination of certain proprietary foods for infants by Dr. F. J. H. Coutts and Mr. Julian L. Baker, F.I.C. The report, which is full of interest to all workers for the welfare of infants, does not deal with foods consisting solely of dried milk or dried milk with milk products; a separate report on such food is stated to be in preparation.

The present report is concerned with foods consisting mainly of flour unaltered, altered only by heating, mixed with some malt flour or malt extract, consisting mainly of flour with some dried cow's milk, consisting of flour with active diastase or pancreatic ferment, or manufactured flours the starch of which has been mainly or partially converted into soluble products during the course of manufacture. Samples of 106 proprietary foods of this nature were collected, and 29 were submitted to a very exhaustive chemical examination by Mr. Baker, who found that 20 of them consisted mainly of cereal flours, the starch of which was not appreciably altered when the food was prepared according to directions, though 7 of them contained some malt flour or malt extract. The labour involved in this analysis was, of course, very great, and when Mr. Baker stopped exhausted, the classification was completed for the remaining samples by Dr. Coutts, who relied upon other and more summary methods. It was apparent that about 70 per cent. of all the samples contained "material quantities of starch, which remains practically unchanged when the food is prepared according to directions."

Dr. Coutts exposes a great deal that is dishonest and detestable in the sale and advertisement of infants' foods. For example, one of the specimens examined, which contained nearly 60 per cent. of starch and nearly 11 per cent. of cane sugar, with some diastase, was accompanied by the injunction, "Avoid foods composed of starch only." Another proprietor stated that "most of the so-called infants' foods are mere mixtures of starchy meals, and quite unfit for the delicate digestion of infants"; this statement, though most true, seems a little out of place, for the particular food accompanied by this warning itself "contains 62.6 per cent. of starch, and as prepared for food the starch is gelatinized, but otherwise unchanged." Evidence is supplied by medical officers of health, district visitors, and others of the unquestioning belief with which uneducated parents greet the extravagant claims and fulsome testimonials which advertise the various foods. "What was good enough for royalty," said one parent impressed by an advertisement which stated that the preparation was used in the royal household, "was good enough for his young ones." Generally speaking, the profit to the proprietors of these starchy foods must be 300 or 400 per cent. on the cost price of the flour. A good wheat flour can be procured at less than 2d. a pound, while the proprietary baked starchy foods are sold at prices ranging from 8d. to 1s. a pound, and the flour in them, it would appear, is not always from cereals, but may be derived also from leguminous seeds, arrowroot or banana.

Dr. Coutts calls attention to one point in connexion with the infants' foods he discusses, to which we have frequently drawn attention in connexion with proprietary drugs. It is that, owing to the secrecy with which the trades are permitted to be conducted, the manufacturer can vary his method of manufacture or may change the ingredients used without notice to the purchaser. Changes in the ingredients of infants' foods may lead to considerable variation in the chemical constitution of the food, though the public has no notice and the food may continue to be sold under the same brand. The conclusion is that there can be little doubt "that variations in composition do occur either owing to changes purposely made or owing to want of care in the manufacture."

Dr. Coutts's report also includes a chapter which discusses at length the suitability of starch as an ingredient of foods for young infants, and quotes the unfavourable opinion of a large number of writers on the subject.

It is to be hoped that the report will serve to draw attention to an evil which, in spite of all that has been said in lectures and printed in books and periodicals, is still widespread, if, indeed, it can be said to have been at all checked in certain classes of the population. The large infant mortality which results from the use of a diet absolutely unsuited to infant digestion can only be prevented by educating the public. The medical profession must undertake the care and control of the diet of the infant population. To bring about a change so necessary and desirable the universities and examining bodies must demand a course of instruction in the subject, which is at least as thorough as that prescribed in the special diseases of women, and the public must be educated to understand that untutored and ignorant interference with the generally accepted rules of diet for the normal infant, however well-intentioned, is dangerous to life and provocative of great suffering to the infant. It is to the great class of ignorant but self-opinionated advisers of mothers and nurses that these lying advertisements are addressed, a class which owes its reputation not to any knowledge possessed, but to the astonishing tolerance which infants show or develop towards food of the most diverse composition. Not all infants die when their diet is mishandled, and that the majority survive the assaults upon their digestion confirms the self-constituted advisers in the high opinion which they hold of their own judgement.

Most proprietary foods for infants consist practically of starch, dried milk, and sugar, either singly or combined in various proportions; malt sugar is perhaps of special value in certain cases in infant feeding, and it cannot be denied that by the use of combinations of milk and malt sugar results may be attained in certain infants which were not achieved when cow's milk alone was used. Some brands of proprietary infants' foods offer different combinations of milk and malt sugar which are convenient and easy to prepare, and which in the hands of a trained observer may produce good results for the time being. Yet even the use of such foods as contain no

[1] Reports to the Local Government Board (Food Reports, No. 20). (1) On the Use of Proprietary Foods for Infant Feeding, by Dr. F. J. H. Coutts; (2) On the Analysis and Composition of some Proprietary Foods for Infants, by Mr. Julian L. Baker, F.I.C. London: Wyman and Sons; Edinburgh: H.M. Stationery Office; Dublin: E. Ponsonby. 1914. (6d.)

objectionable elements is to be regarded as a therapeutic measure, adopted to combat certain symptoms in the infant, and not intended permanently to replace the usual diet, much less to be recommended wholesale in cases of a different nature upon the ground of a single success. The strictures of the present report are directed, as has been said, only against the proprietary foods containing starch, but in practice most proprietary foods exercise a harmful influence, because they appeal directly to the public and are used blindly without any knowledge of their composition or therapeutic effects. It would be better for medical men to have the selected combinations of milk and malt sugar prepared by the mother than to encourage the fetish of the special virtue of the proprietary combination.

From an appendix to the report headed "regulations in other countries," it would appear that in Australia only are there regulations dealing specifically with infants' foods. The Commonwealth regulations require that in the case of foods for infants, if the food is not suitable for general use for infants under the age of 6 months, the trade description shall include, in legible character and conspicuously displayed, the following words: "Not suitable for infants under the age of 6 months." South Australia alone appears to go to the root of the matter in a regulation which prescribes that "Unless described or sold specifically as food suitable only for infants of or above the age of 6 months, infants' food shall, when prepared as directed by any accompanying statement or label, contain no starch, and shall contain the essential constituents of, and conform approximately in proportional composition to, human milk."

The Local Government Board report which we have been discussing seems to have arisen out of a resolution adopted by the National Conference on Infant Mortality, held in 1906, urging that all preparations offered or sold as food for infants should be certified by a Government analyst as non-injurious, and that each packet should contain a statement of its analysis. Since then representations have been made to the Local Government Board by county councils and others that action should be taken to restrict the use of unsuitable infants' foods, and we hope that we may take this report to be intended as a preparation for legislation.

AIR RAIDS.

THE recent aërial raids to Friedrichshaven and Cuxhaven and the various bomb-dropping exploits of German aircraft are proof that a raid to London is well within the range of practical warfare, and there are other English towns more easily reached, as for instance, Dover, which has already been visited. The British raids have been carried out by aeroplanes, and the war has as yet afforded no direct evidence that the lighter-than-air craft possess a range approaching that of the aeroplane, though their powers of destruction when they reach their destination have been shown, especially at Antwerp, to be very considerable. There is, however, ample evidence that before the war their inventor had no doubt that Zeppelins could reach London, and had prepared plans and instructions. As a recent exponent of German aspirations has explained, incendiary bombs are to be dumped overboard by Zeppelins 10,000 ft. up, and if they miss Buckingham Palace they will hit Knightsbridge, where houses will be set on fire. This, it seems to be argued, will produce a great psychological effect, and will throw England into so great a panic that the people will, according to the Bismarckian doctrine, compel the Government to make an ignominious peace. Whether this would be the effect if a similar outrage were committed in Berlin we do not know, but we are bound to suppose that German writers believe it would, for they can only judge the psychology of other nations by their own. We know that it will have no such effect in London, but a certain number of its inhabitants may be killed or injured by flying bits of bomb, or falling roofs or house fronts, as at Antwerp. The naval and military authorities have issued a notice in London calling the attention of persons using the streets to the danger from fragments of shell and from bullets from the guns used against hostile aircraft attempting a raid on London, and warning the civil population to keep under cover, preferably in basements, upon hearing the sound of firing by guns or of explosives.

Should a raid be carried through, medical men in the neighbourhood of places where bombs fall will, however, have an active duty to perform. We understand that arrangements are being made, with the full approval of the police, for the speedy dispatch of a number of surgeons to give aid, and it is to be expected that the wounds would differ very much in character from those caused by the ordinary street accidents with which the police have to deal. An experienced correspondent asks us to urge all medical men in London or its immediate neighbourhood to see that their dressing-bags are well stocked and especially that a hypodermic syringe, a tourniquet, some dry dressing, and some bandages are not missing. Then, while their wives and children seek shelter, they should go to the spot and quietly set to work, in co-operation with the police, in rendering such first aid as may be essential before the wounded are removed to the hospitals or other institutions which, by previous arrangement, will be prepared to receive them and to which the police will see that they are transported as expeditiously as possible.

A recent issue of *Nature* contained an informing article on high explosives in warfare by Mr. W. Macnab, a well known authority on the subject. It appears that, until it was displaced by picric acid, black gunpowder formed practically the only explosive used as a bursting charge for shells, although gun-cotton was at one time largely employed for military mines and purposes of destruction and as a charge for torpedoes. Picric acid was used either alone or mixed to form explosives known in different countries as melinite, lyddite, shimose powder, and by other names. The explosive power of picric acid is much greater than that of gunpowder, and it is sufficiently insensitive to shock, but it readily attacks metals, forming picrates, which are more sensitive and liable to explosion.

The explosive now commonly used by all nations is trinitrotoluol, which is known under a variety of names—trotyl, tritolo, tolite, tritol, and trilite, and as "T.N.T." in the British services. Trinitrotoluol is chemically stable and without action on metals. It is unaffected by water, can be fused and run into shells in the molten state, and is less sensitive to shock than picric acid. For demolishing bridges, etc., hard blocks of suitable size and shape are electro-plated with copper, which prevents the blocks being broken or their edges chipped. T.N.T. is not quite so powerful as picric acid, but its other advantages are considered to make it the best available explosive for military use. The destructive effect is caused by the

almost instantaneous conversion of the solid explosive into gases, at a very high temperature, by which an enormous pressure is suddenly exerted. It has been found by experiment that when exploded in a confined space picric acid and T.N.T. yield, in addition to small quantities of methane, some carbonic acid, nitrogen, and hydrogen, and relatively large quantities of carbonic oxide. Ammonal, which is largely used by the Austrians, consists of ammonium nitrate, trinitrotoluol, charcoal, and aluminium in fine powder. It is very safe, but owing to the hygroscopic character of ammonium nitrate, it must be protected from moisture. Ammonal yielded about 24 per cent., and picric acid and T.N.T. nearly 50 per cent. carbonic oxide. It is possible, therefore, that in a confined space persons breathing the fumes might be poisoned or seriously affected by the poisonous carbonic oxide, and in mining work care has to be taken so to adjust the composition of the explosive as to ensure that the gases produced shall not have a deleterious effect on the miner. The main effects of a bomb, even in a confined space, and still more in the open air, are those due to the mechanical violence, either inflicted directly on the body or by splinters or falling masses of masonry. Mr. Macnab scouts the notion that the ingredients of shell charges may contain deadly poisons, for he thinks it improbable that any poison intentionally added would retain its toxic properties after the shock and heat of explosion. He recognizes that the explosion of a large quantity of any explosive dropped by a Zeppelin might do a great amount of damage, but judging from the effects of the accidental explosion of a couple of tons of nitroglycerine during manufacture, he believes that the area of damage would be comparatively restricted.

THE PROBLEM OF COLOUR BLINDNESS.

THERE is such an intimate relationship between the theory of colour vision and the practical problems of colour blindness that it is advantageous to have a clear conception of the hypotheses which have been put forward to account for the phenomena of hue perception; these are the Young-Helmholtz, the Hering, and the Edridge-Green theories. Young and Hering strove to explain the facts upon a physico-chemical basis; Edridge-Green takes up a more purely physiological or psychological standpoint.

Young imagined that there were only three primary sensations—red, violet, and green—and that they were served by three sets of nerve fibres. It may be said at once that there is no evidence that such a differentiation of nerve fibres exists, and Helmholtz abandoned this feature of the theory, which, indeed, is not a necessary part of it. We can imagine mechanisms in the retina itself which would correspond to the three primary sensations—sensory mechanisms simultaneously excited by all colours but in a greater or less degree. On this hypothesis red would excite the red mechanism strongly, the green and violet only slightly; orange the red strongly, the green markedly, and the violet slightly. In the same way, by a mixture of sensation the various colours of the spectrum would be appreciated.

Hering postulated six primary sensations which fell readily into two groups. In each pair one colour was complementary to the other—white to black, red to green, and yellow to blue. It will be noted that Hering regarded white and black as distinct sensations as "colours." We can imagine in the retina a visual substance of such a nature that when rays at the red end of the spectrum fell upon it anabolic changes are encouraged, whereas violet and blue rays causes katabolism. Hering supposed that there were three such substances in the retina—a red-green, a yellow-blue, and a white-black. The sensations were caused by anabolism and katabolism of these substances. The theory is purely material—more so than Young's theory as modified by Helmholtz and Maxwell. These two conceptions have been, and still are, widely held. Young's hypothesis has perhaps more adherents, but Hering's influence is still felt in Germany, and his views have many advocates in that country.

Edridge-Green believes that a compound stimulus arises in the retina caused by the action of light upon the visual purple, that this stimulus is transmitted to the brain, and is there sorted out, so to speak, by the ganglion cells set apart for the purpose. Primitive man, it is supposed, possessed no such cell differentiation, but was completely colour-blind, seeing only a monochromatic spectrum. As man developed, red and violet appeared at the extreme ends of the spectrum, but were separated by a broad belt of grey. Green next appeared, and was followed by yellow, blue, and orange. In a few exceptional individuals the power of perceiving indigo was developed. It will be seen at once that this theory belongs to the science of psychology rather than to physiology, chemistry, and physics. For this reason it is difficult either to prove or disprove.

There are, however, objections to Edridge-Green's theory which the author has not yet met. Percival, at a meeting of the Ophthalmological Society on January 28th, 1909, pointed out how difficult it was on that theory to explain the phenomena of the colour equation and of Benham's top. This top consists of a white disc upon which are drawn groups of narrow concentric segments of black circles. When the top is spun greyish rings appear, which become coloured as the speed increases. Variations in the rapidity of rotation cause the colours to change in hue. We doubt whether the explanations given of this phenomenon, either by Edridge-Green or by the supporters of the rival theories, can be considered satisfactory.

Edridge-Green suggests that in the evolution of the colour sense the spectrum began at the extremes, a grey band filling up the central part. One colour was therefore red, orange or yellow, the other blue or violet. But Myers, in his *Experimental Psychology*, points out that primitive peoples have no word for blue and violet. Thus, Homer uses several words for red, one for yellow, ξανθός, but a much less definite word for green, χλωρός. No word is used for blue or brown. The same omission is found in the Zendavesta and the Norse Edda. The conclusion has been drawn that ancient peoples had no perception of the violet end of the spectrum, which developed from the red end to the violet. These views are to some extent supported by a study of the Murray Islanders of Torres Straits, who have no word for blue. Tests made upon these islanders and other aboriginal tribes show that they are less sensitive to blue than civilized races.

We are obliged, then, to conclude that the Edridge-Green hypothesis is still unproven. Like the older hypotheses it fails to account for all the facts; at the same time it is more rational than the crude mechanical explanations of Young and Hering. The mere fact that these two rival hypotheses are both widely held by scientists of repute shows that neither of them completely solves the problem. The essential difference is that Young and Hering placed the sorting out machinery in the eye;

Edridge-Green locates it in the brain. The former see a colour-blind eye, the latter a colour-blind brain. But although we hold that Edridge-Green's theory has not been proved, his methods of testing and detecting colour-blind individuals rest upon a sure foundation of fact. Why, then, have they not been more widely accepted, and why even to-day are they violently opposed? In the first place, probably the author has failed to state his views clearly and concisely, and the majority have found difficulty in appreciating his mode of thought and understanding his argument. In the second place, his view is not the official view. The Royal Society threw its influence against him, and the opinions of pure physicists were officially accepted by the Board of Trade, which for years withstood the evidence of facts. It was not until the evil effects which resulted from the methods of examination founded upon the official theory became glaring that public opinion induced the Board of Trade to appoint a Departmental Committee to examine the tests employed for the detection of colour blindness. The composition of the Committee was criticized on the ground that it consisted largely of strong adherents of the Young-Helmholtz theory, but the report it issued was a practical victory for the methods advocated by Edridge-Green. The Committee advised the use of a lantern, but still retained Holmgren's wool test, a test which has been condemned by practical ophthalmic surgeons all over the world, and especially in Germany. The lantern advised is inefficient because it contains no neutral tint glasses. It cannot exclude the most dangerous type of candidate—the man who has full colour perception, but whose perception spectrum is shortened at the red end. Such an individual sees no light at all in a fog under conditions in which the normal sighted perceives a red light. Imagine the captain of a steamer who cannot see a red light when it is clearly visible to his crew! These cases are being excluded from the royal navy by the Edridge-Green lantern, but they all pass the Board of Trade and railway tests easily. But even the "official lantern" has done good work, and it has shown the utter worthlessness of the wool test, which is nevertheless still retained. In introducing a lantern the Board of Trade introduced the principle that colours must be named. One of the essential demands made by Edridge-Green was that the candidate must name colours, a demand strenuously resisted by the advocates of the antiquated wool test.

The practical problem is simple, although its simplicity has been obscured by the tests used by the Board of Trade. A seaman or an engine driver has to distinguish between yellow (white), red, and green lanterns. He has to name them to himself and say that is red, that is green, or that is yellow. Common sense demands that he shall be tested with a lantern and asked to name the colours shown. If he fail to do so he is unfit for service; his function is not to match hues, so that the wool test has no logical basis, and practically it is a complete failure. It does not detect all the dangerously colour-blind and it rejects colour-blind persons who confuse green and blue but never red and green.

THE NEW ENGLISH LIFE TABLES.

The Registrar-General has now issued life tables for England and Wales based upon the experience of 1901–10. The new issue[1] differs materially from its predecessors, and all the changes are, we think, improvements. The preparation of separate tables for "selected healthy districts" has been abandoned, since the method of selection was arbitrary, but ample compensation is provided by the calculation of several new tables; thus, not only do we have English life tables No. 7 for 1901–10, comparable with No. 6 which related to 1891–1900, but special tables for 1910–12, all males, all females, spinsters (for ages 15 onwards), married women (aged 25 onwards), widows (aged 25 onwards). The tables are the work of Mr. George King, F.I.A., F.F.A., who prefaces them with a luminous introduction which constitutes in effect a short and intelligible treatise upon the construction of life tables. Mr. King explains the method of calculation step by step, provides proofs of the chief formulae, and—a great boon to the non-mathematical reader—arithmetical illustrations of their use, concluding with an account of a short method of constructing abridged tables which will be found to meet most of the requirements of medical officers of health in connexion with life-table work. Treatises and memoirs on the construction of life tables are for the most part so technical that Mr. King's report will supply a widely felt need, and is likely to take its place as a practical introduction to the subject. The notation of the tables has been brought into conformity with that customarily employed by actuaries, a change which will also command approval. With respect to the method of construction, a comparison of observed with expected deaths (p. 16) shows very good results, with the partial exception of age group 4 to 8, where the deviations are large and positive. This was due to the fact that recourse had been had to Lagrange's method of interpolation, with the consequence that too much weight was given to the comparatively heavy mortality at ages 4 and 5. As Mr. King remarks, "it might have been possible to devise some method of interpolation that would avoid this small error, but in practice it is of no importance." If the present tables are compared with No. 6, a remarkable change is noticed. For males aged from 5 to 89 last birthday there would be 217,199 deaths annually according to life table No. 6, 189,109 according to No. 7 (1901–10), and 175,844 according to No. 8 (1910–12), in a population equal to that enumerated in 1911. Thus there are 41,355 lives saved annually in this section of the population by the fall in the rate of mortality which took place between the period 1891 to 1900 and the period 1910-12. The figure in the case of females is 48,562. The improvement in the rate of mortality has been 19.04 per cent. in the case of males, and in that of females 21.96 per cent. In the case of children under 5, a comparison is instituted between the mortality of 1900–2 and of 1910–12. It is found that, according to the rate in the former period, 106,677 male children would die out of what may be taken to be the population of England and Wales in the middle of 1911, while only 79,357 would die according to the mortality of the years 1910–12. This is a saving of 27,320 males annually. The corresponding figure for females is 23,414, and the relative improvements are 25.61 per cent. and 26.19 per cent. These results are very gratifying to all citizens, certainly not least so to members of the profession specially charged with the care of the public health, and a knowledge of the facts will be some consolation in these days of mourning. The Registrar-General and Mr. King are heartily to be congratulated on this addition to a series of publications which has occupied the energies of so many distinguished vital statisticians.

[1] Supplement to the 75th Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales. Part I, Life Tables. Cd. 7512. (9d.)

ZINC IN DRINKING WATER.

The increasing use during recent years of galvanized iron for service supply pipes has rendered the presence of traces of zinc in drinking water a more common occurrence than was formerly the case. There is practically no evidence of harmful results occurring in this country from the use of drinking water containing traces of zinc,

and the presence of traces of zinc in drinking water has received little attention. A series of cases of poisoning thought to be due to zinc in drinking water occurred in the Malay States some years ago, and were reported in this JOURNAL (September 7th, 1901). In these the symptoms were so acute that it is difficult to understand how they could have been caused by the relatively small amounts of zinc found in the water. The symptoms were very suggestive of some bacterial contamination of the water causing enteritis, and this likely cause of the epidemic does not appear to have been excluded. A recent case, the consideration of the Park Prewett Asylum water as regards its fitness for drinking purposes, has raised the question as to the influence of zinc on the potability of a drinking water. The Park Prewett Asylum water was admittedly pure water drawn from a well sunk in the deep chalk. After being drawn up from the well in iron pipes it was distributed to a lodge and certain cottages on the estate. The service supply pipes to the lodge and cottage were of galvanized iron. Numerous analyses were made of samples of the water from the lodge and cottages, and all showed small traces of zinc varying from 0.07 to 0.28 grain per gallon. The mean of nine analyses gave a result of 0.17 grain of zinc per gallon. A number of analyses of different samples of water in Hampshire and Essex (where galvanized iron service pipes were used) were made by Dr. Lyster, medical officer to the county of Hampshire, and Dr. Thresh, medical officer to the county of Essex. It was discovered that in all of these waters traces of zinc were present, and in many of the samples the amounts exceeded those of the Park Prewett Asylum water. The samples taken were from various institutions and sources of supply where the water had been drunk for years without any known ill effect, and the purity of these samples had been unquestioned. In view of the fact that traces of zinc were of common occurrence in the water supplied to houses where galvanized iron pipes were used, and in view also of the fact that there was no definite evidence that traces of zinc corresponding in amount to those found in the Park Prewett Asylum water were injurious to health, the magistrates at Basingstoke decided to grant an order for the occupation of the lodge and cottages of the Park Prewett estate.

SPIRITS AS COLLECTORS FOR HOSPITALS.

WE know nothing of the British Hospital for Nervous Disorders beyond the information supplied at p. 432 in the *Medical Directory* for 1915. The institution is there described as the "Forbes Winslow Memorial," and its local habitation is given as 72, Camden Road, Camden Town, N.W. The members of the medical staff may, for all we know to the contrary, be men of the highest scientific attainments, but we are so unfortunate as not to know anything about them, with the exception of Dr. Stenson Hooker. Although we do not agree with the views of that gentleman on many points, we recognize that he has a right to hold and express his opinions. But if we have no fault to find with the medical staff of the "Forbes Winslow Memorial," we are sorry to see superstition enlisted in the cause of what we presume is a public charity. We should have thought that every conceivable device had been used to collect funds for public institutions, but the committee of the Forbes Winslow Memorial are the first, as far as we know, who have had the idea of utilizing ghosts to "raise the wind" for the benefit of their charity. Sir Victor Horsley has been good enough to forward us a letter addressed to him a week or two ago by a member of the Finance Committee of the hospital. It is there stated that "the Rev. Susannah Harris, whose wonderful psychic gifts enable our departed friends to communicate with us in the direct voice, has kindly offered her services free for the benefit of the British Hospital for Mental Disorders." It is added that Mrs. Forbes Winslow had given the use of her drawing-room for the sitting and that the admission fee was to be 10s. 6d. By way of encouraging the curious people who cannot leave their departed friends in peace it was stated that at a previous sitting the conditions were good. "Sir Alfred Turner had talks with his late wife, Mr. Stead, Archdeacon Coley, and others; Mrs. Forbes Winslow with her husband, who spoke of friends on both sides of life and gave her some valuable advice regarding a legal matter." Tempting as the prospect of holding converse with the egregious patron of "Julia"—who evoked the spirit of Gladstone to ask his opinion of a Budget—Archdeacon Coley and Dr. Forbes Winslow must have been, we are sure that Sir Victor Horsley did not take advantage of the wonderful psychic gift of the Rev. Susannah Harris. For ourselves we happen to regard spiritualism as a vain imagining, holding in it possibilities of mischievous influence on weak minds, and this belief leads us to condemn it most strongly. But even if it be honestly regarded as a form of religion, we think such playing with the supernatural a very undesirable way of raising funds for the benefit of a hospital for the treatment of mental and nervous disorders.

MEDICINE, RELIGION, AND ETHICS.

THE medical or semi-medical articles in the new volume of Dr. Hastings's great undertaking, *The Encyclopaedia of Religion and Ethics*,[1] are fairly numerous. The rubrics in this (the seventh) volume run from *Hymns* to *Liberty*, a fact which would seem to point to the work consisting of not less than fourteen volumes; but possibly the second half of the alphabet may contain fewer subjects calling for lengthy discussion, although this is open to question. At any rate the seventh instalment contains, like its predecessors, more than 900 pages of some 1,500 words each, not counting the numerous small type parts; and the list of authors is equally imposing, containing 183 names, most of them well known amongst the world's writers, and including representatives of many nations (seventeen being Teutonic, three of whom are drawn from Halle, two each from Bonn, Heidelberg, and Breslau, and singletons from Prague, Kiel, Jena, Baden, Würzburg, Budapest, Tübingen, and Munich). The articles which are peculiarly medical are those on hypnotism, hypochondria, hysteria, illegitimacy (including the falling birth-rate), illusion, infancy, inhibition, insanity (an article of eleven pages), and king's evil; but there is scarcely a single contribution which has not a medical side to it, and incubation, kapala-kriya (breaking the head of the corpse), kin, kinship, knots, and all the papers on races and their customs may be named as instances of this penetration of religion and ethics by the healing art. The article on insanity is perhaps the most ambitious of the purely medical ones; it is written by Dr. John Macpherson, Commissioner in Lunacy for Scotland; it is well-balanced and comprehensive. Hysteria, by the same writer, is given far too little space, for surely no one doubts how large a part it has played in certain extravagances of religion or how it may affect ethical problems. Other medical writers are Walter James Dilling, M.B., Julius Jolly, Hon. M.D., William McDougall, M.B., Hamilton Marr, M.D., and W. H. R. Rivers, M.D.

ILLEGIBLE PRESCRIPTIONS.

WE learn from the *Chemist and Druggist* that at a recent meeting of the Western Pharmacists' Association some difference of opinion was expressed as to a statement made by Mr. F. W. Gamble that no prescription should be really illegible to a trained pharmacist. Perhaps not; but Mr. Gamble will surely not deny that some prescriptions are illegible to pharmacists, just as some addresses are illegible to the trained officials at the post office, and as many signatures baffle all endeavours to decipher them. This would seem to be especially the case in France, where

[1] *Encyclopaedia of Religion and Ethics*. Edited by James Hastings, with the assistance of John A. Selbie, M.A., D.D., and Louis H. Gray, M.A., Ph.D. Vol. vii: Hymns—Liberty. Edinburgh: T. and T. Clark. 1914.

signature illisible is a familiar appendix to copies of official documents reproduced in the papers. A "trained pharmacist" has this advantage over ordinary people, that his professional knowledge will often enable him to guess at the meaning of hieroglyphs which convey nothing to other people. Moreover, he is often familiar with the scrawls in which doctors whose prescriptions he is in the habit of dispensing indicate the remedies they wish to administer. In other cases the scientific use of the imagination of the pharmacist may perhaps lead to a correct solution of a problem which at first sight looks hopeless; and it is at any rate conceivable that sometimes he may be driven to interpret the mysterious script in the light of what he thinks the doctor ought to mean. Our contemporary gives an example of a prescription by a panel doctor which might pass for an order of the great Napoleon written on the battlefield in his later days. It is described as a "futurist prescription"; to us it looks like a magic formula in a strange Oriental tongue. The pharmacist—perhaps correctly, at any rate prudently—dispensed a mixture containing a moderate dose of magnesium sulphate. The interpretation was at any rate appropriate to the season. But we would respectfully suggest to doctors, whether on the panel or not, that they should take the trouble to write, if not beautifully, at least legibly enough not to put too great a tax on the ingenuity of those who have to give material form to their therapeutic devices. The popular theory that illegible handwriting is a mark of genius is dangerous if applied in medical practice, and it is a fact that serious and even fatal accidents have been caused by the careless writing of symbols or the misreading of the preparation of an active drug.

The British Medical Association will be delighted to welcome all medical officers of the Overseas contingents to make use of the Library and reading rooms at 429, Strand.

The report of the medical officer to the Local Government Board in England for 1913–14 has been issued (Cd. 7612, price 1s. 11d.). Appended are reports of auxiliary scientific investigations undertaken for the Board by Dr. Andrewes on arterial degeneration, by Dr. Rajchman on the possibilities of serological diagnosis of scarlet-fever, and three by Dr. Blaxall on the preparation and preservation of vaccine lymph.

Mr. Charles E. Hecht (Secretary, National Food Reform Association, 178, St. Stephen's House, Westminster) writes with reference to the notice of *Facts for Patriots* in the Journal of December 26th, 1914: It is not the case that the National Food Reform Association "urges the adoption of a lacto-vegetarian diet." It neither advocates this nor any other form of diet, being undogmatic as it is uncommercial. Its objects were correctly set out by you in your friendly notice of an earlier publication (British Medical Journal, October 2nd, 1909), though, since the Guildhall School conferences, hygiene has been regarded as also within its scope. The policy of the association is that of the committee and members as a whole, and is not dictated by Mr. Eustace Miles or by any one else. We enjoy the support and co-operation of such distinguished members of the medical profession as Sir Lauder Brunton, Dr. Robert Hutchison, Professor Sims Woodhead, the Master of Downing, Dr. Harry Campbell, Dr. Clement Dukes, and Dr. Chalmers Watson. Moreover, in the task of preparing *Facts for Patriots*, the writer had the invaluable encouragement and assistance of the three first named, while among others whose gratifying testimony to its usefulness are prefixed to the little book may be mentioned Professor Noel Paton, Dr. David Forsyth, Dr. T. N. Kelynack, Dr. Ronald Herdman, and Dr. A. E. Carver, as well as a number of well-known cookery teachers and social workers. Recent investigations at York, Edinburgh, Glasgow, and Birmingham all emphasize the need for such teaching of food values and broadening the basis of the diet of the wage-earning class as this publication is primarily designed to assist. I shall be happy to send a copy to any of your readers on the receipt of four penny stamps.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

British Committee.

The British Committee has issued a circular setting out the objects and methods of the Belgian Doctors' and Pharmacists' Relief Fund. The Medical Secretary of the British Medical Association will be glad to supply secretaries of Divisions and Branches with copies enclosed in stamped envelopes for distribution to local members of the profession.

The subscriptions which have been received up to Tuesday evening last by the Honorary Treasurer, Dr. Des Vœux, in addition to £2,505 previously announced, are as follows:

Seventh List.

	£	s.	d.
Dr. E. Kaye-Smith...	3	3	0
Dr. C. P. Handson ...	1	1	0
Dr. E. J. Wood ...	1	1	0
"The Barrhead Medical Men" (per Dr. R. Corbett) ...	5	0	0
Dr. May Thorne ...	2	0	0
H. W. Scott, Esq., Surgeon R.N. ...	2	2	0
Dr. R. O. Moon ...	5	5	0
Dr. Pelham C. Maitland	1	0	0
Dr. Dora E. L. Bunting	1	0	0
Dr. Guy B. Courtney	1	1	0
Dr. H. Cooper Pattin	1	1	0
Mr. Kenneth Scott ...	2	2	0
Dr. E. T. Larkham...	1	1	0
Dr. Bruce C. Kelly...	2	0	0
Messrs. H. Mitchell and Son	0	10	6
Dr. James Green ...	2	2	0
Mr. George Waugh...	5	5	0
Dr. R. Wilde ...	0	10	0
Surgeon-General O'Dwyer, A.M.S....	1	1	0
Dr. T. A. Chapman	2	2	0
Mr. W. H. Vickery...	1	1	0
Dr. Rossiter ...	1	1	0
Mr. Frederic Durham	2	2	0
Dr. South	1	1	0
Mr. Charles Spurrell	2	2	0
Dr. D. H. Forty ...	1	1	0
Dr. H. P. Fairlie ...	5	0	0
Dr. Douglas D. Malpas	2	2	0
Dr. H. L. Ormerod...	3	3	0
Dr. Eliza L. Walker Dunbar	2	2	0
Dr. T. Hammond Williams... ...	2	2	0
Midland Railway Surgeons' Association (per F. W. J. Coaker, Esq., Hon. Treas.)	3	3	0
Consett Division, B.M.A. (per Dr. J. Charles, Hon. Sec.):			
Dr. Thos Grainger.	3	3	0
Dr. Wm. Bratten...	1	1	0
Dr. A. D. M. Macintyre	1	1	0
Dr. J. Murray ...	1	1	0
Dr. W. C. Fraser...	2	2	0
Dr. W. M. Morison	1	1	0
Dr. Alex. Cook ...	1	1	0
Dr. R. E. Ingram-Johnson ...	1	1	0
Dr. E. G. D. Benson	1	1	0
Dr. D. A. Dewar ...	1	1	0
Dr. J. Charles ...	1	1	0
Dr. H. Finzel ...	1	1	0
Dr. Semple... ...	1	1	0
Dr. F. St. John Bullen	5	5	0
Mr. J. P. Ellerington (*La Pharmacie Française*) (third donation)... ...	5	0	0
Dr. Reginald A. Yeld	0	10	0
Canterbury and Faversham Division, B.M.A., second donation (per Mr. Neil Robson, Hon. Sec.)—			
Dr. John Greasley	1	1	0
Dr. S. R. Alexander	1	1	0
Dr. W. M. Scott ...	1	1	0
Dr. F. W. Penfold	1	1	0
Dr. John Watson ...	1	1	0
Dr. A. E. Barclay ...	10	10	0
Shropshire and Mid-Wales Branch, B.M.A., second donation (per Dr. A. G. Mackenzie, Hon. Sec.)—			
Dr. H. G. P. Le Fanu	1	1	0
Dr. J. H. Clark ...	1	1	0
Dr. E. A. Elkington	1	1	0
Mr. Prosper H. Marsden	1	1	0
Mr. H. J. Kluge ...	3	3	0
Messrs. T. and H. Smith, Limited ...	25	0	0
Employees of Messrs. Reynolds and Branson, Limited (per H. S. Sykes, Esq.)	5	5	0
Lieutenant-Colonel Walsh, I.M.S. (by sale of gold medal)	10	10	0
Miss E. M. Ironic ...	2	0	0

Subscriptions to this Fund should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited, and sent to Dr. H. A. Des Vœux, 14, Buckingham Gate, London, S.W.

Instruments.

The Master of the Society of Apothecaries acknowledges the receipt of surgical instruments, etc., kindly contributed by the following gentlemen since the publication of the last list:

Dr. W. F. Gibb, Paisley.
Anonymous.
Dr. Wakefield, Northwood.
Dr. Pickett, Croydon.

Messrs. C. J. Hewlett and Son have drawn up a leaflet on the *British Pharmacopœia*, 1914, showing the additions, omissions, and principal alterations. They are prepared to supply preparations according to the new pharmacopœia if the indication "*B.P.* 1914" is given with the order, and will supply a copy post free to any medical man on a request addressed to them at 35 to 42, Charlotte Street, London, E.C.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

CHARACTER OF RECENT WOUNDS.

ACCORDING to accounts that have appeared in the daily papers most of the fighting in the British section of the allied line during the past fortnight or so has consisted either of duels between opposing batteries of artillery or of isolated conflicts between the occupants of contiguous trenches. In these latter combats the artillery on neither side has been able to interfere, because the trenches lie so close together that there is a danger of injuring one's own men when shelling the trenches of the enemy. In other words, infantry alone has been opposing infantry alone, and often at exceedingly close quarters. This is presumably the reason why the proportion of rifle-bullet wounds to all wounds among the men who reach the advanced base hospitals would seem to have increased.

The nearness of the combatants to one another would seem also to explain the fact that many of these rifle wounds are severe, including gutter and perforating wounds of the skull and fractures of the thighs and upper arms. It is now, of course, fairly well recognized that it is only when fired from a distance of, say, more than 400 yards, that a modern rifle bullet begins to justify to some extent its claim to be regarded as a humanitarian missile. If it hits its mark when travelling at almost its muzzle velocity the force of impact is widely transmitted through the tissues surrounding the line of perforation, and quite a large wound is liable to be caused, even though no bone be shattered. The tissues moreover tend to be temporarily devitalized, and to exhibit little healing power for some days.

The closeness of the fighting does not, however, explain quite satisfactorily why there should have been something like a recrudescence in the number of cases of infection by *B. aërogenes capsulatus*. It may be that some of the newer trenches have been driven through patches of especially highly cultivated soil. Fortunately the virulence of the infection seems less great on the whole than at the time when these cases attracted so much attention. In this respect, however, there are great variations. In one case a day or two ago amputation became imperative within thirty-six hours of the receipt of the wound. In another—a gunshot wound of the tibia and fibula shown me by Major Butler, of No. 13 Stationary Hospital—the virulence was so slight that the nature of the infection would almost certainly have been overlooked at any institution where a constant watch for gas gangrene was not maintained. The smell was fairly characteristic, but there was no glossiness of the skin, and only with the finger of faith could the slightest physical evidence of gas formation be detected. Indeed, not until the bacteriological examination of the case was complete was full assurance felt as to its real nature. It is, however, by no means certain to what extent the quantity of gas formed can be taken as a gauge of the virulence of any particular instance of infection. In fact, the only constant feature of this condition would appear to be the characteristic smell and the presence of *B. aërogenes*. I have heard, for instance, on excellent authority, of one instance in which no gas formation could be detected at all until at the *post-mortem* examination death was found to be due to air embolus of the heart. From another equally well informed observer—a Frenchman—I heard some months ago in Paris of a case in which there was much gas but no gangrene. The appearance of the wound itself scarcely sufficed to distinguish it from a wound healing by second intention on fairly healthy lines; but the smell was present.

BRITISH RED CROSS NURSES.

Shortly before Christmas a moral bombshell fell in the hotels where British Red Cross nurses are quartered in France. A large number of them received notice that their existing engagements would be regarded as at an end on January 1st, though opportunity would be afforded them of re-engaging at half their original salary. Naturally they were much perturbed, their previous belief having been that there was a definite contract between each nurse and the Society, the former engaging to serve, at her own bodily risk and for not less than six months, wherever sent by the Society, and the Society being under an obligation for a like period to provide the nurse, so long as she was of good behaviour, with board, lodging, and a salary of £2 a week. Some of the nurses seemed disposed to contest the right of the Society to alter the terms of their engagements in the summary fashion indicated, but fortunately this proved unnecessary. The authorities of the Society in France considered that whatever its legal position might be, the new terms of employment proposed by head quarters in London for acceptance by the nurses in France, could not in the circumstances justly be enforced. How the nurses would have fared had not this wise view of matters been taken it is difficult to say, for though the general intention of the "contract" on which they were relying seems fairly clear, it is a loosely worded document which, from a legal point of view, probably binds no one to anything. Surmise is, however, superfluous since the incident is now happily at an end; nevertheless its occurrence is to be regretted. At the best of times the British Red Cross nurses in France, as a whole, are not in a very happy position. On various occasions the head quarters of the Society in London have hurriedly sent out a good many more nurses than the number for which the authorities of the Society in France could find employment, and one result among others has been that a considerable number of nurses have had exceedingly little to do during the whole period of their stay in France, and consequently regard their time as having been wasted and their skill as unappreciated.

AMBULANCE BUFFETS.

In the issue of the *Morning Post* for January 2nd I see an appeal for funds, signed by Canon Rawnsley, to enable some ladies in the South of England to start some ambulance buffets in France. "It is notorious," he writes, "that our wounded soldiers who are now being removed to the base hospital are obliged to wait sometimes for hours at the clearing house for trains to convey them to the hospital. This clearing house is generally a station on a railway line, and the only accommodation possible for them is a railway goods shed with abundance of straw to lie upon." There is no place in France under British control, or even used by the British, of which these statements are even remotely true. Such stories must obviously tend to increase the anxieties of those who have friends at the front, and it is a pity to give them currency without full inquiry. It is exceedingly doubtful if there is any place in France at which a fresh ambulance buffet enterprise could now desirably be started. There are those who hold that there are already too many of them; and though I am not in a position to assert that this contention is absolutely true, it is certain that if further funds are to be spent on work of this order they should be disbursed, not by private individuals, but by already existing and properly organized societies.

THE FRENCH RED CROSS.

OUR correspondent in the North of France stated some time ago that the French Red Cross organization consisted of three societies—La Société de Secours aux Blessés Militaires, L'Union des Femmes de France, and l'Association des Femmes Françaises. Though nominally they form one common body, La Croix Rouge Française, there appears to have been a certain amount of rivalry among them, although all are subject to the French War Office. Some statistics of the work of the Société de Secours aux Blessés Militaires, which is the oldest of the organizations, have recently been published. At the beginning of the war this society established 93 dressing stations, 85 dispensaries, and 35 canteens at railway stations. The principal work since undertaken by the society has been the preparation of auxiliary hospitals; it has organized altogether 771, which contain now 56,579 beds. To bring the wounded to these hospitals, however, it possesses only 32 automobiles, which are stationed for the most part at Paris, Amiens, Creil, Rheims, and Furnes.

The Duke of Portland has recently announced that the British Ambulance Committee, in response to an appeal for motors, men, and money, to be devoted to work for the French wounded at the front, has received many motor cars and a sum of £25.000. The first convoy of 25 motor ambulances is on the point of starting, and a second is nearly ready. The Committee has been generously assisted by the British Red Cross Society, and has received the authorization of the French army to work from the firing line to the nearest hospital or railway station. The Société de Secours has expended nearly £350.000 sterling on the provision of hospitals, railway station dispensaries, dressing stations, and in other ways, and has in addition provided large quantities of linen, underclothing, and clothing to the hospitals, and in some cases to the soldiers at the front.

"FROST-BITE."

DR. E. G. FEARNSIDES, Beit Memorial Research Fellow, and Lieutenant MILLAIS CULPIN, F.R.C.S., R.A.M.C., send us the following preliminary note of an investigation of the condition which has come to be known as "frost-bite":

The number of cases diagnosed as "frost-bite" and invalided from the front is sufficient to make the subject important both from the military and the medical point of view. We have had the opportunity of observing such cases in this country only, and several days after onset, but at the front opportunities for their careful investigation are probably limited and progress cannot be followed. The cases which we have seen fall into two definite groups: in the one definite objective manifestations are still present on their arrival, in the other few or no objective signs are found, but the patients complain of many subjective symptoms and to sensory testing show some interference with sensibility over the distal portions of their lower extremities. A few observations are therefore offered as a step towards the proper understanding of the cases thus diagnosed.

In both groups as factors of causation there had been continued exposure, fatigue, lack of sleep, and disorganization of the routine of life; and to general apprehensiveness had been added, owing to the import attached to a word, the fear of a disease new to experience but familiar to imagination. The men were living in deep mud, with an occasional spell of frost and snow. Wet boots were worn continuously for periods up to fourteen days, and several days were passed in the upright or squatting posture with no interval of recumbency. The feet are always affected, the hands rarely, and the manifestations may be divided into objective and subjective.

Objective.

Gangrene necessitating amputation occasionally occurs, but discoloration of the skin and haemorrhages into it are frequent. The hallux has been more often affected than the other toes; the other regions affected are the heels and the pressure points of the base of the hallux and the ball of the little toe. Oedema is often seen; it is greatest where the tissues are lax and is most noteworthy on the dorsum of the foot. Massive peeling and desquamation in flakes are frequent. The nails often show haemorrhages beneath them. When a nail is pressed upon by the neighbouring toe haemorrhage may only occur in the part subjected to pressure. Pigmentation is sometimes found under pressure points.

The extensor tendons of the toes may be taut and the hallux intensely dorsiflexed. Active movements of the toes are frequently limited in range and defective in power. The joints and tendon sheaths are not affected. The knee-jerks, ankle-jerks, and plantar reflexes are always obtainable; occasionally, however, in patients showing a loss of sensibility there may be some difficulty in eliciting the plantar responses.

Subjective.

Spontaneous pains are frequent in the feet and ankles and may occur in the lower portions of the legs; rarely do they extend above the knee. They are described as "shooting," "gnawing," and "aching," and are said to be constantly present, but intensified by movement; yet, when the patient's attention is diverted, he will talk freely and appear at ease. Numbness of the skin and coldness or deadness of the feet are among the frequent symptoms, and many patients describe their sensations as "like walking on their heels."

Accompanying these spontaneous pains and paraesthesiae an alteration in sensibility is common. The alteration may be an excess of reaction to stimuli (hyperaesthesia), a defect of reaction (hypaesthesia), or may even amount to total anaesthesia.

Hyperaesthesia may be so excessive that the patient gives vent to a lively expression of pain when the cotton wool in which the foot is swathed is even lightly touched. In other cases all the usual forms of stimuli used in sensory testing, including the lightest touch with cotton wool, may elicit an expression of pain; this is most common over the distal half of the foot. Passive movements of the toes, in many patients, are said to cause intense pain: the pain is referred over the course of the tendons moving the toes, and in these patients all passive movements of the feet are actively resisted.

In those patients in whom objective signs are scanty, hypaesthesia or even total anaesthesia to all forms of stimuli over some portion of the foot is usually found. When anaesthesia is present the area which is totally anaesthetic, and from which no response to the prick of a pin is elicited, is usually sharply defined, and has a linear upper margin, conforming with the "stocking" or "slipper" area so frequently seen in functional nervous disease. Where hypaesthesia only is found, the patient, whilst able to appreciate that a something has been in contact with the skin over the distal portion of his lower extremity, is unable to tell whether the stimulus applied was a simple contact, a pointed object, painful or painless, large or small, and says that the point of a pin over this area feels "less acute," "less sharp," or "less definite." In these patients showing a diminution in sensibility, the responses to all forms of sensory stimuli—the prick of a pin, pressure, pressure-pain, the light touches with cotton wool, the vibrations of a large tuning-fork, the hot and cold tubes—are affected equally and over identical areas. Yet to any form of stimulus the line of change in sensation is not absolutely fixed, and is usually shifted progressively distalwards during any prolonged examination; a phenomenon which is not seen in peripheral neuritis.

We have found that when objective signs are conspicuous subjective manifestations are slight or absent; and, on the other hand, when objective signs are slight the subjective manifestations are excessive.

With regard to their general behaviour, the patients fall into two groups: The man with definite, or even gross objective, manifestations is placid, attentive, and unperturbed; whilst the second group is made up of men who are "jumpy," inattentive, and emotional.

In the group of patients with gross objective signs, in one case only has amputation been necessary; in the rest, recovery has occurred, or is in progress, under ordinary treatment. In the second group, with subjective manifestations, convalescence is less definite, and in some has already been prolonged over several weeks; this group includes a majority of the cases seen by us.

Conclusions.

We have seen no cases of classical frost-bite, and in no case have we obtained the history of absolute numbness followed by excruciating pains as sensation returns, such as one has heard described by a sufferer from real frost-bite. A patient from whom portions of both feet have been amputated had not removed his boots for fourteen days, and says that during the whole of this time his boots were wet and tight; he was exposed to frost and snow, but other factors which might lead to a stoppage of the circulation in the feet and gangrene were certainly present. Thus we believe that the cases are improperly diagnosed when classed as "frost-bite."

The symptoms in the second group of cases, where objective signs were scanty and subjective manifestations in excess, coincide with a lay conception of "frost-bite," and we believe that in the main these manifestations have a mental origin. Gross alterations in sensibility were found only in this class, and the distribution of the sensory changes was similar to those observed in so-called "hysterical" or "psychical" anaesthesia.

Prophylaxis.

Measures should be taken against the postural causative factor. The long-continued dependent position of the feet should be prevented. All use of the term "frost-bite" or "frozen-feet" should be avoided.

THE WORK OF VOLUNTARY AID DETACHMENTS.

London.

THE social historian who deals with the effects of the war upon the life of the nation will probably ascribe to this period the modification of that attitude of almost exclusive concern with the affairs of the family and the home which has come to be regarded as a distinctive characteristic of the people of this country. Since the war began people in every town and of every class and political or religious creed have come together for various public purposes to an extent never brought about by any other event. Even in the dormitory suburbs of London, where men do not know their neighbours and scarcely the name of the borough or parish in which they reside, exclusiveness has given way before the new spirit of individual concern in national affairs. A study of records of work already done by the Red Cross and St. John Ambulance Societies shows that no small share in this social revolution—for it is scarcely less—is to be attributed to the efforts of these organizations in bringing together people of every class and creed to engage in tasks which do not engender the fires of animosity, but give opportunities for mutual understanding.

Inquiries prosecuted in various parts of London show that under the auspices of the county branch of the British Red Cross Society a spirit of untiring activity in the public good has been aroused to an extent never experienced by those who, armed only with the lever of an ordinary occasion, despaired of getting the unwieldy mass of London to move. The nature of the work that has been, and is being, accomplished deserves to be permanently recorded. It is, perhaps, nowhere better exemplified than in Camberwell—a half-industrial, half-residential suburb with a population of over 250,000. The Camberwell division of the British Red Cross Society had a membership at the outbreak of war of about 180. There was immediately a huge influx—over 1,200 men and women applying to be employed on more or less immediate service. In order to classify these according to their capacities, a series of emergency classes were held and a certificate of efficiency was granted to about 260. The certificate was of no permanent value, but it served to weed out the utterly incapable. Those who gained it practically all joined the various Voluntary Aid Detachments in the division, which worked for the time at double or treble strength until separate detachments could be formed. All the medical practitioners in the division were invited to help in training the recruits and give such services as might be required, and over 40 responded. The borough council placed at the disposal of the division accommodation at the Central Library (which was made the Red Cross head quarters for the district), at the public baths at Dulwich for an 80-bed hospital, and at the South London Fine Art Gallery for a store for Red Cross material. The first task on the mobilization of the division was to make inquiries at 150 public buildings and private halls in the borough to obtain particulars of any likely to be suitable for a hospital, a store, or for nursing quarters. Should necessity arise details can be furnished of accommodation for upwards of 5,000 persons. A squad of women members was appointed to canvass the borough street by street to ask for the gift or loan of articles suitable for hospital purposes. A card system of record was adopted, and the articles promised were collected as required by means of carts, motor vans, and boy scouts' trek carts, all of which were placed at the disposal of the division without charge. About 2,000 requisitions have already been made. To give an instance: On receipt of an application for 12 dustbins and 6 galvanized bins for soiled dressings for No. 1 General Hospital, Camberwell, the dustbins were collected from twelve separate donors and delivered within two hours. Every facility has been given to the chief officers of the various London military hospitals to inspect the stores accumulated and requisition any goods required. When the public was asked to give blankets to meet the emergency needs of the new armies the division collected, sorted, and dispatched several hundreds. The sewing circle expended about £100 in the purchase of materials for clothing and surgical dressings, a gift was received of over 1,000 splints, and the members of the circle padded them all. Under the supervision of a trained nurse large quantities of dressings were made and sterilized under proper supervision. Larger articles and all beds and bedding were sterilized free of charge at the council's disinfector.

On the arrival of Belgian and other war refugees in this country the division was asked to place its services at the disposal of the War Refugees Committee. The Dulwich baths were at once opened as a hostel, the number of beds being increased from 80 to 160. Several private houses were obtained rent free and fitted up as auxiliary hostels. The hostels are staffed and managed by members of the division. At the request of the War Refugees Committee a squad of members has attended regularly at the various London railway termini to meet the refugees allotted to Camberwell. The Camberwell hostels are claimed to be the only ones of the kind in London; through them have passed over 1,500 refugees. Large supplies of clothing for their use have been presented by the inhabitants. Bathing accommodation for the refugees is provided free by the borough council; a local laundry does their washing free; the mangling and ironing is done at the public washhouse by members of the Red Cross detachment in charge. The bulk of the cleaning at the hostels has to be carried out by members of the detachment, as the majority of the refugees only stay a few days, and have not sufficiently recovered from the shock of their experiences to take part in any work. Every Sunday a men's detachment attends the hostel at Dulwich baths and thoroughly scrubs down the wards and performs other rough work. A proportion of the food was supplied for a time from the National Relief Fund; when this assistance was not received, it was found that the cost of food was less than 1s. a day for each adult, and for children under 10 years of age 6d. The mayor has raised one fund locally for Red Cross work; the cost of the food is met from another fund raised in the same way. The division has assumed the supervision of all private hostels opened within its area in order to prevent the issue of bogus appeals for public support.

With all this urgent practical work in hand there has been little opportunity for ordinary Red Cross instruction to be continued, but a limited programme has been carried out. Most of the women's detachments put in one drill a week; twice a week a pharmacist of the men's detachment gives a lecture. The divisional medical officer, Dr. Langford, has arranged a course of lectures on surgical nursing. Every Saturday the men's detachment has a drill followed by a route march to a public open space where a night practice under war conditions takes place. A number of bystanders are pressed into service as "wounded," they are labelled in the usual way and given ten minutes to distribute themselves in various parts of the park, behind bushes, etc. The only lights permitted are matches, cycle lamps, and electric flash lamps. The best qualified person present moves about amongst the parties and criticizes the work as it progresses and on its completion.

In other boroughs also, instances are recorded of a similar spirit of active co-operation between individuals and between public and religious bodies. Practically every borough has had a share in tending Belgian refugees, the numbers handled varying according to the circumstances of the area. The Kensington division divides with the St. John Ambulance Association the responsibility for work at the Territorial encampment at the White City, Shepherd's Bush. It also supplies Red Cross workers for various private hospitals for the wounded. Twenty officers and members of the Paddington division are engaged on special service at a rest station in Boulogne. The Greenwich and Woolwich detachments have been mobilized by the War Office for work at the Royal Herbert Hospital. Battersea has housed many Belgian refugees in premises lent by religious bodies, business firms, and public companies. In every borough routine work on the lines of

that described in detail in the case of Camberwell is being carried on continuously.

All Red Cross work in London is carried out under the control of nurses who have had at least three years' hospital training. The untrained woman member of a Voluntary Aid Detachment—who is now called a woman orderly to make it quite clear that she is not a nurse—is useful in the performance of many tasks for which a training is not necessary. A women's detachment, enrolled under the auspices of the British Red Cross Society or the Order of St. John of Jerusalem, consists of the following: A commandant, who may be of either sex and not necessarily a doctor. If the commandant is not a doctor, a medical officer is attached. There are also a lady superintendent, who must be a trained nurse; one quartermaster, one pharmacist, if available, and twenty women, of whom at least four are qualified as cooks. All must be British subjects, and not under the age of 17. Those now employed have already received certificates in first aid and home nursing; some also in hygiene, and many have undergone long special courses of training. Some have been attached to a hospital for a few weeks to give them some insight into the importance of asepsis and hospital discipline.

MIDDLESEX.

In Middlesex the Territorial Force Association is directly responsible to the War Office for the organization of voluntary aid, and the St. John Ambulance Association is the body through which this work is carried out. The brigade units are registered at the War Office for service with local temporary hospitals for the sick and wounded. Eleven such hospitals are established in the county, as follows: Northwood 20 beds, Eastcote 20, Harrow 40, Hayes 25, Hendon 40, Cricklewood 40, Willesden and Harlesden 40, Southall 100, Winchmore Hill 40, Hornsey 20, and Brondesbury 20. Each works in connexion with one of the large military hospitals. The voluntary aid organization provides for the conversion, equipment, and maintenance of the hospitals; it also supplies the personnel. An important duty falling to the voluntary aid organization is the transport of the sick and wounded, and in this matter the distance from Woolwich to Middlesex is found to cause some difficulties, especially as no fleet of ambulances is regularly at the disposal of the administration. The provision of a small fleet of motor ambulances to serve the eleven hospitals would be a valuable help.

The hospital at Southall was fully described in the last issue of the JOURNAL (p. 38); it may be said of the institutions generally that they have all been inspected by the Assistant Director of Medical Services, and registered. Though comparatively small, the accommodation has proved adequate for requirements. It has been found relatively easy to obtain adequate supplies beyond the War Office grant by interesting local residents in the hospital in their own area, and there is no prospect of any shortage of funds in this respect.

HOME HOSPITALS AND THE WAR.

ROYAL NAVAL HOSPITAL, HASLAR, GOSPORT.

WE are indebted to Deputy Surgeon-General A. Gascoigne Wildey, R.N., for the following notes, forwarded by Surgeon-General J. J. Dennis, M.D., R.N., of wounded under treatment in the Royal Naval Hospital, Haslar:

From the commencement of the war to the middle of December a large number of sick and wounded Belgian soldiers, officers and men, have been under treatment in the Royal Naval Hospital, Haslar, though very few cases of British ratings have been received. Altogether 953 Belgians have found accommodation in the hospital. Of these, 950, received between October 13th and 16th, had been hurriedly dispatched from Antwerp at the time of the bombardment; they arrived in a very exhausted condition. Amongst them were many medical cases and cases of fatigue only. All the wounds had been inflicted several days previously. Some had been treated in hospitals in Antwerp, others by first aid only. The lacerated shell wounds were all suppurating. Compound fractures which had been put up in plaster-of-Paris required immediate attention and the removal of the plaster. In one of these cases gangrene necessitated amputation. As no paper descriptive of the injuries or of the previous treatment accompanied these patients, and as many of them spoke only Flemish, considerable difficulty was experienced in obtaining trustworthy histories.

The majority of the injuries were caused by either rifle or shrapnel bullets, and many were almost healed, but all shell-fragment wounds were suppurating. Other injuries were due to burns from explosions. There were cases of nerve blindness and neurasthenia from shell concussion. Sprains and contusions from falls into trenches, some bayonet wounds, several cases of hernia, and one dog-bite. The medical cases were mostly rheumatism, attributed to remaining in wet trenches.

RIFLE BULLET WOUNDS.

Where bones were not injured the greater number of rifle bullet wounds were comparatively insignificant. The wound of entry was found to have healed by first intention in many instances. Where infection had taken place suppuration was often confined to the first inch or so of the track of the bullet connected with the wounds of entrance and exit. In a large proportion of cases the bullet had failed to penetrate the skin on the opposite side and was found lying quite superficially. In uncomplicated rifle bullet wounds of the soft parts little treatment was required, saline dressings being sufficient. Several cases of extensive comminution of the humerus have terminated quite satisfactorily without removal of any fragments. Extension by weight and pulley has been found the most efficient method of keeping the fractured bone in good position.

Penetrating wounds of the thorax with haemothorax have done well without any surgical interference. A case of biliary fistula healed without operation; a case of bullet wound of the head with hernia cerebri terminated fatally.

In several cases retained bullets, shown by skiagrams to be deeply situated, have not been removed, and are causing no symptoms.

Penetrating Bullet Wound of Thorax.

A Belgian soldier, aged 25, wounded on October 6th, 1914, was received into Haslar Hospital on October 13th. He gave a history of bullet perforating the right side of the thorax. The entrance wound was in the tenth interspace in the mid-scapular line, the exit wound in the third interspace anteriorly. Both wounds were almost healed. The patient appeared very ill, and was with difficulty induced to give any account of himself. The temperature was 101.6°, the pulse 98, and the respirations 24. He complained of slight pain in the chest; from the third interspace downwards there was dullness on percussion, and no breath sounds were audible. Haemothorax was diagnosed. A sterile gauze dressing was applied, and he was kept at rest. Calcium lactate gr.xv was given every four hours for six doses; it was repeated in increased doses on October 27th. The temperature fell to normal during the third week, and the general condition improved and the wounds healed. The physical signs remained the same, and the mental condition was peculiar. He would make no attempt to talk, although physically able to do so.

Bullet Wound: Comminuted Fracture of Thigh.

A Belgian soldier, aged 22, was admitted on October 13th, 1914, with a history of a bullet wound of the left thigh, received four weeks previously. He stated that he was operated upon in Antwerp two weeks after being wounded, and that the left thigh bone was plated.

The wounds in the left thigh led to exposed bone and plates. There was profuse suppuration, and the patient looked extremely ill and much wasted. There was a subcutaneous abscess in the left mammary region at the site of an injection of saline solution. *X* rays showed two long plates holding in excellent position the femur fractured just above the middle third.

The wounds were drained and dressed twice daily with hydrogen peroxide and saline.

On October 26th the patient was anaesthetized for the removal of the plates and for the free opening of the sinuses, but his condition under the anaesthetic forbade the continuance of the operation. The wounds were freely opened, but the plates were not removed. The exploration showed that for a length of 6 in. about the middle of the bone nearly half its circumference was missing. The bone at the seat of fracture was denuded of periosteum and probably necrosed for 1½ in. A counter-opening was made at the back of the thigh. For the next two days the patient was in a precarious state, but under careful treatment his general condition greatly improved. The discharge has very considerably decreased; new bone is forming in quantity about the seat of fracture, the necrosed bone forming an involucrum. Further operative treatment will be required.

Multiple Bullet Wounds.

A Belgian soldier, aged 21, wounded on August 29th, was admitted on October 13th, with the history that he had sustained shrapnel wound of the left wrist causing disorganization of the joint, a bullet wound of the left deltoid region, and a perforating wound of the right thorax. He stated that he had undergone an operation for "abscess of the lung" on September 14th. When admitted he had a suppurating wound of the left wrist-joint. The bullet wound of the left deltoid region was almost healed. Scars of operation wounds on anterior and posterior aspects of the thorax disguised the original wounds of entrance and exit; anteriorly, a sinus in the right sixth interspace in the nipple line was discharging bile, and posteriorly a sinus in the tenth interspace in the mid-scapular line was discharging pus freely. His general condition was fair; the temperature was 102°, the pulse 118, and the respirations 24. The faeces contained bile, and the right side of the chest was dull as high as the third interspace anteriorly and the seventh posteriorly; no breath sounds heard over dull area.

The temperature and pulse remained high, and on exploratory puncture pus was found in the right chest. On October 24th, under local anaesthesia, 2 in. of eighth rib in the posterior axillary space were removed and pus released in quantity. The cavity was drained, and the general and local condition improved rapidly. Bile ceased to be discharged from the sinus, which closed.

Antisepsis vaccine was given. The temperature is now normal, and the deltoid wound healed. The condition of the wrist wound is greatly improved, but may require operative interference.

Bullet Wound of Neck: Injury to Sympathetic Nerve.

A Belgian soldier, aged 21, was wounded on September 12th by a rifle bullet entering a quarter of an inch to the left of the middle line of the neck at the level of the upper rings of the trachea, and passing out at the level of the spine of the left scapula at a point just internal to its vertebral border.

He was admitted on October 13th, having been in three different hospitals in Belgium. The wounds of entry and exit had healed by first intention, appearing as mere puncture scars. There were physical signs of pleural effusion in the left chest; although the area of dullness and absence of breath sounds extended to the fourth intercostal space there was no displacement of the heart. No important structures in the neck were damaged except the recurrent laryngeal nerve and cervical sympathetic nerves. The patient stated that for one week after the injury he could not speak above a whisper; his voice was still very weak. There was pseudoptosis on the affected side; the lid was dropped, its normal rugae absent, and the palpebral fissure narrowed, but the lid could be raised voluntarily completely, that is to say, there was paralysis of the involuntary fibres only. The left pupil was contracted almost to a pin-point; it dilated slightly in the dark, and reacted faintly to light. It reacted perfectly to homatropine, but not at all to cocaine. The conjunctival vessels were slightly dilated. The patient volunteered the statement that the left eye did not water as freely as the right. No difference in temperature or moistness was noted in the two halves of the face, but one-tenth grain of pilocarpine produced a very free flow of sweat from the right half, and a very slight reaction on the left. Tears flowed freely from the right eye, much less freely from the left eye. There was no exophthalmos of the affected side and no unilateral blush, otherwise the signs of unilateral paralysis of the cervical sympathetic nerve were complete.

The effusion in the chest, diagnosed to be a haemothorax, has decreased without special treatment. There has been no change in the cervical sympathetic paralysis. Subsequent experiments with pilocarpine gave the same results, except that there was no lacrymation. It is concluded that the original lacrymation was emotional and not due to the drug.

Bullet Wound, Right Orbit.

On October 1st, near Antwerp, W. W., private, R.N. Sick Berth Reserve, suffered a rifle (?) bullet wound of the right orbit. He received treatment in several hospitals in Belgium.

When admitted there was just below the right upper eyelid, which was uninjured, a deep sinus into the orbit and below a fungating mass above an everted and split lower lid; pus exuded from the sinus. There were no remains of the eyeball. A skiagram showed that the bony parts of the orbit were much disorganized, also some small fragments of metal, and deeper a foreign body resembling a portion of a bullet.

No attempt was made to remove the bullet. Under treatment by boracic acid lavations and dressings the fungating mass eventually disappeared. The lower lid is completely healed and in good position.

Shrapnel Bullet Wounds.

These have occurred in about the same proportion as rifle bullet wounds. Here also the wound of entry frequently healed by first intention. These bullets not infrequently lodge in the bones. They have been removed from the head of the humerus and elsewhere. The wounds they make in soft tissues do not differ from rifle bullets as much as would be expected. The wound of entrance is often extremely small, so that it is with some surprise one finds, with the aid of a skiagram, the presence of a round shrapnel bullet.

Shrapnel Bullet Wound of Abdomen: Resection of Intestine: Bullet Removed Later from the Bladder.

A private of the British Royal Marines received a bullet wound in the right buttock about October 1st, while serving in an armoured motor car in the neighbourhood of Antwerp. He stated that he was operated upon in Antwerp on the same day, and that the surgeon had removed a large portion of the intestine, and had extracted the bullet.

When he was admitted (October 13th), there was a healed bullet wound in the right buttock at a point 2 in. below and to the outer side of the posterior superior spine, and a healing operation wound 6 in. long to the right of the mid-abdominal line below the umbilicus. The general condition was good, and there were no complications. The stitches were removed on October 15th. On October 19th he complained of pain and tenderness to the right of the abdominal wound, and the temperature was 100° F. A small abscess was found in connexion with the lower end of the wound.

On October 23rd the wound was quite clean, but the patient complained of pain at the end of micturition felt above the pubes. At 4 p.m. on October 25th he was seized with severe pain, and strangury, passing a few drops of blood-stained urine every few minutes. Symptoms of irritation of the bladder with blood-stained urine continued for four days. There was difficulty in micturition when in the erect position. He was examined by cystoscope. Some diffuse injection of the trigone was observed, and a puckering or dimpling of the bladder at its apex pointing towards the site of the abdominal wound. No foreign body was seen.

During the night of November 3rd he was suddenly seized with severe pain in the perineum and inability to pass more than a few drops of urine. At 6 a.m. the pain was very severe and the bladder moderately distended. After an injection of morphine a catheter was passed with difficulty, and 4 oz. of urine drawn off. On attempting to pass a catheter an hour or two later a hard foreign body was encountered 6 in. from the meatus, preventing the passage of the instrument. *X* rays showed a circular shadow the size of a shrapnel bullet on the mid line 1 in. below the symphysis pubis.

The urethra was opened on the point of a Wheelhouse staff just anteriorly to the foreign body. On attempting to grasp the foreign body it passed back into the bladder. It was considered inadvisable to attempt to remove through the perineal wound. The bladder was distended and opened suprapubically. A shrapnel bullet was found and extracted; it was smooth, slightly distended, and free from phosphatic deposit. The suprapubic wound was closed around a drainage tube. The perineal wound was closed in layers over a catheter, which was removed. From the first the patient passed water naturally. The drainage tube was removed from the bladder the following day. On November 20th both wounds were healed, and the patient up and about and free from symptoms.

How and when the bullet entered the bladder remains a mystery. It seems scarcely possible it could have escaped observation at the time of the cystoscopy.

Shrapnel Bullet Wound, Left Buttock: Infarction of Lung: Death.

A Belgian soldier, aged 25, wounded by shrapnel bullet in the left buttock on October 3rd, was admitted on October 13th. There was a small, painful wound in the left buttock, but no wound of exit. On October 15th he complained of pain in the chest, but nothing abnormal was found upon examination. On October 18th he had dyspnoea, and some difficulty in moving the legs. On October 22nd he complained of severe pain at the site of the wound, and in the chest on the right side. The breath sounds were inaudible, and there was dullness on percussion. On October 23rd the temperature was 102°, and the pulse 92. The *x* rays showed a shrapnel bullet in the left ilium, near the sacro-iliac synchondrosis.

On October 27th a shrapnel bullet was removed from the ilium after gouging out some bone. On November 1st the discharge from the wound was profuse, the temperature 105°, the pulse 120, and the respirations 36. On November 3rd percussion was impaired, the breath sounds at the right base behind suggesting embolus. On November 5th friction sounds were heard in the right mid-axillary line. The discharge from the wound was profuse and chocolate-coloured. On the following day there was abdominal distension, and on November 7th jaundice and delirium. He died at 2.55 p.m. on November 8th. *Post mortem* examination showed large haemorrhagic infarction of the right lung.

Shrapnel Wounds: Amputation through Left Thigh.

A Belgian military student, wounded by shrapnel (?) bullets in both legs on September 28th. The right tibia and fibula were badly comminuted at the lower third, and a bullet wound of the left thigh.

When admitted, on October 13th, the right leg was encased in plaster-of-Paris with a window. There was extensive suppuration and sloughing of tissues. The bullet was retained in the left thigh; the wound was healed. The temperature was 99.4°, and the pulse 92, of very poor quality. He was examined under an anaesthetic on October 14th. When the plaster was removed, the limb was found to be gangrenous, and amputation was performed at the junction of the lower and middle thirds by circular method. His progress after the operation was uneventful.

Wounds by Fragments of Shells or Mines.

The lacerated wounds from shell fragments were all septic. There were no means of ascertaining what early treatment had been employed. Most of these cases did quite well when cleaned with hydrogen peroxide and dressed with saline solution. Shell wounds about the shoulder were the most troublesome of the less severe injuries to limbs. Even when the bone was not affected suppuration was extensive, burrowing in unexpected directions. In these cases the most efficient treatment was to lay open widely the whole cavity, stuff it with gauze and iodoform emulsion and allow it to heal from the depths.

Shell Wound: Multiple Injuries: Amputation of Right Arm.

D. M., aged 36 (A.B., R.N.R.), was wounded by an explosive shell in the right arm and right leg. The right arm was amputated through the middle of the humerus on board the ss. *Carmania*. When admitted, on October 31st, the stump of the right arm was healed. The wound of entry of the fragment of shell in the leg was on the outer side of the knee-joint, the wound of exit was at the lower border of the popliteal space; the wounds were suppurating. A skiagram showed comminuted fractures of the external condyle of the femur and of the upper end of tibia and fibula, and several pieces of metal behind the femur. There was total paralysis of the peroneal muscles and of the extensor muscles of the right foot, and anaesthesia of the skin over the greater part of dorsum of foot, with patches of hyperaesthesia.

The wound of the outer side of the knee was explored on November 14th, and all comminuted pieces of bone removed. The external semilunar cartilage was found partially detached and was removed, a counter incision was made on the inner side of the joint. The joint cavity was found to be almost obliterated by adhesions; a rubber drain was passed between the wounds. The cavity left by the removal of bone was packed with gauze soaked in iodoform emulsion.

After the operation the acute pain which previously attended any movement of the leg completely disappeared. The cavity has been daily packed with gauze and iodoform emulsion, and is now rapidly granulating. No pus has formed in the wound since the operation, and the patient's general condition is improving rapidly.

Explosion Wounds from Mechanical Mine (Marine): Multiple Injuries: Evulsion of Astragalus.

A. B., aged 35, was injured on September 3rd, when on board H.M.S. *Speedy*, by the explosion of a mechanical mine. He was hurled from the ship, rescued from the sea, and about twelve hours later was treated on board the hospital yacht *Albion*. He had experienced a compound fracture of the left ankle, with partial evulsion of the astragalus and comminuted fractures of the left tibia and fibula in the upper third. In the hospital yacht the astragalus was removed and the lacerated tissues trimmed. When admitted to Haslar, on September 12th, the wounds on the external and internal aspects of the ankle-joint were suppurating, the leg bones were badly displaced, and he was suffering from nervous shock, manifesting itself in dreams repeating his experiences at the time of the explosion.

The wounds were treated with hydrogen peroxide and saline solution, and the sloughs rapidly separated; the tendon of the tibialis posticus sloughed. No extension could be fixed to the limb that would in any way reduce the fracture. On December 4th, the wounds being completely healed, the fractured tibia was plated in the upper middle third with a six-hole plate. The bone ends were found to be densely indurated. They were trimmed, removing as little bone as possible to refresh the surface. The fragments were drilled in several places in their long axes through the hardened bone until healthy bone tissue was reached previously to applying the plate.

The operation wound healed by first intention. He has good prospect of a fairly useful limb.

Explosion Wounds from Mechanical Mine (Marine): Multiple Injuries: Amputation through Right Thigh: Dislocation of Right Leg: Enucleation of Right Eye.

F. L., aged 31, was injured by the explosion of a mechanical mine which sank H.M.S. *Speedy* at 10 a.m. on September 3rd. He was hurled into the air and fell into the sea, regaining consciousness as he fell. On attempting to swim he found both legs powerless and his right eye blinded with blood. He was picked up ten minutes later, and received first aid shortly after. At 11.30 p.m. he was transferred to the hospital yacht *Albion* in a condition of profound shock. He was found to have received the following injuries:—*Right Leg:* Compound fracture of upper end of tibia and lower end of femur, with complete disorganization of the knee-joint. Lacerated wound above ankle. *Left Leg:* Dislocation backwards of knee-joint, absence of circulation, and disordered sensation of foot. Extensive ecchymosis of whole of outer side of limb. *Right Eye:* Almost complete absence of vision: punctured wound of sclerotic of outer side; lacerated wound of eyebrow.

The immediate treatment on board the *Albion* consisted of the administration of anti-shock remedies and injections of morphine, atropine and strychnine, and subcutaneous salines. On the following day amputation was performed at the junction of the lower and middle thirds of the right thigh. Efforts were made to keep up the circulation in the left leg, and by September 11th the circulation was completely restored, and the patient's general condition good.

When admitted to Haslar Hospital, on September 12th, the wound of the face was nearly healed, but there were suppurating sinuses in the stump of the right thigh, backward displacement of left leg, oedema of the foot, and loss of sensation over the lower two inches of the leg above the ankle. The right eye was injected, and there was haemorrhage into vitreous.

The sinuses in the stump healed quickly under simple dressings. The irritation of the eye subsided, but complete blindness remained from opacity of the lens. *X* rays showed no foreign body. Later the eye was enucleated and found to contain a small piece of glass. *X*-ray examination of the knee-joint showed fracture of the spines of tibia; the dislocation was partially reduced, and this was followed by improved sensation in the leg. Later, the tendo Achillis was divided and a better position of the foot obtained.

Burns.

Some severe burns of the head from shell explosion were received. They made good recoveries under simple saline dressings.

Amaurosis: Aphasia.

Cases due to explosion, concussion, or possibly from shell flash; of blindness, apparently complete, but without any abnormal condition of the fundus or any lesions of the cornea and media, have been received. Photophobia was present, and neurasthenic symptoms are evident in some cases. The condition is bilateral and not to be compared with amaurosis following injuries to the orbital margin and consequent damage to the optic nerve in its foramen.

One case of loss of speech following shell concussion was admitted. The patient was neurasthenic.

Arterio-venous Wounds.

One case of aneurysmal varix of the popliteal vessels was received. It was treated successfully by ligature of vessels above and below and excision of sac.

CASUALTIES IN THE MEDICAL SERVICES.

Royal Navy.

Killed.

The year 1915 opened badly, with the loss of the *Formidable*, a pre-Dreadnought battleship of 15,000 tons, which was sunk in the Channel, blown up by a mine or torpedo, in the early morning of January 1st, with great loss of life. Out of a complement of about 800 only about 200 have been saved. Captain Arthur N. Loxley, the commander, and all three of the medical officers, are among those lost.

Fleet Surgeon Godfrey Taylor was educated at Trinity College, Dublin, where he took the B.A. in 1895, and the M.B., Ch.B., and B.A.O. in 1897. After acting as resident medical officer of the City of Dublin Hospital he entered the navy, and attained the rank of Fleet Surgeon on November 29th, 1913, shortly after joining his ship on October 1st, 1913.

Surgeon William Mellis Mearns was educated at Aberdeen, where he took the M.B. and Ch.B. in 1908; he entered the navy on November 6th, 1908, and joined the ship on July 29th last.

Surgeon Septimus Hibbert, R.N.V.R., was educated at Oxford and at St. George's Hospital. He took the M.A., M.B., and B.Ch. at Oxford in 1913, and joined the Royal Naval Volunteer Reserve on August 14th, 1913. He joined the *Formidable* on July 29th, 1914.

Army.

Died of Wounds.

The death from wounds received in action of Lieutenant William Ebenezer Maitland, Seaforth Highlanders, is announced. He was educated at Glasgow University, where he took the M.B. and Ch.B. in 1913, and was acting as house-physician in Glasgow Royal Infirmary when he resigned on the outbreak of the war to take a commission as Second Lieutenant in the Third Battalion of the Seaforth Highlanders from August 15th, 1914.

NOTES.

Health of the Troops.

The health of the British troops in France and Belgium continues to be very good, even surprisingly so, for there are very few cases of pneumonia and practically none of

rheumatic fever; yet the troops are on a waterlogged clay soil, with water standing in the fields. The freedom from typhoid fever is probably to be attributed in part to the efficacy of antityphoid inoculation and in part to the persistent search for typhoid carriers.

Field Motor Ambulance Columns.

The motor ambulance column which the St. John's Committee of the Indian Soldiers' Fund has just completed for the Indian troops will provide for the collection of the wounded from points near the firing line and their conveyance to the nearest clearing station. It is similar to the ambulance column accepted by the War Office from Mr. Arthur du Cros, M.P., which reached the British lines at the time that the Prussian Guard made its great attack; fifty ambulances then worked for forty-three hours consecutively, and carried 1,200 wounded. About 15,000 cases have been dealt with up to the present time. The War Office recognizes these ambulance columns as military units; the whole of the personnel is enlisted under the Army Service Corps (mechanical transport department), and the officers are commissioned in the army in the usual way. On arrival at the front the ambulance column is attached to the R.A.M.C. and supplied with bearers and medical necessaries. A third ambulance column is now being raised for the Overseas Expeditionary Force.

The first column sent out contained 50 ambulances; that for the Indian troops consists of 39 motor ambulances, 25 being Panhards and 14 Crossleys (the latter presented by the British Red Cross Society and the Order of St. John), 4 officers' cars, 2 workshop vans, 3 vans for carrying medical stores and comforts, and 7 motor cycles. The Overseas column will consist of 41 ambulance and other vehicles, and 10 motor cycles. The ambulance vehicles are of specially light construction with reinforced springs, and can be driven over fields and rough ground. All spare parts are interchangeable, so that they can be repaired from the travelling workshops. The cost of a single ambulance, built to the design approved by the War Office, is about £300.

Hospitals for French Lines of Communication.

The sanction of the French War Office has been obtained for the organization by a committee in England of hospitals to be placed on the French lines of communication, with the object of affording facilities for the performance of operations on the more urgent cases, and avoiding the delay entailed by the journey to a base hospital. The present suggestion is that there should be from thirty to fifty beds in each hospital, and that the staff should consist of experts only—surgeons, fully trained nurses and stretcher-bearers, with motor drivers and a household staff. The scheme is promoted by Miss Eden, honorary secretary of the National Union of Trained Nurses, 39, Great Smith Street, London, S.W., who is appealing for a sum of £5,000, towards which about £1,100 had been obtained by the end of the year. The scheme when complete will, it is stated, be submitted for the approval of the Anglo-French Hospitals Committee formed by the British Red Cross Society and the Order of St. John.

Convalescent Beds at San Remo.

Dr. W. G. Brett (Villa Lamberti, San Remo) writes as follows: I wish to bring to the notice of medical officers in charge of sick or wounded officers of the army or navy that, through the kindness of Miss Jekyll, Superintendent of the San Remo Nursing and Convalescent Home, 5 beds in this home have been placed at the disposal of the War Office and British Red Cross Society for the reception of officers during convalescence free of all cost, and including nursing, massage, and electricity. Also that Mr. Hugh K. Brodie of La Guardiole, San Remo, has very kindly offered to the British Red Cross Society the use of a furnished villa for the reception of 5 convalescing officers. For obvious reasons it is desirous that only those cases which are most likely to benefit from the sunshine of this dry and stimulating climate should be recommended. As honorary medical officer I shall be obliged if reports be sent with each case when possible.

For the information of friends wishing to accompany any convalescent, I may mention that all the hotels and pensions, except the German ones, are open, that the journey from Paris to San Remo by the 8.5 p.m. train from the Gare de Lyon (restaurant and sleeping car attached) now takes less than twenty-four hours, and that there are no vexatious restrictions or delays.

Particulars of cases and applications should be sent to the British Red Cross Society's head quarters.

Hospital for Indian Troops.

We were in error in stating that the hospital for Indian troops established in hotels at Balmer Lawn and Forest Park had been entirely discontinued. It is still retained for a reduced number of patients, and contained a little over 200 at the beginning of this week.

Medical Treatment of Men in the New Armies.

We have recently received letters from medical men in various parts of the country expressing a strong opinion that the medical arrangements for the treatment of at least minor ailments of men in camp in this country are inadequate and in other respects unsatisfactory. This is a matter of first-rate importance, to which public attention should be directed. We would ask our correspondents, however, carefully to distinguish between Territorial Forces and the new armies, commonly called Kitchener's armies. We are aware that raisers of units not yet recognized by the War Office may have considerable difficulties to encounter, but so soon as the units are taken over by the War Office these difficulties ought to cease. We propose to deal with the subject more fully in a later issue.

Medical Officers Wanted.

The Hospital of the Alliance, Yvetot.

The Hospital of the Alliance, established by American and British subscribers at Yvetot, near Rouen, is in need of a physician willing to give his services for a period of at least three months; all out-of-pocket expenses will be met.

This hospital will provide 400 beds for French and British wounded and sick. It will probably receive more of the former than of the latter, but fifty beds will be kept at the disposal of the British authorities. It is established in a seminary, and the alterations necessary to convert the building to meet all modern hospital requirements are so far advanced that it will be ready to receive patients early next week. It is under the control of the French military authorities, and is officially known as Hôpital Militaire, 41 bis, Yvetot, Seine Inférieure. The surgeons to the hospital are Mr. Dudley Wright, F.R.C.S., and Mr. Penrose Williams, F.R.C.S. The hospital has a well-equipped clinical laboratory and an *x*-ray department, with an efficient staff. Any physician willing to give his services may communicate in the first place with the Editor of the British Medical Journal.

1st London Division, T.F.

There are vacancies for several medical officers in the field ambulances of the 1st London Division, T.F. These units are now training at their war stations. The rank and file are of exceptionally good quality. Officers must be duly qualified and registered medical men. Applications should be made by letter or in person to Colonel J. Harper, A.D.M.S., 1st London Division, T.F., Head Quarters, Lea, Crowborough, Sussex, and will receive an immediate reply.

1st, 2nd, and 3rd London (City of London) Field Ambulances.

Medical officers are urgently required at once for imperial and home service in the 1st, 2nd, and 3rd London (City of London) Field Ambulances. Applications should be made at once to the O.C. Dépôt R.A.M.C., 1st London Division T.F., Duke of York's Head Quarters, Chelsea, S.W. (entrance from Turks Row Gate).

1st (R.) East Anglian Field Ambulance.

Two vacancies for medical officers in the 1st (R.) East Anglian Field Ambulance are announced in our advertisement columns. Preference will be given to candidates undertaking to serve abroad. Applications should be addressed to Major Francis Ward at the head quarters, 38, New Road, Peterborough.

2nd Northumbrian Field Ambulance (Reserve).

As announced in our advertisement columns, officers are required in this reserve unit to complete staff and to supply drafts to replace casualties in the foreign service unit about to proceed to the front. Particulars can be obtained on application to Captain A. C. H. McCullagh, The Workhouse, Gateshead-on-Tyne.

3rd Welsh Reserve Field Ambulance.

Officers are still required for the 3rd Welsh Reserve Field Ambulance. The total pay for lieutenants is 19s. per diem. Applications should be addressed to the Officer Commanding, Captain E. Brice, R.A.M.C.(T.), the Drill Hall, Swansea.

North Midland Reserve Division.

We are requested to state that the North Midland *Reserve* Division of the Territorial Force (which includes the counties of Lincoln, Stafford, Leicester, Nottingham, Derby and Rutland) requires some medical officers. Any doctor wishing to join should communicate with Colonel Astley V. Clarke, A.D.M.S., North Midland Division, T.F., 13, Magazine Square, Leicester.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

ROYAL INFIRMARY OF EDINBURGH.

On Monday, January 4th, 1915, the managers of the Royal Infirmary of Edinburgh presented their annual report to the Court of Contributors. As was to be expected, the two main matters in it were the influence of the Insurance Act and the effect of the war. With regard to the former, it was reported that for the twelve months ending December 14th last 48.14 per cent. of the total number of in-patients and 32.89 per cent. of the out-patients belonged to the insured class. Details regarding the large amount of assistance which the institution was thus giving to the working of the Insurance Act had been sent to the various approved societies (over 300 in number), but the replies had been disappointing both in number and in tone; most of the societies gave reasons for delaying the consideration of the matter, some expressed sympathy, and only one—the Scottish Miners' Federation Friendly Society—gave a definite promise to make a contribution whenever possible. The managers repeat their statement of last year—namely, that no claims had ever been made for any share of the sickness benefit of insured persons having no dependants who had been treated in the Royal Infirmary, and that no agreements had been entered into with any of the approved societies for that purpose. A gratifying incident, however, fell to be related—since the close of the financial year under review a donation of £104 12s. had been received through the Burgh of Edinburgh Panel Committee, being a percentage voluntarily subscribed from the shares of a large number of insurance medical practitioners on the Edinburgh Panel of the unallocated funds for 1913 distributed among them.

With respect to the influence which the war had had upon the working of the institution, it was reported that the naval and military authorities had asked for the assistance of the managers in the treatment of their sick and wounded, and it had been felt that it would be the wish of the subscribers that the advantages of the hospital should be placed as fully as possible at the service of the defenders of the country, while preserving the interests of the civil population. Accordingly two spare wards were opened at once for the purpose, and extra beds had been introduced temporarily whenever this had been possible; the managers had thus been able to render valuable assistance to the two services. The assistance thus given had been warmly acknowledged by the authorities, but it had necessitated an immediate increase in the nursing staff, and new quarters had had to be found for the extra nurses. This difficulty had, however, been got over by providing accommodation outside the hospital but in its immediate neighbourhood.

Several other matters are dealt with in the report to which attention has already been drawn in this JOURNAL, as for instance, Professor Wyllie's retirement from the acting staff and his election to the roll of consultants, and the presentation of rubber flooring for the entrance hall and main surgical corridor by the Rubber Growers' Association.[1] The total number of patients treated in the wards during the twelve months from October 1st, 1913, to October 1st, 1914, was 12,818, and of these 890 died, 7,809 were cured, 3,144 were relieved, 225 were discharged on other grounds, and 750 were still under treatment on October 1st, 1914. Of these patients 4,286 were medical and 7,782 were surgical. There was an increase of 304 as compared with the previous twelve months, but there was a decrease in the average daily number of patients. The average time each patient was under treatment was 23.6 days, against 24.7 days in the previous year; but the period of residence varied much with the side of the hospital in which the patient was, thus in the medical wards it was 32.5 days, in the surgical 19.1, and in the lock wards 14.8 days. Of the 11,988 patients who entered the hospital between October 1st, 1913, and the corresponding date in 1914, Edinburgh furnished 5,279, Leith sent 479, and the country 6,230. Of the deaths, 199 took place within forty-eight hours after admission, indicating a degree of hopelessness from the first; if these were deducted the percentage of deaths to cases treated was 5.4, whilst if they were retained it was 6.9. The out-patients during the twelve months numbered 37,897. The total ordinary income for the year was £36,332 16s., an increase of £299 7s. 2d. over that of the preceding period; the ordinary expenditure was £60,490 7s. 3d., or an excess of £24,157 11s. 3s. over income. The extraordinary income was over £30,000, part of which was used to meet the deficit, and part to meet the extraordinary expenditure, which included the cost of new tubular boilers, of radium, of alterations in the west medical theatre, of furnishings for new quarters for nurses, of alterations at the pathological department, and of alterations and equipment at the medical electrical department. The total number of patients admitted into the convalescent home at Murrayfield during the year was 1,240. The only death in the medical staff during the year was that of that of Dr. L. C. Peel Ritchie, assistant surgeon; he was accidentally drowned in Granton Harbour in September, 1914.[2] The cost per occupied bed was £71 8s. 4d., against £65 19s. 7d. in the previous year, and the managers anticipated a further rise to nearly £75 in the coming one.

Lord Provost Inches, who presided, mentioned a fact not referred to in the report—namely, that the superintendent, Sir Joseph Fayrer, had been relieved of his duties at the infirmary in order that he might take charge of the 2nd Scottish General Hospital at Craigleith, and that Dr. McKenzie Johnston had been appointed interim superintendent.

According to custom, the managers' report was remitted to a committee of contributors for consideration. The report of this committee will be considered at a meeting on January 18th.

VICTORIA HOSPITAL, DISPENSARY, AND FARM COLONY.

The first annual report on these institutions presented by Sir Robert W. Philip to the Public Health Committee of the City of Edinburgh shows that the war has not caused any marked disturbance, save in the case of the Royal Victoria Hospital, which has been placed at the disposal of the military authorities. In the Dispensary and Farm Colony the work has proceeded normally.

Sir Robert lays it down that the functions of a tuberculosis dispensary are to serve as: (1) Receiving house and centre for diagnosis; (2) clearing house and centre of observation; (3) centre for curative treatment; (4) centre for the examination of "contacts"; (5) centre for "after-care"; and (6) information bureau and educational centre. The accommodation and arrangements of the city dispensary are excellently arranged to fulfil these functions, and the medical and nursing staff have undertaken a large amount of work under the several heads. The value of the systematic activity of the dispensary is illustrated by the statistical reports appended, which contain a summary of work undertaken by the dispensary from the date of its foundation in 1887 down to the end of August, 1914. These statistics take note of the frequent occurrence of tuberculosis in certain areas and streets. The work of the dispensary as a centre for "after-care" should, he says, be extended. When a case of tuberculosis has been brought to the knowledge of the authorities, its further course should be followed and duly recorded from time to time for a sufficiently long period. The *x*-ray department, under the care of Dr. Edmund Price, has done good work. The farm colony is designed to meet the case of tuberculous patients who, after the disease has been almost or completely arrested at the sanatorium, remain liable to relapse. For such persons return to their original avocations is apt to entail recurrence of disease, and consequent disappointment and economic waste. They require more prolonged care and guidance than can be given at the sanatorium. The results obtained since the opening of the colony have demonstrated the value of such an institution; of eighty-eight persons transferred to the colony, all, with very few exceptions, during the year's residence have not only recovered from the disease, but have been restored to a high state of working activity. In most cases excellent situations have been found for them prior to their discharge from the colony.

[1] BRITISH MEDICAL JOURNAL, September 12th, 1914, p. 483.

[2] BRITISH MEDICAL JOURNAL, October 3rd, 1914, p. 607.

Canada.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

RECIPROCITY IN MEDICINE.

THE question of medical reciprocity between Great Britain and the provinces of Canada has been much debated of late, particularly in Ontario. Cases have arisen during the present war in which it has been impossible for the War Office to accept the proferred services of medical men from Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia, these provinces having entered upon no reciprocal arrangement with the mother country. This applies to military surgeons who have offered their services direct to the War Office and not to those who accompany the Canadian Expeditionary Forces. In 1906 the Laurie amendment was passed by the Imperial Parliament, by which medical reciprocity was offered to the provinces of Canada—that is, licentiates of the provinces of Canada would be admitted to the British *Register* provided that British licentiates could register in the province in question. The agreement was accepted by Nova Scotia in 1907, by Quebec in 1909, and later by New Brunswick and Prince Edward Island. The arrangement has worked satisfactorily, but in Ontario and in the West conditions are somewhat different. Some years ago reciprocity was in force between Ontario and Great Britain, but was abrogated by the former on the ground that abuses had arisen. It was alleged that students who were unable to pass the Ontario examinations took out British qualifications and thus evaded the requirements of their own Council. A reciprocal arrangement, of course, would not necessarily entail a repetition of these abuses, and many are strongly in favour of such an agreement. On October 23rd the following resolution was adopted unanimously by the Medical Faculty of Queen's University, Kingston:

> Whereas a number of physicians registered in Ontario have volunteered for Imperial Army Medical Service and have not been accepted because the Ontario qualification is not recognized in Great Britian, resolved that in the opinion of the Medical Faculty of Queen's University the time is opportune to establish reciprocal relations between the General Medical Council of Great Britain and the Medical Council of Ontario, and resolved that the Faculty suggest to the officers and executive of the Ontario Medical Council that a special meeting of the Council be held at the earliest possible moment to deal with this important matter.

HEALTH AND SANITATION IN ONTARIO.

A new code of regulations for the medical inspection of schools in the province of Ontario has been issued by the Department of Education. The regulations provide for the organization of a system of medical inspection by one or more school boards, with power to appoint a qualified medical inspector of not less than two years' experience, who will be subject to the school inspector or principal. Authority is also given to the Board to appoint one or more nurses of not less than two years' experience in nursing. In rural sections inspection must be made once every three months, in villages once a month, in towns every two weeks, and in cities once a week. A complete physical examination must be made of every pupil as soon as possible after admission to the school; a thorough examination of heart and lungs is to be made only by permission or in the presence of the parent or guardian. If considered necessary, a physical examination of the teacher or janitor may be ordered. In cases of emergency a school medical officer may render first aid but may not prescribe. The school inspector is to assist in organizing special classes, and preparing the syllabuses authorized for subnormal pupils. Medical officers must report either to their chief or to the school board at least once a month, and a general report must be submitted at the close of each year.

In future slaughter-houses will be under the direct regulation and inspection of the provincial government. The plans and specifications for buildings intended for this purpose must be approved by the provincial board. Moreover, it will be the duty of the provincial authorities to see that each abattoir is supplied with efficient lighting and ventilation; that the ceilings, walls, floors, approaches, and platforms are kept clean; that the instruments are thoroughly cleansed each time they are used, and that no workman affected with a communicable disease is employed in any department where carcasses are dressed or handled. The slaughter of unhealthy animals or the sale of meat unfit for food is made an indictable offence, and the local health officers or sanitary inspectors are empowered to enter any slaughter-house for the purpose of inspection.

PREVALENCE OF INFECTIOUS DISEASE.

Reports from various parts of the country would seem to indicate that the measures taken for the prevention of infectious disease—typhoid in particular—have been to some extent effectual. There has been a good deal of scarlet fever during the past year, and at present it is reported to be particularly prevalent in Cape Breton County, Nova Scotia, where the disease has assumed a severe form and several deaths have occurred. The cases of diphtheria also have been unusually numerous, both in the east and west. Cases of small-pox continue to crop up here and there, and minor epidemics of typhoid are reported from time to time; for instance, at Aylmer, in the province of Quebec, there were recently reported over 100 cases. The source of infection was found to lie in the water supply, which came from the Ottawa river; this was chlorinated, and the number of cases immediately began to decrease.

MATRICULATION STANDARD IN MANITOBA.

The standard of the medical matriculation examination has been raised by the faculty of the Manitoba Medical College. Beginning with the session 1915–16, the standing of students must be equivalent to that of the first year in the science course at Manitoba University. Thus medical matriculation in Manitoba now consists of a junior matriculation divided into part 1 and part 2, which really coincide with the old junior and senior matriculation, and a senior matriculation which is the same as the first year science examination. It is probable that in a few years the matriculation standard will again be raised. There are 176 students in medicine this session; the freshman class numbers 40, including 4 women. Several members of the teaching staff and a number of students have joined the first and second contingent of the Overseas Expeditionary Force.

Correspondence.

THEORIES OF COLOUR VISION.

SIR,—I am much indebted to Mr. Devereux Marshall not only for his kind remarks concerning me but also for the very thorough manner in which he has made himself acquainted with the subject. Unfortunately the physiology of vision and colour vision is in a state of chaos at the present time, misstatement and theory, and particularly German theory (opposed to fact), are given instead of fact. This state of affairs is due to the very defective state of scientific method of the present time. The official scientific methods favour incompetence and ignorance, and are opposed to the progress of science. It is necessary for me to support such a sweeping statement, and I do so in the hope that it may lead to an alteration in the present state of affairs. The official methods of dealing with scientific papers and facts are the referee system and the appointment of scientific committees.

In the referee system, a scientific paper intended for publication is sent to a referee, who decides on its merit. If rejected, neither the communicator nor the author of the paper is told the reason of its rejection.

It is extremely difficult to select an efficient referee. It is not of much use to send the paper to a man who knows nothing about the subject, whereas if sent to a worker on the same subject the paper may entirely upset that worker's views, and he may for that reason alone reject it. The present state of things may be entirely remedied if a report giving the reason of the rejection were sent at least to the communicator of the paper. It would not be necessary that the referee's name should be mentioned, but the author of the paper could then have an opportunity of replying; and if the objection were one of fact, the question of the correctness of the observation could be submitted for demonstration and discussion to the

special scientific society under whose province it came, as, for instance, a physiological fact for the Physiological Society, a physical fact for the Physical Society, etc.

The second official method is that of the appointment of scientific committees. If these committees really did their work in a scientific manner, the results would be very valuable: but when the committee will only take the evidence of witnesses, and will not examine essential facts, the only result is to set back the subject for a number of years, and to ruin the career of the man who has discovered the new facts. This attitude, which is unfortunately so common, of expressing a strong opinion whilst refusing to look at the facts, is not only unscientific, but brings discredit not only on the academic individual who evolves his science from his inner consciousness, but upon the real scientific worker who does his work with the most punctilious and conscientious accuracy.

I have to thank Dr. Percival for his kind remarks, but, as Mr. Devereux Marshall states, I have experienced the greatest difficulty in getting the simplest facts accepted. When I started the subject of colour vision I drew up a list of predictions, which ought to be facts if my theory were the correct solution of colour vision. Now, all these predictions have been fulfilled and are found to be actual facts, which are inconceivable on any other theory. My opponents adopted the simple method of denying the facts and refusing to allow any demonstration, and, when Germans had rediscovered the facts, either attributing their discovery to them or appropriating them without acknowledgement. Dr. Percival states that I have not been able to bring forward a satisfactory explanation of the facts of colour mixing and Benham's top. I would like him to point out in what way the explanations I have given are not satisfactory. Now, the trichromatic theory does not give a satisfactory explanation of why red and green, when mixed, should make yellow and not red-green, which several other theories do. According to my theory, yellow is a colour which in the course of development has replaced the red-green of a previous state, therefore red and green, when mixed, should make yellow, the colour which has replaced the red-green of a previous stage of development. Now, if this explanation be the true one, there ought to be cases in which the yellow of the spectrum is seen as red-green, and there are; these are the trichromic cases of colour blindness.

I strongly resent Dr. Percival's imputation with regard to the Benham top. I was not present at the meeting, and did not hear his paper—a fact which he alludes to in a subsequent correspondence. I saw Dr. Percival before the meeting, and he did not tell me he was going to criticize my views. When I heard that he had, I sent a letter to the *Ophthalmoscope*, giving a simple explanation of the phenomenon which is in accordance with other physiological facts. I think it would have been fairer if Dr. Percival had pointed out in what way my explanations were not satisfactory to him.

Though I consider that my theories of vision and colour vision are actual facts, I have never taken exception to any one not accepting them as such, but I do take exception to any one stating in the most dogmatic manner that a fact cannot be true whilst refusing to allow it to be demonstrated. When I have heard any adverse criticism it has nearly always been the denial of an easily demonstrated fact, as, for instance, that a colour blind person can pass the wool test. The actual fact is that over 50 per cent. of dangerous cases can pass the wool test even in its most improved form.

In the number of *Science Progress* for January, 1915, I have reviewed the whole subject of colour vision and its theories, including the theory of vision.—I am, etc.,

London, N.W., Jan. 4th. F. W. EDRIDGE-GREEN.

THE CHANNELS OF INFECTION IN POLIOMYELITIS.

SIR,—In a recent article,[1] I dealt with what appear to me to be the three chief methods of conveyance of infection, namely:

1. By direct contact with a sufferer or a human carrier.
2. By an insect carrier. There is a good deal of evidence inculpating the stable fly (*Stomoxys calcitrans*).
3. Infected dust.

The last-named is, I think, rare—but the second, in my experience, probably accounts for a large percentage, thus confirming the observations of Rosenau and P. B. Roth.

The suggestion expressed in your editorial in the BRITISH MEDICAL JOURNAL of December 12th, that in all probability the organism responsible for poliomyelitis exists usually in saprophytic form, it may be on the mucous surfaces of many persons, is an opinion so much in accord with my own reasonings that I have no hesitation in supporting it. It may also exist in stable manure, or in the salivary glands of *Stomoxys calcitrans*, and acquire pathogenicity when injected into the blood or lymphatics of a susceptible person through the ant-like proboscis of the *Stomoxys*. In five recent cases of poliomyelitis which I have investigated cowsheds or stables were within 10 to 50 yards of the infected cottages in five different parishes, and I have found specimens of *Stomoxys* in the cottages, and a history in two cases of the child having complained of "biting" by flies.

Since stable and cowshed refuse is, as a rule, very infrequently removed in rural districts, the *Stomoxys* has favourable conditions of existence as compared with urban areas; and I have ventured to suggest this as an explanation of the disease being more a rural than an urban disease.

If infection from mucous membranes of sufferers or "carriers" were the more common channel, the disease ought surely to be commoner in towns than in sparsely-populated rural areas.

For these reasons I suggest that the *Stomoxys* is probably the chief carrier of infection, Anderson and Frost having supplied direct experimental evidence that this fly does carry infection.

Assuming this inculpation of *Stomoxys calcitrans* to be correct, certain methods of prevention by sanitary authorities are obvious which should materially lessen the incidence of this cruel disease.—I am, etc.,

J. T. C. NASH, M.D., D.P.H.,
County Medical Officer of Health and
Norwich, Dec. 14th, 1914. School Medical Officer.

[1] *Public Health*, December, 1914.

SANITATION IN INDIA.

SIR,—Your correspondent of December 19th, 1914, with so representative a *nom de plume* as I.M.S., instead of attacking my main subject as to "the position of sanitation in the administration of India," applies to certain co-related statements the criticism "hardly correct." I fail to see that this strategic "nibbling" has resulted in weakening, in the slightest degree, the accuracy of my facts, or their application to my arguments.

"I.M.S." defends the present Director-General from an imaginary personal attack. The following is my sole reference to that officer in the paper above mentioned, and my allusion is still more brief in my letter to you of September 26th, 1914:

> As a result, at a time when the Panama Canal will inevitably lead to greater international treatment of sanitation, the Member for Education decides the sanitary policy of India, the Director-General of the Indian Medical Service, an officer ordinarily promoted from the selected list of lieutenant-colonels (solely of the Bengal Establishment) for his ability in curative medicine, dictates the policy of its adviser in preventive medicine, and indicates the direction sanitary research should take.

As a matter of courtesy, I purposely referred to him as the holder of an official post and not by name. I treated not of the man but of measures sanctioned by the Government of India, which undoubtedly have added to the existing discontent of the Indian Medical Service, and which will have their influence on its fate long after the present incumbent has (officially) disappeared.

The capability of Sir Pardey Lukis to fulfil brilliantly the function for which he was selected—that of Director-General—is not, and was not, open to question. Your correspondent, however, whilst thinking it necessary to enlarge upon that officer's professional qualifications as a physician and surgeon, states his selection had "probably more to do with his having been Principal of the Calcutta College," which, he maintains, is an "administrative as

well as a professional appointment." Except that "I.M.S." is absolutely wrong, in an official sense, in asserting that the appointment of a principal is "administrative," there is no objection to his emendation. But, as when the promotion of this officer was made in 1909, the question as to his taking charge of the then separate Sanitary Commissionership could not have arisen, as Lieutenant-Colonel Leslie was still alive, my suggestion that he was not selected with a view to the sanitary exigencies of the Government of India remains correct. I did not "object," as "I.M.S." states, to the monopoly of the Director-Generalship by the Bengal establishment, which, according to him, is unauthorized by any ruling. The allusion made in the above quotation from my paper merely emphasized the difficulty caused by such restriction of numbers of eligible officers in securing in future, as a type of present-day science, an individual who is at once an expert physician and sanitarian.

As "I.M.S." admits that "a branch dealing with preventive medicine, or sanitation, has gradually developed, and to some extent has split off from the general profession," it is not evident why he should think it "curious" that I fail to see if, for example, a man has distinguished himself in gynaecology, he should be specially fitted to guide the sanitary policy affecting 244 millions of people. The Indian Plague Commission of 1898 presumably had much the same curious views; they stated that "the office of the Sanitary Commissioner should not be held as at present in conjunction with the Director-Generalship of the Indian Medical Service."[1]

The rest of the letter by "I.M.S." might well have been prepared for the mystification of the notorious cold weather globe-trotter, Mr. Paget, M.P. He states that from 1880 up to the appointment of Lieutenant-Colonel Leslie in 1904 the Surgeon-General with the Government of India (now Director-General) being both Surgeon-General and Sanitary Commissioner, "there could be no doubt that the Sanitary Department was *under his orders*."[2] Without taxing your space as to the somewhat intricate relation of the head of the Indian Medical Service to officers in so-called "permanent civil" and military employ, the following official orders issued before and subsequent to 1880 should suffice to prove the statement is incorrect, unless the term "Sanitary Department" be confused with the clerical staff of the office of the Surgeon-General: The Government of Madras, relying upon a Government of India communication, in G. O. Pub. No. 64, dated June 15th, 1875, thus stated their policy:

> Local Sanitary Commissioners are entirely subordinate to Local Governments and to no other authorities.

The Government of India's letter, No. 228 (Home Department), of 1886, dated June 4th, states:

> In all Provinces for which a separate Sanitary Commissioner is sanctioned the Sanitary Department *will remain distinct from and not subordinate to the Medical Department*, and, in selection for such posts, knowledge and experience as a sanitary officer will be specially considered.

"I.M.S." would disarm criticism as to subordination of the Sanitary Commissioner's policy to the dictates of the Director-General, by stating that the Sanitary Commissioner "appears to have powers to put forward any sanitary policy which recommends itself to him." Certainly, the Sanitary Commissioner may amuse himself by "putting forward" as many schemes affecting personnel, funds, or policy as he likes; but so long as the Resolution of the Government of India of August 19th, 1912, gives the overlordship to the Director-General, these need never go further "forward" than the pigeon-holes of the Director-General's office. He is, however, generously permitted to address the Government of India in "technical" matters—that is, for instance, without running the risk of the "machtpolitik" of his superior officer, he may suggest a new mosquito trap. It is also true the Sanitary Commissioner sits on a committee which disposes of funds for research, and may vote, if he dare, against the officer to whom he is now definitely subordinate in his sanitary functions. Obviously, such a position must be just as helpful in getting his own opinions adopted as when he suggests schemes affecting administrative details.—I am, etc.,

W. G. KING, Colonel, I.M.S. (ret.).

Hatch End, Middlesex, Dec. 28th, 1914.

[1] BRITISH MEDICAL JOURNAL, 1911, p. 1295.
[2] Italics not in original.

ARTIFICIAL PNEUMOTHORAX.

SIR,—The letter in the last issue of the JOURNAL from Dr. Vere Pearson on the article on artificial pneumothorax, by Dr. Woodcock and Dr. Clark, contains some remarks which must have occurred to many readers of the article. I should have thought that the type of case which would be selected as most suitable for artificial pneumothorax would be the case of fairly extensive disease, limited to one lung (or at least with only slight mischief in the other lung), which showed no sign of improvement under ordinary sanatorium treatment. No special mention of this type of case is made by Drs. Woodcock and Clark.

"Early cases with localized unilateral disease" and "few constitutional symptoms" should surely be treated on ordinary lines, when in many such cases arrest of the disease may be expected. Bilateral disease must in any case gravely influence the decision as to the advisability of producing a pneumothorax, but in "severe bilateral cases, with much constitutional disturbance, offering no hope of cure by ordinary methods of treatment," surely to induce a pneumothorax would be simply to hasten the end.

The methods employed by Drs. Woodcock and Clark with early unilateral cases are also open to criticism. Why subject the patient to four sittings, involving a puncture at each, when one, or at most two, would be sufficient? At the second sitting we are told that a Saugman's needle is actually introduced successfully into the pleural cavity, yet it is removed without having introduced any gas; at the third "meeting" a "small amount of gas is introduced," and apparently it is not until the fourth sitting that the operation is completed. The amazing statement that 30 c.cm. of nitrogen may safely be introduced, even though the position of the needle is in doubt, and the manometer not be oscillating freely, because "the entry of this small amount of gas will not cause embolism," must have surprised many others besides Dr. Vere Pearson.—I am, etc.,

January 6th. E. WEATHERHEAD, M.B.

THE TREATMENT OF WOUNDS.

SIR,—Colonel Maynard involuntarily misrepresents me because he has evidently not seen the whole correspondence on this subject.

My position is that every case should be dealt with on its merits and not by routine; that septically infected and severely contused wounds must be thoroughly disinfected in accordance with Lister's teaching—namely, by non-slough-producing agencies (that is, solutions of phenol and not the pure acid), and I showed that Sir R. J. Godlee had misstated Lister's views and principles respecting the use of pure carbolic acid.

Colonel Maynard's statement that though tetanus is prevalent in Calcutta he is in the habit of using pure liquid carbolic acid because he cannot obtain from his hospital authorities antitetanic serum for prophylactic use is as "terrible" an indictment of disregard of human life as any yet published. Fortunately we hear that at the front our wounded receive a prophylactic injection and that the septically infected wounds are freely disinfected with non-slough-producing agents, and especially anti-anaërobes, such as hydrogen peroxide.

I am glad to see Sir Mackenzie Davidson advocating the greater use of Professor Bell's telephonic probe. I agree with him that it is a valuable help and precludes unnecessary incisions and dissection. The most handy form of it, however, is Girdner's. I do not know if it is made here (I bought mine in New York in 1889); but the only practical point about it is that the "active" electrode is simply a metal bulb, which is placed in the patient's mouth, instead of the moistened plate on the skin.—I am, etc.,

London, W., Jan. 4th. VICTOR HORSLEY.

SIR,—The evidence in favour of using pure carbolic acid for the immediate disinfection of, as a preventive, lacerated wounds amongst our soldiers at the front, both against tetanus and severe sepsis, steadily accumulates. Tincture of iodine has proved a broken reed. Carbolic acid has not only stood the test as a preventive, but has been shown to have curative properties against tetanus. The objection to diluted carbolic acid, even when mixed with double cyanide of zinc and mercury, is that it cannot be relied upon to destroy tetanus spores which abound in the soil of Flanders. The so-called "escharotic" properties of liquid phenol are, to my mind, inconsiderable and are

easily outweighed by its other valuable properties, not least of which is its analgesic power.

The practical question is, How can the application of phenol to wounds be carried out actually in the field or trench? The protected swabs which I described in a recent issue of the BRITISH MEDICAL JOURNAL seemed simple enough, but perhaps even a less cumbersome plan may be the clothed glass capsule idea as advocated by Dr. Campbell Highet[1] for a weaker antiseptic solution. I should, however, suggest that in order to avoid soiling the fingers with the acid (which should be kept as much as possible from contact with the skin) one end of the gauze cover surrounding the glass capsule of pure carbolic acid should be secured to a small wooden skewer, which would serve as a "handle" to the swab. (The glass capsule would be broken inside its gauze cover before removing the impervious paper outer covering, and the gauze swab, saturated with pure liquid phenol, is then ready for use.) Messrs. Allen and Hanburys are making some of these swabs for me, and I shall be pleased to present some of them for actual trial at the front.

Another matter to which I wish to draw attention is the provision of an efficient anodyne, as well as an antiseptic, in the first field dressing of every soldier. I understand that in the German army every man is so provided. If this be the case, I cannot believe that we as a nation desire to be less thoughtful for our men, or less humanitarian than the Germans. The best anodyne, in my experience, is a combination of morphine sulphate, $\frac{1}{4}$ to $\frac{1}{6}$ grain, and hyoscine hydrobromide, $\frac{1}{200}$ grain, given hypodermically. Here again the practical difficulty arises of providing each man with a hypodermic needle and solution. This difficulty is, I consider, admirably solved by the use of Messrs. Allen and Hanburys' "hyposols"—sealed glass capsules containing a sterile solution of the desired drugs in the required dose and a wad. This is readily converted into an efficient impromptu hypodermic syringe by breaking off the drawn-out ends of the capsule; a small metallic stem fits into the end adjoining the wad and acts as the piston of the syringe, and a steel hypodermic needle (kept aseptically in another sealed glass tube) fits on to the other end, and completes the syringe, which can be made ready for use in less than a minute. It is, indeed, a triumph of forethought and ingenuity, and, as the cost is small, it should be at the disposal of our suffering heroes.—I am, etc.,

P. R. COOPER, M.D., B.Sc.Lond., F.R.C.S.Eng.

Altrincham, Jan. 3rd.

X RAYS IN THE DIAGNOSIS OF GUNSHOT WOUNDS OF THE LUNGS.

SIR,—In your issue of January 2nd (p. 36), where wounds of the chest are under discussion, I was rather surprised not to notice any reference to the assistance afforded by x rays in clearing up a doubtful diagnosis.

If the patient can be examined sitting upright, a screen being used, fluid can be seen as a horizontal line which alters its level as the patient is moved. Even if too viscid to show immediate movement, blood or pus will generally assume the characteristic horizontal line if the patient is kept upright for a few minutes.

On the other hand, in some cases in which fluid is suspected, the lung is found to show only some general lack of brightness when examined. Such cases are, of course, too ill to admit of being moved. Fortunately, however, they generally like to be propped up in bed as much as possible, and a large radiograph taken by a ward apparatus will often show the characteristic appearance of fluid, or definitely prove its absence. A pneumothorax produces a very striking picture.

X-ray investigation is not recommended as a substitute for clinical examination, but as an adjunct to it. In many instances in this hospital it has been the deciding factor for or against operation. Many patients are plainly doing well; others just as obviously require surgical aid. But there are numerous borderline cases when the diagnostic help afforded by skiagraphy and fluoroscopy is invaluable. I am, etc.,

F. HERNAMAN-JOHNSON.

Cambridge Hospital, Aldershot, Jan. 4th.

POPULAR FREUDISM.

SIR,—It requires a considerable amount of courage, not to say temerity, to enter a field of battle in which Dr. Mercier is one of the combatants on the opposite side, more especially when one realizes and fully admits the great services he has rendered to psychology and psychological medicine. Dr. Mercier writes of the absurdity of "unconscious consciousness." He attributes the words to me, though I did not use them. I suppose he argues as follows: Mind is consciousness; therefore unconscious mind is unconscious consciousness. It depends, however, on the definition of the word mind, and no two psychologists agree on a definition. We do know that certain states, presumably mental and apparently unconscious, affect the consciousness. Dr. Mercier's letter is an example. In discussing Freud he brings in the names of Krafft-Ebing, Hegel, Nietzsche, Bethmann-Hollweg, Kraepelin, and the Kaiser, clearly showing that an anti-German bias influences his judgement of Freud. It would be an insult to the clever logician we know Dr. Mercier to be to suggest that he consciously allowed himself to be affected in this manner. We therefore say it was unconscious. The theory of the unconscious assists in systematizing many facts, and has proved its usefulness. I do not pretend to be an expert on Freud, who, after all, is not a German, but is of Jewish extraction, and lectures in Vienna; but I do plead for a greater study of those phenomena which are at present included under the heading of the "unconscious."—I am, etc.,

R. H. STEEN.

City of London Mental Hospital, Dartford, Jan. 4th.

SIR,—Before replying to the pieces of Dr. Selfe Bennett's rather confused letter that apply to myself, I feel that I must thank him for his startling compliment in comparing me to St. Paul.

The nomenclature of science has many instances of what, in ordinary language, would be a contradiction in terms, and some of these are, I am sure, used by Dr. Selfe Bennett himself without a qualm. The first word in this connexion that comes into my mind is the word "atom." The meaning of this word is "that which cannot be cut." Yet an atom is regarded as having weight and extension, and it is therefore inconceivable that it could not be cut. The word, however, has a perfectly definite technical meaning, and it represents a fact.

With regard to Dr. Selfe Bennett's other point, that "history shows that no fraud or imposture is too crude to lead astray the multitude if only it be advocated with sufficient insistence and impudence," I would submit that what I asked for was further investigation into the subject, that I suggested that there was chaff as well as grain, and that it would be well to sift them, whereas his sweeping remark begs the whole question. I would remind him that out of certain semi-fraudulent proceedings truth has come—chemistry out of alchemy, astronomy out of astrology—and as he is of a theological turn of mind, I would recommend him to read again the words which the learned Gamaliel said on the subject of stamping out new ideas.

The real sin which Freud has committed is, that when he found that a certain phenomenon occurred sometimes, he said it occurred always. What we want to know is the proportion of times in which it occurs.

To be mentioned by Dr. Mercier is like being mentioned in *Punch*. To that no one can object or reply. Why should anyone answer Dr. Mercier—the writer of the comic column in the BRITISH MEDICAL JOURNAL?—I am, etc.,

T. A. ROSS.

Ventnor, Jan. 2nd.

SIR,—In order to understand how the Germanic obsession has held a majority of our profession in thrall for so many years, a rough contrast of the British and German temperaments is useful.

We tend to take people at their own valuation; we are in the main somewhat modest, and we have a certain sense of humour. The Teuton, being in his own opinion the apotheosis of intellect, naturally does not consider the other person's point of view at all; he is, of course, consciously unconscious of the fact, or unconsciously conscious, one or the other. Again, that weapon, most essential to the armamentarium of the ancient wizard and present-day charlatan, qualified or not—namely, a certain air of ponderous secretiveness and impressive solemnity, which could only exist in a nature lacking to a very considerable degree a proper appreciation of the humorous. This characteristic flourishes exceedingly on Teutonic soil.

[1] BRITISH MEDICAL JOURNAL, December 26th, 1914.

The difference between the two temperaments is strikingly epitomized by the songs the soldiers are singing, the response to "Deutschland uber alles" being "Tipperary." The majority of our own nationality therefore being—what Carlyle delicately hinted at—easily impressed, it naturally becomes a ready prey to the imposing Teuton.

Well, Sir, I think even Dr. Mercier will agree that now, at any rate, this Teutonic temperament has given us something new in the domain of psychology—namely, the spectacle of a whole nation suffering from a form of systematized delusional insanity, to which, in their own inimitable, hypermethodical, cannot-see-the-wood-for-the-trees manner, they have given the name of *Kultur*. The prognosis and proper treatment of this condition we all know, and from the letters already published it is a relief to see that at last such a course of treatment is in process of adoption amongst ourselves. It is being carried out in a more active fashion abroad.—I am, etc.,

Stafford, Jan. 4th. B. H. SHAW.

SIR,—Dr. Mercier rejoins that rational argument is wasted on those who differ from him on Freudism. But this is no justification for appealing to the prejudice of those who are still open to conviction. Since, however, he has elected to follow this course, your readers are left the choice on the one hand of inferring the value he sets on his arguments, on the other of appreciating the compliment he pays to their intelligence.—I am, etc.,

London, W., Jan. 5th. DAVID FORSYTH.

ALCOHOL AND THE WAR.

SIR,—I should like to draw the attention of the profession to the second resolution moved at the meeting at Caxton Hall by Sir Thomas Barlow (reported in the JOURNAL on November 21st, 1914), calling upon all classes to help the empire in its great struggle by becoming total abstainers for, at least, the duration of the war.

The temperance question is no mere case of personal betterment; it is one of supreme national concern. If it is bad for the soldiers to drink, it is equally bad for the civilian, and indeed, in some respects worse, because, how any one can selfishly indulge himself with alcohol and then acquiesce in urging what we all know, namely, that the best shot, the most enduring, the least complaining soldier is the total abstainer, passes all understanding. Yet that is what is going on now, and will continue until every man in the nation realizes that, since he owes to his country his resources and his services, whether he is in civilian life or in one of the Forces, it his duty to economize those resources by ceasing to squander his money on his pleasures, and it is his duty to make his own work as efficient as he can, and that is only done by avoiding alcohol.

Let us, therefore, instead of merely asking our soldiers to practise self-restraint and total abstinence, begin ourselves by taking the pledge for the sake of our country. That is the just and patriotic idea of the Archbishop of Canterbury. Surely the medical profession, more than any other, should help it forward, and every one set an example personally to his fellow citizens.—I am, etc.,

Birmingham, Jan. 4th. J. FURNEAUX JORDAN.

THE STOPPAGE OF ALCOHOL IN DELIRIUM TREMENS.

SIR,—It gives me great pleasure to see that Dr. J. C. McWalter has called attention to the error in your review on Dr. Mercier's work on *Insanity*, and to find that at last it has definitely been laid down by such an authority, that delirium tremens is frequently directly brought about by the sudden withdrawal of alcohol, and that many cases may be, and indeed are, successfully aborted by the judicious use of alcohol, even when symptoms have begun to show themselves. Not having yet read Dr. Mercier's book, I am unable to say whether or not he says so, but it is nevertheless a fact that a skilful tapering-off of the daily drink-ration in the treatment of chronic alcoholism is an almost certain safeguard against delirium tremens, which the sudden suppression of all alcohol in such cases is extremely liable to result in, even if strong sedation is resorted to, in the occurrence of it. I have stated this and very emphatically in my book[1] published last year, Dr. Francis Hare in his,[2] and neither of us arrived at our conclusions without abundant clinical evidence.

In my opinion one of the greatest causes, indeed the cause, of the not few cases of delirium tremens that we see in hospitals, following upon an injury to a man who, though he may be sober at the time of injury (many are drunk), shows signs of being a heavy drinker, and will, if questioned, admit to taking a good deal, though probably less than he actually does, is the sudden and complete withdrawal of all alcohol immediately on admission. I had my suspicions of this twenty-five years ago as house-surgeon in a London hospital. My twelve years of experience of the treatment of inebriety in a special sanatorium has convinced me that those suspicions were justified. In the interest of these unfortunate patients, many of whom go under when their injuries, often comparatively trivial, are complicated by an attack of delirium tremens, it is high time that the part played by the sudden suppression of alcohol in persons who are drunkards, and in persons who, while not actually in the common acceptation of the word drunkards, but very heavy chronic drinkers, should be better understood, and that the teaching of old text-books should be revised on this subject.—I am, etc.,

J. W. ASTLEY COOPER,
Medical Superintendent, Ghyllwoods Sanatorium,
January 4th. near Cockermouth.

SIR,—I have for some years past had the opportunity of studying the treatment of alcoholism as carried out at the Norwood Sanatorium. Dr. Francis Hare, the able superintendent, has conclusively shown that an attack of delirium tremens may be precipitated by suddenly cutting off the patient's alcohol; and further, that it is unwise entirely to withhold alcohol during the attack.—I am, etc.,

London, W., Jan. 3rd. HARRY CAMPBELL.

URETERIC CATHETERS.

SIR,—I trust that you will not consider me hypersensitive if I venture to reply to an inquiry contained in your very kind and carefully considered review of my book on genito-urinary surgery. The sentence runs as follows: "It would be pertinent to inquire why the ureteric catheter now generally made by instrument makers is described in the figure as the 'author's catheter.'"

During 1905 and 1906 the ureteric catheters sold in London were exclusively of foreign manufacture, being imported from Paris and Berlin. At that time I was pursuing work on the renal function, which afterwards appeared in the form of Hunterian Lectures (1907), and I entered into communication with catheter makers in Paris with the object of getting certain modifications carried out. The French firm, however, professed themselves satisfied with their article, and I approached Mr. J. H. Montague, 69, New Bond Street, W., with the idea of having catheters made in this country. He took endless pains in the matter, and after a number of trials a catheter, modified in the following points, was evolved: It was cut obliquely at the outer end, without the trumpet-end then commonly supplied, the object being to allow the catheter to slip out of the tunnel on withdrawing the cystoscope, and at the same time permit the easy entrance of the point of a fine-nozzle syringe into the lumen of the catheter. It was marked in half inches instead of centimetres, and at each six inches a narrow distinguishing band was added. Certain other points, such as a long gutter leading to the eye, and the use of Albarran's bulbous thickening below the eye to prevent leakage alongside of the catheter, were dropped as experience dictated, and the colour—at first black and yellow—was changed to black and brown, with red half-foot markings.

This catheter is at present sold by most instrument makers, but it is not, as your reviewer states, "generally made by instrument makers." The manufacture of ureteric catheters in this country is in the hands of one or two firms who supply them to the instrument makers.

I was unaware of any one else in this country working at the subject at that time, and the makers of the catheter did not produce the instrument on their own initiative. I therefore ventured to designate the article "author's catheter," under the impression that I had influenced its evolution in the manner indicated.

I trust this somewhat lengthy explanation may satisfy your reviewer that the claim was not made in haphazard fashion. In any case, I remain very deeply in his debt for his careful and indulgent review of the book.—I am, etc.

London, W., Jan. 5th. J. W. THOMSON WALKER.

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[1] *Pathological Inebriety, its Causes and Treatment.* Baillière, Tindall and Co.
[2] *Alcoholism.* Dr. Francis Hare. Churchill.

Obituary.

THOMAS BRYANT, F.R.C.S.,

CONSULTING SURGEON TO GUY'S HOSPITAL; SERGEANT-SURGEON TO H.M. QUEEN VICTORIA; SURGEON IN ORDINARY TO H.M. KING EDWARD VII.

WITH the last week of the fateful year 1914 there passed away Thomas Bryant, the veteran of Guy's Hospital, famed as an operating surgeon, as a teacher in one of the largest schools in London, and as the author of a deservedly popular textbook, and the advocate of torsion as the best haemostatic.

The father of Thomas Bryant was Dr. T. Egerton Bryant, president in 1837 of the Medical Society of London, and Fothergillian Gold Medallist a year earlier. Dr. Egerton Bryant was in practice in the south of London when Thomas Bryant was born there on May 26th, 1828.

The father was acquainted with Sir Astley Cooper, whom the son remembered well. Thomas Bryant received his general education at King's College, and entered Guy's Hospital Medical School as a student in 1846. He obtained the diploma of M.R.C.S. in 1849 and that of Fellow in 1853. In 1857 he was appointed assistant surgeon to Guy's Hospital and it was not till the following year (1858) that he entered into the duties of his first teaching appointment as lecturer on clinical surgery. In 1871 he was made full surgeon and lecturer on surgery, and filled these appointments until his retirement in 1888, when he was elected consulting surgeon to Guy's Hospital.

Thomas Bryant was an excellent surgeon, very particular about the choice and the special advantages of instruments used in general surgery. When in his prime there was much discussion and experiment in relation to the question of haemostasis without ligatures. Charrière, in 1858, introduced his catch forceps with the lock and rings of scissors, devised both for dressing and for haemostasis by torsion, and two or three years earlier Webber had invented an anti-ligature forceps, which, however, never came into wide employment. Koeberlé, a pupil of Spencer Wells, made use of Charrière's forceps for forcipressure, maintained for several hours or days, in 1862, and continued the practice till 1867, when he removed the pressure forceps at the end of the operation or earlier, as is now the almost universal practice. Péan, in 1867, and Wells, about 1872, brought forcipressure into general use. In that year Bryant's *Practice of Surgery* first appeared, and the author strongly advocated torsion, figuring the instrument still known as Bryant's forceps. Thus the instrument was made known two years before the publication in the JOURNAL, vol. ii, 1874, p. 47, of the instrument usually described in makers' lists as "Wells's forceps." In 1874, however, the latter was used as much or more for torsion as for forcipressure, though on the other hand we must remember that it was first made for Spencer Wells in 1872, the year that Bryant's textbook first appeared. Bryant devised many other instruments generally known to British surgeons, but it is in his principles and practice of haemostasis that he played the part by which he most deserves to be remembered in the history of surgery in the nineteenth century. He maintained to the last his preference for torsion as a surgical haemostatic, laying much stress in the fourth edition of his textbook on the fact that in 200 consecutive cases of amputation of the thigh, leg, arm, and forearm, in all of which the arteries had been twisted, there had been no secondary haemorrhage. In no fewer than 110 it was the femoral artery that had been treated by torsion. He was among the first of London surgeons to undertake ovariotomy systematically in a general hospital, and his success in Guy's Hospital reflected great credit on himself and that institution.

Mr. Bryant lectured and wrote freely on surgical subjects. Fifty-two years ago he delivered his Lettsomian lectures on the surgical diseases of children; in 1867 he wrote on ovariotomy; twenty years later his excellent *Diseases of the Breast* appeared. In 1899 he made public his last work—*Villous Growths and Common Diseases of the Rectum*. His *Practice of Surgery* went through four editions.

He was a member and honorary secretary of the first committee which sat in London (in 1863) to report on the value of chloroform. Sir James Paget, Sir Prescott Hewett, Mr. Curling, and Mr. Callender were the other members.

Thomas Bryant worked hard at the College of Surgeons. He became a member of the Council in 1880, and was re-elected in 1888 and 1896, resigning in 1904. Thus he served three full terms of eight years apiece, a record only equalled by Sir James Paget. In 1882 he was elected a member of the Court of Examiners. In 1890 he was made President, and enjoyed the then rare distinction of being twice re-elected, for it was only in 1886, when Sir William Savory was re-elected, that the custom of changing the President every year was departed from. It is true that between 1846 and 1862 there was a series of eight Presidents who all held the chair twice, but not for two years running, all at the end of the eighth year being re-elected in the same order as before, excepting that Mr. Guthrie was intercalated in 1854, after having been President in 1833 and 1841. Later, immediate re-election was deemed better, as a leader of merit was thus given the opportunity to continue his good work in the chair. Thomas Bryant had already, in 1888, lectured, as Professor of Surgery and Pathology to the College, "On the treatment of torsion as met with in surgical practice," and on "Surgical interference in cranial injuries." In 1889 he delivered the Bradshaw lecture, choosing for his subject "Colotomy, lumbar and iliac." During his third year of office as President the jubilee of the Fellowship of the College was celebrated, and he delivered the appropriate address. On the occasion, in 1893, of the centenary of the death of John Hunter, Bryant had the honour of delivering the Hunterian Oration in the presence of their Royal Highnesses the Prince of Wales, afterwards Edward VII, and the Duke of York, now His Majesty George V. Three years later Bryant was appointed surgeon-extraordinary to Queen Victoria.

He was vice-president of the Section of Surgery at the annual meeting of the British Medical Association in London in 1895, and was president of the Metropolitan Counties Branch in 1899–1900.

Mr. Bryant married in 1862 the daughter of Mr. Benjamin Waldrond, whom he survived three years, and by whom he had four sons and three daughters. He lived his latter days in complete retirement, dying on December 31st, 1914, in his residence in West Kensington. The funeral, which took place on Saturday, January 2nd, at Kensal Green, was attended by the President of the Royal College of Surgeons (Sir Watson Cheyne), Sir Frederic Eve, and Mr. Charters Symonds.

Mr. CHARTERS SYMONDS, Consulting Surgeon to Guy's Hospital, has been good enough to send on the following tribute to his late colleague:

Bryant was a rapid and dexterous operator. From the manner in which he carried out his operations, and from the remarks with which he explained what he proposed to do, it was obvious to all that he had carefully thought out his plans. He was decided and even bold in his incisions, and nothing was finer than the rapidity and yet smoothness with which he would remove a thigh by transfixion. In the ligature of the larger arteries he had, like most men of his time, a wide experience, and his success was probably better than the average. He was a neat and accurate dissector, and thus injured few structures on his way to the vessel. Ever striving for a primary union as the one security against secondary haemorrhage, he invariably twisted all the large vessels in amputations. In the effort to dispense with the use of a ligature he experimented with the compressor in the case of the superficial femoral. Mr. Bryant was, in operative surgery at any rate, always open to make trial of new methods, when after careful consideration he considered them to be sound. He was no doubt in his day and for several years amongst the three or four leading operating surgeons in London.

As a teacher Mr. Bryant was stimulating and encouraging. He took pains to lead the students through the difficulties of the case, and always insisted on a diagnosis being made. To the senior men he would give suggestions for papers to be read before the Physical Society, and with a vivid enthusiasm urged dressers and others to undertake some line of inquiry. His splendid optimism was infectious, and his cheery manner and his attentive kindness greatly alleviated the suffering of his patients. His visits to the wards were largely attended, and when he left

the particular place he occupied was hard to fill. He was a really great clinical teacher. His lectures in systematic surgery were carefully prepared, and he told me that each year he went over the subject afresh, trying to put the points more clearly than before. For years he gave three lectures a week for three months with scarcely an omission, with no sign of failing energy or loss of interest. His delivery was clear, his material well arranged, and the lectures made attractive by the fact that he was able to draw his illustrations from his own practice. In the clinical lectures he was at his best. The points were clearly set out with keen interest, and the subject enriched by illustration from a wealth of experience.

Each year he gave one lecture at least on his mistakes. For instance, after removing a breast for supposed carcinoma and finding a simple cyst he would, as was his practice, bring the specimen before the students (who in that day filled the operating theatre), show the error, and promise a clinical lecture upon the subject. His summary of the case before an operation was also admirable as a clinical method. The audience knew what he thought, and could see whether he was right or wrong, and Bryant never hesitated to acknowledge the error, and to show, if possible, how such might be avoided.

The many specimens he added to the museum at Guy's Hospital are evidence of the interest he took in the scientific side of his work, and the watercolour drawings made under his directions by Mr. Hirst form probably one of the most valuable collections in London. The museum of the College of Surgeons shared with that of his own hospital in these gifts, many from private sources. His interest in the preservation of specimens was probably derived in the first place from his father, who sent several specimens to the museum at Guy's Hospital. Not only did he work out the naked-eye appearances; he also had microscopic examinations made, and many reports from the pen of Sir James Goodhart, then pathologist to the College of Surgeons, will be found in his papers in the *Guy's Hospital Reports*. It is well to mention these points, for many may have looked upon Mr. Bryant as a practical surgeon only, little knowing the trouble he took to investigate the pathology of his cases.

The appearance of his *Practice of Surgery* in 1872—a book long expected—created somewhat of a sensation, partly because of an attack made upon it by a review in one of the journals, but chiefly because such a book was much needed, and the author was well known. At that time Erichsen's two large volumes were beyond the scope of the ordinary student, while the smaller books, such as those of Fairlie Clark and Druitt, were inadequate and too brief to be of real service. It was necessary for the student, therefore, to rely upon the systematic lectures on surgery. Holmes's smaller *Surgery* did not appear till 1875, when it at once became a formidable rival to Bryant's volume. The second edition appeared in 1876 and a third in 1879; these later editions were issued in two volumes. A comparison shows how much care the author had expended on these later editions, and the ready sale was the best proof of the usefulness of the work. It was well received in America, where it was recognized as a sound exposition of British surgery and became a popular text-book. Looking through this book to-day, one cannot but be struck by the large amount of original material it contains, and by the excellence and variety of the illustrations. It was, indeed, largely a record of his own work and practice, amplified by the co-operation of several of his colleagues.

Bryant was a steady contributor to the *Guy's Hospital Reports*, where will be found many admirable papers on practical subjects, with here and there original observations and methods of treatment. For some years he contributed cases to the Hospital column of the *Lancet*. It was his practice to look through the clinical reports each month, taking those he wished to have copied. In this way he had always ready a considerable number of cases from which a selection could be made. Of the many papers he contributed to the societies it would be impossible to speak here. Reference may be made to that on Stephen Smith's amputation at the knee-joint, read before the Medico-Chirurgical Society, as a good example of his style.

In no account of Mr. Bryant's work, however brief, could his uncompromising opposition to Listerism be omitted. In a man so open to the trial of new methods this refusal to accept and to adopt the antiseptic system was the more remarkable. It is difficult to say why he refused to recognize the value of the method, or why he so openly tried to discredit it, especially when the results obtained by one of his colleagues, the late Sir Henry Howse, could so easily be examined. But Mr. Bryant, while declining to use the carbolic spray, employed a weak solution of iodine and paid increased attention to cleanliness. These added to careful after-treatment, while securing a large measure of success, did not altogether prevent wound infection, which was rapidly disappearing under the use of Lister's methods.

On retiring from Guy's in 1888 at the age of 60, Mr. Bryant was still in his prime. The severance from his old hospital and school, where he had worked so long, was a profound grief to him. He could ill conceal the emotion it evoked. He loved the place and all it meant to him. He would speak with enthusiasm of his own teachers, especially of Aston Key and of Cock, and, whether he succeeded or not, he never failed in his effort to increase and spread the fame of his hospital and school. The punctuality of his attendances was remarkable, and it was a matter of wonder to many of us how he managed his hospital work, his lectures, and, when so required, the college examinations, in addition to a busy private practice, without sign of fatigue. Fortunately he found in the Bolingbroke Hospital an outlet for his energies, and it was there he finished his active public career, having contributed in no small degree to raise the position of that hospital and widen its influence. There he adopted all the newer methods of sterilizing dressings and instruments, and, in a sense, he came to his own.

Mr. Bryant's vigour carried him well over 80, and when he had passed this age he still attended an occasional dinner, and conversed with rare interest about things present and past. At 80 he still carried himself well, exhibiting to the last much of his cheerful, optimistic character.

To another old colleague of Mr. Bryant at Guy's Hospital we are indebted for the following note:

Thomas Bryant, aged 86, buried at Kensal Green, January 2nd, 1915. And what an expanse of time does that suggest when one casts the mind over the years from 1864 till now! Mr. Bryant was the assistant surgeon at Guy's Hospital of that day who most fixed the attention of the students. He was busy, and drove about in a private hansom, as the surgeon of that day sometimes did. I believe it was the late Sir Thomas Smith who once said when he was busy he drove a hansom; when only moderately so he used a single-horse brougham; when he had nothing to do he had out his carriage and pair; and now motors have reduced us all to a dead level of uniformity!

Bryant had an attractive face, a genial greeting, a pleasant smile, a calm demeanour, and the most perfect self-reliance. He had a nice hand, was neat in his manipulations, and he was an intrepid and enterprising operator. Moreover, he was obviously and refreshingly keen on all his work, took up readily new ideas and suggestions, and in this respect his mind remained young to the end of his day, so that, had that day been now, he might have been one of the foremost in the practice of intestinal surgery. In those days he was an ovariotomist of note, coming well up behind Spencer Wells and Knowsley Thornton. Thus to be dresser to Bryant was an appointment much sought after, and valued, and he was a good teacher. His *Practice of Surgery*, published first in the early Seventies, immediately established itself as a standard work, notwithstanding some acrid criticism that it at first received, and it passed through numerous editions, as it could not but do, it was so full of good stuff. In Mr. Arnold Bennett's *Literary Taste* it is maintained—not quite from this point of view—that the *matter* is the *style*. Bryant's matter was always good, for it was based upon a large experience, but it must be allowed that the style was not unto edification, for it was both clumsy and uninteresting.

In surgical practice Bryant had a long and successful innings. Until he retired from the surgeoncy at Guy's, some twenty-six years ago, he was certainly one of the

most sought after and occupied of the surgeons of the day, although that day was not as now, when operative surgery has so mightily increased.

Yet with all his success I should be surprised if many of his old friends did not feel that the close of life found him as not having fulfilled all the expectations they had formed for him. Perhaps he had lived long enough for his work and its accomplishments to have paled in remembrance. I have no doubt that this was so, but not so much by reason of length of days, as because it was the tale of his life, as it was the mainspring of his vitality. Bryant's forte was unquestionably the practice of surgery—that series of nervous attributes that has at its end the strength of mind to undertake and to carry through the manual dexterity of operations. To carve out his success he devoted all his energies, and he achieved it in great measure by his own personality. But it happens that, having done so, on retiring from active work at the hospital, the skilful hand is too often assumed to have forgotten its cunning, and should no other headlight be forthcoming to keep one prominent amongst the sons of men, wherein lies the promise of the morrow? It may have been so with Bryant. At any rate, although he had obtained the highest honour that surgery had to bestow—the Presidency of the Royal College of Surgeons—he received no title to deck his declining years, and the brilliancy of his services to surgery are fast fading from memory.

A similar fortune comes to all of us more or less; so as we waft a last adieu to him across the waters of the bar it may well be our grateful thought that he occupied a prominent place in extending the progress of surgery in his day, not alone by his technical skill, but also as a successful teacher and by a life of careful observation and the record thereof.

FRANCIS CHARLES MACNALTY, M.A., M.D., M.CH.

DR. F. C. MACNALTY, who died in Dublin on December 26th, 1914, at the age of 68, was the son of Dr. G. MacNalty, a Dublin physician. His elder brother was the late Surgeon-Colonel G. W. MacNalty, C.B., who saw much active service abroad, and is singled out by Winwood Reade, in his book on the first Ashanti campaign, for his coolness in attending to the wounded under fire.

After a distinguished academic career at Trinity College, Dublin, and after being the pupil of Stokes and Corrigan, and holding the usual hospital appointments, Dr. F. C. MacNalty practised for some years in London, and became senior assistant physician to the Metropolitan Hospital. He subsequently acquired an extensive general practice in the Lake District near Ulverston, where for over sixteen years his skill and sympathetic manner greatly endeared him to all his patients. He was afterwards in practice in Winchester, where he held several public appointments, until failing health last year compelled him to retire. For many years he was an active member of the British Medical Association.

Owing to the ceaseless claims of a busy professional life, Dr. MacNalty's contributions to medical literature were not numerous, but the papers that he wrote were always marked by careful observation and originality of thought. He was a great believer in the efficacy of cold water bandages in the treatment of Graves's disease, and claimed to have been the original advocate in the columns of the BRITISH MEDICAL JOURNAL of tracheotomy in cases of threatened death during chloroform anaesthesia. But those who knew him will best remember his personal gifts of healing, and his generous, true, and kindly nature. The death of his wife in 1911 was a grievous blow to him, and one from which he never really recovered.

Dr. MacNalty leaves four sons, the eldest of whom is a member of the medical profession.

DAVID DOUGLAS CUNNINGHAM, M.B., F.R.S., C.I.E.,

COLONEL, INDIAN MEDICAL SERVICE (RET.).

COLONEL DAVID DOUGLAS CUNNINGHAM, Bengal Medical Service (ret.), died at Torquay on December 31st, 1914. He was born on September 29th, 1843, educated at Edinburgh, where he took the M.B. and C.M. in 1867, and entered the Indian Medical Service, passing first, on April 1st, 1863. He became surgeon on July 1st, 1873, surgeon-major on April 1st, 1880, brigade surgeon-lieutenant-colonel on October 24th, 1892, and retired on June 26th, 1898, receiving an extra compensation pension. Subsequently he was promoted to full colonel on the retired list on appointment as Honorary Physician to the King on December 4th, 1907. He was elected F.R.S. on June 6th, 1889, and received the C.I.E. on June 3rd, 1893.

After completing his Netley course, along with the late Surgeon-Major T. R. Lewis, who passed first into the Army Medical Department at the same examination, Cunningham was sent to Munich for special training in scientific research. For some fifteen years after their arrival in India Cunningham and Lewis were wholly employed in research into the causation of tropical disease, especially cholera. After Lewis's death the more important of their reports on this work were published in 1888 in a memorial volume, *Physiological and Pathological Researches*. Afterwards Cunningham held for many years the posts of Professor of Physiology and Pathology in the Calcutta Medical College, first the two together, later the former only. The *Army Lists* assign him no war service. After his retirement he published his experiences of many years' study of animal life in Calcutta in two interesting volumes, *Plagues and Pleasures of Life in Bengal*, and *Some Indian Friends and Acquaintances*.

Colonel Cunningham was the son of the Rev. W. B. Cunningham, of Prestonpans, and brother of D. J. Cunningham, Professor of Anatomy successively at Dublin and at Edinburgh. He was a skilled botanist and zoologist, but these were not his lifework, but hobbies. He gave much assistance to the late Sir George King in researches into the manufacture of quinine, which enabled the Indian Government to supply itself from its own cinchona plantations with that drug at a much cheaper rate than before, and so to extend greatly its use in India. More than once he acted for Sir George King for short periods as Superintendent of the Calcutta Botanical Gardens and Government Quinologist. He also accompanied the Sikkim expedition of 1887–88 as Government naturalist.

DR. CHARLES PÉRIER, President of the Paris Academy of Medicine, died suddenly on December 13th at the age of 78. He had been successively surgeon to Lourcine, to the Salpêtrière, to St. Antoine, and to the Lariboisière Hospitals. He was elected a member of the Academy in 1890.

DR. JACQUET, the well known dermatologist, died recently. He was physician to the Hôpital Saint Antoine in Paris. He contributed largely to the literature of his speciality, and at the time of his death had in preparation an important work on the consequences of venereal disease. He was one of the first in France to call public attention to the manifold evils of alcoholism.

DR. ERNEST WILSON STOKER, who belonged to the well-known Irish family which has produced so many members of the medical profession, died on December 24th. His father and grandfather were doctors, and three of his four brothers follow the same calling. He received his medical education at the school of the Royal College of Surgeons in Ireland. He took the diplomas of L.R.C.P. and S.I. in 1888, and that of F.R.C.S.I. in 1901. He also went through courses at Berlin and Vienna under Billroth and Politzer, and when a young man travelled extensively in various parts of the world. After practising for four years in Berkshire he went to London, and held the post of house-surgeon at the Mount Vernon Hospital. Seventeen years ago he became assistant surgeon to St. Paul's Hospital for Skin Diseases. Later he took the house of his cousin, Dr. George Stoker, in Hertford Street, Mayfair. Dr. Wilson Stoker loved his profession, and refused, notwithstanding failing health from diabetes, to take a long rest, and died in harness, as he always wished to do, after a few hours' illness, from pneumonia. He had a most interesting personality, with great charm of manner and unfailing kindness and courtesy. He was loved by all his friends and patients, for whom he would grudge no time or trouble. He was a good sportsman and a splendid specimen of an athlete, playing Rugby football for Ireland in 1888, 1889, and 1890, besides being a fine tennis player and a keen

shot. The remains were interred in the family vault in St. Patrick's Cathedral, Dublin, on December 28th. He was unmarried, but leaves two sisters and four brothers.

EDWARD IRWIN SCOTT died at Brighton on December 1st, 1914, aged 68, of angina pectoris. He received his medical education in the school of the Royal College of Surgeons in Ireland. He took the diploma of L.R.C.S.I. in 1867 and that of L.R.C.P.I. in 1874. He graduated M.D.St.Andrews in 1888. He was honorary medical officer to Brighton and Hove Dispensary for twenty-five years, and had held the office of President of the Irish Medical Schools' and Graduates' Association. He at one time practised in Swatow, where he was surgeon to H.B.M., U.S., and I.G. Consulates, Imperial Maritime Customs, and Swatow Seamen's Hospital. He was formerly a member of Hove Town Council and was interested in local philanthropic bodies. He leaves a widow, three sons, and four daughters. He was noted for his great kindness to his patients, rich and poor alike. There was a large gathering at his funeral at All Saints Parish Church, Hove, and at Hove Cemetery.

DEPUTY-SURGEON-GENERAL WILLIAM HENRY HARRIS, Madras Medical Service (retired), a Crimea and Mutiny veteran, died at Shanklin, Isle of Wight, on December 11th. He was born on February 10th, 1830, educated at the London Hospital, took the diploma of M.R.C.S. in 1851, and that of L.S.A. in 1852, and the degree of M.D. (St. Andrews) in 1859. He entered the I.M.S. as assistant surgeon on February 13th, 1853, became surgeon on February 13th, 1865, surgeon-major on February 13th, 1873, and brigade surgeon, when that rank was first instituted, on November 27th, 1879, retiring with a step of honorary rank on July 1st, 1881. For some years before his retirement he held the important posts of superintendent of the lying-in hospital, Madras, and professor of midwifery in Madras Medical College. His war services comprise: Crimea, 1855, siege and fall of Sevastopol, attack on the Redan on June 18th, and the battle of Tchernaya, medal with clasp, and Turkish medal; India, 1857–58, operations before Kalpi, capture of Lucknow, surrender of forts, Ahmati and Thankupur, and subsequent operations in Oudh, medal. The funeral took place at Woking crematorium on December 15th.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on December 16th, 1914.

Recognition of Teachers.

Dr. Harold M. Woodcock was recognized as a teacher of protozoology at the Lister Institute of Preventive Medicine.

Brown Animal Sanatory Institution.

Mr. Edwin Deller, LL.B., was appointed Secretary of the Brown Animal Sanatory Institution as from October 1st, 1914, in succession to Mr. T. Ll. Humberstone, B.Sc., resigned.

Hygiene at the M.B., B.S. Examination.

It was resolved that in and after 1917 the syllabus in hygiene for the M.B., B.S. examination be amended to read as follows

Hygiene: The principles of personal hygiene. The principles regulating the sanitary construction of the dwelling. Overcrowding and its evil effects. Diseases liable to be conveyed by water and food. Etiology and prevention of the more commonly occurring endemic and epidemic diseases, including isolation and disinfection. The power and legal obligations of the medical practitioner under public health legislation. Elements of medical statistics, including the meaning and interpretation of birth-rates and death-rates. Causes and prevention of infant mortality. Correct certification of the causes of death.

M.D. and M.S. Examinations.

A list of institutions recognized for the M.D. and M.S. Examinations for internal and external students was approved, and may be obtained on application to the Academic Registrar.

Second Examination for Medical Degrees, Part II.

The regulations for the Second Examination for Medical Degrees, Part II, have been amended by the insertion of the following footnote to the words "Pharmacopoeia" in the sixth line of Section (2) of the Syllabus for Pharmacology on p. 187 of the Internal Regulations, and p. 225 of the External Regulations:

At the Examinations in Pharmacology in March and July, 1915, students will be permitted to base their replies either on the old or on the new edition of the *Pharmacopoeia*, provided that they shall be required to state on which edition such replies are based. In and after March, 1916, replies must be based on the new edition of the *Pharmacopoeia*.

Bequest by the late Dr. H. J. Johnston-Lavis.

Dr. H. J. Johnston-Lavis, who died in September, 1914, bequeathed to the University, for the purposes of University College, his geo-dynamical collection, the offer of which the Senate accepted in June, 1913.

Lectures in Protozoology.

Professor E. A. Minchin, F.R.S., will give a course of fourteen lectures on development and life-cycles in the protozoa, at 5 p.m., on Tuesdays and Fridays during the second term beginning on January 26th. Each lecture will, when possible, be followed by exhibits of microscopic preparations illustrative of the subject of the lecture. The course is intended to provide instruction (*a*) to students past the intermediate stage—that is, to those preparing for the B.Sc. Examination, Pass or Honours, or taking "Protozoa" as a special subject for the B.Sc. Examination, or to those preparing a thesis upon the group for the D.Sc. degree; (*b*) for medical men and others interested in the practical aspects of protozoology. The course is open free (1) to all members of the University, (2) to all medical men or registered medical students, (3) to other persons, who may obtain tickets on application to the Academic Registrar.

Paul Philip Reitlinger Prize.

Dr. Alfred H. Gosse (London Hospital Medical College) has been awarded the Paul Philip Reitlinger prize for an essay on the heart in acute rheumatism, with special reference to graphic methods of investigation.

Gilchrist Studentship for Women.

An appointment will shortly be made to the Gilchrist Studentship for Women of the value of £100, tenable for one year; a candidate must be a graduate in honours of the university prepared to take a course of study in preparation for some profession.

Result of Examination.

The following candidates have been approved at the examination indicated:

FIRST PROFESSIONAL.—†G. V. W. Anderson, M. Aronsohn, T. J. D. Atteridge, Julia Bell, T. G. D. Bonar, J. A. A. Bouic, Sarah A. F. Boyd-Mackay, N. C. Cooper, Ursula B. Cox, C. K. Cullen, J. J. da Gama Machado, Edith M. P. Davies, T. Davies, J. J. P. de Chaumont, J. Franks, Dorothy M. Greig, Magdalena A. H. Hamel, C. L. Hewer, A. St. G. J. M. Huggett, H. V. Jackson, J. J. Jhirad, D. L. G. Joseph, J. W. Joule, E. F. Kerby, M. E. King, *M. Laurent, Teresa J. Lesser, G. M. Lewis, D. McClean, M. Mackenzie, A. G. A. Miller, J. C. R. Morgan, R. G. Morrison, W. D. Nicol, R. H. Parry, P. G. Quinton, A. H. Richards, Esther Rickards, Jessie C. Ritchie, †F. P. Schofield, Marguerite G. Sheldon, S. Singh, V. A. T. Spong, H. R. J. Thomas, J. P. Traylen, R. F. White.

* Awarded a mark of distinction in Inorganic Chemistry.
† Awarded a mark of distinction in Physics.

UNIVERSITY OF EDINBURGH.

ANNUAL REPORT.

IN the annual report of the University of Edinburgh for 1914 the following matters are of medical interest:

The total number of matriculated students was 2,529, and of these 1,025—a decrease of 290—were in the Faculty of Medicine. Of the students of medicine, 448, or nearly 44 per cent., belong to Scotland; 154, or over 15 per cent., were from England and Wales; 41 from Ireland; 79 from India; 256, or nearly 25 per cent., from British colonies; and 47 from foreign countries. These figures show that the proportion of non-Scottish students of medicine is well maintained, the percentage of colonial students being the highest ever reached. The number of women attending extra-academical lectures, with a view to graduation in medicine in the university, was 94 (an increase of fifteen on the number for 1913). The decrease mentioned is, as has been already explained (see JOURNAL for January 2nd, 1915, p. 47), largely due to the number of students serving in the military forces.

During the year the degree of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.) was conferred upon 189 candidates, that of Doctor of Medicine (M.D.) upon 41, and that of Bachelor of Medicine and Master in Surgery (M.B., C.M.) upon 1 candidate. The diploma in Tropical Medicine and Hygiene was conferred upon 8 candidates. A new lectureship was instituted by the University Court in Surgical Pathology, and Mr. James M. Graham, M.B., was appointed the first lecturer.

The total annual value of the university fellowships, scholarships, bursaries, and prizes in the Faculty of Medicine amounted to £5,355. Of benefactions made during the year, it is noted that the Carnegie Trust has intimated the third quinquennial distribution of grants under Clause A of its scheme, a sum of £52,500 spread over five years; included in it is £10,000 for the Edinburgh Lister Institute of Pathology. There was also a bequest by the late Rev. George M'Guffie, F.S.A.Scot., of £2,000 for the foundation of a bursary in each of the Faculties of Arts, Medicine, and Divinity; and it is reported that the Vans Dunlop Scholarship fund had increased

so as to permit of the institution of two additional scholarships—one in the Faculty of Arts, the other in the Faculty of Medicine: there were now twenty-six scholarships in all on this foundation, each of the annual value of about £100.

CALENDARS.

THE *Calendar* of the University of Bristol contains the statutes, ordinances, and regulations of the University, and an account of associated institutions. The particulars given of societies and clubs afford a good indication of the variety of college life. The Officers' Training Corps, it is stated, possesses an exceptionally well-equipped miniature rifle range.

The *Calendar* of University College (University of London) is a large volume, contains a great deal of information of interest to students, including papers set at the examinations for entrance scholarships and exhibitions by the Inter-Collegiate Scholarships Board, as well as papers set at various class examinations. The number of post-graduate courses of lectures given in the faculties of arts, science, and engineering shows that this part of the college's work has been very greatly extended, and now covers a very wide field.

The *Calendar* of the College of Medicine, Newcastle-upon-Tyne, University of Durham, for the year 1914–15 contains the usual particulars with regard to teachers and classes, and a short history of the college. The volume also includes examination papers set at various examinations for degrees.

The *Calendar* for the thirty-second session (1914–15) of University College, Dundee (University of St. Andrews) contains a list of the professors and lecturers, and of the classes they give. Special sections deal with graduation in medicine, and with the diploma in public health. Examination papers set for the entrance scholarships are included.

Medico-Legal.

THE SALE OF LAUDANUM.

DR. WALDO held an inquest at Southwark touching the death of Maria Phillips, aged 52, a cook employed at the Borough Polytechnic Institute, who died there on December 19th. According to a report published in the *Morning Advertiser*, the deceased, who was the widow of a soldier, had lived for some years in India, where she contracted a malady for which a doctor prescribed laudanum. For the last six years she had taken four or five ounces of the drug every week. On December 18th she obtained an ounce. On December 19th, on arriving at the Polytechnic, she was taken ill and died. Mr. Thomas Cusan, manager of Boots' Drug Stores, London Road, S.E., said he had supplied the deceased with four or five ounces of laudanum a week for the last four or five years. He continued serving her, because she did not seem to be affected by it. At present the law only required that the poison should be supplied in a bottle distinguishable by the word "Poison," and that the label should bear the name of the drug and the name and address of the seller. Dr. Thomas Massie said that death was unconnected with the taking of the drug, and was due to heart failure following inflammation of the lungs. The Coroner, in summing up, said that instances of the drug habit had of late been frequently before him. As in the present case, the drug was frequently first prescribed by a qualified medical man. The public owed a debt of gratitude to the General Medical Council, which by increasing the strength of tincture of opium in the new edition of the *British Pharmacopœia*, automatically brought it within Part I of the schedule, so that the chemist would only be able to sell the drug to those he knew, after inquiring the use for which it was required, etc., and obtaining the signature of purchaser in his poisons book. In returning a verdict in accordance with the medical evidence, the jury expressed their thanks to the General Medical Council for having taken steps to cause the drug to be placed in the First Schedule.

Medical News.

THE next meeting of the Medical Society of London will take place on Monday, January 25th, and not on January 11th as previously arranged.

ST. JOHN'S GATE TAVERN has been taken over by the St. John Ambulance Association, which has its head quarters in the gatehouse of the old priory.

THE memorandum (dated May 23rd, 1914) of the Government of India with reference to Indian sanitary policy, to which we have referred on several occasions, has been issued from the Government Press, Calcutta, in a small volume, furnished with a table of contents and an index.

A MEETING of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, Chandos Street, Cavendish Square, W., on Tuesday next, at 4 p.m., when Dr. F. S. D. Hogg, Resident Medical Superintendent of the Dalrymple House, Rickmansworth, will open a discussion of the after-history and care of inebriates.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

OMEGA wishes to hear of some definite means of discovering whether, in the absence of other symptoms, a suspected malingerer is really suffering from colicky pains in the abdomen.

INCOME TAX.

H. R. inquires whether the amount to be paid as income tax under Sch. D at 9d. in the £, plus the additional one-third since added, should be deducted as a partnership expense before arriving at the net divisible profits.

*** The difficulty in dealing with the question of income tax when making a division of profits arises from the fact that owing to the operation of the existing scale of "abatements" and differential "rates," the amount of tax paid frequently is not divisible in the same ratio as the profits of the practice. The best method of dealing with the matter is to ascertain from the surveyor of taxes who dealt with the returns, if necessary, how the amount of the tax should be divided between the partners, and then to divide the profits *before* deducting income tax, and from the sums thus arrived at to subtract the respective shares of the tax paid. A convenient method of avoiding the difficulty referred to above is for the cheque for the amount of the firm's tax to be drawn from the firm's account, and thereupon balanced in the books by cheques paid in by the partners for the amounts of their ascertained shares of the tax. Where this has been done the profits are divisible without any adjustment for income tax.

E. is in receipt of compounded pay as a temporary lieutenant in the Royal Army Medical Corps, and inquires whether he cannot deduct the cost of his uniform, etc., for income tax purposes, as otherwise he would be at a disadvantage as compared with an officer receiving a specific—and presumably untaxed—allowance for uniforms and camp kit.

*** In the case, Tennant *v.* Smith, the principle was laid down that only money or things capable of being turned into money were taxable. It may be that sums paid by the authorities for specific purposes are regarded as not capable of being turned into money to the benefit of the recipient, but though that would account for the specific allowances being untaxed, it would not assist our correspondent. His only remedy is to establish the fact that the expenses to which he refers are "wholly, exclusively, and necessarily incurred in the performance of his office" (*vide* Income Tax Act, 1853, Sec. 51). The equities of the matter seem to be clearly in his favour, but he may have a difficulty in proving to be "exclusively necessary" an expense which has a non official as well as an official utility.

ANSWERS.

F. P. H. B.—We have not heard of Dr. Sejournet's anti-diabetic pills, but santonin has been suggested as one among the multitude of remedies to be tried in diabetes. A report on it in the *Berl. klin. Woch.* for 1911, by Dr. Walter Loefer, who had tried it in some cases, was adverse.

LETTERS, NOTES, ETC.

THE King has by warrant dated May 11th, 1914, been pleased to grant his royal licence and authority to Miss Agnes Oswald (formerly Williamson), M.B.Lond., D.P.H.Camb., to take and thenceforth use the surname and arms of Estcourt.

MALLOCK-ARMSTRONG EAR DEFENDER.

IN publishing the notice of the Mallock-Armstrong ear defender last week (p. 25) we omitted to state that the appliance can be obtained from Mr. H. N. G. Cobbe, 86, York Street, Westminster, S.W.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks

ON THE

MECHANICAL TREATMENT OF COMPOUND AND SUPPURATING FRACTURES OCCURRING AT THE SEAT OF WAR.

BY

ROBERT JONES, CH.M., F.R.C.S.ED. AND I.,

LIVERPOOL.

[WITH SPECIAL PLATE.]

I HAVE been asked to offer some suggestions as to a suitable way of treating certain fractures of the upper and lower limbs as they occur at the seat of war. We realize that wounds as met with during the Boer and Russo-Japanese campaigns were very different in character from those occurring on the richly manured fields in Flanders where suppuration so commonly follows. The point, therefore, is to decide upon the best way of immobilizing compound fractures in the presence of pus.

The method employed must be both efficient and simple; it must allow easy and painless access to the wound, and protect the limb from harm during transport. From experiences gained by a short visit to the front, and from conversations with many surgeons at home and abroad, I feel strongly that surgeons should abandon all operative methods designed to immobilize the fractured ends. They are fraught with danger, and have no place in this campaign.

Plaster-of-Paris, so often used in the treatment of simple fractures, becomes a filthy method where suppuration has occurred. Despite every precaution for the exposure of the wound the plaster mops up discharges like blotting-paper, and becomes horribly offensive, adding to the infection of the wound. I would urge my young colleagues at the front to discard it altogether.

FRACTURES OF THE LOWER LIMB.

Hip and Upper Thigh.

Fractures through the hip-joint and those just below the trochanter are best treated by a modification of the Thomas splint, which I have described as an "abduction frame" (Fig. 1 *a*). It is a splint upon which the patient lies and can be carried (Fig. 1 *b*). Extension is easily maintained and applied, and need not be relaxed for any purpose. The patient is placed upon this splint, and any displacement should be overcome by immediate extension in the abducted plane. The limb should be rotated inwards slightly until the foot is at right angles to the table and be fixed in this position on the frame (Fig. 1 *c*). It will be seen by the illustration that both limbs are controlled and that extension is secured by strapping on the injured limb with counter extension by means of a smooth leather groin strap on the opposite side of the pelvis. This groin strap should not be slackened by the nurse under any pretext, but in order to avoid pressure sores she should be instructed to alter the area of skin over the adductors, which is subjected to pressure, by moving it to and fro. This method of "fixed extension" in abduction secures the lower limb in relation to the pelvis in a manner which can never be satisfactorily achieved by weight and pulley, where reliance is placed on the weight of the body for counter extension. It is by reflex nervous impulses, induced by changes of tension in the muscle, that muscular spasm is produced. A patient lying in bed with a fractured femur—high up or lower in the shaft—cannot avoid constantly changing the state of tension of the muscles of his thigh if a weight and pulley are attached to his limb. The counterpoise is the weight of his body. Every time he tries to shift the position of his shoulders by digging his elbows into the bed he alters the tension of his muscles, calling forth a reflex spasm. When he falls asleep and his muscles relax, when he moves in his sleep, when he is lifted upon a bedpan or moved slightly by the nurses to have his bed put straight, there is apt to recur this reflex contraction due to sudden change in tension.

The long Liston splint, which is much in use, is quite unsuitable for fractures of the upper thigh. It does not permit abduction, but maintains the limb in line with the trunk—a position which must result in angular union. Furthermore, as the splint extends to the axilla, any movement of the trunk involves movement of the limb, and attention to the secretions disturbs the fracture. Both the Liston and the ordinary weight and pulley are ill suited for any form of fracture with suppuration, where good alignment, comfort and ease of transport are desired.

The patient who lies on an "abduction frame" can be lifted and moved without pain, without disturbing the fracture or relaxing the extension, and the dressing can be changed without interfering with the mechanism of fixation. If the wound is through the buttock and the discharge takes places there, the splint can be modified as shown in the illustration (Fig. 1 *d*). The abduction frame can be applied in a few minutes.

Upper Middle and Lower Thigh.

For all other fractures of the thigh, the Thomas knee splint is incomparably the simplest and best (Fig. 2 *a*). I have often fixed a fractured thigh in this splint, and sent the patient home in a cab. By reason of its construction, it automatically secures a correct alignment, as any surgeon with a mechanical mind can see if he examines the illustration. I am in the habit of using this splint for the treatment of all fractures of the middle and lower third of the thigh, fractures through the knee-joint, and fractures through the upper and upper middle portion of the leg.

The application of the Thomas bed splint is quite easy. Strapping of adhesive plaster is applied in the usual way to the sides of the limb. At the lower end of the extension strapping there is a loop of webbing to which is attached a length of strong bandage Fig. 2 *b*). The ring of the splint is passed over the foot (Fig. 2 *c*), and up to the groin till it is firmly against the tuber ischii. The extensions are then pulled tight, the ends turned round each side bar (Fig. 2 *d*) and tied together over the bottom end of the splint, which should project 6 or 8 in. beyond the foot. Care must be taken to avoid internal or external rotation of the limb, the foot being kept at right angles. Local splints can then be employed, and are made of block tin or sheet iron. They can be moulded by the hand to fit the limb, and yet, being gutter-shaped, they are rigid longitudinally (Fig. 2 *e*). They can be disinfected by fire or water. A couple of transverse bandage slings suspend the limb from the side bars of the knee splint. A straight splint is placed behind the suspensory bandages of the thigh and knee. On the front of the thigh another sheet iron splint is applied, and the femur is thus kept rigid (Fig. 2 *f*). The alignment from the hip-joint to the ankle is perfect, being dependent on a straight pull (Fig. 2 *g*). This splint allows the patient to raise his shoulders, or even sit in bed. His other leg can be moved freely without altering the tension on his thigh muscles, and there is no reflex spasm. Even if the muscles try to contract they cannot, for the ring of the splint is firm against the tuber ischii. The muscles therefore do not remain on the alert but become quiescent, and starting pains do not occur. Such is the difference between "fixed" and "intermittent" extension.

In using this splint a little attention is necessary to prevent soreness of the perineum. The ring of the splint, being covered with smooth basil leather, can easily be kept clean, so can the skin. The nurse should also several times a day press down the skin of the buttock, and draw a fresh part of the skin under the splint. To change the point of pressure over the perineum the limb can be elevated or abducted. The dressings can be applied without in any way interfering with the work of the splint. When the fracture has occurred through the knee or upper tibia the splint is applied in the same way.

It has often been a matter of astonishment to me that so simple and effective a splint has not been universally employed. It can be applied in a few minutes, usually without an anaesthetic, and one is always sure of good length and good alignment. The fractured limb can be moved in any direction without giving pain, so that transport is easy and safe. I have never yet had to plate or wire a femur in a recent case, and this I ascribe to using the Thomas splint.

Leg.

Fractures of the lower portion of the tibia or fibula, and fractures through the ankle-joint, I treat in a skeleton

splint, such as I have illustrated (Fig. 3 *a*). It allows of easy access to the wound, and can without difficulty be modified to suit a special case. Fortunately, in gunshot wounds, the spiral fracture is rare, and, generally speaking, one bone remains unbroken. The treatment, therefore, of fractures of the leg does not present so much difficulty as that of the thigh. For transport, however, and for general comfort, the splint should immobilize the knee (Fig. 3 *b*).

Fractures of the Upper Limb.

Arm.

Fractures through the shoulder-joint and through the surgical neck of the humerus require no splints. The elbow should be slung at right angles and fixed by a broad bandage to the side. The dressings would probably replace the usual pad in the axilla, which should never be bulky. Shoulder shields are unnecessary and cumbrous. The patient, where practicable, should be treated in the upright position, and should have his head and shoulders well propped at night.

Where ankylosis is to be expected after a bad smash and suppuration of the shoulder, and opportunity is afforded for continuous treatment, the arm should be kept abducted slightly forward, and slightly rotated inwards (Fig. 4). This assures a much extended range of movement at a more useful radius, such range of movement being brought about by the action of the scapula. This position need not be adopted if the patient has to be transported, as it can be established after the arrival home. Fractures through the elbow or immediately above the condyles are best treated without splints. If possible, the arm should be kept flexed well above a right angle. Suppurating cases in the adult will not admit of the very acute flexion which we insist upon in the case of children. If, for a rare reason, a splint has to be applied, the internal wooden angular splint must be avoided, because it is always clumsy and often causes deformity, and a splint as illustrated (Fig. 5 *a* and *b*) used.

Fractures of the middle and lower middle portions of the shaft of the humerus, where dressings have to be frequently changed, require very gentle handling, and I illustrate two splints which may be found very useful. One is a modified Thomas knee splint used to maintain extension in the abducted position, the patient being recumbent (Fig. 6 *a* and *b*). The other is a modified Thomas humerus extension splint (Fig. 7 *a*, *b*, and *c*), to be used when the patient can walk about or sit up in bed. Either splint permits of easy dressing, and maintains adequate fixation. As so much destruction of bone may be produced by modern shrapnel, and even by rifle bullet, great care must be taken to prevent over-extension, otherwise non-union will ensue.

Forearm.

The chief disability to be feared in fractures of the shafts of the bones of the forearm is inability to supinate the forearm completely. The trouble usually arises where both bones are broken, but it may occur where the radius alone is involved. We must remember that the whole length of the posterior border of the ulna is subcutaneous and is practically straight. On this straight ulna the curved radius rotates like the handle of a bucket. We must therefore attend to two points. First, we must keep the ulna straight; second, we must not interfere with the natural curve of the radius. That is to say, there must be no lateral pressure of bandage or splint on the middle of the shaft of the radius. In dealing, therefore, with these fractures, whether one or both bones be broken, the position of supination should invariably be maintained (Fig. 8). This is even more important in septic compound fractures than where no complication exists. Neglect of this important point will often result in a locking of the bones in pronation. We must remember that in nearly all neglected fractures of the forearm, supination and not pronation is defective.

Wrist and Hand.

I have seen several cases of gunshot wounds through the wrist, and they have been mostly treated with the hand in line with the forearm—that is, midway between palmar and dorsiflexion. This is fatal to a useful joint. In order that the fingers may maintain their grasping power, all injuries of the wrist-joint should be treated in the dorsiflexed position, as shown in the illustration (Fig. 9 *a*, *b*, and *c*). Fractures of the hand may be immobilized as shown (Fig. 10 *a*, *b*, and *c*).

Retention of Loose Pieces of Bone.

I do not intend to deal with the surgical considerations involved in the treatment of the suppurating wound. Many distinguished surgeons are devoting themselves to this problem. It may be well, however, to offer a word of warning against the destruction of loose pieces of bone removed from the wound. If quite loose they can be taken out, cleaned, and replaced. Even in the presence of pus they may unite. Suppurative compound fractures unite well if time be given them; a common source of failure is due to the removal of bone.

Preparation of Splints.

The appliances which I have described can be obtained from F. H. Critchley, 21, Great George Square, Liverpool, and for the convenience of surgeons at the front I append the measurements required when a splint is ordered.

Abduction Frame (Fig. 1 *a* and *d*).—Give measurements from nipple to external malleolus, and state left or right. For an uninterrupted splint—site of wound measured from nipple.

Bed Knee Splint (Fig. 2 *a*).—From fork to heel, also circumference of thigh at fork.

Long Foot Splint (Fig. 3 *a*).—Length of foot, also heel to knee.

Short Hand Splint (Fig. 9 *a*).—From palmar flexure of wrist to below metacarpo-phalangeal range, usually 2½ in.

Long Hand Splint (Fig. 10 *a*).—Same as short, but to finger ends.

Extension Splint for Arm (Fig. 6 *a*).—Circumference of arm at junction of shoulder and from axilla to finger-tips.

Angular Elbow Splint (Fig. 5 *a*).—Wrist to olecranon, and olecranon to tip of shoulder.

Humerus Extension Splint (Fig. 7 *a*).—Wrist to olecranon, olecranon to axilla, and circumference of arm round shoulder.

Frequently the unaffected limb can be measured to ensure correct length, etc.

THE BACTERICIDAL ACTION OF COLLOSOLS OF SILVER AND MERCURY.*

BY

PROFESSOR C. R. MARSHALL, M.D.,

AND

G. B. KILLOH, M.B.,

MEDICAL SCHOOL, DUNDEE.

In March of 1911 Crookes introduced two new preparations—collosol argentum and collosol hydrargyrum—containing 1 in 2,000 of silver and of mercury respectively in a colloidal form. From his bacteriological experiments with these preparations he concludes: "I know of no microbe that is not killed in laboratory experiments in six minutes." These experiments consisted in adding the collosol to nutrient broth infected with a micro-organism and making streak cultures from the mixture on agar plates at definite intervals of time. This method and the slight modification of it adopted in the case of gonococcus experiments appeared to us to show little more than the antiseptic action of these preparations, since, after subculture on a semisolid medium like agar jelly, the micro-organisms are still in an environment of the antiseptic little removed in strength from that of the original mixture.

We therefore performed the following experiment: A vigorous twenty-four hours' growth of *Bacillus coli communis* on agar was swamped with collosol argentum, and after ten minutes the collosol was poured off and the growths carefully washed with sterile distilled water to remove any collosol adhering to the micro-organisms or the medium; inoculations were then made on agar and in MacConkey's medium and the tubes incubated for twenty-four hours at 37° C. Growth occurred in both media.

Further experiments on the bactericidal and antiseptic actions of these preparations were made in the autumn of 1911, and are summarized in the succeeding tables. The preparations were obtained through a retail pharmacist, and when examined after dilution by the ultra-microscope showed the usual structure of inorganic colloids. There was very little clumping of the particles, and no other evidence of coagulation.

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*Read at a meeting of the Section of Pharmacology at the Annual Meeting of the British Medical Association at Aberdeen, 1914.

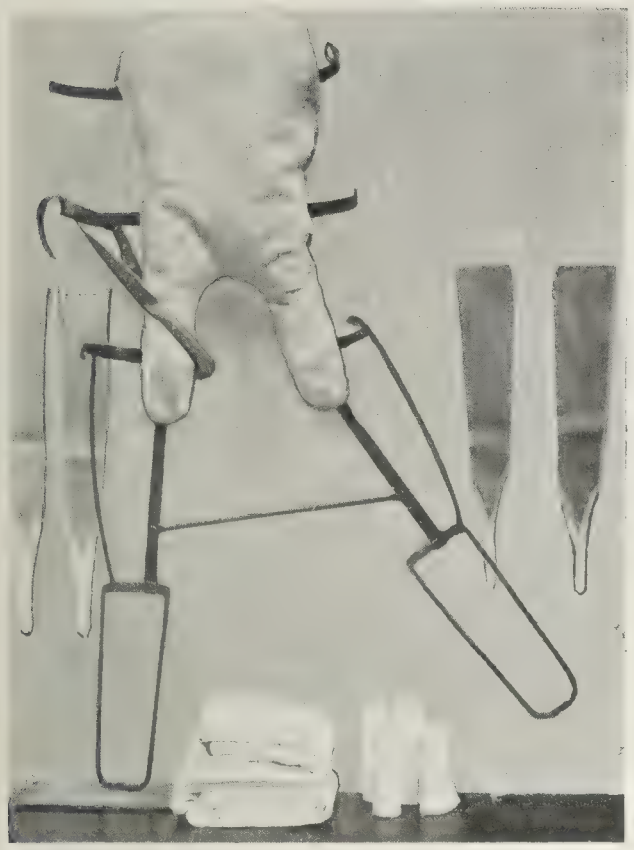


Fig. 1 *a*.—Left abduction frames with strapping extensions, wadding, and bandages used in application.



Fig. 1 *b*.—Convenience of abduction frame for transport.



Fig. 1 *c*.—Abduction frame applied.

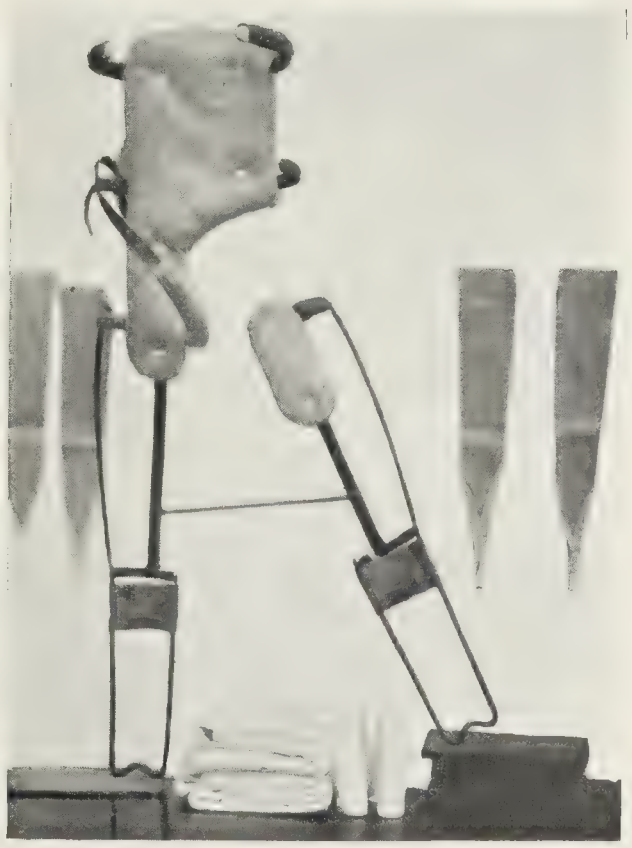


Fig. 1 *d*.—Modified abduction frame for pelvic wound.

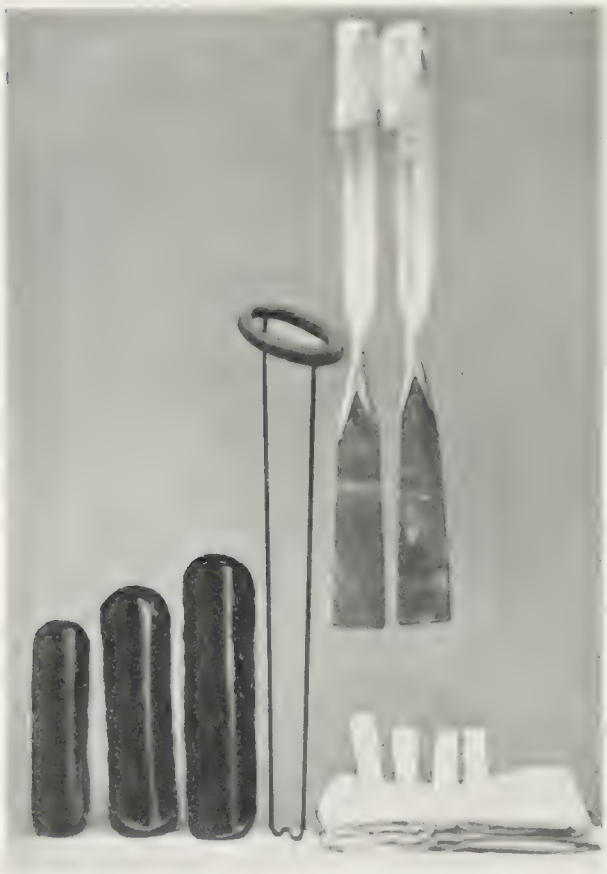


Fig. 2*a*.—Thomas's knee splint, with strapping extensions, local splints, wadding, and bandages used in application.



Fig. 2*b*.—Strapping extensions applied to leg. Bandage suspension slings to splint to support limb.



Fig. 2*d*.—Knee splint in position, traction applied.



Fig. 2*c*.—Introducing limb through ring of knee splint.



Fig. 2*e*.—Sheet iron splints moulded by hand for various uses.



Fig. 2 *f*.—Application of local splints.



Fig. 2*g*.—Thomas's knee splints applied.

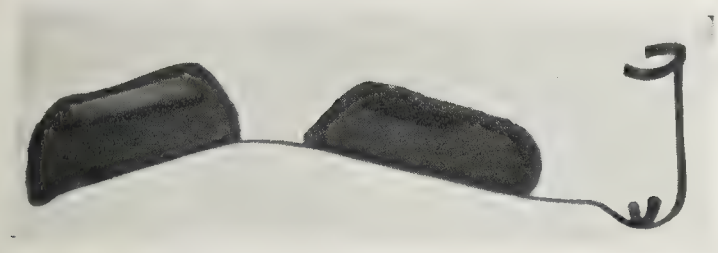


Fig. 3*a*.—Skeleton splint for injuries near the ankle-joint.



Fig. 3*b*.—Skeleton splint applied.



Fig. 4.—Position to be maintained when ankylosis is expected.

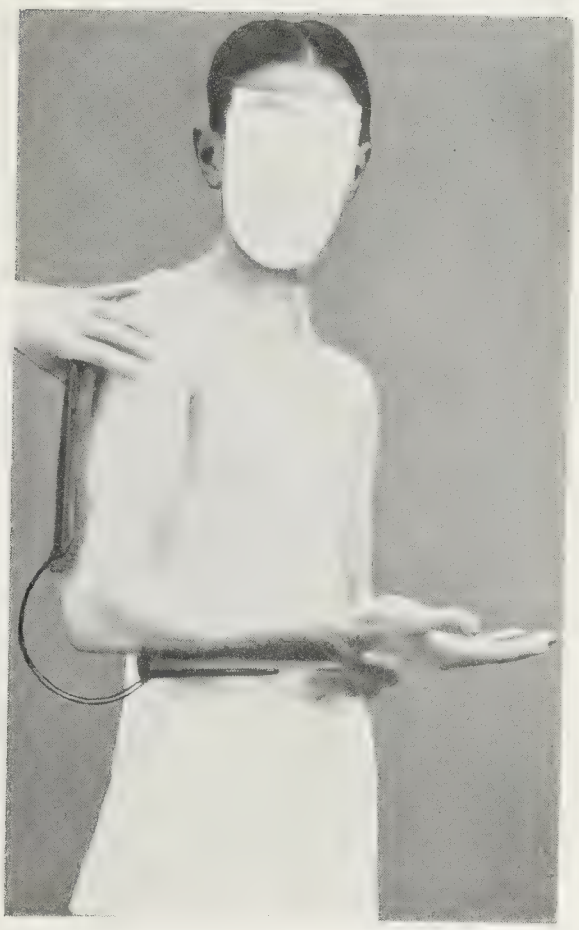


Fig. 5*b*.—Elbow splint applied.



Fig. 5*a*.—Splint immobilizing elbow-joint, but allowing access to it.



Fig. 6*a*.—Modified Thomas's knee splint to secure extension of arm. Note flattened face of ring.

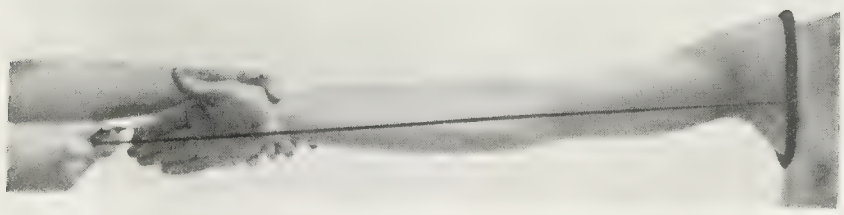


Fig. 6*b*.—Extension arm splint applied.

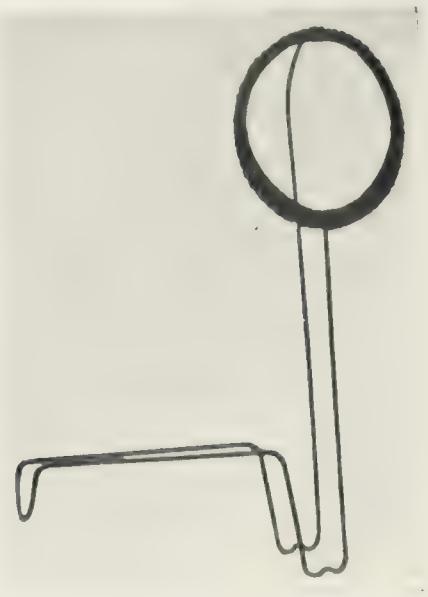


Fig. 7 *a*.—Modified Thomas's humerus extension splint.



Fig. 7 *b*.—With supporting bands in position.



Fig. 7 *c*.—Applied.



Fig. 8.—Securing supination in fractured forearm.



Fig. 9 *c*.—Dorsiflexed wrist splint applied.

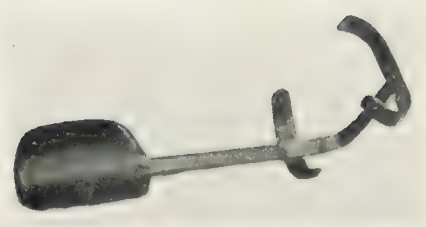


Fig. 9 *a*.—Dorsiflexed wrist splint to secure good grasp.



Fig. 9 *b*.—Dorsiflexed wrist splint applied.



Fig. 10 *a*.—Long dorsiflexed splint for wounds of hand.



Fig. 10 *b*.—Applied.



Fig. 10 *c*.—Applied.

Bactericidal Experiments.

The method adopted to determine the bactericidal action was to add a loopful of micro-organismal emulsion to 5 c.cm. of the collosol or this diluted to known strengths with sterile distilled water, and after periods of five, ten, fifteen, or more minutes inoculating 5 c.cm. of MacConkey's medium or lemco broth, according to the micro-organism used, with a loopful of the mixture and incubating at 37° C. The micro-organismal emulsion was made by adding three or four loopfuls of a twenty-four hours' growth of the various organisms on agar to 1 c.cm. of sterile distilled water. Controls were employed in all experiments, and the usual aseptic precautions were taken.

A large number of experiments were made with various dilutions and with practically uniform results. In a few instances, with dilutions around the limit of bactericidal power, sometimes a positive, sometimes a negative result was obtained. These are indicated in the tables by a double sign. For brevity only those experiments showing the limit of bactericidal action are given. It is to be understood that half the strengths mentioned gave positive results, and double the strengths negative results, with all the times indicated; + means growth, 0 means no growth, and they refer, unless otherwise stated, to observations made after twenty-four hours' incubation. The order of the organisms is that in which they were investigated, and the times given are those during which the organism was submitted to the preparation or the dilution mentioned.

Collosol Hydrargyrum.

Organism.	Dilution of Collosol.	Time in Minutes.			
		5	10	15	30
B. coli communis	1 in 5	+	+	0	
B. paratyphosus A... ...	1 in 5	+	+	0	
B. paratyphosus B... ...	1 in 5	+	+	0	
	1 in 10	+	+	+0	0
B. Aertryck	1 in 10	+	0	0	
B. Gaertner	1 in 10	+	+	+0	0
B. typhosus	1 in 10	+	0	0	
	1 in 15	+	+	0	
Staph. pyogenes aureus ...	Full strength	+	+	0[1]	
B. anthracis	Full strength	+	+	+	
B. pestis	1 in 2.5	+	+	0	0
	1 in 5	+	+	+	

[1] + after 48 hours' incubation.

As it is not improbable that a part, if not the whole, of the bactericidal action of colloidal mercury is due to a portion undergoing ionization, a few experiments were made to determine whether the presence of such salts as are likely to increase the amount of mercury in solution has any intensifying power on the bactericidal action of this preparation. The experiments were carried out in the manner described, except that a sterile solution of 0.9 per cent. sodium chloride was used as a diluent in place of sterile distilled water. As the following experiment shows, intensification of action does occur under these conditions:

Organism.	Dilution of Collosol.	Time in Minutes.		
		5	10	15
B. coli communis ...	1 in 35	0	0	0
	1 in 40	+	0	0
	1 in 42.5	+	+	0
	1 in 50	+	+	+

It is possible that such an intensification may occur when the preparation is injected into the blood or applied to the tissues.

In order to obtain the influence of ionized mercury for comparison with the results obtained with collosol of mercury similar experiments were made with mercuric chloride. The strengths of the solutions in these are given in terms of mercury, and for comparison with those of the collosol must be divided by 2,000.

Mercuric Chloride.

Organism.	Strength, calculated as Mercury.	Time in Minutes.		
		5	10	15
B. coli communis	1 in 200,000	+	0	0
B. paratyphosus B	1 in 200,000	+	+	0
B. paratyphosus A	1 in 200,000	+	0	0
Staph. pyogenes aureus ...	1 in 100,000	+	0	0
B. typhosus	1 in 400,000	+	0	0

Similar experiments carried out with collosol of silver showed that this preparation even in full strength had no bactericidal action whatsoever. Nor had the addition of salts—for example, sodium sulphate in 1.3 per cent. strength—any influence in inducing a bactericidal effect.

The experiments with the undiluted collosol were as follows:

Collosol Argentum.

Organism.	Strength of Collosol.	Time in Minutes.				
		5	10	15	30	60
B. coli communis	Full strength	+	+	+		
B. typhosus	,, ,,	+	+	+		
Staph. pyogenes aureus	,, ,,	+	+	+		
B. anthracis	,, ,,	+	+	+		
B. pestis	,, ,,			+		+
B. Gaertner	,, ,,			+		+
B. Danysz	,, ,,			+	+	
B. paratyphosus B	,, ,,			+	+	
B. paratyphosus A	,, ,,			+	+	

Experiments made in a similar manner with silver nitrate solutions, as representing ionized silver, gave the following results.

Silver Nitrate.

Organism.	Strength, calculated as Silver.	Time in Minutes.		
		5	10	15
B. coli communis	1 in 2,000,000	0	0	0
	1 in 2,500,000	+	+	+
B. paratyphosus B	1 in 1,000,000	0	0	0
	1 in 1,500,000	+	+	+
B. Aertryck	1 in 2,000,000	0	0	0
	1 in 2,500,000	+	0	0
Staph. pyogenes aureus ...	1 in 400,000	0	0	0
	1 in 500,000	+	0	0

Antiseptic Action.

Some experiments on the antiseptic action of the two collosols were carried out by adding known quantities of them to 5 c.cm. of nutrient medium, and afterwards inoculating with a loopful of micro-organismal emulsion and incubating. The results are summarized in the following tables:

Collosol Hydrargyrum.

Organism.	Dilution of Collosol.	Result after Incubation for	
		24 Hours.	48 Hours.
B. Gaertner	1 in 15	+	
	1 in 13.5	0	0
B. Danysz	1 in 15	+	
	1 in 13.5	0	0
Staph. pyogenes aureus ...	1 in 42.5	+	
	1 in 39	0	+
	1 in 32	0	0

Collosol Argentum.

Organism.	Dilution of Collosol.	Result after Incubation for 24 Hours.	Result after Incubation for 48 Hours.
B. coli communis	1 in 26	+	+
	1 in 17 5	0	0
B. paratyphosus A	1 in 26	+	
	1 in 17.5	0	0
B. paratyphosus B	1 in 26	+	
	1 in 17.5	0	+
	1 in 13 5	0	0
B. Aertryck	1 in 26	+	
	1 in 17.5	0	0
B. Gaertner	1 in 26	+	
	1 in 17.5	0	0
B. Danysz	1 in 32	+	
	1 in 26	0	+
	1 in 13 5	0	0
Staph. pyogenes aureus ...	1 in 36 5	0	+
	1 in 34	0	0

From these experiments it will be seen that both these preparations have considerable antiseptic power, and that the silver collosol is the more powerful of the two. Considering the absence of bactericidal action when tested under favourable conditions, the antiseptic action of this preparation is interesting. The explanation we hope to give in a later communication.

COLLOSOL ARGENTUM AND ITS OPHTHALMIC USES.

By A. LEGGE ROE, L.R.C.P., L.R.C.S.I.,

OPHTHALMIC SURGEON, HULL ROYAL INFIRMARY AND HULL AND SCULCOATES DISPENSARY.

COLLOSOL ARGENTUM is a clear sherry-coloured liquid, and, as described by the makers, is a solution containing the metal silver in a colloid form. The silver is present in a metallic state, not as a salt. The actual particles are of extreme minuteness and they pass readily through the pores of a filter, and are visible only under the ultra-microscope. They show great uniformity in size, and exhibit marked brownian movements. It is claimed for this preparation that no microbe is known that is not killed in laboratory experiments in six minutes.

The opinion that I have formed as to its value may be summed up in very few words: It is the most useful preparation that has been placed in our hands since the introduction of cocaine. I have used it many thousands of times and have never known it cause the slightest irritation, and it may be used for many months without staining the conjunctiva.

The first time I had occasion to use it was in a case of gonorrhoeal ophthalmia in an adult. He had been treated for a week with 5-grain solution of silver nitrate neutralized immediately with saline solution once daily, and the eye irrigated every hour with mercury perchloride solution, 1 in 7,000. There was very great chemosis, and a profuse purulent discharge was running down the cheek long before the time for irrigation came round again. A small central ulcer of the cornea had appeared. The same treatment was continued, and, in addition, collosol argentum drops were introduced into the eye after each irrigation. In thirty-six hours the discharge had completely stopped, there was no extension of the ulcer, and the eye made a rapid recovery, leaving only a faint nebula. I have treated three other cases in adults, with similar results. The last case, a woman, was treated by collosol only, and was discharged cured from the infirmary in five days.

In purulent ophthalmia of infants the same treatment is used, and I am certain that if this treatment was adopted in every case early, there would be no such thing as impaired vision or blindness from this cause. Many cases are treated in the out-patient department of the dispensary, and the drops being absolutely harmless may be safely trusted to the friends. The child is brought up once daily for the silver nitrate drops; the eyes are washed out every hour at home, and the collosol drops put in.

In infected ulcers of the cornea and hypopyon ulcer, of which I am sorry to say we have a great experience at the infirmary, I have had better results from collosol than from any other treatment, and tapping of the anterior chamber, the cautery and other operative procedures are now rarely required; if perforation does occur it is smaller and more manageable. The pupil is kept dilated with atropine, and the collosol is used every two hours.

In the various other forms of ulcer of the cornea, especially in the early stages, in addition to keeping the pupil dilated, no better treatment can be adopted, followed by calomel dusting, and yellow oxide of mercury ointment as the ulcer begins to heal.

In interstitial keratitis it is undoubtedly of the greatest value. I have had many cases in adults, in which from complete opacity the cornea has become absolutely clear in from three to five months, and anyone who has had much experience of this disease in adults knows how often permanent impairment of sight results, and how long the treatment used to last, especially if irritants had been used before coming under treatment. The eye is kept under atropine or, preferably, scopolamine, and the collosol is dropped in three times a day, the eye being kept closed afterwards for five minutes. When all active symptoms have disappeared, and not until then, if any opacity remains, yellow oxide or mercury ointment may be used; but if treated throughout as described above I am sure this will rarely be necessary.

In the various forms of blepharitis, collosol affords the best chance of a cure. The following case illustrates its value in one of these conditions:

Blepharitis Ulcerosa.—A lady, aged 29, a visitor to the town, acting under the pressure of her friends, came to interview me. "I do not expect that you will be able to do me much good, as I have been under the care of an ophthalmic surgeon in my own town for three years, and you see what I look like now. If you are able to do me any good I will stay here three months." I ordered her to bathe the eyelids with a borax lotion three times a day, and then very gently to remove every particle of scab, after which she was to lie on her back, with her head thrown back, and have the collosol dropped on the closed lids, allowing it to soak for five minutes. In six weeks she went home cured.

In dacryocystitis, after probing collosol argentum is a great help. The sac should be first syringed out with saline solution, and, after expressing any that remains, the sac should be filled with collosol with the syringe. In cases of long standing this will not be sufficient; the sac should be incised and plugged with ribbon gauze, and for about a week the sac should be dressed daily by inserting into it ribbon gauze soaked in 10 per cent. solution of potassium bichromate, or the lining membrane of the sac should be scraped. The wound is then allowed to close and the collosol injections continued.

For burns of the cornea, conjunctiva or lids, nothing will keep them in an aseptic condition better than collosol ointment, 50 per cent.

My routine treatment of wounds of the cornea, sclerotic or conjunctiva is collosol every four hours, and in my hands it has proved most successful. This is also my treatment in preparing for operation an eye from which there may be any discharge.

In the various forms of conjunctivitis I have not found it to be so efficient as the ordinary remedies. I may say that collosol is always used as supplied, and not diluted. This is a record of my own experience in the use of it during the last three years.

CATERING for the sick, not always an easy matter even in favourable circumstances, becomes doubly difficult on active service, when meals suitable for patients in every stage of disease and exhaustion have to be prepared out of whatever happens to be procurable at the moment. This is a problem sufficient at times to tax the ingenuity of a Vatel; and the *War Cookery Book for the Sick and Wounded*, recently compiled by Miss Jessie M. Laurie (London: T. Werner Laurie; 6d. net) should do much to lighten the task of those entrusted with the cooking arrangements in the field hospitals of to-day. The book contains a large number of simple and nutritious dishes, with full instructions as to their preparation; and the convenience of the cook has been considered in every detail of its arrangement, the recipes being printed in large type on strong paper, which should not easily tear or become detached, even with constant usage.

INSECTS AND WAR:

X.—*THE MOSQUITO* (*Anopheles maculipennis*).

BY

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Where the water is stopped in a stagnant pond,
Danced over by the midge.
R. BROWNING, "By the Fireside."

THERE is no zoological distinction between a mosquito, a gnat, or a midge. But, as a matter of convenience, we might confine the term "gnat" to the genus *Culex*, the term "mosquito" to the genus *Anopheles*, and the term "midge" to the genus *Ceratopogon* and its congeners, whose collocation with the naked knees of the Highlander is said to have given rise to the "Highland Fling."

There is no doubt about it that both the mosquito and the gnat are extraordinarily beautiful insects. This fact, however, has been veiled from the public partly owing to their small size and more especially because of their irritating bite, which causes the sufferer to kill a mosquito at sight rather than examine its fairylike beauty or its fascinating dances in the air, far surpassing in grace and agility anything seen in the Russian ballet. But biting is the dominating note of a mosquito, and we may as well consider, to begin with, how it bites.

If we examine the head of a mosquito we shall find that it is shaped like a circular cushion bearing two enormous eyes, so large that in the male they touch above the forehead and almost meet below the chin. Each eye consists of hundreds of facets of a brilliant green hue, set in a darkish background, like emeralds arranged on a black surface. The head also bears a number of hairs and flattened scales whose number, shape, and arrangement are of considerable systematic value.

The following are the appendages of the head:

1. A pair of antennae, which are markedly different in the two sexes.
2. A pair of mandibles. These are absent in the male.
3. A pair of first maxillae, each of which has a jointed tactile palp.
4. A pair of second maxillae which have fused together to form a deeply grooved soft process in which the other appendages lie.

Beside these four pairs of appendages, which are in reality modified limbs, there are two median processes, which project one from the top, the other from the bottom of the mouth, like elongated and hardened upper and lower lips. These are the median labrum above, a deeply grooved structure whose edges approximate and almost touch, thus forming a tube along which the blood of the

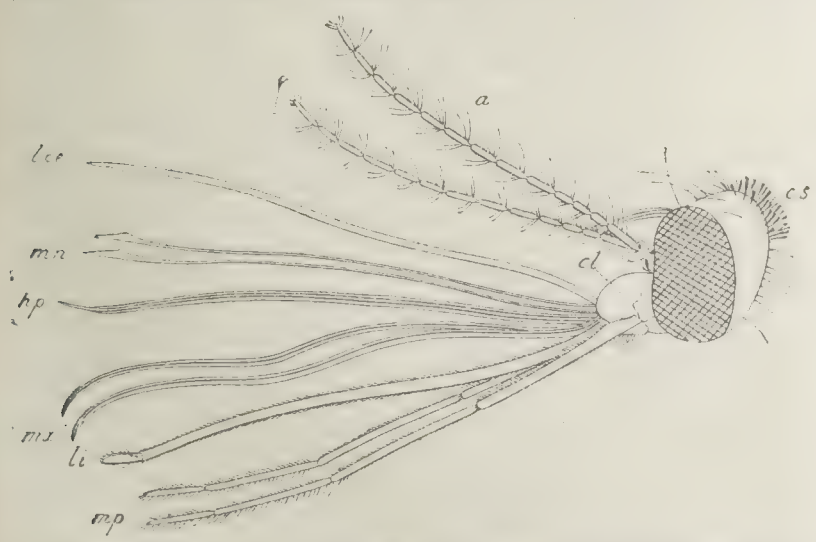


Fig. 1.—Side view of the head of a female *Anopheles maculipennis*, magnification about 20, with the various mouth parts separated, but in the relative position in which they lie when enclosed in the groove of the labium. This figure shows the characteristic cephalic scales. *a*, Antennae; *c.s*, cephalic scales; *cl*, clypeus; *lxe*, labrum + epipharynx; *mn*, mandible; *hp*, hypopharynx; *mx*, first maxilla; *li*, labium; *mp*, maxillary palps.

victim is sucked. Lastly, there is the hypopharynx, sometimes termed the tongue, a median structure, a double-edged sword, rising from the bottom of the mouth, and it is this that is the cause of all the trouble.

A glance at Fig. 1 will show how these various mouth appendages can by a skilful use of dissecting needles be separated out, but in nature they are all packed together in a case; the arrangement in the case is shown by Fig. 2, which represents a transverse section of the proboscis. The term "proboscis" is given to the totality of all these structures taken and packed together. With the exception of the labium and of the tactile maxillary palps all the mouth appendages lance into the skin. The proboscis of the male is, however, too weak to pierce the human integument, and it is the female which does all the damage. When a mosquito is going to bite, she alights so gently that her approach is unperceived, and she proceeds to thrust her arsenal of weapons into the epidermis of her victim almost unfelt; the feeling comes later. These weapons are all guided, by the forked end of the softened labium, just as one's finger-tips guide the end of a billiard cue. These "mouth parts" are exceedingly fine, extremely sharp-edged structures, whose consistency is about that of whalebone, and both the mandibles and the maxillae have a toothed, serrated edge (Fig. 3). They are partly pushed in by muscles in the head, partly, I think, by the lowering of the body, and they sink slowly and surely into the flesh with as much ease as a paper-knife will penetrate a cream cheese. But as they sink deeper and deeper into the integument the body of the mosquito approaches nearer and nearer to the skin of the victim, and the labium is pressed further and further backwards until at the end of a satisfactory puncture the distal and proximal parts of the labium are parallel and touching.

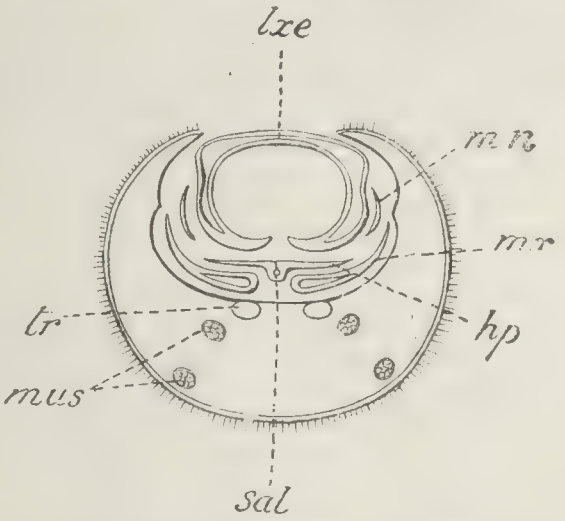


Fig. 2.—Transverse section through the middle of the proboscis of a female *Anopheles maculipennis*, showing the relative position of the parts when at rest. Two tracheae and two pairs of extensor and flexor muscles are seen in the labrum. *lxe*, Labrum + epipharynx; *tr*, trachea; *mus*, muscles; *hp*, hypopharynx; *sal*, salivary duct; *mx*, first maxilla; *mn*, mandible.

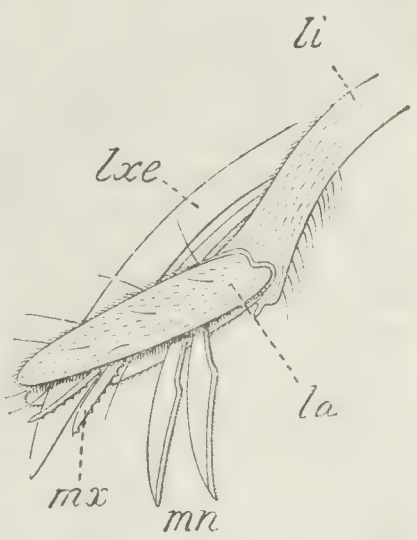


Fig. 3.—A side view of the labellae and piercing organs of the proboscis of a female *Anopheles maculipennis*, dissected out to show the tips of the mandibles, maxillae and labrum + epipharynx. The hypopharynx is not shown. *li*, Labium; *lxe*, labrum + epipharynx; *mx*, first maxilla; *mn*, mandible; *la*, labellae.

It is rather an interesting point that the labium does not enter the skin, because the larvae of certain *Filarias*, one of which produces elephantiasis in man, and the other severe heart trouble in the dog, are found in pairs, probably a male and a female, in these labia of mosquitos. How exactly these nematode larvae leave the labium of the mosquito, and enter the body of the man and the dog, has not definitely, I believe, been cleared up, but that they do enter the human and the canine skin seems certain.

We have mentioned that the labrum is a grooved tube with its edges practically in proximity, and it is up this tube that the blood of the bitten is sucked by the well-known suctorial pharynx which occupies so large a part of the interior of the head of a mosquito. Much the most dangerous weapon of the whole armoury, however, is the hypopharynx. This is shaped like a double-edged sword with a very minute groove running down the centre; this

groove is so minute that Professor Nuttall and I and others for some time took it to be a tube. It receives at its base the products of the salivary glands of the mosquito, and it is these products which contain the organisms which cause malaria—a disease which has probably caused more trouble and has played a greater part in the history of the world than any other malady to which humanity is heir. Down this minute, microscopic groove has flowed the fluid which has closed the continent of Africa for countless centuries to civilization, and which has played a dominating part in destroying the civilizations of ancient Greece and of Rome.

When the adult mosquitos (the imago) leave their pupa cases they are unable to pierce the human skin until the mouth parts have hardened, which takes at least six hours. In England they can undoubtedly feed twenty-four hours after leaving the pupa case. When feeding, both the sensory antennae and the tactile maxillary palps are thrust forward at right angles to the proboscis. They thus test the place where the two-lobed extremity of the labium will guide the battery of stylets into the substance they are feeding on. The female is much more voracious than the male, which, as we have mentioned above, cannot pierce the human integument, and has to be content with a vegetarian diet. Sometimes the effort even of the female mosquito to insert its proboscis is fruitless, and we have watched a mosquito attempt four times to pierce the skin before it drew blood. If undisturbed during the meal the suctorial repast may last some two or three and a half minutes. So greedy at times is the mosquito that she resembles Baron Munchausen's horse after the adventure with the portcullis. What was flowing in at one end was flowing out at the other. After the process of biting, of sinking in of the piercing needles, is complete, the proboscis is withdrawn, and to do this the mosquito braces herself on her legs and raises her body.

Another curious feature about the head of *Anopheles* is that it is pierced by two chitinous, symmetrical tunnels—tubes which are open at each end with trumpet-shaped orifices. The use of these is probably to act as a stay or strut to strengthen the chitinous exoskeleton of the head; but these queer galleries or tubes also to some extent act as an attachment for muscles.

The antennae vary very much in the two sexes. In the female there are fifteen segments, each bearing a ring of hairs, but of small and disproportionate size, whereas in the male the bushy character of the hairs is conspicuous even to the naked eye. In fact, it is the best criterion for judging the sex of the insect. At the base of the first joint of the male antenna is a deep cup-shaped structure packed with sense organs, and containing a large nerve ganglion. There are sixteen segments in the whole antenna, one more than in the female. The hairs are capable of movement, and as a rule are kept closed on the shaft of the antenna whilst not in use; when evening comes on they are spread out. There seems little doubt that these organs are olfactory and help the male in searching for the female.

The beautiful transparent wings of the mosquito are beset with minute spikes which serve to break up the light and to give rise to the many coloured iridescence of the creature's wings. The posterior border of the wing bears rows of beautifully graded scales. These add much to the symmetry and beauty of the whole structure. Just behind it are two balancers, or halteres, a name derived from the Greek word ἁλτῆρες meaning a kind of dumb-bells which athletes used in the stadium when jumping. These so-called balancers project outwards and backwards from the body when the wings are in a position of flight.

A curious distinction between the *Culex* and *Anopheles* is in regard to the position assumed by the male when it rests In *Anopheles* the proboscis and body are almost in one line, and the axis of the body is at an angle with the surface upon which it rests. *Culex*, on the other hand, has its proboscis at a slight angle with its body, and its body is almost parallel with the surface upon which it is perching. *Culex* has a much more hump-backed appearance than *Anopheles*, and its legs are considerably shorter and stouter. The insect generally rests upon four out of six legs; in the former case the hinder pair are held out and curved upwards. The hind legs not infrequently serve as a test for food. When feeding upon sweetened milk or fruit, the moment the hind leg touches the fluid or juice the insect will wheel round and at once begin to feed.

Anopheles maculipennis is very widely distributed, and it has been recorded from most parts of North America and Europe and from many parts of Asia. Probably it is much more widely distributed than we have any record. Individuals do not wander very far, of their own accord, from the breeding places, but they may be blown by the wind. Cases are known where they have been blown as far as ten or even twenty miles, and in camping in Africa it is always well to keep to the windward of a native village. They are also carried about by trains, motors, and steamers. They do not indulge in any such voluntary migratory flights as the locusts; although some such flights have been from time to time recorded, they are probably due to a high wind catching a large number of mosquitos temporarily together.

In a joint paper which Professor Nuttall and I wrote some years ago, we drew attention to a case in which mosquitos came aboard a ship some ten miles from land, and in another in which a Spanish barque from Rio was quarantined in the South Atlantic quarantine station of the United States. The vessel was so much infested with mosquitos that it was rendered nearly uninhabitable, and the United States quarantine officer reported that when the forecastle was opened after fumigation "the mosquitos could be scooped up by hand." The master of the barque was positive that there had been no mosquitos on board until the twenty-second day out. Howard quotes a letter from a general living in Texas in which he states he has "twice seen flights of *Culicidae*," but as the species and the genus are not given, much of the interest of the statement evaporates.

RECENT ADVANCES IN THE RELATION BETWEEN CHEMICAL STRUCTURE AND PHARMACOLOGICAL ACTION.*

BY

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PHARMACOLOGY occupies a tract in the domain of science between the kingdoms of the chemist and the physiologist; it is, as it were, a "buffer state," and can be approached from either region. But, as far as I know, no boundary commission has ever attempted to completely delimit its borders. Both avenues of approach to the subject offer certain advantages and disadvantages. Chemical knowledge is perhaps more precise and definite, but, on the other hand, the large number of varied and complex substances dealt with, and the comparatively few far-reaching generalizations which can apply to pharmacology, render the material to be presented difficult to arrange in a concise way.

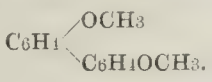
Our ignorance of the physico-chemical reactions of the bioplasm and the mechanisms by which it responds to chemical substances introduced into the organism makes a purely physiological outlook on this subject almost impossible; so that for our present purpose I think a combined scheme of approach will best suit the circumstances. I propose, therefore, to consider the relation between chemical structure and pharmacological action on a primarily physiological basis, the secondary classification being chemical. I propose to trace the points in its passage through the organism at which alterations in its structure may modify the physiological action of a chemical substance, classifying these alterations on chemical lines, so that in all cases chemically comparable bodies will be grouped together.

I.

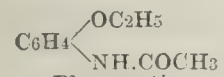
Before absorption structure may modify action indirectly by its effect on physical properties. Increasing the size of the molecule and extending the chain (as in the paraffin series) alters gaseous or liquid bodies, which are easily absorbed, into insoluble solids (the higher paraffins), which are devoid of action because they are not absorbed. Modifications which render substances more or less

* An introduction to a discussion of the subject in the Section of Pharmacology, Therapeutics, and Dietetics, at the annual meeting of the British Medical Association at Aberdeen.

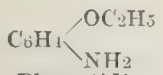
readily acted upon by acids and alkalis will, of course, affect their absorption by the stomach and small intestine. A good example of this is seen in Nencki's well-known "salol principle," in which an ester is constructed to avoid decomposition in the stomach and to allow the molecule to be broken up in the intestine; this principle is seen in the combination of guaiacol with anisic acid—



Phenacetin may be considered another example, as the introduction of the acetyl group diminishes the formation of the hydrochloride of phenetidin in the stomach, which is a poisonous body—



Phenacetin.



Phenetidin.

II.

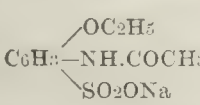
More important, however, are modifications in chemical structure which involve changes in the pharmacological action of a substance after absorption. These modifications may be arranged in four groups.

1. The first group includes such changes in structure as involve alterations in the physical characteristics of the drug. This is illustrated by Meyer and Overton's observations on the action of certain hypnotics, now very generally known. Among the substances investigated, the sulphones (sulphonal, trional, and tetronal) are the most apt examples, as here the increase in ethyl groups—a simple chemical change in structure—leads to a corresponding increase in the distribution coefficient, and thus to increased narcotic action. The degree of dissociation of a compound in solution is another physical property which affects the action of a drug, and may be regarded as a function of its chemical structure. The pharmacological inactivity of the cacodylates, compared with inorganic arsenic compounds, is thus explained.

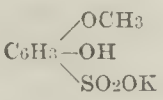
2. The second group includes changes in structure which affect the reactions which occur between a substance and the body tissues. These reactions are either oxidation, reduction, synthesis, or a combination of these processes. The entrance of hydroxyl groups is generally associated with a decrease in physiological activity, which may be due to the increased facility with which these compounds are oxidized. Well-known examples are seen in ethyl alcohol and the polyhydric alcohol glycol; propyl alcohol $CH_3CH_2CH_2COOH$ and glycerol; caffeine and hydroxy-caffeine.

Reduction processes, though less common, may modify the action of drugs introduced into the body. A well-known example is chloral, which is first reduced to the corresponding alcohol CCl_3CH_2OH. If the chloral is combined with arabinose a less-easily reducible substance is formed, with a corresponding decrease in physiological activity. Chloralamide is also more slowly decomposed, and thus less toxic.

Synthetic processes are in general associated with a decrease in physiological action, and modifications in structure which facilitate these result in less reactive and less toxic bodies. Thus, the introduction of sulphonic or glycuronic acid radicles results in decreased toxicity; as certain classes of compounds are partially eliminated after synthesis with these groups. Sulphonic acid salts being soluble are frequently introduced into pharmacology, but the resulting compounds often show a diminution of physiological action. For instance, phenacetin sodium sulphonate—



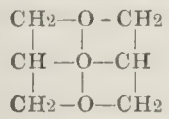
—is less active than phenacetin, and potassium guaiacol sulphonate—



—passes unchanged through the body.

3. (A) In the third group we may consider, first, changes in structure produced by substitution in the outlying parts of the molecule of a drug—that is, the introduction of certain radicles, such as acyls, hydroxyl, amido, or nitroso groups. The effects of this sort of change in structure are variable, and may be divided into two main classes:

(*a*) Effects due to an increase or decrease in the general reactivity of the drug. If a substance has a marked physiological action but is very easily broken down in the organism, it may be protected by substitution processes, and its pharmaco-dynamic activity will thus be increased. Thus, glycerol, which is inert and easily oxidized, may be converted into a narcotic substance, glycerine ether—

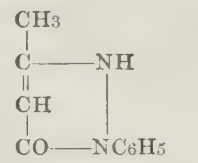


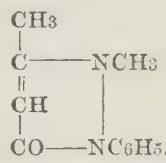
—by substitution of the hydroxyl hydrogen atoms by an alkyl. On the other hand, if a substance having pharmacological activity is prevented from undergoing chemical combination by a closure of its reactive groups a decrease of its activity will result. Thus phenol is rendered inert when converted into phenetol $C_6H_5.OC_2H_5$.

This is very noticeable when the reactive carboxyl group is converted into an ester.

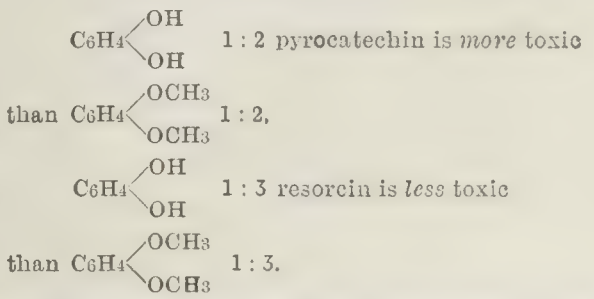
Fränkel has shown that in heterocyclic compounds the introduction of acetyl when it replaces hydroxyl hydrogen renders the substance more toxic. This is illustrated by diacetyl morphine (heroine) and other alkaloidal bodies, the best example being aconitine. Cash and Dunstan showed that the introduction of an acetyl group in place of hydroxyl in the practically non-toxic aconine converted it into a powerful poison, a second acetyl group, however, only slightly weakened the action.

If the acetyl group replaces amide hydrogen in similar compounds, the toxicity is decreased. In some cases the decreased general reactivity allows of the manifestation of special reactions, as when, by the introduction of methyl into the imido group, phenyl-3-methyl-pyrazolon is converted into antipyrin—





A curious illustration of increase and decrease in toxicity by substitution of phenolic hydroxyl hydrogen by methyl is seen in the case of pyrocatechin and resorcin:



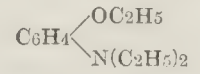
Here may also be included the variations in the rate of decomposition shown by certain series of bodies, which produce similar variations in toxicity and general pharmacological action. Thus, the series

Formanilide	$C_6H_4.NH.HCOO$
Acetanilide	$C_6H_4.NH.CH_3COO$
Propionanilide	$C_6H_4.NH.C_2H_5COO$
Normal butyranilide ...	$C_6H_4.NH.C_3H_7COO$
Normal valeranilide ...	$C_6H_4.NH.C_4H_9COO$
Benzanilide	$C_6H_4.NH.C_6H_5COO$

show decreasing velocity in decomposition *in vitro* and decreasing physiological action, formanilide being too toxic for employment in medicine, and benzanilide being inert.

(*b*) Certain groups introduce characters of their own into the resultant compound—the halogens and nitroso groups, for instance. The entrance of chlorine increases the narcotic and depressant action of the aliphatic hydrocarbons, and the nitrites are vaso-dilators. This may be taken as an example of "selective action," which may be further illustrated by the way in which pharmacological activity may be modified by alterations affecting the so-called anchoring groups.

Thus the introduction of ethyl groups produces increased hypnotic action, as in triethyl para-amidophenol—



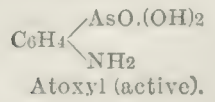
—compared with the corresponding trimethyl derivative.

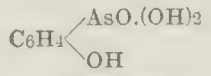
This has been compared to the action of certain dyes containing an amido group which, when both hydrogens are replaced by ethyl, will stain nerve tissues; when methyl groups are used this staining reaction is not present.

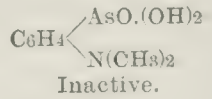
The antipyretic action of the benzene nucleus may be increased by variations in the side chains attached to it; basic radicles being more suitable as "anchoring groups" for this purpose than acid ones.

Thus phenol C_6H_5OH, aniline $C_6H_5NH_2$, phenylhydrazine $C_6H_5NH.NH_2$, represent an ascending series.

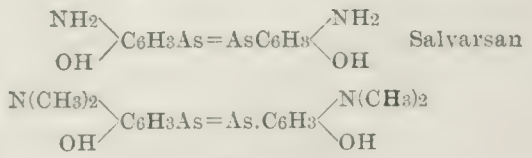
Breinl and Nierenstein have shown that the amido group has a special affinity for trypanosomes; if this group in atoxyl is substituted, bodies having no trypanocidal action result—


Atoxyl (active).

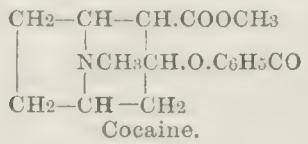

Inactive.

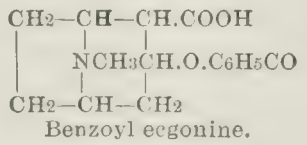

Inactive.

Salvarsan becomes inactive if NH_2 is replaced by $N(CH_3)_2$—


Salvarsan

Cocaine furnishes a good example of the effect of introducing an acyl group—


Cocaine.

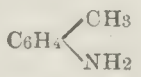

Benzoyl ecgonine.

Benzoyl ecgonine has no local anaesthetic action, but is much more toxic than cocaine. Hence $COOCH_3$ is considered an anchoring group.

(B) But there is another series of changes in the side chains and outlying groups which can be conveniently considered here. This is not substitution but simple change in position, which, as is well recognized in many commonly used drugs, may considerably alter physiological action. The best known example is perhaps salicylic acid, *ortho*-oxybenzoic acid; the *meta* and *para* compounds are pharmacologically inactive. Here again Breinl and Nierenstein's work on atoxyl is of interest; the *ortho* compound is inactive, the *meta* slightly active, the *para* very active as a trypanocide, and the same holds good with the corresponding antimony compounds.

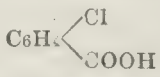
O. C. M. Davis has worked out accurately the affinity constants of two sets of very similar compounds, the toluidines and chlor-benzoic acids.

In the case of the toluidines—



—the *ortho* compound is least toxic, the *meta* more toxic, and the *para* most toxic, and the toxicity is shown to vary directly with the equilibrium constant, that is the chemical affinity.

In the case of chlor-benzoic acids—



—however, the reverse is the case, and the toxicities of the *ortho*, *meta*, and *para* compounds vary inversely as the chemical affinity. Davis explains the apparent anomaly by supposing that the ease with which they are excreted (depending upon their affinity for hippuric acid) is greater than the ease with which they combine with protoplasm. This may be represented by the equation

$$\text{Toxicity constant} = \frac{\text{Physiological affinity}}{\text{Excretion constant.}}$$

4. The fourth and last group of structural changes which we have to consider is that which involves profound alterations in molecular arrangement.

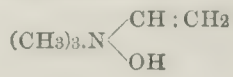
(*a*) *Changes in Valency and Stereo-chemical Changes.*—Changes in valency have long been recognized as affecting the physiological action of a substance, the classical example being the curare-like action of the ammonium compounds described by Crum Brown and Fraser. The change from quinquevalent to trivalent arsenic in organic combination is one of the factors in the pharmacological action of salvarsan as opposed to that of atoxyl. Changes in valency and stereo-chemical changes form two subgroups, which really imply the same kind of rearrangement of atoms. Thus dimethyl sulphide $(CH_3)_2S$, which is inert, has a plane configuration, but trimethyl sulphine hydroxide $(CH_3)_3S.OH$, which is optically active, and therefore has a solid configuration, obtains a curare-like action, together with the change in valency of the sulphur. Not only nitrogen, but phosphorus, arsenic, and antimony bases show curare-like action when the atoms of these elements become quinquevalent.

Some of the effect appears, however, to be due to the alkyl radicles, ethyl sulphates being in some cases less active than the corresponding methyl derivatives; some halogen alkyls do not produce curare action, whereas their oxidized compounds are active.

The difference in action between laevo- and dextro-rotatory isomers has been largely illustrated in the naturally occurring alkaloids and in synthetic compounds. Hyoscyamine and adrenaline are well-known examples.

(*b*) *The Effect of Double Linkages.*—Another variation in intramolecular structure which may influence physiological action is the presence or absence of unsaturated carbon atoms. In the aliphatic bodies the presence of double bonds usually increases the toxicity.

Thus allyl alcohol $CH_2:CH.CH_2OH$ is much more toxic than *n.* propyl alcohol $CH_3CH_2.CH_2OH$; neurine—



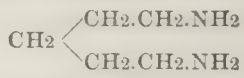
—is much more toxic than choline $(CH_3)_3N\langle^{CH_2CH_2OH}_{OH}$

All compounds containing double linkages are not, however, toxic; other factors in such cases may antagonize their reactivity.

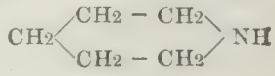
(*c*) *Breaking the Ring Substances.*

In ring compounds variations may be produced by bre· ·ng up the ring structure.

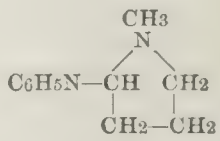
Thus, penta-methylene-diamine—



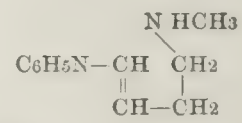
is inactive, whereas piperidine—



is toxic. Nicotine—

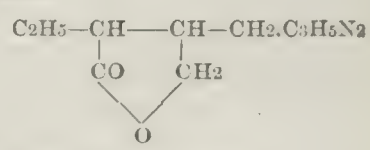


and metanicotine—

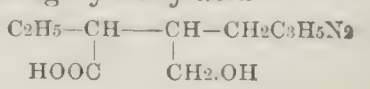


furnish another example.

Changes in ring structure involving loss of the lactone grouping cause a fall in the physiological action, this is shown in pilocarpine—



and the corresponding hydroxy-acid—



DISCUSSION.

Dr. J. C. MCWALTER (Dublin) said that the mediaeval conception of disease was that of a definite morbific entity, for which there existed somewhere a specific remedy. The problem for the physician was to find the cure. The general view was that of bane and antidote. To recognize the bane and to apply the antidote constituted the work of the healer. It was a case of lock and key—if the key which fitted the lock could be found the problem was solved. Meanwhile some useful facts were elicited by

mere empiricism. Certain vegetable drugs were found to have curative effects in certain diseases, and chemistry was afterwards able to show that these drugs generally contained an active principle—whether alkaloid, glucoside, etc. —a very complex chemical compound, containing carbon, hydrogen, nitrogen, and oxygen in extremely intricate architecture. The more recent biological and microbic conceptions of disease led to even more crude therapeutics. Disease being caused by the presence of a pathogenic organism, the problem apparently was to kill the microbe. Hence, there came an era of microbicidal treatment. It mostly ended in failure, but it was observed that not the most potent germicides but the most elaborately constituted alkaloids had the most satisfactory action. Ehrlich's haptophore theory threw a flood of light on the action of elaborated specialized compounds in disease. It was most pregnant with possibilities of a really rational and useful therapy, even though its best known exemplification, salvarsan, was not, in the speaker's opinion, a specific for syphilis, but simply an arsenical salt modified so as to be comparatively non-toxic, and having an influence on a specific fever. The marvellous action of ipecacuanha alkaloids in amoebic disease, of santonin in sprue, of the quinine alkaloids in malaria, of the coal-tar series in fevers, of atropine, morphine, and the digitalis series, clearly showed a relation between intricate and elaborate chemical composition and therapeutic usefulness. Whether it was due to some haptophore method of conjunction with the morbific particles or to a cruder chemical combination remained to be proved.

Dr. OTTO GRÜNBAUM (London) thought that Dr. Fortescue-Brickdale's masterly exposition of the subject conveyed the impression that he believed that the action of a drug could to a certain extent be foretold from its chemical constitution. The difficulty of solving the problem of determining why a drug acted was immense. Reference to some of the arsenic preparations would illustrate this. For instance, the peculiarity of the salvarsan group refusing to act upon the nervous system, or possibly even reach it, whilst atoxyl and arsacetin not only reacted but caused degeneration of the optic nerve. That there was some difficulty in foretelling how a drug would act was obvious from salvarsan being No. 606 and neo-salvarsan No. 914, showing that Ehrlich had to carry out experiments with many preparations before finding that for which he was looking. Again, what was the explanation of the great pharmacological difference and small chemical differences between ergotoxin and ergotonin, hydrastinine and hydrastin. Chloral and choralose also called for explanation. It was to be hoped that in the near future all the facts would be known, for then and then alone would the ideal analgesic be prepared, a drug which would paralyse the sensory cells, and have no action upon the rest of the nervous system.

REPLY.

Dr. FORTESCUE-BRICKDALE, in reply, said that Dr. Grünbaum's questions lay at the root of the whole matter. The number of compounds investigated by Ehrlich showed how difficult it was to get a substance which would have the therapeutic action required, even when certain guiding principles as to reaction of chemical compounds in the organism could be laid down—namely, the necessity of getting arsenic in a trivalent state, and the space relation of the amido and hydroxyl groups. The ground plan of his paper showed, he thought, how difficult it was to foretell pharmacological action from simple consideration of structure, because the points at which a drug's structure might modify its action in the body were so frequent, and the methods so numerous. Only with regard to the simpler bodies could any opinion be given, not as to therapeutic effect, but as to the sort of pharmacological action a body would have, and whether there were any marked antagonistic or favourable features in its structure. With regard to the action, the slight differences in the structure of chloral and chloralose might affect the rate at which the substance was reduced or otherwise changed in the body.

FOR the eight years prior to 1907 there was a steady increase in the number of United States soldiers admitted to hospitals for alcoholism. This rate then began to decline, and in 1913 reached the figure of 14.24 per mille, which is the lowest rate since 1870.

A CASE OF BILATERAL OPTIC NEURITIS DUE TO SPHENOIDAL SINUSITIS.

BY

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MANCHESTER.

THE addition of still another to the long record of eye affections due to sinusitis is excusable by reason of the following: The method of onset, the implication of the abducens nerve, and the fortunate termination. As far as my researches have extended, the last two features seem not to have been recorded before.

The patient was an apparently healthy married lady, aged 27, with one healthy child, and no history of miscarriages or other evidences of specific taint.

When she consulted me in January, 1914, she gave a history of twelve months headaches, the pain being chiefly situated at the back of the head and neck. About Christmas she had suffered from a severe cold in the head accompanied by a fairly copious nasal discharge, but it had cleared up without resort to medical advice. Recently she had experienced a muddled feeling when gazing into the distance and a tendency to double vision when looking to either side. She had no trouble in reading or sewing, and, except for the symptoms mentioned, was in excellent health. Examination of the eyes revealed a slight weakness of abduction of the left externus muscle, the vision in this eye being $\frac{5}{5}$ and in the other $\frac{6}{5}$. The right optic disc and fundus were normal, whilst the only detectable change in the left was a slight blurring of the nasal border with some hyperaemia. The pupils were equal with normal reactio is. Accommodation was normal; there was no tenderness on pressure, and no ptosis or proptosis. The left visual field showed a slight peripheral contraction and a little enlargement of the blind spot with normal field for red.

A tonic was ordered. When next seen, a week later, diplopia had become a very troublesome symptom, although no actual squint was discernible. The fundus changes were unaltered. Seen again three weeks after the first visit, neuritis was plainly evident in the left nerve, although the vision had improved to $\frac{6}{5}$. As time passed the whole disc became blurred, the vessels emerging from a cloud. The other disc became slightly affected in about five weeks after the onset, the upper edge of the disc attacked mainly, and the process gradually spread along the nasal border, the temporal and lower margins being unaltered during the whole course of the affection. At this stage the patient complained of intense neuralgic pains affecting both sides of the face and back of the neck, and as she possessed a decaying molar its extraction was advised and carried out.

In March eight degrees of deviation of the abductor was present, and a maximum of fourteen degrees was reached a few weeks later. The condition of the left disc became gradually aggravated, but at no time was the central lumen closed. A broad patch of exudation appeared at the upper and inner section, where also occurred a small haemorrhage. The vision in both eyes remained normal, nor was choroiditis or "K. P." present.

I had suggested at the commencement of the illness that the seat of the mischief was in all probability in the nose, and the patient accordingly agreed to consult Dr. Courtenay Yorke, of Liverpool, who furnished the following report:

"At Christmas, 1913, the patient had severe rhinitis with purulent discharge. As the eye changes appeared immediately afterwards it was thought feasible that they were dependent on some inflammatory condition in the posterior ethmoidal labyrinth or in the sphenoidal sinus. The absence of pus in the nose was not opposed to this idea, as a closed empyema of one of the posterior ethmoidal cells, with inflammatory extension to the cellular tissues of the orbits would anatomically explain most adequately all the ocular changes. A symptom suggestive of sphenoidal sinus suppuration was occipital headache. On examination the nose was found to be apparently quite healthy. The septum was in the middle line, and no trace of pus was seen. The naso-pharynx was normal. On transillumination both sides were clear. No tenderness was observed over any of the sinuses accessible to the finger."

Yet, as the sequel proves, the sphenoidal sinus was undoubtedly choked with matter, a feature which the many recorded cases show is particularly common, and in fact to be expected. At the consultation cocaine and adrenalin tampons were applied to the body of the sphenoid with the view of attempting operative measures. This manœuvre, however, became impossible on account of the patient's apprehensiveness and nervousness. It was therefore decided to keep the patient under careful observation, and if necessary at a later date to explore the posterior ethmoidal cells and sphenoidal sinuses.

The following day the patient suffered from what she termed an intense "cold in the head," accompanied by a copious thick yellow discharge. This continued for over a week and caused her intense discomfort. When seen again the neuritis was plainly subsiding. Five weeks later the diplopia suddenly ceased, but slow jerky nystagmus on extreme abduction could be elicited. The condition of the discs was improving and the central vision was still normal. When the disease was at its

* Read before the Liverpool Medical Society.

height slight ptosis of the left upper lid manifested itself, and this feature, it was particularly noticed, became more marked when the patient was apprehensive or suffering from mental excitement, as, for instance, when the idea of operative measures was suggested to her at the consultation.

She was last seen in October and complained then of occasional attacks of blurred vision, more marked on getting out of bed in the morning or when entering a brightly lighted room. She experienced no difficulty in near work or moving about outdoors or in the house. She still suffers at times from pain down the right side of the neck, aggravated when the head is turned suddenly to the right. Has no diplopia but occasionally stumbles. The eyes show equal but dilated pupils, which react feebly to light but fairly to accommodation and convergence. Slight jerky nystagmus can still be elicited, otherwise the ocular movements are full and free; there is no squint or ptosis. The left disc is still hyperaemic, its edge blurred but definable, exudation covers the vessels in places but does not seem to cause any sudden diminution, although they as a whole seem narrowed.

A less marked condition is present in the right disc, and in addition are two patches of exudation, one above to the nasal side and one below. The vision in both is $\frac{5}{5}$ and J.1, the visual fields uncontracted, but the central scotoma remains about the same size.

The case presents several features of interest, and some problems, the solution of which can only be surmised. When first seen the only objective signs were the slight weakness of the left abductor and the suspicious neuritis of the left disc. The length of time which elapsed before the neuritis became definitely evident on the face of the disc undoubtedly pointed to a lesion affecting the nerve a long way behind the eyeball. This was further confirmed by the absence of pain or tenderness on pressure over the eyeball and the primary implication of the sixth nerve. The implication of this nerve still further assisted the localization of the seat of the mischief, for such could scarcely be anywhere else than at its situation on the body of the sphenoid where it traverses the cavernous sinus alongside the carotid artery. By direct extension of the mischief forwards the implication of the optic nerve can be explained, for, as pointed out by Onodi in his investigations on the relations of the optic sulcus, this canal can be formed entirely by the bone forming the sphenoidal sinus. It is possible that in this case the sixth nerve may have had an abnormal relationship to the carotid artery in the cavernous sinus, and instead of lying external to the artery might have lain on its mesial aspect in contact with the bone. This theory would explain why the occurrence of abducens paresis has not been recorded before. Again, the localizing feature of this paresis enables one to put out of court any liability on the part of the posterior ethmoidal cells, which, as is well known, are a frequent cause of optic neuritis.

A more difficult symptom to account for is the complaint of occipital pain, which is, I believe, almost pathognomonic of sphenoidal sinus trouble. In my humble opinion such may be attributable to implication of the sympathetic plexus around the carotid artery. That this was affected is proved by the character of the ptosis. The drooping of the lid was clearly not due to levator paresis, nor would it be reasonable to expect to find the frontal division of the third nerve implicated without at the same time the fourth nerve being involved. The ptosis in this case was due to weakness of the bundle of non-striated muscle fibres (arising between the striated fibres of the levator, along the under surface of which they run to be inserted in the upper margin of the tarsus) a muscle discovered by and named after Heinrich Müller and innervated by the sympathetic. That the sympathetic was affected is confirmed by the aggravation of the ptosis under mental excitement despite the fact that the other classical and textbook(?) symptoms were not at the same time present.

The fortunate termination of the case is not without interest. At the first consultation one had a very strong suspicion where the mischief lay, due in no small degree to the history of rhinitis which had suddenly ceased. When, then, a fairly lengthened interval elapsed before the neuritis became evident on the face of the optic nerve, the diagnosis became settled and I ventured to express the opinion that the recurrence of the original cold in the head would prove a blessing in disguise. The sequel proved the truth of this surmise, although one scarcely expected it would result so beneficially.

THE late Dr. Eustace Smith left estate valued at £2,826.

THE EFFECT OF DAYLIGHT AND DRYING ON THE HUMAN AND BOVINE TYPES OF TUBERCLE BACILLI.*

BY

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MUCH work has already been done on the type of tubercle bacillus occurring in tuberculous lesions in the human subject.[1] The potency of the bovine type of bacillus in producing gland, bone, and joint tubercle, particularly in young subjects, is now well recognized,[2] as also its ability to set up a miliary tuberculosis;[3] but there is a striking absence from published records of instances of primary pulmonary tuberculosis associated with bovine type infections.[4]

This incidence of bovine type infections in man is noteworthy, for in general the lungs of mammals are particularly good sites for the development of tuberculous lesions, and experimentally it is much easier to induce tuberculosis in healthy, susceptible animals—for example, rabbit or guinea-pig—by inhalation than by ingestion.[5] The bovine type of bacillus is the less virulent for man, yet when it does infect it apparently enters by the less favourable route! A rational explanation of this anomaly is still wanting.

The lesser pathogenicity of the bovine type for the human species, though it accounts for the restriction of bovine type infections to the most susceptible members of the community—namely, the young—gives no hint why primary lung infections with the bovine type of bacillus should be so rare.

Further, while opportunities for respiratory infection with the human type of organism are admittedly numerous, as large numbers of human bacilli may be contributed to atmospheric dust through the expectoration of phthisical subjects, it hardly appears reasonable to assume that a notable number of bovine bacilli are not also disseminated atmospherically by the drying of discharges and secretions containing them.

In the naturally acquired tuberculosis of domesticated animals differences are also met with. Cattle, horses, and swine are all liable to spontaneous bovine type infections, yet while respiratory infection is the chief mode in the cow, in the horse and the pig it is most frequently alimentary (Nocard).[6] Whether this lung incidence in domesticated animals is due to real differences in susceptibility of the lungs of these species, or merely to different modes of infection consequent upon the habits of each species, could only be settled by comparative inhalation experiments upon them.

To account for the absence of aërial infection of man by the bovine type of bacillus it has occurred to us to inquire whether atmospheric influences are more deleterious to the bovine than to the human type of bacillus. The effects of desiccation and daylight on tubercle bacilli have been studied by several observers, and, depending largely upon the experimental conditions, markedly different results have been obtained; but, so far as we know, no comparative tests have been made between typical human and bovine types of bacilli. There is general agreement that drying, even for months, has of itself little influence;[7] however, when dried in dust Kirstein,[8] for example, found that human tubercle bacilli did not survive diffuse daylight longer than fourteen days. Koch's cultures, exposed at a window to diffuse sunlight, died in five to seven days, while in direct sunlight they were killed in from a few minutes to several hours[9]—a period which Weinzirl[10] finds shortened to from two to ten minutes when the organisms are spread in thin films and are unshaded by glass.

In our experiments we used pure cultures on egg media of bacilli of known pedigree and virulence. Both were originally derived from the human subject, had been

* A paper read in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association at Aberdeen, 1914. The expenses of this research were defrayed by grants from the British Medical Association and the Carnegie Trust.

TABLE I.—*Effect of Desiccation Alone.*

Weighed amounts of cultures, four weeks' growth, were placed in small sterile test tubes, loosely plugged with cotton-wool, and kept in a dark, well ventilated cupboard. Under these circumstances definite desiccation occurred. Emulsions were finally made in salt solution and amounts equivalent to $\frac{1}{100}$ mg. of moist culture were injected intravenously into rabbits.

Time Culture Dried.	Rabbit.	Duration of Animal Experiment.	Bovine Type.				Rabbit.	Duration of Animal Experiment.	Human Type.			
			Lungs.	Kidneys.	Spleen.	Liver.			Lungs.	Kidneys.	Spleen.	Liver.
0 days	No. 1	23 days (k)	+++++++	+	+	+	No. 8	23 days (k)	+ (only 1 nodule)	–	–	–
1 day	No. 2	41 days (k)	+++++++	+	+	+	No. 9	41 days (k)	+ (25 nodules)	–	–	–
2 days	No. 3	39 days (d)	+++++++	+	+	+	No. 10	40 days (k)	–	–	–	–
3 days	No. 4	40 days (k)	+++++++	+	+	–	No. 11	40 days (k)	+ (2 nodules)	–	–	–
4 days	No. 5	40 days (k)	+++++++	+	+	–	No. 12	40 days (k)	+ (6 nodules)	–	–	–
6 days	No. 6	22 days (d)	++ (25 nodules)	–	–	–	No. 13	22 days (k)	–	–	–	–
7 days	No. 7	40 days (k)	+++++++	+	+	+	No. 14	40 days (k)	+ (only 1 nodule)	–	–	–

(d) indicates that the animal died, (k) that it was killed. The relative severity of the lesions *post mortem* is indicated by the number of crosses (+). The minus sign (–) indicates that no naked eye lesions were found. In this series the virulence of the human type of bacillus was lower than usual; see other tables. (Series begun on January 27th, 1914.)

TABLE II.—*Effect of Diffuse Daylight Alone.*

For this purpose cultures, five weeks' growth, sealed with paraffin to conserve water of condensation, were exposed at the window. After desired intervals, weighed quantities of growth were removed, emulsified and injected as before.

Time Culture Exposed.	Recorded Hours of Sunshine.	Duration of Animal Experiment.	Bovine Type.				Duration of Animal Experiment.	Human Type.			
			Lungs.	Kidneys.	Spleen.	Liver.		Lungs.	Kidneys.	Spleen.	Liver.
0 days	0.0	No. 1, 36 days (k)	+++++++	+	+	+	No. 8, 36 days (k)	++++	–	–	–
1 day	1.3	No. 2, 35 days (k)	++++++	+	+	+	No. 9, 35 days (k)	++++	–	–	–
2 days	1.3	No. 3, 29 days (d)	+++++	+	+	–	No. 10, 34 days (k)	++	–	–	–
3 days	1.3	No. 4, 31 days (d)					No. 11, 33 days (k)	+	–	–	–
4 days	1.5	No. 5, 32 days (k)	+++++	+	+	–	No. 12, 35 days (k)	+	–	–	–
5 days	3.4	No. 6, 25 days (d)	++++	–	–	–	No. 13, 34 days (k)	+	–	–	–
7 days	11.7	No. 7, 32 days (k)	++	+	+	–	No. 14, 32 days (k)	–	–	–	–

Animal No. 4 was accidentally cremated before an examination had been made. This series of experiments was begun on March 16th, 1914.

TABLE III.—*Effect of Diffuse Daylight with Simultaneous Desiccation.*

Weighed quantities of cultures, four weeks' growth, were exposed at the window in small sterile test tubes loosely plugged with cotton-wool. Desiccation rapidly occurred. At intervals emulsions were made and injected as before.

Time Culture Exposed.	Recorded Hours of Sunshine.	Duration of Animal Experiment.	Bovine Type.				Duration of Animal Experiment.	Human Type.			
			Lungs.	Kidneys.	Spleen.	Liver		Lungs.	Kidneys.	Spleen.	Liver.
0 days	0.0	No. 3, 23 days (k)	+++++++	+	+	+	No. 1, 23 days (k)	++++	–	–	–
3 days	11.1	No. 7, 23 days (k)	+	–	–	–	No. 5, 23 days (k)	++	–	–	–
7 days	14.3	No. 9, 24 days (k)	–	–	–	–	No. 11, 24 days (k)	–	–	–	–
17 days	27.5	No. 15, 32 days (k)	–	–	–	–	No. 13, 34 days (k	–	–	–	–

This series of experiments was begun on September 6th, 1913.

under cultivation for two years, and still retained their distinctive characters. They were exposed simultaneously and under identical conditions in each series of experiments in a room (temperature 50°–60° F.) with a northern exposure, and their virulence for the rabbit was then estimated by intravenous inoculation of amounts equivalent to 0.01 milligram of moist culture. The results are given in the accompanying tables. It is to be noted that only the desiccating action of room temperature and the actinic effect of diffuse daylight were thus observed, either singly or together. As days vary much in brightness, in order to give some measure of them, we have included in our tables numbers indicating the hours of sunshine recorded during each of the periods of exposure. These figures were obtained, through the kindness of Professor Becker, from the records of the University Observatory, which is situated within half a mile of the laboratory.

From Table I it is seen that there is little appreciable loss of virulence of either type after seven days' desiccation.

From the experiments recorded in Table II it is seen that diffuse daylight causes a definite lowering of the virulence of both types; within seven days the human being avirulent. Note the small amount of sunshine recorded (3.4 hours) during the first five days.

In Table III a marked diminution of virulence is seen to have occurred within three days (11.1 hours recorded sunshine) and after seven days (only 3.2 hours more of recorded sunshine) pathogenicity had gone. The main point that emerges from this series is that under the combined influence of desiccation and diffuse daylight not only is there a fall in virulence, but also that the drop is much more pronounced in the case of the bovine type.

The general conclusion, then, is that, tested in this way, the bovine type is distinctly more susceptible to the prejudicial effect of ordinary atmospheric influences (daylight and drying) than is the human type of tubercle bacillus. This difference between the types may in part explain why aërial infection with the bovine type is so infrequent in human beings.

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THE LOCALIZATION OF FOREIGN BODIES BY MEANS OF THE X RAYS.

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THE medical journals have recently contained many descriptions of new methods of localization. It is advisable in these circumstances to take stock of these and consider some points regarding their respective merits.

The object of the radiographer is to be able to state with the utmost precision the exact position of a foreign body, and to satisfy himself that, if an extraction does not result, he is in no way to blame. For this reason the method of examination chosen should be the most accurate, not the most rapid. It is often concluded that such and such a method is the best because of the ease and rapidity with which it can be executed. However quickly it may be possible for the radiographer to do his share of the work, if it is not accurate it is the worst possible method.

Considerable difficulties may face the radiographer, and he must to a certain extent depend upon the skill of the surgeon, but if he knows that he has made no mistake he need fear no criticism. It is advisable for him, however, to be present at the operation in order to see that the patient is placed in a similar position to the one which he assumed during the *x*-ray examination, and further so that he may draw the surgeon's attention to various necessary points. For instance, if a spot has been marked on the skin under which the bullet is said to lie at a stated distance, he must see that the skin is not stretched before the incision is made. A surgeon will frequently do this without thought, placing his thumb and forefinger on either side of the spot indicated. Further, if it is stated that a foreign body lies at a certain depth below a mark, that depth is vertical, and the information given will be of no value if the operator enters obliquely in order to avoid certain structures. The surgeon must, so to speak, focus the bullet in his mind's eye before the cut is made, as once the knife has entered the surface marking is lost.

Method of Right-angled Planes.

In this method two marks are made on the skin vertically over the shadow cast by a foreign body when examined both from the front and from the side—that is to say, at an angle of 45 degrees from each other. From each of these marks imaginary perpendicular lines are dropped and the foreign body sought for at the point where they intersect. The examination may be confirmed by taking two radiograms at right angles to one another. Acting on this principle, four marks can be made instead of two, the limb being examined from the front, from the back, and from both sides.

In order that these observations should be as accurate as possible, it has been suggested in recent articles in the BRITISH MEDICAL JOURNAL and in the *Archives of the Roentgen Ray* that a ring localizer should be employed. The limb is placed at first in a fixed position, and care is taken to ensure the beam being vertically below. The diaphragm is narrowed down, and when a small aperture alone remains and the foreign body is seen lying in the centre a metal ring, with an internal diameter of two-thirds of an inch, attached to a wooden handle, is slipped between the upper part of the limb and the screen. A mark is then made over the shadow of the foreign body. The ring is afterwards placed below the limb and another mark made. The process is repeated when the part to be examined has been rolled over at an angle of 45 degrees, and thus the four points desired are obtained.

The right-angled plane method has the disadvantage of being difficult to carry out when the foreign body is in a region other than a limb, and, further, although in many instances it may be entirely successful, it might be unfair to blame the surgeon for failing to find something which is supposed to be lying where imaginary lines intersect. This objection can be obviated by estimating the depth of the foreign body below a marked point, and, if the surgeon has been given this data, there can be no excuse for his failure. In the description of the ring localizer, a way by which this could be easily accomplished was given. Shenton pointed out another method in the *Practitioner* several years ago. When he had obtained his first mark he rolled the limb over at right angles and placed the point of a probe, held parallel with the screen, in contact with the mark. Next, a piece of lead foil was slipped over the probe until its distance from the point was equal to that of the point from the shadow of the foreign body. This, of course, gave the depth.

The objection that the method already explained is of little use when a foreign body is embedded in other parts than a limb can be overcome by using in conjunction with, say, the ring localizer some contrivance that will indicate the depth below the surface by means of the relative amount of movement of two shadows when the tube is moved backwards and forwards or from side to side. The nearer a foreign body lies to the screen the smaller will be the amount of movement of its shadow.

Thus if a body is lying in the pelvis, and a wooden stick, to the end of which a metal knob is attached, is held to the side of the body, when the tube is moved the shadow of the foreign body and the shadow of the knob will both move in a direction opposite to the displacement of the tube. When the knob is placed in a position so that its shadow moves exactly the same amount as the shadow of the foreign body, a mark can be made under the knob, and the depth calculated. It is necessary to become familiar with this method before it can be executed with accuracy. In the article by Shenton, already referred to, the same principle was applied, but the pointer with the knob was clamped, and greater accuracy resulted accordingly.

Method of Triangulation.

In this method the tube is moved a fixed distance, and one or two plates taken, two shadows of the foreign body resulting. If the distance of the tube from the plate and the lateral movement of the tube are known, it is easy to reconstruct the various parts, and, by means of cross threads, which represent the rays proceeding from the focal point of the tube, to obtain the exact position of the foreign body. If the necessary precautions have been taken, there should be no possibility of error. The reason why this method is not more freely employed is because it has been stated that the localizer necessary is complicated, and the calculation a long one. This is a matter of opinion, and if a modification of the original Mackenzie Davidson localizer is used, it will be found that the operation required is simple. Moreover, all objections of this kind have been met by the radiometer of Hampson. He has drawn out a scale, and, if his instructions are followed, it is merely necessary to refer to it in order to know the exact depth of the foreign body below the point marked on the skin. The principle is that of triangulation, but the radiographer has had all the calculation already done for him, and if the tube is placed at a fixed distance below the plate, and moved laterally a fixed distance, the scale will give the depth according to the amount of movement of the shadow of the foreign body.

The modification of the cross-thread localizer mentioned is made by Butt and Co., of Wardour Street, and with it can be obtained a portable couch of value for field service. The apparatus consists of a couch with a crossbar tube holder and a plate-changing box with wires stretched at right angles over a vellum covering. The cross-thread localizer has an adjustable mirror below, a movable base, and a vertical scale carrying a T-piece. In addition, there are two metal mice carrying needles and threads, the latter being also attached to the T-piece, and a vertical millimetre scale with two sliding pointers, moving in different directions.

The tube must be placed within the box with the centre of the anticathode vertically over the point of intersection of the cross wires. Two exposures are made, the tube being moved 3 cm. to either side of the central position. The position of the cross wires must be marked on the patient's skin.

If the two exposures have been made on one plate, this is placed after development on the localizer, with the shadow of the cross wires superimposed on similar marks, scratched on the surface of the localizer. If two plates have been taken the shadows must be drawn on ground

glass or celluloid, which in their turn are placed on the localizer.

The T-piece of the vertical scale is fixed from the surface of the localizer at a distance corresponding to the distance of the anticathode from the plate. This is easily done, as the vertical scale can be moved from the couch to the localizer, on account of its movable base. On either arm of the T is a notch, through which the threads going to the needles on the mice are passed. These two arms are 6 cm. apart, that is, the distance through which the tube is moved between the exposures. The points of the threads attached to the mice are placed one over each shadow, in such a way that the threads cross, the right thread of the T-piece going to the left shadow, and vice versa. All that now remains to be done is to read off the measurements on the vertical millimetre scale. This should be placed on one of the lines of the quadrant which contains the shadow of the foreign body. The upper pointer should be made to touch the intersection of the threads. This gives the depth and distance in one direction, while if the lower pointer, which is set at right angles, is slid along to the other line, the reading in the other direction is obtained.

The distance of the foreign body from two fixed lines has now been ascertained, and as these lines are marked on the patient, and the depth is also known, a record can be given to the surgeon, such as: Depth of foreign body, 3.6 cm.; north, 2.6 cm.; east, 4.6 cm. The calculation can be made rapidly once the plates have been developed, and, if the surgeon desires to do so, he may place the two plates in the stereoscope, which enables the observer to get a most realistic view of the relative position of the surrounding structures.

These, then, are some common methods at our disposal for estimating the exact position of foreign bodies.

This is not the place to criticize them. Each radiographer must make his own choice, based on his own experience, and guided by his own opinion, as to whether the method of right-angled planes or that of triangulation is the more accurate.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A METHOD OF X-RAY LOCALIZATION.

LET me briefly describe the method of localization by *x* rays which I generally employ. Say, for example, that the foreign body is in the arm. If possible the arm is moved till the foreign body presents itself at the highest point—that is, nearest to the surface. If the part cannot be moved the tube is moved to obtain this information. When this highest point is determined, a metal pointer is pressed gently over the part, and presently an area is discovered when on pressure the foreign body will move. This spot indicates the nearest route to the foreign substance, and the depth can be easily estimated, a pencil mark made on the skin, and the necessary data given to the surgeon.

This method has proved of great value in the hands of Mr. Thring and Sir Alexander MacCormick, the two consulting surgeons connected with this hospital, and I feel sure is all that is necessary in 90 per cent. of the cases.

HERSCHEL HARRIS, M.B., Ch.B.Sydney.
Captain, R.A.M.C.

Australian Voluntary Hospital,
Wimereux, France.

AORTIC ANEURYSM: PARAPLEGIA: DEATH.

MY excuse for publishing the following case of aneurysm is that it was mistaken for an abscess by native attendants at the Union Poor House, Kingston. The length of time the patient lived after erosion of the bodies of the vertebrae is also a matter of interest.

The patient was a man aged 34. He had been a soldier in the West India Regiment. He was admitted with a very large circular tumour on the back, immediately below the left scapula. He suffered considerable pain for some months, during which time the tumour became somewhat smaller. Then, quite suddenly, he became completely paralysed in the lower limbs, and died three weeks later.

At the *post-mortem* examination, in which I was kindly assisted by Dr. Cato, of the Hospital, Kingston, it was found that the aneurysm extended from the arch of the aorta and occupied practically the whole thoracic aorta; three of the ribs were eroded through, and so were the bodies of the vertebrae, exposing the spinal cord for 2½ in. The sac was more than half-filled with laminated clot. The left lung was greatly compressed and was firmly adherent to the chest wall. The pericardium was half-full of fluid.

C. R. EDWARDS,
Halfway Tree, Jamaica. District Medical Officer.

LYMPHOCYTIC LEUKAEMIA.

A MARRIED man, aged 29, consulted me on October 14th, 1914, complaining of a sore throat. Both tonsils were slightly enlarged and injected. There were no other symptoms. A gargle and a mixture were prescribed and he returned after four days to say that he felt quite well. On October 21st he came again complaining of a sore throat. He appeared to be very ill; both tonsils were considerably enlarged, the right being larger than the left; both were inflamed. There was no exudate. The temperature was normal. I was struck by the appearance of the tonsils, which were gelatinous and "unhealthy-looking." I sent him home to bed. On the following day I painted both tonsils with tincture of iodine and gave him a mixture of liq. arsenicalis mlv and potassium iodide gr.v. On the following day he was much better. A few small but tender glands could be felt at both sides of the neck. During the next nine days he improved in every way. He became stronger, and the throat symptoms disappeared. On November 5th he came to me again, complaining of a rash, consisting of spots covering profusely the front of the chest and abdomen; some were small petechial haemorrhages, but others were slightly-raised, irreducible, irregular, black patches, about the size of a fleabite. The tonsils were once again considerably enlarged, and had the unhealthy appearance previously mentioned. Both sides of the neck were swollen. Large and tender discrete glands were felt in both cervical regions. The liver and spleen appeared normal to percussion and palpation. There were no other physical signs apparent. The urine was normal.

I suspected a melanotic sarcoma with primary origin in the tonsils and secondary deposits in the skin. On November 12th I sent him to the Throat Hospital, Golden Square, where he was seen by Dr. Hope, who removed a gland from the neck and a piece of skin for microscopic examination. I understand that the patient bled profusely from the incisions. Dr. Hope kindly informed me that the pathological report suggested lymphadenoma with skin infection. It was arranged that the patient should see Dr. Hope at a later date in order to have his blood examined, but he became worse and was unable to keep the appointment.

From this time onwards until his death the symptoms became rapidly more serious and alarming. The tonsils suddenly increased in size and became black. The right tonsil ulcerated and fungated. A few days later the left tonsil went through the same morbid process. On seven occasions he lost a large amount of blood from the tonsils. The glands of the neck became more enlarged, painful, and tender, and large and tender glands could be detected in both axillae and groins. The rash spread to the back of chest and over legs, arms, gums, and the mucous membrane of the mouth. The spleen increased in size to approximately twice its normal dimensions. The liver was slightly enlarged. Sight and hearing remained unimpaired. There were no symptoms suggesting any morbid process proceeding in brain or kidneys. The patient died on December 13th in his sleep. At no time was he comatose.

A few days before death Dr. Bone of Luton, who met me in consultation, obtained a specimen of the patient's blood and very carefully worked out a blood count. The leucocytes were enormously increased, numbering 2,000,000 per cubic centimetre. The red cells numbered also approximately 2,000,000.

Luton. W. E. LEVINSON, M.R.C.S.Eng., L.R.C.P.Lond.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BRITISH GUIANA BRANCH.

AT a meeting of the Branch held at Georgetown on November 18th, 1914, the following officers were appointed: President, Dr. Ozzard; Vice-Presidents, Drs. Wise and Craigen; Council, Drs. Edmonds, Von Winckler, Duncan, and E. P. Minnett; Honorary Secretary, Dr. MacQuid.

Treatment of Ankylostomiasi.—The President, Dr. OZZARD, read a paper on ankylostomiasis. He expressed a doubt as to whether thymol was as effective a remedy as commonly supposed, and mentioned that he had observed the disappearance of the ova after a course of emetine. Seven out of thirteen cases so treated showed no ova at the end of the course. He had also used oil of chenopodium, which was less nauseous than thymol, had no disagreeable after-effects, and produced no toxic symptoms in therapeutic doses. After fasting for eight hours, the patient was given an ounce of Epsom salts, and two hours later sixteen drops of the oil, which was repeated at intervals of two hours until three doses had been given. Four out of seven cases so treated left hospital without showing ova at the last examination of their stools. On this point, however, he uttered a warning, stating that a patient should not be declared free on a single examination, as whatever the treatment used no ova might be seen perhaps for two or three days consecutively, and then found again. He insisted strongly that the proper way of dealing with ankylostomiasis was by prevention. It was, he said, not a race disease but a dirt disease, and clean-living people in a country swarming with the infection could easily ensure themselves against it. He attached particular importance to the provision of proper latrines on the estates, taking care to prevent soil contamination. Latrines might be fixed over an open trench with a good flow of water, though the septic tank system was very efficient for houses and institutions under proper control; it was, he added, most important to train people to eat and drink with clean hands, and not to walk on dangerous ground unless properly shod. In the discussion which followed the paper Drs. VON WINCKLER, MINNETT, and WISE generally supported its conclusions, but the last-named felt that drugs were helpful, and Dr. BARNES suggested a mixture of Epsom salts 60 grains, and an effusion of quassia 5 oz., as a most efficient vermifuge.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting on December 11th, 1914, Sir JOHN LENTAIGNE in the chair, the following card specimens were shown: (1) *Portion of resected intestine showing congenital absence of caecum and appendix with atrophied ascending colon.* Mr. D. KENNEDY said the intestine was removed from a girl aged between 20 and 21. Four years ago she had a subcostal abscess on the right side, which was thought to be a localized tuberculous abscess. On opening it she made a good recovery. Two years afterwards a faecal fistula formed. About three weeks before the meeting the abdomen was opened away from the fistula and a resection done, followed by lateral anastomosis. The portion of the large intestine anastomosed was about the middle of the transverse colon. The opinion of the pathologist who examined the specimen was that it was a congenital malformation, and that the atrophied ascending colon was the result of inflammatory trouble, probably of tuberculous origin. (2) *Urethral calculus removed from bladder.* Mr. KENNEDY showed a stone removed from the bladder of a child. It was impacted towards the fundus of the bladder, and part of the calculus projected into the right ureter. Sir JOHN LENTAIGNE thought that the origin of the trouble in the intestinal specimen had been inflammatory in character, and suggested that it had probably originated in or about the appendix. Dr. CROFTON also made remarks, and Mr. KENNEDY replied.

(3) *Prostatic calculi.* Mr. A. BLAYNEY showed a number of small stones removed from inside the capsule of the prostate. On cystoscopic examination a tumour could be seen. Urine occasionally came through the rectum. On examination of the rectum with the finger a mass the shape of the prostate could be felt, somewhat like the stone. A diagnosis of prostatic calculi was made and perineal operation was done, when the stones shown were removed from the prostatic urethra. Mr. BLAYNEY read a paper in which he related his experiences of an operation recommended by Paterson for the relief of *Intestinal stasis.* It consisted of the removal of the caecum, ascending, and part of the transverse colon. The operation had been done twenty-one times, with three deaths. In those who survived there had been a very marked improvement. Sir JOHN LENTAIGNE said that, according to Combe of Lausanne, the essence of the trouble in these cases was the absorption of poisons from the large intestine produced by the decomposition of nitrogenous portions of food. There were many other conditions which were produced by absorption of these poisons, and a very large proportion of cases of ill health that they had to deal with arose from them. Combe, who treated an enormous number of cases, said they could be dealt with by medical treatment, and undoubtedly hundreds of patients treated by him expressed themselves as benefited, and many of them declared they were cured. His treatment was based on the belief that the trouble was due to bacterial decomposition in the large intestine which had got out of bounds because something had interfered with some of the safeguards by which these processes were checked in the normal individual. Great improvement could be brought about in all these cases by diet, but nevertheless there were a lot of cases which came to the surgeon, sometimes owing to an acute attack, and sometimes because they objected to restriction in diet, or perhaps because the patients were too poor to be able to get suitable dieting, or to face the long and tedious, and more or less uncertain, medical treatment, and therefore had to be treated by a surgeon quickly. Stasis alone was insufficient to explain these phenomena, but as a rule slowing of the functions anywhere in the body usually led to trouble. In this condition he thought what the surgeon saw when he opened the abdomen was the result of a very slow process which had gone on for years, and had perhaps originated in infancy from faulty feeding. The local changes were those that brought the patient to the surgeon, constitutional troubles being generally treated by drugs. The former were of the nature of catarrhal inflammation of the intestine which were commonly called colitis. This catarrhal enteritis did not always amount to gross changes in the wall of the intestine, but it did lead to production of membranes which were purely inflammatory. He considered that the best plan, where the surgeon must interfere, was to get a free emptying of the bowel, and so relieve the stasis. He was entirely in agreement with Lane as to complete removal of the colon, but it was a very dangerous operation, and unless the technique was perfect the patient was very subject to sepsis. He had himself been doing a very much simpler operation. The first patient upon whom he performed it was suffering for twenty years, and was sent to hospital as a case of cancer of the stomach. No evidence of this disease was discovered. Laparotomy was done. The caecum, enormously distended, was found lying dragged across the abdomen, and the appendix, which stood out, lay underneath the left nipple line. It was considered impossible to do colectomy, and it was therefore decided to perform lateral ileo-sigmoidostomy to allow an exit for the food. The result was very satisfactory. Since then 15 other cases had been treated in this way, and all except two were completely cured. These two were greatly improved, and none of the patients had died. The cases were all of different kinds. This operation he considered easier, simpler, and safer than any other. He looked upon Mr. Blayney's patients as likely to be improved but not cured. He thought also that regurgitation of the alkaline contents of the large intestine into the smaller was very likely to occur and start catarrhal trouble.

SECTION OF PATHOLOGY.

AT a meeting on November 6th, 1914, the President, Dr. J. B. COLEMAN, made some introductory remarks on

Cerebro-spinal syphilis. Professor A. C. O'SULLIVAN showed the *Heart from a case of sudden death* and said he had come across four cases which, from the clinical point of view, presented no symptoms. In all the heart presented very similar appearances, and in none of them was there any very marked valvular disease. In each of them there was a very straight marked line of thickening from above the aorta downwards. This thickening was somewhat different from ordinary atheroma. He attributed the sudden death in these cases to the narrowing of the coronary artery, as there was no marked lesion nor was there any occlusion of the wall. In the specimen shown the changes were in excess of those in ordinary cases of atheroma. The adventitious tissue was abnormally thick; the vessels in this tissue were quite large and had undergone in many cases complete obliteration. The media had also undergone a marked change, and in places small infiltrations were apparent. Although examination was not yet complete, he felt that it was likely that this form of endarteritis was syphilitic. The PRESIDENT said there could be no doubt that in a good many cases of sudden death the cause was that pointed out by Professor O'Sullivan, although it was not recognized. Dr. R. TRAVERS SMITH said the more he had seen of cases of aortic degeneration and aortic regurgitation the more was he inclined to consider them of syphilitic origin. He attributed these cases of sudden heart failure to syphilis or great strain. Dr. W. D. O'KELLY showed (1) a specimen of *Cancer of the gall bladder following gall stones.* The cancer was situated at the fundus, and several cholesterin stones were embedded in it, many others being free in the cavity; the cancer cells were very embryonic. (2) A specimen of *Primary sarcoma of the right suprarenal gland.* The tumour was 6 in. in diameter. It infiltrated the kidney, and secondary deposits were present in the portal glands, liver, and diaphragm. The PRESIDENT showed a specimen of *Stenosis of the pulmonary valve.* The clinical signs were: very loud, rough, systolic murmur over the pulmonary area, and a very loud thrill over the same area. There were no signs of congenital heart disease, although in all probability the lesion was congenital. The patient was aged about 24, and had been under observation about ten years.

ULSTER MEDICAL SOCIETY.

AT a meeting on January 7th Dr. G. E. HICKS read notes of a case of *Acute intestinal obstruction caused by a dermoid cyst of the ovary* and showed the specimens, which contained teeth and hair. Three laparotomies had to be performed, removing the obstruction, which was due to adhesions, remedying a colon-cutaneous fistula and removing the cyst. The patient was now in good health. Dr. J. L. RENTOUL read a short paper on *Diagnosis in phthisis.* He gave a brief account of his work in trying to estimate the importance of the allied infections in pulmonary tuberculosis. He gave a broad classification of this affection into the haemorrhagic type, where the chief allied organism was streptococcus, and the catarrhal type, where various organisms were found, and generally two or three were predominant. Numerous cases were cited showing the necessity of this bacteriological differentiation, and the reasons of success and of failure in tuberculin administration and of vaccines of these organisms. Dr. A. GARDNER ROBB opened a discussion on the present outbreak of *Scarlatina in Belfast.* Some thirty years ago a scarlatina epidemic with a very high mortality raged in Belfast; then down to the last five years scarlatina was much below the average of other large towns. Now it had risen again, but if the average were taken in Belfast for many years it was found to be below that of Edinburgh with a large residential professional class, a leading medical officer of health, and a magnificent infectious diseases hospital. There was no known cause why an epidemic came; of the causes why it stayed he enumerated the number of cases that were not notified, probably a third of the total; these were mild cases and overlooked. Sore throats in those attending scarlatina were probably in some cases infectious, but the chief was probably the infectious nature of the nasal discharge, which was much more important from a prophylactic point of view than suppurating otitis. Of the causes of return cases, he mentioned the curious fact of new cases occurring just before the patient returned from hospital. These might be due to the mother getting out the infected toys and clothes. There should be a warning notice to all parents to report all nasal discharges. A discussion took place, in which Drs. KEVIN, RUSH, BURNS, J. R. DAVISON, ELIZABETH BELL, CALWELL, BARNES, and the PRESIDENT joined; there was a general agreement in the statement made by Dr. DAVISON that isolation hospital and notification had failed as preventive measures against a scarlatina epidemic. Dr. ROBB replied.

Reviews.

THE HEART IN EARLY LIFE.

IN *The Heart in Early Life*[1] Dr. G. A. SUTHERLAND has recorded his experience of the vagaries of the juvenile heart in a very readable and interesting volume.

Too much has been heard of late years about the failings of the heart at all stages of life, and a little plain speaking on the subject is particularly welcome. Many a promising child has been turned into a coddled weakling on no better evidence of cardiac weakness than the presence of a murmur, and not a few athletic careers have been cut short on equally unsound evidence of cardiac dilatation. To the physician who has had the opportunity of watching the after-progress of a young patient condemned to invalidism on such grounds the fact must be well known that in many cases the trouble proves to be of short duration, or to have been indicative merely of some ephemeral nervous affection which has disturbed the heart's action for a while. But such opportunities are only granted to the few, and hence the carefully considered opinions that they have formed are deserving of more than common attention.

Dr. Sutherland's book is essentially clinical, and the subject is divided into three sections, dealing first with functional disturbance, then with the borderland conditions, of which paroxysmal tachycardia is the chief example, and finally with organic affections.

The chief interest attaches to the first class of cases. The juvenile heart is very prone to functional disturbance, generally of nervous origin, and hence not a cardiac condition at all. But the irregularities of action thus produced are so frequently assumed to be indicative of serious heart mischief that they demand very careful examination before a positive verdict can be pronounced. Too little, as well as too much, stress may be laid on some forms of disordered action; but on the whole the balance of error would seem to be on the side of the latter. The new light that has of late years been shed upon the whole question of the sequence of cardiac movements by Gaskell, and carried forward by Mackenzie, Lewis, and others, has served to establish a new basis for study. The introduction of graphic records of the heart's action, alongside of those of the pulse and respiration, has rendered many of the problems comprehensible for teaching purposes. Actual visible demonstration now takes the place of the vague, though positive, assertions of those who, in times past, have been described in medical writings as "authorities."

The use of the electro-cardiograph and the ink polygraph requires more time and experience than is at the command of the average practitioner; but these instruments will doubtless in time to come play the most important part in the diagnosis and prognosis of puzzling cases of disordered cardiac action.

In youth and adolescence the heart is constantly called upon to respond to varied and sometimes violent body movements. In itself the organ is not fully developed, and hence there may be endless varieties in the degree to which such response may be made. Instrumental observation may show the part of the heart mechanism which is not responding properly, but even a gross disturbance of the normal tracings must not always be assumed to be of serious import. Perhaps the crucial test may be found in the presence or absence of any indication of impaired circulation. If the function of the heart is normally maintained, the irregular action

[1] *The Heart in Early Life.* By G. A. Sutherland, M.D., F.R.C.P. Oxford Medical Publications. London: H. Frowde; and Hodder and Stoughton. 1914. (Cr. 8vo, pp. 327; 48 figures. 6s. net.)

or the presence of a murmur may often be disregarded. The bruit so often heard in the pulmonary area is usually physiological. That which sometimes is produced by the contact between the heart and the part of the lung overlapping it may be classed as unimportant, while the systolic murmur which commonly occurs in debilitated children, although valvular in origin, must not be regarded as evidence of disease. Fainting in young persons is frequently attributed, without due evidence, to heart weakness, whereas it is far more often due to other causes. If it be really due to heart failure, some more definite evidence of organic disease will surely be present.

The last section of Dr. Sutherland's work is devoted to the consideration of organic disease. Here the reader will find himself on more familiar ground, but he will also find that the author is not by any means bound by tradition, either as regards prognosis or treatment, in dealing with his subject.

A considerable number of tracings are introduced into the text to illustrate the clinical cases quoted, and due acknowledgement is made to Dr. Mackenzie and Dr. Lewis, by whom many of them were made. Dr. Sutherland's book is one that deserves careful study. It is the outcome of prolonged clinical observation, tempered with scientific accuracy and common sense.

THE BLOOD.

MANY of those whose names are most familiar to students of haematology have assisted MM. GILBERT and WEINBERG in the preparation of their *Traité du Sang*.[2] Only the first volume has so far reached us, and it is impossible to foresee how much time must elapse before the second, which is required to complete the work, can appear. But, judging from the first volume, the whole will afford an authoritative exposition of present-day knowledge of the blood.

This volume deals with the physics and chemistry of the blood, with coagulation, and with haemoglobin and the normal red cell. The modifications of the blood in anaemias and polycythaemias, and in what is commonly known in this country as acholuric jaundice or cholaemia are next considered. This brings us to the middle of the book, and the next 200 pages deal with the white cells in health and disease, the blood platelets, and the blood-forming organs. The last 100 pages are chiefly concerned with the various parasites which occur in tropical diseases.

All these subjects are dealt with in an adequate and comprehensive manner, but there is a good deal of matter which falls naturally partly under one subject and partly under another, and which has escaped notice. We would instance the very constant and significant changes met with in the liver in leukaemia. In this disease the liver resumes the fetal function of blood cell formation, but as it is not a blood-forming organ it is not mentioned in the chapter on the haematopoietic organs in disease, nor is it mentioned under the heading leukaemia, for here only the cells found in the circulating blood are noticed. This is a sample of one of the common results of any system of multiple authorship, and is perhaps almost inevitable, but the same plea cannot be put forward to explain the entire omission of any mention of sulph-haemoglobin and carboxy-haemoglobin. There is a section on haemoglobin and its derivatives and compounds, but these find no place amongst them. This is the more surprising, since methaemoglobin has full mention and so has haematoporphyrin, the latter a compound which does not occur in the blood at all.

The section dealing with acholuric jaundice is very full, and is from the pen of acknowledged authorities on the subject—namely, MM. Chauffard and Troisier. As is the case in other chapters, a careful account is given of the technique which must be followed to demonstrate each point under consideration.

Those parts of the volume which deal with the essential unity of the blood-forming organs are in advance of anything generally accepted in this country, and are the more worthy of notice on this account. The conception of a myeloid reaction not confined to the marrow but appearing also in the lymphatic tissues (and, it might be added, in the liver) is slow to gain ground here, but is regarded by the authors as essential to any proper understanding of the morbid processes in the haematopoietic organs. They compare and contrast it with cancerous and other processes in the same organs. The morbid anatomy of the lymph glands is especially well set forth and is adequately illustrated.

Such work as this is the antithesis of that bending of facts to fit preconceived theories which characterizes so much scientific work. It can only be done when imagination is allowed free play amongst carefully ascertained facts, even when these facts do not at first seem to have any direct bearing on haematology. Thus we note an illustration of a lymph gland from a case of mycosis fungoides, a disease which is commonly considered to be purely dermatological. In the same way tuberculosis of the lymph glands is considered from the point of view of its relations on the one hand to simple inflammation and on the other to lymphadenoma. This is far more scientific and helpful than attempting to separate them in critic-proof compartments, a process which leads only to a partial comprehension of each.

The breadth of view which characterizes much of this volume has given French haematology the prestige it now enjoys, which is denied to that of other nations whose output of haematological literature is far greater.

In conclusion, we would note that there are plentiful references throughout the book, but that there is no index. It may be that the index is to appear in the second volume; but we think that as this is virtually a book of reference for technique as well as for less specialized matters, an index should be appended to each volume.

[2] *Traité du Sang.* Publié sous la direction de M. A. Gilbert et M. M. Weinberg. Secrétaire de la Rédaction, M. le Dr. Boidin. Tome premier. Paris: J. B. Baillière et Fils. (Sup. roy. 8vo, pp. 628; 134 figures. Fr. 42 en souscription.)

FORENSIC MEDICINE.

SOME years ago we had the pleasure of reviewing Dr. DIXON MANN'S *Forensic Medicine*[3] on its first appearance, and then took the opportunity of saying that we ventured to think it was the best book in the English language on the subject, at any rate for medical men, and we prophesied for it a large sale. Since that first review we have never wavered in our allegiance, and with each edition our favourable impression has increased.

The new edition—the fifth of the original and the first, we believe, edited by Dr. BREND—equally gives to the expert a most favourable impression, both by reason of what is contained in the book, and also by the way the matter is arranged. Dr. Brend's additions constitute some of the most valuable material, especially those in Chapter 25 on professional privileges, obligations, and responsibilities. Dr. Brend has added paragraphs on the "Notification of births," the "Notification of disease," on the "Duties of medical practitioners under the Factory and Workshops Act," and on death certification, which certainly ought to be carefully noted and known by every medical man, and are valuable additions to the book as it was left by the late Professor Dixon Mann.

Having said so much in praise of this work we feel justified in saying something not perhaps in disparagement but in criticism of it from the student's point of view. Dr. Mann in 1893 said in his preface, "This work has been written chiefly as a textbook for students of medicine; it is hoped that it may also prove useful to practitioners and others who are interested in the subject of forensic medicine." We feel sure that Dr. Mann's hope has been more than fulfilled and that the book is on the shelves of quite a respectable proportion of the medical profession, but we can no longer recommend it as a book for the medical student; it is too big, too complete for that purpose; in fact, we may say too good. It would seem as though the time was arriving when some authority will have seriously to consider the propriety of issuing a series of manuals for medical students on the subjects which are merely akin or ancillary to medicine proper, or deal with the application of medical knowledge to lay purposes—bacteriology, physiological and bio-chemistry, hygiene, psychology, forensic medicine, toxicology, or with the legal duties of medical practitioners under the law, etc. The burden on the poor camel's back will soon become too heavy unless something of the sort is done, and especially

[3] *Forensic Medicine and Toxicology.* By J. Dixon Mann, M.D., F.R.C.P. Fifth edition, revised and enlarged by W. A. Brend, M.A., M.B., B.Sc. London: C. Griffin and Co., Limited. 1914. (Med. 8vo, pp. 737; 3 plates, 25 figures. 18s. net.)

if specialists are to continue to be allowed to be examiners as they are at present. The book before us with 717 pages of excellent but very close reading on one subject alone is a very typical example of the trouble we refer to, and it is not made less by the specialist examiners.

ST. THOMAS'S HOSPITAL REPORTS.

THE forty-first volume of *Saint Thomas's Hospital Reports*[4] contains no original articles but many valuable statistical tables, with introductory comments and notes on cases of special interest in the hospital during the year 1912. On January 1st of that year the total number of patients was 493, and on December 31st, 533. The total mortality amounted to 7.49 per cent. Amongst the abstracts of important or rare cases are many doubtless recorded, or to be reported, elsewhere in full. We find one instance of tetanus in a boy, aged 10, successfully treated by two injections of tetanus antitoxin (10 c.cm.) given into the spinal theca, and one into the abdominal wall. The spasms ceased on the thirteenth day. There was a neglected ulcer on the foot, and an abrasion of the forehead was produced by a fall four days before admission. Out of 13 cases of general paralysis of the insane, a positive history of syphilis was traced in 4; Wassermann's reaction with blood was positive in 8 and negative in 3, whilst with cerebro-spinal fluid it was positive in 8 and negative in 2; in one instance it was positive in the cerebro-spinal fluid yet negative with the blood. In 2 out of 3 patients treated with salvarsan there was considerable amelioration; yet in 3 cases of tabes under the same treatment there was no definite improvement while in hospital. The report of the *x*-ray department, by Mr. Archibald D. Reid, will be studied with interest by experts. The report of the obstetric ward includes one instructive example of chorea gravidarum associated with old and recent endocarditis, atypical ulcers in the ileum, and suppurative pulmonary and renal changes. Under the able direction of Professor Shattock, the Curator, some important additions have been made to the pathological museum, especially in the department illustrating the morbid anatomy of blood vessels. Thus there is a sample of spontaneous yielding of the aorta a little below the arch in a youth aged 18, and a coil of silver wire in which is entangled a semilunar mass of clot, the wire having been inserted with the object of obliterating the sac of an aneurysm.

NOTES ON BOOKS.

THE *Year Book of the Scientific and Learned Societies of Great Britain and Ireland* is described on its title page as "a record of the work done in science, literature and art during the session 1913–14 by numerous societies and Government institutions."[5] It is compiled from official sources, and the present is the thirty-first annual issue. It gives information as to the principal societies, the names of their officers, the dates of their meetings, the amount of the annual subscription and life composition, the titles of their publications and lists of papers read during the session, with the names of the authors. How comprehensive the range of the work is may be gathered from the contents, which comprise science generally, astronomy, mathematics and physics, chemistry and photography, geography, geology and mineralogy, biology, including microscopy and anthropology, economic science and statistics, mechanical science and architecture, naval and military science, agriculture and horticulture, law, literature and history, psychology, archaeology, and medicine. To judge from the space devoted to them, the medical societies (Section XIV) are the most active of all, the list, with the enumeration of the communications made to them, occupying no less than fifty pages. This does not include the Röntgen Society, the Society of Public Analysts, the Pharmaceutical Society of Great Britain, or certain other bodies more or less directly connected with medical science. *The Year Book of Scientific and Learned Societies* is a useful book of reference, but we should like to see a general sketch of the objects and work of the British Medical Association, such as is given, for instance, in the case of the Imperial Institute, the Meteorological Office, and the National Physics Laboratory. Although the *Year Book* may be classed among the books described by Charles Lamb as *biblia a-biblia*, it gives a bird's-eye view of what has been done in the various departments of scientific knowledge during the year to which it refers.

The *Manual of Instruction for the Royal Naval Sick Berth Staff*[6] has been prepared with three objects: the first is to provide a textbook for the probationary sick berth attendants in the Royal Navy, the second to promote uniformity of instruction at the naval hospitals, and the third to provide a concise and comprehensive manual for the use of all members of the sick berth staff in preparing themselves for the various examinations for higher ratings. Of these objects the third appears to us to be the most important, and it would be difficult to compile a book more admirably adapted to its purpose. The information is of a most comprehensive kind, running from the elements of anatomy—a subject illustrated by excellent diagrams—through elementary physiology including the elements of optics, bacteriology, fractures, poisons, asphyxia from drowning, the first place in the treatment being given to Schäfer's method, the keeping of clinical records, and the ordinary appliances for the sick bay and hospital, to notes on various diseases and instructions on the method of recording clinical cases. There is a list of medicines provided in chests for use in His Majesty's ships, with an indication of their doses and chief uses, an article very copiously illustrated on stretchers and their use in the various emergencies on ship board, and a list of instruments and appliances. There is a short but very practical note on preparation for a naval action and on landing parties. It is directed that before action, "every man should, if possible, have a bath and put on clean clothing preferably white working rig. This helps to diminish the risk of septic infection of wounds. He should also wear his silk handkerchief round his waist, to be used as a triangular bandage if necessary." The compiler, Staff Surgeon G. O. M. DICKENSON, R.N., is to be congratulated on the success of what must have been a very difficult task.

MR. WILLIAM GLOVER, declining to accept the pessimistic estimate of Mr. H. G. Wells as to the mental standard of the man in the street, has boldly essayed a popular statement of the elements of psychology. His *Know Your Own Mind*[7] is a book which can be cordially recommended. Written from an approximately Herbartian standpoint, it conveys clearly and accurately a great deal of interesting and important information. The style is frankly colloquial, but this, after all, has become quite fashionable since the example of the late Professor James fluttered the academic dovecotes. Any intelligent reader can, by the careful study of this little book, derive a genuine insight into the mechanism of mental activities, and can qualify himself to discuss the formation of concepts, the phases of apperception, the different forms of memory and attention, if not also to turn his knowledge to practical account. To those who question the utility of psychological knowledge the perusal of Chapter xvi may come as a revelation. It concludes thus: "When the education authorities, the teachers, the preachers, the journalists and the writers of books begin to acknowledge the immense importance of Herbart's teaching—a teaching that culminates in the doctrine of interest—well, maybe the millennium will have come within the bounds of our horizon."

The second triennial meeting of the National Association for the Study of Pellagra was held at Columbia, South Carolina, on October 3rd and 4th, 1912. The papers read at that meeting have recently been issued in a volume of *Transactions*.[8] The delay in publication is attributed to the difficulty of obtaining their manuscripts from various writers. Some of the papers are interesting and worthy of perusal, others are not. The subject is discussed from almost every side, many recent workers contributing papers on the aspects of the disease in which they are specially interested. Many mistakes in spelling occur in some of the papers, but the editors are not wholly responsible for this, as some of the contributors in Europe would not return their corrected proofs. The next triennial meeting is due to be held in 1915, but the time and place have not yet been selected.

[4] *Saint Thomas's Hospital Reports.* New Series. Vol. XLI. Edited by Dr. J. J. Perkins and Mr. C. A. Ballance. London: J and A. Churchill. 1914. (Demy 8vo, pp. 291; 2 illustrations. 8s. 6d. net.)

[5] *The Year Book of the Scientific and Learned Societies of Great Britain and Ireland.* London: Charles Griffin and Co., Ltd. 1914. (Quarto fcap., pp. 388. 7s. 6d.)

[6] *Manual of Instruction for the Royal Naval Sick Berth Staff.* 1914. London: Wyman and Sons. Edinburgh: 23, Forth Street. Dublin: E. Ponsonby, Limited, 1116, Grafton Street. (Crown 8vo, pp. 507. 2s.)

[7] *Know Your Own Mind: A Little Book of Practical Psychology.* By W. Glover. Cambridge: The University Press. 1914. (Fcap. 8vo, pp. 211. 2s. net.)

[8] *Transactions of the National Association for the Study of Pellagra.* Second Triennial Meeting at Columbia, South Carolina, October 3rd and 4th, 1912. Columbia, S.C.: The R. L. Bryan Co. 1914. (Med. 8vo.)

MEDICAL AND SURGICAL APPLIANCES.

The Coolidge X-ray Tube.

A YEAR ago the radiological world was startled by the announcement from New York of a new *x*-ray tube of unexampled power and efficiency. Since then the apparatus has been tested in various laboratories, but it is only within recent weeks that it has found a place on the market. There is little doubt that this tube, the invention of Dr. W. Coolidge, an American physicist who had previously done some original work in connexion with ductile tungsten, will prove of great value in *x*-ray diagnosis and treatment. Both medical and physical radiologists must be prepared to recast a number of formulae, and it will be necessary above all things to revise the protective measures, which, even as regards ordinary tubes, are still a long way from perfection. Dangerous secondary radiations have been, it is said, produced on the eye side of lead-glass spectacles designed as a protective cover, and also on the inner side of *x*-ray proof gloves. It is possible that, when the technique is mastered, the Coolidge tube will make *x*-ray work more scientific and in consequence more safe, but the matter should receive attention without delay. On first acquaintance the tube is comparatively unimpressive. It is scarcely as large as the average tube, works very quietly, and has no apple-green fluorescence when in action; indeed, it is difficult to say at a glance whether current is passing or not. The power of the tube is due to the special mechanism of its electrodes, more particularly the cathode, and the high degree of its vacuum. Hitherto, in the refinements of tube construction, the anticathode has claimed chief attention. In the Coolidge tube also the anticathode is an interesting feature, consisting of heavy tungsten (Figs. I and II, 15) welded to a rod of the chemically related metal known as molybdenum (Fig. I, 16). The principal novelty, however, is the cathode. We have had the somewhat rare opportunity of inspecting this cathode separately (in a broken tube), and can testify that the mounting of the contrivance, shown in section in the figures, is most ingenious. The stream of electrons or cathode rays emerges from a small, flat, and very fragile spiral of tungsten wire (Fig. II, 1), which is

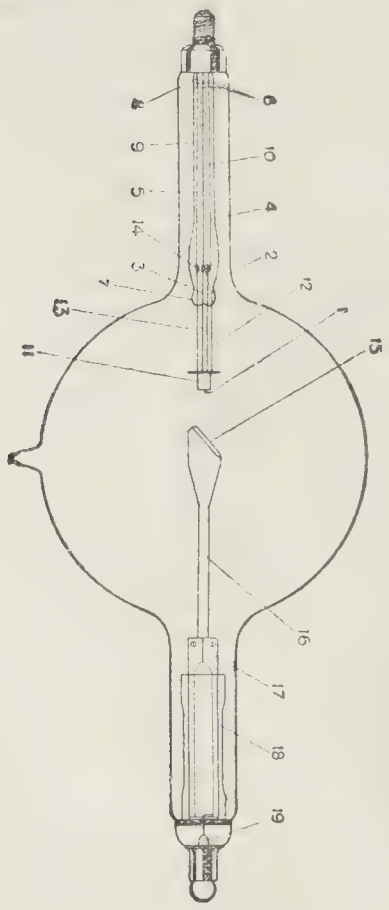


Fig. I.

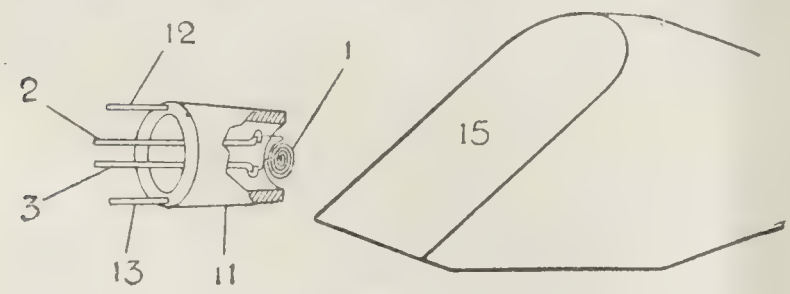


Fig. II.

heated by a subsidiary electric current, regulated with great nicety between 3 and 5 ampères, from a small storage battery, and with the raising of temperature the value of this cathode as a source of cathode rays is rapidly increased. The temperature of the filament governs instantly the intensity of the *x*-ray emission, and can be raised to an enormous height, even to 2,300° C., which is still several hundred degrees below the melting point of tungsten. The tungsten filament is electrically connected to heavy molybdenum wires (Fig. II, 2, 3), the other extremities of which are welded to two copper wires (Fig. I, 4, 5), and these in their turn to a wire of platinum (6). Equally intricate is the construction of the glass sheath, in which a series of glasses of graduated expansion coefficients lead up from the special glass (7) for sealing the molybdenum wires, to the ordinary soda glass of the outer end of the supporting tube (8). The focussing of the cathode rays on to the anticathode, which is mounted only 2 or 3 cm. away from the cathode, in the centre of the bulb, is accomplished by a sleeve of molybdenum (11) projecting very slightly beyond the plane of the tungsten filament. The thorough exhaustion of the bulb—the vacuum is stated to be, perhaps, 1,000 times that of the ordinary bulb—prevents any discharge current from passing unless the tungsten filament is heated, and the cathode also renders the tube self-rectifying, for ordinarily the current can only pass in the one direction. The penetration of the *x* rays obtained is a function of the potential difference between the electrodes, and its range extends, according to the claims of the introducers, from very soft rays up to, approximately, the hardness of the gamma rays of radium. We have come across the more definite statement, made at the congress of the Roentgen Society of Berlin in April last, to the effect that the maximum penetrability of the homogeneous primary rays obtainable with the Coolidge tube equals that of the secondary rays through 3 mm. of aluminium. The same German observer adds that the intensity of the radiation, which is governed quite independently of the penetrability, is 20 per cent. higher than that of the best tube hitherto constructed. The advantages of a tube which is capable of taking anything up to 200 milliampères, and of being operated continuously for hours without any appreciable change in characteristics, need not be insisted on, and it is a great gain to the *x*-ray worker owing to the homogeneity of the rays, the stability of the output, and the way in which the same tube can be used alike for work calling for the lowest or the highest penetration at will. The conditions of exposure can also be exactly repeated so as to duplicate a previous result, and an additional advantage is that the focal spot where the electrons bombard the anticathode, once the tube has had its baptism of fire, is not a fluctuating but a fixed point. The owners of the British patents covering the tube are the British Thomas-Houston Company, Limited, of Mazda House, Upper Thames Street, London, E.C., who have published a comprehensive leaflet of instructions.

REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD (ENGLAND AND WALES).

IT was mentioned last week that the report of the Medical Officer, with its appendices of special reports from the staff and the results of the auxiliary scientific work subsidized by the Board, had been issued.

The present document differs somewhat from its predecessors in that the personal report of the Medical Officer is much more extended than in former years, whilst the appendices are much less bulky. The special features of this report are that it deals at considerable length with the question of infantile mortality and its administrative control by means of maternity and child welfare work; another section deals very fully with the administrative control of tuberculosis, and venereal diseases receive the attention which has been denied to them in former reports.

These three features are in themselves almost sufficient to characterize the present report as the most interesting of recent years. There is, of course, the usual review of statistics relating to infectious diseases, but the reviews of exotic diseases, such as cholera, have necessarily been postponed, owing to the difficulty in obtaining information at an early date from foreign countries.

Sources of Information.

Without proper information as to the facts of life and death preventive measures must be haphazard in character, and as an index of progress we find that year by year the information is becoming increasingly accurate, and owing to centralization more easily available, as may be instanced by the fact that at present each medical officer of health receives a weekly report of the incidence of infectious disease in every sanitary area in order that he may be placed on guard against its introduction into his own area.

Another source of valuable information, the importance of which has only recently been recognized, is furnished by the pathological reports on specimens forwarded to public laboratories. Statistics are given which show the

extent to which these facilities are used. There is a definite improvement on the statistics furnished in the last annual report, but there is still great room for improvement, some districts being much more advanced than others. In other directions it is possible that laboratory diagnosis is being pushed too far. Thus, on the one hand, we find that in the metropolitan boroughs during the year only 68 samples of milk were examined for tubercle bacilli. As it is a well-known fact that tuberculous cows have a remarkable tendency to disappear from areas which are properly controlled into areas not so controlled, there appears to be grave reason to suspect that the London milk supply will be found to be very unsatisfactory when it is at last properly examined for the first time. In other areas vomits and faeces are examined for occult blood, although it is known that over 50 per cent. of all vomits give a positive reaction for occult blood, quite apart from the nature of the case from which they are derived, and that the conclusion to be drawn from the tests are far from definite. The wisdom, also, of undertaking to examine for spirochaetes in specimens not taken by the person who is to institute the search is open to doubt. It would seem that the pathological enthusiasm of public bodies requires not only stimulation, but very active criticism. Otherwise, it is quite possible that we may see a sanitary authority assuming the responsibility for delaying treatment in the case of a suspected chancre, or for decreeing the necessity for an operation in a case of suspected gastric or duodenal ulcer which may never have existed. In all we are told that 284,688 specimens were examined, at a cost of over £23,000, or £1 per 1,600 of the population. In Manchester the amount spent was £1 per 337 of the population, in Sheffield £1 per 339. In some areas there has been little or no development of this work; the towns mentioned above have developed it very extensively. It is hoped that the recent Budget proposals will enable the facilities to be extended to all diseases where such aid is useful in diagnosis and treatment. The proposals which are at present under consideration will be fully considered in next year's report.

International Hygiene.

The section dealing with international hygiene is of interest in that it gives us a glimpse of the high degree of elaboration which had been attained before the outbreak of war. The great growth of commerce combined with the greater speed of modern ships has increased the danger of importation of disease, but so well has the work been done that such diseases as cholera, though not infrequently introduced, have never been able to get a foothold in this country. In the Foreign Intelligence Department of the Board all the information derived through the Foreign Office, the Colonial Office, the Indian Government bulletins, and the International Health Office, foreign and British journals, and even the daily press, is summarized and supplied in weekly bulletins to the medical officers of ports. In addition to information as to the prevalence of disease, research work also is noted and abstracted for the information of the Board. The measures for the prevention of the introduction of disease have been carefully arranged so as to offer the least possible impediment to freedom of commerce, and this country in consequence relies more upon its internal sanitary organization than upon quarantine, which is the first line of defence. Special attention is directed to the dangers arising from the importation of rats infected with plague. It is admitted that the opportunities for the infection of man from the rat are less frequent in this country than in others where men live in more intimate contact with the rat, yet danger undoubtedly exists. The Medical Officer points out the danger which exists in London owing to the undoubted fact that many of the warehouses for food materials are rat-infested, and it is reassuring to find that the Board has made strong representations to the Port of London Authority. It is clearly pointed out that the cost of "rat-proofing" the warehouses, though great, is almost infinitesimal when compared with the huge loss which would ensue were the port to become infected with plague, for in that case it appears probable that the export of foodstuffs from London would be practically prohibited. At the time the report was written the Port of London Authority had not yet decided as to the action it would take.

Infant and Child Mortality.

The movement for the saving of child life is not of very recent development, though public interest in it has greatly increased during the last few years. For many years some medical officers of health have replaced the former perfunctory statistics on the subjects by most important and valuable contributions to the public health aspects of infant mortality. In 1905 the Board issued a memorandum demanding more detailed statistics on the subject, and the figures obtained in response to this appeal have been the basis for reports on the subject from the pen of the Medical Officer.

The Huddersfield experiment with compulsory notification of births, followed by the Notification of Births Act in 1907, has resulted in the appointment of health visitors, so that at present there is one health visitor for about every 6,000 children under school age. There is already some statistical evidence to show that in those areas which have adopted the Act with subsequent visiting there has been a greater reduction in infant mortality than in otherwise similar areas where the matter has been neglected.

Quite apart from statistics, however, it is reasonable to act on the assumption that the hygienic advice secured by the visits following notification must have valuable influence in securing improved health in childhood. Further action is, however, required, as can be seen from the following considerations. The chief causes of death in the first five years of life are the infections—measles, diarrhoea, enteritis, whooping-cough, and tuberculosis. It is also suggestive that even with the present defective methods of death certification 1 per cent. of all deaths under the age of 5 are ascribed to venereal diseases. Another large group of deaths are due to the acute respiratory diseases, which are also infectious, although not classed as infectious diseases. Now, reviewing the progress which has been achieved since 1905, it is shown that "in the first month of life the death-rate fell 8 per cent., in the next two months of life 29 per cent., in the second three months of life 40 per cent., and in the second half of infancy 35 per cent."

The improvement which has been achieved in the later months is due to the diminution in diarrhoea and respiratory diseases, whilst the relatively small decrease of mortality in the first month of life is owing to the fact that congenital disease and enfeeblement are largely responsible for deaths in this period. In order that this relative lack of success may not continue the work must be revised, and must be extended in the direction of ante-natal work. The scheme is as follows:

1. Arrangements for the local supervision of midwives.
2. Arrangements for *ante-natal* supervision:
   (1) An *ante-natal clinic* for expectant mothers.
   (2) The *home visiting* of expectant mothers.
   (3) A *maternity hospital* or beds at a hospital in which complicated cases of pregnancy can receive treatment.
3. Arrangements for *natal* supervision:
   (1) Such assistance as may be needed to ensure the mother having skilled and prompt attendance during confinement at home.
   (2) The confinement of sick women and other difficult cases at a hospital.
4. Arrangements for *post-natal* supervision:
   (1) *Hospital treatment* for *complications* arising after parturition whether in the mother or the infant.
   (2) Provision of advice and treatment for infants at a *baby clinic* or dispensary.
   (3) The *continuance of these clinics* until the infants are entered upon a school register and come under the care of the school medical department.
   (4) The *systematic home visiting* of infants and of children who are not upon a school register.

Medical officers of health have been asked to formulate such schemes as may seem to meet local circumstances; Exchequer grants amounting to one half the proposed expenditure are available for approved schemes.

The novel features of this scheme are of course those measures relating to ante-natal work. The great importance of this is emphasized by the estimate that the ante-natal mortality as represented by abortions and dead births is 150 per 1,000 live births. Inquiries have shown that a considerable amount of ante-natal work is already being performed by various voluntary agencies. A great difficulty

has been the absence of information as to expected confinements. It is suggested that this information may be obtained from midwives and from the maternity departments of the hospitals, as is being done in Leeds and some other areas. We note as a very questionable feature of the report the complete absence of any appreciation of the fact that both hospitals and midwives should regard information of this kind as absolutely confidential. If the State has the right to obtain this information it might be obtained through the approved societies under the Insurance Act by making previous notification of the birth a condition for obtaining maternity benefit, but one approved society that approached the Insurance Commissioners with this object was met by an unconditional refusal. If it be wrong to obtain direct notification in exchange for a definite *quid pro quo* it can hardly be justifiable to obtain the same information by tapping sources of information which should be confidential. This aspect of the matter deserves the prompt attention of the medical profession.

The death-rates from puerperal fever and from accidents of childbirth are still far from satisfactory, and serve to emphasize the need for maternity centres at which expectant and parturient mothers may receive treatment.

THE CHEMICAL CONSTITUTION OF CERTAIN PROPRIETARY DRUGS.

(*Continued from p. 75.*)

THE contraction *B.P.* with date is used for the *British Pharmacopoeia*, and *B.P.C.* is used for the *British Pharmaceutical Codex*, 1911.

Iothion.

This is a name applied to di-iodohydroxypropane. It is said to contain 77 to 80 per cent. of iodine, and is offered as a topical substitute for iodine and the iodides. The trade name Iothion indicates the product of Farbenfabriken vorm. Fried. Bayer and Co., Elberfeld, Germany.

Isoform.

This is stated to be oxy-para-iodo-anisol, obtained by oxidizing iodo-anisol; it is intended as a wound antiseptic. The trade name Isoform indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Isopral.

A name applied to trichlor-isopropyl alcohol. It is offered as a hypnotic. The trade name Isopral indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Kharsine.

This is a name applied to sodium para-amino-meta-tolyl-arsinate or sodium methylaminophenylarsonate, a compound related to Soamin. The trade name Kharsine indicates the product of Burroughs, Wellcome and Co.

Kresamine.

A name given to ethylenediamine-trikresol, also known as kresolamine, trikresolamine, ethylenediaminecresol. It is intended for use as an antiseptic and bactericide in tuberculosis and skin diseases. The trade name Kresamine indicates the product of E. Schering, Berlin.

Lactophenin.

A name applied to para-phenetidin lactate, which differs chemically from phenacetin only in having a lactic acid in place of the acetic acid group. The trade name Lactophenin indicates the product of C. F. Boehringer and Soehne, Mannheim-on-Rhine.

Largin.

A name applied to silver albuminate, or protalbin silver, a compound of white of egg with silver. The trade name Largin indicates the product of E. Merck, Darmstadt, Germany.

Lenicet.

This is a name applied to a basic aluminium acetate. Aluminium subacetate is described under the latter name in the *B.P.C.*, and the trade names Estone and Lenicet are those mentioned as pertaining to similar products. The trade name Lenicet indicates the product of Dr. R. Reiss, Berlin, and Estone that of Dr. A. Friedlander, Berlin.

Lenigallol.

A name applied to pyrogallol triacetate; Eugallol indicates the monoacetate. The trade name Lenigallol indicates the product of Knoll and Co., Ludwigshafen-on-Rhine.

Loretin.

This is chemically meta-iodo-ortho-oxy-quinoline-sulphonic acid, a powder which is said to contain 36.2 per cent. of iodine. The trade name Loretin indicates the product of Theo. Schuchardt, Görlitz, Germany.

Losophan.

Losophan is a tri-iodo-meta-cresol, which results from the action of potassium iodide upon sodium ortho-oxy-para-toluylate. The trade name Losophan indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Lycetol.

This is a name applied to dimethyl-piperazidine tartrate, introduced as a substitute for piperazidine in gout and gravel. The trade name Lycetol indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Lysidine.

This is a name applied to ethylene-ethenyldiamine. A bitartrate of lysidine has also been introduced. Both substances are intended for use in all forms of uric acid diathesis and in gout, etc. The trade name Lysidine indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Melubrin.

A name applied to sodium phenyl-dimethyl-pyrazolon-amino-methan-sulphonate. It is put forward as an antipyretic and antineuralgic. The trade name Melubrin indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Mesotan.

This is a name given to salicylic-methoxy-methylester, said to be identical with ericin. It is put forward as a substitute for methyl salicylate. The trade name Mesotan indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Nargol.

Described as nuclein-silver or silver nucleinate, a combination of silver with yeast nuclein. The trade name Nargol indicates the product of Parke, Davis, and Co., Detroit, Mich.

Neobornyval.

A name applied to the isovalerylglycollic ester of borneol. The trade name Neobornyval indicates the product of J. D. Riedel, A.G., Berlin-Britz, Germany.

Neopyrine.

A name applied to valerylaminoantipyrine. It is put forward as a nerve sedative and antispasmodic. A brom-neopyrine, said to contain 21.85 per cent. of bromine, has also been introduced, chiefly for use as a nerve sedative. The trade names Neopyrine and Brom-neopyrine indicate the products of Knoll and Company, Ludwigshafen on Rhine.

Nirvanin.

Nirvanin is defined as the hydrochloride of diethyl-glycocoll-para-amino-ortho-oxybenzoic acid methyl ester, and is brought forward as a substitute for cocaine as a local anaesthetic, and stated to be less toxic. The substance is mentioned in the *B.P.C.* under the name glycocaine. The trade name Nirvanin indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Nizin.

A name applied to zinc sulphanilate, which closely resembles zinc sulphocarbolate, and is said to have the same uses. The trade name Nizin indicates the product of Burroughs, Wellcome and Co., London.

Nosophen.

This is a name applied to tetraiodo-phenolphthalein, formerly known as Iodophen, and obtained by the action of iodine upon phenolphthalein. It is offered for use chiefly as a surgical antiseptic in place of iodoform, and also as an intestinal antiseptic. The trade name Nosophen indicates the product of Chem. Fabrik "Rhenania," Aachen, Germany.

Novaspirin.

Novaspirin is methylene-citryl-salicylic acid, described in the *B.P.C.* as citrosalic acid. This substance is said to pass through the stomach unchanged and to be decomposed in the intestine, salicylic acid and methylene-citric acid being liberated. The trade name Novaspirin indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Novocaine.

A name given to para-amino-benzoyl-diethylamino-ethanol hydrochloride. It is mentioned in the *B.P.C.* under the name ethocaine. The trade name Novocaine indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Orexine.

This is a name given to phenyl-dihydro-quinazoline tannate, introduced as an appetizer and stomachic. The trade name Orexine indicates the product of Kalle and Co., Biebrich, Germany.

Orphol.

A name applied to bismuth beta-naphtholate, described in the *B.P.C.* as bismuth naphtholate. The trade name Orphol indicates the product of Chem. Werke von Heyden, Radebeul, near Dresden.

Orsudan.

A name adopted for sodium methyl-acetyl-amino-phenyl-arsonate. It is said to contain 25.4 per cent. of arsenic and to act as an antiluetic and alterative. The trade name Orsudan indicates the product of Burroughs, Wellcome, and Co.

Orthoform.

Defined as the methyl ester of meta-amino-para-oxy-benzoic acid. It is sometimes referred to as New Orthoform, and the substance is mentioned in the *B.P.C.* under the name Orthocaine; offered as a local anaesthetic and antiseptic. The trade name Orthoform indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Paroleine.

Liquid paraffin is in the *B.P.* 1898. In the *B.P.* 1914, the specific gravity is given as 0.860 to 0.890 instead of 0.885 to 0.890 as formerly. This admits the lighter and more mobile oils which are sometimes preferred for making nasal sprays. The name Paroleine designates the product supplied by Messrs. Burroughs, Wellcome, and Co.

Perhydrol.

Defined as a 30 per cent. (by weight) solution of hydrogen peroxide. Perhydrol also occurs in combination, magnesium perhydrol and zinc perhydrol being trade names for the peroxides of magnesium and zinc respectively. Perhydrol, alone and in the combinations mentioned, is the trade name for the products of E. Merck, Darmstadt.

Phytin.

Phytin is described as the calcium and magnesium double salt of anhydro-oxymethylene-diphosphoric acid, and is said to contain 22.8 per cent. of phosphorus. The trade name Phytin indicates the product of Ges. für Chem. Industrie, Basle, Switzerland.

Propaesin.

A name adopted for the propyl ester of para-amino-benzoic acid. It is claimed to be non-poisonous as well as non-irritating, and to be a local anaesthetic for all mucous surfaces. The trade name Propaesin indicates the product of Franz Fritsche and Co., Hamburg.

Proponal.

Proponal is a name given to dipropyl-barbituric acid, which is described in the *B.P.C.* under the name Homalourea, indicating that it is a homologue of malourea or barbitone. The trade name Proponal indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Protargol.

A name applied to silver proteinate, a substance which is described in the *B.P.C.* under the latter name. Another trade name is Novargan. The trade name Protargol indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany, and that of Novargan the product of Heyden Chem. Works, Radebeul, Germany.

Protylin.

This is described as a synthetic protein or phosphorus-albumin, an organic compound of phosphorus and albumin containing 2.7 per cent. of the former element. It is offered as an assimilable, non-toxic form of phosphorus. Brom-protylin and iron-protylin are combination products of Protylin. The trade names Protylin, Brom-protylin and Iron-protylin indicate the products of Hoffmann-La Roche Chem. Works, Basle, Switzerland.

Purgen.

Purgen or Purgo consists essentially of phenolphthalein, which is contained in the *B.P.* 1914. In the *B.P.C.* it is stated that phenolphthalein in a simple or compounded form is also known under the following names—Aperione, Laxans, Laxatin, Laxatol, Laxatoline, Laxiconfect, Laxoin, Laxophen, Paraphthalein, Phenolax, Probilin, Purgella, Purgolade and Purgylum. The trade name Purgen (Purgo) indicates the product of H. Goetz, Frankfort-on-Main, Germany.

Pyoktanin.

A name applied to methyl violet, described in the *B.P.C.* as methyl-rosaniline. The trade name Pyoktanin indicates the product of E. Merck, Darmstadt.

Pyramidon.

A name applied to dimethyl-amino-antipyrine (Japanese Pharmacopoeia) or phenyl-dimethyl-dimethyl-amino-pyrazolon. Pyramidon camphorate (acid and neutral) and pyramidon salicylate are combinations of pyramidon with camphoric and salicylate acids respectively. The trade name Pyramidon indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Pyroform.

This is a name given to bismuth oxyiodo-dipyrogallate, said to be obtained by treating bismuth oxyiodide with oxidized pyrogallol. It is put forward as a relatively non-toxic substitute for pyrogallic acid in dermatology. The trade name Pyroform indicates the product of Hoffmann-La Roche Chem. Works, Basle, Switzerland.

Sabromin.

A name given to calcium dibrombehenate, which is put forward as a substitute for the bromides. The trade name Sabromin indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Sajodin.

Defined as calcium monoiodobehenate. It is intended as a substitute for the iodides when these are not well borne. The trade name Sajodin indicates the products of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany, and Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Salacetol.

This is described as salicylacetol, salantol, acetol-salicylic-acid ester. It is put forward as an intestinal antiseptic and antirheumatic. The trade name Salacetol indicates the product of Hofmann and Schötensack, Ludwigshafen, Germany.

Salipyrine.

A name applied to antipyrin salicylate, described as such in the *B.P.C.*, where it is stated that it is also known under the trade names Salazolon and Salipyrazolon. The trade name Salipyrine indicates the product of J. D. Riedel, A.G., Berlin-Britz, Germany.

(To be continued.)

THE LISTER INSTITUTE.

As our readers are aware, the governing body of the Lister Institute of Preventive Medicine recently proposed that the Institute should be handed over to the Medical Research Committee established under the paragraph of the Insurance Act providing what is commonly called the Research Penny. This proposal, which had been freely canvassed in our pages, was not accepted by the members, and, as was stated a fortnight ago, the governing body has decided, in view of the vote at this meeting, not at present to take any further steps to promote the amalgamation of the Institute with the organization for medical research established under the Insurance Act.

Sir Ray Lankester, a member of the Institute, who took a leading part in combating his proposal for amalgamation, has recently published in the series of articles, "Science from an Easy Chair" in the *Daily Telegraph*, his views on the inadvisability of the proposal. The article is entitled "Attempt to Manufacture Scientific Discovery." It begins with a recital of the history of the foundation of the Lister Institute. The then Lord Mayor of London had in 1889 collected a sum of money to meet the cost of sending patients to the Pasteur Institute at Paris for antirabic inoculation. In co-operation with Sir Ray Lankester, he called a public meeting, and eventually a fund was established to found in London an institute similar to the Pasteur Institute in Paris. A considerable sum was raised; the Berridge Trustees gave £40,000, some of the City companies gave money, private individuals subscribed large sums, and Lord Iveagh gave no less than £250,000. The buildings and funded property of the Lister Institute are now estimated to be of the value of £400,000, and it has an income from endowments of about £10,000 a year. It has, Sir Ray Lankester says, been the seat of much valuable scientific work, but, owing to the fact that it does not itself publish the records of work done in its laboratories in separate volumes, the extent and variety of the work accomplished there are not generally known.

The proposal for the amalgamation is described by Sir Ray Lankester in the following terms:

> It was proposed that the independence—the autonomy—of the Lister Institute should be abolished and that the property of the members should be presented to and be hereafter administered by this Government committee, nominated by Government officials, and, of course, consisting of a majority of official "respectabilities" not themselves experts in scientific discovery.

Those who opposed the amalgamation, while admitting that it would be a good thing for the Medical Research Committee under the Insurance Act, to put up laboratories in London and elsewhere in order to see "what they could get done in the way of medical research, and in order to carry out various odd jobs for the Local Government Board," did not consider that the Lister Institute should commit suicide and place its property in the hands of the Government. In urging the members to accept the proposal at the meeting on November 18th, 1914, Lord Moulton, Chairman of the Medical Research Committee, again to quote Sir Ray Lankester, said that:

> It was a surprise that the members did not at once appreciate the great advantages to science which would result from the adoption of the governing body's proposal for the transference of their property to the Government. He told us that men of science are apt to be guided by considerations of abstract truth and to fail in the appreciation of the practical realities of life. He then asked us to hand over our rich and independent institute to his committee because we should gain for it, thereby, the blessings called "centralization" and "co-ordination." I think that my readers will agree that the majority of the members of the Institute, in refusing to part with their property, do not justify Lord Moulton's opinion of men of science. They show a thoroughly practical spirit and a mistrust of abstractions. They have no confidence in vague invocations of "centralization" and "co-ordination"—abstractions with which Lord Moulton endeavoured to allure them. They do not wish to see the Institute placed at the disposal of centralizers and co-ordinators. The men they desire to maintain in undisturbed control of the Lister Institute are of a totally different class, namely, the rare individuals known as "scientific discoverers"—a variety of humanity impossible to drive or to co-ordinate, inevitably paralysed by official programmes and stultified by ignorant though well-meaning superintendence.

So much for the concrete case; the following paragraphs of Sir Ray Lankester's article deal with the general principles involved:

> There is a widespread but erroneous belief in official circles, and among wealthy philanthropists, to the effect that you can hire a scientific discoverer and then say to him, "Discover me this" or "Discover me that" (naming to him a possible and greatly-desired piece of new knowledge), and that he will thereupon proceed right away to make the discovery which you want. As a matter of fact, neither the official nor the wealthy man can obtain what he desires in this way A board of directors of a commercial company can procure commercial commodities by hiring workmen and skilful overseers to produce them. They know clearly what they want; they understand it when they have got it; and can choose and employ workers of the professional or artisan class to carry out their orders. But valuable and important scientific discovery cannot be produced directly in response to orders given and money expended. You cannot manufacture scientific discovery like soap. The great difficulty, in the first place, is to catch that rare and evasive creature—a scientific discoverer—and when you have found him you have to humour him and let him do as he fancies. Then he will discover things, but probably not the things which either you or he wanted or expected. He will discover very probably something not of immediate service, but possibly destined to be of incalculable value and service hereafter. Scientific discoverers of real importance can as a rule only be detected and selected from the mass of mankind by men who are themselves "of that ilk." Such rare opportunities as those possessed by the Lister Institute, with its laboratories and endowments, can best serve the State by affording to a certain number of selected discoverers the opportunity of freely exercising their gifts. Men who have proved themselves to be real discoverers, possessing in the highest degree this special capacity, must be selected for the three or four best-paid posts or professorships, and enabled to associate by their own choice younger workers with themselves. They must be no further fettered or "directed" than is involved in the understanding that they will devote themselves to continued investigation of the general subject by discoveries in which they have already become famous.
>
> The only persons who have the necessary skill and understanding to make these selections and to act as the governing body of such an institute are its actual active professors or heads of laboratories. They should be constituted as a "senate," reporting once a year to a body of trustees, whose sole duty is to receive and to accept or reject the proposals made by the senate as to prospective expenditure, and as to the filling up of vacancies in professorships, etc. The trustees must have no power to initiate any expenditure or any appointments, or to require or to forbid any line of investigation, all such power being assigned to the senate of "professors." It is in this way that the Institut Pasteur in Paris is managed, and it owes its great success largely to the *esprit de corps* and devotion of its working staff due to this organization which is that of other successful institutions aiming at scientific discovery. It is, indeed, I believe, the only one which ever has produced, or can produce, any measure of success. It is this freedom of the professors from any trace of lay direction and interference which has led in Germany, where direction and discipline are in other matters so predominant, to the production in the universities of a marked abundance of scientific results of value.

The following paragraph, in which Sir Ray Lankester sums up his conclusions, explains, perhaps in rather stronger language than they would have used, the hesitation which the majority of the members of the Lister Institute felt in accepting the proposal for its amalgamation with the Medical Research Committee:

> Until very recently the British Government has given assistance to scientific work by "grants in aid," such as that received by the Royal Society, the new universities, and other institutions. The plan of annexing a rich and independent institution such as "the Lister," and of undertaking the production of scientific discovery through the expenditure of public money by an unpaid, inexperienced committee of variegated eminence, nominated (*ad hoc*) by officials equally devoid of experience, is a regrettable novelty. A "grant in aid" of the work of an existing body of competent scientific workers is much more likely to produce valuable results.

THE *Livingstone College Year Book, 1915*, contains a report of the work of the previous session. This was the last of the twenty-one years during which Dr. and Mrs. Harford resided at the college, the work of which they took a large part in initiating. During that time 548 students went forth from the college to all parts of the world, all with some knowledge of how to care for their own health and the health of their fellow missionaries, and how to deal with the more simple diseases of the natives. The *Year Book* contains extracts from letters received from old students, which are a striking testimony to the value of the work. A number of past students supply personal tributes to the work of Dr. and Mrs. Harford. There is a review in simple language of recent progress in tropical medicine.

British Medical Journal.

SATURDAY, JANUARY 16TH, 1915.

PRISONERS IN CONCENTRATION CAMPS.

IN the BRITISH MEDICAL JOURNAL of December 5th, 1914, reference was made to a protest addressed by the Hamburg Medical Association to the medical profession of Great Britain about the treatment of "unarmed and innocent Germans who have been held imprisoned for some months in England in the so-called concentration camps." The protest had special reference to the camp on Newbury racecourse. We stated that, although the document consisted for the most part of mere vague denunciations of this country and its want of humanity, we should do our best to secure that an investigation should be made as to the conditions in the camp, especially in regard to the medical men among those interned. Steps were taken for the purpose, but before anything definite could be done in the matter the Newbury concentration camp, as was announced in the BRITISH MEDICAL JOURNAL of December 12th, was closed and the prisoners were transferred to hulks on the South Coast.

The complaints made by the Hamburg Medical Association as to the treatment of interned aliens in the camp had, however, already been proved to be unfounded. The Prime Minister himself had paid a visit to the camp and made inquiries. We showed that the protest of the Hamburg physicians was practically a hash-up of statements which had been dealt with in the *Times* of October 30th. These statements had been investigated both by a representative of that journal and also by two officials of the American Embassy in London, who made an independent inquiry into the treatment of Germans interned in the concentration camps. The conclusion arrived at by all the inquirers was that the charges were untrue. They were, in fact, founded on the allegations of one man, which were contradicted by a number of the prisoners themselves. The report of the American officials was dated October 14th, while the protest of the Hamburg Medical Association is dated November 3rd, though it did not come into our hands till November 26th. The *Cologne Gazette* of November 5th virtually admitted that there was no evidence in support of the charges, and said regard must be had to the favourable report from the American Embassy in London.

Whether the members of the Hamburg Medical Association when they drew up their protest had any means of knowing that the charges made by them were founded on statements which had been proved to be false we are not in a position to say. But they have had ample time to learn that the charges had broken down on examination; nevertheless, as far as we are aware, they have not made any public admission that they had been misled. We must therefore leave them to settle the question with the *Cologne Gazette*, a journal which has certainly not been favourably disposed to this country since the war began. It has indeed been one of the leading agents in propagating the gospel of hate against England which is so zealously preached in Germany. Its withdrawal of charges of which it had made itself the mouthpiece, therefore, affords the strongest possible proof that they cannot be sustained. It is probable that at first there may have been some unavoidable inconvenience in some concentration camps owing to want of proper accommodation for a large number of persons suddenly interned in quarters that were necessarily hastily improvised. But there is evidence that, if such unsatisfactory conditions existed at first at any particular place, they have long since been remedied. A remarkable letter, dated November 17th, 1914, from a German seaman interned in the concentration camp at Eastcote, Northants, published in the *Berliner Tageblatt*, speaks of the kindness with which the prisoners are treated, and appeals to the writer's fellow countrymen, saying he and his fellows would be proud if they heard that the Germans also treated their prisoners well. That they do not do so is proved by the reports of impartial neutrals who have been deputed to investigate the conditions in German concentration camps. These reports, which have been extremely unfavourable and which have never to our knowledge been denied by the Germans, are confirmed by the personal experience of Dr. James J. Paterson, of Maidenhead, a letter from whom was published in the BRITISH MEDICAL JOURNAL of December 12th, 1914 (p. 1048). We have much other evidence to the same effect, but it will be sufficient for our present purpose to refer to the seventh report of the Belgian Commission of Inquiry, in Section II of which is found the following statement: "On 18th September, about 5 p.m., a train with several carriages full of English prisoners passed through the Eastern Railway Station. The Germans prevented the ambulance men from giving them food. Another train contained both French and English prisoners. The sentries permitted an ambulance attendant to help the French, but prevented him from assisting the English. Witnesses report that this kind of incident occurred repeatedly." The unanimity with which French, Belgian, and Russian prisoners testify to the particularly inhuman manner in which the British prisoners are treated is so striking that it must carry conviction to any unbiassed mind. So notorious, indeed, are the facts that, according to a statement issued from the War Office on January 12th, negotiations are now proceeding for bettering the condition of British prisoners in Germany.

The Hamburg document speaks of Great Britain's disregard of the Geneva Convention. This charge comes strangely from representatives of a nation which in its dealing with medical prisoners has hitherto systematically treated that Convention as a mere scrap of paper. We may call the attention of the signatories to the authenticated cases in which medical officers of the Allies have been deliberately murdered by German soldiers in their hospitals while actually tending the sick and wounded, and to the numbers of such officers who have been detained in Germany, not to look after their own wounded, as provided by the Convention, but as prisoners who have been treated in the harshest manner. We have collected from unimpeachable sources a mass of evidence on this subject which forms a most damning record of German conduct. Some striking examples of the deliberate disregard of the Germans for the Geneva Convention will be given in an early issue. In the meantime we need only allude to the experience of Captain C. T. Edmunds, R.A.M.C.,

Captain E. S. B. Hamilton, R.A.M.C., Lieutenant W. S. Danks, R.A.M.C., Mr. L. J. Austin and Dr. A. R. Elliott, of the 1st Belgian Unit, British Red Cross Society, who have just been released after five months of captivity. Captain Hamilton says that when taken to Torgau the journey occupied four days, during three of which they had nothing to eat or drink. When he asked for water or food, the only reply was that there was nothing for the English swine. Yet the Hamburg Medical Association says that German doctors have always considered it their special duty to give the same attention to friend and to foe, and accuses us of violating the Geneva Convention!

In conclusion we beg to offer one or two pieces of advice to the signatories of the protest of the Hamburg Medical Association. In the first place, they will do well in future to investigate charges before committing them to print, and we may add that when they are shown to be false it is their duty as honourable men to withdraw them. In the second place, it would be prudent on their part to look at home before accusing this country of inhumanity and of violating the Geneva Convention. As they speak of the "cruelty" of the British people, we invite them to read with attention the letter from Dr. Cobden Haslam, of Cambridge, published at p. 138, as to the treatment of the late Professor van Gehuchten by their countrymen. This shows the "humanity" of the German army is a light that makes "the indelible brand" which the authors of the protest speak of us as "bearing on our brows," stand out with a terribly angry glow on that of their own country. *Quis tulerit Gracchos de seditione querentes?*

We regret to say that in our opinion the Hamburg document, though emanating from a medical society, must be placed in the same category as the professorial and diplomatic literature which has so discredited Germany in the eyes of the world. Nevertheless if they will supply us with details as to the case of any German medical men interned in concentration camps in this country whom they believe to be improperly treated we will do our best to procure a mitigation of their lot.

ABSENT COLLEAGUES.

THE need for such work as is being done by the Scottish Medical Service Emergency Committee (SUPPLEMENT, p. 17) is illustrated by a story told in the *Times* of January 13th by a correspondent who signed himself "Only a Doctor." He stated that on August 5th he received fifteen hours' notice to join his unit. He was, he said, fortunate in being able to hand over his practice to another practitioner, and left with the fond hope that though he must expect to lose a large number of patients, he would at least retain his appointments and a small but certain income accruing therefrom. He has not, however, met with the consideration he expected and deserved to expect, for he was, he states, notified a short time ago by the board of guardians that a certain colleague had applied for the appointment which he, the writer, had held for twelve years, and had obtained it. He addressed a hurried protest to the Local Government Board, but so far this has produced nothing beyond a printed acknowledgement of its receipt. He expects to go shortly to the front, and will have to take with him the knowledge that his home has had to be given up, his children withdrawn from school, that those dependent upon him will be left behind with a small and rapidly dwindling income, and that when he returns, if he ever does, he will have to take up the struggle of fifteen years ago.

We hope, and indeed believe, that such an incident as this is rare. The members of the medical profession, at the instance in many localities of the local Divisions of the Association, have bound themselves to do everything in their power to diminish the losses which medical men who are called to serve the army in any of its branches are liable to incur. The movement in this direction began very early, and we may quote from the first report of action which came to our notice, and there could have been few earlier, since the meeting was held on August 4th, when the medical profession in Southampton resolved loyally to undertake to safeguard the interests of those of their colleagues called to leave their practices in the service of their country. One of the rules drawn up by the committee then appointed for the purpose was, "That the remaining Poor Law doctors be asked to do the necessary parish work of the absent Poor Law doctors." We believe that this is the intention of the vast majority of the profession, and we would suggest that any medical officer serving with the forces at the present time who finds that the spirit of this regulation is being violated should communicate with the Medical Secretary of the British Medical Association, who will be prepared to look into the matter and advise.

TREATMENT OF GUNSHOT FRACTURES.

AMONG the many types of injury sustained during the present war none, perhaps, have caused more suffering to the wounded man and more perplexity and anxiety to his surgeon than fractures of the thigh, especially in its upper third or into the hip-joint. They give rise also, as our correspondent at the seat of war points out this week, to a serious administrative problem. They are difficult to dress and nurse, and, owing to the long time they must remain under treatment, they form a larger proportion of the cases in a given hospital on the lines of communication or at an advanced base than the ratio they actually bear to the total number of cases passing through the hospital. For this reason alone it is practically impossible to keep them in the clearing hospital to which they are first taken, but it is not easy so to arrange matters that they can be moved by ambulance or train without great suffering and the aggravation of the local condition. The problem is how thoroughly to immobilize the limb in good position without impeding easy access to the wound and the necessary moving of the patient in bed. Mr. Robert Jones, whose authority will be generally recognized, addressed a short letter to the JOURNAL on the subject last month, and has now gone more fully into it in the course of a paper on the mechanical treatment of compound and suppurating fractures occurring at the seat of war which he contributes this week. The very instructive photographs he has taken specially for this paper illustrate so clearly the method he has found satisfactory that it is easy to follow his explanations. The "fixed extension in abduction" which he advises secures the lower limb in relation to the pelvis with the fracture in good position in a way that can never be achieved by weight and pulley, while it at the same time allows the patient to be moved and carried without causing suffering or the risk of displacement. Although the author in the title of his paper limits its scope to the consideration of the mechanical problems involved, he is compelled in their scientific consideration to touch upon a problem of great pathological interest and general application. He shows that the method is a prophylactic of those painful startings of the limb which are often so distressing a feature of cases of fracture of the long

bones, especially of the lower limb. They are, he considers, of reflex nature, and are due to changes of tension produced by any slight movement of the trunk or of the limb, whether passive or active. In the fixed abduction-extension splint movement is impossible, and, if a teleological expression may be excused, the muscles realize that they are off duty, and do not contract. The occurrence of starting pains in any case of fracture ought therefore to be taken by the surgeon as an indication that he has not found the solution of the mechanical problem, and, when he has realized this, he will not rest satisfied until he has found a method by which they are prevented. The point is illustrated also in the discussion of the principles which should govern the mechanical treatment of the lower thigh. When the method described is properly carried out the muscles cannot contract, they therefore "do not remain on the alert, but become quiescent, and starting pains do not occur." What this means to the individual any one who has stood by the bedside of one of these unhappy patients, in whom complete immobilization has not been achieved, knows only too well, but the general as distinguished from the particular interest of Mr. Jones's paper seems to us to lie in the explanation he gives of the physiology of the matter. It is a chapter added to the history of the study of "rest and pain," and an illustration of the general principle that if we can subdue pain not by numbing the nervous system by opiates but by removing its cause, then we have put our patients on the best road to a happy and speedy recovery.

MOTOR OPERATION THEATRES.

MR. G. H. COLT, assistant surgeon to the Aberdeen Royal Infirmary, has sent us a highly ingenious design for a motor operation theatre, illustrated by working drawings, and photographs of a model he has made (p. 129). Mr. Colt devised a portable operation theatre some years ago, and described it in the first volume of the *British Journal of Surgery*; since then he has materially altered, and as it seems to us greatly improved, the disposition of the interior, and has even been able to provide two operating tables while still leaving adequate space for moving about. The advantage of the two tables is largely to be found in the facility thus afforded for dealing with cases more quickly, since the surgeon can be operating at one while a second patient is being anaesthetized, or final dressings adjusted as the case may be. The theatre body is intended, we gather, to be mounted on a 3-ton Dennis chassis. In some notes on a visit to West Flanders then recently paid by Sir William Collins, published in our pages on November 28th, he said that "a motor vehicle fitted up as a field theatre or surgery would be of immense service in securing the earliest practicable attention to wounds, thus reducing the number of those infected and offensive arriving at the base." In a subsequent issue it was suggested that it would be well so to design the body of the car that it could be used not only as an operation theatre, but also as a radiographic laboratory. A combined operation theatre and *x*-ray wagon to meet these conditions is described in *Cooper's Vehicle Journal* for January; the description is accompanied by a working drawing and a plate. The body is mounted on a 5-ton Dennis chassis. In the setting out of the appliances, the plan of the interior follows rather closely Mr. Colt's earlier design, and acknowledgement is made to him. Mr. Colt's new plan for the arrangement in the interior is more comprehensive, and in its ingenious utilization of the available space recalls devices more often seen at sea than on land. He does not seem to have provided for the use of the car for radiographic work. In the other design the *x*-ray room is placed immediately behind the accommodation for the driver, and is separated from the operation theatre by sliding doors. The *x*-ray room is 5 ft. long, the theatre 9 ft. 6 in., and it is proposed that the patient should be *x*-rayed in the theatre or in a temporary shelter, and that the *x*-ray room should be used only as a dark room for developing. It is, however, stated that it would be possible to arrange for a special *x*-ray table in the theatre, in which case the length of the dark room would have to be reduced to 3 ft. The question whether an *x*-ray room and theatre should be provided is a matter in which conveniences have to be balanced, but as will be observed, even if an *x*-ray dark room be provided, it may be necessary to *x* ray the patient in a temporary shelter.

X-RAY LOCALIZATION.

THE December and January meetings of the Röntgen Society have been occupied with a discussion on the localization of foreign bodies in the tissues by means of *x* rays. The discussion, originally opened by Dr. Robert Knox, has rather lacked cohesion owing to the fact that the speakers (apart from the opener and three or four others) have left on one side the general aspect of the subject, and have merely described new methods of their own adoption or modifications of old ones. Practically all the methods, however, as one speaker said, arrange themselves in three groups: the triangulation system, the cross-plane system, which might almost be described as a triangulation method, although the angles usually employed are right angles; and the parallax method. The merits of stereoscopy do not appear to be finally decided. Mr. C. R. C. Lyster, who opened the adjourned discussion on January 5th, said that on viewing a stereoscopic picture of such a thing as a bullet in the bony structures, it was almost impossible to realize the exact position of the foreign body. Two surgeons, while agreeing that the bullet was in front of a bone, might differ even to the extent of half an inch in their opinion as to its exact distance in front. Stereoscopic skiagraphy was of extreme value in making an estimate as to the relationship which the portions of a fractured bone bore to one another, but was not accurate enough, in his judgement, for bullet localization. Dr. E. S. Worrall, on the other hand, had found that in such a case as a bullet in the arm, the wound being covered with dressings, a pair of stereoscopic skiagrams were sufficient to enable the surgeon to operate successfully, although he admitted that some surgeons did not possess true binocular vision, and had difficulty in seeing the stereoscopic effect at all. To screen or not to screen was also a debatable point. Mr. C. E. S. Phillips, who has been responsible for the *x*-ray work at the Royal Military Hospital at Woolwich, said that there they had come to the conclusion, after many discussions, that screening methods were practically useless, seeing that large fragments of shrapnel could not be detected on the screen, and a bullet at times was difficult to make out. Moreover, for record purposes it was well to take the photographs. Using, generally, a modification of the Mackenzie Davidson method, and, in the case of the limbs, taking two photographs at right angles, Mr. Phillips said that in one series of localizations, including bullets and fragments, out of 241 bodies localized 239 were removed by the surgeon without the slightest difficulty. He emphasized the necessity, however, of having the operating theatre close to the *x*-ray room. One advantage of screening was pointed out by Dr. N. S. Finzi. A case similar to several which he instanced was that of a man who was wounded in the right shoulder. No sign of a bullet was found there, but the screen showed a bullet behind the left scapula, quite superficially placed, and easy to remove. It caused merely an indefinite pain in the back, and, had it not been for the screen examination, would have been overlooked. Dr. Sidney Russ pointed out that a great advantage of all photographic methods was the reduction of the risk to which the operator was subject when the localization took place on the screen. In summing up the discussion, Sir A. Pearce Gould, who had presided, said that in quite recent days a great amount of ingenuity had been brought to bear on the

subject in the direction of simplifying and expediting well-known methods. The simplification of method was a great desideratum at a time like the present when a hospital was sometimes overwhelmed by a sudden rush of cases.

BIOLOGY AND CULTURE.

BISMARCK probably troubled himself little with biological or any other kind of theory; he had the contempt of the man of action for "professors." But he acted on the principle that might makes right and that whatever stood in the way of the realization of his plans could justly be "hacked through" with the sword or turned aside by garbling of documents or any other unscrupulous device of "diplomacy." His practice has been justified by Treitschke, Bernhardi, and others on a professedly biological theory that small nations have no rights. Professor Grasset of Montpellier, has lately shown the unsoundness of the doctrine that might makes right. If we, he argues, were to give in human biology to the word "force" the sense which is given to it for other living beings and for the whole universe, man would be the weakest of all, and as in the universe taken as a whole it is the strongest who rules and dominates, the mastery which man has established scientifically over the whole world could not be understood. But this very mastery proves that the strength of man is made of something else than the brutal and unintelligent violence of the cyclone or the earthquake. "The bull, the elephant, or the lion, just as the microbe, can inflict on man passing and individual defeats, but man has always in relation to them the strength which masters them, and in the end directs them for the progress of humanity. The strength of man lies wholly in his intelligence, and this intellectual superiority is made up of all that is in human nature, notably the power of progress and the law of morality and right. It may be said that, if in general biology might makes right, in human biology, on the contrary, it is right that makes might." Professor Grasset's conclusion is that, without going beyond human biology, it may be said that "in the history of man final and definite success will always be with him who has true might, that is to say, moral right—that which puts science to the service of right." Dr. Fridtjof Nansen, the well-known explorer, recently delivered at the University of Christiania, in the presence of King Haakon and the Queen of Norway, an address on the rights of small nations. It had often, he said, been contended that on the basis of biology only the strong have rights. This he emphatically denies, for it is quality only, not quantity, that matters. The great facility of communications in modern times, of course, tends to form larger and larger aggregations. This may have advantages, but it is accompanied by the danger that it may cause a tendency for the special qualities of different races to disappear. What certainty of truth, he asks, will the citizen of the world with one only culture, one only kind of development, have when there will be no exchange of different ideas? Autofecundation is contrary to Nature, and leads to sterility. Where would be the admirable German work in zoology and biology without the fecundation of Darwin, Spencer, Wallace? What would German bacteriology be without Pasteur? Or chemistry without Lavoisier? Or physics without Newton? Where, we might add, would medicine be without Jenner, or surgery without Lister? Had not, Nansen went on, Kant built on English thought? What do not Goethe and Schiller owe to Shakespeare? In small countries, more than in great, it is easier to make ideas pass into the domain of practice. The multiplicity of small States allows of the multiplication of endeavours to arrive at useful results. Using the Italian Republics of the Middle Ages, the free towns of Germany, the Swiss Cantons, and the Holland in our own day, as examples, he says that small States are a kind of political laboratory in which such schemes as, for instance, the referendum, universal suffrage, and so forth, can be tested. The England of Shakespeare was no bigger than Sweden of to-day; London was about as large as the Christiania of Ibsen. Germany was not the great Germany when it produced Bach, Goethe, Schiller, Kant. From all this Nansen drew the conclusion that small nations have the right to exist by the side of large ones. It is not only a right but a duty. Any reasoning which tends to the conclusion that one should not defend oneself is bad, not only because it is the reasoning of the slave, but because it leads men to renounce their most sacred right.

NOTIFICATION OF INDUSTRIAL POISONING.

A MEMORANDUM (Form 304) has recently been issued by the Factory Department of the Home Office with reference to the certification by medical practitioners of cases in which they believe the patient to be suffering from lead, phosphorus, arsenic, or mercury poisoning, or from anthrax contracted in a factory or workshop. Notification is compulsory, and the fee paid is 2s. 6d. Forms for notification will be supplied on application to the Chief Inspector of Factories, Home Office, London, S.W. The object of the notification is to afford to the factory inspectors a clue to dangerous conditions over which they can exercise control, but their powers in this respect are limited to factory and workshop premises, and notification of poisoning contracted otherwise, as for instance from lead in drinking water, or arsenic in food, or even from industrial employment outside the Factory Acts, would be useless for statistical purposes and is not required. The opinion to be notified on the certificate is twofold: (1) That the patient is the subject of one of the forms of poisoning specified or from anthrax, and (2) that the practitioner believes the poisoning or disease to have been contracted in a factory or workshop. In some cases doubt may arise, particularly with regard to the second point, and an instance given in the memorandum is that of house painters. If a painter spends part of his time in the factory or workshop occupied by his employer in processes such as grinding lead pigments, or mixing lead paints, lead poisoning in his case may be reportable, seeing that there is a risk in such employment, though of less degree, than he incurs in his usual outdoor work. The same considerations apply to lead poisoning in plumbers. As to recurring attacks in the same person, it is stated that, if the affected person continues at work, successive attacks, especially when distinct from those preceding, should each be notified. Cases in which symptoms continue or recur after the employment in dangerous processes has come to an end are not notifiable.

THE QUATERCENTENARY OF VESALIUS.

PREPARATIONS had been made for some time at Brussels to celebrate with appropriate ceremonies the four hundredth anniversary of the birth of Andreas Vesalius, who first saw the light in that city on the last day of the year 1514. The fulfilment of this intention was, however, prevented by the war. The anniversary did not, however, pass uncommemorated. A historical club meeting of the Harvard Medical Society was held at the Peter Bent Brigham Hospital at Boston on December 8th, 1914, under the presidency of Professor Harvey Cushing. An account of Louvain and its University was given by Dr. Robert M. Green, and a paper on "The Vesalian Spirit" was read by Dr. Lewis Stephen Pilcher. Dr. Harvey Cushing discussed the iconography of Vesalius, and showed lantern slides representing many of the portraits of the famous anatomist. A specially interesting feature of the meeting was an exhibition of the collection of Vesalian and post-Vesalian editions shown at the annual meeting of the American Medical Association held in Atlantic City, New Jersey, in June, 1914.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

BRITISH COMMITTEE.

A MEETING of the Executive Committee was held on Thursday afternoon, January 7th, when the question of opening up communication with Belgium for the purpose of ministering to the wants of the Belgian doctors and pharmacists was discussed in the light of information from the United States. In the United States work similar to that which the British Fund is doing has been started. An American committee of medical men will operate through the International Commission for Relief in Belgium and will have packages, prepared by instrument makers and pharmaceutical houses of the United States, shipped for distribution in Belgium upon the same method as the British Fund has adopted.

A meeting of the Subcommittee empowered for the present to make emergency grants was held on January 8th, when Dr. Clément Philippe attended to represent the Belgian Medical Society in London, and placed before the Subcommittee the details of various cases. The grants were made. A representative of Messrs. Harrods was also present, and a guarantee was given to that firm for the supply of clothes of an agreed class to Belgian doctors whose names were submitted by Dr. Philippe.

The following circular explaining the objects of the fund has been widely distributed to the medical profession by the Executive Committee; the Medical Secretary of the British Medical Association, 429, Strand, London, W.C., will be glad to supply Secretaries of Divisions and Branches with copies enclosed in stamped envelopes for distribution to local members of the medical profession.

The Belgian Doctors' and Pharmacists' Relief Fund.

THIS Fund is being raised to organize relief for Belgian doctors and pharmacists, both those remaining in Belgium and those who are refugees in this country.

The Executive Committee.-

Sir RICKMAN J. GODLEE, Bt., *Chairman.*
Sir THOMAS BARLOW, Bt., President of the Royal College of Physicians of London.
Sir W. WATSON CHEYNE, Bt., President of the Royal College of Surgeons of England.
Mr. MEREDITH TOWNSEND, Master of the Society of Apothecaries of London.
Sir ALFRED PEARCE GOULD, Acting Vice-Chancellor of the University of London.
Dr. FREDERICK TAYLOR, President of the Royal College of Medicine.
Dr. HERBERT SPENCER, Obstetric Physician to University College Hospital, London.
Sir FREDERIC EVE, Consulting Surgeon to the London Hospital.
Mr. T. JENNER VERRALL, Direct Representative for England on the General Medical Council, and Chairman of Representative Meetings of the British Medical Association.
Dr. F. M. SANDWITH, Gresham Professor of Medicine.
Mr. E. T. NEATHERCOAT, Vice-President of the Pharmaceutical Society of Great Britain.
Dr. ALFRED COX, Medical Secretary of the British Medical Association.
Dr. DAWSON WILLIAMS, Editor of the BRITISH MEDICAL JOURNAL.
Dr. H. A. DES VŒUX (Honorary Treasurer), 14, Buckingham Gate, London, S.W.

Honorary Secretaries:

Dr. S. SQUIRE SPRIGGE, Editor of the *Lancet*, 423, Strand, London, W.C.
Mr. W. J. UGLOW WOOLCOCK, Secretary and Registrar of the Pharmaceutical Society, 17, Bloomsbury Square, London, W.C.

It is requested that correspondence addressed to the Honorary Secretaries should be marked "Belgian Fund." Subscriptions should be sent to Dr. H. A. Des Vœux, 14, Buckingham Gate, London, S.W., and cheques should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Ltd.

The General Committee.

This Committee is in process of formation. It already includes the following names in addition to those of the Executive Committee:

Sir DONALD MACALISTER, K.C.B., President of the General Medical Council.
Sir HENRY MORRIS, Bt., Joint Treasurer of the General Medical Council.
Sir JOHN W. MOORE.
Mr. JAMES HODSDON, President of the Royal College of Surgeons of Edinburgh.
Sir LAMBERT H. ORMSBY.
Dr. RICHARD CATON.
Dr. NORMAN WALKER, Treasurer of the Royal College of Physicians of Edinburgh.
Mr. H. A. LATIMER, Direct Representative for England on the General Medical Council.
Dr. J. A. MACDONALD, Chairman of Council, British Medical Association; Direct Representative for England on the General Medical Council.
Sir CLIFFORD ALLBUTT, K.C.B.
Sir THOMAS FRASER.
Sir CHARLES BALL, Bt.
Professor ROBERT SAUNDBY.
Professor WILLIAM RUSSELL.
Sir WILLIAM WHITLA.
Professor JOHN YULE MACKAY.
Professor G. ELLIOT SMITH.
Professor G. SIMS WOODHEAD.
Dr. J. C. MCVAIL, Crown Nominee on the General Medical Council.
Professor ARTHUR THOMSON.
Sir T. LAUDER BRUNTON, Bt.
Mr. BILTON POLLARD.
Professor RUTHERFORD MORISON.
Sir ISAMBARD OWEN, Vice-Chancellor of the University of Bristol.
Sir WILLIAM OSLER, Bt.
Mr. H. P. SYMONDS.
Dr. W. COLLIER.
Professor WILLIAM THORBURN.
Dr. JAMES PEARSE, Medical Officer of the National Insurance Commission (England).
Dr. MACDOWEL COSGRAVE, President of the Royal College of Physicians of Ireland.
Dr. H. MACNAUGHTON-JONES.
Professor ALFRED BARRS.
Sir GEORGE HARE PHILIPSON, Vice-Chancellor of the University of Durham.
Dr. A. H. F. BARBOUR, President of the Royal College of Physicians of Edinburgh.
Professor JOHN BARLOW, President of the Royal Faculty of Physicians and Surgeons, Glasgow.
Professor CONWAY DWYER, President of the Royal College of Surgeons in Ireland.
Sir ANDERSON CRITCHETT, Bt.
Sir W. ARBUTHNOT LANE, Bt.
Sir WILLIAM MILLIGAN.
Mr. J. LYNN THOMAS, Vice-Chancellor of the University of Wales.
Mr. EDMUND WHITE, President of the Pharmaceutical Society of Great Britain.
Mr. D. M. WATSON, President of the Pharmaceutical Society of Ireland.

Dr. DUNDAS GRANT.	Professor SINCLAIR WHITE.
Mr. CHARTERS SYMONDS.	Dr. A. J. HALL.
Dr. AMAND ROUTH.	Dr. W. K. HUNTER.
Professor J. THEODORE CASH.	Mr. F. P. SARGEANT.
Professor E. W. HOPE.	Mr. W. S. GLYN-JONES, M.P.
Sir JOHN BYERS.	Mr. J. C. UMNEY.
Mr. J. H. CUFF.	Mr. D. GILMOUR.
Mr. W. H. GIBSON.	Mr. J. P. GILMOUR.
Mr. R. L. GIFFORD.	Mr. W. L. CURRIE.
Mr. A. HAGON.	Mr. T. GUTHRIE.
Mr. P. F. ROWSELL.	Mr. J. RUTHERFORD HILL
Mr. G. E. PEARSON.	Sir T. BARCLAY.
Professor T. K. MONRO.	Professor J. MARNOCH.
Professor DUNCAN BURGESS.	Professor J. M. MUNRO KERR.

THE OBJECTS OF THE FUND.

The committee was started in reply to an appeal from Belgium brought by Professor C. Jacobs of Brussels, who represented in moving terms the terrible position in which his colleagues and also the pharmacists in that gallant country were involved. At the same time, the giving of assistance to the members of the medical and pharmaceutical professions and their families who are refugees among us is clearly a matter of urgency and a worthy object of subscriptions. It was recognized at the outset that it would be impossible, while the German occupation lasted, to do more for the doctors and pharmacists in Belgium than to dispatch certain packets of medical material with which the misery created by the wholesale destruction of laboratories and pharmacies might be relieved. A start has been made in this direction, and packets will be sent regularly when it is known that they can reach their destinations without interference. The position of the refugees of the two professions is in many instances utterly sad, and a large amount of money could be usefully expended to meet their immediate needs.

The plight of the pharmacists of Belgium is as heart-rending as the position of the medical men, and their present needs, as well as their eventual necessities, should appeal with peculiar force to the pharmaceutical community of Great Britain. Much has been done already unofficially in the way of organizing practical sympathy

on behalf of those expatriated pharmacists who have taken refuge in this country, but the problems that are daily arising, together with the claims which will ultimately reveal themselves, can only be met successfully and in a manner worthy of the occasion by systematic co-operation on the lines suggested in this appeal. The President and Vice-President of the Pharmaceutical Society of Great Britain feel that British pharmacists will be proud to share the honour of repaying, in part, the enormous debt of gratitude which Great Britain owes to Belgium for its heroic sacrifices.

A comprehensive scheme is being organized, under which an appeal will be made to all Scottish practitioners. A large committee is being formed from representatives of the universities, the Royal Colleges of Physicians and Surgeons, the Royal Faculty of Glasgow, and the pharmaceutical profession.

In Ireland the Royal College of Physicians and the Royal College of Surgeons have already taken action. A committee, including the Presidents of the Colleges, the President of University College, Dublin, the President of the Pharmaceutical Society, and many leaders of the medical profession, has been formed. The Registrar of the Royal College of Physicians (Dr. T. Percy C. Kirkpatrick) and the Secretary to the Council of the Royal College of Surgeons (Dr. C. M. Benson) combine the offices of treasurer and secretary, and subscriptions may be sent to either at the Royal College of Physicians, Kildare Street, Dublin. A substantial sum of money has been already received.

The Master of the Society of Apothecaries of London, in reply to a request published in the medical journals, has received at the Apothecaries' Hall, Blackfriars, London, E.C., many surgical instruments for distribution among Belgian practitioners, and these are still being generously presented.

The Committee has already done much preliminary work, and its various steps have been reported weekly in the *Lancet* and the BRITISH MEDICAL JOURNAL, in both of which journals Dr. Jacobs's appeal was published on November 21st. But sight has not been lost of a larger object. Sooner or later the rehabilitation of Belgium will be an honourable charge upon the countries saved by her courage. No doubt the State will take control of large measures to this end, but there will be room for international action whereby the doctors and pharmacists all the world over can co-operate in aiding their Belgian colleagues to a re-establishment of their professional positions. At the right time this Committee will be ready to take its share in such a movement.

The following list of subscriptions received by the Treasurer down to Tuesday evening last raises the total received to £2,654; the list does not include subscriptions received from Dublin.

Eighth List.

	£	s.	d.
Dr. Porter... ...	0	10	6
Dr. W. E. de Korte...	3	3	0
Dr. J. Mitchell Wilson	1	1	0
Dr. P. J. Freyer ...	5	5	0
Dr. G. E. Haslip ...	3	3	0
Birmingham Local Committee (per Dr. Robert Saundby)—			
Professor Gilbert Barling ...	10	10	0
Mr. Christopher Martin	5	5	0
Mr. J. T. Hewetson	5	5	0
Dr. Purslow ...	5	0	0
Professor Haslam..	3	3	0
Mr. Leonard Gamgee ...	2	2	0
Dr. Lilley ...	2	2	0
Dr. W. T. Lydall ...	2	2	0
Dr. Leonard Hackey ...	1	1	0
Dr. Thomas Nelson	1	0	0
Mr. Arthur Oakes	0	10	6
Dr. T. S. Short ...	5	5	0
Dr. T. M. Tibbetts	3	3	0
Mr. T. B. Ward ...	2	2	0
Mr. Frank Barnes	2	2	0
Dr. Mary Sturge ...	2	2	0
Dr. C. W. Suckling	2	2	0
Mr. G. P. Mills ...	2	2	0
Mr. J. F. Stockwell	2	2	0
Dr. William Gordon	2	2	0
Dr. John Robertson	2	2	0
Dr. W. A. Morris...	1	1	0
Dr. Alice Maclean..	1	1	0
Dr. Haitley Burn...	1	1	0
Mr. Bertram Lloyd	1	1	0
Dr. Geo. St. Johnston	1	1	0
Mr. Gilbert Smith.	1	1	0
Dr. Smallwood Savage	1	1	0
Anonymous ...	1	0	0
Dr. E. Watt ...	1	1	0
Dr. Marion S. Linton	5	0	0
Dr. Richard Ainsworth	2	2	0
Dr. J. K. Jones ...	1	1	0
Dr. George E. Percy	5	0	0
Dr. Thomas Wilson..	3	3	0
Dr. William Glaister	2	0	6
Dr W. B. Drummond	3	5	0
Warrington Division, B.M.A. (per Dr. T. A. Murray):			
Dr. R. Kennon ...	0	10	0
Dr. James Bennett	0	10	0
Dr. Henry Langdale	0	10	0
Dr. Lindsay ...	0	10	0
Dr. G. Binns ...	0	10	0
Dr. G. T. Schofield, J.P.	0	10	0
Dr. J. B. Naden, J.P.	0	10	0
Dr. A. J. Hutton ...	0	10	0
Dr. J. D. Liston ...	0	10	0
Dr. E. J. Geary ...	0	10	0
Dr. F. R. Seager ...	0	10	0
Dr. Arthur Anderson	0	10	0
Dr. T. U. Mercer...	0	10	0
Dr. O. H. Edwards	0	10	0
Dr. F. J. Breakell	0	10	0
Dr. E. E. Bowden	0	10	0
Dr. J. S. Manson...	0	10	0
Dr. Ian Ogilvie ...	0	10	0
Dr. Hodgkinson ...	0	10	0
Dr. C. Hutchinson.	0	10	0
Dr. G. H. Joseph...	0	10	0
Dr. D. Ferguson ...	0	10	0
Dr. T. A. Murray	0	10	0
West Suffolk Division, B.M.A. (per Dr. B. E. A. Batt):			
Subscriptions from doctors in West Suffolk... ...	23	16	0
Collected by doctors in West Suffolk...	5	1	0
Boxford Parish Church, Christmas Day collection	5	0	0
Dr. C. M. Pilcher (per Dr. Tuxford, Boston)	1	1	0
Dr. de Havilland Hall (second donation)	2	0	0
Mr. Lawford Knaggs	5	0	0
Mr. H. Elwin Harris	2	2	0
Dr. Alfred Mantle ...	3	3	0
W. H. Quarrell, Esq.	1	0	0
Dr. Margaret Orange	0	10	0
Mr. A. Wight ...	1	1	0
Dr. Clive Riviere ...	2	2	0
Dr. D. Fogarty ...	1	1	0
Surgeon B. Bradburn, R.N. ...	1	1	0
Dr. George Macdonald	1	1	0
Mr. H. A. Barford ...	2	2	0
Dr. Waterhouse ...	3	0	0
Mr. Alfred Winkfield	5	5	0
Dr. J. A. Drake ...	1	1	0
Mr. J. Need ...	1	0	0
Dr. H. Darwin Hey	1	1	0
Mr. C. F. Hawkins	1	1	0
Dr. Morgan Richey	2	2	0
"Quattuor" ...	0	10	0
Mr. M. Cashmore ...	1	1	0
Salford Division, B.M.A. (per Dr. J. P. Elias, Hon. Sec.):			
Dr. P. Benington...	1	1	0
Dr. J. Bradley ...	1	1	0
Dr. Davie ...	1	1	0
Dr. Dobbs ...	0	10	0
Dr. J. P. Elias ...	1	1	0
Dr. S. B. Haynes...	0	10	0
Dr. F. Mercer ...	1	1	0
Dr. James Morrow	1	0	0
Dr. Pilkington ...	2	2	0
Dr. E. T. Scowby	0	10	6
Dr. W. J. Sprott ...	1	1	0
Dr. J. P. Williams	1	1	0
Messrs. Curtis and Co.	2	2	0
Mr. Albert Lucas ...	2	2	0
Dr. Alex. Stuart ...	10	10	0
Bolton Division, B.M.A. (per Dr. T. O'Neill, Hon. Sec.):			
Dr. Kershaw ...	2	2	0
Sir T. E. Flitcroft	5	0	0
Dr. A. Cosgrave ...	2	2	0
Dr. J. Johnston ...	2	2	0
Dr. R. S. Robertson	2	2	0
Drs. Wright and Cochrane ...	5	0	0
Dr. J. S. Sewell ...	1	1	0
Dr. J. L. Falconer	2	2	0
Dr. H. Jefferies ...	5	0	0
Dr. W. A. Hatton	1	1	0
Dr. G. P. Alderson	1	1	0
Dr. Rees... ...	2	2	0
Dr. Agnes Bernfeld	0	10	6
Dr. B. Pickering ...	3	3	0
Dr. F. E. Dowling	2	2	0
Drs. Boulton and Robinson ...	3	3	0
Dr. Cross... ...	2	2	0
Dr. T. O'Neill ...	2	2	0
Dr. Geo. Mowatt ...	1	1	0
Dr. R. D. Mothersole	5	0	0
Dr. J. M. Thornley	3	3	0
Dr. J. D. Marshall	2	2	0
Messrs. Potter and Clarke	2	2	0
Dr. F. Van Allen ...	2	0	0
Mr. F. J. Gibson ...	3	3	0
Mr. C. B. Allen ...	5	0	0
Mr. A. H. B. Bell ...	1	0	0
Mr. S. R. Atkins ...	1	1	0
Mr. T. A. White ...	2	2	0
Mr. J. Parrott ...	1	1	0
Mr. J. Rymer ...	5	0	0
"K. H."	1	1	0
Mr. W. L. Currie ...	1	1	0
Mr. A. I. Robinson...	0	5	0
Mr. I. Bourdas ...	5	0	0
Mr. A. S. Campkin...	3	3	0
"Sterilla"... ...	1	1	0
Messrs. Maw, Son, and Sons	5	5	0
Leeds and District Chemists' Association (per Mr. H. Gilleghan) ...	57	2	6
Mr. W. H. Gibson ...	5	0	0
Anonymous ...	0	10	6
Mr. Charles Umney (second donation)...	3	3	0
Publisher, *The National Druggist*, St. Louis, U.S.A. ...	5	0	0
Mid-Cheshire Division, B.M.A. (per Dr. A. T. Blease)—			
Dr. F. Cox, Dr. M. Manwaring-White, Dr. R. R. Duncan, Dr. A. McDougall, Dr. W. Turner, Dr. H. B. Gore, Dr. T. M. Hughes, Mr. W. Owen Jones, Dr. Annie T. Brunyate, Dr. H. A. Burrowes, Dr. T. W. H. Garstang, Mr. H. Leak, Dr. W. H. Tattersall, Dr. P. R. Cooper, Mr. L. C. A. Savatard, Dr. H. Terry, Dr. W. Nicholson, Dr. A. Young, Dr. A. T. Blease, Dr. E. L. Luckman ...	19	7	0
Professor C. S. Sherrington	1	1	0
Dr. E. W. Ainley Walker	1	1	0
Dr. James Hewlett...	2	2	0
Mr. C. W. O'Brien ...	5	5	0
Royal College of Surgeons of England	52	10	0

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.

Dr. MAJOR GREENWOOD (243, Hackney Road, N.E.), Treasurer of the Brussels Medical Graduates' Association, acknowledges the receipt of subscriptions amounting to £112 2s. 6d. from members of that association.

INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments contributed by the following gentlemen since the publication of the last list:

Dr. Hugh R. Smith, S. Hampstead. Dr. W. R. Keith, Erdington.
Dr. J. D. Staple, Bristol. Dr. Samuel Davidson, Kelso.

THE WAR.

A MOTOR OPERATING THEATRE.

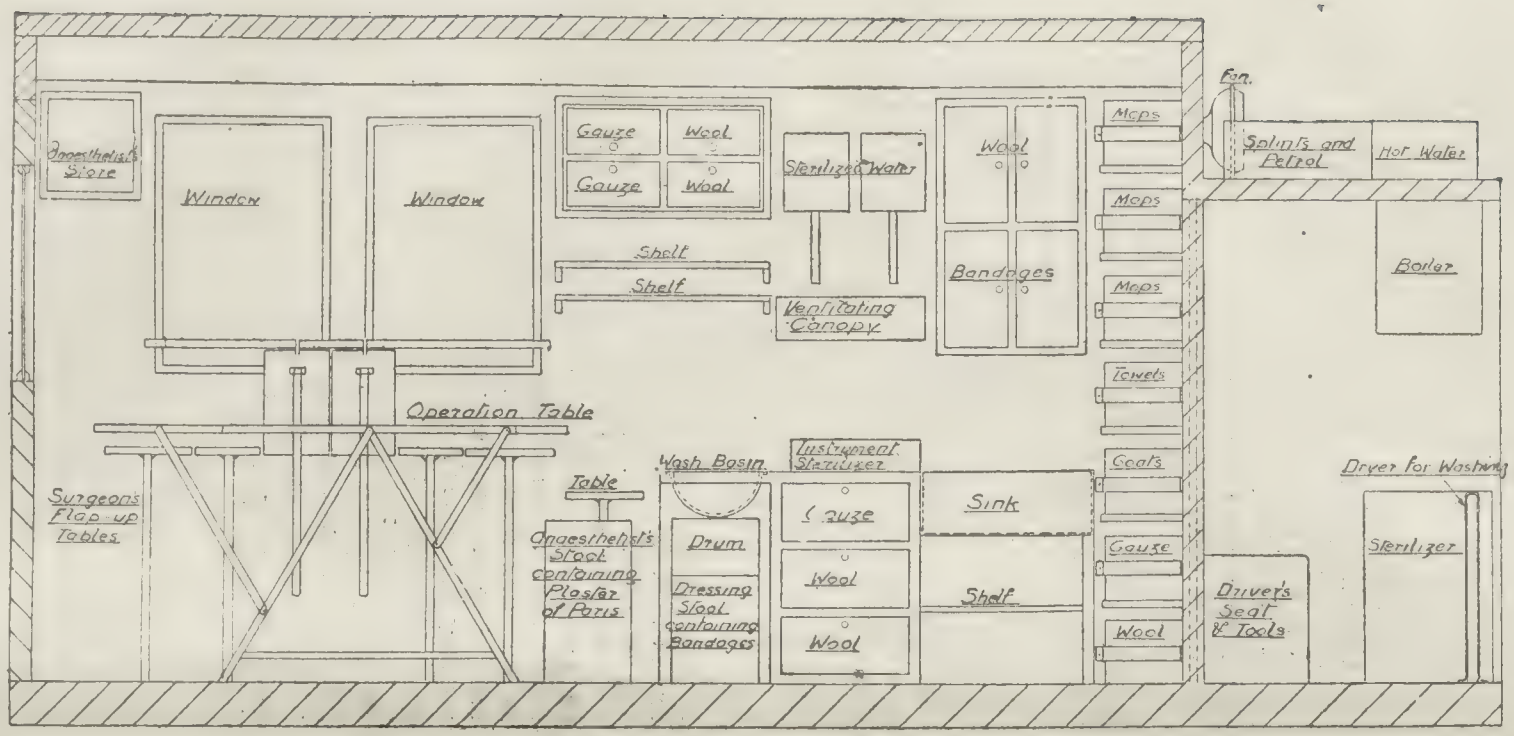
MR. G. H. COLT, F.R.C.S., Assistant Surgeon, Aberdeen Royal Infirmary, has devised a motor operating theatre, illustrated in the accompanying plans, which are on the scale of one-third of an inch to the foot; the photographs, which are from a model made by Mr. Colt, are not to scale. Mr. Colt's description is as follows:

A short description of a proposed portable motor operation theatre as the outcome of some ideas which had occurred to me in April, 1910, was published in the *British Journal of Surgery*, vol. i, Part I, 1913. This design was intended for times of peace, although the use of such a thing in war time was considered to be ideal. The object at that time was to obtain the smallest theatre in which an operation could be performed in comfort, to arrange for the contents to be as light as possible, and to mount the body on a chassis of the light car type. Drums of sterilized dressings, towels, gowns, etc., were to be shipped before starting, otherwise the theatre was complete. For war purposes, however, the problem is different. The theatre and staff should be capable of "passing through" large numbers of cases continuously, and should contain a supply of stores calculated to last at least twenty-four hours. A copy of the article was sent under favourable auspices to the War Office, and was duly acknowledged on July 24th, 1913, with the statement that the matter had been noted for consideration. Messrs. Dennis Bros. of Guildford drew up plans and a specification. Their design was of the heavy rather than of the light order, and considerably more space was available than was originally proposed.

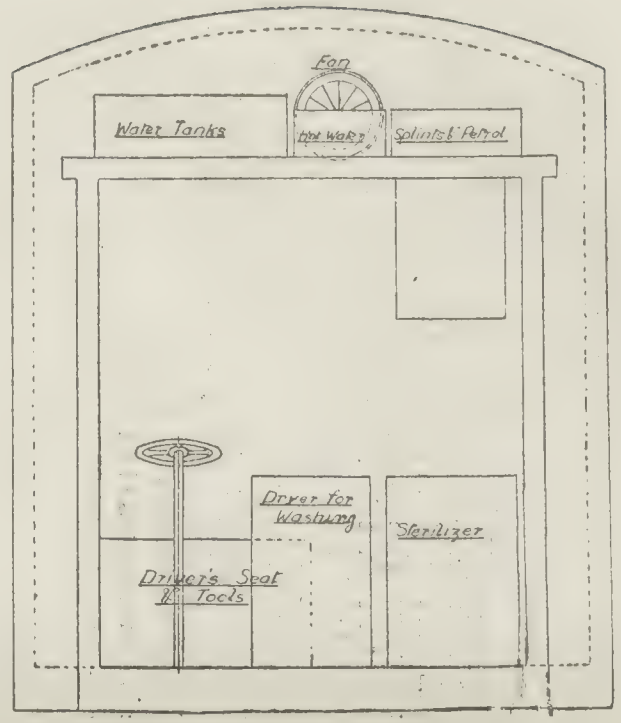
There the matter rested until a leading article in the BRITISH MEDICAL JOURNAL[1] drew attention to the obvious life-saving possibilities of such a device, and pointed out that a little cross-fertilization between the surgeon, the electrician, and the engineer was sadly needed. On reading the reports from the front ([2] and [3]) of Sir Anthony A. Bowlby, C.M.G., it is clear that there is a great and crying need for such a thing in quantity and in the shape of both the light order designed rather as a dressing van than as a theatre and of the heavier variety designed as a theatre. The first of these two designs is so largely included in the greater, now to be described, that a separate description has been omitted. That there might be a difficulty in bad weather in transporting the theatre along the roads in their present condition is clear, but as we understand from the papers that motor omnibuses and lorries of all kinds are travelling along these same roads, the side ruts of which are being filled in with broken brick, this difficulty may diminish. The weather will improve, and for the advance in the spring a few such theatres would be of great use. It seemed to me, therefore, necessary again to attempt to stimulate the process of cross-fertilization.

Now although the operating theatre of a military base hospital of 520 beds is only officially provided with one operation table, much time is saved as regards stretcher and anaesthetic work if two or more tables are in use at the same time. On inquiring from Messrs. Dennis Bros. they stated that by using a 3-ton instead of a 2-ton chassis the length of the interior of the body of the theatre could be increased up to 13 ft. 4 in., but the inside width could not be more than 6 ft. 6 in. In addition a cab could be provided in front measuring about 5 ft. wide, 3 ft. 6 in. from front to back, and of suitable height. I therefore designed an interior arrangement to fit these measurements and supervised the construction of and partly constructed a model of such a theatre on a scale of 2 in. to the foot. The design is primarily intended to provide for the continuous use of two operation tables. The model represents the body and cab of the theatre, and does not show the wheel base or the bonnet of the car. It is not in any way intended to represent mechanical details, such, for instance, as electric or steam pipe connexions, neither is construction work of the body or furniture shown; but it has been made solely to represent the possibilities as regards the space available inside the body and cab. For instance, it is proposed that the operation tables shall be the well known swing model (after Paul). This is such an efficient, artistic, and workmanlike invention—light, strong, and portable, giving all the ordinary positions required, including the high Trendelenburg—that its use seems to be indicated in this instance. The tables could be fixed to the floor by fly-screws for travelling. The only modification from stock pattern required is to well round off the corners of the ends, because by so doing a few inches are gained for moving about between the two tables. In the model the triangular space between the legs under the tables has been boxed in so as to indicate the amount of storage room available there, which measures in fact about 7 cubic feet for each table. In practice this would be filled with packets of wool, gauze, bandages, etc. A disadvantage of the table is that when working it in the Trendelenburg position the operator has to sit down because the table cannot be raised. Some do not consider this a drawback, and one of the dressing stools provided affords a seat of the correct height.

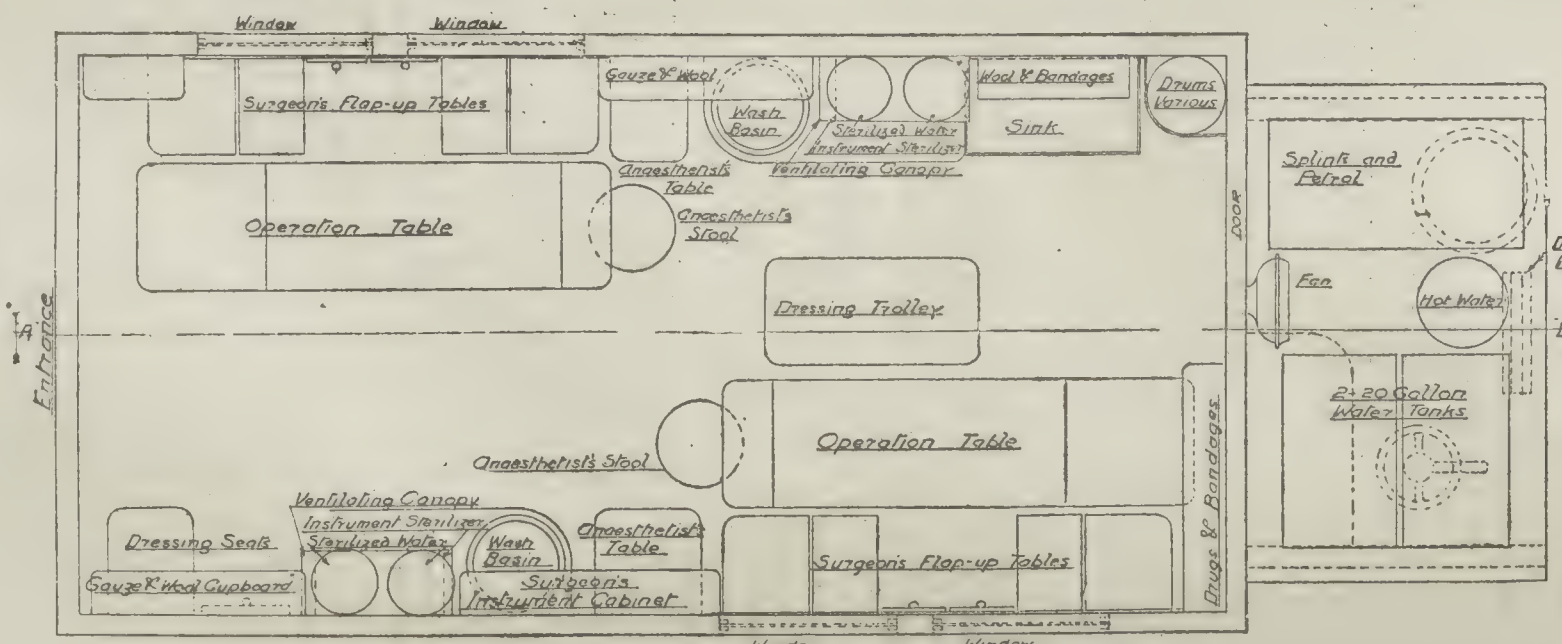
The model has been drawn to scale by an expert, and also photographed in various positions by Messrs. Morgan and Sons, Aberdeen. From the illustrations thus obtained the general arrangements are easily understood and the various distances can be measured. For instance, by moving the operation tables the maximum distance between their adjacent corners can be increased to 2 ft. 6 in., and is ordinarily 1 ft. 9 in., this last measurement being amply sufficient for an easy passage way. While premising that any arrangement of the furniture can be made in future, as provided by the consideration and experience of those who use the first one constructed, it is suggested that the arrangement shown is the one of choice. In this the head ends of the operation tables are both towards the middle of the theatre, the table nearer the door being on the left and the far table on the right. This fits in best with the arrangement of the sliding door separating the cab from the body of the theatre, as indeed is settled by the position of the driver, and leaves room for the stretchers to operate for each table. In the paper referred to before I described the essential part of the device as follows: "The walls are fitted with tables which, when not in use, can be closed up flat on their hinges against the walls and are held in this position by spring clips and rubber dams. When in use they are lowered and a central support in each fits into a cup formed in the angle between the wall and the floor. Twelve of these tables are provided. . . . All are the same height, the tops being 33 in. from the floor. It will be seen at once that, by bringing the tables into combination, any desired accommodation may be obtained, according to the position of the operator and his assistant. If necessary a bridge table may be placed across the patient from a table on one side to one on the other . . ." This method has been utilized in this instance, but not centrally, the place of such tables in the passage way being taken by a trolley and an adjustable instrument stand. The trolley top is 2 ft. 6 in. long, and 15 in. wide, and the trolley stands 33 in. high. Its vertical corners are rounded off to facilitate its passage here and there, and it will readily pass under the top of the operation table when the latter is horizontal. Its ball-bearing castors should be specified as by Down Bros., and it should have lugs and fly-screws to fix it to the floor or wall during travelling. It seems to me that the probable use of the top of this trolley will be to provide ligatures and sutures for both surgeons by means of an assistant or nurse serving both. The instruments will probably rest on the flap tables. A second adjustable instrument stand could easily be carried folded up, but when moving the theatre off quickly the simpler way will be not to fold them, but to lash them to the operation tables. It is suggested that each surgeon or assistant should help himself to mops from a drum placed handy on a flap table. It seems a pity to employ a nurse to hand them when all will be so busy. A bridge table (not shown) should be carried and placed across from a flap table on one side to the trolley on the other. This table may also be used as a convenient table for washing mackintoshes on. A piece of webbing and buckle to go round the operation table and over the patient's knees during the induction of anaesthesia is also essential in such a confined space. The stools for the anaesthetist would be hollow cylinders of sheet steel a foot in diameter and 26 in. high. The top



SECTIONAL ELEVATION AT A.B LOOKING IN DIRECTION OF ARROWS



END ELEVATION



PLAN WITH ROOF REMOVED

PROPOSED MOTOR OPERATION THEATRE

Scale, 1 inch = 3 feet.

is flat with rounded edge, so that the thigh is not injured and so that any drum can be stood on it. The top can be removed like the top of a tea canister, and the interior is used as a store for gauze, wool, bandages, plaster-of-Paris, etc., as may be desired, the cubic capacity of each being about half a cubic foot. The same design would apply to six stools, each 16 in. high, which would serve for patients to sit on or for the operator and anaesthetist when using the Trendelenburg position. These stools have each a content of about one-third of a cubic foot. They are not shown in the photographs. It is proposed that one with a drum above it should be strapped to the corner under the wash basin on each side, the depth of this basin and the plumber work being arranged suitably. The four other stools could be strapped to the end wall under the drug store. Suppose, for instance, that it were necessary to use half the theatre for dressing sitting-up cases. The flap tables at the near left hand side would be closed up and the operation table either moved over to the side wall or removed from the theatre. The six stools would be brought into use and also the two flap-down seats shown on the right near the door. In this connexion it might be advisable to carry a curtain across so as to screen the operation table at the far end.

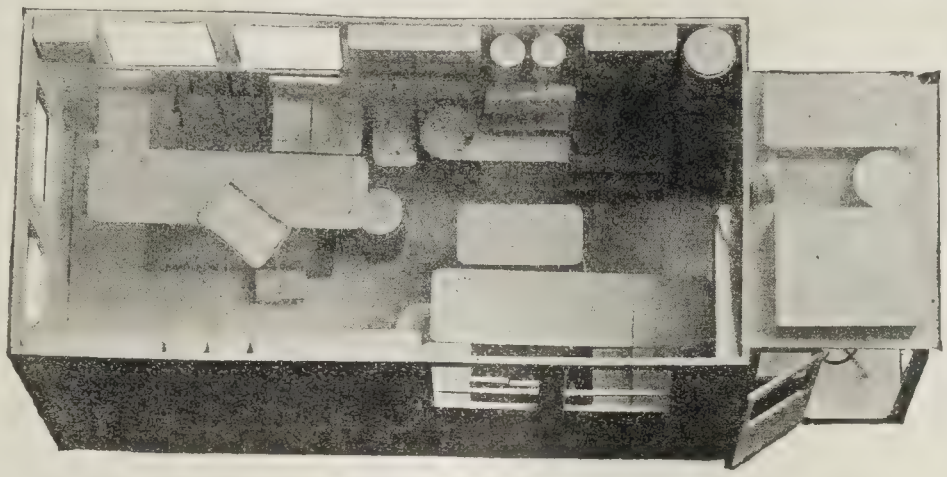


Fig. 1.—Model seen from above, obliquely.

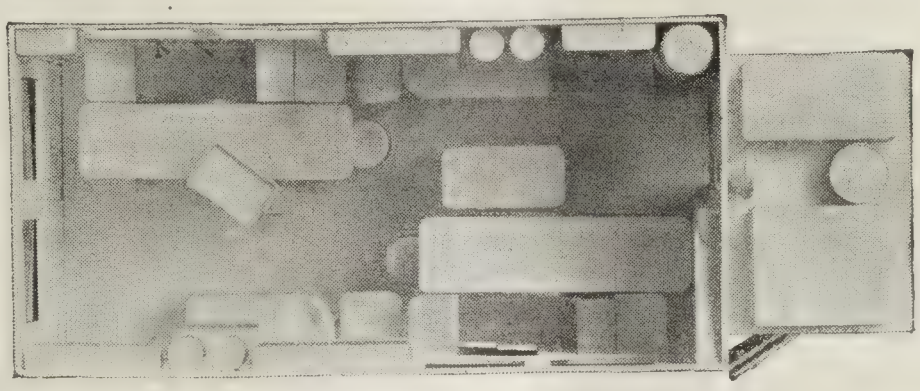


Fig. 2.—Model seen from above.

It will be seen that the left side wall provides a sink 25 in. by 15 in. by 9 in., and, in the corner, space for storing on shelves seven of the drums, each one being strapped in. The anaesthetist's table on this side has therefore to be only 11 in. wide as against 15 in. on the right side. Both are designed to be 26 in. from the floor, this being a convenient height for his right hand when he is sitting on the canister stool 24 in. high. The provision of a sink is chiefly for the purpose of washing out towels as soon as used, and a steam-heated drier is provided in the front part of the cab and is shown in one of the photographs. Under the sink are two compartments, separated by a shelf, for mackintoshes and drums, and they should be spaced primarily for the latter. Two drums may be carried in the sink, if necessary, four under it and two under the wash basins, making, with the seven already mentioned, a total of fifteen, and more could be carried if necessary. These drums are intended to be of the type commonly in use measuring 11 in. in diameter and 9 in. high. The high pressure steam sterilizer in the cab would take them two at a time. The outside dimensions of this sterilizer are 27 in. high by 18 in. in diameter, it being in fact the ordinary Schimmelbusch's sterilizer heated by a steam coil instead of by a burner. It is proposed to run it continuously—except, perhaps, while travelling—according to the need for replenishing the stock of sterilized materials. Full directions should accompany this apparatus. Each side of the theatre has an instrument sterilizer 18 in. by 6 in. by 4½ in., and a foot above each is placed a canopy for collecting the steam, above which are tanks of hot and cold sterile water. Care would be taken to let the water in the sterilizer simmer rather than boil quickly, as the nuisance from condensed steam would otherwise be considerable. This naturally leads to mentioning the question of ventilation, roofing, and lighting. It is proposed that the roof shall be arched and as far as possible smooth on the inner surface and devoid of edges here, because water will be liable to condense and run down and drip from any projections. An electric fan, placed outside the top of the cab and kept running continuously, will deliver an indraught of filtered air through a conduit (not shown) placed mesially on the top of the roof and having small delivery holes near the cab and larger ones as one proceeds towards the doors. The air thus delivered will escape by the canopy slots and by the windows if open. This system, though differing from that described by Keith,[1] will probably give good results. In hot weather the windows could easily be left widely open as well. It may be necessary, as will be mentioned later, to restrict the use of the fan. It is proposed that the roof shall have eight lights of clear glass each measuring 2 ft. square (4 sq. ft.), and arranged symmetrically, leaving a foot of opaque space at the sides, and mesially and very similar transverse opaque bands. The glazing could conveniently be done in small squares by the Luxfer process with resulting safety as regards breakage. The side and end windows should be of frosted glass or "exonite," movable either by means of a handle near the top of each and a lazy-tongs spring below or by a strap and stud. No window has been placed above the back of the driver's seat. Experience alone will show if it is necessary to borrow light from the cab in this situation. One central electric light globe of the old pattern would always be present in the centre of the roof, while laterally, and arranged symmetrically in two longitudinal rows of five each 2 ft. from the side walls, are ten other electric lights. If metallic filament lamps are used for these, it would perhaps be as well to remove them while travelling owing to the risk of breakage, and spare lamps should, of course, be carried. There should be a wall plug on each side near the middle of each operation table for cautery, hand light, etc. Many cars now have an electric installation, but it is open to question if any of the ordinary systems would be sufficient during the dark days or for running a fan. The accumulator system charged from the dynamo should be in duplicate, and would need careful attention, more, perhaps, than it would receive

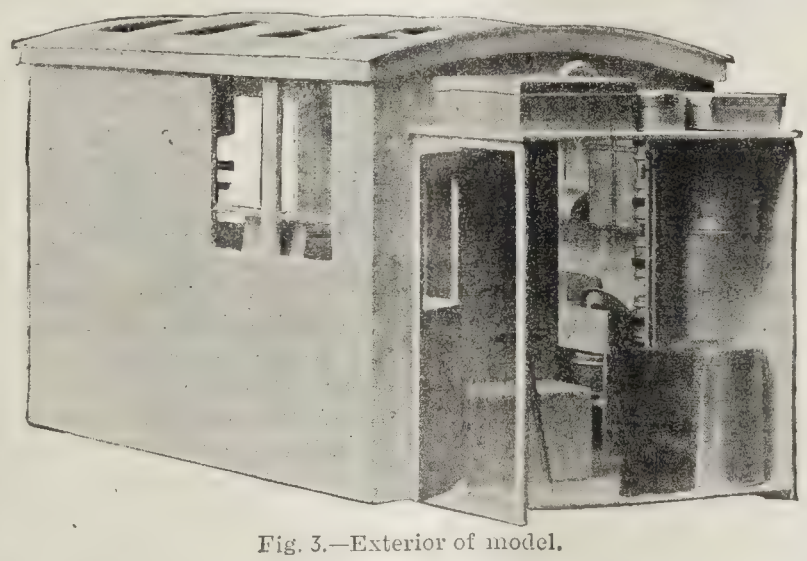


Fig. 3.—Exterior of model.

under service conditions. It seems to me that it might be desirable to carry on the cab a small generator worked by petrol or by low pressure steam, so as to avoid running the engine during operations. This generator would be removed from the cab and set up near the theatre, and connected to it by a flexible cable. Reliability would in this matter be of greater importance than a high degree of mechanical efficiency, and the question is one for the electrician rather than for the surgeon. It is proposed to avoid loss of light to the fullest extent by having the walls, roof, and floor done with white, shiny ripolin. The furniture, which is constructed of thin sheet steel, would be coated with aluminium paint, this being easily kept, and yielding a fairly bright surface.

It is proposed that the theatre shall be heated by superheated steam and not by electricity. For this purpose steam would be provided from the boiler which is heated by a pressure paraffin burner. It is important to shut off all naked lights from the operating room on account of the production of phosgene gas from the chloroform vapour, and on account of the risk of explosion when open ether is used. The superheated steam will be used for heating the instrument sterilizers and the dressing sterilizer, for boiling the water alternately in the four drums labelled "sterilized water," for heating the drier for the washing and the tank of hot water on the roof of the cab. Possibly, it may be used for producing electricity, as mentioned before. The four tanks of sterilized water hold about a gallon and a quarter each, but larger ones could be fitted if required. It is proposed to boil them up alternately. These tanks should have small but strong gauges, or even outside "float" gauges, and should not be fitted with a ballcock. The level of the tops should be below the level of the lowest part of the cold water tanks on the roof of the cab. The hot water cistern on the roof of the cab is not connected with these sterile water tanks. No taps have been shown, but it is proposed that the wash basins should have single elbow taps and a rose spray, and that the sink should have separate hot and cold taps worked by hand. A hand pump should be carried for filling the cold water tanks outside the roof. If at any time the surgeon were dissatisfied with the water supplied he might rinse his hands in water from the sterile system, but to use this continually for washing needs such a considerably increased supply that it seemed to me inadvisable to provide for it at this juncture. The wastes of the sinks and basins would be fitted with ordinary rubber bungs, than which there is no better! All waste pipes would be carried through the floor, and would empty into pails outside the car. These pails would be carried in the cab and placed in position when the theatre stops. Hand lotions can rest in 6-in. bowls on the table which supports the instrument sterilizer or on any flap table or canister stool as found convenient. Irrigation of wounds would be performed by means of douche cans and not direct from the supply of sterilized water. Soiled dressing tins and oval pans would be placed on the floor.

The storage capacity of the cupboards, lockers, trolley, and canister stools is about 60 cubic feet. In addition there are fifteen drums. One of the most striking things is the large amount of room available when one comes to arrange the space. If a man of average build stands with his back against a wall his front is well within a foot of it antero-posteriorly, and in this theatre a distance of 15 in. is allowed for the surgeon, and he has his instruments to his hand. It will, of course, be necessary that all concerned should be of the versatile, handy, and tidy order. The members of the staff would be two surgeons, two assistants, two anaesthetists, two nurses, with one chauffeur, who should be a general engineer; one orderly in addition would be a great help. This is a staff of ten, of whom one works in the cab and one there or thereabouts. No provision is made for carrying stretcher-bearers. With two operations in progress there would be ten persons in the theatre at once. With the smell of the chloroform and ether vapours it might be thought that the atmosphere would be stuffy. The question resolves itself into the amount of filtered air blown in and the window ventilation, and it seems to me that all this will be easily arranged. I think the left-hand side and roof of the cab should be asbestos-lined, but otherwise I should be in favour of dispensing with the asbestos or "poilite" lining originally proposed in the paper before referred to.

Mention should be made of certain special things which it will be necessary to carry, namely, four small Mayo Robson catgut sterilizers, six tourniquets, one oil stone, labels, one Cathcart dressing sterilizer[5] in case of a breakdown in the steam plant, a pair of steps of the household variety which fold to 3 ft. 6 in., and open to form a ladder 7 ft. high, a few simple tools, nails, screws, nuts, bolts, steam-pipe wrenches, unions and washers, one stretcher, one wheelbarrow with wide flanged wheel, one surgeons' bridge table, string, cord, leather punch, insulated wire, fuse wire, spare electric lamps, folding deck chairs, one water pump, enamelled iron tea set and plates, knives, forks, and spoons, packs of playing cards, etc. Hammocks could easily be slung in the theatre.

The model, which is 36 in. long, 14 in. wide, and 17 in. high, is placed on exhibition at the offices of the British Red Cross Society, 83, Pall Mall, London, for the present, in the hope that it may help to call attention to this great national need.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, December 12th, 1914, pp. 1034-5. [2] *Lancet*, December 19th, 1914, p. 1427 et seq. [3] BRITISH MEDICAL JOURNAL, December 19th, 1914, p. 1053 et seq. [4] *Lancet*, September 20th, 1913, pp. 880-5. [5] BRITISH MEDICAL JOURNAL, December 19th, 1914, pp. 1056-8.

MOTOR AMBULANCES FOR WAR SERVICE.

BY H. MASSAC BUIST.

A COMPETITION FOR BODY DESIGNS.

As has been previously intimated in these columns, certain phases of the motor ambulance problem should receive special attention through the unofficial appointment of what is styled "The Ambulance Construction Commission." This has come into being at the instance of Mr. Henry S. Wellcome, founder of the Wellcome Bureau of Scientific Research. The Commission will be primarily concerned with judging and awarding prizes to the value of £2,000 for the best designs for a motor field ambulance body which shall fit a standard pattern motor. Sir Frederick Treves is chairman of the Commission, on which Major-General Sir John Cowans, Quartermaster-General, is represented by Brigadier-General S. S. Long and Colonel H. C. L. Holden; while Surgeon-General Sir Arthur May, Director-General of the Medical Department of the Royal Navy, is represented by Deputy Surgeon-General McNabb, and Surgeon-General Sir Alfred Keogh, Acting Director-General of the Army Medical Service, by Lieutenant-Colonel H. E. R. James. The St. John Ambulance is represented by Sir Claude Macdonald and Sir John Furley. Lord Montagu of Beaulieu, C.M.G., Professor W. E. Dalby, F.R.S., Mr. John Robertson, and Dr. Andrew Balfour, C.M.G., treasurer, are the other members of the Commission, of which Mr. Hardress O'Grady is secretary. All details of conditions may be obtained from the Commission at 10, Henrietta Street, Cavendish Square, London, W., where all inquiries and designs should be sent. The prizes are £1,000, £500, £300, and lesser sums for the best designs for a motor ambulance body for, and improvements in, field motor ambulances.

THE LOGIC OF THE PROBLEM.

Thus it will be seen that the problem of the chassis is not to be attacked, despite the fact that this is where there is most scope for improvement now that very appreciable progress has been made in mere body construction as the result of experience gained at the front. I understand that the reason for the course adopted is that chassis take more time than bodies to produce. The truth of this theory is dependent on what makers might be concerned. We have large factories in this country that can produce chassis more quickly than they can make bodies. Most of the big motor manufacturers with coachwork departments on a much bigger scale than the coachmakers of the country who do not manufacture chassis are only able to turn out about sixty bodies to every hundred chassis. Thus the argument accepted for the basis of the Commission's work is open to challenge, as is a statement issued in the name of the Commission to the effect that "a perfected body is badly wanted to

ensure complete comfort for the wounded." Obviously that desirable end cannot be achieved so long as we fit any form of body to any of the chassis hitherto used, or which it is proposed to use despite the fact that they have not been especially designed and made in every detail for motor ambulance work and nothing else. Assuming that the competition should result in the discovery of the perfect motor ambulance body, we see by the most simple process of logic that the placing of that body on non-ideal chassis prohibits the attainment of complete comfort for the wounded. In point of fact, the diagram of the leading dimensions of chassis to which ambulance bodies must be capable of being attached and which is issued by the Committee above Colonel Holden's signature, shows that overhang appears to be accepted as a matter of course (see pages 8 and 9 of the Commission's "Instructions and Information for Competitors").

THE RULES FOR THE COMPETITION.

Recognizing the distinct limitations of the work to be undertaken in a competition open until June 30th next, otherwise until a date at which we may reasonably expect the worst of the war will be past, we may note that there are four main conditions, which are subdivided into thirteen points relating to construction. The body must carry in comfort and safety four wounded lying down on stretchers of the British Army regulation pattern and dimensions, having 7 ft. 9 in. poles, 6 ft. canvas, 1 ft. 11 in. width, 6 in. height, and 30 lb. weight; or eight wounded sitting; or two lying on stretchers and four sitting—all in addition to the driver and the orderly attendant. Having due regard to ventilation, nevertheless, the patients must be sheltered from weather and sun, while driver and orderly must be provided with adequate shelter. Regulation 3 reads: "The vehicle must be capable of being loaded from the ground level by four or fewer bearers." Presumably what is meant is that the work of loading must not necessitate the services of more than four bearers. As the rule reads, the judges might insist that the design must be to enable the body to be loaded from the ground by only one bearer.

Every patient must be accessible for attendance from one side without being shifted from his position. There must be a vertical space of not less than 2 ft. between the lower and upper tiers of patients. There must be sufficient windows to ensure ample light by day and means of lighting the interior by night. There must be means for the orderly, accommodated on the box or elsewhere, to see every patient during the running of the vehicle, as well as of carrying the arms and equipment of the patients, some dressings, water, and small quantities of hot liquid in the vehicle. The centre of gravity of the body must be kept as low as possible, while an imaginary vertical line through that centre "must fall between the axles whether the body is laden or empty." The coach-work must be kept as light as possible compatible with adequate strength. Materials of as non-inflammable material as practicable should be used for the construction. Competitors may be called on to submit samples of the materials they propose should be used.

All the necessary chassis dimensions are furnished in diagram form, the chief being length of body inside, 8 ft. 2 in.; height of body inside, 5 ft. 9 in.; minimum width of body on seat line, 5 ft. 6 in.; and maximum width of body outside, 6 ft. The cost of construction will be taken into consideration when making the awards. Each competitor is free to submit as many different designs as he chooses. All will become the property of the Commission, which will take steps to protect the patents.

The object of the Commission is "to produce, if possible, a standard pattern body of perfect design which shall fit standard chassis," which, we realize, are of imperfect design for field motor ambulance work, albeit of great value as being a vast improvement on any other appliances to-day. Apart from the prizes, no payment will be made for designs, which the Commission may, if it approves, publish that they may be used in the cause of humanity.

It is incidentally gratifying to observe that such practical authorities on ambulance work in the field as Mr. J. Lynn Thomas, C.B., who is doing valuable work for the Welsh Army Corps, are especially alive to the importance of the chassis as bearing on the comfort of the patients. Moreover, Mr. Thomas has always been averse from spending money on mounting ambulance coach-work on any second-hand chassis that may be offered.

MOTOR BICYCLE AMBULANCES.

The development of the motor bicycle with side car for ambulance work, to which recent attention was drawn in these notes, proceeds apace. One of the most recent examples has been tested by the medical authorities in the Tyneside district, and has been passed by the British Red Cross Society for service on the Continent. In this case an 8 h.p. power N.U.T. motor bicycle has been used in combination with a side car ambulance scheme designed by the firm of Sir William Angus, Sanderson, and Co., Limited, of Newcastle-on-Tyne, to accommodate two recumbent patients on regulation army stretchers borne on very plangent springs attached to a tubular side car framework. The machine, of course, can go in places too narrow for the ordinary motor ambulance; also it can turn in a diameter of 9 ft. as against some 36 ft. necessary in the case of the usual motor car ambulance. Fuel and tyre consumption are on motor cycle scales, war time rates always understood by reason of the rougher going. On the other hand, the wounded have to travel unattended, since the driver is wholly occupied in managing the vehicle.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[From a Special Correspondent in Northern France.]

FRACTURES OF THE THIGH: AN ADMINISTRATIVE PROBLEM.

FROM a medical point of view one of the most interesting administrative problems produced by the war has been how to deal with cases of fracture of the thigh. It has presented itself in two aspects: One of these is how to secure the best surgical results; the other how to prevent these cases gradually producing a blockage in the general machinery for dealing with the sick and wounded. In regard to the former point, the desiderata are that the cases should be brought under effective treatment at an early stage—that is to say, thoroughly cleansed from a surgical point of view, and adequately splinted; that they should be transferred from one place to another only when this is absolutely inevitable; and that each individual case should pass through as few hands as possible. It has even been proposed that since compound fractures of the thigh caused by the projectiles used in this war present many peculiarities, and the best way of dealing with them can be learnt only by experience, it would be desirable to place them all in charge of a certain number of men who would specialize in their treatment. It has been suggested that the number of transfers could be diminished and early effective treatment secured by detaining these cases at the clearing hospitals until their progress towards recovery was well advanced. But apart from the fact that clearing hospitals work under pressure, and that the demand on their accommodation is frequently great, they lie much too far apart for a few specialists to take charge of all their cases of fractured thigh. The skilled dressing and adjustment of the position of even a single case may well occupy the best part of an hour each day.

There is also the consideration that any hospital working close to the actual front should be capable of being evacuated rapidly. This would not be possible in the case of a hospital containing a large number of cases of fracture of the thigh. Finally, it is essential that advanced positions should be kept as free from non-effectives as possible. The prime necessity of war is to keep the fighting men supplied with ammunition and food. The means of doing this are never superabundant, and it is easy to imagine circumstances in which it would be the duty of a commander to devote all available transport to this purpose, and others in which the filling of a single truck or lorry with hospital stores instead of ammunition would make all the difference between the winning or losing of a battle. Only a certain number of trucks and lorries can be passed along the railway lines and roads leading to any

given spot in any twenty-four hours. Several times there has been raised in England a cry to the effect that the clearing hospitals should be enlarged, and the medical personnel at the front greatly increased. What has been said will suffice to show that the desired result could not be attained in this way, and that in particular it is undesirable that fractures of the thigh should be retained at the front.

In regard to the second part of the administrative problem, the prime necessity in regard to all sick and wounded is to secure that there shall never be any shortage of accommodation for new cases. This means that not only the patients in the clearing hospitals but also those in the hospitals at the advanced bases must be moved on as soon as possible. From this point of view cases of compound fracture of the thigh are of special importance. The ratio of these to all wounds is considerable, and even were it less than it is, they would still absorb a serious portion of the total hospital accommodation available, owing to the very long period for which the treatment of every case must continue. Sometimes it may be possible to arrange for the treatment of these patients at an advanced base until the initial risks have been eliminated and they can safely be regarded as cases of fracture *plus* a wound rather than wound *plus* a fracture. At others it is inevitable that the cases should be transported over a long distance while in quite an early stage. But whether the cases receive their main treatment at a clearing hospital, at an advanced base, at a distant base, or at a home hospital, one aspect of the problem that they represent is practically common to all. Early or late, the patients must be moved before their fractures are mended. Consequently a great deal of thought has been devoted to the question of how this can be done without causing pain to the patient or interfering with his progress.

Obviously some kind of special splint is necessary, and out of consideration of the subject here two very practical means of rendering thigh fractures transportable have emerged. One of these was described in a note on the subject four or five weeks ago. It is a kind of double Liston strengthened by cross bars, and was devised, I believe, by Mr. Makins. The other came into existence a little later, but has already been used for a month or more. It is an excellent splint, so long as there is no excessive tilting forward of the upper fragment, or so soon as this has been overcome by an appliance of some other kind. It might be called the "Burghard-Clarke splint," the basic idea having been suggested by one of the consulting surgeons to the forces, while the details have been worked out by a R.A.M.C. officer. It may be regarded as a cross between a Thomas knee splint and an interrupted Liston. It resembles a Liston because the patient's foot and leg are attached to an external wooden splint running from the heel to a few inches below the armpit. It resembles a Thomas because at the level of the groin it has attached to its Liston element a ring of soft iron, exactly like that in which a Thomas knee splint ends. In an ordinary Liston, whether interrupted for the purpose of allowing a dressing to be applied, or solid from end to end, extension is obtained either by stirrup and weight traction on the foot, or by the tension of a bandage passing between the upper end of the splint and the perineum.

In the splint under consideration extension is secured by attaching the patient's foot to the foot-piece in which the Liston element ends and lengthening the distance between this foot-piece and the point at which the thigh ring impinges on the tuber ischii by means of a ratchet and screw arrangement. The latter is of a very simple character; the iron ring or Thomas element is attached to a short piece of board which moves in a slot on the upper end of the Liston element, and can be fixed therein by a screw at any desired point. The object of applying extension to the cases in which this splint is at present being used is not primarily that for which extension is commonly employed in ordinary cases of fracture of the thigh, whether compound or single. As was pointed out in the previous note, compound fracture of the thigh due to shells requires, as a rule, only a minimum of extension to prevent shortening of the limb, for there is no impaction of fragments. Consequently, the primary aim of the Thomas element of this splint is extension not as a means of avoiding shortening, but of preventing movement of any part of the limb between the os calcis and caput femoris, while the Liston element immobilizes the hip joint. The general aim in short is to convert leg, thigh, caput femoris, acetabulum, and the whole of the pelvis into one solid mass. This the splint does with entire comfort to the patient (provided, of course, that all parts of the splint are duly padded) and so effectively that a patient wearing the splint can, without any pain or movement of the fracture being caused, be turned on his side for the purpose of having a posterior thigh wound dressed, or raised above the level of the bed for placing a bed-pan, or lifted off the bed altogether. A splint of this kind could probably be produced at the cost of a few shillings by an instrument maker, and be adapted to the needs of any particular patient by any surgeon possessed of reasonable mechanical skill. Some hundreds of them are now being turned out by a man working in Boulogne, and are being largely used by those who have to transfer thigh cases from the clearing or advanced base hospitals to home hospitals or elsewhere.

THE TYPHOID FEVER AT CALAIS.

It is not quite clear to me what term should be used in speaking of the cases of enteric fever at Calais. For reasons that will occur to most epidemiologists neither "outbreak" nor "epidemic" seems quite to meet the case. On the whole, the phrase "threatened epidemic" is probably the right one to employ, for it covers both the civilian population of Calais and the Belgian army. The public health records of Calais do not seem to reach the high-water mark of statistical perfection, and opinions differ as to whether the number of cases of typhoid fever among the civilian population habitually resident is above the average of former years. It seems certain, however, that Calais cannot at present be regarded as the scene of an epidemic, though the risks that it is running are undoubtedly great. There are daily being brought into it from the Belgian trenches and fighting line a varying number of men, of whom some are undoubtedly suffering from typhoid fever, and others are open to the suspicion of being in the same condition. The arrangements for isolating these cases are not very complete, and considerable delay would seem to occur in making a final diagnosis. Consequently there are all the makings of an outbreak, and meantime the number of imported and duly authenticated cases under treatment is, of course, being more or less steadily augmented.

Cases of infection, whether by typhoid or by paratyphoid bacilli, last so long and require so much attention that quite a moderate prevalence of either infection among any considerable body of men suffices in the course of a few weeks to absorb a very large amount of hospital accommodation, more especially if included in that term be the needs of convalescents and provision for possible "carrier" cases. The whole of the arrangements have had to be evolved in circumstances of considerable difficulty and the organization of prophylactic and therapeutic measures has not proceeded very rapidly. Greater progress would probably have been made had the number of authorities whose views on co-operation it was necessary to obtain been smaller. Calais, though a Belgian military base, is also a French town whose sanitary authorities must obviously be allowed some say in any dispositions relative to such a disease as typhoid fever; the views of the local military medical authorities must be made to combine with those of the principal medical officer of the army in the field; the British Red Cross Society, which has not only proffered but has afforded so large a meed of assistance in money, material, and personnel, cannot be left out of count, and no step in the least degree likely to affect the movement of the troops can be taken without first obtaining the sanction of the Belgian Commander-in-Chief.

As was stated in an earlier note, the plan originally proposed was to attempt to tap the stream of typhoid cases almost at its source by establishing a large typhoid hospital and observation station in the neighbourhood of La Panne, which lies just inside the Belgian frontier, has a good port, and is within such easy reach of the infected trenches that it would have been possible to dispatch there forthwith any man presenting suspicious symptoms. La Panne, however, was considered to be an inconvenient place for a hospital base from a military point of view,

so though a certain number of cases are under treatment there, the scheme connected with it is as a whole in a state of suspended animation. Meantime, the majority of the cases are being treated in various improvised hospitals in and about Calais itself, and the British Red Cross Society is now erecting huts for the accommodation of 150 patients. Antityphoid inoculation is also being carried on so far as circumstances permit. The serum mainly used is that of Vincent, and four injections at intervals of seven days are necessary to obtain the best results. It is therefore not a prophylactic measure which can readily be applied to troops who are not only on active service, but for the most part all fully occupied in actual fighting and connected work. The difficulty is being met in some cases by increasing the dose, but the results are understood to be not very happy, and the probability is that the Belgian army will never be fully protected or even contain as considerable a proportion of partly and fully protected men as the British and French armies respectively.

NOTES.

Maintenance of Wounded in Voluntary Hospitals.

The Council of the British Hospitals Association has issued a letter to the managing committees of voluntary hospitals throughout Great Britain with reference to the cost of the maintenance of wounded soldiers received into such hospitals. The arrangements which the War Office has made vary considerably; few if any hospitals in London have asked for any payment, but most of the provincial hospitals, it is stated, expect to be paid at rates varying from 2s. to 4s. a patient a day. The opinion of the committees is asked on the question whether an application should be made to the War Office to deal upon a basis of a uniform scale of payment with all the voluntary hospitals in which payment is desired. It is understood that some such arrangement has been made in reference to private hospitals provided by the British Red Cross Society and other similar organizations. The question whether an application should be made to the Inland Revenue to remit the duty on rectified spirit used in hospitals in the making of tinctures, etc., has been referred to a committee.

Rest from the Trenches.

Probably everybody has read the report of the Eye-Witness with General Head Quarters dated January 8th, but we may extract from it, if only by way of record, the following account of the arrangements made, and already mentioned in a previous communication, to enable men who have suffered from exposure and hardship in the trenches to rest and recuperate by such means as the use of hot baths after their tour of duty is over, and convalescent homes for those who require a rest. "Eye-Witness" writes:

All these means are combined and can be seen to the best advantage at a large establishment at general head quarters, which is being used as a convalescent home capable of accommodating 1,000 men. The building is a jute factory, which has only just been built, and has not yet been used. To this are brought men who may be suffering from minor ailments, such as swollen feet, rheumatism, neuritis, and exhaustion, the results of life in the open in such weather as we have experienced. On being brought in, the men are at once given a bath in a shed heated by steam, which runs along one side of the building; their clothing is taken away and either destroyed or cleaned, and they are then admitted into the main building, with its rows of beds, where they can rest until well enough to return. The complete change and, above all, the effects of a good wash work wonders, and a few days are generally sufficient to render them again quite fit for work. When recovered, they are not at once sent back to duty in the trenches, but are given light work for a few days at the head quarters of their units.

Medical Officers Wanted.

3rd (Reserve) Northumbrian Field Ambulance.

We are informed that the 3rd (Reserve) Northumbrian Field Ambulance is in urgent need of officers. Applications should be made to Major O. L. Appleton, R.A.M.C. (T.F.) Officer Commanding, Wenlock Barracks, Hull.

3rd Western General Hospital (T.F.), Cardiff.

Applications are invited from registered medical practitioners in respect to the appointment of four junior officers with rank, pay, and allowances (including uniform) of lieutenants to be attached as house-surgeons and house-physicians. The duties will be such as the commanding officer may determine, and will include valuable surgical, medical, and *x*-ray experience. Application should be made to the Commanding Officer, 3rd Western General Hospital (T.F.), Cardiff.

3rd North Midland Field Ambulance (Reserve).

As announced in our advertisement columns, five medical men are required for commissions as lieutenants in this unit, the pay and allowances being at army rates. Particulars can be obtained on application to Captain John Miller, Commanding 3rd North Midland Field Ambulance Reserve, Stafford Street Drill Hall, Wolverhampton.

1st South Midland Field Ambulance (Reserve).

Officers are still required for the 1st South Midland Field Ambulance (Reserve), R.A.M.C.T., and applications should be made to the Officer Commanding 1st South Midland Field Ambulance (Reserve) R.A.M.C.T., Great Brook Street Barracks, Birmingham.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Motor Ambulances for London this Year.

At an inquest held recently by Dr. Waldo, Coroner for the City of London, on a man who was found in a dying condition in Upper Street, Islington, and was conveyed in a street litter to St. Bartholomew's Hospital, attention was once again directed to the inefficiency of the ambulance service in the county of London. The evidence showed that unfortunate delay had occurred in taking the patient to the hospital—first, the police officer had to fetch the litter; and, secondly, a long time was occupied in wheeling it to the hospital. The medical evidence was conclusive as to the superior advantages of the motor ambulances as used for the last seven years in the city area for the transport of street accident cases. Dr. Waldo, at the unanimous request of the jury, informed the London County Council of the dissatisfaction expressed at the continued employment of such antiquated appliances as the wheel litter for cases needing prompt medical attention. We understand that the promised tentative service of motor ambulances provided by the London County Council under the Act of 1909 will be started within the next few weeks at a station in North End Road, Fulham. Subsequently five other stations will be opened in north and south London, outside the city area, and a staff of 6 senior and 43 other ambulance attendants, together with 4 telephone operators, has been, or is being, appointed under the Chief Officer of the Fire Brigade. An estimate for £2,350 for the current financial year has been passed by the Council for the purposes of the ambulance service. It was in 1902 that attention was specially drawn to the value of the motor ambulance as against the wheel litter and the horse ambulance in civil practice when Sir William Collins laid his report before the London County Council. It was not, however, till 1909 that he succeeded in getting a bill through Parliament to enable the County Council to establish and maintain such a service. It is not creditable to this great health authority that these powers should have remained unused for nearly six years. Meanwhile, the abundant testimony of the boon which the motor ambulances have been in war has cut the ground completely from under the feet of those who placed every obstacle in the way of the adoption of this new beneficent service in civil practice.

Gift of a Motor Ambulance: Newcastle.

A committee of medical men recently appointed in Newcastle, with Mr. Rutherford Morison as chairman, Dr. James Hudson as vice-chairman, and Mr. David Ranken as honorary secretary, has raised among medical men in the city a fund sufficient to defray the cost of a completely equipped motor ambulance. It was formally presented to the 1st Northern General Hospital last week by Professor Morison, who said that the subscribers hoped that it would serve to diminish the inevitable sufferings of the wounded, and that it would at the end of the war be of value in civil life by filling a want long felt both by medical practitioners and by the public in Newcastle-upon-Tyne and the surrounding district. Colonel Gowans, commandant of the hospital, in accepting the gift, said that it would certainly prove of great benefit to the sick and wounded continually being sent to the hospital.

He congratulated the committee on the choice of the car, believing that there was none better equipped in the whole of England. The car has been built according to the British Red Cross Society's requirements by the Argyll Works at Alexandria, Glasgow. The chassis is 15 to 30 h.p., fitted with sleeve valve engine and four-wheel diagonal braking system; to diminish shock, it has three-quarter elliptic springs and shock absorbers fitted to both front and rear axles, specially large tyres, and a silent rear axle worm drive. Dunlop detachable wire wheels are fitted, and two spare wheels are provided. The body consists of a wood frame with canvas detachable curtains, and contains four stretchers for lying-down cases.

THE MANCHESTER RADIUM DEPARTMENT.

The Manchester Radium Committee has now in its possession radium of the value of about £20,000, and it has spent an additional sum of about £1,000 in bringing the department up to date in its equipment. The stock of radium is to be kept in a special fireproof strong room at the Manchester Infirmary, which, with other rooms required for the department, has been provided rent free by the Board of Management. In addition to the rooms where treatment will be carried out, there is a laboratory and workshop with electrically-driven lathe and mercury pumps used in the making and preparing of emanation tubes and applicators. Although the stock of radium is thus to be kept as a rule at the infirmary, it will be available for use by any of the hospitals of Manchester, Salford, and neighbouring towns which have participated in the scheme, or patients from these hospitals can be sent to receive their treatment at the infirmary.

The department will be worked in close connexion with the Cancer Research Laboratory under Dr. Powell White, the staff of which will thus be enabled to carry out extensive experimental work. Dr. Arthur Burrows, who was assistant at the Radium Institute, London, has been appointed radiologist to the department, and Mr. Lupton, late of the Physical Laboratory of the University, has been appointed physicist. Mr. Lupton thus succeeds Dr. Marsden, who has recently received the appointment of Professor of Physics in the University of Wellington, New Zealand. With these appointments the department is now ready to begin work.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

VOLUNTEER HOSPITAL IN BELFAST FOR WOUNDED SAILORS AND SOLDIERS.

THE Ulster Volunteer Force had made considerable hospital preparations during the last two years; about two months ago it offered the War Office a fully equipped hospital of 100 beds for wounded sailors and soldiers of His Majesty's navy and army, and this generous offer was accepted. On January 8th this hospital was formally opened by Lady Carson, and will be ready for patients in two weeks. The hospital committee in charge obtained sufficient money in a short time to enable it to go on for many months; the city council granted the use of the Exhibition Hall free of rent, the Samaritan Hospital Committee granted the use of that institution, Mr. and Mrs. J. C. White gave an adjoining house for a nurses' home, Mrs. James Moore furnished it, the Queen's University granted the use of adjoining grounds and of their Roentgen ray apparatus and pathological laboratory, the architect who planned the necessary changes and additions gave his services free; a large and influential medical, surgical, and specialist staff were appointed, and Miss Bruce, formerly in the service of the Egyptian Government, was appointed matron, with the requisite staff of fully trained nurses, under whom some probationers from the Ulster Volunteer Nursing Corps will be employed in various offices. A large number of the public visited and examined the various institutions and equipment after the formal opening, and the greatest pleasure and satisfaction was expressed with the institution and its organization, not merely in words but also in handsome donations. As Sir George Richardson, who acted as chairman at the opening ceremony, said, the hospital will be available for any wounded soldier and sailor in His Majesty's service, and will be run on practical business lines by some of the leading business men in Ulster.

DOMICILIARY TREATMENT OF TUBERCULOSIS.

A conference took place lately between representatives of the Louth Insurance Committee and of medical practitioners with regard to domiciliary treatment of tuberculosis under the Insurance Act. Dr. Blake, in expressing the unanimous opinion of his medical brethren, said that provided that the proposal did not involve any communication with a "medical adviser," the doctors would be willing to assist the Council in their beneficent work. The rate of remuneration, he said, should be in accordance with the model scheme agreed upon by the late Conjoint Committee, and approved by the Local Government Board. An amicable settlement on these lines is pending. Several of the County Councillors present expressed regret that a similar conference could not be held to settle the certification question, and many gross cases of hardship to sick persons seeking sick pay during illnesses were mentioned both by the doctors and the members of the County Council.

CHEMISTRY OF PROTEINS.

On August 1st, 1914, we mentioned that the exhibit prepared by Professor Abderhalden of Halle, and shown at the Dresden International Health Exhibition in 1911, had been lent to Professor W. H. Thompson, who was in charge of the food section of the Civic Exhibition then open in Dublin. It represents the actual cleavage products in exact quantities which he obtained from several proteins, including caseinogen, gliadin, and globulin. With the approval of Professor Abderhalden, obtained through Professor Pekelharing of Utrecht, the collection remains in the custody of Professor Thompson, who recently showed it at a meeting of the Section of Anatomy and Physiology of the Royal Academy of Medicine in Ireland, which took place in his laboratory. Professor Thompson informs us that if a general desire were expressed he might be able to arrange for it to be shown and demonstrated in London.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE CHAIR OF MEDICINE IN EDINBURGH.

THE last day for the receipt of the names of candidates for the Chair of Medicine in the University of Edinburgh, rendered vacant by the resignation of Dr. Wyllie, was Friday, January 15th. It is understood that the candidates (the names are arranged in alphabetical order) are Drs. J. J. Graham Brown, Robert A. Fleming, G. Lovell Gulland, Alexander Morison, Harry Rainy, and Douglas Chalmers Watson. Dr. Graham Brown, Dr. Fleming, and Dr. Gulland are physicians, and Drs. Harry Rainy and Chalmers Watson, assistant physicians to the Royal Infirmary, Edinburgh; Dr. Morison is senior physician to the Great Northern Central Hospital, London. All are graduates of the University of Edinburgh.

SCOTTISH VITAL STATISTICS.

The fifty-eighth annual report of the Registrar-General for Scotland, for the year 1912, has been issued recently. The Registrar-General states that the preparation of the report for 1913 is far advanced, and that when it is completed the arrears of work in the statistical branch, caused by the organization of the whole system of tabulation, will have been overtaken; it is hoped that the reports of future years will be ready for press, if not indeed submitted, within six months of the close of each year.

In the year ending December 31st, 1912, the birth and death rates continued low, while the marriage-rate increased. The birth-rate of the year, 25.90 per 1,000, though slightly above that of 1911, was lower than in any previous year. The death-rate, 15.26 per 1,000, though somewhat higher than in 1910 and 1911, was less than in any other year. This is the fourth consecutive year in which the Scottish death-rate has been less than 16 per 1,000. The marriage-rate of the year, 6.86 per 1,000, was higher than that of the years 1908 to 1911, but lower than those of the years 1906 and 1907. The infantile mortality-

rate, 105.5 per 1,000 registered births, was the lowest yet recorded, the previous lowest being that of 1909, when it was 107.7.

The death-rates from enteric fever, from diarrhoea, from all forms of tuberculosis, and from phthisis were the lowest recorded. The death rates from scarlet fever, from diphtheria, and from whooping-cough were low, and those from pneumonia and bronchitis less than the average. The causes of death which were more than usually prevalent during the year include measles and cancer. The death-rate from the latter has shown a steady increase since 1855, the year in which national registration commenced. The cancer death-rate was once more higher than in all previous years. The deaths of 13 reputed centenarians were registered during the year, and by research the ages of 5 of them have been satisfactorily proved. The population at the middle of the year 1911 was estimated at 4,751,132, as from that date to the middle of 1912; the natural increase—the excess of births over deaths—numbered 48,404, while the loss by migration amounted to 58,459. There was an apparent loss of 10,055, the population at the middle of 1912 was consequently estimated at 4,741,077. This estimated population is 19,827 less than the population of Scotland as ascertained by the 1911 census, but 2,466 more than the estimated population of the year 1910.

The births of 122,790 living children were registered during the year 1912. This number was 940 more than the previous year, but 4,166 less than the mean of the numbers of the preceding five years, and 6,869 less than the mean of the preceding ten years. The registered births of the year were fewer than those of all previous years since 1873, those of 1889, 1890, and 1911 excepted. Of the children registered, 62,931, or 51.3 per cent., were males, and 59,859, or 48.7 per cent., were females. The ratio of male to female children was 105.1 to 100; in 1911 this ratio was 104.5.

Of the 72,340 deaths registered during the year 70,978, or 98.1 per cent., were certified as to cause by a registered medical practitioner, or by a procurator fiscal, while 1,362, or 1.9 per cent., were reported as not being so certified.

Deaths from all forms of tuberculous disease numbered 8,149, 4,105 being of males and 4,044 of females. This number is 238 fewer than in the previous year, 993 fewer than the mean of the numbers of the preceding five years, and 1,326 fewer than the mean of those of the preceding ten years. It is the smallest number of deaths from tuberculosis in all forms registered in Scotland for any year since the institution of national registration in 1855. Deaths from tuberculous disease attained a maximum of 13,027 in 1870, and since then have shown a fairly steady decrease. The death-rate from this cause was 172 per 10,000, which is 5 less than that of the previous year, 24 less than the mean of the five preceding years, and 34 less than the mean of the preceding ten years. It is the lowest Scottish death-rate from this cause.

The tuberculosis death-rate of the larger burghs, considered individually, ranged from 270 in Dundee, 240 in Greenock, and 227 in Glasgow, to 123 in Kirkcaldy, 141 in Aberdeen, and 149 in Ayr. The male death-rate of the year from tuberculosis was 179, and the female 166. Of the 8,149 deaths from tuberculous disease, 5,124 were ascribed to phthisis, 182 to acute phthisis, 93 to miliary tuberculosis, 1,018 to tuberculous meningitis, 875 to abdominal tubercle; 132 to tuberculosis of spine, 57 to tuberculous disease of joints, and 665 to other or unspecified forms of tuberculous disease, this last including disseminated tuberculosis. The phthisis death-rate was 3 below that of the previous year. The male death-rate from phthisis was 116 and the female 108. The former was the same as in the previous year, but the latter 5 less.

South Australia.

[*FROM OUR SPECIAL CORRESPONDENT.*]

THE WAR.

OUR thoughts are all of the war; we have no time for anything else. Every entertainment almost that is given is either for our patriotic fund or for the relief of the Belgians, or for the British Red Cross Society, or for supplying comforts to troop horses, or for nurses going with the hospital. Even the cinema shows seek patronage by advertising "war prices," not, as one might expect, increased prices of admission, but reduced. Some drugs, especially morphine, have increased in price; at one time we were told there would be a famine of anaesthetics. In spite of the prolonged drought, in spite of the water famine in Adelaide itself, there seems to be some money still in the metropolis, for Mme. Melba at a concert raised £1,200 or so for the Lady Dudley Hospital and the Red Cross funds.

THE MEDICAL CONTINGENTS.

The first contingent, after many delays, sailed from Western Australia—about twenty-five troopships were required to convey the Australian divisions and the New Zealand contingents. Accompanying them are many of the best of the medical profession, and many of them have sunk their rank in order to be allowed to serve. The veteran of the Sudan and Boer wars, Surgeon-General W. D. C. Williams, C.B., Colonel Charles Ryan, of Plevna fame, author of *The Crescent and the Cross*, have gone, also Major J. W. Barrett, C.M.G., and a host of others. Sir Alexander MacCormick is in England. From this State we have sent or are sending Lieutenant-Colonel Ramsay Smith (the City Coroner), who has been appointed to the charge of a base hospital of over 500 beds; Professor Watson, who goes as consulting surgeon; Majors Powell, Simpson Newland, Jermyn, Corbin, T. G. Wilson; Major Goldsmith (who served in Montenegro two years ago), Captains Le Messurier, J. S. Verco, Cavenagh-Mainwaring, Pitcher, Meikle, Nott, Jeffries, Fry (ex-Rhodes Scholar), and Bells. Altogether two months ago it was announced that 200 medical men were leaving Australia, as well as 3,000 of other ranks in the medical service, and 100 nursing sisters. Major Strangman has gone to the "tropics," possibly New Guinea, with a contingent from South Australia.

ANNUAL MEETING OF THE BRANCH.

The annual meeting of the South Australian Branch was held on June 28th, and was indeed a red-letter day because the Branch met for the first time in the Lister Hall on its own premises. The Young Women's Christian Association building was purchased by a limited company. Most of the spare rooms have been let, and the Main Hall has been rechristened, the ceremony being performed by Professor Sir Harry Allen of Melbourne, in the presence of members of the University Council (to whom we are indebted for placing rooms at our disposal for so many years). The whole scheme is a monument to the energy and perseverance of the honorary secretary, Dr. H. S. Newland. Dr. E. W. Morris was elected President of the Branch for the second time, and the dinner in the evening was a great wind-up to a most successful ceremony.

WATER FAMINE.

Our winter rains have been a failure—not only in Adelaide but throughout the State—hence the harvest is one of the worst of recent years. Drought in the centre of Australia is often relieved by monsoonal summer storms, but these are seldom useful in filling the creeks that feed our local reservoirs. At Christmas, 1913, we were careful with our water; since September we have been prohibited from using it to water our gardens; now we are advised to take shower baths only—this in a country where the temperature may reach 115° in the shade, and we are told that there is enough with care to last for a few months! Meanwhile we are all boring with more or less success and sinking wells, but it is notified that we may have to seal up the deep drainage system and revert to some dry pan system. The outlook is bad, as we seldom take water into the reservoirs earlier than July or August.

THE Local Government Board has arranged to send medical officers of health during the continuance of the war a second copy of the return as to infectious diseases. This second copy is intended to be transmitted to the military, medical, or sanitary officer in charge of any troops that may be in the district. This arrangement is not intended to supersede the special notification of infectious diseases within the area to the military authorities as advised in the circular letter sent out on August 31st.

Correspondence.

GERMAN OUTRAGES ON THE LATE PROFESSOR VAN GEHUCHTEN.

SIR,—It may be well to place on record in the columns of the BRITISH MEDICAL JOURNAL some of the grosser outrages perpetrated by the apostles of "Kultur" on the late Professor van Gehuchten whose death here last month, in such tragic circumstances, deeply affected the Belgian academic community now resident among us and, I think I may add, their *confrères* of this university. I had the following account from the professor himself a few days after his arrival here last October.

German officers were quartered in his house at Louvain, and one of their first acts was to cause his entire library to be thrown out of his house into the road, he himself being present. As he explained, with his unfailing good humour, more than half the books were German. His portrait, which had been presented to him a few years previously by his colleagues and students of the medical faculty, was wantonly destroyed; this being now an added sorrow to his widow and family. Other souvenirs were also destroyed, and a horse was stabled in his drawing-room, together with a pig! He and his family were treated with the utmost indignity, and were only allowed to live in their own house on sufferance. Finally, in the sack of the town his house was burned, though he and his family had by that time left. During the last few years he had been preparing a second edition of his book on the nervous system of man; both the manuscript which was at his house and the copy which had already gone to the publishers have perished in the general destruction.

This is not the only case in which the Germans vented their malignity on a private library. The same thing happened to M. Gilson, the Director of the Natural History Museum in Brussels. He lived in Louvain, and returning to his house after the occupation by the Germans, was greeted by the sight of his library in a heap at his front door. The German officers quartered in his house kindly informed him that he could take them away if he liked!—I am, etc.,

Cambridge, Jan. 4th. H. COBDEN HASLAM, M.B., Sc.D.

POPULAR FREUDISM.

SIR,—I beg to acknowledge the receipt, from Dr. Forsyth and Dr. Ross, of one scalp each, with thanks.

Dr. Steen asserts that my reference to Krafft-Ebing, the Kaiser and Co., clearly shows that I have an anti-German bias; and, further, he asserts that this bias is unconscious, by which I suppose he means that I do not recognize the bias, and am not aware that I have it. If this is his meaning, then, in the first place, it is an illegitimate and erroneous use of the word "unconscious"; and in the second, he is wrong in his fact. I am quite well aware, and consciously recognize, that I have a profound contempt for the mental pseudo-science that is made in Germany, including German Austria. It would require the tongue of another John Knox to express the contempt I have felt for many years towards the monstrous regiment of German professors that has so long afflicted us; but this feeling in my mind is not unconscious, nor can any feeling be unconscious.

What Dr. Steen and his fellow Freudians seem to be groping after in this use of the term "unconscious" is the fact, known for the last 250 years, that cerebral processes that are usually attended by consciousness may occur without conscious accompaniment. The classical example is the solving during sleep of a problem that has baffled our waking thought. This is not unconscious mind, or unconscious thought, or unconscious psyche; it is unconscious cerebral activity.

The fact that there is such unconscious cerebral activity is established, and the Freudian may perhaps say that what it is called does not matter: it is a mere quibble about words. I assert, on the contrary, that a person who can use any of these contradictions in terms shows thereby such a confusion of thought, such incompetence to think clearly and express himself accurately, as disentitles him to serious consideration.

But, while I admit and assert the gradual diminution in the vividness of consciousness as we recede from the centre of the field, and the occasional absence of consciousness during cerebral action that is usually accompanied by consciousness, I do by no means admit the enormous assumptions of Freud—assumptions supported only by other assumptions, and these again by others, until the whole system resembles a chain hanging from the clouds with no attachment at its upper end. The Freudians assert that there is such a chain, and that it will carry weight, and they expect us to accept their assertions.

I am old enough to have seen the rise and fall of several such systems, and history has made me acquainted with many more—witchcraft, astrology, the humoral pathology, reflex action as a universal cause of disease, sour milk as a universal cure, and many another. Every one of them has its enthusiastic advocates, every one of them can show "incontestable proofs" in the shape of chance coincidences, verbal similarities, strained analogies and, above all, numberless "cures" that are so surprising, so dramatic, and so loudly trumpeted that they do not fail to convince. Freudism resembles them all, not only in these features, but in the ghastly results it produces in the cases that do not appear in the books, but that come to the knowledge of practitioners who are called in, often too late, to clear up the mess that the use of the system has made. I do not use words at random, and I abhor and detest the common practice of using strong words as mere intensitives, whether the word is "rotten," or "awful," or "absolutely," or "bloody," or what not. It is not as a mere intensitive, but with a full sense of the gravity of the expression, that I say that the results of the practice of psycho-analysis have been, in cases known to me, horrible. Patients who have gone through it describe psycho-analysis to me as the sedulous inculcation of obscenity.

To pass to another subject, the causation of delirium tremens by the deprivation of alcohol is not my doctrine, though I adopt and endorse it. The credit is due to Dr. Hare, and is duly acknowledged in my textbook.—I am, etc.,

Parkstone, Dorset, Jan. 9th. CHAS. A. MERCIER.

SIR,—It is not surprising that Dr. T. A. Ross was rather confused by my letter on this subject, seeing that he has in some way, inexplicable to a non-Freudian, identified himself with the Apostle of false analogy; when, however, he implies that there is a resemblance betwixt me and the German theologian, I feel that he has dealt me a blow beneath the belt. If the reference had been to the trial of Mr. Pickwick, it is to be supposed that by similar ratiocination he would have assumed the character of Serjeant Buzfuz and paid me the "startling compliment" of suggesting that I acted the part of the inimitable Sam Weller with his imaginary magnifying glass of miraculous power. It appears that Dr. Ross is not yet convinced of the fallacy of his argument when he declared that "Freud's teaching could not have claimed such widespread attention if there was nothing in it at all." I would remind him "that widespread attention" has also been drawn to the frequent success of the gold-brick fraud and of the disappearing confederates in the confidence trick; there is undoubtedly "something in them," and they may, in that respect, be held to corroborate that "piece" of his declaration of faith.

Dr. Ross kindly informs us of the derivation of the word "atom"—"that which cannot be cut"; he tells us that this minutest quantity of matter has certain qualities, so that "it is therefore inconceivable that it could not be cut." This is adduced as an instance of a contradiction in terms used by me "without a qualm," such as I should feel were I to speak of conscious unconsciousness or of unconscious consciousness. Again I will say "I do not agree with him," but as there is no difference between us as to the "definite technical fact" expressed by the word "atom," the only argument would be as to the analogy, for we need no learned Gamaliel to explain the meaning thereof. As yet, however, we cannot see, even "through a glass darkly," what is intended to be visible by the use of the phrase "an unconscious painful idea"; we have only the reiterated assertions of the Freudians that "it represents a fact." The word "cuttlefish" also represents a fact, or rather a series of facts, in the science of natural history, capable of proof by an intelligent investigator; these do not necessitate frequent asseveration, and their definition

is unchallenged. In a free country we may speak any jargon we please, and it is, of course, open to Dr. Ross to use Abracadabra or even to compare me to a cuttlefish, which is not a fish but "a mollusc that discharges a black liquor when pursued, obscuring the water and so escaping," but I pray him of his mercy not to "confuse" me again with a "German theologian."—I am, etc.,

London, W., Jan. 9th. H. SELFE BENNETT.

COLOUR VISION.

SIR,—Protests have recently appeared in the JOURNAL in reference to the inadequate rewards of research work. We may surely hope in this connexion that the case of Dr. Edridge-Green is unique. A man with the gift of original insight and endowed with the capacity for broad generalizations may naturally look forward to the scientific recognition of a F.R.S., suitable pecuniary reward, and the appearance of his name in the New Year's list, if he is successful in his pursuit of knowledge.

Dr. Edridge-Green, through his fidelity to scientific truth, has suffered the loss of a valuable situation and the many insults that "patient merit of the unworthy takes." His hypothesis may be unverified, but his practical conclusions have conferred a boon on humanity. How many hypotheses in medicine are verified? The only method by which justice can be done to Dr. Edridge-Green is by parliamentary action. The facts of his case could be brought before individual members of Parliament by local representatives of a general committee. I believe with a little effort this plan is feasible and would eventually result in success.—I am, etc.,

Belfast, Jan. 11th. R. M. FRASER, M.B.

SIR,—In 1909 I came up to town expressly to raise a discussion at the Ophthalmological Society on the theory of colour vision, and when I saw Dr. Edridge-Green in the antercom before reading my paper, I told him that my explanation was not in accordance with his views, and that I expected him to jump on it. No one was more surprised than myself to find that neither he nor any of his supporters would rise to controvert me. His explanation is given by himself in the *Ophthalmoscope* (April, 1909). I fear that I may do injustice to it by giving a summary, so I will quote it in full:

When the image of a black surface or object falls upon the retina, the visual purple accumulates and becomes in excess of that in the surrounding parts of the retina which are exposed to light. This part of the retina is therefore partially adapted to darkness, and is accordingly more sensitive to green light. When the image of the white portion of the disc falls upon the eye, the visual purple is diffused beyond the limits of the image, and invades the black line and now appears red through contrast, the white really being pale-green. This greenish tint of the white portion of the disc appears to have been entirely overlooked, but it is quite easy to see, especially if another piece of white paper be used for the purpose of comparison. When the image of the black line falls upon a portion of the retina which has been previously exposed to light, the diffusion of the visual purple is stopped at that part, and so the adjacent white portion appears bluish-green or blue through contrast. Now the conditions are most favourable for contrast, the inducing colour being weak, and covering a relatively large surface to that on which the contrast colour is seen. The after-image of a black object is green, as the reader can easily ascertain for himself by looking for some seconds at a black object and then at a white surface—as, for instance, snow. How can this be explained on any of the former theories? I at first thought that this green after-image was caused by red light (invisible to the eye) reflected from the black object, but I obtain the same result with a hole in a sphere placed so that no light could be reflected from the interior. When the retina has been exposed to light, it becomes relatively more sensitive to the red end of the spectrum.

Dr. Edridge-Green in your last issue asks me to point out in what way his explanation is not satisfactory to me.

I, in common with most experimenters on the subject, have found that a contrast colour is fainter than that of the inducing colour, and that intensity of the latter is essential to obtain a vivid contrast effect. To me, therefore, it is inconceivable that the pale green tint that Dr. Edridge-Green detects in the disc can account for the brilliant red line seen; and, similarly, that the deep blue line (not "bluish-green") is explained by a contrast effect, the eye after exposure to white light being more sensitive to red light.

In physical laboratories the student is taught to distinguish between colour sensations and colour pigments. He is shown that red and green pigments, or red and green glass, when placed on the top of each other, give rise to the sensation of black, whereas the mixture of red and green sensations, as produced by a parti-coloured spinning top, gives rise to a yellowish sensation.

I hoped that in my previous letter I had given all due credit to Dr. Edridge-Green for his excellent tests for colour-blindness, but to my mind his theory, as indeed all others, is inadequate to explain all the facts. His letter rather astonishes me, as he professes to take no exception to any one who does not accept his theories of vision and colour as facts.—I am, etc.

Newcastle-upon-Tyne, Jan. 11th. A. S. PERCIVAL.

THE METRIC SYSTEM IN MEDICINE.

SIR,—I was much interested in the article in the JOURNAL of January 9th on the above subject, but it is to be hoped that the system recommended will not be adopted.

A prescription in the form given should, strictly speaking, be dispensed by weight, grams being understood when no sign is written, and this is contrary to the British practice of dispensing liquids by measure and solids by weight.

If the prescriber wishes his liquids to be dispensed in cubic centimetres and his solids in grams, why not say so in the prescription, instead of sending round word to the chemists in his neighbourhood that that is what he really means?

I started this year writing my prescriptions in the metric system, and it did not take one long to make the pleasing discovery that, provided one ordered sixteen-dose mixtures, it was easier to write a prescription in the metric than in the old system. All that one has to do is to put cubic centimetre or gram in the place of minim or grain in the single dose and make the quantity up to 230, 115, or 57 c.cm., according as table, dessert, or teaspoon doses are required.

For instance, if each dose is to contain

Sod. bicarb.	gr. x
Ammon. carb.	gr. iij
Tinct. nucis vom.	♏ v
Inf. gent. co.	ad ʒss.

the eight ounce mixture will be written:

Sod. bicarb.	10 gm.
Ammon. carb.	3 gm.
Tinct. nucis vom.	5 c.cm.
Inf. gent. co.	ad 230 c.cm.

It is made up to 230 c.cm., as this is a nearer equivalent to 8 oz. than 240 c.cm.

When one wishes to order powders or pills the simplicity of this method becomes more marked. It is unnecessary to know that 1 grain equals 0.06 gram provided one remembers that a gram equals roughly 15 grains.

Thus the following pill:

Aloin	gr. ½
Podophylli resinae	gr. ¼
Jalapae resinae	gr. ⅔
Ext. hyoscyami	gr. j

M.; ft. pil.

is written:

Aloin	0.5 gm.
Podophylli resinae	0.25 gm.
Jalapae resinae	0.66 gm.
Ext. hyoscyami	1.00 gm.

M. et divide in pil. xv.

The point being, of course, to order 15 pills.

By this method one can, without any previous experience, write the great majority of one's prescriptions in the metric system, though I am afraid one would always think of doses in terms of minims and grains.—I am, etc.,

London, S.W., Jan. 10th. S. VERDON-ROE.

THE "ELDERTON" CONTROL METHOD OF TESTING THE VALUE OF NEW TUBERCULIN.

SIR,—In his letter on the above subject, Dr. Wynn makes several criticisms on the method of administration of the tuberculin in Dr. Shaw's cases.

1. He condemns the intitial dose—0.00001 mg. or 0.000001 c.cm.—as absurdly small. He also states that he can find no initial dose of equivalent strength recorded in any authority.

Riviere and Morland,[1] in their manual, recommend an initial dose of 0.001 c.mm. or 0.000001 c.cm. of T.R., as well as other tuberculins.

Dr. Horton Smith Hartley, at the Brompton Hospital, begins, or began, with this same dose. Drs. Latham and Inman[2] used an initial dose of 0.000002 c.cm. T.R., and I have before me a scheme of Dr. Inman's, in which he gives the approximate initial dose of T.R. as one-fifth to 1 c.cm. of a dilution containing 0.000001 c.cm. original fluid in 1 c.cm., which works out to from 0.0000002 to 0.000001 c.cm. initial dose.

Rothschild used an initial dose of 0.0000001 c.cm., T.R. or B.E., and King, of New York,[3] one of 0.000002 c.cm.

With T.Bk., Rollier[4] used an initial dose of 0.000000025 c.cm., Arnrein one of 0.0000002, and Sahli one of 0.000001 c.cm.

With B.F. (regarded as 100 times the strength of T.R.) Denys[5] used an initial dose of 0.00000001 c.cm., which is equivalent to 0.000001 c.cm. T.R.

2. With regard to the increase of doses Dr. Wynn states: "The two schemes of doses given are the series 1, 3, 5, 7, and 10, and 1, 2, 3, 5, 8, and 12. The increases are uneven, and vary from 50 per cent. to 200 per cent."

As regards the first scheme, the following is taken from my paper published in the BRITISH MEDICAL JOURNAL, February, 1913:

> The dose given was as follows in milligrams every second day—0.00001; 0.00003; 0.00005; 0.00007; 0.0001; 0.00015; 0.0002; 0.0003; 0.0005; 0,0007; 0.001; 0.0015; 0.002; 0.003; 0.005; 0.007; 0.01; 0.015; 0.02; 0.03; 0.05; 0.07; 0.1. Every fourth day—0.15; 0.2; 0.3; 0.5; 0.7.

From this it is entirely obvious that the series used is the one, 1, 1.5, 2, 3, 5, 7, 10, with the initial second and third doses omitted—a not unusual procedure to save time while using the weakest dilution.

This series (which is the well-known one used by Bandelier and Röpke[6]) gives a percentage increase varying from 33.3 to 66.6, the ratio of the highest increase to the lowest being 2. With the second series (omitting the initial dose, which should in theory be 1.2, not 1.0) the increase varies only from 50 to 66 per cent., giving a ratio of 1.3.

I do not know of any other method which gives a better, or as good, a gradation, excepting the use of the so-called "logarithmic" scale, as with Lieberg's syringe.

3. Dr. Wynn further states: "After a reaction the dose was actually trebled after an interval of eight days," but omits to say that this rise of temperature followed the initial dose of 0.000001 c.cm. T.R. (which he says is absurdly small). After eight days' interval the second dose of the scheme was given (which is 0.000003 c.cm., and therefore treble the first), as it was thought probable that this rise was an initial idiosyncrasy; and, at any rate, if the patient was going to react to such minute doses, he could scarcely continue to be treated on the lines of the scheme laid down to ensure uniformity as far as possible. The correctness of this view was shown by the fact that the patient did not react again till four and a half weeks later, and after sixteen doses had been given, when there was a rise of temperature to 99° F. This was treated on the lines laid down, the same dose being repeated after an interval of five days.

It would appear that Dr. Wynn's perusal of the papers has been superficial, or that his criticisms are rather dialectical than genuine.—I am, etc.,

Brigg, Jan. 5th. E. THOMPSON RIGG, M.D., B.Sc.

REFERENCES.

[1] Riviere and Morland, *Tuberculin Treatment.* [2] Latham and Inman, *Lancet*, 1908, ii, 1280. [3] H. M. King, *New York Med. Journal*, 1910, xcii, 164. [4] Rollier, *Revue méd. de la Suisse Rom.*, 1907, xxvii, 47. [5] Denys, *Le bouillon filtré du bacille de la tuberculose dans le traitement de la tuberculose.* [6] Bandelier and Röpke, *Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose.*

ARTIFICIAL PNEUMOTHORAX.

SIR,—Dr. Vere Pearson, with characteristic courtesy, has in a private note invited this letter. I will spend no time over his attack on our regard for morphine. Given shock, there should be morphine, and even in a case conducted under the auspices of Dr. Vere Pearson I have seen shock. But his austere condemnation of our treatment of advanced cases demands attention. We say that Saugman has published the results of 38 operations on severe cases—on patients, that is, for whom, apart from pneumothorax, there was no hope. We find that in following Saugman we are saving some few lives, and, as we have so far lost no lives, this seems to be a clear gain.

I am disturbed by the attitude of such an observer as Dr. Vere Pearson towards shock. Brauer and Spengler's book is full of it—is, indeed, an Iliad in which shock and gas embolism contend with varying fortune. Saugman explains one of his two tragedies by shock, the other by embolism from alveolar air. And this introduces the important subject of embolism by alveolar air. Brauer and Spengler's 6 or 7 published cases of death include at least 4 due to alveolar air embolism. The explanation was given by Quincke, who pointed out that the vein, after injury, continued to gape. Continued to gape—why? Because of the chronicity of the disease. I know of no published case of gas embolism occurring in any but medium or advanced cases. Our paper was a mere epitome of a larger paper, but we told that the danger in advanced cases was embolism. Not only is the danger embolism; it is frequently alveolar air embolism. Parry Morgan's recent researches point this way. Gas embolism is not at all likely to occur in early cases; we, at any rate, do not expect to find it. Time must settle the point, but our cases are surely to be admitted as witnesses for our views. Parry Morgan is not only with us but against us; he states that every puncture of the pleura punctures the lung. Dr. Vere Pearson asks if we have read of experiments on animals. We have. Brauer distinctly states that operators may remain "indifferent" to such injuries as he found in healthy dogs. Let us accept Brauer and conclude that in healthy humans, or in people with a limited lesion, the injury from puncture is negligible, and that the danger of gas embolism is, at most, small. In accepting Brauer we run some risk, for Brauer comes to conclusions absolutely inimical to the mode of operation Dr. Vere Pearson so brilliantly expounds and defends.

Many early cases may and do improve in sanatoriums, and may even become hygienically solvent. If the resistance is low, sanatorium treatment is insufficient. Dr. Vere Pearson's cases are of Mundesley, ours of Mabgate. A tailoress cannot live three years in a palace.

One thing more I must add: that though want of space prevented our speaking of canalization of a vein, exhaust-pump action of the left side of the heart, etc., we must not be considered ignorant of the literature. And the technique used by us, and already published in the BRITISH MEDICAL JOURNAL—that is, Dr. Clark's modification of the technique which in great measure we learnt from Dr. Vere Pearson—renders it impossible to canalize a vein or rupture the lung without knowing it. Our needle in the case imagined was either in the intrapleural space or, at the worst, between the costal pleura and the extrathoracic fascia. We use the lowest pressures; we sound continually with the stilette; we inject the gas by driblets; we never work without an initial negative rise. We limit our manœuvre to early cases; Rothschild and Fehleisen carry it even to advanced cases. As our other critic, Dr. Weatherhead, suggests, our attitude is one of temerity tempered by timidity—a charge we do not wish to disprove. We are content to be considered among the pioneers in the treatment of early cases by artificial pneumothorax.—I am, etc.,

Leeds, Jan. 11th. H. DE CARLE WOODCOCK.

TREATMENT OF TETANUS.

SIR,—With reference to Dr. Stewart and Mr. Laing's case (BRITISH MEDICAL JOURNAL, December 26th, 1914, p. 1095), I should like to suggest caution in drawing conclusions from the results of commencement of the carbolic acid treatment. I have noticed a tendency to slight improvement followed by exacerbation of the symptoms in cases of tetanus about the third or fourth days, and at one time felt disposed to attribute it to diminishing doses of the serum which I was then beginning to use. I have since learnt that it occurs, however, without using smaller doses, and may be quite a feature of the disease.

With regard, however, to the treatment adopted, I think larger doses of serum might have been used. Personally I inject 3,000 units intrathecally, and repeat smaller doses daily in some cases, as well as giving doses intravenously. I cannot express an opinion on the value of the "carbolic

acid treatment" as I have not tried it, for the reason that the serum treatment carried out in this way, in cases in which the incubation period is seven days or longer, seems to give better results than any I have heard of with any other form of treatment. I certainly agree that morphine should be used very sparingly.—I am, etc.,

Boulogne, Jan. 5th. FREDK. C. DAVIES, M.R.C.P.

CEREBRAL LOCALIZATION.

SIR,—In your issue of January 9th, in a review of a work of Monakow's, occur some observations in regard to Broca's convolution and aphasia which interest me deeply.

For generations past students in medical schools and universities all over the world have been taught the story of centres of localization, that of Broca being cited always as the triumphant proof of the theory involved. Even as a student I ventured to doubt this theory, though I made, as I make now, a clear distinction between Broca's observed facts and the interpretations which he and his followers have given to them. The researches of Monakow and Marie and others have modified our ideas even with regard to the facts, but that, I submit, is not the pith of the matter. In prosecuting the studies of which the outcome has been my *Psychology: A New System*, I submitted to rigorous examination the whole theory of localization, and I concluded that certain of the underlying notions were as crude and fallacious as those of the phrenology of Gall and Spurzheim; and, indeed, in pursuing my researches into the history of the subject I ascertained that they were the lineal descendants of Gall's conceptions.

On purely psychological grounds I showed that the question had been so badly posed that we could not even answer it in terms of the localization of speech in Broca's convolution, or even as to whether a lesion in Broca's convolution is the cause of aphasia. I pointed out in what way we must render both more extensive, more organized, and yet more precise, our notions of the meaning of "word," or again of "localization." I endeavoured to make it clear that in every process of thought the function of the brain as a whole is involved, even though that should appear in diverse regions in the form of inhibitions or of other correlated conditions. Here I but roughly indicate what I have set forth in detail in my chapter on localization of functions.

Subsequently to the completion of the book, I became acquainted with the researches of Marie and the deductions he had drawn from them, and I was able to claim these as the confirmation of my theory. Not long ago I had the pleasure of hearing this confirmation from the lips of Marie himself, in a discourse in which profound scientific knowledge was associated with what is more rare—lucidity of thought. And the confirmation did not merely reach to the extent of a rectification of the Broca position, but satisfied what I had set forth as the true doctrine in regard to the conception of "localization" itself.

I beg, therefore, to bring this matter to the notice of your readers, for it is the only instance I know of in the history of psychology where on purely psychological grounds a concrete result of this kind has been obtained. In the book it occurs as an illustration in discussing the general position in regard to the relations of physiology to psychology; and that again is subsidiary to the main purpose of the work, which is to set forth and expound the *Fundamental Processes* of the human mind.—I am, etc.,

January 11th. ARTHUR LYNCH.

The Services.

MEDICAL STUDENTS IN THE REGULAR ARMY.

THE circular letter issued to general officers commanding in chief by the War Office on November 28th, 1914 (BRITISH MEDICAL JOURNAL, January 2nd, p. 24), with regard to releasing medical students who desire to continue their studies in order to qualify as medical practitioners, referred only to the medical units of the Territorial Force. In the case of students who joined the regular army under the conditions of the Army Order issued early in August, there is no special arrangement therein for their release; a student desiring to be released should submit an application through the commanding officer to be allowed to resume his studies. Each case will be dealt with on its merits.

TEMPORARY COMMISSIONS AND FUTURE EMPLOYMENT.

WE have been asked whether a medical man now accepting a temporary commission in the R.A.M.C. could obtain a permanent commission when the war was over and remain in the R.A.M.C., qualifying for pension. We understand that no such arrangement at present exists. This, however, does not preclude such an arrangement being made in the future. In that event it would be probable that the usual age limit of 28 would be varied.

INDIAN MEDICAL SERVICE.

THE following technical courses of study in India shall, when undergone by officers of the Indian Medical Service, be reckoned to the extent noted against each as "study" towards the total period necessary to qualify for accelerated promotion to the rank of major, provided that the officers pass "with proficiency" the examinations at their conclusion.

1. X-ray course, Dehra Dun, three months.
2. Short bacteriological course at Kausali, one month.
3. Malarial course at the malarial bureau, one month.
4. Long bacteriological course at Kasauli (according to the duration of the course), three to six months.

Obituary.

THE LATE COLONEL D. D. CUNNINGHAM.

COLONEL KENNETH MACLEOD, I.M.S. (retired list), desires to add to the excellent obituary notice of the late Colonel David Douglas Cunningham, I.M.S., which appeared in the last issue of the BRITISH MEDICAL JOURNAL the following appreciative note, founded on many years' personal acquaintance:

Dr. Cunningham was a typical Scotsman—in feature, physique, disposition, character, and mental traits. He was somewhat reserved and difficult of approach, but, his friendship once gained, he was warm-hearted and staunch. He was loyal, straightforward, and manly, and resented a cad, a sneak, or a humbug. His intellectual gifts were sound and solid. He was persevering and systematic in his work; patient and exhaustive in research; scrupulously accurate and honest in reporting; ingenious in devising methods and thoughtful in interpreting results; keen in observation, cautious in deduction, and inclined rather to doubt than speculate. His early labours in India were devoted to investigating the value of hypotheses regarding cholera causation started by Hellier and others. Their outcome being of a negative character, much of his work was destructive, and the critical habit thus acquired probably accounts for the fact that no positive discovery of importance can be associated with his name. He warmly espoused Pettenkofer's views, and advanced many facts in support of them drawn from Indian observation. His reports and writings were admirably clear and systematic. He was a great reader, and loved to indulge in philosophical speculation, following Kant and Hegel. He had a good use of his pencil, as well as of his pen, and his reports are illustrated by neatly drawn diagrams and plates. His life in India was devoted rather to scientific than professional pursuits, and his recreations were largely concerned with the study of plants and animals and the discovery of the adaptation of their habits to their environment. In retirement he occupied himself in literary pursuits, and was keenly fond of gardening. Cunningham was an able and industrious, rather than an original and brilliant, man. He performed excellent work for the Indian Government, and promoted physiological and pathological science in many ways. His memory will be preserved and honoured by numerous friends, both European and native.

J. A. R. writes: Allow me to correct the obituary notice of Colonel David Douglas Cunningham, C.I.E., M.B., F.R.S., in the JOURNAL of January 9th. His brother is Emeritus Professor Robert O. Cunningham, M.D., the zoologist, who is happily still with us although retired from his chair at Belfast, and not, as stated, the late Professor Daniel John Cunningham, the anatomist, who was the son of the Rev. Principal of St. Mary's, University of St. Andrews. As David's father was also a clergyman with a reputation for learning, the mistake was natural.

DR. JOHN ROBINSON of Runcorn, who died recently at the age of 78, was a man of marked personality and a fine type of the old-fashioned general practitioner. He was the

son of the Rev. William Robinson, at one time minister of the Bethesda Congregational Church, Runcorn, and the author of several devotional books of merit. Dr. Robinson was educated at St. Andrews University, where he took the degree of B.A. Afterwards he studied medicine at Edinburgh, and in 1860 was admitted L.R.C.P.Edin. and L.R.F.P.S.Glasg. He became assistant to Dr. Wilson, then a leading practitioner in Runcorn. Five or six years later the town suffered from a terrible visitation of typhus fever. Dr. Wilson and his assistant both worked night and day in fighting the disease, which both of them contracted. Dr. Wilson died, but Dr. Robinson recovered and carried on the practice, which became very large. Dr. Robinson impressed himself deeply on the life of Runcorn, although he never sought any kind of municipal honour. He was content to be known in his district as the "working man's doctor." He was a man of unconventional opinions and somewhat eccentric habits, but the soul of honour and uprightness. Since the passage of the Insurance Act he had to a large extent retired from the active pursuit of his profession, but he kept himself in touch with all matters affecting its interests and scientific advance. He was a good classical scholar, and read some Greek every day.

IT is with great regret that we announce the death of Professor G. R. Mines, who was recently appointed to the chair of physiology at McGill University. Last winter was spent in Toronto by Professor Mines as temporary assistant to Professor Brodie, and it was only a few months ago that he commenced work in Montreal. His tragic death occurred on a Saturday afternoon, November 7th. He was engaged on a research on respiration and the heart, and his death was the result of an experiment he was performing upon himself, alone in the medical college. Professor Mines, who was born at Bath twenty-nine years ago, was educated at Bath College and the Grammar School, King's Lynn; he gained an entrance scholarship to Sidney Sussex College, Cambridge, in 1904; in 1909 he was elected to a Fellowship of his College, and became Praelector in 1911, in which year he took a first-class in the Natural Science Tripos (Parts I and II). He was additional demonstrator of physiology in the University of Cambridge from 1911 to 1914, and director of physiology in the Balfour laboratory from 1910 to 1913. Endowed with a passion for music, Mines at first thought of entering upon a musical career. His liking for natural science, however, was stimulated by Dr. P. M. Chapman, of Hereford, and it was in the development and interpretation of exact methods of recording heart action that Mines made his mark. To pursue his studies upon the hearts of lower animals, he spent months at the marine zoological stations at Plymouth, Rostock, and Naples. At the Marey Institute he mastered the technique of the cinematograph, of which he recognized the value as a record of animal movements. Possessed of great personal charm, Professor Mines had already established himself in the hearts of his associates at Montreal, and the deepest sympathy is felt for his young widow and her two little children.

DR. JAMES LESLIE, of Hamilton, Ontario, died on October 18th, 1914. He was born at New Pitsligo, Aberdeenshire, on September 23rd, 1832. He was educated at Aberdeen, and graduated M.B. in 1858 and M.D. in 1860. Dr. Leslie spent some time as surgeon on vessels in the Arctic regions, and subsequently went into practice at New Deer, Aberdeenshire. In 1872 he went to Canada, and commenced to practise in Hamilton, where the last thirty years of his life were spent. His son, Dr. Norman V. Leslie, is now with the Canadian Expeditionary Force.

DR. JULES AUGUSTE BARDE of Geneva, who died not long ago, was born in 1841 and studied medicine at Berlin, where he took the degree of doctor in 1863 with a thesis entitled *De syphiliticis renum affectionibus*. He then devoted himself to the study of diseases of the eye under Albert von Graefe. Afterwards he went to Paris, and was assistant to Dr. Meyer. On his return to Geneva in 1869 he established a private ophthalmological clinic. In a report published in 1873 on the first three years' work of the clinic he pointed out the need of an eye dispensary for poor patients in Geneva. His wish was fulfilled in an unexpected manner. Barde was called in to remove a foreign body from the eye of Baron Adolphe de Rothschild, and the operation was so successful that the Baron became keenly interested in ophthalmology, and in 1874 founded a private institute for the gratuitous treatment of sufferers from eye diseases. Barde became chief medical officer to the institute, and retained that position to the end of his life. He was offered the chair of ophthalmology, which was founded in Geneva in 1876, but preferred to retain his appointment at the Rothschild Institute, which developed into a teaching centre of great reputation. Barde's reports contain a large amount of valuable scientific material. He was one of the organizers of the Ophthalmological Congress held at Lucerne in 1904. He was an enthusiastic musician, and was a member of the first committee founded at Geneva for the organization of concerts in the new theatre.

BRIGADE SURGEON HENRY ATKINS, Bombay Medical Service (retired), died at Weston-super-Mare on November 1st, aged 84. He was born in 1830, received his medical education at St. George's, and after taking the diplomas of M.R.C.S. and L.S.A., was for two years house-surgeon of Southampton Infirmary. He entered the Indian Medical Service as assistant surgeon on January 24th, 1855, passing in at the first competitive examination held; became surgeon on January 24th, 1867, and surgeon-major on July 1st, 1873, retiring with a step of honorary rank on December 31st, 1885. Though he was in India at the time of the Mutiny, the *Army List* assigns him no war service. On November 7th, 1856, he became surgeon to the Rajkot Political Agency, and on October 29th, 1857, to that at Bhuj, and on June 2nd, 1858, joined the Indian navy. In 1860 he was agency surgeon at Kelat in Baluchistan, in 1861 civil surgeon of Thana, and on February 6th, 1863, was posted to the 4th Bombay Native Infantry, with which he served till he took furlough in 1869–71. In 1872–75 he was again civil surgeon of Thana, and from 1876 to 1882, when he again went on furlough, residency surgeon of Baroda. On his return he was posted to military duty till he retired.

LIEUTENANT-COLONEL RICHARD CARELESS SANDERS, Bengal Medical Service (retired), died at Farnham, on December 31st, 1914. He was born on July 13th, 1845, educated at the London Hospital, and took the M.R.C.S. and L.S.A. in 1867; he also graduated M.D.Durh., and took the F.R.C.S.Edin. in 1882. Entering the Indian Medical Service as assistant surgeon on April 1st, 1869, he became surgeon on July 1st, 1873, surgeon-major on April 1st, 1881, and brigade surgeon-lieutenant-colonel on October 4th, 1893, retiring on July 13th, 1900. The *Army Lists* assign him no war service. Most of his early service was spent in civil employ in the North West, now the United Provinces, where he attained a considerable reputation as a surgeon, especially in lithotomy and cataract. This was before the days of litholapaxy. When the late Deputy Surgeon-General H. Cayley, professor of ophthalmic surgery in the Calcutta Medical College, and ophthalmic surgeon to the College Hospital, went home on leave prior to retirement, in 1884, Sanders succeeded him in these posts, which he held till the end of his service. During his tenure of office a new ophthalmic hospital, the Shama Charau Laha eye hospital, was built in the grounds of the College Hospital, for the reception of eye cases, which had formerly been accommodated in one of the wards of the main building.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. W. H. Baker, of Boston, organizer of the department of gynaecology in the Harvard Medical School, aged 69; Dr. A. Geyl, of Delft, well known as an authority on the history of medicine, aged 61; Dr. James Sullivan Howe, of Boston, Mass., professor of dermatology in the Tufts College Medical School, aged 56; W. Taylor Johns, professor of physiology and serology in the St. Louis College of Physicians and Surgeons, aged 39; Dr. George W. Lasher, for twenty-five years professor of surgery in the University of Southern

California, Los Angeles, aged 69; Dr. C. W. McMurtry, instructor in dermatology in the College of Physicians and Surgeons, Columbia University, New York, aged 42; Dr. Winfield S. Smith, a former president of the Massachusetts Medical Society, and professor of operative surgery in Boston University; and Dr. José Lopez Villalonga, of Havana, a specialist in nervous diseases, who was assassinated by a lunatic in his consulting-rooms, aged 60.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

Capacity of a One-eyed Stone Cutter.

AN interesting case was decided in the Sheriff Court at Aberdeen regarding the working capacity of a man who had lost one eye by an accident.

The claimant while engaged as a stone cutter was struck in the left eye by a small splinter of steel from his chisel, and thereby lost the sight of his eye, and was totally incapacitated for work. Liability for compensation was admitted by the respondents, Messrs. Coutts and Younie, and this compensation was paid for eight months. At the end of this time the respondents offered to take the claimant back at the rate of 6½d. an hour, which was an advance of ½d. an hour on his previous wages. This offer the claimant declined. An action was raised to reduce the amount of compensation. Sheriff Young, in delivering judgement, stated in connexion with the offer of the respondents to take back the claimant at even a slight advance of his previous wages was an element in the case and might seem to indicate that they were at all events prepared to give him a trial, but just as the circumstances that a workman had been taken back by his employers at wages equal to what he had before the accident was not conclusive as to his ability to earn the amount (Malcolm *v.* Bonhill Coal Company, 1910, S.C. 447) as also his declinature of such an offer did not terminate his right to compensation, and was no bar to his claim; the fact of his capacity or incapacity must be otherwise established. After making some remarks regarding the fitness of one-eyed workmen to continue in their former employment, the Sheriff stated that full vision was necessary in fine stone-cutting work, and he was not able to affirm that the claimant's capacity was now as it was, and that he was fit for his former work either as regards its quantity or quality, and thus able really to earn his former wages. To this the Sheriff added two considerations which he thought relevant. The first was the particular form of labour to which the claimant would require to address himself if he were able to accept the respondents' offer would necessarily put a greater strain on the eye that remained, and subject it to extraordinary fatigue, while, at the same time, there was reason to suppose that its vision was somewhat short of normal. The second point, which the Sheriff considered had been proved, was that unless his former employers were to favour him, the claimant's chances of getting such work would not be rosy; if employed and then discharged by them, he would not easily get employment elsewhere; and he would, in the ordinary labour market, be at a disadvantage with other workmen possessed of normal sight. The Sheriff added that, assuming it could be said that incapacity due to the accident was now truly at an end, it would be of no avail for the claimant to oppose the respondents' application with the plea that he was afraid to incur, and desired to avoid, the risk of losing his remaining eye. This was clear on the authority of Hargreave *v.* Haughead Coal Company, 1912, S.C. 70.

Medical News.

DR. FREDERICK WOLVERSON, of Walsall Wood, has been appointed a Justice of the Peace for the County of Stafford.

MR. H. G. PLIMMER, M.R.C.S., F.R.S., pathologist to the Zoological Society, will begin a course of three lectures on modern theories and methods in medicine, at the Royal Institution, Albemarle Street, W., on Thursday next, at 3 p.m.

DURING the month from November 17th to December 17th the work done through the Central Medical Office of the Dundee Emergency Medical Service was as follows: Average number of consultations per night, 96; number of cases at patients' own homes, 823; maternity cases, 16.

THE Japanese Red Cross Society has dispatched a unit to England to assist the British Red Cross Society. It is composed of two doctors—Surgeon-Inspector J. Suzuki and Dr. T. Oshima—twenty-two nurses, and two clerks. The unit is due to arrive at Liverpool, travelling via America, on January 21st. Similar units have been sent to France and Russia.

IN reply to a question by Lord Tenterden in the House of Lords on January 7th, Viscount Haldane said that inoculation against typhoid fever was not compulsory in the army, and that men might go to the front who had not been inoculated, but the authorities were convinced of its benefits and placed such stress upon it that the man who wished to see active service was at an advantage if he elected to be inoculated.

THE meeting of the Medical Society of London, at 8.30 p.m., on Monday, January 25th, will be devoted to *x*-ray demonstrations connected with the war by Dr. Ironside Bruce, Sir James Mackenzie Davidson, Dr. Humphris, Dr. Harrison Orton, Dr. A. Jordan, and others. On February 8th Sir Victor Horsley will open a discussion on gunshot wounds of the head.

THE National Association for the Prevention of Infant Mortality and for the Welfare of Infancy has arranged an advanced course of lectures on infant care for voluntary health workers, mothers, and nurses. The course will be given at the Royal Society of Medicine, 1, Wimpole Street, W., and will commence on February 1st. Particulars can be obtained from the secretary of the association, 4, Tavistock Square, London, W.C.

THE fifty-ninth course of lectures and demonstrations for sanitary officers arranged by the Royal Sanitary Institute will begin on February 1st, that for school teachers and others entering for the examination in school hygiene on February 22nd, and that for meat inspectors on April 9th. Further particulars can be obtained on application to the Secretary, Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.

THE secretary of All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge Road, Frederick Richard Panter, was charged at the Westminster Police Court, on December 19th, with embezzlement and other offences. On January 10th the prisoner, according to the report in the *Daily Telegraph*, pleaded guilty to the charge of embezzlement, the other charges being withdrawn. The alleged defalcations amounted to £500. The magistrate sentenced him to six months' imprisonment with hard labour.

AS was mentioned at the time, the Executive Committee of the British Dental Association on August 6th addressed letters to the Admiralty and War Office offering to assist to provide dental surgeons to supplement the civilian dental surgeons employed by the navy, and to serve with the army (Regular and Territorial). Many offers of assistance were received from dentists in all parts of the country. The object of the movement has been to ensure that recruits otherwise suitable should not be refused simply on account of defective teeth. In London a great deal of work has been done at the Royal Dental Hospital, Leicester Square; the National Dental Hospital, Great Portland Street (dental department of University College Hospital); and at other hospitals. A Soldiers' Dental Aid Fund has now been established, and is supported by the presidents of the two hospitals mentioned. Communications should be addressed to the operating honorary secretary, Miss Ada Elizabeth Fletcher, 36, Leicester Square, London, W.C., to whom also subscriptions may be sent.

A SUPPLEMENT entitled "St. Bartholomew's and the War" has been published with *St. Bartholomew's Hospital Journal* for January. It contains the names of those connected with the hospital or medical school who are serving in the Navy, Army, and Territorial Force in the present crisis. It begins with a roll of honour, containing the names of two officers, R.A.M.C., and one, I.M.S., who have been killed; of one officer who was lost in H.M.S. *Good Hope*, of four officers wounded, of one missing, of three officers of the R.A.M.C. prisoners of war, of one surgeon, R.N., interned in Holland, and of two officers (one of them of the R.A.M.C.) reported wounded and prisoners of war. It also contains four more pleasing entries, the names of four officers, R.A.M.C., who have been mentioned in dispatches. Thereon follows a list of 36 surgeons in the medical service, R.N., of 41 temporary surgeons, of 17 surgeon probationers, and of one sub-lieutenant of the Air Service. In the Army Medical Service there are three surgeon-generals and three colonels, besides Sir Wilmot Herringham and Sir Anthony Bowlby, who are consulting physician and surgeon respectively with the Expeditionary Force. There is a long list of officers of the R.A.M.C., temporary lieutenants, R.A.M.C., and of officers attached to general hospitals abroad and at home, and to field ambulances. It appears that 16 past or present students have received commissions in the Regular or Territorial Army, and that 19 are, or were, serving in the ranks. The list of officers in the Indian Medical Service is a long one. The publication also contains the names of former nurses and also of employees of the hospital and medical school in connexion with the war.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INCOME TAX.

APEX sold his practice last March, and purchased another in October; during the interval he was not professionally employed. He inquires how his income tax return should be calculated.

*** During the first six months of the year ending April 5th next his income tax liability in respect of practice is clearly *nil*, and as regards the second half-year his liability is one half of the average net profits of his present practice calculated in respect of the three years—1911, 1912, and 1913. If our correspondent is not in possession of information sufficient to enable him to state this average exactly, he should estimate the amount to the best of his ability. The tax in respect of the profits assessable for the first half year is recoverable from his predecessor.

ANSWERS

J. F. R. will find good accounts of chronic gonorrhœa of the prostate, and also of ionic treatment in the following works: *Gonorrhœa and its Complications in the Male and Female.* By D. Watson, M.B., C.M. (London: H. Kimpton. 1914. Price 15s. net.) *The Treatment of Gonorrhœa in the Male.* By C. Leedham-Green, M.B., F.R.C.S. (London: Baillière, Tindall and Cox. 1908. Second edition. Price 5s.) *Syphilology and Venereal Diseases.* By C. F. Marshall, M.D., M.Sc., F.R.C.S. (Third edition. London: Baillière, Tindall and Cox. 1914. Price 10s. 6d. net.) Luys's *Traité de la Blennorrhagie* (English translation by Foerster: *A Handbook on Gonorrhœa and its Complications*). (London: Baillière, Tindall and Cox. 1913. Price 15s.)

CHILBLAINS.

DR. JOSEPH P. BELTON (Nottingham) writes: Chilblains respond rapidly to electrical treatment. Both galvanic and faradic currents are useful. High-frequency brush discharge gives excellent results.

L.R.C.P.ED., M.R.C.S. writes: If "E. G. B." will thoroughly toast the chilblains before a hot fire every evening, she will require no other remedy, and chilblains will lose their terror for her. This is opposed to theories and old women's rules, but is founded on forty years' experience. Boots, but not stockings, should be taken off if feet are affected, and thorough dryness and warmth ensured.

LEUBE'S BEEF SOLUTION.

J. R.—Sir William Osler has been good enough to inform us that Leube's beef solution (Osler's *Practice of Medicine*, 1913, p. 496) consists of 4 or 5 oz. of scraped beef, 2 oz. of fresh, very finely chopped pancreas, and 5 or 6 oz. of hot water. It can be diluted if necessary and flavoured with a little salt. "I do not know," Sir William writes, "that it has any advantage over the ordinary meat juices, but it can be made very palatable, and is very nutritious."

LETTERS, NOTES, ETC.

ARCTICS AND GOUTIES.

E. H. writes: With reference to the remarks of your special correspondent on "Arctics" in the trenches, I should like to say that when I was in Colorado, twenty years ago, the name was always applied to what in Swiss winter resorts are now known as "Gouties"—that is, india-rubber overshoes lined with flannel, and just covering the boot. So far as I know, it was the ordinary name in the United States. I only write this because any confusion as to the exact character of our soldiers' outfit is undesirable when many people are contributing. Gouties, though a first-rate protection against snow and cold, would be useless in deep, heavy mud except for standing still.

EXAMINATION OF ABDOMINAL VISCERA.

DR. A. L. BENEDICT (Buffalo) writes: Referring to the article on examination of abdominal viscera, by Mr. Cantlie, in your issue of 1914, vol. i, p. 414, in which the location of organs by tuning-fork auscultation is described, I beg leave to mention my description of this method published in the *Transactions of the Medical Society of the State of New York*, 1895, with illustration of stethoscope and tuning-fork used. I am still carrying this tuning-fork, but prefer a heavier instrument, secured in Paris and mounted in hard rubber, in 1908.

THE SANITARY EDUCATION OF THE ARMY.

HUXLEY, who was pre-eminent as a popular lecturer, used to tell the following story of himself. On one occasion after he had delivered a lucid discourse on the brain, he stayed, as was his custom, to clear up any difficulties of anxious learners who might care to seek for a solution at the fountain head. A lady presented herself who, after complimenting the lecturer on the way in which he had made abstruse things clear, said there was just one little point which she had failed to grasp: Was the cerebellum outside or inside the skull? Medical officers who are instructing their men in sanitary matters must often find themselves in a like predicament. A non-commissioned officer in a camp in Surrey sends us the following amusing "howler": A medical officer was examining the men of a field ambulance for their qualifications for the "corps pay" of the Royal Army Medical Corps. He asked a candidate, "What would you do with an enteric stool?" "Scrub it, Sir," was the prompt reply.

"THE APOCALYPTIC KEY."

THE study of prophetic writings has always been a hobby of the few, but among the by-products of the war is an extension of the interest in such studies. One evidence of this is the publication of a small book with the title *A Warning and an Encouragement to England: Current Events Long Ago Predicted.* It is written for laymen by a member of the medical profession, and is an epitome of Robert Fleming's *Apocalyptic Key.* Fleming was one of the seven children of the minister of Cambuslang, Clydesdale, who was ejected at the Restoration, and eventually took charge of the Scots Church at Rotterdam. His son went to school in Edinburgh, and afterwards attended the universities of Utrecht and Leyden. In 1694 he succeeded his father at Rotterdam, and four years later accepted a call to the Scots Church in Founder's Hall, Lothbury. While minister to that church he published his book, in which he calculated from the Apocalypse of St. John that in 1794 the French dynasty would be overthrown, that in or about 1848 the Papal power would receive a severe check, that about 1900 the Turkish power in Europe would be destroyed, and that the millennium, following on Armageddon, would begin about 2000. The manner in which Fleming made his calculations is clearly and briefly explained by M.D. The book is published by Charles J. Thynne, Great Queen Street, London, W.C., price 1s. net.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

SURGICAL NOTES FROM A TEMPORARY CLEARING HOSPITAL AT THE FRONT.*

BY

ARTHUR A. MARTIN, M.D., F.R.C.S.EDIN.,

SENIOR SURGEON, PALMERSTON NORTH HOSPITAL, NEW ZEALAND; SURGICAL SPECIALIST, No. 6 GENERAL HOSPITAL, ROUEN; LATE ATTACHED FIELD AMBULANCE 5TH DIVISION, BRITISH EXPEDITIONARY FORCE.

DURING the recent fighting in France the clearing hospital has taken its place as a definite unit in the medical organizations. For obvious reasons the clearing hospital could not fulfil its destiny during the retreat of our army from Belgium to the south-east of Paris. When our army took the offensive and drove the Germans over the Marne and across country to the Aisne, it was possible to make use of clearing hospitals. The clearing hospital belongs to the line of communication. It stands between the field ambulances and dressing stations at its front and railhead and its hospital train behind. Its function is to receive all the wounded from the fighting line and transmit them to the hospital train *en route* to the base. Motor ambulances in many cases to-d y co vey wounded direct from the regimental dressing station to the clearing hospital without leaving them at the field ambulance dressing stations. Whether the clearing hospital will remain as at present constituted or will be modified or abolished, I am unable to say. It is at present in swaddling clothes, and may require some careful nursing. In addition to being a "rest house" on the *via dolorosa* of the wounded, it is also a sieve. It has to sift the lightly wounded from the seriously wounded and the serious case from the desperate case. In this process of sifting a large collection of wounded men it discriminates between those who are fit to be sent to the base at once and those who must remain for a longer or a shorter period. Many claim that the clearing hospital is not a hospital *per se*, but holds a purely administrative position. I feel sure that it will become more and more a hospital as time goes on, and its surgical and medical equipment will necessarily undergo a complete reorganization. To-day its equipment is little more than that of a field ambulance. It is not equipped to deal with extensive and serious operations, and yet serious operations have been performed and will necessarily continue to be performed at the clearing hospital.

The transportation of the wounded from the front is now being magnificently carried out by the motor ambulances. The motor ambulances during this war can go to any place that a horse ambulance can. All the transportation is carried out on roads behind our front to-day, and also during the fighting on the Marne and Aisne. During the Marne and Aisne, and latterly in Northern France and Belgium, I was attached to a field ambulance, and not at any time was there any occasion to bring the horse ambulance of this unit across a field or through open country. They steadily kept to the roads, and the motor ambulances can do this also.

It appears to me, therefore, that owing to the presence of motor ambulances the field ambulance of the future will be concerned entirely with the evacuation of the wounded of their respective brigades to the clearing hospital. The clearing hospital will therefore become a more important unit, and need not be moved any nearer to the front than it is now. Tuffier in his report on the French clearing hospitals advised that the personnel should be carefully chosen, and that each unit should have a good surgeon of ripe judgement ready to meet with any surgical emergency. The same advice applies to the British clearing hospital. The brief review of a series of cases under treatment at one "temporary" clearing hospital will serve to illustrate my contention that the clearing hospital should at any moment be prepared to handle serious cases requiring dangerous and immediate surgical interference.

It has been said that to-day we are treating wounds of an eighteenth century character with twentieth century technique. The eighteenth century battle wounds were inflicted at close range, so are many of the wounds inflicted to-day.

At Cressy and Agincourt both sides used arrows; our aviators to-day carry sharp arrows, which they spin down on the enemy below. Bombards were used at Cressy, and bombards are used in the trenches to-day. Hand grenades were employed in the Peninsular war, and are employed to-day in the War of the Nations. Our men attack the enemy and the enemy attack us with bayonets, as in the days of the Crimea and the Peninsula. Our riflemen pick off the enemy by long distance fire, and also fire at close range into solid masses of them.

The hardships of the Crimean trenches—cold and frost-bite—are repeated on the Yser. Gangrene was rampant at one time in the Peninsula amongst the French and British wounded, and it has startlingly reappeared to-day. Historians of that day refer to it as hospital gangrene, or the gangrene so common after any surgical operation or wound of that time. It may, on the other hand, have been the same gas gangrene that has ominously complicated so many wounds in France.

FIELD AMBULANCE AND CLEARING HOSPITAL.

In the second week of October the field ambulance to which I was attached arrived at a certain town in the North of France. The brigade which this ambulance served was very soon in touch with the enemy. The fighting rapidly developed, and assumed a most sanguinary and stubborn character. In twenty-four hours we had a very large number of wounded on our hands. The head quarters of the ambulance occupied a large chateau behind the brigade, and within reach of enemy shell fire. A section of the ambulance, consisting of three medical officers and the equipment of one section, was sent to the town four miles further back with orders to prepare a building to act as a temporary hospital, or temporary clearing hospital, or a temporary dressing station. This section took over a large school, cleaned and prepared the rooms, which were large and lofty, and covered the floors with straw. No beds were then available. This temporary hospital had not to await events; the events were there at once in the guise of crowds of recently wounded men. Motor ambulance after motor ambulance dashed up with its load of wounded. These were rapidly lifted out and conveyed into the building; then away went the ambulance to bring in more wounded. Many and large as were the schoolrooms, they were quickly filled to overflowing. The corridors and porches were covered with straw, and this straw was soon covered with rows of wounded men. The paved courtyard under the verandahs was covered with straw, and again covered with wounded. Those densely-packed rooms during that long night were a lurid and impressive picture of the devastation of war. As more and more wounded arrived we had to pack them closer and closer, gently push one this way, lift another there, edge a third one closer still. So it went on. We took in a number of French wounded, and put them alongside our own men. All the wounded were glad to get in out of the pouring rain and be comfortably installed on dry, clean straw, and covered with blankets.

All these wounded arrived with the first field dressing applied. Some were applied by the surgeon with the regiment, some by orderlies, some by field ambulance officers, and some by the comrades of the wounded man. At first we were busy "packing" our wounded as comfortably as we could. Then as soon as possible we performed the dressings where necessary, differentiated our seriously wounded from those lightly wounded, and carried on any immediate surgery required in a small room kept for the purpose. All these wounded had to be fed, blankets had to be provided, and when we began to get things in better running order more wounded arrived. Our wounded behaved like brave men, and took their gruelling like good sportsmen. Next day the pressure was relieved by the opportune arrival of a hospital train, and we were enabled to evacuate 250 of the cases fit for transport. More doctors and some dressers were sent to help, and the vacant places of the 250 sent away were soon occupied by 250 fresh cases.

As the pressure for beds showed no sign of diminution a search was made for another building to hold wounded. This was found at the Hôpital Civil et Militaire, a permanent hospital of the town of X———. The basement floors were full of French wounded. There were two very large empty rooms or halls on the top floor of the hospital. Each room was capable of holding 70 patients at least. A good lift was available, by which a man on a stretcher could be

* A paper read at a meeting of "No. 6 General Hospital Branch" of the British Medical Association on January 10th, 1915.

conveyed from the basement to the top story. The French authorities offered me the use of these rooms for our wounded men, and also gave me the use of three side rooms for wounded officers. But, greatest boon of all, I was allowed the use of the two operating theatres of the hospital. Both of these theatres were modern and beautifully equipped, with good lighting, natural light and gas, glass tables, a complete set of instruments, sterilizers, towels, aprons, and modern washing basins with foot taps. It was presided over by Sister Ferdinand, a trained nurse with rigid antiseptic and aseptic principles. The nursing at this hospital was performed by Sisters of Mercy, all trained and skilful nurses, and the gentlest and most helpful people one could meet. The Reverend Mother of the Order was the Matron of the hospital, and was also a trained anaesthetist, being able to administer chloroform or open ether. In addition two of the nursing sisters were Irish nuns who belonged to this French Order. The matron detailed these two Irish sisters to work with the British wounded. The women of the city came eagerly also to our assistance, and in a *coup d'œil* had made 180 straw mattresses, provided blankets, hot water bottles, and other adjuncts to sick rooms. I reported all this to Surgeon-General Porter, and that able officer quickly grasped the possibilities of this hospital. He decided that all the very seriously wounded should be sent here, and also those cases requiring immediate major surgical operations. A real clearing hospital now arrived in this town and took over a large college for a hospital. Up to this time, be it noted, one section of a field ambulance with its personnel and equipment, and assisted by five or six medical men detailed by Surgeon-General Porter, had carried out all the duties of a clearing hospital. This is a proof, if any were needed, of the wonderful elasticity and adaptability of the medical service at the front.

The heavy list of casualties was not expected, but at once efficient means were arranged to meet it. All the wounded were housed in a comfortable building with clean straw. All were dressed, all were fed, many were operated upon. This first building was not found sufficient, so another building, the French hospital, was requisitioned, and then the clearing hospital proper with its equipment arrived. Difficulties had only to be recognized to be at once overcome. All three buildings were quickly filled, and between 6,000 and 7,000 wounded and sick were passed through these three clearing hospitals in three weeks.

Sir Anthony Bowlby constantly visited the hospital and saw the patients. I am indebted to him for much valuable advice and help, and also for his cheery encouragement at all times. To this hospital very many cases of the formidable gas gangrene were sent. Having the modern operating rooms, trained nurses, and all necessary surgical equipment, one was enabled to treat and observe the cases in excellent surroundings. The military situation had constantly to be borne in mind, and all the cases were evacuated as quickly as was consistent with safety. One would have liked to have kept many of the men much longer, but the fighting front must be kept as clear of wounded as possible. At this hospital many of the operations were performed under conduction anaesthesia and infiltration anaesthesia. In all the work one was loyally helped by the Reverend Mother and the nursing Sisters, also by the Abbé Bouchondhomme, a French priest, the *aumônier* to the hospital. This splendid priest spoke English and German as well as his own native tongue, and was of great assistance not only to our British wounded but also to the wounded German prisoners in the wards. I am glad to know that the work of the Reverend Mother and the Sisters has been brought to the notice of Her Majesty Queen Alexandra and of the President of the French Republic.

The wounded on arrival were speedily placed on the straw mattresses, quickly undressed by the Sisters, and covered with warm sheets and blankets and surrounded with hot bottles. Basins of hot water and soap were brought round and the wounded were washed and cleaned. Their lice-infected shirts and drawers were sterilized by dry heat. It was the finest example of *l'entente cordiale* to see the French nuns taking off the muddy boots and putties, cutting off blood-stained clothing, washing and cleaning the wounded, slipping on warm, dry shirts, and tucking the blankets and pillows comfortably. Others appeared with hot soup, hot coffee, red wine, and hot gruel. We occupied this hospital for some weeks. One day a German aeroplane dropped a bomb into our courtyard, and another day one on to a house near the gate of the hospital, and several into the central square in the town. One night a "Black Maria" burst between the hospital and the big church in the town, and it was then considered advisable to evacuate all our wounded and establish a clearing hospital further back. This was done, and shortly afterwards the town was freely bombarded by the German artillery beyond X——.

GAS GANGRENE.

Gas gangrene was a formidable complication with many of the wounded admitted at this time. If the case reached us soon after the onset of gangrene a cure could almost certainly be promised from the gangrene. If the case arrived late, when the limbs were dead, amputation was the only "conservative treatment" that one could adopt. Many of the cases sent to me were beyond any hope of recovery and soon died. On one day I saw in one clearing hospital in the town 4 cases dying from gas gangrene, in the other clearing hospital 2 cases *in articulo mortis* from the same trouble, and in my own one other case. Seven cases dying in one day from gas gangrene! None of these had been operated upon. This will give some idea of the formidable character of this complication.

In these notes it must be remembered that none but the very serious cases were sent to me. Many cases of gas gangrene were evacuated early and sent to the base hospitals. Most of my cases came from one or other of the clearing hospitals in this town. Some arrived direct from the field ambulances. In every amputation for gas gangrene performed at this hospital the limb was absolutely dead and beyond the possibility of any treatment short of amputation. All the patients were in an extremely grave state. Their general condition was in every case very bad. I cannot picture any worse surgical subject than these men with gas gangrene. Numbers of them were in too low a state to admit of a general anaesthetic, and here the necessary operations were performed under conduction anaesthesia.

Dr. F——, an eminent French surgeon in charge of the French wounded in this town, saw many of my cases before, during, and after operation. I had the privilege also of seeing his gangrene cases at this time. He had amongst the French wounded the same experience as mine. Both of us had German wounded to treat, and here also we met dead limbs from gas gangrene. We were both of the opinion that the Germans at this place were also up against a very virulent "culture" here, that of the anaërobe. Some wounded French refugees were brought into this hospital at this period and some of these had gas gangrene. The serious character of gas gangrene at this time could only be recognized at the front. The serious cases were retained here for operation. I am of the opinion that all cases of gangrene should be treated at the front at the nearest clearing hospital, and that no case should be sent to the base till the gangrene has disappeared, subject, of course, as always, to the military situation. All the wounded admitted to this town—French, British and German—came from the same area of the battle front.

In many of the cases of gas gangrene bones were badly shattered and pulverized, splinters of bone were lying in surrounding muscles, or had been driven out through the skin. Important nerves were injured, torn, or compressed in many of them. Important blood vessels were frequently, but not invariably, injured. In some, big vessels had been torn through, in others arteries and nerves were compressed by displaced fragments of bone. The wounds were dirty in most cases. The skin was black and lacerated, and muscles were extruded and covered with coagulated blood clots. Wound full of blood clots, and containing at times pieces of khaki cloth, shrapnel fragments, nickel casing of bullets, gravel, and, in two cases, bits of rock. There were, however, cases in which the bullet had drilled an apparently clean hole through a joint, like the wrist or ankle, without much apparent destruction to bone. In such cases one would not expect gas gangrene; yet it sometimes occurred. One eminent surgeon stated that he had not seen gas gangrene anywhere save in the extremities. This observation was not confirmed either by myself or by Dr. F——. I had amongst my patients two cases of gangrene of the thoracic wall. In one there was a bad

shrapnel wound of the axilla. One rib was badly shattered, and the muscles of the side of the chest extensively torn; gas gangrene was present over the shoulder, and extended across the thorax as far as the sternum, and well over the clavicle. In the second case a rib was grazed by shrapnel, and the superjacent tissues badly torn. Gas gangrene had spread up and down from this wound. In another case a wound (shrapnel) above the crest of the ilium exposing the bone was admitted with gangrene of the abdominal wall and back. A shell wound exposing and injuring the mastoid process was followed by gangrene of the scalp and side of neck.

Gas gangrene is encouraged by tight bandaging and many of the cases had a bandage applied all too firmly. When a man is wounded in a trench his mate frequently applies the first aid dressing, and fixes it like a tourniquet. This could perhaps be obviated by making the bandage of the first field dressing a little wider than at present. A narrow bandage tends to become cord like.

All the cases of gas gangrene had a very penetrating putrefactive smell, which is quite characteristic. The area of advancing gangrene is preceded by an oedematous zone which fades in one direction to the area of healthy skin and in the direction towards the wound to a dullish injected area which crackles on palpation. Nearer the wound the skin is purplish and dark. Around the edges of the usually jagged wound the tissues were black or greenish-black. Extravasated blood undermined the skin all round the wound. The wound itself was full of blood clots. The limb distal to the wound was swollen, greenish-black, covered with green blebs, cold, anaesthetic, and pulseless in the "dead" limbs. Frequently toes and fingers were quite black. In other serious cases there might be a little warmth, or a slight pulse. If any case showed either of these two favourable signs, an attempt was made to save the limb, and was in many cases successful. The gangrene did not spread up a limb in an even circle. For example, it might reach anteriorly to the lower third of the thigh, and posteriorly be at or well above the fold of the buttock. This was due to the extravasated blood lying more towards the dependent parts and to hypostasis. In the upper arm the gangrene travelled rapidly up the inner side along the course of the big blood vessels. The invasion spread upwards; very little crepitation was felt below the site of the wound. The circulation below seemed to be rapidly cut off, and that portion of the limb underwent the changes associated with a complete circulatory block. The emphysema travelled always towards the healthy living tissues. Wounds of the thigh with shattering of the femur, wounds of the elbow-joint and of the metatarsus were very prone to develop this gangrene. Some of the cases were admitted within thirty-six hours after receipt of the wound, with well-marked gangrene.

The flaps in all the amputations performed were not closely coapted. Two or three stitches were employed to hold them loosely together. Drainage had to be free and easy, for many of the flaps were made from tissues already crepitating but not gangrenous. In two of my cases the flaps sloughed. This was due to conservatism in attempting to preserve as much as possible of an upper arm in one case and of a forearm in another, and to employing devitalized flaps. Every attempt was made to secure strict antiseptic treatment. Gloves were changed after the amputation had been performed and before the stump had been treated. Hot antiseptic lotions, principally carbolic lotion (1 to 60), were applied to all exposed surfaces. Iodine catgut was employed for ligating the vessels. In spite of all precautions many of the wounds became septic, and this could only be expected of tissues so gravely involved, and with men who were so obviously ill. Every case before operation was given antitetanic serum. As a matter of fact, every wounded man at these hospitals, no matter how slight his wound, was inoculated with antitetanic serum. All the drained amputation wounds were dressed at the end of twelve to eighteen hours with carbolic dressings (1 to 60), and cotton-wool was freely employed to cover the whole area of the wound and the regions well beyond.

All of the cases were treated with hydrogen peroxide injections. I could not obtain any hydrogen peroxide from British sources during the first week at this place, but obtained a supply from French sources. How I obtained it I will not proclaim from the housetops. At this time hydrogen peroxide was worth untold gold. Hydrogen peroxide is acid in reaction, and it was made neutral or slightly alkaline by adding some sodium bicarbonate. It was tested with litmus paper before being used. Some of the peroxide we had was in the form of "perhydrol," and this being twice the strength of the usual *B.P.* strength, was diluted. I had at this time no information about the correct method of employing the peroxide or the dosage to use in injecting. The method I employed was as follows: The needle of the large syringe—already full of the peroxide—was inserted about two fingerbreadths above the line already indicated. Multiple punctures were made to surround the limb or affected area with this zone of hydrogen peroxide. Next, the needle was inserted through the crepitating area and into the subjacent muscles and fascia. Next, the long infiltrating needle (for infiltration anaesthesia), with a blunt point, was passed in till it met the bone. By manipulating this needle one could inject all the tissues surrounding the periosteum. I am of opinion that this is necessary, for from the observation made on many cases of amputation, a greenish mucoid lymph was observed about the bony attachments of the muscles. I did not know whether this was of an infective nature or not, so treated it as if it were. A dissection of the bone at the upper part of a removed limb showed this zone surrounding the periosteum in every instance. This course was carried out in all the "saved" limbs at this hospital.

The wounds in every case received very careful attention. All blood clots were carefully swabbed away. All splinters of bone were removed where possible. In many cases splinters with high attachments had to be left alone for fear of lacerating healthy tissues and opening new parts for infection. Some of the cases sent down would therefore require future operations for the repair of the broken bone. The aim was to cleanse the wound, establish a free drainage, and stop the spreading gangrene. The after-treatment of these cases was for a base hospital, and not for a clearing hospital so near the front. The edges of the wound were as a rule torn and fragmented, and were carefully cleansed or rawed. Free drainage was most important, and this was effected with rubber-tubing drains. The majority of the wounds were cleansed first with hot carbolic lotion 1 in 40, then dried with gauze, then packed with gauze wrung out in potassium permanganate lotion. Stitches were rarely used. Most of the wounds were sent down "gaping." In some cases strapping was employed to keep the gauze and tubing in position during the transportation to the base.

As far as possible one endeavoured to treat the wound gently and to avoid traumatizing the tissues and encouraging shock. The after-treatment of these patients was very important. Every means had to be taken to prevent and to combat shock. Salines were given by the rectum. Saline was infused into the axillae and abdominal wall. The onset of pain and restlessness was treated with morphine. Heat was applied in the form of hot water bags to the back of the neck, the top of the head, to the epigastrium, and to the limbs. Fall in blood pressure was treated by pituitary extract and caffeine injections, and by position—elevating foot of bed, etc. Conduction anaesthesia is mentioned again in this connexion to emphasize its value as opposed to general anaesthesia. These cases of gas gangrene were all bad surgical subjects, for in addition to the gangrene, loss of blood, privation, and exposure subsequent to being wounded, their wounds were dangerous and mutilating, and the transportation to the hospital was, sometimes, necessarily an agonizing ordeal. This will show that our clearing hospitals at the front should be well and thoroughly equipped with all modern appliances for the treatment of shock and a staff fully alive to this clamant necessity. A clearing hospital cannot to-day remain as an administrative unit only.

CASE I.

Private B., sent from clearing hospital for amputation of arm. Humerus badly smashed at lower third, large gaping shell wound, full of foul blood clots and exuding sanguineous serum, forearm and elbow-joint black and gangrenous and quite dead. Crepitation present to middle of deltoid and into axilla, extended higher up axillary side than outer side. Amputated about level of deltoid, flaps cut through crepitating tissues, which were sodden and very slightly vascular. Flaps loosely approximated with three silk gut stitches. Injected hydrogen peroxide beyond infected area and alongside shaft of bone and into

muscles. Watched case for seven days, then evacuated, gangrene cleared, flaps healthy, wound suppurating; shock present after operation.

Examination of the removed limb showed that the brachial artery and veins were crushed above elbow-joint.

CASE II.

Private M. (Wilts). Shattered elbow-joint by shrapnel; wound received seventy-two hours previous to admission. Crepitating to upper third of upper arm. Hand and forearm completely gangrened. Wound very foul. Amputated at lower third of upper arm. After-history to eighth day uneventful, was then evacuated. (Hydrogen peroxide carried out in this and all the cited cases of gangrene.)

In the arm removed the vessels and nerves at the elbow-joint were badly crushed. General condition of this patient very bad on arrival. Bad pulse, cold, restless. In spite of general bad state was operated on one hour after arrival.

CASE III.

Captain X. (Devons). Shrapnel wound left elbow-joint. Gas gangrene well up the upper arm and well down the forearm. Crepitation over deltoid and into the axilla, also extending across chest and round to the back. Opened the wound up freely and removed splintered bones from lower end of humerus and upper part of radius and ulna. Cleaned out all clots, drained through and through with rubber tube. Peroxide freely injected above and below wounded joint.

The circulation was present in the forearm, but was very feeble. He had lost sensation in hand and fingers, and could not move the parts voluntarily. He will probably get a good arm with a somewhat stiff joint. Owing to the escape of the important vessels, this limb was saved, in spite of the extensive area of gangrene. He was doing well twelve days after operation, but was septic.

CASE IV.

Private J. R. (Royal Fusiliers). Shrapnel wound, right lower jaw, three days before. Jaw smashed badly from angle of jaw to canines. Gas gangrene present over side of neck and over clavicle. Smell very bad. Drained freely. Injected hydrogen peroxide freely into various fascial planes of neck and submaxillary regions.

This case was doing fairly well when sent to the base six days afterwards. The crepitating gangrene had disappeared, but a deep incision had to be made on the fourth day into the tissue at the angle of the jaw for suppuration. He, of course, will require plastic surgery for repair of the jaw later on.

CASE V.

Private P. (Northumberland Fusiliers). Wounded forty-eight hours previously in right foot and ankle; metatarsus pulverized. Wound full of dirty and foul-smelling blood clots. Toes and forepart of foot quite dead. Gas gangrene to about mid-leg. Crackles felt over popliteal space. Amputated at upper one-third of leg. Injected hydrogen peroxide freely round popliteal space, and into posterior flap, and all round knee-joint.

Examination of the removed foot showed extensive destruction of vessels and nerves round the ankle-joint.

CASE VI.

Private I. (Royal Fusiliers). Left hand shattered by shrapnel three days before. Hand and fingers dead. Wound foul smelling. Gas gangrene present at wrist, and crepitations present to middle of forearm. Amputated through middle of forearm; the flaps looked very doubtful. Injected with peroxide about site of amputation.

CASE VII.

Private E. Bullet wound of right upper arm; entrance wound through deltoid posteriorly, exit middle of upper arm anteriorly. Humerus badly shattered; wound accidentally inflicted by a French bullet seventy-three hours before admission. The gangrene here had extended considerably; the whole axilla was crepitant, and crepitations were present on the whole of the right side of the chest wall, front and back, and well over the acromion process and clavicle into the cervical region. The man's condition was very grave. He was very cold, and was vomiting, had a very feeble pulse, and was wandering a little. An attempt was made to improve his general condition before operation by giving salines hypodermically and rectal injections of coffee, brandy, etc. The arm was removed at shoulder-joint, only flap possible was one from back. Deep incisions were made through the infected area over chest and neck, back, and hydrogen peroxide pumped in. His condition was very serious all night, but improved towards morning and rapidly during next day. Was able to take champagne and other stimulants. On dressing the wound, one flap was found to be quite dead; it had not been stitched at all, only bandaged over. This flap was then cut off, the part being quite insensitive. Great improvement from this till the seventh day. All signs of gangrene had disappeared. Wound, although quite uncovered by any flap, was looking clean and healthy. He developed septic pneumonia on the seventh day, and died on the tenth day.

This case was interesting but unfortunate. The patient made a magnificent rally from the serious operation performed, when he was being smothered with a rapidly spreading gangrene, which of itself would have killed him shortly. It also shows that in some circumstances one may be unable to get a flap to cover an exposed disarticulated joint. Had he not developed the pneumonia, he would have probably recovered from a very extensive and formidable gangrene. In this case deep incisions were made in the crepitating area, and the wound naturally provided also a very free drainage.

CASE VIII.

Private P. (Northumberland Fusiliers). Shell wound, foot and ankle, received forty-four hours previously. Gangrene to knee-joint; crepitations to middle of thigh; amputated at lower one-third of femur; loosely coapted flap. After-history good.

Ankle and foot absolutely smashed. All vessels destroyed. Wound very foul.

CASE IX.

Lieutenant X. Bad lacerated shrapnel or shell wound of left leg. Tibia fragmented at lower third. Fibula fractured, but not comminuted. Large entrance and exit wound. Sent from clearing hospital with note, "Gangrene foot and ankle, probable amputation." This officer was very excited and restless and very upset at the idea of losing his limb. His foot was swollen, livid, and cold. Crepitation was present to the popliteal space, but very little anteriorly. The wound was very foul and full of blood clots. Smell typical. Edges of wound livid. Faint circulation felt round ankle-joint. Wound cleaned, under anaesthetic, with carbolic lotion; peroxide injected in the usual way. Removed splinters of bone. Drained wound with tube and packed with gauze wrung out in potassium permanganate. Wound dressed twelve hours after operation with permanganate gauze. Foot looked livid still, but circulation was better. Sir Anthony Bowlby saw this case with me on this day, and we were both satisfied, but not over-confident, about the progress as regards the limb. Next day the wound was oozing blood fairly freely. The following day Sir Anthony saw the case again. The wound was then very inflamed, but the gangrene had completely disappeared. When the patient was evacuated the wound was suppurating freely and was still in a very bad condition, but one felt very hopeful that the limb would be preserved.

CASE X.

Captain T. Shrapnel wound forearm, received forty-one hours previously. Ulna pulverized from lower part of olecranon to lower end of bone. Radius intact. Wrist and elbow joints intact. Wound of forearm very ragged and torn, muscles extruding; full of blood clots, and commencing to smell. Crepitation present round upper part of wound, edges of wound black and sodden. Under anaesthetic, removed a large number of pieces of splintered bone lying embedded in the muscles. Injected hydrogen peroxide into the tissues round elbow-joint and forearm. Drained wound freely after cleansing well with carbolic lotion.

The gangrene disappeared completely, but the wound became profoundly septic.

CASE XI.

Major X. Bullet wound of left forearm, shattering radius and ulna. Entrance and exit wounds very large. Evidently wound at close range. Shot twenty-six hours previously. Characteristic gangrene smell and gas gangrene present at an early stage round the wound. Veins distended at wrist and hand, and fingers and hand much swollen. Here the wound was freely opened, drained and cleaned, and hydrogen peroxide injected into the tissues all round the wound. All sign of gangrene had vanished next day, but a plastic operation will be required later to unite the widely separated ends of the splintered radius and ulna.

CASE XII.

Lieutenant S., sent from clearing hospital for amputation at hip. Was shot through the right thigh four days previously. Bullet entered in front, about middle of thigh, and emerged posteriorly at gluteal fold, badly smashing the femur in its course. Entrance and exit wounds large; exit wound very jagged. Delirious, restless, pulse very poor; temperature subnormal. Gas gangrene present. Crepitations up to above the crest of ilium, and extending on to lumbar region. Smell almost overpowering. As there was some slight circulation present round the knee and ankle, an attempt was made to save the limb. Usual procedure adopted; free drainage, hydrogen peroxide, etc. The patient's general condition rapidly improved after the operation, and on the second day after the gangrene was disappearing, and there was a free pulsation in the limb. He was then evacuated. Although the gangrene was disappearing, it was still a question whether the limb would be saved, as the wound was an unusually severe one. He was evacuated so early owing to military reasons.

CASE XIII.

Private R. (N. Lancs.). Struck on crest of right ilium by a bullet at short range, two days previously. Large wound of entrance; no exit. Wound ragged and gaping, and full of splintered bone. Crepitations all over gluteal regions; oedema of thigh muscles; foul smell. Opened wound up freely, cleaned with carbolic and permanganate, and made two counter incisions in buttock for drainage. Removed bullet lying at upper part of sciatic notch. Injected hydrogen peroxide freely all round the infected area. Healing rapidly when sent down to base.

The following case illustrates the danger of overlooking tourniquets:

CASE XIV.

Private —— (Wilts). Admitted on October 25th, 1914, with complete gangrene of whole of right arm from shoulder to fingers. Bullet struck upper arm in front where axillary becomes brachial artery, tearing artery. Emerged through

posterior wall of axilla. A strap tourniquet was applied round the axilla and shoulder to stop the sudden haemorrhage, covered over with cotton-wool and arm bandaged to side. This was done at the front. The man was sent back to a field ambulance, where the tourniquet was unfortunately overlooked, and the upper arm and shoulder covered with more wool and bandaged. He was then sent to a clearing hospital and then transferred to me. It was then fifty-four hours after the tourniquet had been applied. The arm was dead, and the condition of the man was so bad that we thought he would die in a few hours. The tourniquet was removed, and the torn vessel was easily reached and ligated. Circulation had ceased, and on removing tourniquet no bleeding occurred. Eight hours afterwards the condition had slightly improved, but was still desperate, and under conduction anaesthesia the arm was disarticulated at the shoulder-joint. For several days following he lay at the point of death. Then he made an astonishing improvement, and, although very weak, was getting hourly stronger when he was evacuated.

This case was not one of gas gangrene, but was due to tearing of the axillary artery and a forgotten tourniquet. Sir Anthony Bowlby saw this case with me before amputation, and also saw him two days afterwards, and on both visits the man's outlook seemed hopeless. His recovery was due to the great attention and skill of the French nursing Sisters who nursed him constantly night and day.

These histories are illustrative of the series of cases of gas gangrene at this clearing hospital at this period. One man had secondary haemorrhage following an amputation below the knee. The flaps necrosed, and sloughing occurred in the deeper structures. The femoral artery was ligatured in a hurry under local anaesthesia, and later the limb was amputated above the knee-joint.

In every case of amputation performed there was nothing else to be done in order to save life. The limbs were dead. In many of these cases important blood vessels were torn, crushed, or compressed, and when the vessels were injured the gangrene developed more quickly and spread more rapidly. It is regrettable that one had to perform so many amputations at this time, but it is a matter for congratulation that so many lives were saved. One of the cases (not above recorded) died suddenly twelve hours after a disarticulation at the shoulder-joint. Another one (not above recorded) died three days after amputation at the hip-joint, from gangrene which progressed steadily on to the perineum and lower abdomen, even after free drainage, incisions and peroxide injections. There were in addition five deaths from gangrene following wounds of the extremities. These five were admitted in a dying condition, and passed away two to four hours after admission. One could do nothing for them surgically. Other cases died at the other clearing hospitals in the town. It was a sad and mournful experience seeing these fine young men die.

HEAD WOUNDS.

Scalp wounds were common, from a simple graze to an extensive tearing. As a rule, all these cases did very well.

Wounds involving injury to the bony wall of the brain were also very common. Compound depressed fractures with extradural haemorrhage responded well to treatment by trephining, elevation of fragmented bone, removal of spicules of bone sticking on to brain surface, controlling haemorrhage, and removing blood clots. More extensive wounds with laceration of brain substance, loss of brain tissue, or with fragments of bone deeply embedded in the brain, did very badly.

The head wounds in all these cases were carefully cleaned, fragments of bone removed, and free drainage provided, but the results were very bad. Hernia cerebri and septic meningitis rapidly developed and the symptoms speedily progressed. These brain cases were the most distressing of all. The men died slowly, were very restless, constantly screaming and shouting and struggling, throwing off their blankets and rolling off their mattresses. They required constant attendance for these things, and for retention of urine, etc. Eleven shell wounds of the head were admitted with laceration of brain substance and hernia cerebri; all died. One was admitted for middle meningeal haemorrhage, was operated on, and recovered. One was admitted for a shrapnel wound of vertex; the shrapnel made a gutter fracture over the longitudinal sinus and caused severe haemorrhage. This patient was trephined, and when evacuated was doing well. With one exception, all the operations on the skull were performed under local anaesthesia.

WOUNDS OF ABDOMEN.

Shell and shrapnel wounds of the abdomen frequently lacerated the abdominal wall to such a degree that bowel prolapsed from the wound. Two cases were admitted with large loops of small gut protruding from wounds of the abdominal wall. In one the protruding bowel was plastered with fine gravel stones. In another the loop of the bowel protruding was gangrenous. These cases were cleaned up as well as possible, the gut repaired and returned and the pelvis drained. All died.

In one large shell wound to the left of the umbilicus a mass of omentum protruded. This was cleaned and gently pushed back, and held to the peritoneal edge with two fine catgut sutures. The wound was drained. This man recovered.

CASE XV.

Corporal W., admitted with shell wound of right infracostal region. The liver was exposed in the gaping wound. Shock bad, haemorrhage severe. The wound was packed and an attempt made to rally him, but he died in four hours.

Examination after death showed extensive laceration and bruising of liver. Gall bladder torn and extravasation of bile present.

CASE XVI.

On the same day another man was admitted with a shell wound of same region as Case 15. Liver exposed and also the hepatic and transverse colon. Shock severe. Was operated on at once under infiltration anaesthesia. Omentum seen lying at one corner was carefully pulled up and used to pack off bowel. Drainage tube and gauze inserted under liver. Edges of wound cleaned and loose stitches put through and through the skin and muscles but not tied. Acute jaundice developed in two days but cleared up well. Wound remained clear throughout. Drain removed on fourth day and stitches pulled tight. Recovery normal.

The cases of perforating bullet wounds of abdomen did well. No surgery was attempted. Nothing was allowed by the mouth for three or four days. The question of pelvic drainage was always borne in mind in connexion with these visceral wounds.

Several shrapnel wounds of the colon were admitted. All died.

CASE XVII.

One man who had a faecal fistula from a wound of the ascending colon died in four days. Nothing was done surgically.

CASE XVIII.

Another was admitted two days after having been wounded with a faecal fistula to the left of the umbilicus, involving the descending colon. The area surrounding the wound was very foul and a rapidly spreading infiltration into the abdominal muscles was taking place. The leak through the bowel was a "diarrhoeic" leak — bubbling, frothing, scalding, and constantly welling out. The bowel wound was small, but the injury and laceration to the muscles and skin were extensive.

The bowel was washed out through a catheter with warm olive oil at first, then with boracic lotion, followed by bismuth lotion. He was given bismuth and opium by the mouth. The diarrhoea through the wound did not abate; the wound steadily got worse and the general condition of the patient was not good.

Left alone he would have died from the diarrhoea and from the septic wound. It was therefore decided to operate. Under open ether anaesthesia the abdomen was opened below the umbilicus, through the right rectus muscle sheath at the middle line. A lateral anastomosis was established between ileum and sigmoid colon. The operation was performed three days after entering hospital and the fifth day from receipt of wound. The area round the shrapnel wound was cleaned and drained, and the wound packed with gauze wrung out in potassium permanganate solution. For some hours after the operation the diarrhoea stopped. Then it recurred as violently as ever—this time through the rectum. The shrapnel wound still leaked and bubbled a little, but could be kept fairly dry. The day after operation the patient's condition was worse. The diarrhoea still continued through the rectum, and although the shrapnel wound could be kept almost dry from faeces, the condition of the tissues all round this wound was much worse. He died on the morning of the fourth day after operation.

CASE XIX.

The third case of faecal fistula was sent in by Sir Anthony Bowlby from a field ambulance. This young officer had been lying there for some days. He had had a shell wound of the right groin involving the caecum. The whole abdominal wall was dusky and threatening to slough all round the wound. He was admitted in a moribund state, and nothing was done but to give him morphine.

After death I made a careful examination of the abdomen. The wound had torn the caecum and ascending colon, but the bowel was closely adherent to the abdominal wall. There had been no leak into the peritoneal cavity. The pelvis was clean. The bowel had glued itself well round the injured area. The bowel was, however, badly bruised, and extensive extravasation of blood had occurred into its wall.

The mortality in cases of faecal fistula is very high. My opinion, formed from what I have seen of this class of wound, both in France and also during the Boer war in South Africa, is that all, or nearly all, of them should be operated upon (short-circuiting of bowel and lavage of bowel above and below the wound). The death-rate without surgical interference must be about 90 per cent. at least, and surgical interference might save many. There is always the "thousandth man" who will pull through if given a chance.

The opinion of German surgeons is interesting in connexion with the treatment of abdominal wounds. The words of Professor Payr, of the Saxon army, in the *Muenchener medizinische Wochenschrift*, and already quoted in the BRITISH MEDICAL JOURNAL, are full of interest. "The victims of these wounds (abdominal wounds) seldom receive proper treatment at an *early date* when operative interference would be most beneficial, and at a later date when all the resources of surgery were at the patient's disposal he was already on the high road to recovery or too ill to be benefited by an operation." The rough generalization—that perforating abdominal wounds above the umbilicus do well and should be left alone, and that those below the umbilicus are dangerous and may require operations—is apt, when oft repeated, to be absorbed as a fixed surgical guide. Nothing could be more harmful. It is perfectly true that wounds above the umbilicus do well as a rule and should not be operated upon. It is also very true that some die from peritonitis due to a leak of blood and bowel contents at the time of wound, subsequent collection of this infected material in the pelvis, and then pelvic abscess or spreading peritonitis.

First, the surgeon should be prepared early to drain the pelvis with a tube through a suprapubic opening. If in any doubt of sepsis at all it is inadvisable to wait for strong confirmatory symptoms and signs; a suprapubic drain should be immediately established.

Secondly, the free administration of morphine is open to question. Morphine given at the time of the injury to prevent shock by easing the pain is absolutely necessary. It is equally necessary to keep the patient free from pain for eight or twelve hours afterwards. Then morphine should be withheld in order that the surgeon can faithfully comprehend the patient's state.

Thirdly, these men should, from the time of admission, be treated in the Fowler position, in order to establish a pelvic drain.

Fourthly, they should be kept at the clearing hospital for ten days and then transferred to the base. Early transportation in the lying-down position is surgically improper.

Fifthly, it is seldom necessary in these cases to open the abdomen to search for the wound in the bowel. That can be left to the bowel itself and to the omentum. The pelvis is the point to approach and to drain. Vomiting or retching, hiccough, distension and rigidity of the lower abdomen at the end of thirty-six hours after receipt of the wound, and increasing pulse-rate, are indications to drain the pelvis. The temperature at this stage is no guide, but the pulse is all-important.

WOUNDS OF SCROTUM AND TESTICLE.

Four such cases were admitted. In two the right testicle was removed at once, owing to severe laceration of cord and testis proper. In the third case an attempt was made to save the testis, but orchitis and severe suppuration ensued, and it was removed. In the fourth case the cord was torn through and the scrotum bruised. The testicle was left alone here, and the case was evacuated three days later. I do not know what the result was. Wounds of scrotum and testicle are not so common as one might expect. After the battle of the Marne two cases were treated at one ambulance, and at the Aisne three more by the same ambulance.

GUNSHOT WOUNDS OF HAND.

Wounds of the left hand were extraordinarily common. Many were wounded between the index and middle fingers at the base of the fingers. Some had the tops of fingers blown off, and some the little and ring fingers badly injured. The same holds true of the Indian troops. On visiting a clearing hospital of the Meerut Division, I could not help being struck by the number of men with left hands in slings. All these injuries were very carefully examined, and the conclusion of various surgeons on this subject should be carefully collected at some future date.

WOUNDS OF ORBIT.

Wounds here were fairly common. One young Highlander was shot through the temple, the bullet entering at one temple and emerging through the other. He was totally blind, and had proptosis of both eyes.

In another case a bullet entered at the inner canthus of the right eye and emerged in front of the left ear. The left eye was destroyed; it was removed under local anaesthesia. The sight of the right eye remained intact.

Most of the wounds of the orbit were associated with bad tearing of the cheek and malar regions.

Dr. La Personne pointed out at a meeting of the French Academy of Medicine in Paris the frequency and gravity of ocular lesions, and particularly transverse wounds of the orbits, which were followed so frequently by total blindness. He indicated the principles which ought to guide the surgeon when he intervened surgically in these cases.

WOUNDS OF KIDNEYS.

Only one case of wounded kidney was treated; it was sent by the officer commanding of school clearing hospital for severe haemorrhage.

CASE XX.

A shell splinter had torn the lumbar muscles badly over the right kidney posteriorly. Muscles extruded; wound very foul; shock severe. Passing "pure blood" per urethram. During the first twenty-four hours this was very alarming. Infiltrated novocain all round kidney region; opened up wound; cleaned muscles, brought kidney well into muscles. Kidney was lacerated and bruised. Did a partial decapsulation, and stitched capsule by three catgut sutures to muscles. Drained freely with two rubber tubes and packed round with gauze. On third day the urine was only slightly bloodstained, and the condition was good. On the fourth day removed gauze but left tubes. These were removed on the sixth day, when I had to evacuate him owing to hospital being bombarded.

WOUNDS OF BLADDER.

Two cases of bladder wounds were received:

CASE XXI.

The first man was wounded by a shrapnel bullet. Wound of entrance in hypogastrium; no exit wound. Admitted sixteen hours after injury. He had not passed urine during that time; he says that he thought he was shot three or four hours after he had urinated.

A catheter was passed at once, and about 2 oz. of blood and urine withdrawn. He was put under open ether anaesthesia, and an incision was made in middle of abdomen, to the left of the wound. Blood clot found lying on surface of bladder, which was deep down. Difficult to define source of bleeding at this time. The peritoneum was opened, and omentum was noticed to be well down on brim of pelvis. A considerable quantity of bloody urine was mopped up slowly and carefully. Palpated posterior surface of bladder, but was not sure where the leakage came through. On palpating found the shrapnel bullet. The bullet may have been dislodged from a temporary resting-place somewhere in the pelvis during the process of swabbing. Then made a lateral incision through left side. Passed down two rubber drains behind bladder, and packed omentum deeply down on to tubes. Closed peritoneal wound after first dragging up bladder into incision. Opened bladder; upper surface very bloody and bruised. Shrapnel had grazed upper surface and perforated it at the left side. Leak occurred through this. Shrapnel wound in bladder was not sutured. Stitched bladder to incision by four sutures after drawing it fairly firmly round a rubber drainage tube. Packed all round tube with gauze. Inserted one deep stitch of catgut through muscles and fascia and bladder at the upper part in order to completely close off peritoneum. Dressed shrapnel wound with hydrogen peroxide and gave a dose of antitetanic serum.

This anxious case surprised us by the uneventful after-history. As no sign of peritonitis occurred, and as the suprapubic drain tube in the bladder was acting well and not leaking, one of the tubes in the pelvis was removed in twenty-four hours, and the other alongside in forty-eight hours. The loose stitch left through the incision here was then tightened and the wound completely sealed. The case was evacuated on the twelfth day with a suprapubic fistula.

The case was seen by Surgeon-General Porter and by Sir Anthony Bowlby, and illustrates my previous contention that clearing hospitals should be equipped to meet any such cases. In this case the man owed his life to the excellent modern equipment of the French hospital. Some meed of praise is due also to the kindly omentum which came down to the pelvic brim, and also to the probable

aseptic state of the urine. The operation was performed about sixteen and a half hours from the time the man was hit.

CASE XXII.

The second bladder wound was that of a man shot through the right buttock transversely; also by a shrapnel ball. Admitted with extensive extravasation of blood and urine around the perineum and both buttocks. Opened up area of extravasation by multiple incisions. When incising over the left ischio-rectal fossa found the bullet, which practically dropped into one's hand. Owing to the man's state, which was very bad, no attempt was made to hunt for the wound of the bladder. The bladder was opened suprapubically and drained.

He was kept in hospital six days after operation; the perineum was then dry and doing well.

Perhaps this man should have been operated upon through the perineum by an external urethrotomy high up, but it was thought at the time that the suprapubic drain was the safest.

BAYONET WOUNDS.

Only one bayonet wound was admitted to this hospital. This seems very surprising, as bayonet attacks were reported to be occurring frequently and one would have expected serious wounds.

CASE XXIII.

Private F. (Royal Fusiliers). Brought in urgently by motor ambulance for treatment for severe haemorrhage from mouth and eye. The bayonet had entered at the inner canthus of the left eye and penetrated through the left maxillary antrum. He was bleeding freely from vessel round palatal and maxillary regions. Under ether the antrum was opened through the canine fossa, and the opening was rapidly enlarged. It was found full of blood clot. It was washed out and packed in gauze soaked in hydrogen peroxide. Packing had to be very firm in order to stop the smart bleeding.

The eyeball had escaped injury, evidently pushed aside by the bayonet.

WOUNDS OF THORAX.

A considerable number of officers and men were admitted with perforating wounds of the thorax. Wounds of the upper part of the chest invariably did well; wounds of the lower part were serious and often fatal.

A short history of one case will illustrate the others.

CASE XXIV.

Captain S., R.A.M.C., attached to the —— Regiment, was shot through both lungs by a bullet while gallantly attending to wounded men under a heavy fire. For this act he has been awarded the Military Cross. He was stooping forward at the time with both arms extended away from the body. The bullet struck him about the lower part of the right axilla and emerged about the posterior axillary line of the left side. He was admitted with severe shock and dyspnoea. He had frequent cough, which he tried to prevent owing to the pain it produced. When put to bed and heroin ¼ grain placed under the tongue he became easier and the shock gradually disappeared. The cough eased off and respiratory excursions became more marked; temperature normal, pulse rapid. There was marked dullness over the right lung base. The breath sounds were vesicular but distant. The patient said he felt so well that he wished to get up. In fact he did get up once or twice when the watchful French nursing sister was out of the ward.

At the end of the third day the temperature ran up to 103° F. Dyspnoea became marked, and pain in breathing so severe that a hypodermic of morphine was given; the pain was all over the right base. Briefly, the course of events was: pleurisy of right base, pneumonia over the course of bullet wound through right lung, expectoration of old blood clots, high temperature. The left lung, curiously enough, escaped, although there was dullness due to haemothorax of left base. The after-history was a slow recovery.

All the penetrating bullet wounds—those with entrance and exit wounds—behaved in a similar way. First, a period of dyspnoea, very little haemoptysis, with shock slight or severe. Then a period, usually lasting for two or three days, of comparative quiet, with slightly quickened breathing, no haemoptysis, occasional cough, no rise of temperature. Then a rise of temperature, frequent and painful cough, with expectoration of particles of old blood clot, and thick mucus, and signs of pneumonia round the track of the bullet, and generally pleurisy of base from the haemothorax. The above only refers to the course taken at the time of the wound and for some days afterwards. The after-history of these perforating wounds of the thorax often presents other features.

LOCAL ANAESTHESIA.

Local anaesthesia on active service is a subject that will bear some study. The circumstances in which this form of anaesthesia can be applied are many. The condition of the wounded, owing to shock, haemorrhage, exposure, and gangrene, is often so serious that any operation, however small, entails formidable risks. For the prevention of shock, local anaesthesia has proved to be invaluable. It can abolish pain and so remove a powerful factor producing shock. It enables one to operate on many patients when a general anaesthetic would be hazardous.

The principles of infiltration anaesthesia and of conduction anaesthesia are easily mastered. One need only have a sound knowledge of the anatomy of the nervous system. The surgeon must accustom himself to the needles and apparatus. Conduction and infiltration anaesthesia was carried out in a large number of cases in this hospital. The method was employed in all the trephine cases except one. It was used in amputations of fingers and in cleaning up wounds in the hands and fingers. It was employed in operations on the toes, feet, ankle, leg, fractured thighs, opening a frontal sinus, removing contents of orbits, removing testicles, in shell wounds of limbs.

I hope to record these cases in a special article at a later date. The syringes and needles are not supplied by the army. One must bring one's own outfit. It can be conveniently packed in a light metal box enclosed in a canvas bag with a handle. Barker's infiltration needles are necessary, and also two sets of needles and syringes for the conduction anaesthesia. My outfit included also adrenalin in solution, beta eucaine in powders, and tablets of novocain-suprarenin. These tablets are added to physiologic salt solution, and can be made up to various strengths, as 0.5 per cent., 1 per cent. or 2 per cent. The tablets contain novocain and suprarenal extract. The solution can be boiled after adding a few drops of dilute hydrochloric acid, and so rendered quite sterile.

ACIDOSIS AND THE NITROGEN PARTITION IN PREGNANCY.*

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To Dr. Whitridge Williams is due the institution of a scientific examination of the urine in pregnancy. Recently he has modified to some considerable extent his original view that an ammonia coefficient over 10 to 15 per cent. is an indication for the prompt termination of pregnancy. Most of those working at the subject were more or less prepared for this change, but perhaps not all are yet convinced that his present view is a clear and sound one. It will be of interest, then, and possibly of service, to review the later aspects of the question and to report some recent results in a series of cases.

It appears to me regrettable that investigation, even in toxic cases, in maternity hospitals is so often limited to a quantitative estimation of the albumin, of the urea, and occasionally of the ammonia, and to a qualitative examination for acetone bodies. These elementary tests, while no doubt of distinct service, cannot aspire to rival an investigation which gives with moderate accuracy the percentage of total nitrogen, the fractions of this existing as urea and as ammonia, and the actual amount of acetone-complex bodies present.

Further, when a fuller examination is undertaken, it is usually limited to abnormal cases. No clear comparison, therefore, is obtained between the normal and the abnormal. It will be apparent later in this paper that it is not legitimate to judge of the ammonia percentage in pregnancy, normal or abnormal, from the percentage found in the urine of a non-pregnant individual.

This paper records the results of an investigation of the urine in 80 cases of pregnancy, both normal and toxic, and has as its special endeavour the description of several tests for that purpose. These have the particular merit of being applicable by a relatively inexperienced worker in a clinical, as distinguished from a bio-chemical, laboratory.

Mathison's Method of Ammonia Estimation.

This test is performed as follows:

Shake for two minutes 25 c.cm. of urine with 15 grams (circa) of *neutral* potassium oxalate and 50 c.cm. distilled water. The

* A paper read in the Section of Obstetrics and Gynaecology at the annual meeting of the British Medical Association at Aberdeen.

oxalate clears the specimen by precipitating calcium salts and thereby makes the end-reaction more accurate. Neutralize with N/10 soda, using phenolphthalein as an indicator. Add 5 c.cm. neutralized commercial formalin. Titrate again with N/10 soda till neutral. Half an hour should elapse before the final reading is made. Each cubic centimetre equals 0.0014 gram of nitrogen in the urine as ammonia.

Formalin in the presence of ammonia forms urotropin, at the same time liberating the acid which was combined with the ammonia. If to neutralized urine be added neutralized formalin the indicator will show an immediate acidity, which can be measured by N/10 soda, and from which the ammonia content can be calculated.

The result is acknowledged to be sufficiently accurate for clinical purposes, and the error in any pathological urine does not exceed 1 per cent. of the total nitrogen—that is, the reading is about 15 per cent. more than by Folin's method, which does not include the amino-acids. There is, however, no disadvantage from this inclusion of amino-acids.

Groat's Method of Nitrogen Estimation.

The method of applying this test is as follows:

Add to 2 c.cm. urine 6 c.cm. concentrated sulphuric acid and a few crystals of potassium sulphate in a Kjeldahl flask. Boil in a fume cupboard till clear; cool, wash thoroughly into a large flask, and estimate the total nitrogen as ammonium sulphate by the above method.

The neutralization of the washings can best be done with first 20 per cent., then 5 per cent., and finally 1 per cent. sodium hydroxide, and if the neutral margin be passed a drop of acid should be rapidly added. Once again the final reading represents a pink tint persisting for half an hour. The number of cubic centimetres of N/10 soda multiplied by 0.07 gives the percentage of total nitrogen. The method here given is a slight modification of the original, and was kindly sent me by Dr. Groat in a private communication.

Groat's method, as will be seen, is an ingenious adaptation of Mathison's. The total nitrogen is converted to ammonium sulphate as in Kjeldahl's method, and thereafter the ammonia calculated as in Mathison's test. If a fume cupboard be not available, the long-necked flask can be fixed in a slightly opened window.

The method has the advantage over Kjeldahl's method in its simplicity, in the elimination of decinormal sulphuric acid solution, and in the fact that personal error is equalized for both Groat's and Mathison's tests by the similarity of the end results (phenolphthalein).

I have compared this method with Kjeldahl's in a number of cases, and in none has the ammonia nitrogen percentage of the total nitrogen (calculated by each method) differed by more than 0.6 per cent. I consider, however, that it would be better for each worker to do some such comparison before relying entirely on Groat's method. The urine from fifteen non-pregnant cases, none suffering from primary liver disease, in no case showed an ammonia coefficient above 5.5 per cent.

All striking results in the cases about to be mentioned were at once controlled and in every case confirmed by Kjeldahl's method.

Hart's Colorimetric Acidosis Index.

There have been several colorimetric estimations advocated in recent years for acetone complex bodies, but Hart's method, while perhaps less accurate than some of the others, is a very simple one and gives a reasonably accurate result.

Two solutions are necessary:

(*a*) Ethyl aceto-acetate, 1 c.cm.; alcohol, 25 c.cm.; distilled water, 1,000 c.cm.

(*b*) Ferric chloride, 100 grams; distilled water, 100 c.cm.

Take two test tubes of equal (½ in.) calibre; in one put 10 c.cm. of (*a*), and in the other 10 c.cm. of urine; add to each 1 c.cm. of (*b*). Dilute the tube containing urine till the two match. The acidosis index per litre equals one-tenth of the volume (cubic centimetres) in the tube of urine. To obtain the index proper (which represents the total acidosis estimated in terms of grams of β-oxybutyric acid), multiply the above by the number of litres passed in twenty-four hours.

Quantities of acetone bodies insufficient to give a positive perchloride test but giving a sodium nitro-prusside reaction represent an acidosis index per litre of 0.5.

By adding varying quantities of ethyl-aceto-acetate to normal urine, I have found that a very fair estimate of the amount added can be gauged by this simple test, and both in pregnancy and in other conditions it has proved both interesting and illuminating.

As regards qualitative tests for acetone bodies in the urine, Harding and Ruttan have recently shown conclusively that the ordinary sodium nitro-prusside-ammonia-acetic acid test (Lange or Le Nobel) is not alone a test for acetone, but detects as well diacetic acid—that this latter body, in fact, seems to augment the acetone reaction. They estimate the relative delicacy of Le Nobel's test and Gerhardt's test—that is, ferric chloride—as 30 to 7. A urine, then, which only gives the former, may still contain diacetic acid. It must be remembered, too, that acetone appears first in order, and, with increase of these bodies, is accompanied by diacetic acid, and, later on, by β-oxybutyric acid. A positive diacetic acid test and a negative acetone reaction is, then, impossible, and it will be found that salicylates or their derivatives (such as diuretin) account for the phenomenon.

DISCUSSION OF THE POSSIBLE VALUE OF DATA OBTAINED.

(*a*) *Total Nitrogen.*

This figure should be used merely as the total from which to calculate the ammonia percentage. It can have no other reliable value unless the nitrogen values of the food and faeces are simultaneously examined. This is particularly true in pregnancy, where there are very marked variations in the nitrogenous excretion at different periods. For instance, there is in the second half of pregnancy a tendency towards the retention of nitrogen; it must not, therefore, be immediately decided in late pregnancy that a low total nitrogen value implicates inanition as a factor to be considered—say, in explanation of the presence of acetone bodies in the urine. The total nitrogen figure is, obviously, however, a vastly more useful figure than the urea nitrogen which, in toxic cases, varies inversely as the ammonia.

(*b*) *Ammonia Nitrogen.*

The normal coefficient in the non-pregnant state is 3 to 5 per cent.—that is to say, this percentage of the nitrogen in the urine is eliminated as ammonia. In pregnancy, even in clinically normal pregnancy, these limits may be greatly exceeded. There is a widespread and absolutely unjustifiable belief that this increase of ammonia must necessarily represent and measure an acidosis; but, as I have emphasized in an earlier paper, there is every reason to assign a part of the ammonia (and that perhaps a large one) to the histological changes occurring in the liver.

It is certain that primary liver disease—primary disturbance of the protein metabolism—is associated with an increase. Presumably the urea metabolism has been interrupted half way by the insufficient functioning of degenerated cells, and ammonia thereby split off. To begin with, this shows that the liver cells are still—largely, at any rate—living, as otherwise this first stage of ammonia formation could not take place. The more widespread the degeneration the greater will be the ammonia formation.

It will be at once apparent that if large areas of liver substance in any disease have received a *mortal* blow they will be unable to functionate, and ammonia will, therefore, not be formed. In primary liver disease, then, the gravity of the injury is not directly proportionate to the increase of ammonia once the borderland between degeneration and necrosis has been passed. There is a fundamental chemical difference between the two conditions, even although both are stages in the process of cell destruction.

In all cases the dependence on these two conditions of data obtained must be borne in mind. Thus, if a certain proportion of cells have altogether escaped—if, in other words, the lesion be mainly focal—there may be sufficient healthy tissue left to very considerably lessen the urinary evidences of the altered metabolism occurring in the affected parts.

Coming now to discuss the coefficient more particularly in relation to pregnancy, one is inevitably drawn to the conclusion that there is an assault on the liver which renders it classifiable as a primary liver disease. Detailed work, such as that of Ewing and Wolf, gives evidence that even in normal pregnancy there is a considerable strain on the liver—the margin of safety, no doubt, is a large one.

It is much to be regretted, too, that the *post-mortem* findings in fatal cases of toxic pregnancy have not been more regularly compared with the urinary analyses during life.

In toxic pregnancy it is clear that increased ammonia is

most in evidence in hyperemesis. While not wishing to dissociate unduly this form of toxic pregnancy from the eclamptic group, it is at the same time certain that in hyperemesis the lesion is essentially a degenerative one; such necrosis as occurs appears late as the final stage of this degeneration. An increased ammonia coefficient, therefore, is what one would expect. It is just possible that in such a case, if necrosis supervened to any great extent, the ammonia might decrease towards the end, but I do not know of any reports of cases taken sufficiently often to have demonstrated this; yet in one rapidly fatal case (No. 12 in the series of Ewing and Wolf) the ammonia ratio was not increased at all, while the total nitrogen and the urea were both increased but *relatively* unchanged—a condition rather characteristic, as demonstrated by the experimental work of Jackson and Pearce, of a lesion where necrosis predominates.

On the other hand, in eclampsia the predominating lesion is often a massive focal necrosis which appears too suddenly and too early to be the last stage of the ordinary toxaemic degeneration, and, once more judging from experimental work, must follow a vascular obstruction. In such cases one would not expect the high ammonia values characteristic of vomiting, and, as a matter of fact, they do not occur. There may be early increase in mild cases, and, in general, in cases with a good prognosis—so far as one can give any prognosis in a disease where other factors, such as cerebral haemorrhage, may intervene—but otherwise there is but little.

Some pathological foundation will now become apparent for the empiric view of Whitridge Williams that, generally speaking, he regards a low ammonia value as a good sign in toxaemic vomiting and a bad sign in eclampsia. In persistent vomiting a low ammonia value would indicate a slighter degree of upset of the ammonia-urea proportion, or, pathologically interpreted, less degeneration; whereas in eclampsia a low ammonia value would suggest that necrosis was very widespread, and a high one that a considerable proportion of liver cells was still alive and functioning, albeit imperfectly.

For a fuller comparison between the chemistry and histology of toxic pregnancy and these features as exhibited in comparative experimental work my earlier papers must be referred to. It should also be kept in view that the study of the ammonia variations in pregnancy is only one aspect of the changes taking place. The very important question of alterations in the rest-nitrogen, and in the amino-acid fraction of this cannot, unfortunately, be studied in purely clinical practice and must here be omitted; when such an attempt has been made the result usually indicates that this group has been made the dumping ground for all the errors in the other estimations.

(c) Acidosis.

So far, I have merely indicated that variations in the ammonia value *may* be explained in pregnancy, as they certainly *are* explained in certain other conditions, by a primary disturbance of the protein metabolism.

We have now to decide, so far as is possible, to what extent an acidosis may take part in the alteration, and here at once one finds prevalent the most conflicting ideas. There is still a certain amount of mystery surrounding the whole question of acidosis and the criteria which different observers consider sufficient for its demonstration vary to an almost ridiculous extent. Some are content to judge absolutely by increased ammonia; this, as I have endeavoured to show, may be quite wrong. Others are content to label every case showing some acetone in the urine as being of this nature; this is certainly a fallacy.

It will be best to discuss a few elementary points in relation to acidosis in general, and in so doing I will draw largely from the excellent work of Sellards.

As a preliminary it may be asked—Why does ammonia appear at all in normal urine? The usual answer given is that a slight grade of "physiological acidosis" exists under normal conditions; in other words, in order to assist in the neutralization of the acids derived from the food proteins and to establish an equilibrium of the acids and bases, even in the healthy state ammonia must be bound to the former. If this be admitted, it would be possible to conjecture a condition which would be pathological merely in degree.

Now, in definitely pathological conditions, acidosis may be considered under two headings—namely:

1. *There is a qualitative change.*—This is usually indicated by the appearance in the urine of salts of certain well-known foreign acids. It must not be forgotten, however, that even in diabetes these recognized foreign acids may not be the sum total of the unusual acid bodies present. It is also possible to imagine, and there is considerable evidence in favour of the view, that there are types of acidosis in which the better-known acids—the acetone-complex bodies—do not appear at all. This is particularly so in cases of nephritis, especially in uraemia or cases tending thereto. The remarkable alleviation of symptoms which can occur in some of these by administering sodium bicarbonate will be a revelation to those who have not tried it.

2. *There is a quantitative change.*—The essential in this is a decreased amount of fixed bases in the tissues. It cannot be too strongly asserted that symptoms of pathological acidosis are not due to the acid bodies present but to a diminution of fixed bases in the tissues as the result of an attempt to neutralize the acids. Now, at a certain point—although by no means necessarily at a very early stage—a compensatory increase of ammonia production is induced in order to spare the fixed bases. Ammonia, however, is by no means the only compensatory mechanism, and an acidosis may occur without much disturbance of the coefficient. Other bases, such as calcium, magnesium, potassium, and sodium, take their share, particularly in extreme cases. In herbivorous animals these, of course, take an early and important part in the neutralization.

What, then, is the best test that the body is suffering from the condition ordinarily called "acidosis"—that is, a depletion of the fixed bases? It would appear very reasonable to believe that the best test is one of tolerance to alkali. Expressed differently, if the body is in no need of fixed bases, any alkali introduced will be eliminated, and the urine will become alkaline. On the other hand, if there be a need for fixed bases, when alkali is introduced, it will remain in the body, and the reaction of the urine will remain unchanged.

I am sorry to see that Dr. Herbert Williamson is not very enthusiastic over this test. To me it appears—theoretically, at least—a more important and reliable indicator than either a high ammonia value or the demonstration of acetone-complex bodies in the urine. Its absolute value can only be determined when a long series of cases of normal and toxic pregnancy, and of other conditions, has been put to the test. Meanwhile, it has the merit of being simple in execution (5 grams of sodium bicarbonate every six hours per os, or, in cases with gastric upset, the intravenous injection of 2 to 4 per cent. solutions), and is to some extent a quantitative as well as a qualitative indicator—that is, one can judge of the degree of depletion in inverse proportion to the ease with which an alkaline reaction can be produced and maintained.

There are, then, two reasons for the appearance of increased ammonia in the urine:

1. From a disorder of the primary protein metabolism.
2. As a purely compensatory process.

In the latter case the increase will disappear if sufficient sodium bicarbonate be given; in the former case it will not. We must differentiate, therefore, in pregnancy between these two mechanisms, and one must not attribute increased ammonia to an acidosis until one has eliminated the possibility of primary metabolic error. Williamson's observations have not convinced him that the ammonia coefficient can be regarded as an index of the gravity of the hepatic lesions, for he finds that after the administration of sodium bicarbonate the ammonia falls. Personally, I have not found this so in all cases, but, owing to lack of facilities, the number in which I have had the opportunity of trying it has been small. Sellards confirms this by quoting an instructive case in which a very high coefficient, acetone-complex bodies in only slight amount, and a normal tolerance to alkali occurred in a case of toxaemic pregnancy. This is not explicable on the supposition that the ammonia increase was purely compensatory.

In definite acidosis, too, of the ordinary type, the ammonia coefficient does not rise till the acid bodies are well in

evidence in the urine; that is to say, the fixed bases of the body have done the earlier stages of neutralization.

In general, then, the excretion of ammonia in pregnancy is not a reliable basis for the detection or estimation of acidosis, for it may be normal in acidosis and high without acidosis. It is really more important than might at first be thought to make certain of the extent of an acidosis from a practical point of view. A very frequent procedure in toxic pregnancy is copious bleeding; if the fixed bases are already depleted this will still further lessen them, and will only be justifiable if alkali be immediately added.

If one cannot be certain of an acidosis by an estimation of the ammonia, does an estimation of the acetone-complex bodies give a better indication? On the whole, I think that it does.

As I have explained, there may be other acids than those so readily recognized as taking part in the process, but where the acidosis is of the type wherein these bodies are excreted in quantity, and where, as in diabetes, there is no reason to hypothecate a primary disturbance in the urea metabolism, we know that these acid bodies increase with the clinical symptoms of acidosis and that there is a definite relationship between the imminence of coma and the quantity of those demonstrable. In pregnancy, then, it appears likely that their estimation may give an index, although probably a very rough one, of the degree of acidosis. Even here it may be necessary to make some reservation and to draw a distinction between acidosis and acid intoxication, for it is undoubted that individuals, both pregnant and non-pregnant, occasionally excrete remarkable quantities of these bodies with little or no general upset.

The results I am about to record are of interest more particularly in relation to symptomless pregnancy, but have also some value in a discussion of toxic conditions.

Collection and Preservation of Specimens.

Mixed specimens were not considered necessary nor, in toxic cases, even advisable. Repeated tests in pregnant cases and in non-pregnant individuals, normal and abnormal, showed that the percentage of ammonia nitrogen to total nitrogen did not vary more than 1 per cent. in specimens from different periods of the twenty-four hours. In acutely toxic cases, on the other hand, the difference within a few hours has been found at times to be very marked, and it appears to me to be important to take specimens as often as possible rather than the single result from a twenty-four hours' mixed specimen. Particularly is this important from a prognostic point of view, as, in any one case, the direction of the variation should carry more weight than the actual increase of ammonia.

Accordingly, the method adopted was to shake with thymol crystals each specimen directly it was passed. Experiment showed that there was a definite increase in the coefficient within a relatively short time if this were omitted.

RESULTS.

The cases examined number 80, and the following are the results:

Symptomless Pregnancy.

I wish to draw your attention more particularly to these cases. Nearly all these cases were examined on more than one occasion, and the majority of the readings were taken during the last six weeks of pregnancy.

The ammonia coefficient was found in 66 cases to range from 2.2 per cent. to 12 per cent. These results are scarcely in accordance with those of Williamson, who gives readings of 4 to 5 per cent. They are, however, on a par with those obtained by Ewing and Wolf, whose figures show in clinically normal pregnancy a coefficient of 2.8 to 10.8 per cent.

In my own cases, in 72 per cent. the coefficient was over 5.5 per cent., in 20 per cent. it was over 8 per cent. It was noted that there was a definite tendency for it to become higher as pregnancy advanced, and to be highest in labour. In no case was a coefficient over 5.5 per cent. obtained before the fifth month.

Two of the many cases examined during labour had particularly high readings, 13 per cent. and 17 per cent. These results were at once controlled by Kjeldahl's method. There was neither albumin nor acetone bodies in either case and the index dropped very rapidly when labour was over.

Two cases in labour showed the presence of acetone bodies totalling an index per litre of 1.5 and 1 respectively. The corresponding coefficients were 9 per cent. and 10 per cent. In one of these the tolerance test for alkali was done, but no evidence of retention was made out and the coefficient did not fall.

In four cases of late pregnancy, giving high ammonia values (9 to 12 per cent.) without acetone bodies, the tolerance test was carried out; in none was there any difficulty in rendering the urine alkaline.

A trace of albumin was found in 9 of these 66 cases, but bore no relation to a high ammonia coefficient.

Pregnancy with Symptoms.

As I have stated, the details of these cases are not as full as I could wish, but I think the figures given in several cases do show that Whitridge Williams is correct in correlating morely closely than he was at first disposed to do, from the points of view both of diagnosis and prognosis, the clinical with the urinary condition.

1. *Hyperemesis.*

One acute case was observed for a week (3 tests) during which the coefficient, temperature and pulse remained normal. There was no acetone or albumin. The patient was two and a half months pregnant, and, as the vomiting showed no tendency to become better under medicinal treatment, rectal feeds (glucose with milk pancreatized for twenty-four hours as directed by Rendle Short) were given and retained well. The vomiting appeared to improve during the next two or three days, yet the patient began to look ill, the pulse became fast and the temperature heightened. During the next two days the coefficient rose to 15 per cent. and then 25 per cent. Acetone and diacetic acid appeared in the urine, but unfortunately were not estimated.

There was greatly increased tolerance to sodium bicarbonate *without* reduction of the coefficient. The uterus was emptied, with an immediately successful result.

A second case developed vomiting about the fifth month with a little irregular temperature and moderate albumin. There was a very slight deposit of pus in the urine, which may have accounted for the temperature but certainly did not account for the albumin. The coefficient was 4.9 per cent., and the patient was put on calcium lactate.

One week later, although the patient appeared improved, had less vomiting, and was retaining food well, there appeared acetone bodies with an index per litre of 4 and an ammonia coefficient of 20.3 per cent. Alkali given as a tolerance test and as a therapeutic measure reduced the coefficient to 9.2 per cent. I decided to do nothing radical, and was justified in the result.

Other cases, more moderate in character, developed coefficients of 10 per cent. and 11.8 per cent. In the latter there were no acetone bodies, but in the former (third month) an index per litre of 1.7 was given and remained so for a few days, when spontaneous abortion took place.

2. *Eclampsia.*

Five cases were observed. In one there was an acidosis index per litre of 2.2; the other four were negative. This agrees with the results of Ewing and Wolf, who found acetone bodies present in one case and absent in three. The coefficients ranged between 13 to 18 per cent. in four cases. They were all in labour at the time, and they cannot, therefore, be said to have exhibited any very marked rise. After labour, in three of these the index came to normal very rapidly. In the fourth mental symptoms developed and the ratio remained high for one week, subsiding gradually with a return to normal cerebration.

The fifth case was a fatal one. The index was examined on admission and the coefficient found to be 8.5 per cent.; the urine in the bladder at death—six hours later—gave a reading of 6 per cent. There was only slight albumin (0.05 Esbach) and there was no acetone. No opportunity was given for a tolerance test. The *post-mortem* examination showed that the patient had died of cerebral haemorrhage. There was, however, a very marked necrosis in the liver of the type characteristic of the disease, and it is of interest that this should have shown a lower coefficient than any of the others.

3. *Pre-eclamptic State.*

Two cases examined in the ninth month with moderate albumin showed coefficients of 11 3 and 10.4 per cent. and no acetone. These figures, it will be noted, give less indication of the patient's condition than did the clinical examination with obvious oedema, headache, and scanty loaded urine.

4. *Nephritis in Pregnancy.*

One case was seen in the seventh month. The urine was scanty and showed a coefficient of 3.5 per cent., albumin 0.7 (Esbach), and no acetone. There was moderate oedema and considerable breathlessness. The tolerance test showed that alkali was retained in the body. In spite of the low coefficient and the absence of acid bodies, it seems perfectly justifiable to class this case as one of acidosis. The patient was spontaneously delivered of a living child thirty-six hours after the observations were made, and died of uraemia a few days afterwards.

A second case was also in the seventh month. She was heavily waterlogged and showed albuminuric retinitis. The urine showed no acetone but gave a coefficient of 16.4 per cent., and albumin 1 (Esbach); tolerance to alkali was normal; labour was induced by bougies and three days later the coefficient was 9.1 per cent., and a week later 4 per cent. The albumin and oedema rapidly decreased.

5. *Toxaemia of Doubtful Origin.*

This case was seen at the fourth month. She had headache and temperature, with drowsiness and occasional vomiting. The ammonia coefficient proved to be 5 per cent.; there were no acetone bodies, and the tolerance test was normal. One was led, therefore, to look elsewhere than in the pregnancy for the cause, and a Widal reaction and the subsequent history, which included miscarriage, proved the condition to be typhoid fever.

In conclusion, I frankly admit that I feel scarcely more confidence in my interpretation of many of these results than I do in an interpretation of acidosis in general. My main object is to excite discussion and to stimulate a little more interest in the whole question, more particularly in maternity hospitals, where series of valuable data could readily be compiled.

It would be of great interest to see what parallelism exists between tolerance to alkali and the other criteria of acidosis. Only then will it be possible to determine to what extent acidosis represents an intoxication.

In general I think that one is justified, (1) so far as the practical aspect is concerned, in endorsing Whitridge Williams's considered view that only by a close comparison of the clinical condition with the urinary findings can one judge of degrees of gravity; and (2), so far as academic research is concerned, in keeping a very open mind on the subject till more figures are available.

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THE British Fire Prevention Committee (8, Waterloo Place. London, S.W.), having found that deaths had been caused by the bursting of chemical liquid fire extinguishers, and being satisfied that some of the appliances sold were of inferior quality, issued some time ago a provisional specification. It has now replaced this by a definite specification, copies of which, together with lists of appliances complying with it, will be forwarded in response to a written application, accompanied by a stamped foolscap envelope. The committee states that its requirements are not so severe as to handicap legitimate endeavours of the trade, and also that "Portable liquid fire extinguishers are not the only form of portable first-aid fire appliances, but that ordinary buckets of water (together with hand pumps) are equally, if not more, effective in the majority of cases, and, further, have considerable economical advantages for ordinary household, office, shop, and factory purposes."

CASES OF INOPERABLE CANCER TREATED WITH GOAT SERUM.*

BY ALBERT WILSON, M.D.,
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THERE has always been a great mystery about the blood in malignant disease. Why, for instance, should cancer remain stationary in one patient, or even disappear spontaneously, and progress in others? Why should one species of animal be apparently immune to cancer, and why should inoculation of one animal of the same species with cancer give rise to tumour growth and the same not occur in another?

Attacking the problem from the blood point of view, Dr. J. A. Shaw-Mackenzie[1] has shown that while normal serum in health contains a substance which has the property of activating or accelerating the fat-splitting action of pancreatic juice and pancreatic extracts, in certain cases of cancer this property is considerably increased. In progressive and advanced cases this power of the serum is decreased compared with the action of normal serum examined at the same time as a control, while the normal antitryptic action of the serum is increased in accordance with the original observations of Marcus, Brieger, and Trebing. When these two reactions are present they aid in the diagnosis of cancer, and when they are absent they exclude cancer.

During quiescence or improvement or after apparent recovery the accelerating fat-splitting action of the serum is high, while the antitryptic action falls to normal or is subnormal.

This accelerating fat-splitting property of the serum is greater in the lower animals than in human serum, while the antitryptic action of the serum is not greater than with normal human serum. Inoculation of animals with normal tissues or with cancer tissue is followed by a similar increase in this property of the blood; while in mice which had been inoculated with mouse tumour and did not "take," and also in mice which had recovered spontaneously from large growths, the accelerating fat-splitting action of the serum is high.

In view of such facts Shaw-Mackenzie has suggested that "the fat-splitting acceleration is a possible and natural factor in resistance to disease in carcinoma and in other conditions," and "if so, serum and substances which increase this action or protective mechanism are indicated in treatment."

In illustration Dr. Shaw-Mackenzie records the results of examination of the blood in two cases of apparent recovery from inoperable cancer, examination of the blood having been made before, during, and after treatment with injections of the patient's own serum, together with the administration of bile salts by the mouth. In one case the figures rose from 8.6 before treatment to 14.7 after treatment; while the antitryptic action fell from 7 to 4. This was a case of inoperable breast cancer in March, 1911. The patient is now (June, 1914) in very good health generally, but a small lump remains locally.

In the other case—one of inoperable uterine cancer—the figures rose from 10.1 before treatment to 14.2 after, while the antitryptic action fell from 6 to 3. This patient is in good health, now $2\frac{3}{4}$ years after treatment.

In general terms, animal serum is higher in the fat-splitting, accelerating, or activating property than normal human serum. This is witnessed in Dr. Shaw-Mackenzie's observation, namely, that the fat-splitting action of the serum in the goat was 14.5 compared with normal human serum, which I understand from him varies considerably in health, but approximately averages 10.0

The treatment of inoperable cancer, therefore, by normal goat serum is not empirical, for obviously we are introducing an activator of the fat-splitting protective action in the tissues.

CASE I.

In 1890 a patient, aged 60, suffering from inoperable cancer of the uterus was sent to me by Dr. Robert Barnes. It occurred to me to inject goat serum, as the goat was considered by veterinary surgeons to be immune to cancer. A healthy young goat was procured and 6 oz. of serum were injected in the

* Abridged from a paper read in the Section of Pharmacology, Therapeutics, and Dietetics at the Annual Meeting of the British Medical Association at Aberdeen, 1914.

basilic vein. The serum reaction was severe. The uterus healed in about six weeks and the disease was apparently cured. She lived two years and died of an acute disease. I was assisted by Mr. Skene Keith and Dr. Enraght.

I did not repeat the experiment for twenty years. I have five more cases to report.

CASE II.

A man, aged 56, suffered in July, 1907, from profuse haematuria; it recurred in February, 1908, and there followed an attack of renal colic in June, 1908; the urine was loaded with triple phosphates only. The provisional diagnosis was a calculus.

There was no haemorrhage for a year. In June, 1909, haemorrhage returned. Exploration of the bladder was followed by profuse haemorrhage, accompanied by masses of a villous growth—non-malignant villous papilloma. *X* rays revealed nothing. Haemorrhages recurred in August, twice in October; once in January, 1910, twice in February, and once in March and April. Continuous *x*-ray treatment was without effect; we tried radium under Dr. Finzi's care (50 to 100 mg. with a filter of 0.5 mm. silver or platinum for 1½ to 4 hours). The patient had five treatments in one year—namely, in April, July, December, 1910, and January, March, 1911. At first there was less haemorrhage, but in March, 1911, a renal tumour on the left side was felt; it grew rapidly, and was removed by Dr. Thomson Walker in June, 1911. It was previously proved that the right kidney was normal.

After this operation the urine was clear for twenty-two months, when blood and villous tumour again appeared on two occasions. This must have come from the right kidney, which was previously sound. The whole case presented an interesting study, but the chief interest rests with the problem of secondary growths, which appeared six or seven months after the operation at the stitch points, and disappeared after the use of goat serum. These growths were treated by *x* rays in May and June, 1912, without effect. The left testicle and cord were also affected by a very large primary growth. The patient was in August, 1912, in a dying state, almost bedridden, and his weight 8 st. His normal weight was 13 st., and at the operation 9 st. 6 lb.

The Goat Serum Treatment.—I injected ½ oz. in the buttock on August 24th, 1912; ¾ oz. on August 28th, and 1 oz. on September 4th. The temperature was usually from 100° to 101° for twelve months before the first injection, rising and falling irregularly. After the serum it fell to normal, except during the forty-eight hours after each injection, when there was a rise, malaise, pains, and itchy erythema. On October 2nd I gave a fourth injection, a fifth on November 23rd, and a sixth on December 17th, 1912.

Result.—The goat serum cured the dyspepsia, toxaemia, and fever which had lasted a year. He now ate good meals, and strength improved so that in December he took drives. The secondary stitch growths got less in eight weeks and disappeared entirely by Christmas. The testicular growth disappeared, but a mass continued in the cord. The patient died in June, 1913. Mr. Shattock reported on the tumour, that microscopically it was a papilliferous or villous carcinoma. The long duration of the haematuria (four years) indicates the growth was possibly a papilloma which developed malignant characters (Cat. Path. Section, Roy. Coll. Surg.). It was after the course of radium that the simple character of the papilloma apparently changed and the tumour grew.

Mr. D'Arcy Power, being interested in the experiments, kindly placed two cases at my disposal at St. Bartholomew's Hospital.

CASE III.

A married woman, aged 35, seen on December 31st, 1912, had inoperable carcinoma of rectum. In January, 1913, I began to treat her with weekly injections (½ oz.) of goat serum, and at the same time injected 3 grains of arsacetin for Graves's disease. In June she got a chill, after sixteen injections. The motions were larger and passed easier; the pain was completely relieved. Dr. Elmslie Crabb of Brockley said the growth was certainly no larger. After this she had severe jaundice, and treatment ceased. The growth rapidly increased, rising in July up to the umbilicus, necessitating colotomy. She died in September, 1913.

CASE IV.

A man, aged 58, in February, 1913, presented carcinoma near the pylorus with secondary infection of glands and mesentary as proved by exploratory operation. I gave five injections similar to those given in Case III. Dr. Carruthers Corfield, Upper Tooting, informed me that the patient's appetite and health much improved and pain ceased. He died February, 1914. It was considered that life was decidedly prolonged.

CASE V.

A man, aged 72, seen in December, 1912, had the left iliac fossa filled with a large growth diagnosed as sarcoma. There was great oedema and discoloration of the left leg threatening ulceration, and anaesthesia below the knee. Treatment carried out by Dr. Image—weekly intramuscular injections of ½ oz. of goat serum. After four injections Dr. Image wrote, "Left leg decidedly smaller," and, after fifteen injections, "An unaccountable improvement." The leg was almost normal, and the growth two-thirds the size. The patient, previously in great pain, had had opiates daily and opium poultices; now all pain had gone, and no opium was used. Dr. Image died in April, 1913, and treatment was discontinued for a time. The patient got worse, and in June, when Dr. Stork resumed treatment, the growth had increased, pain returned, and he died in August, 1913.

CASE VI.

Dr. Stork, impressed with the serum treatment, tried it on a male, aged 32, with inoperable epithelioma of the jaw and tonsils. On July 31st, 1913, the patient told me that radium did him no good, and that the serum was the only thing which took away the pain. Dr. Stork first saw him in January, 1913; he began the serum in June, and continued it weekly for three months. The patient died in November. This growth was very rapid in its course.

I suggest that the goat serum relieves pain by attacking the outskirts of the advancing growths, retarding or preventing their advance into normal and sensitive tissues. A sufficiency of the same chemical action ought to lead to shrivelling up of the tumour, and did so in some instances.

The cases with which the physician has to deal are far advanced, and often hardly cases for any treatment at all, or yet for conclusions. At the same time, a great deal may be done for some of these cases, and a wide field of research opened on scientific lines.

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A CASE OF TETANUS: RECOVERY.

BY

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IN the following case the long period of incubation—fourteen days—suggested a favourable prognosis in spite of the severity of the symptoms.

A Belgian soldier, aged 21, was wounded near Ostend on October 18th, 1914, by a rifle bullet, which passed through the upper third of his left thigh. He was brought to the Bevan Hospital, Sandgate (V.A.D., Kent, 30-36, T.F.A.), on October 26th, when I found an exceedingly foul wound discharging pus from entry and exit openings. The wound was irrigated twice daily with hot strong solution of iodine and also with hydrogen peroxide lotion, and hot boracic fomentations were applied every four hours.

He did well until 3.30 p.m. on November 1st, when he complained of sore throat and stiffness of the jaws. When I saw him at 5.30 p.m. signs of tetanus were marked; 1,500 U.S.A. units of antitetanic serum were at once injected subcutaneously close to the wounds. The wounds were packed full of potassium permanganate crystals, which, after three minutes, were washed out with 1 in 40 carbolic; hot boracic fomentations were ordered every four hours, and by the mouth calomel gr. ½ and sod. bicarb. gr. 2½ every hour till the bowels acted. The powders were continued for twelve hours, but as the bowels had only acted once slightly a turpentine and soap enema was given and followed by relief. The spasms in the back and abdomen had been very severe, and he had bitten his tongue; there were marked risus sardonicus and profuse cold sweats. He could only swallow when helped into the sitting posture and pressure applied to the left trapezius muscle. He was fed by tube through a gap in the teeth every hour.

On November 3rd he was very restless and the spasms and trismus were severe; there was great difficulty in breathing. The wound was irrigated with saturated solution of potassium permanganate. Hyoscine gr. $\frac{1}{100}$ was injected at 6.30 p.m., but gave no relief, and as the spasms were increasing morphine sulphate gr. ¼ was given at 11 p.m. and repeated at 11 a.m. next morning. At 3 p.m. he had a very severe spasm and seemed to collapse; he was deeply cyanosed and respiration ceased. Brandy was injected into the chest and hyoscine gr. $\frac{1}{100}$ into the arm; he rallied slowly.

From November 5th to 8th the spasms, trismus, and sweats were well marked. The calomel powders were repeated on November 3rd and 4th. On November 9th he became very restless, and was with difficulty kept in bed; the temperature rose to 102.8° F., and he had a hard dry cough. Veronal (gr. viii) was given at noon without result; at 6 p.m. he was given a rectal injection of potassium and ammonium bromides āā gr. x. chloral hydrate gr. xv. He had a restless night, and at noon on November 10th chloretone gr. xxv was given by the rectum. At 8 p.m. he was given veronal gr. viii, but had very little sleep. On the following day the spasms were less, but on November 12th he was very excited, jerking about, especially when lying; he was given a mixture containing potassium, sodium and ammonium bromides gr. xlviii of each, one-twelfth part every four hours. He improved, and on November 14th the jaws began to relax; next day he could protrude his tongue. After this he made a rapid recovery.

The marked dyspnoea, a very grave symptom, was no doubt due to spasm of the respiratory muscles set up by

the tetanus toxin, and also, I think, increased by the injections of morphine sulphate, which may cause spasm of the pulmonary arterioles. I should certainly never use it again. Dr. Doyen of Paris recently reported 24 cases seen by him in France in which, after subarachnoid injections of serum, the patients were made to lie on their faces with the foot of the bed raised to cause the serum to gravitate to the brain; after adopting this manœuvre he had 80 per cent. of recoveries whereas previously he had lost 80 per cent. I consider, however, that had this been done in our case the patient would have died, as he was quite unable to swallow excepting in the sitting posture. Intravenous subarachnoid or intracranial injections of serum were not used, as the man did well with subcutaneous injections for the first three days and intramuscular injections subsequently. The large doses of calomel and soda given the first day and the subsequent frequent doses helped greatly to eliminate the toxin and prevent any symptoms from the serum. The excitability on November 9th and 12th, when the spasms were diminishing, is worth noting, as it did not readily yield to treatment. I had, unfortunately, missed reading Dr. W. Sheaf's notes on the treatment of tetanus by chloretone, 30 to 40 grains in olive oil per rectum, in the BRITISH MEDICAL JOURNAL of October 17th, 1914; the dose of chloretone averaged 80 grains a day for five days. My thanks are due to Colonel Wilson, R.A.M.C., P.M.O. Shorncliffe, who kindly supplied the serum; to Dr. Bradbury of Sandgate, who saw the patient with me on several occasions, and also to the excellent nurses he had.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AN ARITHMETICAL HELP TOWARDS X-RAY LOCALIZATION.

THE following method, which I have worked out in order to simplify the determination of the exact depth of a foreign body from the surface, may be expressed in the form of an arithmetical rule.

"Multiply the distance from the anticathode to the screen by the amount of the excursion of the shadow on the screen, and divide the product by the sum of the amount of displacement of the tube and the amount of the excursion of the shadow."

This can be easily remembered by the formula

$$\frac{A \times S}{T + S}$$

where A is the distance from the accurately centred anticathode to the screen above, S is the amount of displacement of the shadow, and T is the amount of displacement of the tube.

It is necessary that T and S should be expressed in the same terms—either in inches or centimetres, but A may be expressed either in inches or centimetres, and the result will be in the same terms as A. The screen is supposed to be on the skin surface. The three following examples will show the simplicity and rapidity of the calculation required.

1. A. Distance of anticathode from screen = 22 inches.
   T. Displacement of tube = 6 centimetres.
   S. Excursion of shadow = 2 centimetres.
   By the formula $\frac{22 \times 2}{6 + 2} = \frac{44}{8} = 5\frac{1}{2}$ inches distance of foreign body from surface.

2. A. Distance of anticathode from screen = 54 centimetres.
   T. Displacement of tube = 3 inches.
   S. Excursion of shadow = 1 inch.
   Then $\frac{54 \times 1}{3 + 1} = \frac{54}{4} = 13.5$ centimetres from the surface.

3. A. Distance of anticathode from screen = 20 inches.
   T. Displacement of tube = $3\frac{1}{2}$ inches.
   S. Excursion of shadow = $\frac{1}{4}$ inch.
   Then $\frac{20 \times \frac{1}{4}}{3\frac{1}{2} + \frac{1}{4}} = \frac{5}{3\frac{3}{4}} = 1\frac{1}{3}$ inch from the surface.

By the employment of this method the necessity for the use of triangulation charts or apparatus with sliding-scale pieces is done away with. Providing the tube is accurately centred and the measurements of A, T, and S are exact, the depth of the foreign body is given with mathematical accuracy.

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Chief Clinical Assistant, X-Ray Department, West London Hospital.

CASE OF LARYNGEAL SARCOMA.

A MAN aged 75 was sent to me by Dr. Cowie of Bournemouth on account of laryngeal trouble of eighteen months' duration. His voice was little more than a whisper, and he complained of difficulty in breathing, cough, and expectoration.

On examining the larynx it was observed that the left cord was normal and moved freely, but from the level of the right aryepiglottic fold downwards a reddish papillary mass occupied the right side of the larynx. Opposite the sound left cord the growth presented a whitish area covered with close-set, short, pointed papillae. No secondary glandular deposit could be found.

A diagnosis of epithelioma was made from the clinical evidence. A subsequent report after the microscopic examination of the growth stated it to be "a large round-celled sarcoma."

The patient at first declined operation, but subsequently agreed to have thyrotomy performed. He objected to any procedure which would deprive him of his voice.

Operation was performed on March 4th under chloroform. After a preliminary tracheotomy the anaesthetic was given through the tube for the remaining steps of the operation. The thyroid cartilage, which was ossified, was sawn through. On separating its wings, the growth was seen to be much more extensive than appeared in the laryngeal mirror. It almost filled the space from the level of the cords to the upper border of the cricoid. It was difficult to see how the patient had breathed at all. After cocainizing the larynx, the growth was peeled off the thyroid up to an incision just beyond its limits.

As there was considerable bleeding and the patient had some bronchial catarrh, I decided to retain the tracheotomy tube for a day or two. He was nursed in a well-ventilated room with open windows. There was a very free discharge of bloodstained mucus from the tube for the first two days. On the third day the tube was removed. The wound above the tracheotomy opening looked like giving some trouble, but cleared up under a boric fomentation. The first attempts to take liquid food caused some pain and troublesome cough, but this difficulty soon disappeared after the tube was removed.

The patient made an uneventful recovery. Six weeks after operation laryngoscopic examination showed that the area occupied by the growth was completely healed over. The patient feels well and strong, and has a rough but useful voice. Now (six months after operation) there is no evidence of recurrence, and the patient is in excellent health. A slight fold is to be seen replacing the right cord.

In view of the extent of the disease and the nature of the operation permitted, one could hardly anticipate a permanently successful result, but the patient has at all events enjoyed six months' excellent health.

Sarcoma of the larynx is a somewhat rare condition, and for this reason I have thought it worth while to put this case on record.

Bournemouth. CHARLES SALKELD, M.B., B.S.Durh.

Reports of Societies.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

AT a meeting on January 8th Dr. W. WHITLEY read a paper on *Criminal abortion and abortifacients*, in which he laid stress on the importance of distinguishing between those abortions which were successful and those which were not. In the former case life was utterly destroyed, and in the latter the infant, when born, might be puny, undeveloped, and devoid of resistive power. If it should survive, it might be only to establish a pathological existence, and possibly to perpetuate a race of degenerates. Among the means adopted to produce abortion the commonest in England was by repeated, regular, and

systematic purgation. It was probable that where this means of procuring abortion was unsuccessfully attempted the child frequently did not live long, and, in the event of survival, it exhibited a tendency to develop nervous diseases. Referring to the use of diachylon as an abortifacient, it was pointed out that this drug was quite readily obtained from herbalists. From inquiries he had made Dr. Whitley found that in some localities chemists had agreed not to sell it to lay persons except on the prescription of a doctor. Among the agencies which were actively at work, directly and indirectly, in fostering the trade of the abortionist was the press, and especially the religious press. Among the various remedies which had been suggested for checking criminal abortion the scheduling of diachylon as a poison and the notification of pregnancy were not practicable. A closer study of ante-natal hygiene and educative measures generally were more hopeful, and some good might result from making all abortions and miscarriages notifiable to the sanitary authority, a patho'ogical examination of the fetus and placenta being made in every case. When the state decided to take charge of every nameless child, much would have been done to put a stop to the practice of abortion. Dr. W. G. WILLOUGHBY said that at the root of the whole matter was the deplorable fact that motherhood had fallen into disgrace. Dr. F. G. BRIEN (Canada) considered that educative measures and personal influence would do far more than legal enactments in lessening the practice of abortion. Dr. C. W. HUTT considered that more evidence than at present existed was required that there was any injury to a child born after an unsuccessful attempt to procure abortion. The PRESIDENT referred to the frequency of abortion among the women who worked in lead processes in the pottery trade. He criticized the action of the Insurance Commissioners in permitting the treatment of insured persons by herbalists, through whom it was well known that abortifacient drugs could very readily be procured.

Reviews.

MORE FLIES.

THE Pitt Press of Cambridge seems to have become the special patron of flies. In our issue of October 24th, 1914, we reviewed Dr. Graham-Smith's *Flies and Disease*, and now we have the new edition of Dr. GORDON HEWITT'S *The House-Fly*,[1] a monograph well worthy to rank with Malpighi's *De Bombyce* or with Lyonet's treatise on the goat-moth.

Some seven years ago Dr. Hewitt, well known as the entomologist to the Dominion of Canada, was engaged in studying the anatomy of the house-fly, and he published his results in a series of monographs in the *Quarterly Journal of Microscopical Science*. A couple of hundred of these "separata" were, by the kind consent of the editor, bound up together and published under the title of *The House-Fly — Musca domestica Linn.* This small edition was, however, soon exhausted, and we congratulate ourselves that Dr. Hewitt has reissued his work in an enlarged and revised form. It is certainly one of the completest monographs we have on any animal, and that is rather to be wondered at, because it is the commonest animals that have as a rule been least "monographed." The fact that the fly has now come into its own is really due to the knowledge humanity has recently acquired of the terrible part flies play in conveying infantile diarrhoea and typhoid fever.

The first half of the book is occupied with a description of the anatomy of the egg, larva, pupa, and imago, and with detailed accounts of the breeding and other habits. The second half of the book contains chapters on the natural enemies and parasites of *Musca domestica*; chapters on other species of flies; of flies which frequent houses; and, most important of all, a chapter on the relation of house-flies to disease; and another on control measures. The fact that very many diseases may be and are conveyed by flies is now thoroughly established. Diseases such as infantile diarrhoea, anthrax, tuberculosis, cholera, ophthalmia, plague, small-pox, yaws, leprosy, dysentery, oriental sore, syphilis, and poliomyelitis, are all said to be carried by flies, and there is no doubt that just as we can free a community of *Anopheles* and therefore of malaria, so we can free a community of many of these diseases if we only took the same trouble to keep flies down that we do mosquitos. The United States Consul in Nuremberg twenty-one months ago drew attention to the scarcity of flies in Bavaria, which, he says, can there be in no way regarded as a pest. This he considered to be due to the extraordinary cleanliness of the Bavarian cities. Courtyards, alleys, vacant plots are kept clean, garbage being collected in closed tins, and there are no such quarters that can justly be designated as slums. It is that sort of cleanliness which Dr. Gordon Hewitt has been preaching in a veritable crusade throughout Canada and the United States during the last two or three summers.

People are so extraordinarily ignorant of the habits of the fly that few appreciated the fact that it breeds very largely in stable manure. The use of motor cars renders it more difficult for the fly to breed and has a marked influence on the fly population. Manure should be stored in fly-proof receptacles, or it should be removed at the very least once a week, sometimes twice a week—at any rate, during the summer months. It has been found that treating the manure with kerosene has been effective. Chloride of lime has also proved fairly successful—1 lb. of chloride to 8 lb. of infested horse manure. But flies breed in other fermenting matter, such as decaying vegetables of all kinds, rotting plants, fruit, etc. Hence it is extremely important that all garbage should be collected and removed in the shortest possible time and removed in fly-proof receptacles. The so-called tips or dumping places in vacant fields, often surrounded by densely populated houses, should be abolished, and all decaying organic matter buried or burned. Every care should be taken to protect the infant and the sick from contact with flies, and especially should all exposed food be covered. Anything more filthy than the English habit of exposing uncooked meat to all the dust and floating dirt of the town can hardly be imagined. The present writer frequently sees the dust-carts of the town he lives in collecting the garbage and refuse of the town in the early morning. The dust-boxes and other receptacles are tilted into the carts and scatter a shower of impure dust and microbes over the uncovered meat, etc., displayed in unwindowed butchers' shops. Thus is the food of the people contaminated, and yet no one seems to mind.

The second book we have under review is called *Flies in Relation to Disease: Blood-sucking Flies*,[2] by E. HINDLE, B.A., Ph.D. This volume, together with the one mentioned above and that of Dr. Graham-Smith on *Flies and Disease*, leaves little further to be said about flies in relation to human disease. Dr. Hindle states in the preface that his main object in writing the book was to collect the more important observations made in regard to the part taken by flies in the transmission of disease. He has included notes on the classification of the flies concerned and descriptions of the infection transmitted, but he has made no attempt to describe the clinical symptoms of the varying diseases either in the human being or in other animals. It is indeed a notable list, containing close upon one hundred species of biting flies which convey disease in some form or other to our poor suffering humanity. It is difficult to know quite where to begin to deal with so many-sided a book, but we will, as an example of the method adopted by Dr. Hindle, give an account of Chapter XIV. The chapter commences with a short description of the family TABANIDAE, which contains about 1,800 species, and which is known popularly as breeze-flies, horse-flies, gad-flies, or clegs. In this family, as is so often the case, the male is a comparatively innocent creature, living on nothing more stimulating than the juices of flowers, whilst the female is one of the most bloodthirsty and voracious of insects. Its bite is painful, but is, as a rule, not followed by any marked swelling. The eggs are usually laid on the stems and leaves of plants, and the

[1] *The House-Fly—Musca domestica Linn.: Its Structure, Habits, Development, Relation to Disease and Control.* By C. Gordon Hewitt, D.Sc., F.R.C.S. Cambridge Zoological Series. Cambridge: The University Press. 1914. (Demy 8vo, pp. 397; 104 figures. 15s. net.)

[2] *Flies in Relation to Disease: Blood-sucking Flies.* By E. Hindle, B.A., Ph.D. Cambridge Public Health Series, under the editorship of G. S. Graham-Smith, M.D., and J. E. Purvis, M.A. Cambridge: The University Press. 1914. (Med. 8vo, pp. 409. 12s. 6d. net.)

larvae—most horrible-looking creatures they are, too—crawl about on logs and stumps at the edges of ponds and streams. So characteristic are they in their tendencies that when reared in captivity they must be kept carefully segregated in different vessels, or the brood will invariably end by the strongest eating up all the weak ones. As a rule the larva lives through the winter and pupates in the spring, but in the warmer countries their development is considerably hastened. The adult flies are difficult to keep alive in captivity, being very resentful of all confinement. The precise amount of harm they do is still a matter of dispute. A large number of them harbour certain species of flagellates; whether these are parthenogenetic has not been accurately proved.

Into all the evidence for or against incriminating the *Tabanidae* as disease carriers Mr. Hindle goes very carefully. He seems to accept the conclusion that certain varieties of trypanosome disease in animals, such as El Debab, Nagana, Mal de la Lousfana, and Dourine, have been transmitted experimentally by the bites of Tabanid flies and certain diseases of dromedaries and camels are also thought to be conveyed by these objectionable insects. On the whole he says that the available evidence supports the view that Surra may be transmitted by the bites of Tabanids, and in nature they may play an important part in the spread of this disease; the worst Surra-zones are areas where the genus *Tabanus* is very common. It is obvious that there is, in this direction, still room for inquiry. We must congratulate Mr. Hindle on the completeness of his work, on his admirable illustrations, and on his exhaustive index. A. E. S.

PHYSIOLOGICAL PRINCIPLES IN PRACTICE.

SIX years have elapsed since we took occasion to commend the useful work undertaken by Dr. LANGDON BROWN to indicate the lines upon which physiological principles may be usefully applied in the treatment of disease. The appearance of a third edition[3] makes it evident that its value has been duly appreciated.

The action of hormones, the substances secreted by living organs and exercising influence over other parts of the same organism, is closely examined in an early chapter. Their employment in practice requires just such guidance as is afforded. Dogmatic assertions as to their action must be strongly deprecated. A good deal of trustworthy information has now been acquired with respect to the movements and function of the stomach and intestinal tract, but the old adage with respect to "one man's meat" remains to be faced in practice and can only be met by close personal observation.

A useful chapter is devoted to the work of the pancreas. It is now known that the organ secretes ferments which are capable of acting on all foodstuffs and hence disease affecting it may be followed by multiple derangements of intestinal absorption and subsequent intoxication. Their recognition calls for elaborate chemical analysis. Surgical treatment of intestinal stasis is deprecated until all medical means have failed, but these means, whether by vaccines or intestinal disinfection, do not offer very brilliant hopes of success.

Physiological, and still more pathological, chemistry seems to have reached a somewhat chaotic stage. Equally skilled observers fail to agree in similar investigations, and under such conditions knowledge does not advance. Until agreement is reached progress is delayed, and it would seem to be more advantageous at the present time to carry out confirmatory observations than to multiply inquiries founded on hypothetical bases.

PHARMACIST WRIT LARGE.

The Pharmacy Handbook,[4] by Mr. F. W. CROSSLEY-HOLLAND, contains a collection of information on a variety of subjects on which it is thought pharmacists would do well to inform themselves. Its scope may be indicated by the titles of some of the chapters, which include pharmacotherapy, serums, vaccines, and tuberculins, hormone therapy, ionic medication, pharmaceutical bacteriology, etc. While some knowledge of such subjects is naturally useful to a practising pharmacist, it may be doubted whether the amount of information to be obtained from a short treatise like the present would not be rather a source of danger than otherwise. The very slender nature of the treatment of the various subjects may be gauged from the fact that the chapter on pharmaceutical bacteriology occupies only nine small pages. The last paragraph of the chapter states that "There is no doubt that the pharmacist can be of great assistance to the physician in this connexion by assisting him in his work of clinical diagnosis. In this way the pharmacist will become a 'clinical chemist' and add to both his reputation and income." This shows a good deal of optimism on the part of the writer. He is engagingly frank in his attitude to the medical profession, as the following extracts from an earlier chapter will indicate:

> A knowledge of the therapy of a drug is useful to the pharmacist, not from the point of view of its being so much ornamental knowledge, but because such acquaintance would enable the pharmacist to assist the physician in choosing the right form of any given drug to enable him to realize his intentions.
>
> There are some who will venture to say that the physician's knowledge of therapeutics is not profound in a large number of instances; it is too often centred around the contents of his hospital pharmacopoeia. A conversational knowledge of the therapy of the conventional drugs of pharmacy would be the pharmacist's best friend in confining the physician's attention to the recognized drugs for treatment, and at the same time extending that attention to really worthy preparations.
>
> A chat with local doctors when they visit the pharmacy will do much to ascertain their outlook on some drugs and to guide this in a profitable direction.

The spectacle of the physician or even the "local doctor" increasing his "not profound" knowledge of therapeutics by means of the pharmacist's conversational efforts may well provoke a smile, and although this little book may perhaps be useful to the pharmacist in giving him a smattering of the subjects treated of, he would scarcely find it sufficient to enable him to "be able in no small degree to influence his particular medical patrons in their prescribing."

MEDICAL JURISPRUDENCE FOR INDIA.

PROGRESS in forensic medicine depends on scientific advance and increased experience of legal practice. New aids in the application of medical knowledge to the solution of questions arising in the administration of law are continually accruing, and it becomes necessary, in order to maintain the usefulness of treatises on medical jurisprudence, to revise and amplify existing textbooks, more especially those which, from original merit, have acquired authority and acceptance for reference and use by those engaged in the business of law courts. For this reason the issue of a new edition—the fifth—of Lyon's excellent *Medical Jurisprudence for India*[5] is as welcome as it is necessary. This present edition has been prepared by Lieutenant-Colonel L. A. WADDELL, whose singular fitness for the task has been indicated in the reviews of previous editions which have appeared in the BRITISH MEDICAL JOURNAL. The work has undergone very thorough revision. Much of it has been rewritten, and fresh matter has been introduced into every chapter, while by rearrangement of its contents and the amplification of the index consultation has been greatly facilitated. The book constitutes a full and trustworthy representation of the subject, specially adapted, as its title indicates, to the circumstances and needs of the Indian Empire. Among the more important additions may be noted a new chapter on the bio-chemical test for human bloodstains, contributed by Lieutenant-Colonel W. D. Sutherland, I.M.S., in which special processes devised by him suitable for tropical climates have been described; a test for seminal stains and special tests for the separation of alkaloidal poisons and for the detection of cocaine devised by Dr. E. H. Hankin, D.Sc., chemical examiner for the Upper Provinces; and a full description of the use of finger-

[3] *Physiological Principles in Treatment.* By W. Langdon Brown, M.A., M.D.Cantab., F.R.C.P. Third edition. London: Baillière, Tindall and Cox. 1914. (Cr. 8vo, pp. 414. 5s. net.)

[4] *The Pharmacy Handbook.* By F. W. Crossley-Holland, F.C.S. Oxford Medical Publications. London: H. Frowde; and Hodder and Stoughton. 1914. (Cr. 8vo, pp. 232. 6s. net.)

[5] *Lyon's Medical Jurisprudence for India.* By L. A. Waddell, C.B., C.I.E., LL.D., M.B., F.L.S., etc. Calcutta and Simla: Thacker, Spink, and Co.; Bombay: Thacker and Co., Limited; Madras: Higginbothams Limited. 1914. (Demy 8vo, pp. 882; 71 figures, 6 plates. 28s. net.)

prints for the purpose of identification, with illustrations from the monograph of Sir E. R. Henry, G.C.V.O., C.S.I.

The arrangement of the book is admirable, and the use of heavy type for paragraph headings facilitates reference. Illustrative cases are drawn from European and Indian sources, and the questions which are likely to arise in court are pointedly put and plainly and fully answered. This system of question and answer is further elaborated by propounding in an appendix the interrogatories which are likely to be put to a medical witness in a variety of cases.

Useful chapters are devoted to the subjects of insanity, life assurance, and medical obligations and responsibilities. Directions for the performance of *post-mortem* examinations are given, and forms for police reports and the certification of lunatics. Useful information regarding the mortality of different trades, the statistics of poisoning and suicide, and the prevalence, methods, and detection of cattle poisoning in India, are supplied.

Altogether this is a most excellent volume, and, in addition to its technical value as a reliable instrument of guidance and reference in forensic practice, it is also interesting from ethnical and psychological points of view as supplying data regarding criminal habits and customs prevailing in different parts of India among different tribes and castes.

NOTES ON BOOKS.

MANY students of primitive marriage customs must have been perplexed by the intricacies of the system of prohibitions observed in the Australian tribes, and recorded by such writers as Spencer and Gillen, and *prima facie* it is difficult to account for the existence of so complex a ritual among savages. We have received a copy of an essay by Mr. JOHN HOPKINS,[1] which should be of service to the student. By the aid of diagrams analogous to the constitutional formulae of organic chemistry, Mr. Hopkins brings out the resemblances and differences between two, four, and eight class family types, the latter being that of the Northern Arunata, and he propounds an ingenious theory as to the way in which the types may have been evolved one from another. His essay will be read with especial interest by those who have perused Sir J. G. Frazer's *Golden Bough*, in which classical work Australian folk lore is frequently discussed and illustrated.

MEDICAL AND SURGICAL APPLIANCES.

Plastic Ear Plugs.

AN illustrated account was given in the JOURNAL of January 2nd of a very ingenious ear defender invented by Mr. A. Mallock, F.R.S. The special diaphragm on which the efficacy of the plug depended was mounted in an ebonite holder.

We have now received from Mr. Frank A. Rogers, of 327, Oxford Street, London, W., samples of ear plugs for protecting the organs of hearing against injury from the concussion caused by gun-firing, and for use in deadening noise generally.

The plugs are composed of plastic materials held together by some fibre, and the mass is impregnated with antiseptics. They are the result of experiments made by Mr. Rogers to produce efficient aural plugs which conformed to the requirements indicated by Dr. Jobson Horne in an article on "Gun Deafness and its Prevention."[2]

The conditions of efficiency indicated by Dr. Jobson Horne were that the plugs must be close fitting and impervious, and, whilst reducing intensity of sound, must not prevent hearing; they must be easy to insert and easy to remove intact, no part remaining in the canal of the ear; they must be non-irritating; inexpensive, so that for cleanliness the same plug need not be used repeatedly; and, above all, they must be as nearly antiseptic as possible. The ear plugs hitherto in use do not comply with this last important requirement, and the importance of surgical cleanliness in this matter can hardly be overstated. Cotton-wool has been found to be of little service and may be a medium for conveying infection. A mixture of plasticine and cotton-wool has been tried and found to be of service, but hitherto it has not been prepared and supplied with a view of combating aural sepsis as well as concussion.

An objection to ear plugs made of a hard substance, such as vulcanite, is that they cannot meet the variations in the opening of the ear canal. To overcome this difficulty with hard plugs and to ensure their being retained in the ears an unduly large size at times is apt to be worn and may cause injurious pressure upon the lining of the canal. Moreover, with such plugs it is difficult to eliminate the element of sepsis.

An ideal plug for the purposes in view is, of course, one of proper consistency that can be readily moulded to fit exactly the opening of any ear without preventing the wearer from hearing ordinary conversation or the word of command.

The plastic ear plugs before us are wrapped separately in tinfoil, placed in capsules, and the two supplied in a box. The directions for use are, to remove the tinfoil and knead the plug between the finger-tips into an elongated conical shape, to insert the pointed end into the opening of the ear, and carefully press the plug to fill the orifice. After use the plugs should be remoulded by the fingers into the original shape and replaced in the capsules and box, in which they may be carried safely in the pocket.

From the foregoing it is obvious that both in the manufacture as well as in the manner of supplying these plastic plugs care has been taken to eliminate the element of sepsis. The price of the ear plugs is 1s. a pair (postage 1d.), so that the requirement of inexpensiveness has also been met.

The plugs undoubtedly reduce the intensity of sudden and loud sounds, and in that respect must be beneficial; so far as they have been tested on subjects with normal hearing ordinary conversation is not much interfered with. These tests have been conducted indoors; further tests will show whether the presence of these plugs in the ears interferes with the hearing of the word of command in the open country or in the working of guns on board ship. Their presence in the ears, whilst deadening the sounds, does not prevent conversation over the telephone.

There are two points with reference to the sample sent to us to which we would draw attention. The first is that the plugs seem to be too bulky; if that is a drawback, it is one which can easily be remedied. The second point is that the mass seems to be too friable, with the possible result that if the plug is not suitably kneaded, then when it is removed a piece might remain behind in the canal of the ear and cause anxiety; its presence, however, would cause no more, and possibly less, trouble than the inconvenience of excess of wax in the ear, and it could readily be removed by syringing the ear. In this respect the plastic plugs have an advantage over the hard vulcanite plugs formerly in use, which, when forcibly inserted, could not be removed without risk of injury to the canal of the ear. Doubtless, further experiments will remedy the friability we have noticed. If, by wearing plastic ear plugs the serious consequences of concussion of the organs of hearing through gun-firing can be averted, many, we are sure, would be willing to put up with any possible inconvenience of having the ears syringed.

Gun-deafness is so serious a matter that we are glad to learn that the means of preventing it are receiving so much attention.

Barnet X-ray Plates.

Messrs. ELLIOTT AND SONS, LIMITED, of Barnet, have submitted specimens of their Barnet *x*-ray plates, which upon trial have been found to be quite equal to the best *x*-ray plates on the market. They are rapid, and give soft negatives full of detail. They are, however, slow in fixing, which is no doubt due to their richness in silver.

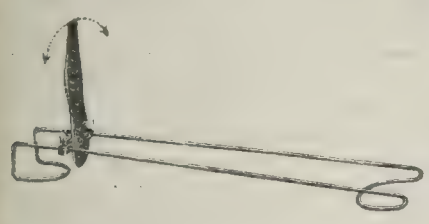
A Leg Splint.

Dr. R. D. MOTHERSOLE, Surgeon to the Bolton Infirmary, writes: The splint shown in the illustration is a modification of one which I have used for about twenty years, and has many advantages over the ordinary back splint. It is made of round wrought iron, $\frac{5}{16}$ in. diameter, and the ends of the bars which make the sides of the splint are bent underneath and joined together, forming a horse-shoe support both top and bottom, so that the proximal end of the splint is raised about 1 in. from the surface on which it rests, and the distal end 3 or 4 in. Two short bars of rectangular wrought iron ($\frac{3}{4}$ by $\frac{5}{16}$), grooved so as to grip the sides of the splint, are clamped together, one above and one below, and carry a footpiece made of sheet steel, so that it may be moved up and down the splint, and fixed at various angles in a plane at right angles to the long axis of the splint. In the larger sizes, it is sometimes advantageous to be able to move the footpiece to right or left of

[1] *The Family Chain. Marriage and Relationship of Native Australian Tribes.* By J. Hopkins, F.R.C.S. London: Watts and Co. 1914. (Fcap. 4to, pp. 31. 1s. net.)

[2] *Lancet*, August 15th, 1914, pp. 462-467.

the middle line. This splint is very easily padded by merely winding a flannel or domette bandage round it, from the top to an inch from the point where the footpiece is to be fixed. The raising of the splint on its horse-shoe ends enables the limb to be bandaged or unbandaged without lifting it off the bed. There is also much less risk of a fracture becoming displaced, and less pain and discomfort to the patient. If there is a wound at the back of the limb, an interruption can be made by omitting part of the bandage. The angular movement of the footpiece enables the splint to be used for either leg with the limb in what Sir Arbuthnot Lane has pointed out to be the natural position of rest, namely, with some rotation outwards. Indeed, it was to allow of this outward rotation that I originally devised the splint. As the footpiece slides upwards and downwards, the same splint fits legs of very different lengths; it is also advantageous to be able to remove the footpiece if one desires to work the ankle-joint while the limb is resting on the splint. In fractures of the leg, whether one adopts the plates and screws of Arbuthnot Lane or the massage and movement of Lucas-Championnière, this splint has distinct advantages over any other with which I am acquainted. It is very useful in many affections of the knee, and after excision of that joint, also after plating fractures of the femur. I have one in use at present on a patient whose femur had to be plated for a simple fracture just above the condyles, while he had a compound fracture of the tibia and fibula in the same limb. It can be used in place of a Hodgen's splint in fractures of the shaft of the femur, if plating is contraindicated. Limbs on this splint are easily handled, and patients always say it is comfortable. I believe that it would be very useful for military purposes.



REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD (ENGLAND AND WALES).

(Continued from p. 120.)

TUBERCULOSIS.

THE numerous problems connected with the administrative control of tuberculosis require over forty pages of the report for their consideration, and this year are of special interest as three important new measures are coming into full action—namely, Compulsory Notification, the Insurance Act, and, finally, the offer of the Treasury to give certain increased grants for the treatment of tuberculosis by schemes embracing non-insured persons.

The confidential nature of the notification is repeatedly emphasized. Unless certain administrative measures are taken the dispensary officer, it is stated, cannot have access to the tuberculosis register. This is as it should be, and serves to bring into greater prominence the unusual nature of the official suggestion that the sanitary authorities should inspect the equally confidential information in the hands of the maternity charities and midwives. In relation to the visiting required after notification the medical officer makes a very important point, which has not yet received proper recognition. The prophylactic object of the visit is twofold—to prevent the patient infecting healthy persons and to find the original source of infection to stop further mischief. This being so, it is equally important that cases of surgical tuberculosis, although not a source of danger to others, should also be visited. The facilities for the examination of sputum have been very much increased in different areas, and it is satisfactory to learn that advantage has been taken of them. It is stated that the presence or absence of tubercle bacilli in the sputum is to be made the basis of the primary classification of all cases treated in connexion with the official schemes. This is a piece of really sound policy, for when the results are published, in the course of a few years, we shall for the first time be in possession of incontrovertible evidence as to the value of certain methods of treatment. In the course of some notes on the constitution of the staff under various tuberculosis schemes the excellent suggestion is made that general practitioners should be appointed for limited periods as clinical assistants.

The co-ordination of the work of the different officials under the various schemes has given rise to several knotty problems which appear to have been met in a satisfactory manner. Much importance is attached to the necessity for providing a certain number of observation beds which may also be used for emergencies such as haemoptysis. There is a special report on this subject from the pen of Dr. Chapman. The thorny subject of early diagnosis and the relative value to be assigned to various physical signs has not escaped attention, as the following remarks indicate:

> To prevent the continuance of this varying standard of diagnosis further evidence will need to be collected as to the value and relative importance of the various signs and other evidences upon which diagnoses are now based. . . . It is confidently expected that the records which the Board are about to prescribe will provide much valuable material for investigation into them.

In relation to this problem a most important point is to ensure careful following up of all cases examined, and the proposed arrangements appear to promise much greater success in this direction than has hitherto been obtained. The examination of contacts appears to have been more or less of a perfunctory nature in most areas, but this is to be remedied. The purpose of the examination of contacts is, first, the recognition of secondary cases at an early stage of the disease, and, secondly, the rooting out of old chronic and very dangerous sources of infection which may have escaped notification. Hence it is specially important that the adult contacts should be examined. Experience is held already to have demonstrated that tuberculosis dispensaries must undertake treatment, if for no other reason than to promote regular attendance and keep in communication with the patients.

Domiciliary treatment is being brought under the scheme, and arrangements are being made to bring the general practitioner and the tuberculosis officer into communication over each case. "After-care" and "care" committees are to be formed, and it is noteworthy to find a responsible public official urging the necessity of obtaining voluntary funds to supplement the inadequate resources of the Insurance Act by providing for additional food, rent, etc. But surely it is a mistake even to suggest, as is done—rather ambiguously, perhaps—at page lxxviii, that Education Committees should find employment for tuberculous patients.

Under financial stimulus the institutional treatment has made great strides. On the basis of the Departmental Committee's report about 14,428 beds, in addition to the 9,000 Poor Law beds, are required for the proper institutional treatment of tuberculosis, and of these 8,846 are already provided and 2,796 are awaiting approval. It is highly probable that the accommodation for early promising cases has already reached the level of 1 bed per 5,000 of the population, which is the standard set by the report. Two cities—Bradford and Sheffield—have already submitted schemes which are comprehensive and deal with Poor Law patients and both insured and non-insured persons.

The average duration of institutional treatment has been less than eighty days, which, in the experience of most physicians, is quite insufficient; and we are told that the Board's inspectors have found that some unsuitable cases are treated for very prolonged periods, whilst more suitable cases are discharged too soon. It is reassuring to find that the inspectors are alive to these deficiencies of administration, which, in some cases at least, are to be attributed to undue influence of members of committees. In connexion with institutional treatment, the medical officer provides a very neat little essay on the immense value to the public health of the hospitals in the large urban districts which should get into the hands of all those who are responsible for charitable appeals.

The mortality figures for tuberculosis are carefully reviewed but nothing very novel is elicited. The notification figures for different areas have revealed so many discrepancies that they cannot be considered to have any importance for comparison, so that at present the chief value of notification is its assistance in dealing with the individual case.

VENEREAL DISEASES.

The medical man will find nothing very new in this section of the report, which consists largely of extracts from Dr. Johnstone's well-known report on the subject.

Dr. Newsholme, who is a member of the Commission sitting upon this subject, expresses a personal opinion against notification, and states "the immediate practical problem is the means for providing for the population as a whole readily accessible and unfettered means for diagnosis and treatment." He hopes that much amelioration of present conditions will ensue from the Insurance Act. Some figures showing the notifications for ophthalmia neonatorum are remarkable for the variations in different towns; whether they correspond to facts is doubtful. Local authorities are now paying increased attention to the early and efficient treatment of the little sufferers from this disease.

MISCELLANEOUS.

Under this heading there is nothing for comment except that one very important matter has been entirely overlooked. The Board is the body responsible for the efficient supervision of the working of the Food and Drugs Act, whilst there is ample internal evidence in the report that the medical officer has surveyed the Insurance Act for all matters which may affect his office. It is therefore somewhat disappointing to look in vain for any indication that the Board is alive to the necessity for ensuring that insured patients are supplied with drugs of good quality and accurately dispensed.

THE APPENDICES.

Amongst many other subjects dealt with are the vaccinal condition of cases of small-pox (only 46 cases in all), the statistics obtained for poliomyelitis and cerebro-spinal fever, a scarlet fever outbreak due to milk (Woodbridge), the Kenilworth outbreak of enteric fever which was traced to the water supply and associated with an outbreak of "gastro-enteritis" possibly due to the same cause. There is a most interesting report on the South London epidemic of diphtheria, which was traced to milk, and it was found that some of the milkers suffered from sores upon the hands which were infected with the diphtheria bacillus. In the case of a small outbreak of small-pox at Milnrow the infection was probably conveyed by imported cotton.

Dr. Frank Seymour's report on lead poisoning at Guisborough deserves special attention from the medical profession in general.

Some authorities hold that lead poisoning is responsible for a large amount of illness which is not diagnosed as lead poisoning. The report indicates that there were in Guisborough a large number of cases of indefinite illness characterized by colic, headache, neuralgic pains, anaemia, but in very few was there a blue line, and in one case only wrist-drop. The practitioner in charge of these patients had caused the urine to be examined, with the result that small quantities of lead were found in many cases. Three cases of serious illness were attributed to lead, but the evidence as given in the report is not satisfactory. The water supply was of a peaty character and was plumbo-solvent. This fact had been recognized, and an attempt had been made to correct it by the addition of lime. It appears probable that, owing to excess of lime being added, the plumbo-solvent properties were thereby replaced by erosive properties, so that no good resulted. Additional measures were prescribed for the treatment of the water supply. The importance of this report lies, however, not so much in the intrinsic facts which it embodies as in its relation to Section 63 of the Insurance Act, which is not mentioned in the report. This section is intended to put the cost of excessive illness upon the shoulders of those responsible, and therefore in a case such as the above serious financial interests might be involved. From this point of view, if from no higher, it is regrettable that the facts were not examined more fully for the Board. There is no mention of any blood examination for basophilia having been made, and in one of the cases mentioned as being serious it must be evident to every clinician that a Wassermann reaction was absolutely indispensable for a correct diagnosis. There is also a useful memorandum on health visiting of expectant mothers by Dr. Janet Lane-Claypon, which is rather spoiled by the assumption that it is the function of the health visitor to treat constipation and depressed nipples. The digest of the vaccination officers' returns shows that the practice of vaccination is still steadily declining.

AUXILIARY SCIENTIFIC INVESTIGATIONS.

Arterial Degeneration.

Dr. F. W. Andrewes, who last year presented a most valuable general review of present knowledge of the subject, has continued his researches, and his report now published on his investigations might serve as a model of first class research work. It is divided into two portions. The first concerns the degree to which infective conditions contribute to the premature occurrence of arterial degenerations; the second to the calcium content of the aorta regarded as a measure of degenerative change.

The liability of the arterial wall to bacterial invasion was first studied by cultural methods with the following results: Six cases of streptococcal septicaemia showed infection of the aortic wall in four; three cases of staphylococcal septicaemia in two; seven cases of malignant endocarditis in one only; three cases of acute rheumatism yielded a relatively non-virulent streptococcus in one; acute pneumonia and peritonitis yielded only negative results; whilst four out of five cases of urinary infection with *B. coli* gave positive results. Only one case of enteric fever could be examined, and in that case it is interesting to note that the organism found was a streptococcus. The histological character of the lesions produced were carefully studied with the following result:

> Syphilis stands by itself; its important rôle in arterial disease is already settled. When we turn to the other infective conditions the first impression is that of the slightness of the inflammatory changes found in the outer and middle coats of the aorta and other large vessels as compared with the damage inflicted by syphilis. But although in degree they are relatively slight, in kind they are similar—that is to say, they consist in chronic inflammatory infiltrations, mainly along the course of the vasa vasorum, consisting chiefly of lymphocytes with a few plasma cells and some endothelial proliferation. They appear to leave behind them slight areas of fibrosis, and in well marked cases slight breaks in the continuity of the elastic laminae are recognizable in suitably stained sections. The result of these small lesions is an impairment of the perfect integrity of the vessel; each spot affected must constitute a *locus resistentiae minoris* perhaps so trivial that of itself it may cause little harm, yet not without importance when other and more general causes of arterio-sclerosis come into play.

In 35 cases of general acute infections the aorta was found normal in 34 per cent., showed slight evidence of inflammation in 29 per cent., and definite evidence of inflammation in the media or adventitia in 37 per cent. Dr. Andrewes does not over-estimate the effects and grants that many cases of nodular sclerosis may begin as a purely degenerative change, but claims that there are other cases, of which syphilis is merely an extreme type, in which local infective changes seem the important determining cause.

By the careful chemical analyses of "normal" aortas at different ages figures of the calcium content were obtained by means of which a curve was constructed to show "the amount of CaO which a person is entitled to have in his aorta in virtue of his age," and thus enable us "to judge whether the actual amount found under given conditions demands a special explanation." The curve shows two abrupt bends corresponding to increase of lime—one at the age of 20 corresponding to the cessation of ossification, and the second between 30 and 35 corresponding to the commencement of involution. Diseased aortas were now examined and compared with the curve, with the following very interesting results: Uncomplicated syphilitic disease is characterized by a notable deficiency in the lime content. In ordinary non-syphilitic sclerosis the calcium content is scarcely raised in the initial stages, and there are occasional cases of extensive disease without any corresponding increase in the calcium content, but these cases are possibly due to some individual peculiarity of calcium metabolism. High blood pressure and renal disease do not lead to any increase in the aortic content, at least for a considerable time. There is some evidence that excessive indulgence in alcohol conduces to arterial degeneration as represented by the calcium content. It is probable that the mere ash percentage of the aorta offers almost as good an index of the condition of the aorta as does the more elaborate calcium determination.

Serological Diagnosis of Scarlet Fever.

Dr. Rajchman has attempted to apply the complement deviation reaction to the diagnosis of scarlet fever. The nasal discharge from cases of scarlet fever was used as

antigen after a preparatory treatment with antiformin. Rabbits were immunized with the material; and it was shown that their blood serum acquired "immune" properties thereby as tested by the Bordet-Gengou reaction. The protocols show that in some cases the complement fixation was of high degree, and therefore possibly specific. It was found that the nasal secretion of other diseases than scarlet fever also gave a positive reaction when tested against the "immune" serum, although in a much smaller percentage of cases.

Cold Storage of Vaccine Lymph.

Dr. Blaxall shows how uniformly good vaccinal results can be obtained by lymph which has been kept in cold storage, and points out that in all stages of lymph production the application of heat must be avoided, and even in the cold store it is necessary to avoid a varying temperature even when below the freezing-point. His further experiences with the use of oil of cloves have finally demonstrated that in this substance we have an agent which exerts a rapid and powerful disinfectant action upon extraneous organisms, but does not affect the potency of the lymph, and that therefore a combination of oil of cloves treatment with cold storage permits the preservation of vaccine lymph in full potency for almost indefinite periods. Ether was tried as a substitute for oil of cloves, but it was found that the margin of safety between the destruction of the extraneous organisms and of the vaccine was too narrow for practical purposes.

THE LISTER INSTITUTE AND THE MEDICAL RESEARCH COMMITTEE.

IN our last issue, in continuation of information already published with regard to the recent proposals of the Governing Body of the Lister Institute and the proposed amalgamation with the Medical Research Committee, we quoted at some length from a recent article in the *Daily Telegraph* by Sir Ray Lankester. It will be understood that Sir Ray Lankester, who, as we explained, took a leading part in opposing the proposals made by the Governing Body of the Institute, has written as a partisan from one side, and we are now enabled to give an account of the proposals made by the Governing Body of the Lister Institute from an opposite point of view, as follows:

It is unfortunate, from the point of view both of the Governing Body of the Lister Institute and of the Medical Research Committee, that the very full statement which was circulated to the members of the Institute by the Governing Body in support of their recommendations to amalgamate the Lister Institute with the national scheme for medical research has not been made public. It was circulated, of course, to all the members of the Institute, and Sir Ray Lankester, though he has had no share in the recent government of the Lister Institute, must be familiar with the urgent reasons for change which the Governing Body advanced in support of their proposals.

The main grounds upon which the Governing Body based the plea they made to the members of the Institute were threefold:

First, the Institute has no hospital beds and this Institute of Preventive Medicine has no opportunities at all for clinical, in close connexion with laboratory, research. Under the proposed scheme a hospital of at least 50 beds would have been provided on an adjacent site by Lord Iveagh, who made this munificent offer conditionally upon the scheme being accepted with the financial proposals which are embodied in it.

Secondly, while of the income of the Institute only £9,000 comes from endowment, the remainder, £15,800, represents gross earnings from the sale of vaccines, etc., and routine bacteriological examinations. As the Governing Body pointed out in its circular to the members, there are "drawbacks to a scientific corporation being also a trading body," and since the time and services of the Lister scientific staff are often unduly taken up in earning money for the Institute, the Governing Body considered "this combination of research and business to be prejudicial to the best interests of scientific inquiry."

In the third place, the Governing Body pointed out that, undesirable as this commercial activity may be in itself, it has the further disadvantage of being in its nature uncertain, and they considered that year by year this commercial source of revenue will tend to disappear as certain business houses, and the laboratories of local authorities, follow their present rapid course of development. A diminution of this commercial income would mean an inevitable crippling even of the present activities of the Institute.

If the proposals for amalgamation had been adopted, the present disabilities realized by the Governing Body would disappear, for it is inherent in the proposed scheme that release from the commercial undertakings necessary at present and from the future anxieties of the Institute, should be met by expenditure out of the National Research Fund.

These are all three weighty reasons, and it is the more to be wondered at that Sir Ray Lankester, who had them before him, makes no reference to them at all in his discussion of the proposals.

In the JOURNAL of last week the Lister Institute was spoken of as being "handed over to the Medical Research Committee," and Sir Ray Lankester had previously written of a "plan of annexing a rich and independent institution such as the Lister, and of undertaking the production of scientific discovery through the expenditure of public money by an unpaid, inexperienced committee of variegated eminence." In point of fact, the proposal upon which Sir Ray Lankester and his fellow members were invited to vote was the proposal of their Governing Body that the Lister Institute should be placed in the hands of three trustees, to hold it in trust for the nation. Of these three trustees, only one was to be nominated by the Treasury, while two were to be nominated in the first instance by the Governing Body and thereafter by the Royal Society. It was to be a condition of the trust that, in the event of a material diminution in the national contribution to the fund, or of failure to utilize the Institute or its endowment for "the pursuit of new knowledge by observation and experiment, with the object of furthering the elucidation of diseases and the alleviation of suffering," the trustees should have power by a majority appeal to a Court of Law to cancel the user of the property and to empower the three trustees in consultation with the Royal Society to submit a new scheme for the appropriation of the whole property for the furtherance of medical research.

The administrative and financial control under the proposed scheme would have been in the hands of the Medical Research Committee, but not, as Sir Ray Lankester represents, only in those of the Medical Research Committee as at present constituted. It was part of the scheme that to the present Committee of eight, three members should be added by the nomination in the first instance of the Lister Governing Body and in the future by that of the Royal Society. Sir Ray Lankester omits all reference to these points and commits the further error of describing the Committee as unpaid. Except the chairman and its two members of Parliament, one from each side of the House, all the six scientific members of the Committee are paid for their services.

The Governing Body in the circular to their members, speaking of the plans of the Medical Research Committee, said: "The ideals of both are the same; each is under the immediate control of a strong mixed Committee, mostly composed of scientific men, leaving the direction of the investigations mainly in the hands of the scientific experts at the head of each department." The policy of the Medical Research Committee, which has not only been declared but has already been put into practice, can hardly be better described than by the words of Sir Ray Lankester himself: "Men who have proved themselves to be real discoverers, possessing in the highest degree this special capacity, must be selected for the three or four best paid posts." "They must be no further fettered or directed than is involved in the understanding that they will devote themselves to continued investigation of the general subject by discoveries in which they have already become famous." Such has already been shown to be the policy of the Committee and only such its "direction," not only in regard to its central and more permanent staff of workers, but also in regard to the scientific men whose work it is already assisting widely through the country. Such also, no doubt, are the ideals of the Governing Body of the Lister Institute, and they could be more adequately fulfilled in practice if the scheme for amalgamation with the interests of the Research Committee, opposed by Sir Ray Lankester, could be allowed to free the scientific workers of the Institute from the present necessities of earning money by commercial work.

The combination of the free scientific workers now on the staff of the Research Committee with the present staff of the Lister Institute, set wholly free for original inquiry, within the same building, enriched by a hospital

for clinical research co-ordinated with that in the laboratory, would at last give us a real Research Institute of Preventive Medicine, and the building in Chelsea Gardens in those circumstances would for the first time be used to its fullest extent of accommodation to fulfil the objects of its foundation.

THE CHEMICAL CONSTITUTION OF CERTAIN PROPRIETARY DRUGS.

(*Concluded from p. 121.*)

THE contraction *B.P.* with date is used for the *British Pharmacopoeia*, and *B.P.C.* is used for the *British Pharmaceutical Codex*, 1911.

Salocoll.

A name applied to phenocoll salicylate. This substance is stated in the *B.P.C.* to be less soluble than phenocoll hydrochloride, which is there described. The trade name Salocoll indicates the product of E. Schering, Berlin.

Salophen.

This is described as salicylic acid acetyl-para-amino-phenol ester or acetyl-para-amino-salol. The trade name Salophen indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Saloquinine.

Saloquinine, salochinin, or salicyl-quinine is a name applied to quinine salicylic acid ester, which is mentioned in the *B.P.C.* under the latter name. It is introduced as an analgesic, antiperiodic, and antipyretic, analogous to quinine. The trade name Saloquinine indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Salvarsan.

A name applied to dioxy-diamino-arseno-benzene dihydrochloride, also known as Arsenobenzol and Ehrlich-Hata, "606," and said to contain about 31.5 per cent. of arsenic. Neo-salvarsan is defined as a mixture of dioxy-diamino-arseno-benzene-methanal-sulphoxylate with inert inorganic salts, and its arsenical content is two-thirds of that of salvarsan. The trade names Salvarsan and Neo-salvarsan indicated the products of Meister, Lucius, and Brüning, Hoechst a/Main, but permission to use these names has now been granted by the Board of Trade to Burroughs, Wellcome and Co., London.

Sanoform.

Defined as di-iodo-salicylic acid methyl ester, resulting from the action of iodine upon wintergreen oil; it is said to contain 62.7 per cent. of iodine. The trade name Sanoform indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Sidonal.

This is a name applied to piperazidine quinate. It is put forward for the treatment of gout, renal calculi, and other manifestations of uric acid diathesis. New Sidonal is introduced as a cheaper variety of sidonal, and is said to be chemically quinic anhydride with a quarter of its weight of quinic acid. The trade names Sidonal and New Sidonal indicate the products of Vereinigte Chem. Werke, Charlottenburg, Germany.

Soamin.

Soamin is defined as sodium amino-phenyl-arsonate. The salt is described in the *B.P.C.* under the name sodium aminarsonate. Atoxyl and Arsamin are other trade names for this latter substance. The trade name Soamin indicates the product of Burroughs, Wellcome and Co.; Atoxyl that of Vereinigte Chem. Werke, Charlottenburg, Germany.

Solurol.

Described as thymic or thyminic acid or nucleotin-phosphoric acid, a hydrolytic product of nuclein. It is claimed to possess the property of holding uric acid in solution, and thus preventing its deposition in the tissues. The trade name Solurol indicates the product of Max Elb, Dresden.

Sozoiodol.

Sozoiodol is a generic name for salts of di-iodo-para-phenolsulphonic acid. The mercury, potassium, sodium, and zinc salts are said to be in use, and the sozoiodols of aluminium, ammonium, barium, lithium, magnesium, and lead are marketed. The trade name Sozoiodol indicates the products of H. Trommsdorf, Aachen, Germany.

Stovaine.

A name applied to benzoyl-ethyl-dimethyl-amino-propanol hydrochloride, a substance described under the name amylocaine hydrochloride in the *B.P.C.*, and used as a local anaesthetic. The trade name Stovaine indicates the product of Poulenc Frères, Paris.

Stypticin.

This is a name given to cotarnine hydrochloride, which is described under the latter name in the *B.P.C.* The trade name Stypticin indicates the product of E. Merck, Darmstadt, Germany.

Styptol.

Defined as neutral cotarnine phthalate. This salt is described in the *B.P.C.* under the latter name. The trade name Styptol indicates the product of Knoll and Co., Ludwigshafen, Germany.

Styracol.

A name applied to guaiacol cinnamate, described in the *B.P.C.* under the latter name. The trade name Styracol indicates the product of Knoll and Co., Ludwigshafen, Germany.

Suprarenin.

Suprarenin is synthetic adrenine, adrenalin, epinephrine, or dioxyphenyl-ethanol-methylamine. The salt suprarenin (synthetic) bitartrate is also prepared. The trade name Suprarenin indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Trional.

Defined as diethylsulphon-methylethylmethane, a substance which occurs in the *B.P.C.*, under the title Methyl-sulphonal, and is made official under this name in the *B.P.*, 1914. It is official in the *U.S.P.* as sulphonethylmethane. The trade name Trional indicates the product of Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany.

Tumenol.

Tumenol is an artificial product somewhat similar to ammonium ichthosulphonate (ichthyol), and supplied in four forms—Tumenol venale, tumenol sulphone (tumenol oil), tumenol sulphonic acid (acid tumenolicum), and tumenol ammonium (the ammonium salt of tumenolic acid). It is introduced chiefly for use in skin diseases. The trade name Tumenol indicates the products of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Tussol.

A name applied to phenylglycolantipyrine, also known as antipyrine mandelate. It is introduced as an antispasmodic, and said to be chiefly useful in whooping-cough. The trade name Tussol indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Valyl.

Defined as valeryl-diethylamide. It is put forward as a nerve sedative and antispasmodic. The trade name Valyl indicates the product of Meister, Lucius, and Brüning, Hoechst a/Main, Germany.

Veronal.

This is a name given to diethylmalonylurea or diethylbarbituric acid. The substance is official in *B.P.* 1914 under the name Barbitone, and is described in the *B.P.C.* under the title Malourea, and it is there mentioned that other trade names for it are Malonal and Hypnogen. Veronal-Sodium is defined as the monosodium salt of diethylbarbituric acid or sodium malourea, and another trade name for this substance is Medinal. The trade names Veronal and Veronal-Sodium indicate the products of E. Merck, Darmstadt, and Farbenfabriken vorm. Fried. Bayer, Elberfeld, Germany; Malonal indicates the product of Fritz-Pezoldt and Suss, Vienna; Medinal

that of E. Schering, Berlin; Hypnogen that of Oppenheimer, Sons, and Co., London.

Xeroform.

A name applied to tribromphenol bismuth or basic bismuth tribromphenolate. It is claimed to be a non-irritant and non-toxic antiseptic. The trade name Xeroform indicates the product of Heyden Chem. Werke, Radebeul, Germany.

Yohydrol.

This is a name given to yohimbine hydrochloride. The trade name Yohydrol indicates the product of J. D. Riedel, A.G., Berlin-Britz, Germany.

GERMANS AND THE GENEVA CONVENTION.

LAST week three officers of the Royal Army Medical Corps—Captain C. T. Edmunds, attached to the Royal Scots Fusiliers; Captain E. S. B. Hamilton, of the 7th Field Ambulance; and Lieutenant W. S. Danks, of the 14th Field Ambulance—together with Mr. L. J. Austin, F.R.C.S., and Dr. A. R. Elliott, of the First Belgian Unit, British Red Cross Society, were released from captivity in Germany, where they had been from the early days of the war. They were at Magdeburg in Prussian Saxony when, on January 10th, they were suddenly informed that they were to be released. According to an account published in the *Times* of January 13th, no reason was given for this decision, but they were made to understand that no more English doctors would be released from Germany unless German doctors captured by the British were also set free. We do not know how many German medical officers are held prisoners in this country; as far as we know no official statement on the subject has been made public. We think it may be taken for granted, however, that such German medical officers as are held prisoners in this country are detained because Germany, in the first instance, systematically ignored the provisions of the Geneva Convention in regard to the treatment of medical officers. These are contained in Chapter III of the Convention, which is as follows:

CHAPTER III.—*Personnel.*

Art. 9.—The personnel engaged exclusively in the collection, transport, and treatment of the wounded and the sick, as well as in the administration of medical units and establishments, and the chaplains attached to armies, shall be respected and protected under all circumstances. If they fall into the hands of the enemy they are not to be treated as prisoners of war.

These provisions apply to the guard of medical units and establishments mentioned in Article 8 (2).

Art. 10.—The personnel of Voluntary Aid Societies, duly recognized and authorized by their Government, who may be employed in the medical units and establishments of the armies, is placed on the same footing as the personnel referred to in the preceding article, provided always that the first mentioned personnel shall be subject to military law and regulations.

Each State shall notify to the other, either in time of peace or at the commencement of or during the course of hostilities, but in every case before actually employing them, the names of the societies which it has authorized, under State responsibility, to render assistance to the regular medical service of its armies.

Art. 11.—A recognized society of a neutral country can only afford the assistance of its medical personnel and units to a belligerent with the previous consent of its own Government, and the authorization of the belligerent concerned.

A belligerent who accepts such assistance is bound to notify the fact to his adversary before making any use of it.

Art. 12.—The persons designated in Articles 9, 10, and 11, after they have fallen into the hands of the enemy, shall continue to carry on their duties under his direction.

When their assistance is no longer indispensable, they shall be sent back to their army or to their country at such time and by such route as may be compatible with military exigencies.

They shall then take with them such effects, instruments, arms, and horses as are their private property.

Art. 13.—The enemy shall secure to the persons mentioned in Article 9, while in his hands, the same allowances and the same pay as are granted to the persons holding the same rank in his own army.

Captain Edmunds and Captain Hamilton were left behind attending to the British wounded when our army retired from Mons on August 23rd. Captain Edmunds was hit twice, but only his clothing was damaged; he then took shelter with his wounded men and orderlies behind a haystack, where a shell burst beside him, killing the whole party except himself. A fragment of shell lodged in his back, and he lay all night on the field. Next day he was captured by the Germans. His injury did not prove very serious, and in a short time he was able to help in attending to the wounded. Captain Hamilton for about a fortnight after he was captured worked among wounded prisoners, British and Belgian, and afterwards among the Germans. He expected, when his work was done, that, in accordance with the Geneva Convention, he would be returned to the British lines. Without any warning, however, he was sent off by train with other doctors to Torgau. The journey occupied four days, during three of which he and his companions in misfortune got nothing to eat or drink. When he asked people who were giving food and coffee to the German troops he was told there was nothing for the English swine. Whether the thing happened on this journey or not we are not in a position to say, but the fact is vouched for that a woman bearing the emblem of the Red Cross tantalized parched and starving English prisoners by offering them cups of coffee, which she snatched away before they could drink. Indeed, the Red Cross women showed a special bitterness against English prisoners, whose sufferings it was their duty, in accordance with the Convention under which they are supposed to work, to mitigate.

Mr. L. J. Austin, who is surgical registrar to the London Hospital, and Dr. Elliott, belonged to the 1st Belgian Unit sent out by Sir Frederick Treves; they were detached and lent to the Belgian Red Cross and were captured on August 17th near Namur, where they went to establish a hospital.

Dr. Elliott's Experiences.

Dr. Elliott has sent us the following interesting account of his experiences:

I left London on August 16th with the 1st Belgian Unit of the British Red Cross, consisting of 10 surgeons, 10 dressers, and 20 nurses. I arrived in Brussels the same evening and received an enthusiastic welcome from the Belgians. There was no work for us in Brussels. On August 17th a message came to our hotel from the Belgian Red Cross saying that they wanted two surgeons to go at once to make a hospital in the district S.E. of Namur, where they were expecting large numbers of wounded and there were no doctors to look after them. I left Brussels at 4 p.m. with Mr. L. J. Austin, and the Director of the Belgian Red Cross for the south-eastern part of Belgium; the party visited a well-arranged Red Cross hospital on the outskirts of Brussels and several other hospitals on our subsequent journey.

After a somewhat exciting motor journey through many barricades and wire entanglements, we reached Namur at 8 p.m., leaving again at 4 a.m. next morning. About 10 to 15 miles south-east of Namur we came suddenly upon a German outpost, who, however, on learning our mission, allowed us to proceed. We arrived at the hospital chateau at Havelange about 7.30 a.m. The arrangements for the hospital were excellent, and there was accommodation for 50 or more patients. After breakfast we were taken out in the car to visit a neighbouring chateau, which was to form a sub-branch of the main hospital. We saw the chateau and visited a Belgian doctor to borrow instruments and chloroform. On leaving his house we found the German army coming down the road. The car was surrounded and we were all ordered out; the car was searched for arms and compromising documents. Nothing of the kind was found. Nevertheless, we were placed in a small empty wayside post-office and there were stripped and searched by a young officer. Later we were taken in a motor to see the officer commanding the army, who seemed to want to murder us out of hand as spies. We were taken back to the post-office, where we went before a formal court-martial, consisting of the commanding officer, an army judge (*sic*), and an interpreter. We were told at the outset that we were being tried for espionage. We were subjected to half an hour's examination of our papers and persons, and to a cross-examination concerning our movements. Then we were cross-examined concerning the British army, as to the numbers and movements of which we knew nothing. Our papers consisted of a passport for France and Belgium, a paper of identity, a brassard paper, and our contract with the British Red Cross. Of course, we were both wearing the official brassard. Each was examined separately, and at the end we were told that they did not know what

would happen to us, but we should have to remain where we were until further orders. The officers then left, taking with them our papers and the "findings" of the court-martial, none of which were ever heard of again. We remained that day and night and next day and night in a single room in this post-office, during which time many German officers visited us and told us what they thought of us.

On August 20th we were awakened at 5 a.m. and taken without any breakfast to a motor transport, by which we travelled to a small station, Vealsam, where we entrained and travelled in a very slow train, and mostly in cattle trucks, to Gerolstein. There we spent the night in a guardroom which resembled an Alpine hut. Early next morning we left in a fourth class carriage for Cologne. It was a nightmare march through Cologne; we were followed, preceded and surrounded by an enormous howling mob, who were with difficulty kept away from the English "pigdogs." Finally we arrived safely in the military prison, where we were each put in separate cells. The cells were small, unclean and verminous, and during our stay there we performed the menial work of the cells, fed on the bad prison fare, and were expected to answer the calls of nature at such times as the gaoler thought necessary. We were not allowed to speak to each other. On the day of our arrival we were examined by the major of the town staff, who took down our statement and made us sign it. Next day we were subjected to a medical examination, conducted by the chief medical officer of the prison through a "lay" interpreter. I was asked the signs and symptoms of typhoid fever and its bacteriology, with special reference to the distinction between *B. coli* and *B. typhosus*; also the stages of the operation for tying the femoral artery in Hunter's canal. At the end of the examination I was told I had "passed," and was again left to my own reflections in my cell. Next day, Sunday, nothing happened. On the Monday we were again examined by a "judge," but were never told the result. On Wednesday we were allowed to buy cigarettes and given a German-English grammar, which the warder carried forwards and backwards between our cells. This was the only book we had to read. Each day we were taken out for a walk in the courtyard for half an hour, fifteen paces apart, and under guard. For fifteen days we were not allowed to speak to each other at all, and at the end of that time we were told we were to be sent to Torgau as prisoners of war to be with the British officers. For the last two days in Cologne we were allowed to go for our walks together, and to visit each other in our cells.

We left Cologne on Tuesday, September 8th, and, travelling all day, picked up seven R.A.M.C. officers at Magdeburg, and arrived at Torgau at 3 a.m. on September 9th. In all our journeys we were exposed to the insults and threats of the populace. Torgau is an old fortress in fairly large grounds, and contained over 200 English and some 800 French officers. Among the English were 30 doctors, a parson, and some R.A.M.C. orderlies. In answer to our numerous applications for release under the Geneva Convention, we obtained such answers as the following, which is our translation from the German:

> The doctors and chaplain are not, as was communicated in the beginning to you, looked upon as prisoners of war, and are not being treated as such. They are rather fallen into our hands, and are to follow their avocation under our direction. We are only at the beginning of the enormous world war, and we shall still have many thousands of English wounded to care for, for which purpose the accumulation of English doctors will be detailed. The same is the case with the chaplain, who can and does already carry on his duty. Only when the personnel of the Red Cross is no longer required—that can only be at the end of the war—can there be any talk of a return to England. If the gentlemen imagine the fact that they cannot move freely in the town to be a contravention of the Geneva Convention, so must be mentioned that the Convention expressly demands that doctors should be protected. Their detention is protective; as our populace is particularly bitter against the English as the promoters of this war, it would be almost impossible for the authorities to protect them in the interior of the town. At any rate, the above-mentioned officers obtain the same rate of pay as officers of the same rank in the German army.
>
> (Signed) BRAUN, Captain and Commander of Prisoners' Dépôts.

Actually we were treated exactly like the other prisoners, except that all the medical officers received only M. 100 a month (not "the same rate of pay as officers of the same rank" in the German army), whereas subaltern combatant officers received only M. 60. The food at Torgau was managed by the French and, though simple, was ample as regards necessities and could be supplemented by bought things. There was plenty of room for exercise and even for football, rounders, tennis, etc. Gymnastic and Swedish exercise classes were formed and the French gave us a concert once a week. The sanitary arrangements at Torgau, as elsewhere, were primitive, but were looked after by an English sanitary corps and kept in good and clean condition. The English and French slept in separate rooms and messed separately. Additional wooden sheds were erected in the field for our accommodation.

On November 25th and 26th the English were moved in two parties to Burg bei Magdeburg, where we were mixed with our Russian allies. The rooms here were converted wagons, in which we slept, lived, and messed. There were about forty Russians and English in each room. After a few days an order was made by the commandant that the English and Russians should sleep in alternate beds. The Russians were informed before we arrived that the English were a barbarous race, who would break all the windows to obtain fresh air, would beat the Russians with sticks, and were given to unnatural vices! Their whole idea seemed to be to get the allies to quarrel among themselves.

The food here also, though managed by the Germans, was sufficient. The exercise ground was, however, very small—100 by 20 yards for 400 officers, and the middle portion of this was rough and often under water in wet weather. The latrine was in the middle of this parade ground, had insufficient accommodation, and was dirty. Baths were allowed only once a week, whereas at Torgau we could bathe every day.

On December 7th we were all split up into parties, some being left at Burg, while some were sent to Halle, and the rest to Magdeburg.

Our party was sent to Magdeburg to a cavalry barracks, and here again we were housed in converted wagon-sheds. The exercise ground here also was very small—100 by 40 yards for 400 officers, the latrine small and insanitary; solid refuse was never removed while we were there, and, as far as we could learn, not since the camp was formed. The urinal trough was leaky and stank, though they made a pretence of disinfecting it once a week with chloride of lime. After 9 p.m. the prisoners were not allowed out to the latrines, but used instead a small walled-off portion of the main passage, in which were two buckets or two commodes. These, of course, were rapidly filled, and if visited in the early morning were found to be overflowing, and no attempt was made to empty them. These two ends of the passage had always a strong ammoniacal odour. Ever since our meeting with our allies our great difficulty and only cause of trouble was with regard to the ventilation of the rooms, which were kept very hot and with rarely an open window. The atmosphere of the rooms was sometimes terrible.

On our arrival at Magdeburg we were asked to give up our money, and on two subsequent occasions were forcibly searched for money and articles of gold and silver, which if found were removed from us. Against this the doctors strongly protested as a further contravention of the Geneva Convention, but in spite of this we were searched. In place of actual money we were here supplied with tin tokens with which to buy things in the canteens, etc. All doctors here received only M. 60 a month, of which M. 45 were taken for messing, that is to say, the rate of pay was the same as that for junior combatants, in spite of any rank. On our leaving, however, we were supplied with the higher rate of pay.

Our whole medical work during all this time was self-imposed, and consisted in dressing the few wounds which still required attention, and treating the small complaints of the officers.

On Saturday afternoon, January 9th, the English doctors in our Wagenhaus, ten in number, were sent for by the commandant; Mr. Austin and I were told to stand aside and the others were asked if any of them were married. One married man joined us and the commandant then informed us that two more were wanted to make up a party of five to go home. The officers themselves suggested that the two senior officers should go, but this the commandant would not hear of, and insisted upon our drawing lots. Our party of five were then told that we should leave for England next day. At noon on Sunday we left Magdeburg with a sergeant-major and four men without papers of any sort. We travelled to Rheine, where we spent the night in a guardroom, and next morning reached the German border station. Here an officer came to see us just as the Dutch train was leaving, and told us he had had no instructions about us and we should have to wait until the next train, while he telephoned to Magdeburg to find out about us. Meanwhile we had lunch and our guard was changed. The Dutch train arrived without any appearance of the officer. We told our guard that this was our train, and

they put us into it, only allowing us to buy tickets to the Dutch frontier station. There, very glad to feel ourselves free men again, we bought tickets to Flushing, where we arrived at 11 p.m., only to be promptly arrested by the Dutch, who thought we were interned prisoners trying to escape. However, after telephoning back along the line and hearing we had actually crossed the frontier we were allowed to proceed and arrived at Folkestone next day. We do not seem to have been exchanged, but seem rather to have been a sort of "present" from the Germans. I think Mr. Austin and I were released by the influence of the Swiss Red Cross Society, whose representative visited Berlin at the end of December.

Something was said in the BRITISH MEDICAL JOURNAL of January 2nd as to the treatment of medical officers who are made prisoners by the Germans, and Dr. Elliott's story, which is fully confirmed by Mr. Austin, shows that they simply disregard the terms of the Geneva Convention. There is further evidence to the same effect from French sources.

Intervention of Geneva International Red Cross Association.

In the *Times* of December 10th, 1914, it was stated by the Berne correspondent of that newspaper that the obstinate refusal of the German authorities to release British Red Cross surgeons and ambulance men in accordance with the Geneva Convention had caused much indignation. The Geneva International Red Cross Association, it was stated, had been in correspondence with the German Red Cross, and on December 9th the president of the society, M. Gustave Ador, left for Berlin to confer with the German authorities, and to inquire why some surgeons and ambulance men, especially of British nationality, were still being detained in Germany. What the result of M. Ador's mission has been we do not know, unless the liberation of our five countrymen is to be regarded as one of its consequences. As long ago as October 13th the French Government demanded the immediate release of the French medical officers who were detained in Germany in violation of the Geneva Convention. As nothing came of this request, a formal intimation was sent on November 4th to the German authorities, to the effect that the return of German medical officers would be suspended till the French demand was complied with. On November 17th the Germans began to return French medical prisoners, but as a certain number were still detained, the French Government sent a further intimation that German doctors, orderlies, and stretcher-bearers would be returned only if faith were kept in regard to the return of French prisoners.

Treatment of French Medical Officers.

Of the manner in which French medical officers have been treated we learn something from statements made in papers of the highest standing. The *Journal des Débats* publishes a report, all the statements in which, it says, have been duly verified, to the effect that on August 23rd, 1914, an ambulance with 150 wounded was stationed in the village of Gommery (Belgian Luxemburg). With them was the officer who acted as interpreter to General T. A German detachment of eighty men came to the village. A non-commissioned officer and several men entered the ambulance where Dr. V., assistant surgeon, and Dr. S., *médecin-major de première classe*, were dressing the wounded. The non-commissioned officer asked for an interpreter. After exchanging a few words with him the German suddenly drew his revolver, and blew out the man's brains. This was the signal for a regular butchery. The Germans fired first on the doctors, then on the wounded. Dr. V. was killed, Dr. S. received three bullet wounds, while an orderly was shot twice in the thigh. The Germans then set fire to the ambulance. When they left there remained only 75 or 80 of 300 wounded who were in the village. The *Temps* relates the experiences of Dr. X., who says: "I was lodged with eight other doctors who, like myself, had protested in vain, in a tent where the only comfort was a little straw spread over the ground. We had, it is true, two blankets. We remained thus nearly two months—exactly fifty-eight days—without undressing. We received no pay, notwithstanding the conventions accepted by Germany at the Hague. We were allowed to get food at the canteen, for which we paid with the money that had been left in our possession. The few English prisoners in our camp had the roughest jobs. They received only one ration of soup instead of the two given to the French prisoners." When at last the French medical officers were set at liberty, and they asked to have restored what had been taken from them, on the ground that they were released as doctors and non-combatants, the Germans laughed in their faces. The military authorities only said, "It is war, it is war," thus confirming the German officers who, on being reproached with a breach of the Geneva Convention, reply that they know nothing about it, or that they only recognize conventions made by themselves. A petty officer relates that when he was made prisoner at Dixmude he saw the Germans go into a hospital, line up the officers who were there and shoot them out of hand. Among these officers were a doctor and a chaplain. We could quote other equally well authenticated instances of the brutality with which Germans have treated medical officers who under the rules of civilized warfare are "protected." These, however, are enough to show how strong a case there is against the Germans in regard to their disregard of the Geneva Convention, of which, it is curious to think, Prussia was at first professedly one of the most ardent promoters.

THE MILITARY MEDICAL SERVICES.

IN the article in the BRITISH MEDICAL JOURNAL of January 2nd (p. 18) on the Military Medical Services, an error was made in the computation of the numbers of Territorial medical officers. The numbers shown—1,143 for January and 1,504 for December, 1914—include the officers attached to field ambulances, general hospitals, and the sanitary service. The names of all these are shown in the *Army List* immediately after the active list of the R.A.M.C. The names of the regimental medical officers of the Territorials, however, are not shown under the head of R.A.M.C., but only under their respective battalions, and were omitted in the above calculations. A count of the number of regimental medical officers of Territorials results as follows:

	January, 1914.	*December, 1914.*
Yeomanry	70	93
Artillery	132	125
Engineers	36	34
Infantry	314	376
Channel Islands Militia ...	15	12
Total	567	640

The totals shown in the above article should, then, have been as follows:

	January, 1914.	*December, 1914.*
R.A.M.C., active list... ...	1,054	1,099
Retired officers employed ...	65	102
Special Reserve	184	661
Temporary officers	*Nil*	1,138
Territorials, all ranks ...	1,710	2,144
	3,013	5,144

No medical officers are shown in the December *Army List* as serving with either the reserve battalions or service battalions of the infantry of the line. We understand that when new units are taken over arrangements are made for their medical treatment on the same lines as that of the regular army in times of peace—that is to say, medical officers are told off to look after troops in certain districts. When more fully mobilized each unit has a medical officer told off to itself, but this medical officer is not shown separately in the *Army List* under the unit any more than those of the regular army attached to regular battalions. At the present time most of the new units which are in a forward state of mobilization have medical officers with temporary commissions attached to them.

AT the December meeting of the New York Society of Anaesthetists, the president of which is Dr. T. Drysdale Buchanan, a resolution was adopted to the effect that the administration of a general anaesthetic by any one other than a regularly qualified practitioner of medicine be not allowed, and that the county and State societies be asked to press for legislation to this end.

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SATURDAY, JANUARY 23RD, 1915.

SYNTHETIC MEDICINAL CHEMICALS.

WE publish this week the concluding portion of a series of notes on the composition of a large number of synthetic chemicals used in medicine; the list is somewhat lengthy, but it comprises only a comparatively small selection from the many hundreds of such articles which are put forward and pressed with more or less insistence on the attention of the medical profession. Almost without exception such articles are sold under names registered as trade marks; in most cases the chemical name is too long and cumbrous for common use, and a shorter name is therefore necessary; when such a shorter name is placed on the register of trade marks it serves not merely to indicate the particular article in question, but designates only the product of the firm whose property the trade mark is. If the chemical proves to have medicinal value other firms as a rule begin to produce it, and it often happens that each registers a separate name for it, and endeavours to ensure that in the minds of prescribers that name only shall be associated with the article. Thus it comes to pass that some articles are on the market under a dozen or a score of different names; familiar examples of this are phenolphthalein and hexamethylene-tetramine, perhaps best known as urotropine.

When the ordinary chemical name is short enough for common use, as in the case of phenolphthalein, that name alone should be used, unless it is specially desired to indicate the product of one particular maker. When the chemical name is too long, as, for example, para-amino-benzoyl-diethyl-aminoethanol (commonly known as novocaine), what is wanted is a convenient short name which shall not be registered as a trade mark, but shall be applicable to any good make of the article in question which complies with a definition, by a competent authority, of the characters of the article covered by such non-proprietary name, so that proper purity shall be assured. In a few cases such a name has been introduced into the *British Pharmacopoeia*; hexamethylene-tetramine, for example, has in the new edition been made official under the name hexamine. In a much larger number of cases non-proprietary short names are provided by the *British Pharmaceutical Codex*. In the series of notes which we have published such short names have been given where they were available, as well as the chemical names, and prescribers will, no doubt, recognize the desirability of using them whenever possible in place of proprietary names.

A glance at the notes shows that the makers of the large majority of the articles enumerated are German firms, and, by including those in less demand, quite a considerable volume might be compiled of similar notes on German products alone. The only German products now obtainable are, of course, those of which considerable stocks existed in this country at the outbreak of the war, or such as may perhaps be obtained from neutral countries. Apart from this question of shortage of supplies, too, there is a general unwillingness at the present time to use substances of German origin whenever others equally good are obtainable. It is therefore of special importance at the present time that such synthetic chemicals as are required in medicine should be ordered by non-proprietary names, and no doubt suitable names will shortly be agreed on and published for those articles which have not hitherto received them.

A far larger question than that of names, however, is involved; much attention is being given to proposals to manufacture in this country those synthetic chemicals of proved therapeutic value which have hitherto been obtained from Germany, but it is necessary to face the fact that the production of synthetic chemicals generally, and not only those used in medicine, has attained far greater dimensions in Germany than here. Perhaps the most striking case of all is the manufacture of artificial dye-stuffs, which originated from the discovery of an English chemist, but has become almost entirely a German industry. Many causes have contributed to bring about this state of things, but, after every allowance has been made, it must be admitted that British manufacturers have been a good deal to blame, and will have to follow a different line of action in the future if the production of such chemicals in this country is to be commensurate with our consumption. At a recent meeting of the Society of Arts Sir William Tilden, in the course of an address on the supply of chemicals to Britain and her dependencies, said that only through the researches of the chemist could the ground lost be regained and that still held retained. We needed he said, many first-rate chemists, a few engineers plenty of capital, and some good business men. A proper combination of these elements was certain of success. The difficulty, Sir William Tilden said, was to induce manufacturers to treat scientific chemists fairly; the pay was generally inadequate and the employer looked too often only for immediate profit. Professor A. S. Green said that the Germans had recognized that it was worth their while to pay for knowledge; we had not, and until we changed our methods we should continue in the same old way. Other speakers laid stress on the same point, and Sir William Ramsay contrasted the great German chemical works with the number of small concerns in England unable individually to bear the expense of a research staff. Co-operation of manufacturers with one another and with the Government was insisted on as a necessary condition of success. At a meeting of the Pharmaceutical Society in December, Mr. C. A. Hill, in the course of a paper on this subject, emphasized an important feature of the matter—namely, the dependence of one product on another, and made some remarks which are worth quoting. He said: "As regards synthetic remedies, one cannot expect to build up in a few months an industry which, by stress of circumstances, has grown up in Germany during two generations. The great difficulty is that each product hangs on others, the raw materials for one synthetic substance being a by-product in the manufacture of another. Not only does this dovetailing business apply to the products themselves, but the apparatus and plant employed are common to many products. It would obviously not pay to put down expensive plant for the manufacture of a few products, the whole consumption of which is only a matter of perhaps hundredweights, but it would easily pay a factory which could turn out a hundred products each with a consumption of some hundredweights per annum. In fact, the great

difficulty is this dovetailing of processes and materials. The business must be on a very large scale to enable it to be carried on profitably; and, except in certain favourable instances, the manufacture of synthetic chemicals cannot profitably be attacked piecemeal. Many large British chemical manufacturing firms have hitherto shown a strong reluctance to take up the manufacture of a line unless there were already to hand a large outlet for it. . . . If a German chemical factory is producing on the large scale a certain chemical compound and in the manufacture of that compound a by-product is obtained for which there is no obvious outlet, the research staff ancillary to that factory sets to work to find an outlet for that by-product; it may itself be put on the market and boomed as such, or it may serve as the raw material for the preparation of some other substance, and one cannot resist a lurking suspicion that British physicians and British patients have been prescribing and consuming synthetic remedies merely because by chance something occurred as the by-product in a German factory and an outlet had to be found for it."

Probably all our readers will agree that there is no valid reason for the use of a large proportion of the synthetic drugs which appear on the market in such numbers. At a recent meeting of the Newcastle Section of the Society of Chemical Industry, Mr. N. H. Martin expressed the opinion that the success of certain synthetic drugs, such as antipyrin, was responsible for the lowering of the scientific value of German chemical work in recent years, and quoted the following passage from an address he delivered in 1899: "Hardly a month passes but that some new substitution compound with a trivial name to indicate its alleged medicinal properties, and a scientific name intended to suggest profound research, is introduced to English medicine. They come with laboratory and medical reports attested by men with university degrees, couched in language calculated to deceive the very elect; but the touchstone of practical trial reveals how science has been prostituted to commercial ends, and the substances, one after the other, pass into oblivion. Such experience serves to bring discredit upon chemical novelties introduced from Germany, and suggests the thought that when science ceases to pursue truth for its own sake, and becomes the badly paid slave of commerce, its deterioration is inevitable."

The present task for British scientific chemists and manufacturers is to produce an adequate supply of those synthetic drugs which are needed and to introduce new ones as and when their value and usefulness may be proved, but to avoid deluging the medical profession with a host of substances possessing no advantage over others already in use, in this latter respect learning from the Germans "how not to do it."

ADVANCED OPERATING HOSPITALS.

THE interesting paper by Dr. Arthur A. Martin, of Palmerston North, New Zealand, published this week (page 145), is the firstfruits of the activities of the "No. 6 General Hospital Branch" of the British Medical Association, which met for the first time on January 10th under the chairmanship of Lieutenant-Colonel Young, R.A.M.C. It has already twenty members, and Lieutenant E. L. Puddicombe, R.A.M.C., is honorary secretary and treasurer. We hope that this plan, devised to meet the special circumstances of the military medical officers serving with the British army in France, may develop. The need for discussion and exchange of views on the treatment of the wounds produced under the special conditions of this war is universally recognized, and the need is perhaps particularly great in respect of treatment in the earliest stage when the course then decided on may determine the final result as to life or limb.

A distinguished officer of the Army Medical Service has said that we have gone back to the wounds of the Napoleonic war, and Dr. Martin emphasizes the point when he says that wounds of an eighteenth-century character are now being treated with twentieth century technique. He discusses various classes of wounds and reports many interesting cases, but we may turn attention to the introductory part of his paper in which he discusses the functions of the clearing hospitals. This unit is described in the R.A.M.C. Training manual as "that set apart for the evacuation of the sick and wounded collected by the ambulances," and in the French army it is called "hôpital d'évacuation." It is the central point to which the collecting zone converges, from which the evacuating zone and distributing zone diverge, and at which the channel or flow of sick and wounded between divisional ambulances and the line of evacuation is regulated. Field ambulances are designed for the immediate medical assistance of the troops; there are three of these units to each division. There is one clearing hospital to each division, and it is directed to be accommodated in suitable buildings, if available, or in tents. It was anticipated that it would act as a hospital in the usual sense of the term only during the time it was unable to pass its patients down the lines of communication. The unit is nominally equipped for the care of 200 sick, but must be expanded when large numbers of sick and wounded are passing through from the division in connexion with which it happens to be employed. It is normally located at an advanced base, and is employed between that base and the field army, but the actual disposition depends upon the movements and actions of the force which it serves. It must be prepared to advance or send on detachments at any time, and the personnel may be told off as rest station parties and as a main body. Under the conditions of the present war, and owing largely to the use of motor ambulances, the rest station as a rule appears to have dropped out, since it is possible to take the wounded direct from the field ambulance to the clearing hospital, and in many cases the wounded reach the latter so rapidly that the first field dressings are not touched in the field ambulance.

There seem to be two currents of opinion with regard to the future of the clearing hospital unit. Sir Anthony Bowlby, in his paper published on December 19th, 1914, tells us that it consists really only of a staff with a sufficient amount of surgical and medical equipment for emergencies, and that it is in future to be called a "casualty clearing station." We observe that medical officers are being gazetted to units so named. It is apparently to this plan that Dr. Martin refers when he says that many hold that the unit should be regarded as holding a purely administrative position.

The other current of opinion tends to increase the importance of the unit as a place for treatment. Dr. Martin refers to the views expressed by M. Tuffier, which we quoted at some length in the JOURNAL of October 31st. They were to the effect that as the "hôpital d'évacuation" is the first sieve, sifting out the cases not fit to be moved, such as abdominal and chest wounds, and fractures of the

upper third of the femur, it is in practice a unit of capital importance, and "should have a special staff of experienced operating surgeons capable of rapidly appreciating and carrying out every indication for operations which its equipment and organization justify." Dr. Martin has formed the same opinion from his experience with the field ambulance of the 5th Division of the British Expeditionary Force. He believes that this unit will be more and more a real hospital as time goes on, and that it will have a medical and surgical equipment rendering it capable of dealing with extensive and serious operations, since such operations have been performed, and must continue to be performed, at a hospital as near the fighting front as possible, even though its forward position may involve some risk to the personnel and their patients from enemies' shells and the liability to be compelled hastily to remove forward or backward.

In the graphic account he gives of his own experiences he states that the head quarters of the field ambulance were in a chateau behind the brigade and within reach of enemy shell fire. One section of the ambulance with its equipment and three medical officers were sent back to a town four miles in the rear to prepare a building to act as a temporary hospital, or temporary clearing hospital, or temporary dressing station. The hesitation in fixing on a term is a good indication of the varying duties that had to be performed. The first application of the sieve showed, as was of course expected, that in a certain proportion the wounds were of such a nature that the men ought not to be immediately sent down the line of communications, but should be treated on the spot, often by operation. Fortunately it was possible to move those serious cases into the local civil and military hospital, which, though it served only a small town, had rooms capable of holding some 140 patients, and possessed two operating theatres with modern equipment, including instruments, sterilizers, towels, aprons, and washing basins with foot taps. Moreover, it commanded the services of a Sister of Mercy who was a trained nurse and understood antiseptic and aseptic principles.

Dr. Martin illustrates his discussion of the general question by reports of a large number of cases which called urgently for operative treatment, and he is to be warmly congratulated on the success which attended his efforts in so many cases. His experience seems to constitute a strong argument in favour of recognizing the advisability of having a movable hospital as near as possible to the front fully equipped, both as to personnel and appliances, for dealing with serious cases in which immediate operation is called for.

We believe that more than one scheme on these lines is under consideration for mobile hospitals to be supplied by voluntary agencies. Whether such a hospital be voluntary or official, the responsibility of its surgeons calls for the very highest surgical attainments. They must not only have experience in operating, but they must know, what is equally important, when not to operate.

ON "FLUSHING OUT THE SYSTEM."

THANKS perhaps in part to the efforts of those who advertise the virtues of various patent medicines, the general public is firmly convinced of the advantages to be gained by "flushing out the system" with copious draughts of water. Whether taken hot or cold, before meals or after, on rising in the morning or on going to bed at night, water consumed in large quantities, is believed to wash out of the tissues the alleged poison fondly termed "uric acid" by the public, and so to avert the onset of a whole host of complaints and deathly diseases. A most attractive hypothesis! What is more, it has a firmer scientific and experimental basis to rest upon than is possessed by many of the popular medical fancies. Thus it is a fact that the increased input of water produces an increase in the nitrogenous substances contained in the urine, if, as naturally happens, the amount of urine excreted is augmented. It is also a fact that the various authorities who busied themselves with the question during the last two decades of the nineteenth century were in substantial agreement with the view that the nitrogenous extractives thus appearing in the urine were mechanically washed out of the body by the excess of water consumed. The eminent physiologist Voit, indeed, in 1860, brought forward evidence to show that excessive water-drinking actually increased the consumption of protein in the body. But this view has not been confirmed by the work of the majority of later investigators, and may almost be said to have been given up altogether. In fact, Magnus-Levy, writing in 1905, argued that the elimination or retention of the nitrogenous extractives in the animal body entirely accounted for the increase in the nitrogen of the urine caused by large draughts of water, and the subsequent diminution, below the normal, of the urinary nitrogen when the return to a normal consumption of fluid was made. He mentioned 6 grams as the maximum amount of this "excess of extractives loosely retained in the system" that was liable to be "flushed out" by excessive water-drinking. As for the physiological action of these extractives, the end-products of nitrogenous metabolism, he sounded a note of warning. They should not, he said, be regarded as valueless decomposition products destined only for excretion. The tissues hold on to them very firmly, and he believed that, with but few exceptions, they must have definite functions to perform in the economy of the body.

Quite recently the whole matter has been subjected to renewed examination by Orr,[1] who has improved upon the methods of urinary analysis employed by some of his predecessors, and has also introduced an interesting and instructive variation by the employment of different diets in his different series of experiments. Some of these were made on a low protein diet containing only 27 or 48 grams of protein a day; others on a moderately high (110 or 160 grams), and yet others on a very high protein diet (319 grams). In each case fat and carbohydrate were adequately represented in the daily allowance of food, which contained no meat. Orr comes to the unexpected conclusion that the smaller the amount of protein in the diet, the greater is the amount of the nitrogenous extractives washed out of the system by extra draughts of water—from 9 to 16 pints a day. He argues, with apparent justice, that if the matter were merely one of washing end-products out of the system, the reverse of this might be expected to occur, for the quantity of nitrogenous end-products must be greater on a diet rich in protein than on a diet low in protein. Whatever the amount of protein in the daily food he found a marked increase in the urinary excretion of ammonium salts, as if they, at any rate, were merely being washed out of the system by the excessive input of water. At the same time the percentage of nitrogen excreted as urea was always increased, and he argued that this fact

[1] J. B. Orr, *Biochem. Journal*, Cambridge, 1914, viii, 530.

pointed to the conclusion that the excess of water had a definite influence on the metabolism of the proteins in the food. He has confirmed this conclusion by discovering that the amount of nitrogen excreted in the faeces was lessened by copious draughts of water, as if the protein in the food were utilized more completely. Finally, turning to the increased retention of nitrogen that followed the days during which the system had been "flushed out" by excessive drinking of water, he found that it took place even on the diet highest in protein, when there would be a surplus of absorbed protein circulating in the economy. This fact suggests that the retention represents an increase in the protein of the tissues, as if excessive water-drinking promoted the building up of the body as well as its "flushing out."

Thus the general conclusion to which Orr's work leads is that the increased consumption of water accelerates both the breaking down and the building up of protein in the body, quickening both its catabolism and its anabolism. It appears that the temperature of the body tends to be raised a fraction of a degree on the days when much water is drunk, as compared with the days when only a normal quantity of fluid is consumed. It is said that the breeders of domestic animals find that nutrition is impaired if much water is drunk, but it is not known whether the putting on of flesh or of fat suffers.

As to the nature of the nitrogenous extractives "flushed out" of the body, Orr has little that is new to say, excepting that he failed to find any creatin among them. But his research is of great interest because it appears to establish an unexpected fact, to wit, that copious draughts of water promote the building up of protein in the tissues of the body. Many people drink quantities of water to make or keep themselves thin, as they suppose, although it must be confessed that not a few of the laity hold the opposite view, and discard water from their dietary as being too fattening. Should Orr's experiments and conclusions represent a general principle, it would appear that the latter view is not without its grain of truth.

It has, indeed, long been developed or improved upon empirically by many stout persons seeking to recover their lost figures. Water, they say, if drunk at meal times is fattening, in contradistinction to water drunk between meals, which is thinning, and, therefore, they themselves drink between meals only. This simple plan for keeping down the weight meets with a wide popular application; it probably owes much if not all of its efficacy to the difficulty most people have in eating a full meal dry, without anything liquid to wash it down. Appetite flags when thirst is felt, so that even the spiciest and most succulent dishes no longer prove tempting. The result is that the big eater who knocks off fluid at meals is likely to punish his victuals less, with corresponding gain to the symmetry of his figure.

THE ANTIVIVISECTIONISTS AND INOCULATION AGAINST TYPHOID.

THE evidence of the protective power of antityphoid inoculation is now so strong that the measure has been made compulsory in the United States army and navy, with strikingly beneficial results. It has also been introduced in the French army, and it is used by the Germans, who, we understand, give the benefit of it—doubtless from motives of enlightened self-interest—to their prisoners of war. In our own army it is not compulsory, but it is encouraged by the authorities. How solid are the grounds for this will be seen by any one who will take the trouble to read the leaflet issued by the Research Defence Society, copies of which can be obtained free from the Honorary Secretary, 21, Ladbroke Square, W. In a letter which appeared in the *Times* of January 15th, Sir William Osler made a powerful appeal to our soldiers not to allow themselves to be misled by the "misguided cranks who are playing into the enemy's hands" by purveying literature on the subject of inoculation which is to the last degree mischievous, because it implies that it is a hurtful and even dangerous procedure. Facts are misrepresented, distorted, or ignored, and every effort is made to pervert the truth for the satisfaction of a small and unimportant but blatant clique of fanatics. The War Office authorities are accused of trying to force antityphoid inoculation on soldiers, and it is alleged that this is a serious hindrance to recruiting. It is difficult to conceive of a more unpatriotic movement than the action taken by the British Union for the Abolition of Vivisection at this moment of national emergency when every man is needed, and Dr. Hadwen, Lord Harberton, Mr. H. G. Chancellor, M.P., and the others who are taking part in it have taken upon themselves a most serious responsibility. Fortunately, the majority of the public take their statements at their true value, and pay no attention to them. But they are leaving no stone unturned to achieve their ends, and we confess that it was with deep regret that we saw a whole page advertisement of their crusade in *Punch* of January 13th. *Punch* has always been the representative of our national common sense, and no one has done better service in the cause of recruiting and in keeping the flame of patriotism alive since the outbreak of the war. It might have been assumed, therefore, that the insertion of such an advertisement was due to inadvertence. Our genial contemporary, which, we understand, has been deluged with remonstrances not only from doctors but from all sorts and conditions of men with regard to the unfortunate advertisement, publishes in a conspicuous part of this week's issue (January 20th) and in special type, the following statement, which will be received with gratification by its innumerable readers and friends, who comprise all the more intelligent part of the British public: "The advertisement which appeared in our last week's issue, opposing the principle of the inoculation of soldiers against typhoid, came in very late, and unfortunately its contents were not submitted to the secretary, who was merely told of the source from which it came—namely, the Antivivisection Society. *Mr. Punch* is himself absolutely in favour of inoculation against typhoid for the troops." We are glad to have this unequivocal declaration of faith, though, like the *Evening News*, we were quite sure that "the genial old gentleman had been caught napping and had not deliberately given publicity to this poisonous rubbish." We hope that a similar explanation will be forthcoming from the *Evening Standard and St. James's Gazette*, which in its issue of January 19th devoted a whole page to the same pernicious and mendacious nonsense.

THE SUPPRESSION OF VODKA.

THE order that the State vodka shops in Russia should be closed during mobilization, its extension to include the whole period of the war, and the Tsar's subsequent announcement that the State would never again engage in the sale of the spirit, formed a sequence of events which rightly attracted a great deal of public attention in this country. Although the announcement that the sale of vodka had been stopped at the beginning of the war came with the dramatic effect of a sudden decision, it had in fact been prepared by a long course of discussion and tentative legislation, of which a clear account is given in the very interesting Russian Supplement published by the *Times* last week. The manufacture of vodka in Russia was made a State monopoly some twenty years

ago. The first Duma asked for legislation, and the third Duma approved resolutions brought forward by the peasant deputies, urging that the output of the spirit monopoly should be diminished yearly; that all villages should possess local option, and that the hours during which vodka might be sold, and the quantity that might be sold to any individual, should be regulated. A bill was drafted by a Special Commission and sent to the Upper House. That House approved the principle, and the Government drafted a bill and issued regulations limiting the hours for which State liquor shops outside municipal limits might be open, conforming to all resolutions of village assemblies as to closing of such shops, and reducing their number in districts suffering from failure of crops. When the bill came before the Council of the Empire in January, 1914, that body not only approved it, but added provisions giving full local option to all consumers, townships and villages, and power to restrict or prohibit sales, and to women the right to vote in these matters at the village motes, "thus practically assuring a majority for prohibition in every Russian commune." At the instance of the Government, these proposals were so far modified that the effect of prohibition resolutions was to be limited to three years, and were not to apply to liquor shops in private hands. The situation was, however, changed by the action of the Czar, who in a rescript early in February, 1914, said "I have come to the firm conviction that the duty lies upon me, before God and Russia, to introduce into the management of the State finances and of the economic problems of the country fundamental reforms for the welfare of my beloved people. It is not meet that the welfare of the Exchequer should be dependent upon the ruin of the spiritual and productive energies of my loyal subjects." The opposition of the Government had been based mainly on financial considerations. The net profit of the State monopoly had been about seventy millions a year, and this was a large sum to replace even in the huge annual budget of Russia; it was in fact the largest single item. The state of matters now appears to be that the sale of vodka is absolutely prohibited, that the sale of wines is not interfered with, and that the Minister of Finance may permit the sale of malt liquors for consumption on the premises subject to the right of any interested public body to require the complete stoppage of the trade in strong drink. So many municipalities have taken this course that it is said that there are very few towns where the sale of beer is permitted. Beer, however, was not a popular beverage in Russia, for the quantity brewed was actually smaller than the quantity of spirits distilled. In the budget for 1914 the yield of the liquor monopoly was estimated to be 26.2 per cent. of all ordinary revenue; in the budget for 1915 it is put at 4.7 per cent., derived from the sale of alcohol for industrial and medicinal purposes. The loss to the revenue, estimated to exceed 84 millions sterling, is to be met by raising the rates of taxation on land, houses, lodgings, and trades, increasing the excise on tobacco, cigarette papers, sugar, petroleum products, matches, yeast and beer, and the customs and stamp duties, by imposing transit duties by rail or water ways within the empire, and by raising postal and telegraphic rates. New taxes are being levied on telephones and on raw cotton, and are projected on wine, on electric and gas lighting, and on mortgages.

THE TREATMENT OF PRISONERS OF WAR.

THE interesting communication by Dr. Athelstane Nobbs, published at p. 180, puts in a strong light one of the chief difficulties in the treatment of prisoners of war. On no point has there been more complaint on all sides than the food supply, which is declared to be generally insufficient in quantity and unsatisfactory in quality. National differences of taste count for much in these complaints. Even when there is no question of deliberate inhumanity it is not easy for one nation to cater for those belonging to another who have been accustomed to a different diet. The German prisoners in the *Scotian* at Portsmouth seem to have plenty to eat, but it has been difficult to supply either the black bread or the sausage for which the Teutonic stomach craves. We learn from the report of Mr. T. E. Steen, a Norwegian neutral, that at Holyport near Maidenhead, and other concentration camps, every reasonable provision was made for the comfort of the prisoners. The food was the same as that given to British soldiers. On the other hand, though the British doctors recently liberated from Magdeburg have little to say about the food, except that it was "uninteresting," in some of the other places of confinement the state of things appears to be less satisfactory. In the *Westminster Gazette* of January 19th there appeared a letter from a British prisoner in Germany begging his relatives to send "a large parcel every week, anything in the way of eatables—bread, cake, margarine, any tinned meat, cocoa, and golden syrup." In this camp, the name of which is not given, the Germans would appear to be finding their prisoners in little but sleeping accommodation. Yet their condition would seem to be much better than that of some others. In the Paris *Journal* of January 12th there was a letter from an Amsterdam correspondent, who wrote under date January 3rd. He says he had on that day questioned a French soldier who had escaped from the camp of Wesel (Friedrichsfeld). The man said the prisoners there were very harshly treated. They were obliged to do physical exercises from eight in the morning till eleven, and from one till four. They are for the most part Territorials, aged from 38 to 43, captured at Maubeuge. These movements of the arms and useless marches in all weathers might be beneficial if they had enough to eat, but unfortunately the food is altogether insufficient. In the morning at 8 they are given a tisane of burnt barley without bread; at midday a ration of black bread and "rata." The portion of bread weighs about 300 grams, and is a slice the size of two fingers. The rata is composed sometimes of sauerkraut, sometimes of rice, sometimes of lard or beef. Each man gets a mouthful of meat, but as there is not enough coal nothing is cooked. The sauerkraut is never eatable. The rest is always insufficient, the prisoners are starved, and as they are not allowed to dispose of all their money, the supplements from the canteen are not sufficient. Those who have no money become so weak that they are driven to grub among the refuse thrown into boxes as food for the pigs, and search for rice that may still be eatable. There is only this distribution in the day. Discipline is extremely strict; for any misconduct a prisoner is tied to a post to which a crossbeam is nailed at about 1.25 metres from the ground. His arms are fixed behind the crossbeam, while his body is fastened to the post with a padlocked chain. He is left chained up in this way for whole hours in all weathers. The constraint of the position and the rain or cold make this, said the man who was fortunate enough to escape, one of the most awful tortures that can be imagined, and it is not difficult to believe him. The *Journal* of December 27th, 1914, published a letter addressed by a French prisoner in the concentration camp at Lechfeld to the President of the Syndicate of the Press in the hope that the cruelty with which the Germans treat their prisoners might be made known. Of 6,000 prisoners there, three-fourths were wounded. Besides insufficiency and badness of the food, he says there was no medicine in the infirmary. In a report of the treatment of Russian subjects by Germans, issued after inquiry by the Russian Minister for Foreign Affairs, shocking examples of inhumanity are given, and it is said "we are quite certain that the conscience of the whole world will stigmatize the conduct of Germany as recalling the darkest times of the Middle Ages." But all the prisoners who have given testimony agree that the worst treatment has been reserved for the British.

THE RISKS OF SERUM SICKNESS.

THE warning which Dr. Gubb of Aix-les-Bains gives (p. 183) as to the risk of serum sickness following a subsequent injection of any antitoxic serum in a man who has received an injection of antitetanic serum is timely. We understand that an Army Order has recently been issued pointing out the need for caution in the use of any antitoxic serum on a second occasion more than fourteen days after the first injection of the same or any other antitoxic serum, even though years elapse. The results of the original experiments of Richet, and especially of Besredka, on anaphylaxis were clear and simple, but the issues have since been confused. The clear experimental result is that if an animal be injected with some foreign serum, even in a small dose, that animal is rendered extraordinarily susceptible to any future injection, even in extremely minute doses of the same kind of serum. If, however, the second injection of the same serum be made within a certain period, which may be taken as usually a fortnight, no symptoms supervene, nor is anaphylaxis induced by any subsequent injection. Practically all antitoxic serums are obtained from the horse. Thus antidiphtherial serum and antitetanic serum are both in this respect the same kind of serum and either might produce the anaphylactic condition in which serum sickness might be produced by a subsequent injection of the other. If antitoxic serums were made from different animals, say the horse for diphtheria and the goat for tetanus, then they would not be a source of danger if the one were used after the other; but this has not been found practicable. The way to defeat the possibility of anaphylaxis is to give a patient who has received a first injection of antitoxin serum a guarding injection of horse serum or any antitoxic serum during the pre-anaphylactic period, that is, within ten to fifteen days after the first. He would never develop anaphylaxis after this second guarding dose. Some German authorities have disputed this view, but the evidence they have advanced does not seem convincing. Speaking generally, it may be said that severe anaphylactic shock (serum sickness) is of rare occurrence in the human subject.

HEALTH LECTURES.

THE 60th Section of the Insurance Act gives an Insurance Committee power to make provision for the giving of lectures on questions relating to health, and for this purpose to make arrangements with local education authorities, universities, and other institutions. The expense is apparently to be charged to the fund for administrative expenses formed by the annual contribution by each approved society of a penny in respect of each of its members resident in the area of the Insurance Committee. The Brighton Insurance Committee some time ago appointed a subcommittee to consider the steps which might be taken under Section 60 and also under Section 63, which deals with excessive sickness. Under it Insurance Committees have very wide powers to move other authorities to take means to abate conditions which tend to prejudice the health of the people. The Brighton Subcommittee has conferred with the approved societies and with the medical officers of health, who expressed the opinion that the subjects to which attention should be directed were tuberculosis, the hygiene of pregnancy, the early treatment of cancer in women, temperance, and, possibly, venereal diseases. The subcommittee has conferred with the Health Committee of the Town Council, the board of guardians, and the Education Committee; and these bodies all expressed their willingness to co-operate. At a conference with approved societies having over 200 local members, held on November 3rd, twenty out of the twenty-four societies invited were represented, and it is proposed to hold further conferences after the societies have considered in detail not only the questions discussed at the conference but others which will undoubtedly arise from time to time. In order to obtain the views of members of the medical profession practising among the industrial classes, questions were addressed to them, and the information contained in the replies was found useful. As the subcommittee had not any experience of its own or of any other insurance committee to guide it, it has not considered it advisable to put forward a comprehensive scheme, but it has been arranged that two lectures should be given, the first on February 4th, by Dr. A. E. Shipley, Master of Christ's College, Cambridge, who will deal with insects and diseases, and the second, on March 11th, by Mr. W. H. Dolamore, Dean of the Royal Dental Hospital, London, who will speak on teeth and diseases; both lectures will be illustrated by lantern slides. The Insurance Committee accepted the recommendation that its Standing Orders should provide for a health subcommittee to carry out the powers of the committee in relation to questions involving the health of insured persons, including the giving of lectures and the publication of information. The subcommittee was authorized to confer with local authorities, associations, and other bodies interested in questions of health, and was instructed to submit a scheme for the giving of lectures and otherwise publishing information on questions of health at a cost during the year 1915 not exceeding £50. The Leicestershire Insurance Committee is the only other that, so far as we know, has undertaken similar work. A series of health lectures has been given, with, on the whole, satisfactory results, although the attendance has not been as large as was hoped. The lectures have dealt mainly with the prevention and cure of consumption, but it is proposed with the co-operation of local authorities, approved societies, and others interested in questions of health, to extend the work. It has been suggested that a conference of representatives of approved societies in the area should be convened by the Insurance Committee; the funds of approved societies are directly affected by undue prevalence of sickness, and it is believed that their interest in the matter can be enlisted.

THE INCOME TAX IN WAR TIME.

WHEN the Finance Act, 1914 (Session 2), which added one-third to the income tax payable for the current financial year, was before the House of Commons, the Chancellor of the Exchequer was pressed to afford special relief to those taxpayers upon whom the taxation might otherwise impose too heavy a burden. It was pointed out that in any case the collection of income tax on an amount based on an average of past year's profits might involve hardship in those industries which had suffered severely owing to the outbreak of war, and that this was especially so when the owner of the business was employed in some military capacity, and while assessed to tax on a full normal year's profit, had to suffer deduction of tax from the amount of his military pay. To meet such cases two obsolete sections of former Acts were revived with some modifications, the result of which may conveniently be summarized as follows: (1) Any person who being assessed under Schedule D proves that his profits have fallen short of the statutory average owing to "circumstances attributable directly or indirectly to the present war," may claim to have his liability adjusted by putting the average period forward twelve months. For example, if the books of a medical practitioner are made up at the end of December, his return for 1914-15 will have been based on the average of his profits for the three years 1911, 1912, and 1913, and under Section 13 (1) of the Finance Act, 1914 (Session 2), if his practice has suffered through the war, he can claim to substitute for this liability the average of the three years 1912, 1913, and 1914. (2) The section also provides in effect that "any person who, in connexion with the war is or has been serving as a member of any of the military or naval forces of the Crown, or in any work

abroad of the British Red Cross Society, or the St. John Ambulance Association, or any other body with similar objects" may claim to have his liability based not on a three years' average, but on the result of the actual year's work. It will be seen that this is a larger measure of relief than is accorded to those who remain in their civil occupations, and that it appears to affect the case of the professional man whose practice is in the hands of a locumtenent, inasmuch as on the revised basis of the actual year's profit the fees paid are deductible expenses, whereas on the original basis of assessment they were not deductible because they were not paid during the three previous years. The special provisions apply to the present financial year, which ends on April 5th, 1915, and any claim for the relief should be sent in to the local officials by that date, a statement of receipts and expenses for 1914 (or 1914–15 if the books are not conveniently made up on December 31st) being enclosed with the statement of claim. The Income Tax Acts are strictly annual Acts, and therefore it cannot be definitely stated whether or not these special provisions will be re-enacted so far as the year 1915-16 is concerned, but in the circumstances it may be assumed with some degree of safety that the return called for early in the next financial year will be governed in the first instance by the ordinary average rules, and that similar provision with regard to substitution of the special basis of assessment will be made for that year, effect being given to the adjustment by reducing the assessment when the statement of account is available in time, and in other cases by means of repayment of any tax found to have been overpaid.

THE PRESCRIBING OF UNUSUALLY LARGE DOSES.

WE publish this week a letter from the Secretary of the Pharmaceutical Society of Great Britain directing attention to a short passage in the preface of the new *British Pharmacopoeia* which bears on the relationship between prescriber and pharmacist. It runs: "Where, however, an unusually large dose appears to be prescribed, it is the duty of the pharmacist or dispenser to satisfy himself that the prescriber's intention has been correctly interpreted." This has hitherto been the practice of pharmacists, and while it may be doubted whether the General Medical Council has the right or power specifically to put this onerous obligation upon them, there can be no doubt from the secretary's letter that they are willing to comply loyally with the request of the Council. We believe that such an understanding, now formally recognized for the first time under the authority of the *Pharmacopoeia*, will be heartily welcomed by all members of our profession, and more especially as it provides an efficient safeguard against mistake or carelessness on the part of the prescriber. It is suggested that in the future all unusually large doses should be initialled.

LEBANON HOSPITAL FOR MENTAL DISEASES.

IN many parts of the globe, but particularly in Great Britain, America, Switzerland, and Holland, subscribers and others interested in the Lebanon Hospital will be wondering how this admirable and unique institution is faring. The hospital is close to Beyrout, but, so far as is known, has not suffered during the Turkish advance, and is thus more fortunate than the historic colony for the family care of the insane at Gheel, in Belgium. Nevertheless, very disturbing news has been received in London from the workers at Asfûriyeh, who say that a state of chaos exists in Syria, and that it is almost impossible to get money at all. As a great part of the income of the hospital is derived from patients' payments, and as these have stopped for the time being, the managers will require to fall back upon reserve funds, which cannot last long. From time to time the valuable services rendered by this hospital have found mention in these columns, and we need now, therefore, only recall the following facts: It is the first and only hospital of its kind in Syria, Palestine, Asia Minor, or Arabia, and offers the only alternative over this wide area to the ignorant and superstitious treatment—by chaining, branding, and exorcism—meted out to the insane. Since its opening in the year 1900 more than 1,200 patients have passed through the institution, and of these 334 have been discharged as recovered and 300 as improved. These figures, satisfactory as they may be and are, indicate but a small part of the beneficent work accomplished. Though Christian in foundation, the institution opens its doors alike to Jew, Gentile, and Moslem. Patients have come from all over Palestine, Syria, and Asia Minor—some even from Egypt, Cyprus, and Armenia—and their home-going from this modern and thoroughly scientific institution must have done much to spread true views of insanity and to mitigate the horrors of its treatment in these places. The hospital is always full. During the last few years it has been progressively extended to meet the ever-increasing demands on its accommodation; the last addition, a house for thirty-six male patients, was opened early in February of last year. These recent extensions increase the responsibilities of the Committee of Management, and strengthen the appeal they have recently made for financial help. Our attention at home is naturally and legitimately focussed on events nearer hand, but so admirable is the pioneer work done by this hospital, so exceptional are its claims upon philanthropic interest, and so urgent its present needs, that we venture to hope the appeal of the committee (Lebanon Hospital office, 35, Queen Victoria Street, E.C.) will find a generous response and enable it to carry on, as before the war, its work of humanitarian service.

RESEARCH DEFENCE SOCIETY.

THE quarterly report of the Research Defence Society, dated January, 1915, states that the lines of its work have shifted a little. The ordinary activities of the antivivisection societies have diminished; they still publish their journals, but it appears that there have been fewer antivivisection lectures, and very few letters have appeared in the newspapers. There has been some activity in opposition to the protective treatment against typhoid fever, shown in advertisements, and in the distribution of leaflets to soldiers. In two London papers one of the antivivisection societies published a full-page advertisement attacking the protective treatment with a picture entitled "Dr. Germ-Hun Bars the Way." The attention of the Censor was called to this advertisement, and it has been modified. In October, with the approval of the War Office, the Research Defence Society published a leaflet giving a number of telling facts and figures showing the value of antityphoid inoculation; already over 385,000 copies of this leaflet have been distributed. In this matter the society has been greatly helped not only by the War Office, but by officers in command of troops, and by officers of the Royal Army Medical Corps and other members of the medical profession. It has also had the assistance of the British Red Cross Society, the National Health Society, and other bodies. Lectures on such subjects as general precautions against infection, the contrast between military surgery in the past and in the present, the discovery of anaesthetics and of x rays, and the work of Lord Lister and Miss Nightingale, have been delivered to soldiers and others at a number of places by Mr. Stephen Paget. In December a complete set of lantern slides was offered by the Society to the Admiralty, for the use of the fleet. Sir Arthur May, K.C.B., Director-General of the Medical Department, R.N., accepted this offer, and the complete series of 114 slides, with a printed catalogue and a few books and pamphlets for reference, has been presented to the Admiralty, on behalf of the Society, by its President.

The slides have mostly been selected to illustrate the practical results of work done in bacteriology. The following subjects are illustrated: Antiseptic and aseptic surgery; the protective treatment against typhoid fever; malaria and yellow fever; Malta fever; nagana and sleeping sickness; plague, and the protective treatment against plague; diphtheria and diphtheria antitoxin; small-pox and vaccination; *x* rays; the work of Miss Nightingale; and the work of Pasteur. Courses of lectures on sanitation and hygiene are already given to seamen; all or most battleships are provided with lanterns, and the slides are to be circulated so as to afford one or more special lectures to each ship. The Society and its energetic honorary secretary deserve the gratitude of the nation for the work done for its enlightenment, while the medical profession may well be asked to co-operate actively in a campaign which aims at the spread of sound ideas on medical subjects among the public.

ON January 7th the King in Council approved of the extension of Part II of the Medical Act to Belgium. Medical reciprocity with Belgium is thus established, and the Executive Committee of the General Medical Council will meet at an early date to investigate the question of the Belgian qualifications which should be recognized.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE following further subscriptions have been received by the Treasurer of the Fund.

Ninth List.

	£	s.	d.
Brussels Medical Graduates' Association (per Dr. Major Greenwood, Treasurer)	112	2	6
Dr. Oswald H. Isard	1	1	0
Reading Division, B.M.A. (per Dr. Gordon Lambert, Hon. Sec.)—			
Dr. F. W. Standfield	1	1	0
Dr. T. H. Gandy	1	0	0
Dr. Walter Dickson	2	2	0
Woolwich Division, B.M.A. (per Dr. B. W. Lacey, Hon. Sec.)—			
Dr. Sidney Davies	1	1	0
Dr. James S. Robertson	1	1	0
Mr. R. Carnelley Walsham	2	2	0
The Misses Reynolds	1	1	0
Morpeth Division, B.M.A. (per Dr. Frank Beaton, Hon. Sec.)—			
Dr. Hugh Dickie	2	2	0
Dr. A. Smail	2	2	0
Dr. Frank Beaton	1	1	0
Dr. M. Maclean	0	10	6
Dr. H. S. Brown	0	10	6
Dr. P. Henderson	1	0	0
Mr. A. John	3	0	0
Mr. W. Austin Attree	0	5	0
Birkenhead Medical Society (per Dr. G. V. Fletcher, Hon. Treas.)	15	15	0
Mr. C. B. Thacker	1	1	0
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In the list printed in the JOURNAL of December 19th, 1914, the name Edward Murphy should have been Edmond Murphy.

THE DANISH MEDICAL ASSOCIATION.

The appeal by Professor Jacobs on behalf of the medical profession in Belgium is sympathetically discussed in *Ugeskrift for Laeger* for December 17th. This journal is the official organ of the Danish Medical Association, and it announces that the secretary of the association will receive contributions and forward them to the committee in England.

INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments contributed by the following gentlemen since the publication of the last list:

Dr. F. R. B. Atkinson, London.
Mr. John W. Orviss, Jersey.
Dr. Blair, Jedburgh.
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Dr. E. Cautley, London.
Dr. W. H. Lewis, Llansantffraid, Mon.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

AMBULANCE TRAINS AND THEIR WORK.

AT one time and another—in bygone days and recently—I have seen so much of ambulance trains that the phrase brings into my mind a dozen different pictures: trains rolling slowly and almost painfully over endless billows of country; trains just arriving at a quay side; trains being swept and cleaned at the end of a journey; "hospital" trains affording long, narrow vistas of tiers of berths ready for the sick and wounded; trains with all their doors open and streams of laden stretchers being lifted carefully into them at some station near the front; and trains unloading at the base.

It is the latter picture that I try to keep in my mind the longest; there is cheerfulness, almost gaiety, about the unloading of an ambulance train—at all events, during the first ten minutes or so. Once the order to unload has been given, there promptly begin to climb out, aided or unaided, all those who have been allowed to come down sitting up. Bandaged, dishevelled, with muddied clothes and torn, the men are nevertheless cheery and bright. They are not hungry, for they have been fed on board. They are not cold, for the carriages have been warmed. They are not tired, for men on ambulance trains not only sleep but sleep heavily, and for hours, even when wounded, in some specially painful position. Their nervos are not on the stretch, for the sound of the guns is no longer drumming in their ears, and the next turn of duty is a long way off. Here are some of the makings of cheerfulness, and Thomas Atkins would not be the splendid soldier that he is if he did not turn them to the fullest advantage. At one time I used to think that much of his cheerfulness on these occasions was artificial—that he was merely putting a good face on matters. But this is a mistake; he is really cheerful. He has endured so much in recent days that a wooden bench in a receiving room, with a cup of coffee from a Red Cross buffet seems the height of luxury. He has waited so long for a bullet from the enemy, that waiting his turn for his wound to be dressed seems nothing. What is it to wait to be assigned to a hospital, or to a vacant seat in an ambulance wagon, meanwhile enjoying a picnic meal and a ready cigarette, when one has stood for hours in a trench with water up to one's knees, a torrent of rain beating against one's shoulders, and with nothing to look forward to for the next two or three days but a few hours' rest in a dug-out or a bayonet charge on the enemy?

I admit that the picture changes when the train has been emptied of all "sitters," and the time comes for dealing with the stretcher cases. It should be mentioned, by-the-by, that occupants of the ambulance train—its passenger occupants that is—are divided into two classes, officially known as "walking cases" and "stretcher cases," but more commonly described as "sitters" and "lyers." Certainly, the scene becomes sad when the turn of the "lyers" commences, but even then there are relieving features. Either the patients make no sound at all, or they utter trifling jests, and the extraordinary skill and care shown by the stretcher-bearers in removing patients through narrow doors and windows, without any jarring whatever, seems partly to distract the attention from the great sorrowful fact that of the stricken occupants of the stretchers most are in the very prime of their youth, and all will be a source of anxiety to their doctors and nurses for days and days to come.

Train Life.

If it be possible for an existence to be monotonous when really full of incident, then that of a train medical officer and his staff may be so described. It is a ceaseless round of journeys which can best be described as beginning nowhere in particular and ending much in the same place. A train medical officer has no home, no head quarters, no fixed hours for work or meals or sleep, and in his life there is nothing regular except its irregularity. All that he can count upon with certainty is that sooner or later he will reach a station to which dozens of loaded ambulance wagons will promptly flock; that six, twelve, or twenty hours later he will reach another station where dozens of empty ambulances will already be awaiting his arrival; that meantime he will be responsible for the well-being of some hundreds of sick and wounded men; and that these unloaded and his train cleansed and reprovisioned, he will find himself on the move once more. Lucky, too, will he be if at least once every twenty miles or so he has not to climb down from his compartment to see what is the cause of an unexpected stop and if he has time for a meal or a few hours' sleep. Luckier still if the train of which he is in charge permits of his passing along from carriage to carriage by a covered way throughout its length should his presence be required in some distant coach. When he is loading his train I see him standing in the open air, probably in the rain, counting his patients as one by one they are handed over to him. When the train is full I see him moving from carriage to carriage, stooping over stretchers in his ward for serious cases, standing at the doors of the compartments occupied by sitters, and acquainting himself with their general condition. His train unloaded, I see him converting his rough notes into formal records, making out requisitions for stores, and seeing that everything is in order for the next journey, which will begin at an hour he cannot foretell, and take him to a destination that he can only guess. Finally, I see him scanning an old newspaper to pass the time when he is on his way to the front once more, or when his train has for some reason been side-tracked, and threatens to remain so for an interminable number of hours.

Train Work.

It is difficult, and perhaps impossible, to give a detailed and really illuminating account of ambulance train work, such as is now in progress on the Continent, within the space of a mere letter. In itself it is only part of a great organization still in process of elaboration, and in point of detail it differs a good deal according to the exact composition of the train on which it is being conducted; hardly any two trains are precisely alike. It varies, too, with the weather, the skill of the driver, the state of the road, the prevailing character of the cases by which the train happens for the time being to be occupied and the length of the journey.

As has been said, a train officer's work has no true beginning nor end, but for the sake of description may be taken as commencing at the moment when a consignment of wounded has been safely delivered. The first thing to be done is to see that every part of the train is properly cleaned and any possessions left behind by the patients duly placed in safe keeping. The extent of the work thus entailed will be suggested by the statement that an average train consists of about twenty coaches, and is about 300 yards long. The second step is to reprovision the train—that is to say, all soiled linen and blankets must be replaced, food supplies obtained, water cisterns refilled, gas tanks replenished, fuel boxes refilled, and any small repairs required effected. The last step is to look over the whole train from end to end, both inside and outside, to see whether everything is in order for a journey that will extend over an indefinite number of miles and last an equally indefinite number of hours.

When satisfied that all is ready, the medical officer makes a report to that effect to the railway transport officer—who, like himself, is a soldier—and the latter arranges with the French railway authorities as to getting the train under way. Both they and the transport officer have to bear in mind the number of trains that have already been started on the road and the number of trains that are due to pass through the same stations; supply trains and troop trains must above all others not be delayed. Once started, the train wends its way as fast as circumstances permit to a station within easy reach of the front, specified in orders which have been telegraphed by a mysterious being at head quarters who knows at what particular place an ambulance train is at the moment most required. This fact known, the train staff busily completes its preparations, beds for lying-down cases are made up, the compartments for sitting-up cases are supplied with writing paper, cushions, and various little comforts, dressing instruments are placed ready, and a meal prepared.

The train arrived at its destination—some station close to a clearing hospital, and technically known as a railhead—its staff divides into sections. One, for instance, carries the stretchers from the ambulances to the train; another attends to the stretcher cases as soon as they have been lifted into it; a third helps the walking cases into the compartments assigned to them. Of the officers, one probably supervises the actual loading of the train, a second remains on the train itself, and a third takes over the patients as they quit the ambulances, making a note of their number and the general character of their injuries, taking charge of any officer's kit or other valuables, and repaying in kind any stretchers or blankets that may necessarily accompany the patients from the ambulances to the trains.

Once the train has been loaded it becomes to all intents and purposes a hospital, and the scene is fairly easy to imagine. Meals are served, patients made comfortable, and dressings changed if required. The amount of work thus involved differs on every journey, and the difficulty of its performance with the structure of every train. Occasionaly a dressing required may be so surgical in character as to need to be done in the compartment reserved for this purpose, and with the train at rest. Transference of patients from one part of the train to another may also be necessary on other grounds. Every separate carriage is in charge of at least two attendants, and the doctors and nurses move about the train as circumstances require. The ease with which they do so depends on how many of the coaches have intercommunicating doors.

Within an hour or two of the time that the loading has been completed most of the patients are likely to be heavily asleep, and after seven or eight hours' travelling an advanced hospital base will be reached. Here whatever the time, early or late, orders for the train will be brought by the embarkation medical officer in attendance. If heavy fighting is in progress or in view, head quarters will perhaps wish to leave the advanced base hospitals as unencumbered as possible. In such cases the train medical officer will unload only very serious cases and continue his journey with the rest. Otherwise, after consultation with the embarkation medical officer as to the general character of his cases and the amount of accommodation available at different hospitals, he will disembark the whole of his patients. In this work the train staff, a bearer detachment at the station, and the orderlies arriving with the motor ambulances will probably all take part. It is never an easy task owing to the height of the carriages from the ground and the narrowness of doors and windows; but the men develop extraordinary skill in its performance. His train empty, the train medical officer is then in a position to start his round once more.

In addition to managing his train, a train medical officer has also to manage his staff. It consists as a rule of two temporary lieutenants, R.A.M.C., three nurses, and about fifty orderlies. He has no voice in their selection, and must himself teach them how to deal with the peculiarities of their work. The latter is so irregular in character that very precise rules cannot well be imposed. Questions of discipline may often call for the exercise of much discretion. It may happen, for instance, that an orderly who is splendid when actually at work, shows a tendency to get himself into trouble if allowed to leave the train for an hour or two while it is waiting at a base. A train medical officer must also understand catering, know enough French to get on with his driver and his guard, and will have occasion to rejoice if in his student days he has thoroughly mastered the principles of physics as a whole. In short, if he is to make a success of his job, he must be a man of very diversified talents, and his general handiness must be more or less fully shared by the whole of his staff. All alike must have digestions which do not resent irregular meals, brains which subside into quiescence whenever an opportunity for sleep occurs, and skins that react so rapidly that chills are not caused by being one moment in a hot carriage and the next in driving rain.

Ambulance Train Construction.

For its present fleet of ambulance trains the British army in France is indebted almost solely to the French railway authorities; that is to say, all the trains in use, with two exceptions, are built up of French rolling stock—restaurant cars, sleeping cars, first class corridor carriages, and fourgons or vans whose available space is not broken up into compartments. The ratio of such coaches may differ, but the general principle on which the trains are composed is much the same in all cases.

What may be called the administrative block—including a surgery and living quarters for the doctors and nurses—is formed of a restaurant car and a sleeping carriage, and is placed near the middle of the train. Immediately adjoining it are fourgons—some fitted with racks for the support of stretchers, others perhaps furnished with ordinary hospital beds—for the more serious lying down cases. Next come sleeping cars for the lighter kind of stretcher cases; then perhaps a fourgon fitted as a store-room for extra clothing and medical comforts, a fourgon-ward for infectious cases, a number of first-class carriages for "sitters," and, finally, a fourgon fitted up as a kitchen.

This description applies in a general way to the existing trains, and, taken as a whole, these fulfil their purpose so excellently that there is room for doubt whether from the point of view of the welfare of patients trains of the pure hospital type offer any real advantage. The latter, however, throw much less strain on the abilities and energies of train staffs, and the amount of French rolling stock suitable for conversion to hospital purposes is not unlimited, and the demands upon it are great. Consequently it is likely that any fresh trains formed will be composed largely of English coaches, and resemble less the present ambulance trains than those of the pure hospital type. By the latter term is meant a train designed solely for lying-down cases, and usually built up of English "bicycle vans." These being fitted with wide intercommunicating as well as wide side doors, it is possible to see almost from end to end of the train, and the general suggestion is that of a long, narrow hospital ward.

A few of the existing fleet of ambulance trains was presented by the French to the British army ready composed, but the rest came into existence much more laboriously. Watch was kept for suitable coaches temporarily sided at stations within the English zone of operations, and when found permission to retain them was sought and obtained. Most of the trains, in short, have been built up coach by coach, and the task of keeping them in good order by replacing worn-out coaches by new ones is effected in the same manner. The constructor and admiral of the whole fleet, as he may be called, is, like the officers in charge of individual trains and their colleagues the embarkation medical officers, a member of the R.A.M.C. (Major G. A. Moore). What his precise ideals in train building may be I do not know, but among them must be the following: He must try to get carriages which have at least six wheels, since these run easiest; which can be arranged so as to intercommunicate; which have widely opening doors and windows; which in the matter of heating and lighting are self-dependent. Carriages relying entirely for their heating on steam from the engine may get stone cold if the train for any reason has to be turned into a siding and the engine removed. At the present time, too, train speeds are so low that full trust cannot be reposed in electric-lighting systems. A further aim must be to secure that the trains are always operated by drivers accustomed to passenger train work. A driver who has hitherto worked only on goods trains may find it difficult to use a Westinghouse brake even if the composition of the train allows of its installation, and any way he is not versed in the niceties of stopping and starting without jars and jerks.

Even if work of this order did not entirely keep the officer in charge of the whole ambulance service very busy, he would still need to be a man of tireless energy. A good train medical officer takes as much pride in his train as a skipper in his ship, and he is always seeking improvements. He will, for instance, be a happy man for a week if he gets an old coach replaced by a new one, or a coach with inter-communicating doors substituted for one with solid ends. It is, moreover, part of his ordinary duty to keep an outlook for any defects in his train—doors that open badly, hinges that are giving way, pipes and stoves that stand in need of repairs, boilers which fail to heat water with sufficient rapidity, and carriage springs which show signs of undue yielding. If he did not notice such defects himself, his lieutenants, his Sisters,

his non-commissioned officers, or his orderlies would soon bring them to his attention. For the righting of such matters the train medical officer is mainly dependent, of course, on the ambulance train service superintendent—the officer already described under another term—and he in his turn must get the repairing staffs of the French railways to get the jobs in hand. Every one, in short, drives every one else, and seeing that it is war time, and that there are no hours to waste, there is no friction, no obstruction, no red tape. No one who has any share in the task, whether as a member of a train staff, or as a train service superintendent, or as an embarkation medical officer, or as a member of the railway transport service, has an easy job or other than a trying life, but there is excellent co-operation between all concerned; and so the work goes on. That it goes on so well, and that nine-tenths of it is in the hands of the medical profession, seems to me, taking things all round, to be about as good a testimony as any that I know to the value of a medical education, and to the care with which the Royal Army Medical Corps has been selected and trained.

TREATMENT OF WOUNDS.

DR. HENRY DE VARIGNY (Paris) writes: To-day only (January 16th) I read the note on Surgery in the War, published on October 10th, 1914 (p. 638), in your columns, after a quotation in the *Times* of a paper of mine in the *Journal des Débats*. You very justly observe that the very small proportion of amputations witnessed by myself at Vichy cannot be taken "as fully representing the facts." Quite right; but I never took it as such, and in one of the first of the some twenty papers I wrote in the *Débats* on my experience with the wounded at Vichy I took care to say that the wounded of Vichy and other hospitals situated far from the front are a selected class, no severe wounds being sent so far. In fact, we had no abdominal nor thoracic cases, and most of our wounded were hurt in the arm or leg, but not very dangerously. Most had fair chances of recovering, and have availed themselves of the opportunity; the cases of amputation have been mostly cases of gangrene, and gas gangrene, and soldiers badly wounded, with shattered bones, were generally not sent so far as Vichy.

While I have my pen in hand, may I give two opinions which are largely supported by the whole of my few weeks' experience at Vichy in the wards of the very distinguished surgeon of the Hôtel-Dieu, Dr. Léon Maire?

1. All long and deep subcutaneous wounds are very prone to give trouble. The ends may heal quickly enough, but after some time trouble arises in the depths, and you are obliged to open in order to give exit to pus. And later on secondary haemorrhage comes in. I should say that deep wounds should be converted to surface wounds by means of extensive incisions.

2. Every case of apparently superficial skin wound of the scalp requires an immediate operation. You must have a look at the skull, and often you will find it slightly depressed, which means a more serious trouble of the *table interne*, and possibly some trouble of the membranes and brain, and the necessity of immediate action. Do not wait till motor or sensibility symptoms appear, for it will be too late. The exploration of the bone offers no danger at all, and may save many lives. I have seen many cases where the wound by a grazing bullet or piece of shell seemed purely cutaneous, but was, in fact, much more serious, and called for the opening of the skull by the trepan or otherwise. Nothing at first could give the idea that the skull was really hurt. But the surgeon must know that it often is, and that he should investigate the matter as soon as possible.

HOME HOSPITALS AND THE WAR.

1ST SCOTTISH GENERAL HOSPITAL, ABERDEEN.

THE work of the 1st Scottish General Hospital continues smoothly. The number of patients treated up to the end of December, 1914, approached 3,000, of whom 2,500 were Overseas sick and wounded; 836 patients have been examined by *x* rays, involving the taking and developing of 1,293 plates. In round numbers 500 operations have been performed, of which 200 were performed under local analgesia, the ordinary hernia or varicocele operation being performed in this way almost as a matter of routine. Some 600 beds are available, and 1,200 Voluntary Aid Detachment beds are scattered in small groups throughout Aberdeenshire and neighbouring counties. The clearing of patients to these smaller hospitals and their discharge from them to dépôt or on furlough involves a great deal of clerical labour; it is being satisfactorily accomplished by the staff, which, though calculated for a single building, in practice is working in four. Much of the clerical work could be done by women or by clerks, and much of the cleaning of the buildings could be done by charwomen, who would be glad to have the work to do. Some of it is already being done by women. With the establishment of a petty cash system in the army, instead of a method of indents, forms, correspondence, and records, the saving of time and labour would be considerable, and many men would be liberated for more suitable duties. Meanwhile, the surgeons continue to draw their daily lines on paper, thus "severally obliterating" the various items on the printed diet sheets, and the diets are ordered by them instead of by the sisters, who understand the subject. They are also expected to prescribe the necessary underclothing for the soldier to take away with him. Yet in spite of the system, rather than because of it, the medical officers *à la suite* are able to make time for work and even for consideration and thought. It would be interesting to know from other sources if medical officers *à la suite* throughout the country are prescribing the requisite amount of underclothing for the patients on their discharge. This they are expected to do, though this duty was not explicitly stated when the Territorial scheme was started.

THE RED CROSS HOSPITAL, WORTHING.

The large and pleasantly situated mansion, The Cecils, West Worthing, standing in its own secluded grounds, and admirably adapted to meet the requirements of the military authorities for sick and wounded soldiers, has been converted into a Red Cross hospital through the kindly influence of the mayor (Alderman J. White) and the generosity of the owners, Mr. and Mrs. Battye. The expeditious manner in which the house was prepared and equipped reflects the greatest credit on the local Voluntary Aid Detachments which were organized at forty-eight hours' notice. The Worthing detachments of the British Red Cross Society are officially regarded as among the keenest and most efficient in the county, and the eminently satisfactory work carried out by them since the hospital was opened on December 4th proves that they are well able to live up to their reputation. The staff comprises: Mr. J. R. Lunn, F.R.C.S., Dr. Smedley, Dr. Wiggins, and Dr. Brown; the transport superintendent is Mr. H. Wiggins; the lady superintendents, Mrs. Good and Miss Hallam; and the quartermasters, Miss Cooper, Miss Roberts, and Mr. Miles.

BRIGHTON MILITARY HOSPITALS.

The King and Queen recently paid a visit to the military hospitals in Brighton. They first visited the hospital for wounded Indians, where they were received by Colonel Neil Campbell, C.B., the administrator, and the members of his staff. All the wards in the Pavilion, the Dome, the Corn Exchange, and York Place Council School were visited in turn. The royal visitors took a keen interest not only in the patients in the hospital, but also in the arrangements made for their care and comfort, into every detail of which they inquired. The King conversed in Hindustani with many of the patients, including Ganga Singh, who has been awarded the V.C. Their Majesties expressed their complete satisfaction with the arrangements made by Colonel Campbell for the treatment of the wounded Indians.

In the afternoon Their Majesties visited the 2nd Eastern General Hospital. At the main building, the Brighton and Hove Grammar School, they were received by Lieutenant-Colonel Rooth, the administrator, and other members of the staff, including Lieutenant-Colonels Maynard and Paley; Majors Buck, Griffin, and Bowring; Captains Walker, Colcutt, Benham, Brailey, Chadborn, Daldy, Fletcher, Groves, Morgan, Hutchinson, Wood, and Whittington, and Lieutenant Ross. The wards, the operating theatres, and the various departments of the hospital were

visited, and the Queen, in conversation with members of the nursing staff, expressed her satisfaction on hearing that the townspeople of Brighton were supplying so liberally not only the actual needs of the men, but also many luxuries, including tobacco, cigars, cigarettes, fruit, game, motor drives, tea parties, and every description of entertainment. At the Kemp Town branch Their Majesties were received at the St. Mark's School by Colonel Jowers, Major Ionides, and Captains Parry and Sanderson, and conducted over the wards. They next went to the Howard Convalescent Home, where they were received by Colonel Hobhouse, Captains Taylor, Parry, Hutchison, and Prowse; all the wards were visited, and the King paid great attention to cases of frostbite, making many inquiries as to causation and prevention from Captain Taylor, who was conducting His Majesty round.

On leaving, the King expressed to Colonel Rooth his great appreciation of all the arrangements that had been made for the treatment and comfort of the sick and wounded in the various branches of the hospital under his charge. The visit of the King and Queen was greatly appreciated by the patients, as well as by the medical and nursing staff, who all recognized the real interest which Their Majesties took in all they saw and heard.

GERMAN PRISONERS IN ENGLAND.

Dr. Athelstane Nobbs (President, Wandsworth Division, British Medical Association), who holds a commission as Lieutenant, R.A.M.C., and is in medical charge of H.M.T. *Scotian* in Portsmouth Harbour, has been good enough to send us the following interesting account of his experiences:

This ship, in times of peace used for emigrant purposes in the Canadian service, has been converted into a floating prison with accommodation for wounded, of whom I have over 200, all practically now convalescent. The total number of prisoners exceeds 1,200; they were all captured in war. Of these, about 1,000 were soldiers and the rest sailors; the latter rescued from the *Mainz* in Heligoland Bight, from torpedo boats off the Dutch coast, and so forth. The sailors easily bear the palm for smartness, physical appearance, and cleanliness.

The dietary consists of 1½ lb. of bread, ½ lb. meat, 2 oz. butter or margarine, ½ lb. potatoes, ½ lb. green vegetables, with tea, milk, and cruet. Evening gruel has lately been added, but is not much appreciated. As to bread, we experienced, to begin with, considerable difficulty in pleasing our guests. They clamoured for black bread, which they urged—and perhaps with reason—was more nourishing than white. Rye was not easy to obtain, but got it was eventually, and it was hoped that all would go smoothly. Such, however, was not the case, for English ovens apparently do not lend themselves to the baking of rye bread. Some of the prisoners, who in private life had been bakers, were employed, but to no purpose. After much experimenting, I venture to think the happy medium has been found by making dough composed of 2 parts wholemeal, 1 part of wheat flour, and 1 of rye. This mixture rises fairly well, and is best when of the previous day's baking.

There were at first loud clamours for the sausage of the Fatherland, which, being unobtainable, is not likely to appear in the menu. In the cookhouse prisoners were at first made trial of, but the inevitable happened. Just as our bakery failed even with German bakers to superintend or advise, so did the cookery prove a slip. Within twenty-four hours of the venture there was an outcry for a return to English methods, and it has remained at that ever since.

With the exception of the quarters allotted to the guard, the officers, and navigators, the prisoners have the run of the whole deck, or rather decks. They have the fair winds of heaven with which to fill their lungs, and hot salt-water baths in moderation; they have a never-ending post which brings them parcels and letters—in short, everything except alcohol and shore leave. Their ranks are no more free from grumblers than are those of any other body of mankind, and occasionally there are complaints which, needless to say, are trivial and for the most part easy of immediate remedy.

Vermin made an unwelcome appearance soon after the soldiers came, but a plentiful use of carbolized hot salt water (baths) and formalin vapour stamped out the visitation.

At first, with so many minor surgical cases to dress, I had the assistance of two R.A.M.C. orderlies, but now I have to rely on four Red Cross men whom I found among the prisoners, and most useful and skilful men have they proved to be in the main. In the treatment of wounds I have found no reason to turn my back on an ally that has stood me in good stead for a score of years—namely, weak iodine solution; and hydrogen peroxide has proved a better friend than permanganate. At least, this is my experience, and I give it for what it is worth.

NOTES.

A Military Orthopaedic Centre.

The War Office has decided to establish a military centre for orthopaedic treatment at Liverpool. The centre will have a call upon as many as 400 beds, and it is understood that the base hospitals will be invited to send cases of orthopaedic type to Liverpool. The centre will be under the direction of Mr. Robert Jones.

Canadian Contingents.

Our Montreal correspondent writes: No. 2 Stationary Hospital, which accompanied the first contingent of the Canadian Expeditionary Forces, has been established at Le Touquet, near Boulogne, and is in charge of Lieutenant-Colonel A. T. Shillington. No. 6 Field Ambulance, which has been recruited from the fourth military division, is now in barracks at Montreal preparatory to accompanying the second contingent. The officers are Majors Philip Burnett and T. J. Murphy, R.A.M.C., Captain W. Howell, Lieutenants Andrew Macphail, R. H. M. Hardisty, G. Ross, H. P. Wright, and Walter. It is expected that Major R. P. Campbell, who has been attached to the general hospital at Salisbury, will take command of this unit on its arrival in England.

Hospital Unit for Servia.

An Anglo-Servian hospital unit was offered recently to the Servian Government and was immediately accepted. The unit left England on January 19th. The staff consists of Mr. James Berry, senior surgeon to the Royal Free Hospital (senior surgeon and medical superintendent of the unit); Dr. Laurence Panting, F.R.C.S., of Truro (surgeon); Dr. May Dickinson Berry, anaesthetist to the Royal Free Hospital (physician and anaesthetist); Dr. E. U. Williams, radiographer to the Royal Free Hospital (radiographer); and Dr. Dorothy Chick (house-surgeon). There is one dresser (a woman), nine nurses, five lady orderlies, four male orderlies, and a cook. The Admiralty has provided free transport to Salonica. The unit is taking with it 25 tons of stores, including everything needed for the establishment of a base hospital.

Bath Treatment for Soldiers.

A memorandum was recently presented to the War Office urging that steps should be taken to provide for the treatment in suitable cases of wounded and invalid soldiers by means of medical baths. The memorandum was signed by Sir Clifford Allbutt, Sir William Osler, Sir Lauder Brunton, Sir David Ferrier, Sir James F. Goodhart, Dr. F. M. Sandwith, Dr. George Oliver, Mr. Charters J. Symonds, Dr. J. S. Risien Russell, Mr. R. P. Rowlands, Mr. Wilfred Trotter, Mr. Albert J. Walton, Dr. Septimus Sunderland, Dr. S. D. Clippingdale, Dr. Leonard Williams, Dr. Neville Wood, and Dr. R. Fortescue Fox. The memorandum pointed out that medical baths were extensively used for the military, with excellent results, in some foreign countries; that Italy, for example, had five Government establishments, France seven, and Germany not less than six. Some of these establishments, it was stated, were in connexion with hot springs; others were hospitals or sanatoriums for hydrotherapy. The memorialists believed that among the men discharged from hospital a number would be benefited by baths, hydrotherapy, massage, and physiotherapy. Among the medicinal waters and baths of this country are some of equal value to those on the Continent, and certain British spas have already made offers of free treatment; officers and men are, for instance,

now undergoing treatment at Bath and Buxton. The memorandum recommended that the provision of treatment by the means in view should be systematized, and that the medical men who now have the responsibility for advising as to treatment after the patient leaves hospital should have an opportunity of obtaining the assistance of colleagues in close touch with British health resorts. The suggestion was favourably received by the War Office, and it is hoped that the signatories will be appointed a committee to make recommendations.

MEDAL FOR DISTINGUISHED CONDUCT.

Among the 187 warrant officers, non-commissioned officers, and men to whom the King has granted the medal for distinguished conduct are the following nine members of the Royal Army Medical Corps:

Sergeant J. L. BARNFIELD, Special Reserve. For conspicuous gallantry in leading his stretcher-bearers in a fearless manner under fire in darkness, collecting the wounded, especially at La Boutillerie on October 24th.

Sergeant F. WOODWARD (attached Royal Scots Greys). For conspicuously gallant conduct on November 2nd, near Kemmel, when he continued to attend on the wounded, although a shell had burst in the room in which they lay and he had been stunned by the concussion.

Private H. HALLAMORE. For conspicuous gallantry and devotion to duty on numerous occasions between October 22nd and November 20th, in rendering aid to the wounded, making journeys constantly under very heavy fire.

Private F. J. HOLROYD, No. 3 Field Ambulance. For gallantry and devotion to duty between October 31st and end of November, in collecting the wounded at night in the neighbourhood of Veldhock.

Private A. H. LUCAS. For conspicuous gallantry and devotion to duty on numerous occasions between October 22nd and November 20th in rendering aid to the wounded, making journeys constantly under very heavy fire.

Private F. MARSHALL. For conspicuous gallantry and devotion to duty on numerous occasions between October 22nd and November 20th, in rendering aid to the wounded, making journeys constantly under very heavy fire.

Private W. J. MATHEWS, No. 2 Field Ambulance. For gallant conduct and devotion to duty in collecting the wounded under heavy shell fire, especially on November 1st near Zillebeke, where he was severely wounded.

Private R. H. MILLS. For gallant conduct in searching for wounded men, on his own initiative, in a house which was being shelled by the enemy.

Private H. J. RANGER. For conspicuous gallantry and devotion to duty on numerous occasions, between October 22nd and November 20th, in rendering aid to the wounded, making journeys constantly under very heavy fire.

INDIAN TROOPS.

Sir Ronald Ross, K.C.B., F.R.S., has been appointed by the War Office Consulting Physician in Tropical Diseases to the Indian troops.

TEMPORARY COMMISSIONS IN THE R.A.M.C.

The War Office notifies that there are several vacancies for temporarily commissioned officers in the Royal Army Medical Corps. Candidates must be British subjects of pure European descent, fully qualified, under 40 years of age, and physically fit for military service. Applications should be made to the Secretary, War Office, Whitehall, S.W.

MEDICAL OFFICERS WANTED.

2nd East Anglian Field Ambulance (Reserve).

As announced in our advertisement columns, medical men are required to take commissions as lieutenants R.A.M.C.(T)., with pay and allowances at regular army rates. Applications should be addressed to Lieutenant-Colonel G. Blake-Masson, 148, Broadway, Peterborough.

THE *Prince Alfred Hospital Gazette* (Sydney) for October 21st contains a portrait of the late Dr. B. C. A. Pockley, who, when serving as captain of the Army Medical Corps of the first Australian Expeditionary Force, lost his life in New Guinea in circumstances which have already been reported. It also contains a portrait of the late Sir Norman MacLaurin, M.D., Chancellor of the University of Sydney, and a member of the board of directors of the hospital. He was born in Fife, and was a graduate of the Universities of St. Andrews and Edinburgh. After a period of service in the Royal Navy he settled in New South Wales, and finally in Sydney, becoming surgeon to the Sydney Hospital and president of the Board of Health. He entered the Legislative Council in 1889; he became a member of the ministry in 1893, and was able to render important services in meeting the financial crisis which then occurred. He had been Chancellor of the University since 1896. The war, it appears, is seriously affecting the hospitals in New South Wales, not only on the financial side, but also because so many members of their staffs have volunteered for military service.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

ROYAL INFIRMARY OF EDINBURGH.

IN accordance with custom, the report of the managers of the Royal Infirmary of Edinburgh was remitted to a committee of contributors, and the report of that committee has now been issued. After stating general approval, it pays special attention to the great increase in the cost of maintaining the infirmary which has been so marked in recent years. This was due in part to the higher prices which had to be paid for supplies of various kinds, and in part to greater medical expenditure; lately, too, it had been necessary to increase the nursing staff, on account of the larger number of in-patients. The total cost of maintaining the institution was £60,000 last year, and whilst 20 per cent. of that was met by interest on the infirmary's capital, and 33 per cent. by annual subscriptions and the like, the remainder had to be taken from the year's legacies and from previously accumulated funds. The accumulated funds had been encroached upon eight times in the past fourteen years, and the committee regards this as an unsatisfactory state of affairs requiring immediate attention. There were only 2,622 members of the Court of Contributors, and it is the committee's opinion that this number could be increased, since membership of the court is simply constituted either by an annual subscription of £1 or by a single payment of £5. The committee also suggests that larger contributions might be secured from employees in public works, and that the co-operation of the various trade unions and societies should be asked for in the making of an appeal for these; that, considering the extra cost borne by the institution by reason of the treatment given to wounded soldiers and sailors, the possibility of recovering payment from the Government should be kept in mind; that in view of the fact that about 48 per cent. of the indoor and 33 per cent. of the outdoor patients belonged to the class of insured persons, some financial recognition thereof should be made to the institution; and that application should be made to the Inland Revenue authorities to remit the duty on alcohol used in hospitals in the making of tinctures, galenicals, etc. The committee notes with satisfaction the fact that, in accordance with the traditions of the infirmary, large numbers of the medical, surgical, nursing, and works staff volunteered, and were accepted for active service. The report was presented to an adjourned meeting of the Court of Contributors on January 19th, and its adoption was moved by Mr. W. A. Tait, the Convener, and seconded by Dr. D. F. Lowe. Sir William Haldane criticized the reference in the report to insurance, and also moved the deletion of the passage in which the possibility of recovering payment from the Government for the treatment of soldiers and sailors was referred to. Mr. G. L. Crole, K.C., seconded this amendment, but on a vote being taken it was found that there were eleven votes for the adoption of the report and an equal number for Sir William Haldane's amendment, and the Chairman (Lord Provost Inches) gave his casting vote for the amendment. Mr. Tait agreed to accept a suggestion by Mr. Crole that the phrase "without interfering with the management of the infirmary" should be incorporated in the paragraph which suggested that the Legislature should recoup hospitals for what they have done for insured persons. The report, as finally amended, was then adopted.

THE CHAIR OF MEDICINE IN EDINBURGH.

The names of Dr. Edwin Bramwell and Dr. John D. Comrie are to be added to the list of candidates for the Chair of Practice of Medicine in the University of Edinburgh, published in last week's JOURNAL (see p. 136). Both are assistant physicians to the Edinburgh Royal Infirmary, and university lecturers on clinical medicine. Dr. Comrie is also lecturer on the history of medicine. The complete list of candidates contains, therefore, the names of Drs. Edwin Bramwell, J. J. Graham Brown, John D. Comrie, Robert A. Fleming, G. Lovell Gulland, Alexander Morison, Harry Rainy, and Douglas Chalmers Watson. An age limit of 65 is attached to the appointment. The Court of Curators of Patronage, which has the

making of the appointment, consists of Principal Sir William Turner, K.C.B., Hon. Lord Dundas, David Fowler Lowe, M.A., LL.D., the Right. Hon. R. K. Inches, Lord Provost of Edinburgh, Dean of Guild Carter, Councillor Harrison, and Councillor Lorne MacLeod. It is expected that the decision of the curators will be made in a few days. The position of physician to the Royal Infirmary with wards is conjoined with the appointment to the chair.

THE HIGHLANDER ABROAD.

Dr. Lachlan Grant recently delivered an interesting lecture on the Highlander abroad to the Oban Scientific and Literary Society. He said that among the Celts the Highlander had ever been in the front rank of pioneers and adventurers. Physically and mentally he was eminently fitted for the work. Scholars, travellers, and soldiers went out to every known land, and to this day their descendants' names could be recognized in Sweden, Russia, Austria, Holland, Spain, France, and Germany. Iona sent out its missionaries everywhere and supplied professors to the great universities, such as Paris, Cologne, and Louvain. The irruption of the Norsemen into Scotland ten centuries ago caused many scholars and ecclesiastics to seek homes abroad. Some of these pilgrims took precious treasures of early books and manuscripts with them for safety, and such have been gradually recovered in Austria, Bavaria, Holland, France, and elsewhere. It was said that the oldest written book from Scotland was still at Shaffhausen in Switzerland. The history of the Highlanders who made their mark abroad would fill a library, and the ancient friendship between Jacobite Scotland and France made our present alliance with that brave and cultured nation doubly welcome and interesting to any Highland Society. In building up its power Russia had all along had the help of many Highlanders. Some of the names were Keith, Farquhar, Gordon, Ogilvie, Munro, Menzies, Ferguson. As in France, some of the Scots who settled in Muscovy Russianized their names by adding "off" or some such termination; for example, Scobie became Skobeloff. In building up the Indian Empire, and in Persia, Burmah, Ceylon, China, Tibet, and throughout the East, Highlanders had always done even more than their share in dangerous pioneer work as travellers, traders, soldiers, and missionaries of all sorts. But of all countries that had ties with Scotland Canada lay nearest to Highlanders, and among the contingents sent for the defence of the empire were the great grandsons of soldiers who had fought for Britain in the early days of the Dominion's history, and afterwards settled in Upper Canada.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

DUBLIN CASTLE RED CROSS HOSPITAL.

AT a meeting of the finance committee of the hospital held at Dublin Castle, reports were submitted as to the progress of the works, and the matron stated that a large number of beds had been delivered. Various tenders for supply of articles of furniture were considered, and certain were accepted. It was reported by the medical committee that the operating theatres were expected to be completed this week, and the matron stated that the nurses' quarters were practically furnished.

COUNTY INFIRMARY SURGEON DISMISSED.

At a recent meeting of the Longford County Infirmary Committee a letter was read from the Local Government Board forwarding a complaint they had received from the Earl of Granard, K.P., colonel commanding the 5th Battalion 18th Royal Irish Regiment, stationed in Longford, in which he stated that on December 13th, 1914, Sir Thomas Myles, Surgeon to the Forces in Ireland, motored to Longford for the purpose of performing an operation on a soldier who was suffering from appendicitis. Accompanied by Sir Thomas Myles, Lord Granard went to the county infirmary and asked Dr. Mayne for the use of the operating theatre, but Dr. Mayne refused to grant permission for the operation unless he himself were allowed to perform the operation. The man was then taken by motor to Dublin, and was operated on at the Richmond Hospital.

The following resolution was proposed:

That learning that Dr. Mayne had refused the use of the operating theatre to Lord Granard and Sir Thomas Myles for the purpose of performing an operation on a soldier then in need of an immediate operation, which was essential to save his life, and being of opinion that Dr. Mayne should not have so acted, we are of opinion that Dr. Mayne should no longer be allowed control of the infirmary, and that he be hereby dismissed and removed from the position of surgeon, and that we request the Local Government Board to concur in our order.

An amendment was brought forward:

That the Committee disapprove of the surgeon's action in refusing leave to Sir Thomas Myles to perform this operation, and to Lord Granard to introduce a soldier patient, and that the Committee expresses its regret, and as far as is within its competence, will welcome in future any soldier patient that shall be sent by Lord Granard.

The resolution was adopted by 7 votes to 4.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

BELGIAN DOCTORS' FUND IN LIVERPOOL.

THE Liverpool Medical Institution on December 3rd, 1914, resolved to open a fund for the relief of the Belgian doctors to be administered by the Central British Committee. The subscriptions already received amount to £300; a list is published at page 176. It is urgently desired that further subscriptions may be sent at an early date, and that a sum may be raised worthy of the history and position of Liverpool as a great medical centre. Subscriptions should be sent to the treasurer, Dr. T. R. Bradshaw, at the Medical Institution.

Professor C. Jacobs of the University of Brussels has accepted an invitation from the President and Council of the Medical Institution to address a meeting of the medical profession on the position and needs of doctors and pharmacists in Belgium. The address will be delivered at the Medical Institution on Thursday evening, January 28th, at 8.45 p.m. Members of the medical profession in Liverpool and district are cordially invited to be present. In due course further particulars of the address will be sent out to all the medical men in the neighbourhood, and it is hoped that Professor Jacobs will meet a large and sympathetic audience on that date.

Correspondence.

UNUSUALLY LARGE DOSES.

SIR,—I am instructed on behalf of the pharmacists of Great Britain to solicit your aid in calling the attention of the medical profession to the wording of a portion of the preface to the new *British Pharmacopoeia*. In that preface the following statement is made:

It must be clearly understood that the "doses" mentioned in the *Pharmacopoeia* are not authoritatively enjoined by the Council as binding upon prescribers. They are intended merely for general guidance, and represent, in each instance, the average range of the quantities which, in ordinary cases, are usually prescribed for adults. The medical practitioner will exercise his own judgement and act on his own responsibility in respect of the amount of any therapeutic agent he may prescribe or administer. Where, however, an unusually large dose appears to be prescribed, it is the duty of the pharmacist or dispenser to satisfy himself that the prescriber's intention has been correctly interpreted.

As a consequence a somewhat onerous obligation is cast upon pharmacists, and, although there is not the slightest reason to suspect that the members of the medical profession, speaking generally, will do anything to render the task of the pharmacist more difficult, it is felt that if the attention of practitioners were specially directed to the new condition of things they would be more prepared to co-operate in those few cases where it might be necessary for a pharmacist to refer back a prescription to the prescriber.

If it could be arranged, as a uniform practice, that where a practitioner orders an unusually large dose of any particular potent drug such dose should be initialled by

the prescriber, all possibility of ambiguity would thereby be removed.—I am, etc.,

W. J. UGLOW WOOLCOCK,
Secretary, Pharmaceutical Society of Great Britain.
17, Bloomsbury Square, London, W.C.,
January 15th.

EAR DEFENDERS.

SIR,—I have read with much interest the account in your issue of January 2nd of the Mallock-Armstrong ear defender, which appears to be a kind of plug for inserting in the ears in order to break the concussion of gun-fire. The writer of your article also mentions "plastic ear-plugs," which are similar plugs made of some plastic material, and without the artificial drum which the Mallock-Armstrong ear defender possesses. Will you allow me to mention that many years ago I employed a very simple device for this purpose for a patient in India, who was suffering from intense nervous irritability and could not sleep if there was the slightest sound?

It consists merely of a light horseshoe-shaped spring, with pads at each end, and bound round with velvet or other soft material. The pads of the spring press on the tragus of each ear, the curve of the spring lying under the chin. The pressure of the spring on the tragus is just sufficient to close the ear gently and thus to break the shock of loud noises—though it does not exclude all sounds; and the spring is made of a material which can be bent so as to increase or decrease the pressure as required. The whole instrument weighs very little, and can easily be slipped into the breast pocket. When the user is awake the pads can be applied to both ears, and the instrument is very useful to exclude annoying sounds during hard mental work or when reading (as in the train). When the user wishes to exclude such noises during sleep, he slips one pad behind the ear which is laid on the pillow, while the other pad closes the tragus of the exposed ear; and this suffices to deaden the many little annoying sounds, such as the creaking and rattling of windows and the hooting of motor cars, which keep many people awake for hours. There is no danger here of causing sepsis of the ear, and I can strongly recommend the instrument if intelligently employed, as I have used it myself for many years.

I asked Mr. C. Baker, the microscope maker of 244, High Holborn, to supply the instrument (at a small cost), but he says that few people can be persuaded to take it up. This appears to me to be singular. Noise at the front and on board ships of war must be frightful, and one would think that soldiers and sailors would be glad of such a simple device. I do not know whether this "ear-clip" (as I call it) is as good or better than the devices mentioned in your issue referred to; but it has been a boon to myself, and I really do not see why it could not be of use to others. I do not profit in the sale of the device. I think you mentioned it in the BRITISH MEDICAL JOURNAL years ago, but I should like again to call attention to it as it will certainly prove useful in war time. Some people, however, have so small a tragus that the device is likely to be useless to them.—I am, etc.,

London, W., Jan. 14th. R. ROSS.

ANTITETANIC SERUM INJECTION AND ANAPHYLAXIS.

SIR,—Administering, as we are, injections of antitetanic serum by the hundred I shall be greatly surprised if, in the near future, we do not have the risks of anaphylaxis brought home to us. If, for instance, any of these patients happen to contract, or be exposed to the infection of, diphtheria in the near future he will in all probability get an injection of antidiphtherial serum, whereupon we should expect to witness the phenomena described by Professor Ch. Richet.

Personally, I have told every one of these serum-immunized patients to inform their doctors that they have been injected, in order that due caution may be shown in the event of other serum injections becoming desirable. I venture to suggest that it would be well to give this warning as a routine measure.—I am, etc.,

ALFRED S. GUBB, M.D.,
Director of No. 15 Auxiliary Hospital at Aix-les-Bains.

NEW DETAILS CONCERNING TUBE EXPERIMENTS ON THE ORIGIN OF LIFE.

SIR,—In the BRITISH MEDICAL JOURNAL for November 30th, 1912, p. 1545, and *The Origin of Life* (second edition, pp. 86–92), I referred to unsatisfactory results with various solutions of sodium silicate, and in a communication to *Nature* on January 22nd last (p. 579, *note*) I mentioned a new solution, and suggested how it might be used.

My own experiments of this nature having proved unsuccessful, I made new trials, using some of the same ingredients, but in different proportions. Three of these trials have yielded tubes containing plenty of organisms. Each ounce of distilled water in the solutions used contained the chemicals now indicated:

(1)	Ammon. phos.	3 gr.
	Dil. phos. acid.	8 drops
	Sod. silicate	1 drop
(2)	Ammon. phos.	4 gr.
	Dil. phos. acid.	6 drops
	Sod. silicate	1 drop
(3)	Liq. ferri perchlor.	8 drops
	Colloidal iron	1 drop
	Sod. silicate	5 drops

The yellow solution (No. 3) without the colloidal iron (which was given to me by Dr. O. Rosenheim) was almost barren; but with this addition in other experiments has yielded numerous embryo fungus-germs, producing one, two, or three hyphae.

Last April I also repeated two of the variations of my experiments devised by the French investigators, Albert and Alexandre Mary, and these have likewise yielded two series of tubes containing plenty of organisms. These fluids have been prepared from 10 per cent. solutions of the two new chemicals, and their composition was as follows:

(4)	Iron sulphate	1 drop
	Potas. ferrocyanide	2 drops
(5)	Iron sulphate	2 drops
	Potas. ferrocyanide	3 drops
	Sod. silicate	5 drops

The sodium silicate solution was in each case that obtained from Allen and Hanburys (6, Vere Street, W.). The organisms found after the samples of deposit taken from the tubes have been well stained with eosin have been fungus-germs of different kinds multiplying as such, or producing either incipient mycelia or actual spore-bearing, delicate moulds. Typical torulae, formerly frequent, have rarely been seen, and bacteria have been found only in No. 2 solutions, in which they have soon multiplied enormously after the addition of some 0.05 per cent. sterilized tyrosin solution.—I am, etc.,

Chesham Bois, Bucks, Jan. 16th. H. CHARLTON BASTIAN.

THE "ELDERTON" CONTROL METHOD OF TESTING THE VALUE OF NEW TUBERCULIN.

SIR,—Dr. Rigg considers my criticisms of the method of testing the value of tuberculin advocated by Dr. Batty Shaw and himself rather dialectical than genuine. It was my genuine concern that the value of tuberculin should be determined which led to my criticism of their methods, for I can find no suggestion in their papers that they considered the manner of administration a matter of importance. So long as patients are chosen by lot and the treated paired off with the untreated it apparently does not matter that the cases are few, that the doses are inadequate, that treatment is stopped after three months, that all cases are treated according to a uniform scale, that the tuberculin is the weakest variety and that to determine the results only one criterion—the presence and extent of râles—is used, the general condition, weight, functional capacity, occurrence or non-occurrence of relapse being put aside.

The good results of tuberculin treatment have been recorded by those who have used tuberculin intensively and reached large doses. To quote Bandelier and Roepke, "We are not astonished that those authors who now are in favour of small and the most minute doses at long intervals, or whose opinion is based on the short cures of the public sanatoria, have seen no results from tuberculin." Dr. Shaw, in order to test the value of tuberculin, deliberately avoids the methods which are said to give good results

and chooses those which have hitherto failed to give results. That he "controls" his cases does not add to the value of his methods.

Dr. Rigg has discovered precedents for his small initial doses. Most of the authorities quoted used very small doses at the beginning of a long course of treatment in which large doses are ultimately reached. Denys, for instance, who begins with as small a dose as Dr. Rigg, is an advocate of prolonged treatment, and has given as much as 10 c.cm. of his tuberculin. In such cases very small initial doses, though involving an unnecessary waste of time, are of less importance than with Dr. Rigg's patients, who only received treatment for three months. For a considerable portion of this time the doses must have failed to produce any satisfactory immunizing response, and the length of effective treatment was therefore much less than three months. Then, why choose T.R. when the good results have been obtained chiefly with the stronger preparations? Dr. Rigg even makes T.R. weaker than I assumed it to be, for he says that Denys's B.F. is 100 times the strength of T.R., but B.F. is nothing more than Koch's non-concentrated tuberculin T.O.A. Dr. Rigg's letter has also made it still clearer that he treated his patients according to a predetermined scale. This use of rule of thumb methods is the bane of tuberculin treatment. Scales are given in textbooks as a rough guide to beginners, and are not intended to be slavishly followed.

Lawrason Brown writes: "It is intended merely as a suggestion in controlling the dosage, which for each patient varies greatly, according to individual susceptibility." Hamman and Wolman write: "There is little advantage in the use of scales, however, as few patients will remain in any one system for any length of time, nor can we tell at the beginning of treatment where the patient best belongs. There is much room for individualization in the choice of a scale, the patient himself always serving as a safe guide and corrector."

I have not raised the broader question as to how far statistical methods can be applied to this problem, as Sir A. E. Wright has ably discussed this and shown the difficulty of finding a critical feature in cases of phthisis which would subserve the purposes of statistical evaluation. Drs. Batty Shaw and Rigg ignore these difficulties and boldly state the results of three months' treatment of a few patients with a method of tuberculin administration which has hitherto consistently failed to give good results. —I am, etc.,

Birmingham, Jan. 18th. W. H. WYNN.

COLOUR VISION THEORIES.

SIR,—Mr. Percival (January 2nd, p. 48) seems to have somewhat mistaken the point I had in view in writing the article on colour vision which was published in your issue of December 26th, 1914.

I had no intention of dealing with the Edridge-Green theory, for that has been fully dealt with by Dr. Edridge-Green and myself on many occasions. All I wanted to point out was the fact that his deductions as well as his theory have been accepted by a very large body of scientific men whose opinions must carry weight.

Mr. Percival seems to imply that although the facts which Dr. Edridge-Green has pointed out are quite correct, yet the theory on which they are all based fails because, he states, it will not explain the colour equation phenomena, or Benham's top. Many of us, however, claim that it explains both. Owing to the position in which I find myself at present, and to the fact that only occasionally am I able to send or to receive letters, I cannot enter into the question now, yet I hope that Dr. Edridge-Green will explain the difficulty which Mr. Percival finds, for it is a subject which he and I have often discussed, and have found no difficulty in reconciling the facts with the theory.

I feel glad to hear Mr. Percival admit that although Young's theory provides "an easy explanation of the phenomenon" yet he considers that "everything that has been proposed is inadequate to account for all the facts," so I gather he thereby admits that most of the phenomena, except those mentioned, are incapable of explanation on the Young theory.

I feel grateful to Mr. Percival for boldly admitting that the facts which Dr. Edridge-Green has so often pointed out are true. I am unable to see how any one who has taken the trouble to investigate them could come to any other conclusion, though many hesitate to say so.—I am, etc.,

H.M.S. *Euryalus*, Jan. 12th. C. DEVEREUX MARSHALL.

SIR,—I greatly appreciate the remarks in the leader in your issue of January 9th. The writer, however, has stated that my theory is not proven because primitive man did not see blue or violet. I feel sure that he would alter his opinion if he were aware of the true facts. Seldom has a theory which emanates from Germany been based on less evidence, the facts being directly opposed to it. I will take the example given of Homer. All the evidence points to Homer's vision being dichromic and that he saw red and violet with a wide neutral region. He has definite colour terms for red and violet, but none for the colours of the intervening regions. The violet *ἴον* is one of the few flowers mentioned by Homer, and is used by him as a colour term *ἰοειδής*, which would not be likely with such an insignificant flower if he did not perceive its colour. He used it correctly to describe violet objects, and never applies this term to any object which is not violet. Homer also used *πορφύρεος* to represent violet. Xenophanes employed *πορφύρεον* to describe the violet of the spectrum. A stroll round the British Museum should convince any one that primitive man saw and appreciated violet-blue, on account of his selection of objects of this colour for ornaments. Professor Petrie showed me a very fine specimen of violet-blue pigment used by the ancient Egyptians, and told me that it required special care in its preparation.

Mr. Devereux Marshall has drawn attention to the fact that my opponents have been quite unable to point out any fact opposed to my theories, and I have therefore nothing to which I can reply. I have tried without success to find a fact which is inconsistent with my theory of vision; if any reader can do so, I hope he will write to the BRITISH MEDICAL JOURNAL or to me.

Dr. Percival has made a statement which is surprising with so able a man. He remarks that my explanation is not satisfactory because it agrees with one of the best-known facts in the physiology of colour vision. This is similar to saying that the solution of an abstruse mathematical problem is unsatisfactory because the author stated that two and two make four. The conditions of contrast mentioned by him are exactly the reverse of those universally accepted. When the inducing colour is weak, and particularly when it is so weak as to be overlooked altogether, the contrast is striking as in the well-known coloured shadows. The reader can test this for himself in the following simple way: Let him take a sheet of brilliant green paper and put a small square of white paper in the centre, the contrast colour will be scarcely noticeable, but if he cover the whole with a sheet of tissue paper, thus reducing the green to a very pale colour, the contrast pink of the white square becomes very striking. If an observer will look at black letters printed on a white ground and then suddenly interpose a blue-green glass, the black letters will for a fraction of a second become a brilliant red.

I thank Dr. Fraser for his kind remarks.—I am, etc.,

London, N.W., Jan. 16th. F. W. EDRIDGE-GREEN.

GREY HAIR AREAS.

SIR,—I have read with interest Mr. G. Lenthal Cheatle's articles on the distribution of grey hair. Although a surgeon, his observations deserve the attention of all physicians. They appear to me to prove the truth of Laycock's observations on neuroses. I am trying to find out the cause of what has been called idiopathic anasarca, which I can study in my own person. I can cause it, and I can cure it, by diet, but I have not yet been able to make sure of the particular element in the food which causes it. There can be no doubt, however, that it is a neurosis, which Laycock taught was the nature of the dropsy in Bright's disease. Since my attention was directed to this subject I have come to the conclusion that Bright's disease itself is a neurosis—an effect rather than a cause. Idiopathic anasarca is a very early form of dropsy, and is,

I find, very common even in young and apparently healthy people. That it depends on some change in the nerve centre I have no doubt, and when we know how to recognize it on the areas supplied by particular nerves, we will have a clue to guide us to the explanation of the facts as to grey hair to which Mr. Cheatle calls our attention. Hair is, as it were, a part of the skin, and is likely to depend upon the state of the skin for its nutrition. A Zulu, who was studying in Edinburgh, told me that his hair had not grown since he left South Africa eleven years before. Of late years I have noticed that my moustache no longer grows, although I shave the face elsewhere, and I have been thinking of shaving the moustache to see if it would then grow. Such observations may seem trifling, but who can explain them? But whatever may be the explanation, there can be no doubt that it will be found in connexion with the state of the *vis nervosa*, which depends upon the integrity of both poles of the nervous battery.—I am, etc.,

Hawick, Jan. 7th. JOHN HADDON, M.D.

VACCINATION IMMUNITY.

SIR,—A lady with a tuberculous history, and who in consequence consumes a large quantity of milk daily, was confined on September 15th, 1914. I vaccinated her baby on September 29th, October 5th and 16th, with lymph from the National Vaccine Establishment; no result was produced on either occasion, a fresh sample of lymph being used the last time. As I had never previously, since I have done public vaccination, failed to get any result whatever, as in this case in an infant, I made enquiries as to why this child might be immune. The result of my enquiry was as follows:

The only milk consumed in the house comes from two cows kept on the premises. One of the cows was bought on August 8th, 1914, the other cow being then out of milk. The cow bought on August 8th had cow-pox when bought, though it was not recognized as such till the veterinary surgeon saw it at a later date. The mother, who had been vaccinated in 1901 and took very well indeed, drank large quantities of milk from this cow-pox cow only up till the date of her confinement.

Was this infant rendered immune against vaccination, while *in utero*, in consequence of the mother drinking during her last month of pregnancy large quantities of milk from a cow suffering from cow-pox? Have other vaccinators ever had a similar experience?

It seems to me to open up an interesting question with regard to immunization against small-pox in particular, and against disease in general.—I am, etc.,

Hambrook, Glos. FRANK W. CROSSMAN.

HERNIA IN INFANTS.

SIR,—May I say that in my experience (not a short one) tight bandaging is the cause of most cases of infantile hernia?—I am, etc.,

Queenstown, Dec. 27th, 1914. WILLIAM DONOVAN, M.D.

CONSULTANTS FOR THE NAVY AND ARMY.

SIR,—Although the present is no time for captious criticism, I cannot resist calling attention to the fees paid to the temporary consultant physicians and surgeons attached to His Majesty's navy.

The present *Navy List* contains the names of eleven consultants, the majority of whom are, I believe, receiving £5,000 per annum, a sum equal to three times the pay of the head of the Medical Department of the Navy and more than twice that of an admiral of the fleet. No one would deny the wounded every care and attention, but this end could be equally well attained by giving to consultants a temporary rank and pay, such as that of a surgeon-general in the navy.

Over 250 members of the profession have volunteered and been accepted as temporary surgeons at the modest remuneration of £400 per annum, and there is obviously something radically wrong when the united pay of twelve such surgeons, many of them of the highest possible qualifications, giving up their private work entirely and enduring the perils and discomforts of life in a warship, is only equal to that of one consultant living ashore.

The army has had no difficulty in obtaining the services of distinguished consulting physicians and surgeons at the rank, pay, and allowances of a colonel in the army, and I cannot believe that among the leading men of the civilian part of our profession there is one so devoid of patriotism as to refuse to serve with the same temporary rank and pay as the heads of the Naval Medical Service.—I am, etc.,

London, W., Jan. 19th. W. A. BRAILEY.

MISCHIEVOUS ADVERTISEMENTS.

SIR,—I notice in this evening's issue of the *Evening Standard* a full page advertisement (p. 13) on behalf of the "British Union for the Abolition of Vivisection." The antivivisectionists can be ignored on account of their stupidity, but this particular advertisement deserves the most severe censure in that it is anti-recruiting. The only way to deal with such a paper is on their own lines—commercial.

I hope, therefore, that all medical men, like myself, will, in future, refuse to buy it.—I am, etc.,

London, W., Jan 19th. HUNTER TOD.

*** A reference to the mischievous advertisements of this society will be found at p. 171.

A PROTEST.

SIR,—My attention having been called to a paragraph in the BRITISH MEDICAL JOURNAL of January 9th, p. 81, in which you associate my name with that of Sir Victor Horsley without my permission. Both proceedings I resent in the strongest possible manner; I also question your right to comment on what takes place in my house. I request that you will publish this note in fairness to myself.—I am, etc.,

London, W., Jan. 14th. (Mrs.) M. A. G. FORBES-WINSLOW.

Medico-Legal.

CONVICTIONS UNDER THE MEDICAL ACTS.

Two prosecutions under the Medical Acts, instituted by the Royal College of Physicians of Edinburgh, were heard at Edinburgh Summary Court on January 15th.

In the one case, Lewis Parker Wade, carrying on business described by him as a medical specialist at 8, St. Andrew Street, was charged, according to the *Scotsman*, that, not being registered, he used the name or title "Dr. Massie" so as to imply that he was registered under the Medical Acts; and also that he displayed in the window of his premises the words "Dr. Massie Company, medical specialists," and also advertised himself similarly in Princes Street and elsewhere by means of sandwichmen.

Mr. J. Anderson Maclaren, advocate, who appeared on behalf of the accused, submitted that the complaint was not relevant. The prosecution was a private one, brought with the concurrence of the Fiscal. It would be noted that there was a specific charge against his client. He would not say that it would not be relevant if the complainers had stated the *modus* in which accused had used the title "Dr. Massie." He might have used it in several ways. He might have represented to a particular person going into the shop that he was a man called Dr. Massie. There were various kinds of doctors. A "doctor" might be anything but a medical doctor. He objected that the *modus* described was in contradiction to the first or general statement of the offence. The expression "Dr. Massie Company" might be a very different thing from the title of "Doctor." Under the law no company could be registered as a medical practitioner. If he called himself not Dr. Massie but Dr. Massie Company, he did not see how he was transgressing the Medical Acts. In regard to the expression "medical specialist," he contended that it did not apply exclusively to doctor. A doctor of science might be a medical specialist, just as a chemist or an instrument maker might be one.

The Solicitor-General, for the complainers, said that the prosecution had been brought on public grounds. The Medical Act was a public Act. What accused had done was exactly the same as if he had a brass plate in his shop or consulting room with the words, "Medical specialist, Dr. Massie." It did not matter whether the word stood alone or had an addition. The word "company," as used by the accused, was printed in such small letters after the expression "Dr. Massie," that it could not readily be seen by the public.

The Sheriff repelled the objections.

Mr. Maclaren said that being so, his client would plead guilty. But he wished to say that the accused was under the impression until he received notification of these proceedings that the business was perfectly legal. Similar businesses were being carried on in Dundee and elsewhere.

The Solicitor-General did not wish to press the case harshly

against any particular individual. But he thought it was right that his Lordship should know that the words "Dr. Massie" were deliberately used to imply that a Dr. Massie was in the business. It was impossible not to regard that as a serious offence.

Mr. Maclaren pointed out that there were other two men in business besides the accused. The business had been going on for four years in Edinburgh without objection having been taken. In any case, the business would be stopped at once.

Sheriff Orr said he thought the offence was a very serious one. It was impossible to doubt that the name of "Dr. Massie" had been deliberately used for the purpose of deceiving the public. He imposed the maximum penalty of £20, with the option of sixty days in prison. One month was given to pay the fine, the accused having a house in Edinburgh.

In the other case, according to the report in the same newspaper, John Piercy Trevor Key, carrying on business described by him as a medical practice at 7, West Register Street, was charged that, not being registered under the Medical Acts, he used the name "Dr. Temple" in connexion with the business so as to imply that he was registered. He at first pleaded not guilty, but after the case above reported had been decided he withdrew this plea. He said that his interest in the company was merely financial, and that he did not manage it.

The Solicitor-General said that this case was rather worse than the other.

A similar fine was imposed. Accused stated he resided in Glasgow, and he was required to pay the fine on the same day.

Universities and Colleges.

UNIVERSITY OF ABERDEEN.

Scholarships.

MR. GEORGE SKELTON YUILL of London and Australia has given a sum of £4,000 to found a scholarship in chemistry in the memory of the Arts Class of 1864–68, of which he was a member. The scholarship founded with the revenue of the gift will be held by a student of the university for the purpose of research within it, or for the study of the practical applications of chemistry elsewhere; or it may be given to a professional chemist to pursue a course of pure science at the university, or to carry out technical investigations. Mr. James Campbell, LL.D., chairman of the governors of the North of Scotland College of Agriculture, has founded four bursaries or scholarships to be held by students of the university in the college.

Service Lists.

The late Colonel William Johnston, C.B., M.D., LL.D. of Newton Dee, a member of the Aberdeen University Court, has bequeathed to the university library, in addition to other volumes, a valuable set of publications consisting of the complete series of *Army Lists* from 1755, *Navy Lists* from 1759, and *India Lists* from 1799. These works had been accumulated by him in connexion with the "Roll of the Officers of the Army Medical Service," on the preparation of which Colonel Johnston had been engaged for several years. It will probably be published in a short time.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on January 14th, when Sir W. Watson Cheyne, Bt., President, was in the chair.

The late Mr. Bryant.

The Council passed a resolution expressing its appreciation of Mr. Bryant's services as a president of the College and in other capacities and sympathy with his relations.

Leave of Absence.

Leave of absence was given to the Conservator, Professor Arthur Keith, for six weeks for the purpose of going to America to deliver a course of five lectures on anthropology at the Western Reserve University, Cleveland, Ohio.

Votes of Thanks, etc.

A vote of thanks was passed to Mr. G. Buxton Browne for his presentation of a collection of lithotrites, and to Sir John Tweedy for a gift of books.

Belgian Doctors' and Pharmacists' Relief Fund.

A sum of fifty guineas was contributed from the funds of the College to the Belgian Doctors' and Pharmacists' Relief Fund.

University of Birmingham.

Sir W. Watson Cheyne was reappointed a member of the Court of Governors of the University of Birmingham for three years.

Vacant Examinership.

The vacancy on the Board of Examiners, occasioned by the retirement of Mr. Bilton Pollard, will be filled up at the Council meeting on February 11th.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE President, Vice-President, and Council of the Royal College of Surgons in Ireland have decided to place in the College a permanent record of the names of all the Students, Licentiates, and Fellows of the College who are at present serving with His Majesty's Navy and Expeditionary Forces, and further to erect a suitable memorial to all such as fall in the war. Relatives and friends are asked to communicate the names of such Students, Licentiates and Fellows to Mr. Alfred Miller, Registrar of the College.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE (*Part I, Chemistry. Part II, Physics*).—F. F. Abdullah, W. G. Barnard, †L. M. Calvert, †A. J. Chiappa, P. C. Collyns, I. J. Corbett, W. Davies, F. S. Drewe, *F. E. Edwards, †M. A. El Dardiri, †A. J. Fenn, †A. Forster, C. Gill-Carey, †W. Girgis, †K. Glaisby, B. A. M. Gordon, F. E. Harger, *M. W. M. Hassan'ally, H. Howard, †D. J. H. Jones, *H. A. C. Kite, J. S. Moore, †G. Murphy, *C. Nicory, †A. B. Olumuyiwa, A. G. M. Severn, *E. A. Sparks, Y. A. Sunbul, *A. G. Sykes, D. D C. Thomson, J. E. van der Merwe, †Gladys M. T. Williams. (*Part III, Elementary Biology*),—Y. Abdel-Messiah, F. F. Abdullah, J B. Acuña, F. T. Allen, G. W. Almeyda, W. G. Barnard, C. R. Cade, A. J. Chiappa, W. Davies, A. J. Fenn, E. T. Flood, C. Gill-Carey, W. Girgis, B. A. M. Gordon, D. P. Guilfoyle, W. R. G. Harris, K. C. J. Jones, J. J. M. MacDonnell, C. Moffatt, G. Murphy, Elizabeth O'Flynn, A. A. Osman, A. G. M. Severn, Y. A. Sunbul, D. D. C. Thomson, J. E. van der Merwe, G. W. Wheldon, F. W. Widgery.

* Passed in Part I only. † Passed in Part II only.

SECOND COLLEGE (*Anatomy and Physiology*).—E. B. Andreae, H. H. Bailey, J. R. Banks, J. A. Berry, K. S. Bhat, F. Caldecott, O. St. L. Campion, M. Carrasco, H. M. Cohen, B. S. Collings, T. M. Cunnington, H. A. Frokjar, L Gill, E. G. Harris, J. Hollings, J. Hope, J. C. C. Howe, J. W. D. Hyde, Ivey Keess, M. E. A. Latif, K. A. I. Mackenzie, P. N. Menon, H. Morris-Jones, P. D. Motivala, W. P. Nelson, Alice O'Reilly, G. A. Pennant, F. N. Reynolds, A. H. Richardson, E. J. G. Sargent, B. L. Skeggs, N. H. Smith, I. H. Syed, A. S. Westmoreland, S. Yahilevitz.

Public Health AND POOR LAW MEDICAL SERVICES.

VITAL STATISTICS IN ENGLAND AND WALES, 1914.

WE are indebted to the Registrar-General for the following statement showing the birth-rates and death-rates and the rate of infantile mortality in England and Wales and in certain parts of the country during the year 1914.

ENGLAND AND WALES.

Birth-rate, Death-rate, and Infantile Mortality during the Year 1914 (Provisional Figures).

	Annual Rate per 1,000 Living.			Deaths under One Year to 1,000 Births.
	Births.	Deaths.		
		Crude.	Standardized.	
England and Wales...	23.6	13.9	13.6	105
97 great towns, including London	24.9	14.6	14.9	113
145 smaller towns ...	23.6	12.8	12.9	104
England and Wales, less the 242 towns	21.9	13.3	12.2	93
London...	24.6	14.4	14.4	103

* The standardized death-rates are the rates which would have been recorded had the sex and age constitution of the populations of the several areas been identical with England and Wales as enumerated in 1901. A description of the method of standardizing these death-rates is to be found in the Registrar-General's Annual Report for 1911, p. 29.

DR. AND MRS. FREDERIC S. LEE, of New York, have given to Columbia University the sum of £4,000 towards the establishment of a fund for the endowment of the department of physiology. Provisionally the income is to be used for the maintenance of the departmental library.

THE Royal Academy of Medicine of Turin asks us to announce that the thirteenth Riberi prize of the value of £800 is offered for the best medical research work. The competition will remain open till December 31st, 1916. Particulars and forms of application may be obtained from Dr. V. Oliva, General Secretary of the Reale Accademia di Medicina, Via Po, No. 18, Torino, Italy.

Obituary.

DR. ETHEL FRANCES LAMPORT died very suddenly on December 27th, 1914, whilst driving to church. Miss Lamport entered the London Hospital as a probationer in 1884, and, after completing her training, was made Sister of one of Sir Frederick Treves's wards—a post which she held for several years. After leaving the London Hospital Miss Lamport took the diploma of sanitary inspector, and then decided to study medicine, entering the London (Royal Free Hospital) School of Medicine for Women in 1891. After obtaining the diploma of L.S.A. and the degree of M.D.Brux. in 1901 she at once returned to the East End of London, and began to practise in Bow, where she worked unremittingly for over eleven years for the improvement of the physical and social conditions of the women and children who came under her care. She also held the post of public vaccinator in Millwall (Isle of Dogs) for ten years. When failing health made it impossible for Dr. Lamport to continue her arduous life of work amongst the sick poor, she retired to Well, near Long Sutton, Hampshire, where she quickly endeared herself to her neighbours by her genial manner and the kindly interest she took in them. Dr. Lamport will long be remembered in Bow and Poplar for her unselfish devotion to the sick poor in those districts.

DR. JOHN WILLIAM GREENWOOD, who died recently at Torquay at the age of 66, had practised at Hanley in the Northwood district for thirty-five years. He was born in the United States in the neighbourhood of St. Louis, and came to this country when a boy with his parents. He received his medical education at St. Thomas's Hospital, becoming M.R.C.S. in 1873, and L.S.A. in the following year. He obtained the degree of M.D. from the University of St. Andrews in 1893. Soon after qualifying he settled at Hanley, where he acquired a considerable practice. Some four years ago he retired and went to live at Torquay. Dr. Greenwood was a member of the British Medical Association. He was held in high esteem at Hanley as a practitioner, and his amiability of character made him personally popular. He leaves a widow and two children.

DR. J. W. WINTERBURN, of Stockland, near Honiton, Devon, who died recently at the age of 56, received his professional education at St. Thomas's, and was admitted L.S.A. in 1885. He began practice in Battersea and afterwards worked for a time in Jersey. He then settled at Stockland. He was medical officer and public vaccinator for the Stockland and Dalwood parishes. Dr. Winterburn never recovered from the effects of a carriage accident which happened over a year ago, and necessitated the amputation of one of his limbs. On his return to Stockland in March last he was able for a short time to resume his work and to drive about the country, but since August he had been practically confined to his bedroom. He bore his sufferings with exemplary fortitude. His professional skill won him the respect of the public, and the kindliness and unselfishness of his character made him beloved by patients and popular with all with whom he came in contact.

SURGEON-GENERAL WILLIAM HENRY MACNAMARA, C.B., C.M.G., R.A.M.C. (retired), died suddenly at Ealing on January 9th, aged 68. He was born at Limerick on June 29th, 1846, the son of the late Mr. D. Macnamara of Corbally, Limerick, and was educated at Queen's College, Cork, and at the Ledwich School of Medicine, Dublin. After taking the M.D. in the Queen's University, Ireland, in 1867, he entered the army as assistant-surgeon on October 1st, 1867, became surgeon on March 1st, 1873, surgeon-major on October 1st, 1879, and surgeon-general on October 4th, 1901. He retired on June 29th, 1906. In 1881 he took the diploma of F.R.C.S.I. He had a long list of war service, all in Africa. He served in the Egyptian war of 1882, with the 1st Battalion Royal Irish Fusiliers, was present at the battle of Tel-el-Kebir, and received the Egyptian medal with a clasp and the Khedive's bronze star. In the Nile expedition of 1898 he served as Principal Medical Officer at first of the British brigade, afterwards of the British division, was present in the actions of the Atbara river and of Omdurman, was mentioned in dispatches in the *London Gazette* of May 24th and September 30th, 1898, and gained the British and Egyptian medals with two clasps, and the C.B. In South Africa he served from 1899 to 1902, at first as Assistant Principal Medical Officer, afterwards as Principal Medical Officer of the lines of communication, was mentioned in dispatches in the *London Gazette* of April 16th, 1901, and July 29th, 1902, and received the Queen's medal with one clasp, the King's medal with two clasps, and the C.M.G.

DEPUTY SURGEON-GENERAL GEORGE ALDER WATSON, Bengal Medical Service (retired), died at Cheltenham on January 12th, aged 83. He was born on June 18th, 1831. He received his medical education at Guy's Hospital, took the diplomas of M.R.C.S. and L.S.A. in 1853, and entered the Indian Medical Service as assistant-surgeon on August 4th, 1855, after serving for a short time as a temporary assistant-surgeon in the army during the Crimean war. He became surgeon on August 4th, 1867; surgeon-major on July 1st, 1873; brigade surgeon, when that rank was instituted, on November 27th, 1879; and retired with a step of honorary rank on December 7th, 1885. He had a long list of war service. In the Crimea he served at the siege of Sebastopol. During the Indian Mutiny he served at Mhow, at the siege of Dhar, and was present in the actions of Mundisur and Guraria, and received the medal with the clasp for Central India. In the Afghan war of 1878–9 he served in the 19th Bengal Lancers, under Sir Donald Stewart, in the advance to Kandahar and the capture of the fort of Kelat-i-Ghilzai, receiving the medal. For his last five years' service he was medical storekeeper at Allahabad.

Medical News.

DR. J. A. MURRAY has been appointed Acting Director of the Imperial Cancer Research Fund.

W. E. STLAWRENCE FINNY, M.D., J.P., who is a member of the Inner Temple, has passed the Bar Final Examination qualifying him for admission as a Barrister-at-Law.

IT has been decided to build and equip a new and complete pathological and clinical laboratory and *post-mortem* department for the Leicester Royal Infirmary at an approximate cost of £3,500.

AMONG recent donations to the fund for the extension of the London (Royal Free Hospital) School of Medicine for Women are £262 10s. from the Mercers' Company and £50 from the Goldsmiths' Company.

DR. LLEWELLYN POWELL PHILLIPS, Professor of Medicine in the Egyptian Government Medical School and Senior Physician to Kasr el Ainy Hospital, Cairo, has been appointed Physician in Ordinary to the Sultan of Egypt.

COURSES of lectures in sanitation are being given at the Royal Army Medical College to medical officers of the Territorial Force and the new armies. A course began on Monday last, and extended over a period of five days. General officers commanding have been asked to notify the dates of such courses, and to nominate officers to attend them.

A COURSE of lectures on military subjects intended primarily for cadets of the Officers' Training Corps, but open to all interested without fee, is being given at Birkbeck College, Bream's Buildings, Chancery Lane, E.C., on Tuesday evenings at 8 p.m. The lecture on January 26th will deal with bacteria, and will be given by Mr. H. C. I. Wynne-Vaughan, D.Sc.

THE Galton Dinner and Lecture instituted last year by the Eugenics Education Society in honour of the memory of Sir Francis Galton, F.R.S., will be held this year, as before, on the anniversary of his birth, Tuesday, February 16th, at the Hotel Cecil, at 7 p.m. Professor J. A. Thomson will deliver a lecture which will deal with eugenics and the war.

THE report presented by the council to the annual general meeting of the Royal Meteorological Society described the work carried on by the society, including the researches in the upper atmosphere, the collection and discussion of phonological observations, the arrangements for the preparation of a climatological atlas of the British Isles, and the delivery of popular lectures on meteorology. Captain H. G. Lyons, F.R.S., was elected president, and Mr. F. Campbell Bayard and Commander W. F. Caborne, C.B.,

secretaries for the ensuing year. The new members of council are Mr. J. S. Dines, M.A., Mr. A. P. Jenkin, F.S.I., and Sir J. W. Moore, M.D.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity and Life Assurance Society was held at the Society's Offices, 300, High Holborn, on January 15th, when Dr. F. J. Allan was in the chair. The reports on members permanently incapacitated showed that forty-two are receiving annually over £4,000 in sickness benefit. This feature constitutes one of the greatest functions the Society performs by providing, practically, an annuity to age 65 of from £1 1s. to £3 3s. a week for each member so afflicted, many of whom, without this assistance, would be in considerable distress. During the past year the claims showed a large decrease over the previous year. New business had been average, but the number of members increasing their benefits was the highest on record. About 120 members are actually serving either at the front or with their regiments at home and the colonies. So far, only three claims have been made as a direct result of the war, two being from illnesses contracted owing to exposure and overwork, and one in respect of death from wounds. Applications are constantly being received from younger members of the profession taking temporary commissions in the R.A.M.C. or serving in the various Red Cross and Base Hospitals. All inquiries in respect of these should be addressed to Mr. Bertram Sutton, Secretary, Medical Sickness Society, 300, High Holborn, W.C.

IN calling the cinematograph to their aid in the task of educating public opinion eugenists are but following the example of other educationalists, who acknowledge its power for good or evil with the large numbers of men and women to whom it would never occur to read a book or attend a lecture. They will be interested, and unconsciously influenced, by a picture play such as "The Escape," produced by Mr. D. W. Griffith at the Alhambra Theatre on January 12th. In that play the evils of mismating and bad environment are graphically displayed in the tragic history of a typical working-class family in a New York tenement house. The hasty and ill-advised marriage of the parents has its inevitable sequel in unfit and unhappy children, whose lives bid fair to be wrecked through no fault of their own by the mere accident of their birth. Their struggles to escape from their wretched surroundings are shown in a series of pictures, in which a young doctor plays the part of good genius to the entire family, saving one of the daughters through risking marriage with her, and converting her brother from an Apache of the lowest type into a normal human being by successfully trephining him after his brain had been injured by a blow on the head from his drunken father. Crude and melodramatic as the story is in many respects, it contains some wholesome truths, and constitutes a moving appeal for those who cannot plead for themselves, urging the potential parents of the future to recognize their responsibilities, and give a fair chance for health and happiness to the generations yet to come.

A DEMONSTRATION of the "Permutit" system of softening water was given at Imperial House, Kingsway, last week. The material is a granular or flaky substance, an artificial zeolite, representing a combination of various bases with alumina and silicic acid. Its value lies in its property of readily exchanging one base for another. It appears to extract the lime and magnesia from hard water, substituting the equivalent in its own sodium. After this process has gone on for some time it becomes necessary to regenerate the material by allowing a solution of sodium chloride to percolate through it. The ordinary small plant for the supply of a household or bathroom carries out its softening function during the day and is made to regenerate during the night. At the demonstration a sample of metropolitan water, having a hardness of 16½ degrees, was filtered through a layer of permutit, and after a few moments was drawn off, when it appeared by the soap-lather test to have no trace of hardness at all. The claim was made that this system will reduce water to a zero hardness, and that the product resembles distilled water as closely as any chemically-treated water can. As the to-and-fro process of softening and regeneration appears to go on indefinitely without depreciation of the zeolite, the method may prove to be of considerable value for industrial purposes. Whether the softening of water to zero hardness is an unmixed advantage from the dietetic point of view is another matter, but there is no question that a domestic supply of soft water has great convenience, effecting, for example, an economy in soap and preventing scale from forming on pipes and fittings. A special installation is made to remove iron or manganese from water, an elimination which is essential in the manufacture of some explosives.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INCOME TAX.

R. B. has been refused any allowance for life assurance in respect of a single-premium policy, and inquires whether he has any remedy.

*** The life assurance allowance is governed by Sect. 54 of the Income Tax Act, 1853, which provides for the deduction of the "amount of the *annual* premium paid." We understand that the income-tax authorities hold that the insertion of the word "annual" in the section referred to excludes from the allowance a "single-premium" payment. The question does not appear to have come before the courts, either because it is one which does not involve sufficient tax to justify the expense, or because the official interpretation of the section does not appear to be controvertible.

RECURRENT DESQUAMATION OF THE TONGUE.

A. B., M.D., writes: Can any one help a hardworking suffering colleague? For the past five years he has been afflicted with a peculiar affection of the tongue, characterized by periodical desquamation of the epithelium of the anterior fourth of its papillary surface. This occurs once in ten days or so and does not commence at any special spot, but wherever it starts it spreads slowly till all the epithelium of the front part of the tongue is removed. Healing takes place quite quickly behind the red advancing edge, which is very painful, strange to say, only when speaking. A fresh attack may have begun before healing, or begins immediately after. At least a score of diagnoses have been made, but no one can say he has seen the condition before. Treatment of many kinds, including vaccine and total extraction of the teeth has been tried, and every form of dietetic restriction, excepting Salisbury's, has been practised. After a seven weeks' course of radium application (15 mgr.) perfect cure resulted for four months. Since then a shorter course has helped the condition, but the sufferer has been deterred from persevering further by the definite assurance that radium, *x* rays, etc., will be sure to set up cancer. The sufferer asks for an authoritative opinion on this point, and as to any similar case. Suggestions would be heartily welcomed. The subject is slightly rheumatic, may have a slight erosion in the colon from an old healed colitis, does not smoke nor take tea or coffee, and is rather fond of sweet things.

ANSWERS.

PROPRIETARY FOODS FOR INFANTS.

M.—The Local Government Board's report on proprietary foods for infants [Food Reports No. 20] does not give the names of the preparations examined. With regard to the particular preparations as to which our correspondent inquires, we believe we are correct in stating that one of Allen and Hanburys' foods consists of dried milk with a fully malted flour added, and that Savory and Moore's and Benger's foods consist of partially malted flours intended to be added to milk. Allen and Hanburys' food (with malted flour) is suitable for some young infants, and is often well tolerated. Reference should be made to the fuller notes on these foods, published in the BRITISH MEDICAL JOURNAL, 1894, vol. ii., p. 705. Savory and Moore's and Benger's foods, given in the proportions recommended in combination with milk, are usually well borne by children over 6 months, and in many cases by even younger children. These two foods are intended to be used as additions to milk and not substitutes for it; in small amounts they may increase growth and provide energy without causing digestive disturbances; the proportion of unaltered starch is not high in either case.

LETTERS, NOTES, ETC.

NOTIFICATION OF INDUSTRIAL POISONING.

THE leaflet (Form 304) issued by the Factory Department of the Home Office with reference to the certification by medical practitioners of cases of lead, phosphorus, arsenic, or mercury poisoning, or from anthrax, can be obtained on application to any of the factory inspectors.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks
ON
CEREBRO-SPINAL FEVER IN CAMPS AND BARRACKS.

BY SIR WILLIAM OSLER, BT., M.D., F.R.S.,
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

SLIGHT outbreaks in two of the camps in this country have aroused interest in this disease, to which soldiers have been peculiarly liable.

Few infections have so remarkable a history. Belonging to the *nova febrium cohors* of Horace, it appeared (or revived?) in the early years of the nineteenth century. It is not likely that an affection with such striking symptoms could have been overlooked by the seventeenth and eighteenth century physicians. Geographically it has a world-wide distribution, as may be seen by reference to vol. ix of Series I and vol. x of Series II of the *Index Catalogue* of the Surgeon-General's Library, in which epidemics are noted in all quarters of the globe, with special prevalence in France, parts of Scandinavia, and the United States. These islands have enjoyed a singularly happy freedom. Dr. Ormerod's list in vol. i of Allbutt and Rolleston's *System of Medicine* shows how slight and unimportant have been the outbreaks until the Glasgow epidemic of 1907, with 1,000 cases and 595 deaths (Chalmers); and that of Belfast, with, for the eighteen months ending June, 1908, 725 cases, with 548 deaths (Robb).

There has been lately an increase of the disease in England. Dr. Newsholme has kindly furnished me with the figures taken from the investigations of Dr. R. J. Reece. In 1912 there were 272 cases; in 1913, 304; and in 1914, 310. This notable increase above the 30 to 40 cases annually in the eighties and nineties may be accounted for in part by the more accurate diagnosis, and the existence of a meningitic type of poliomyelitis, but there appears to be no doubt that sporadic cases have become more frequent. From inquiries at some of the London hospitals I cannot find that there has been an increase during the past few months. Both of the present outbreaks in camps are in the southern counties. There was a local epidemic in Bristol and the neighbourhood in 1913, reported by Michell Clarke and Symes.[1]

Waves of epidemics occur, of which we are in the fifth since 1805. The present period began about 1893, and has been characterized by some of the most severe epidemics on record, notably that of New York, and for the first time in its history the disease became serious in this country.

The disease spreads slowly, or not at all, from foci of prevalence in various parts of a country. For example, in 1893 it broke out in two or three mining towns in Western Maryland, dragged on for the winter months, did not extend, then disappeared, and we heard nothing more of the disease in the State until 1898, when an outbreak occurred in Baltimore and Washington. In this year it prevailed in a mild form in twenty-seven States of the American Union. In 1904–5 a very severe epidemic occurred in New York, while Philadelphia, less than 100 miles distant, was not attacked. The cases may be confined to a gaol or barrack, or to a few scattered villages, as in the outbreak a few years ago in the Eastern Counties, or to a single house. It has prevailed chiefly in the winter and spring months, and an epidemic rarely lasts into the summer.

With a higher death-rate than any acute infection except plague and cholera, the total mortality is not great, as the case incidence in the community is low. With these two diseases it shares the malign capacity to kill within twenty-four hours. Death has indeed followed within six hours of the onset. During the outbreak in 1898 a healthy young man was attacked at 4 p.m. with pain in the head, dizziness and vomiting. At 6 p.m. he had a convulsion; at 10 p.m., when I saw him, the temperature was 105°, a pin-point purpura was beginning in the hyperaemic skin, the neck was drawn back, he was unconscious, and death occurred a little after 4 a.m., just twelve hours from the onset. Among types of inflammation of the meninges this is the only one from which recovery takes place, in from 25 to 50 per cent. of the cases.

The meningococcus, first described by Weichselbaum, has well-defined cultural and morphological properties, and, like the pneumococcus, has various strains. It is found in the cerebro-spinal exudate, in the blood, in the joints, in the visceral lesions, and in the secretions of the naso-pharynx. A curative serum has been prepared with which good results have been obtained, but in the preparation it is probable that sufficient attention has not been paid to the strains of the germ. Prophylactic vaccination has been carried out on a small scale, and Sophian and Black have found immune bodies in the blood more than two years after inoculation. The meningococci are found in the naso-pharynx of patients, but what is of special importance is the discovery that persons in contact with the sick may harbour the germs in the nose and throat. During outbreaks carriers have been found in large numbers among those living in close contact with the sick; in fact, the intensity of an epidemic appears to bear some proportion to the number of the carriers. As a rule, the germs disappear from the naso-pharynx of healthy contacts in the course of a few weeks. Like the pneumococcus, the germ may be found in the naso-pharynx of healthy persons not exposed to infection—in 158 soldiers among 9,111 in the Munich garrison at a time when the disease was not prevailing!

To these main facts in the story of epidemic cerebro-spinal fever there remains to add another—namely, the constant sporadic presence of the disease as the posterior basic meningitis of children, and as an acute meningococcus meningitis of young adults. A large proportion of the 310 cases for 1914 certified in this country were doubtless of these types, though the pneumococcus and the streptococcus may also cause primary meningitis. The posterior basic form of Gee and Barlow occurs in children under 2 years of age, but in young adults the meningococcus meningitis is not very uncommon, and during an epidemic wave cases may occur in places far distant from the centre of prevalence. Thus in 1893, when meningitis was prevailing in Western Maryland, but not in Baltimore, two young adults were admitted to my wards with the disease; and 5 cases occurred in one household in the city—the mother, two sisters, and two brothers, one of whom came under my care.

In certain characters cerebro-spinal fever resembles pneumonia—in the epidemic localization in gaols, barracks, and houses; in seasonal peculiarities, in the fibrinous quality of the pathological exudate, and in the prevalence of the organism in the naso-pharynx of healthy persons. On the other hand, there are striking differences—in the age incidence, in the dominance of sporadic cases, and in the character of the complications. Briefly, then, the meningococcus is a germ of low virulence, widely spread in the community, and of intense virulence in an individual once it has passed the portals of protection. It is doubtless carried from one person to another, not necessarily from patient to patient, as nurses, doctors, and attendants are very rarely attacked, but in a large proportion the germ is transmitted by a healthy carrier. That the carrier does not always, as has been suggested, harbour a mild, non-pathogenic type is shown by the occurrence of meningitis after the presence of the germ has been determined. How the germ gains access is still under discussion—whether by direct invasion of the meninges from the naso-pharynx through the ethmoidal or sphenoidal routes or by the blood stream. I think the latter the more likely, as no evidence has been found of special involvement of the tissues in either of the routes suggested. Then the fulminant form kills with the features of an acute septicaemia. Since 1899, when Gwyn first isolated the meningococcus from the blood of one of my patients, the organisms have been frequently found in blood cultures. The localization in the meninges is no proof of direct invasion, as tuberculous meningitis, obviously a blood-stream infection, presents the same peculiarity.

Of the causes of the outbreaks, whether increased virulency in a widespread germ, or increased susceptibility under changed atmospheric or telluric conditions, we are as ignorant as when Sydenham summed up the

experience of twenty years' close study of the *genius epidemicus* of London:

> Wherefore I conjecture that diseases have certain periods according to the occult and unaccountable alterations which happen in the bowels of the earth, to wit, according to the various age and duration of the same.

In cerebro-spinal fever we may be witnessing the struggle of a new disease to win a place among the great epidemics of the world. In the past decade it has everywhere shown an ominous activity. Again, Sydenham touches the marrow of the matter in a famous passage in which he refers to the briefness of our experience in comparison with the long ages of the world.

> And as there have been other diseases heretofore which are either now utterly extinct, or at least, being almost wasted by age, fade away, and very rarely appear . . . so the diseases which now reign will vanish in time, and give place to other kinds, whereof indeed we are not able so much as to guess. This may be so, whatever we, who are so short-liv'd, think of it, who are born as it were one day and die another; nor are the most ancient authors that have written observations of diseases of much longer age, if they are compared with the beginning of the world.

Our present interest relates to the disease as met with in barracks, camps, and campaigns, and this comforting fact comes out of a review of the outbreaks—that while soldiers are peculiarly liable, cerebro-spinal fever has never been a great war pestilence. Jaeger (to whom we are indebted for important studies on the meningococcus) has published a monograph dealing with the occurrence of the disease in armies, and for this purpose has tabulated the epidemics of the nineteenth century in different countries. France, which has suffered most severely, had sixty-two epidemics, of which forty-three (69 per cent.) were confined to troops. In Germany there have been many small outbreaks in garrisons, particularly in Würtemberg and Bavaria. The incidence of the disease has risen during the past twenty-five years. In Italy the outbreaks have been chiefly in the military population. In these islands there has been no severe outbreak in garrison or camp. In 1868 four cases occurred within three weeks at the Shorncliffe Camp, and in 1876 two cases were reported among the militia at Oxford. Jaeger's analysis shows an increase of the disease in the European armies since 1870. The epidemics are usually small, restricted to a garrison, sometimes to a single barrack in a town.

It is reassuring to find that in the great campaigns of the nineteenth century cerebro-spinal fever played no part as a camp disease. There is no reference to it in the Napoleonic, the Crimean, the Italian, or the Danish wars. In the Franco-Prussian wars there were a few cases, chiefly about Paris. Isolated cases occurred in the Russo-Japanese war, but no serious epidemic, and the same is true of the South African war. The only exception in the history of the century is the Civil War in America, during which there were outbreaks in both the Northern and Southern armies in '61, '62, '63, none of them, however, very widespread, and as a camp disease it did not enter into the same category with typhoid, dysentery, and malaria.

Meningitis is a rare disease among the troops in these islands. Sporadic cases occur, but neither at home or abroad has it ever prevailed as an extensive epidemic, so far as I can find, in any camp or barracks. In 1910–11 there were 10 cases, with 8 deaths; in 1912 there were 6 cases, with 5 deaths; no differentiation is made between the forms of the disease. I have not heard of any cases among the Expeditionary Force. The existing outbreaks are not extensive, in one less than 40 cases occurred in four months among more than 30,000 men. Details of the others have not yet come to hand.

The German troops from the south-west may carry the disease into the field, and the French army has always centres of infection. Metz and Strassburg have a bad name in the history of the disease; but we may hope that the experience of 1870–71 may be repeated.

In the outbreaks among the troops there have always been three strong predisposing factors: overcrowding in camps or barracks, the cold winter weather, and over-muscular exertion among young recruits. Two of these conditions have prevailed in this country during the past three months. The weather has been atrocious, and an enormous number of young recruits have been in active training. One cannot say that there has been special overcrowding, but a great many men have been in tents, in the ordinary regulation form of which nine men live in close contact, and I can testify from personal examination that the ventilation is not always good. It is this very intimate contact that seems to favour the communication of the disease. With fresh air, sunlight, and scrupulous personal cleanliness, the epidemics, as a rule, quickly subside.

I may add that stringent preventive measures have been taken—isolation of the sick, systematic examination of the contacts, and the disinfection of the naso-pharynx of any carriers, which should suffice to limit the outbreaks. In a circular issued a year or two ago in the French army Vincent recommends the following mixture as an inhalation: Iodine 12 grams, guaiacol 2 grams, thymol 35 cg., alcohol 200 grams, with 6 grams of potassium iodide, used five or six times a day. Disinfection of the pharynx is carried out by swabbing with a 3 to 5 per cent. solution of glycerine and iodine. In the recent Texas epidemic Sophian found that hydrogen peroxide 1 per cent., with argyrol 9 per cent., used as a spray, destroyed the meningococcus quicker than any other measure. Urotropin, which is secreted into the cerebro-spinal fluid, has been recommended by Cushing as a prophylactic.

The reader is referred to Stillé's monograph, 1867, for the fullest details as to symptoms; to Hirsch's *Geographical Pathology* for the epidemics; to Jaeger's *Die Cerebrospinalmeningitis als Heeresseuche*, Berlin, 1901, for an exhaustive consideration of the disease as it affects soldiers; to Koplik's article in my *System of Medicine*; and for bacteriology and treatment to the recent publication of Sophian, *Epidemic Cerebro-spinal Meningitis* (London, Henry Kimpton, 1913), and to Heiman and Feldstein's *Meningococcus Meningitis* (London, J. B. Lippincott Co., 1914).

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, June 13th, 1914.

SURGICAL EXPERIENCES AT THE 1ST SOUTHERN GENERAL HOSPITAL, BIRMINGHAM.*

[WITH SPECIAL PLATE.]

BY GILBERT BARLING, F.R.C.S.,

LIEUTENANT-COLONEL, R.A.M.C.(T.): SURGEON TO THE BIRMINGHAM GENERAL HOSPITAL AND TO THE 1ST SOUTHERN GENERAL HOSPITAL (T.F.).

THE 1st Southern General Hospital is housed in the new buildings of the university at Bournbrook. The service at first consisted of about 500 beds; these have been lately added to, until now 800 beds are available, of which some 140 are placed in the Great Hall.

The staff is almost entirely derived from the staffs of the General and Queen's Hospitals; its head is Lieutenant-Colonel Marsh (the administrator), the registrar is Major Sawyer, and the whole time of both these officers is devoted to the service of the hospital. Four resident lieutenants, also full-time officers, carry out the duties usually falling to the lot of resident medical officers in hospitals. The visiting staff consists of five physicians, eight surgeons, an ophthalmic surgeon, and an anaesthetist, the surgical cases so far predominating in number; and the rank of these officers, according to seniority, varies from lieutenant-colonel to captain. The nursing staff consists of a principal matron, whose duties are mainly advisory, a matron with the usual assistants, and about 126 nurses. Orderlies to the number of fifty also assist in the nursing of the patients, and about 100 others are employed in various duties about the building. As time goes on the number of beds will probably be largely augmented and the staff increased. To the foresight of Sir Alfred Keogh we owe the existence of a system of hospitals, of which this is one, spread all over the country to provide for sick and wounded soldiers in case of war.

* Read at a meeting of the Birmingham Branch, January 14th, 1915.

The 1st Southern Hospital was established primarily as a part of the Territorial system, but it has also been utilized for the Expeditionary Force, and up to the present time 4,245 patients have been admitted, made up as follows:

	Officers and Men.
Expeditionary Force	2,571
Belgian Army	451
The Central Force for Home Defence ...	1,223

The deaths from all causes have numbered 16.

About 100 out-patients are seen daily; these are men of the Expeditionary Force who have been treated in the 1st Southern or other similar hospitals, and when sufficiently recovered have been allowed to go on furlough in Birmingham and the district.

To a large extent the 1st Southern Hospital is used as a clearing hospital, many of the patients received suffering from minor injuries or illnesses have in a very short period been drafted to smaller hospitals in the district or to convalescent homes provided by Voluntary Aid Detachments or by the liberality of private individuals.

The nature of the wounds has varied much from time to time: in the earlier admissions a large majority of the wounds were due to shrapnel; then came a period when the injuries were more evenly divided between shrapnel and rifle bullets, and more recently still, so far as my observation goes, the wounds by rifle bullets have predominated.

A large majority of the wounds have been septic; this is especially true of cases wounded during the retirement from Mons. A special feature of this group was the strained nervous systems of the wounded; the same may be said of the Belgian soldiers admitted in November. Although the wounds have been septic, only a very few of them have shown any tendency for the sepsis to spread, and, personally, I have had no example of septic spreading gangrene under my care, nor have I had any tetanus in the hospital, and on inquiry I find that only four cases of tetanus have been treated, with two deaths. A considerable proportion of the wounded patients—but I have no figures to tell exactly how many—have received prophylactic doses of tetanus antitoxin. It is to be hoped that the War Office will eventually be able to publish something like complete statistics of the number of wounded treated by these prophylactic doses and the incidence of tetanus which occurred. So far, the general experience of tetanus seems to confirm the conclusions in civil practice. If the onset declares itself earlier than the tenth day the prognosis is very grave; on the tenth and succeeding days the prospects improve considerably. Probably this accounts for the varying opinion as to the value of the tetanus antitoxin. My own view is that every patient with tetanus should be given the benefit of the antitoxin; it should be administered in considerable doses and frequently repeated, say 4,000 units every six hours subcutaneously. I have never given antitoxin intraspinally, but in one patient, in whom the period of incubation was only five days and the attack intensely severe, I made an insertion into the brain, with, as I thought, acceleration rather than retardation of the fatality.

To return to the septicity of the wounds. This has appeared to me to be due to the conditions under which the wounds were inflicted, and not to any fault in those who were responsible for the treatment of the patients. Once sepsis has been established, I have not been very active in the use of antiseptics to exterminate it, and I have depended upon the resistance of the patient's tissues, reinforced by rest, position, boracic fomentations, and local baths, where they could be applied, to overcome the septic processes. Where there has been any tendency to pocketing of pus, or where joints have been involved or bones considerably injured, early and free drainage has, of course, been provided. Under these conditions rapid improvement has been obtained, and the wounds have done exceedingly well. If any antiseptic has been used, it has been either hydrogen peroxide, with the intention of oxygenating the deeper tissues and so interfering with the development of any anaërobic organisms, or carbolic acid where extensive joint or bone mischief has been found.

Amputations have been few, and though there have been several cases of suppurating knee-joint under my care, the limbs have been saved with mobility of the joints to a considerable degree. Secondary haemorrhage has occurred twice—once in a patient with compound fracture of the fibula, in which the haemorrhage was very severe and very difficult to stop, owing to the septic condition of the wound, which obscured the tissues so much that no large blood vessels could be identified. Under free exposure and plugging of the wound the leg was eventually saved, although amputation seemed at one time to be the likely termination. The other case was a complication of a traumatic aneurysm of the posterior tibial artery, which was also septic. In this case the artery was secured and the limb saved.

Altogether I have had four cases of traumatic aneurysm under my care—the one just referred to, one of the anterior tibial artery, one of the superficial femoral in its lower part, and one of the superficial femoral high up, into the sac of which there were also two openings of the femoral vein. All these patients have recovered, but what the final condition of the limb will be in the case last mentioned it is too early to say.

Many cases of frost-bite have been admitted, but fortunately a very large number of them have not suffered any death of tissue. Most of them have been examples of oedema, loss of sensation, and hyperaesthesia on deep pressure, affecting the feet and the lower part of the legs. With rest in bed, dry powdering, and protection with cotton-wool these cases have speedily improved and steadily gone on to recovery. The explanation of the condition appears to me to be that extreme cold has produced degenerative changes in the endothelium of the capillaries and smallest arteries and veins, allowing serum easily to escape, whilst there has been at the same time a partial coagulation of the axis cylinders of the peripheral surface nerves without the actual occurrence of coagulation necrosis. Only in two cases of frost-bite have I had to resort to operative measures; in both of these the necrotic process had involved the toes and the soft tissues adjacent; both were dealt with by Hey's amputation, and rapid and satisfactory healing has followed.

So far I have said nothing concerning the effect on the tissues produced by the impact of shrapnel bullets or pieces of shrapnel casing or of rifle bullets. The first thing which strikes one is the greater septicity, as a rule, of the shrapnel injuries, due partly to the more bruised and ragged wounds inflicted, partly to portions of clothing carried into the tissues by the missiles. Again, owing to the moderate velocity of the shrapnel bullet, it is more often retained in the tissues than the rifle bullet, and it has much less destructive effect on bone; it may penetrate and be retained in a bone without splitting it, or the bullet may split against a bone and produce a fracture with little comminution, or it may simply flatten against the bone without fracture. A rifle bullet striking a bone with pretty full velocity is likely almost to pulverize it, but if its course is through the soft tissues only without damaging vessels or viscera, it makes a clean channel which seals up very quickly and is very soon healed. Or, again, if it goes through a bone, it appears sometimes to carry portions of bone with it, the wound of exit being very ragged and large. An example of this is afforded by the case of a Belgian soldier. The bullet entered the front and outer side of the leg just above the junction of the lower and middle thirds, traversed more or less vertically the lower portion of the tibia, the cancellous tissue of which was pulverized, and then found exit in the sole of the foot, which was greatly blown away. The parts were horribly septic, but a Syme's amputation has produced an excellent stump, although the heel flap was rather skimpy, owing to the skin damage and the lower 4 in. of the tibia had to be excavated with the gouge to clear out the fragments of bone and the extensive osteomyelitis.

A Belgian was injured by shrapnel, the shell bursting close to him; three bullets had been removed before he came to the 1st Southern Hospital, fourteen were still retained in his tissues, six in the head and eight in the left lower extremity; two of these had penetrated the knee-joint, and one was embedded in the femur. The lower jaw was cut through close to the symphysis, the left eye was destroyed, the skull was fractured just above the frontal sinuses, the bullet causing the injury embedding itself in or near the sphenoidal sinuses (Fig. 1). All the bullets except the last mentioned have been removed, and the patient is making a good recovery, with the expectation

of a movable knee-joint. Thanks to the excellent work of the radiographer, Serjeant Siles, the localization of metallic foreign bodies has attained a high degree of perfection. As a result of this the bullet in the centre of this patient's femur was removed with absolute precision by the aid of a trephine (Fig. 2).

The radiograph in this case also illustrates a valuable point—namely, that when missiles are deeply embedded in the soft tissues the picture may show clearly that there is suppuration around some of the foreign bodies, and not around others.

Fig. 3 shows a fracture of the femur produced in a curious manner. The patient, a tall guardsman, was struck in the lower part of the thigh by a shrapnel bullet, which flattened itself against the bone, but did not produce a fracture at this point. The patient fell and sustained a more or less spiral fracture of the bone several inches higher up. The deformity was great, and ordinary mechanical treatment so ineffective in remedying it, that although a month had elapsed since the injury was produced, operation by Lane's method was resorted to, with promise of an excellent result, despite the septic condition of the bullet track (Fig. 4).

A very severe comminuted fracture of the lower end of the femur into the knee-joint is shown in Fig. 5. Despite the fact that the wound was infected, thorough irrigation and drainage saved the limb, and the patient has the promise of a partially movable knee-joint.

In another case—that of a Belgian officer who sustained a rifle bullet wound through the upper lip—the bullet was localized and removed from the back of the neck; it had damaged no important structure, and presumably had run round the side of the neck instead of passing straight through the tissues.

An example of a shrapnel bullet injury to the humerus is afforded by Fig. 6. The bullet struck the lower end of the bone and split against it, fracturing the humerus, the two halves of the bullet emerging through different openings. The wounds were badly septic, and it was considered unwise to resort to operative measures in the vicinity of the joint. The sepsis eventually subsided, and the bone united with considerable deformity, but the elbow-joint is freely mobile. One of the features of this case was the intense pain complained of in the distribution of the three main nerve trunks below the elbow. This continued long after the septic process had subsided, and was eventually relieved by operation which exposed all three trunks around the elbow and freed them from the dense scar tissue in which they were embedded.

Several examples of shrapnel and rifle bullets in the thorax have been under my observation, and the symptoms have practically always been haemoptysis with physical signs of fluid in the chest, shortness of breath, and in some cases a good deal of pain.

In no case has an empyema formed, the fluid, no doubt in the main blood, has been slowly absorbed, but there has been much fixation and diminished air entry for weeks afterwards and the patient's general condition has improved only very slowly. Such cases will evidently be a long time before they are fit to return to duty of any kind; in no instance has it been thought advisable to remove the retained missile.

The question of removing foreign bodies, such as shrapnel bullets, shrapnel casing, rifle bullets, etc., requires very careful consideration.

There can be no doubt that a considerable number of these bodies become encysted and remain in the tissue without giving trouble. On the other hand, suppuration in some cases goes on until the foreign substance is removed, and a few examples occur of the foreign body healing in, and giving rise to trouble later on. Whether one should or should not intervene in any given case where there is no suppuration depends greatly upon the degree of risk involved in attacking the missile. If, for instance, it is lodged in the thorax, and the wound in the parietes is doing well, and the haemothorax and the lung tissue show no signs of infection, there should be no question of intervention on the mere chance that the foreign body may cause trouble later on. I have had several cases of penetrating thoracic wounds, some with ribs fractured by the entering body, and so far all have done well without interference. On the other hand, if a bullet is lodged in a bone, especially near a joint, I should personally advise removal even if surface healing had occurred. I have seen cases in which apparently sound healing has taken place, the temperature has been satisfactory, and pain and tenderness have disappeared, yet suppuration has been found around the foreign metallic body, and particles of clothing in the bone, in the soft tissues around, or in both positions.

To sum up, I would say that the mere presence of a metallic foreign body in the tissues does not call for operative measures; there should be some definite indication for its removal.

Injuries to nerve trunks have been fairly common, but in few cases has there been entire severance of the nerve. Much more frequently the injury has resulted in partial loss of function, shown by loss of sensation in an area of skin, with in some cases a patch of hyperaesthesia; in other cases paralysis of a group of muscles has resulted. Such interference with function does not necessarily imply actual severance of part of a nerve trunk; it may be due merely to the disturbance of a foreign body passing near to and shaking up axis cylinders, with resulting hindrance to their conducting functions. This view is supported by the speedy improvement shown in some of the cases.

Even when the function of a nerve has been completely abolished I have been slow to operate, preferring to wait for time to show whether the nerve has been really divided or whether it has only suffered the shaking process to which I have alluded. No doubt many of these cases will eventually require operative treatment.

Only one case of shell shock has come under my observation. A Belgian officer was the victim. A shell burst near him without inflicting any physical injury. He presented practically complete loss of power in the lower extremities and much loss of sensation. Improvement has been exceedingly slow, and from pressure on our beds the patient has had to be transferred. It is to be feared that unless proper provision is made for the treatment of such cases—treatment not easily obtained in a military hospital—recovery will be very long delayed, and may not occur at all.

An Address

ON

THE DIAGNOSIS AND TREATMENT OF PARENCHYMATOUS SYPHILIS.

DELIVERED AT THE OPENING OF THE SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

[With Special Plate.]

BY F. W. MOTT, M.D.LOND., LL.D.EDIN., F.R.S.

GENTLEMEN,—It is customary for the President of a Section to open the proceedings by an address, but I feel that it would serve a more useful purpose if I opened the discussion on the diagnosis and treatment of parenchymatous syphilis by giving an account of the observations which I have been making regarding the microscopic and bio-chemical pathology of tabes and general paralysis; for it is by an understanding of the pathological processes underlying these diseases that we are able to make a correct diagnosis and prevent their occurrence or arrest their progress. My personal experience of the effect of treatment is somewhat limited as compared with that of many of those who are to take part in the discussion, and therefore I shall especially devote my attention to the observations which have been made in the Pathological Laboratory of the London County Asylums.

THE DISCOVERY OF THE SPIROCHAETES IN THE BRAIN.

The discovery of the spirochaete in the brains in 12 cases out of 70 by Moore and Noguchi, confirmed by further observations and by other workers, has not only forged the last link in the chain of evidence necessary to show that syphilis is the essential cause of general paralysis and tabes, but it has made it necessary to regard the pathology of these diseases in a new light, and in future to speak of them as "parenchymatous syphilis." Noguchi later examined 200 brains from cases dying from



Fig. 1.—Skiagram showing six shrapnel bullets in head and face.



Fig. 2.—Skiagram showing numerous shrapnel bullets, one of them embedded in the femur. Around the uppermost (*i.e.*, that on the right as the picture is placed) an abscess cavity is clearly shown.



Fig. 3.—Skiagram showing shrapnel bullet in contact with lower part of femur and a spiral fracture of the bone much higher up



Fig 4.—Skiagram showing the same femur after plating, four weeks subsequent to the accident. Union is now firm.



Fig. 5.—Skiagram showing compound comminuted fracture of the lower end of the femur into the knee-joint. The wound was suppurating when received at the 1st Southern Hospital. Firm union has been attained, and there is some mobility of the knee-joint.



Fig. 6.—Skiagram showing fracture of humerus by a shrapnel bullet which split. Two wounds of exit resulted.

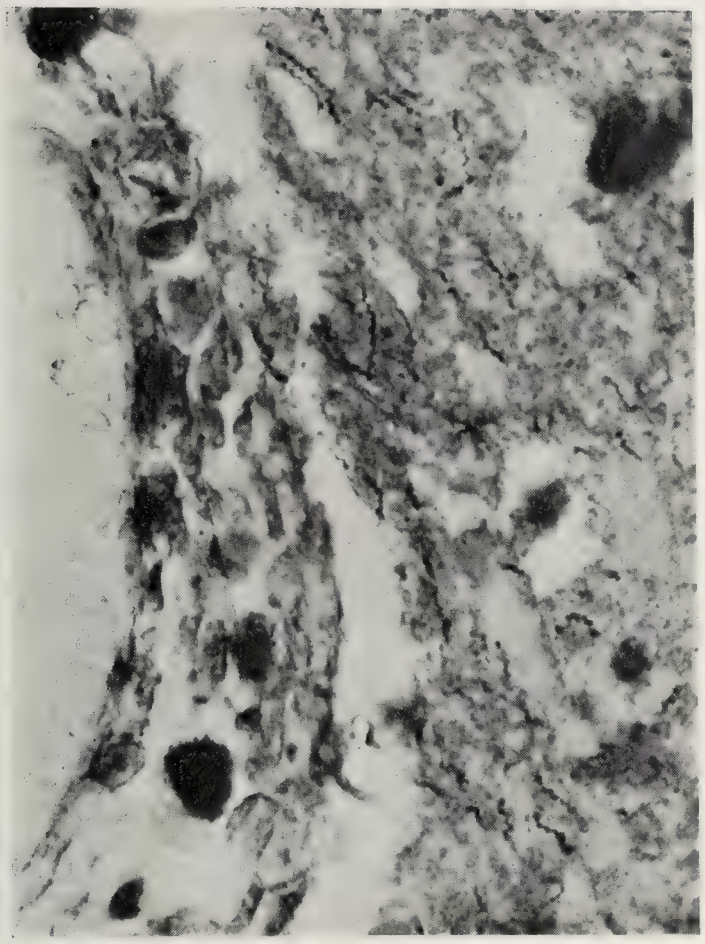


Fig. 1.—Brain (G.P.): spirochaetes near small vessel. × 1450.



Fig. 2.—Same brain: perivascular infiltration producing a nodule. × 190.

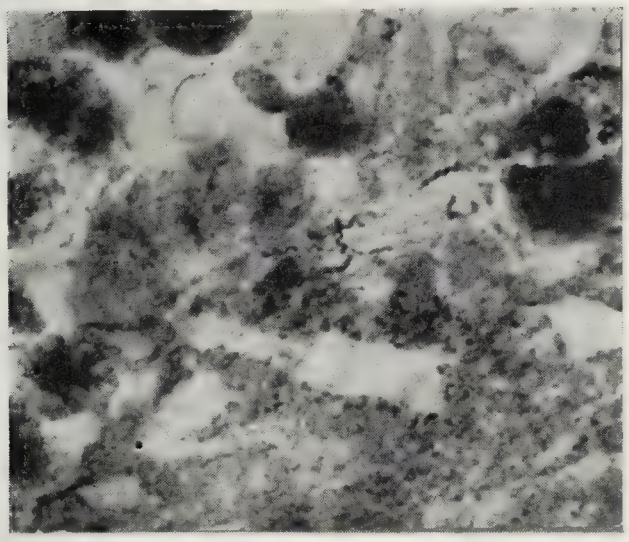


Fig. 3.—Same brain: section of nodule, spirochaetal plasmolysis, etc. × 1550.

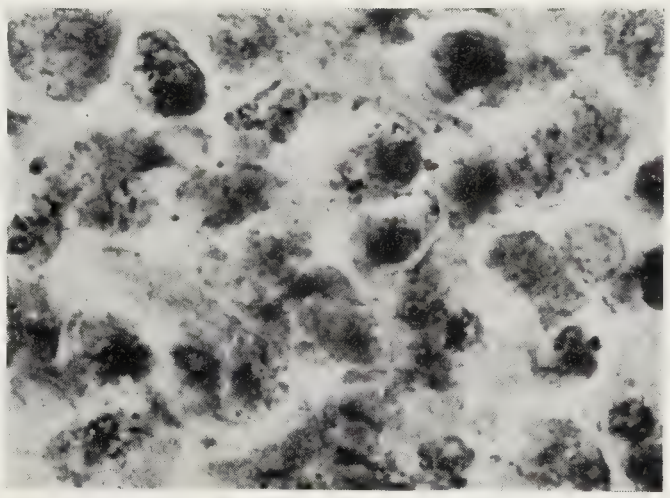


Fig. 4.—Same brain: section of nodule, showing degenerated spirochaetes. × 1450.



Fig 5 –Monkey's brain: experimental anaemia. × 200.

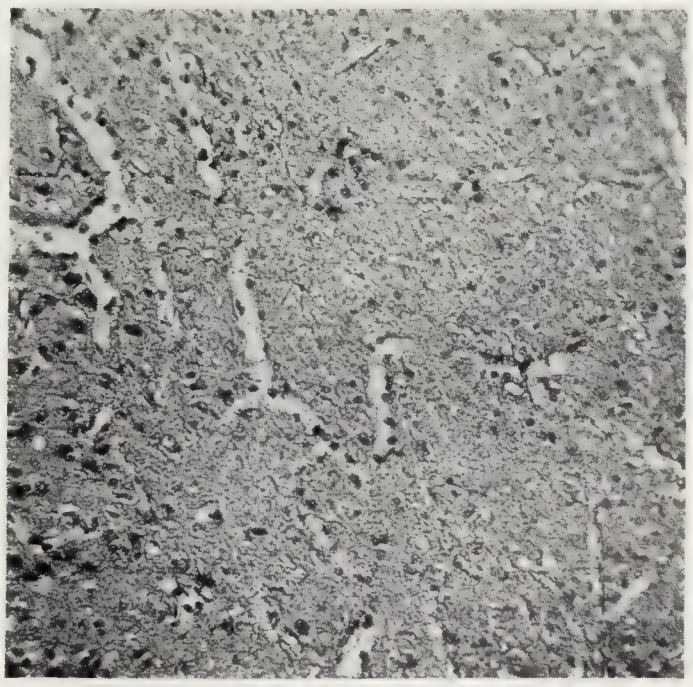


Fig. 6.—Same brain: dilated perivascular lymph spaces. × 200.

[For full description of these figures see notes at end of Dr. Mott's paper.]

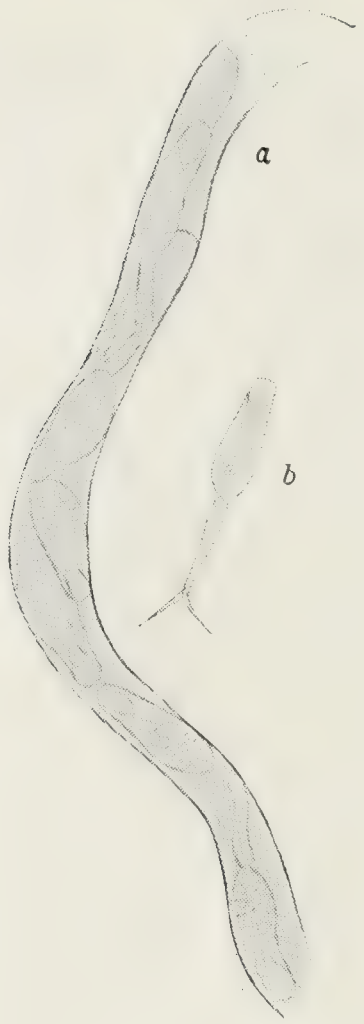


Fig. 1.—(*a*) Sporocyst from liver of *Katayama nosophora*. × 100. (*b*) Cercaria from the sporocyst, × 100.

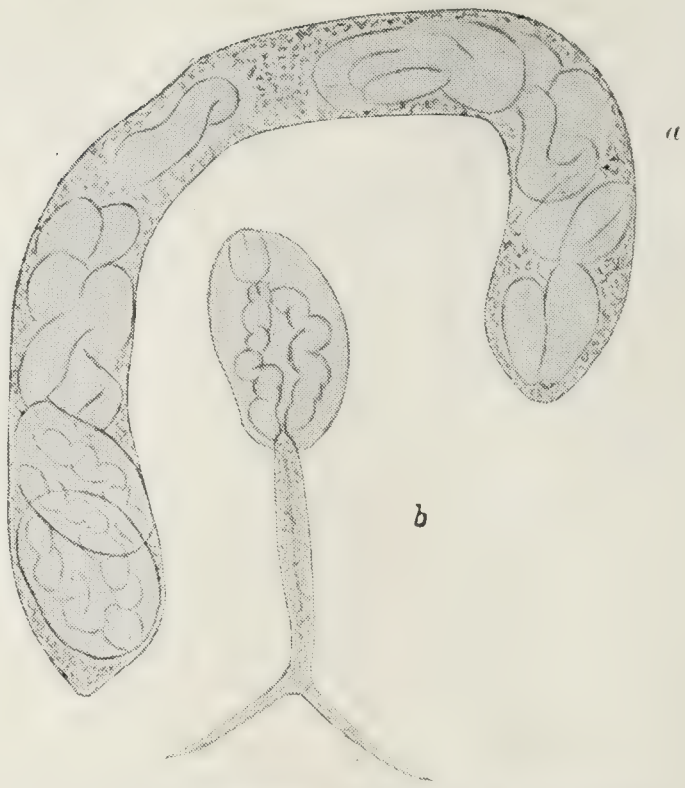


Fig. 6. — (*a*) Sporocyst resembling *Cercaria vivax* Sonsino. × 100. (*b*) Bifid-tailed cercaria from sporocyst Fig. 6 (*a*). × 100.

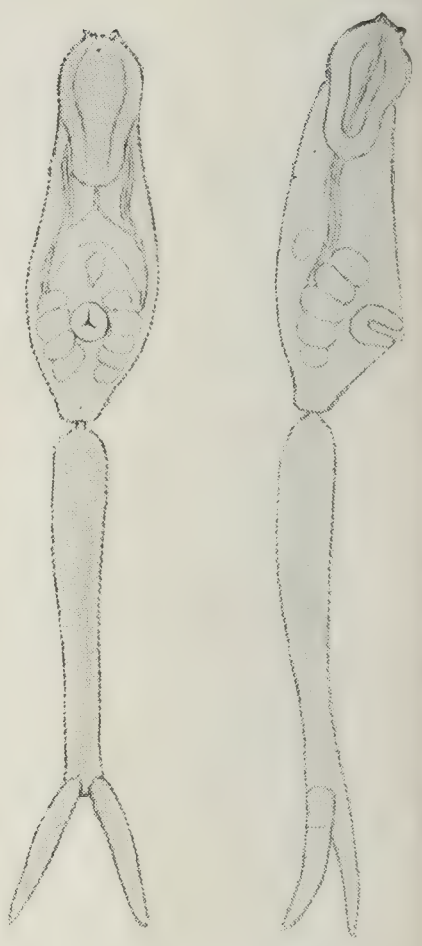


Fig. 2. Fig. 3.

Fig. 2.—Ventral view of cercaria showing anatomical details. × 300.
Fig. 3.—Lateral view of cercaria. × 300.



Fig. 10.—Mesentery and gut of experimentally infected mouse, showing paired schistosomes in the portal veins. (From a preparation now in the Museum in the London School of Tropical Medicine.) × 2.



Fig. 9.—*Katayama nosophora*. Operculum, × 12, drawn semi - diagrammatically to show scheme of coiling.

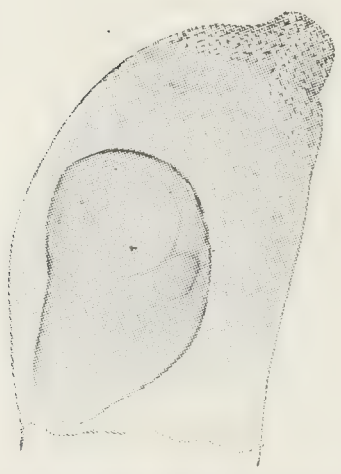


Fig. 4.—Rounded extremity of sporocyst from *K. nosophora*, showing transverse folding, with indications of spines. × 300.

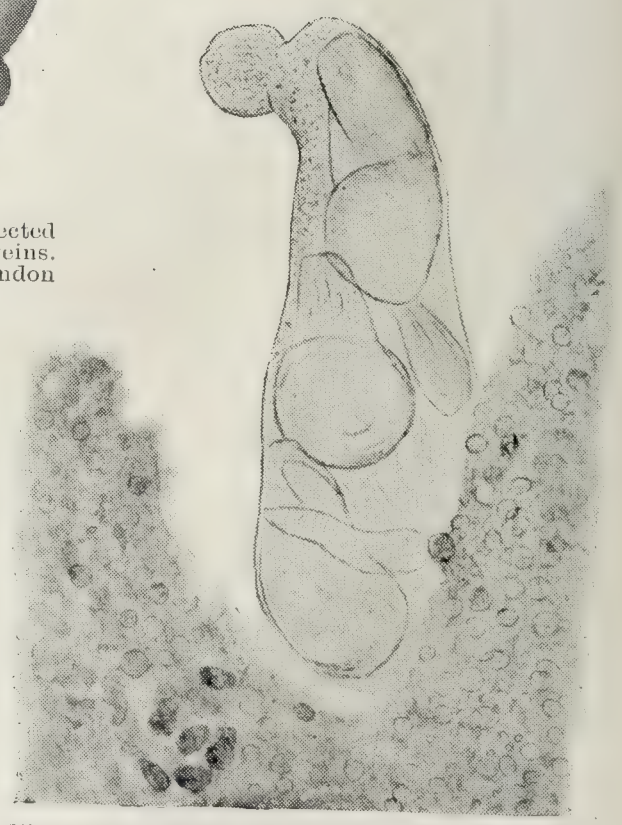


Fig. 5.—Rounded bulbous end of sporocyst extruding from liver substance. × 300.



Fig. 7.



Fig. 8.

Fig. 7.—*Katayama nosophora* (n.g., n.sp.). Shell, oral aspect. × 4.
Fig. 8.—*Katayama nosophora*. Shell, lateral view, showing labial swelling. × 4.

general paralysis, and 12 spinal cords from tabes dorsalis. He has obtained positive results in 25 per cent. of the cases of general paralysis, whilst only one of the 12 cases of tabes gave a positive result. He regards general paralysis as a chronic parenchymatous encephalitis.

Soon after Noguchi published his paper a number of observers—Berial, Jakob, Levy, Marinesco and Minea, Marie, Levaditi and Banchowski, Mott, Ranke, Schmorl, Versé—confirmed the existence of spirochaetes in the brains of paralytics. Very soon Förster and Tomasczewski, followed by Noguchi, demonstrated the presence of spirochaetes in small cylinders of brain removed during life by the Neisser-Pollak puncture method.

The Existence of the Spirochaetes in the Central Nervous System in Relation to the Pathology of Parenchymatous Syphilis.

I have examined now a series of 100 brains of patients who during life presented the clinical symptoms and signs of general paralysis, and in 66 per cent. of the cases spirochaetes have been found by examination with dark-ground illumination, confirmed by staining films by the Fontana silver method. If the film be fixed by the same method the spirochaetes can be readily stained by methyl violet, polychrome blue, or by Giemsa method. Förster and Tomasczewski say they find difficulty in staining by Giemsa. It is impossible to examine the whole of the cortex in a search for foci of spirochaetes, and naturally the question arose whether clinical or pathological indications would afford a clue to the most likely situations to find the organism in a series of brains. There is first the probability of association of active multiplication of the specific organism with production of toxins and the onset of seizures. If the seizures are unilateral it is probable the poison is being produced in the hemisphere opposite to the side on which the epileptiform convulsions are occurring. Next it occurred to me that the most likely situations to find the spirochaetes would be those regions which show the earliest naked eye evidence of the disease, namely, the pole and the mesial surface of the frontal lobe, and the frontal end of the limbic lobe; these are regions where congestive venous stasis and adherence of the leptomeninges are first apparent. It was soon found that by far the most satisfactory method, both for rapidity and certainty of demonstrating the existence of spirochaetes, was to make an emulsion from the cortex of the brain, from the regions mentioned, by rubbing up in a glass mortar a little scraping of the grey matter with normal saline or Ringer's fluid, and then examining with the dark ground illumination. The spirochaetes can easily be seen on the dark ground; and in a number of instances where the brain was removed soon after death more or less active movement could be observed. Cases with marked cortical wasting, according to our experience, yielded far less satisfactory results than recent cases, with little apparent cortical wasting. Sometimes the organisms were found in a quarter of an hour, sometimes only after a day's search. They seem to be present only in small foci, for not infrequently a spot a few millimetres away from that in which the organism had been found would yield negative results. The great difficulty of this investigation is that the search for the organism is like looking for the proverbial needle in the haystack; not finding does not imply non existence. We have never been able to find the spirochaetes once in brains of patients dying with other forms of insanity. Very often a preparation of brain emulsion showing spirochaetes has been sealed round with paraffin and kept for days and observed at intervals; numbers of other micro-organisms have been found, but the spirochaetes can still be seen. Förster and Tomasczewski found spirochaetes 27 times in 61 cases examined by Neisser-Pollak puncture. In 11 the spirochaetes were as abundant as in primary syphilis or congenital syphilitic lesions. In 16 cases they had to seek for hours and make many preparations. I have had a similar experience in the examination of brains obtained *post mortem*. Their experience does not quite accord with mine, for they remark that in simple demential forms spirochaetes are as numerous as in cases where convulsive seizures have occurred.

Experimental Observations.

Noguchi inoculated into the testicles of 36 rabbits the emulsion of six different specimens of brains of general paralytics in the fresh state. At the end of 97 days in one case and 102 days in the other, a small but typical induration of the testicle and scrotal skin occurred. In the first case the spirochaetes were few; in the second they were abundant. Steiner claims to have produced in rabbits experimental syphilis of the nervous system by using albinos and by sensitizing the animals with several intravenous injections of spirochaetal testicular emulsion.

It is interesting to note how slow was the development as compared with the transmission by infection made with material obtained from a chancre, secondary lesion, or even a gumma; in the latter case the lesions appear after an interval of four to six weeks—rarely two months elapse. Dr. Topley, aided by a grant from the British Medical Association, endeavoured at my suggestion to produce lesions in monkeys by injection of emulsions of brain material in which I had found spirochaetes. His efforts to produce infection were unsuccessful, whether the material was injected into the brain or into the testicle. After the publication of the important results to be now described further research was abandoned.

Förster and Tomasczewski commenced their experiments in June, 1913, so that they have been in progress nine months, yet the results have so far been negative. Seeing that these observers have used material obtained from brains during life, and have exercised great precautions in their experiments, the results obtained, although negative, are of very great importance and value. Briefly stated, their experiments were the following: Puncture material from brains of 53 paralytics was inoculated into the testes of 60 rabbits, and 15 of these animals lived over two months without any signs. It may be remarked that Noguchi's rabbits did not develop any signs in the testes for 98 days, so that their results do not prove much. Of 13 apes, however, inoculated in the eyelid with material proved to contain spirochaetes, 5 died 61, 82, 86, 88, and 90 days after inoculation, but 7 have been over four months under observation. Small nodules in the lids have been observed in some of these animals four to five weeks after inoculation, but most careful research of a serous exudate obtained from the lesion showed no spirochaetes. Intracerebral inoculation was also unsuccessful. Observations were made upon 40 rabbits and 17 apes for over four months. The failure to infect monkeys with this material containing abundance of active spirochaetes is remarkable when we consider that material of tertiary syphilis, in which it is difficult to find spirochaetes, when inoculated usually produces infection.

Evidence in Favour of a Biological Change in the Spirochaetes.

It may be assumed, therefore, that this evidence favours the view that there may be a biological difference between the spirochaetes of general paralysis and tabes and those of primary syphilis. The successful inoculation experiments of Noguchi, Berger, and Steiner with a long incubation period supports this conclusion. No one has been inoculated by handling brain material of general paralysis, and the unsuccessful attempts to infect monkeys, even when the material has been obtained from the living body and immediately introduced into the body of the animal, shows that the organism has undergone a biological change. "Still it is unexplained when, where, and how this change has come to pass." The cause of the long incubation period, the typical course and the peculiar characteristic pathological anatomy of this disease in relation to the spirochaetal infection, therefore, is of fundamental importance in the study of syphilis of the nervous system in relation to prevention and treatment. The biological change may be considered from several points of view.

1. The spirochaetes that cause the primary lesion are biologically modified. They may have been attenuated in their virulence by the widespread use of mercury; if this hypothesis be accepted, they may be spoken of as mercury-fast organisms which have acquired a resistance by natural selection, either by the acquirement of a habit of secreting themselves in the central nervous system, where metallic poisons such as arsenic, antimony, and mercury do not

penetrate, or the attenuation has been effected by a diminished chemiotropism to these poisons.

2. It is not the spirochaetes that have changed, but the fluids and tissues of the body. The charts of conceptions of mothers of sixty cases of juvenile general paralytics show that following miscarriages, abortions, stillbirths, and deaths in early infancy are children who at puberty or in early adolescence develop general paralysis. One-half of these paralytic children had signs on the body of congenital syphilis; the remainder of the sixty had no definite signs, although the history of the fate of conceptions was conclusive evidence of infection of the mother. In the greater number of cases the mothers were unaware of the fact that they had had syphilis.

These facts seem to show that antibodies are being continually formed in the body of the mother which kill off the organisms as fast as fresh broods are formed; but with each development of spirillolytic antibodies the organism is modified as regards virulence, so that the tissues of the living offspring are eventually able to cope with the disease by the same process of production of antibodies and spirillolysis. It may chance, however, as fresh broods are formed that some of the organisms get lodged in the central nervous system and penetrate the parenchyma; it is true they may be weakened and attenuated organisms, but under normal conditions they would find a safe resting-place there, because the cerebro-spinal fluid which irrigates the whole substance of the central nervous system contains no leucocytes or bactericidal substances. Just as the pneumococcus or tubercle bacillus may remain quiescent in the body until some depressing or devitalizing condition arises, when they take on active growth, so it is possible that the spirochaete or a granule antecedent form may remain latent for many years in the central nervous system before taking on active development and killing its host.

The Existence of Spirochaetes in the Parenchyma of the Central Nervous System in relation to the Morbid Histological Changes.

It must be admitted that it is the toxins produced by the multiplication of the organisms which produce the inflammatory parenchymatous reactions of the tissues. In general paralysis there is a chronic meningo-encephalitis, but the whole cerebro-spinal axis suffers in some degree sooner or later, whereas in tabes dorsalis this is an elective action, and the disease is limited to histological changes affecting the posterior spinal protoneurons.

The experimental observations of Orr and Rows show that toxins generated outside the spinal canal can pass up the nerves and cause degeneration of the posterior columns only. This is the course of the lymph stream. Ehrmann found spirochaetes in the nerve bundles near the primary sore; they were lying in the lymph spaces of the perineurium and endoneurium. It is probable, therefore, that infection of the central nervous system may occur by the lymphatics of the nerves. It may also occur by the perivascular lymphatics. We have no evidence to show that the spirochaete is in the posterior spinal ganglia, and the one case out of twelve of Noguchi's in which he found the organism in the spinal medulla may have been a case of tabo-paralysis. Moreover, it is difficult to believe that the spirochaetes in tabes exist in the spinal medulla in all cases, as is the case, in all probability, in the brain of the paralytic. If the spirochaete were present in the medulla in tabes we should expect a more generalized reaction in the medulla, as it is unlikely that an organism with independent movement would not penetrate the grey matter and give rise to a myelitis, as we know it does in general paralysis where there is a general diffuse encephalitis. Now this difference in the pathogenesis of the two diseases is of very considerable importance, not only in regard to the comparative pathology of the two diseases, but also in regard to the explanation of the fact that treatment in tabes is satisfactory in many cases, whereas in general paralysis it is altogether unsatisfactory.

The more rapid destruction of the nervous elements in general paralysis may be correlated with the constant presence of the organism in the central nervous system and the generalized effect of the virus on the whole central nervous system, especially the brain. What part does this virus play in the production of the characteristic perivascular infiltrations with lymphocytes and plasma cells, also of the neuroglia proliferation? Similar perivascular appearances and neuroglial proliferation occur in gummatous brain syphilis, general paralysis, and in sleeping sickness. In gummatous brain syphilis, whether localized or diffuse, although there may be profound vascular changes causing interference with the blood supply, yet there is not the profound general wasting of the nervous system and of the cortex cerebri in particular, as occurs in all cases of advanced general paralysis, the wasting being in direct proportion to the decay and destruction of nerve-cell and fibre systems. In sleeping sickness, where the perivascular infiltration and neuroglia proliferation are as marked as in advanced general paralysis, we do not find a proportional wasting of substance and neuronic decay and destruction.

The Biological Nature of the Spirochaeta pallida.

The similarity of the lesions produced by trypanosome infections to those of syphilis was used as one argument among others in favour of the *Spirochaeta pallida* being a protozoon. However, there is a tendency now for biologists and others who have studied the question to regard spirochaetes as more akin to bacteria than protozoa. Mr. Clifford Dobell, of the Imperial College of Science, who has long studied the biology of spirochaetes, has come to this opinion. He does not think it is proved that they multiply by longitudinal division, neither does he think there is reliable evidence of the existence of a spore form. Meyrowski claims to have observed true lateral branches of the spirochaetes in tissues and in cultures which offer to him the best proof of their plant-like nature, and he gives photographs of the same. Many of the appearances he describes are similar to those which I have seen in emulsions of the brain in general paralysis, but which Mr. Dobell considers as artefacts or degenerative forms. Meyrowski denies the possibility of these being involutional forms. I think the argument that the tissue reaction corresponds in trypanosome disease and syphilis is not valid, because the tubercle bacillus causes endothelial and lymphocyte proliferation. The malarial parasite, which is a protozoon, lives in the blood circulation, and gives rise to no such chronic lymphatic reactions as syphilis; neither do trypanosome infections while the organism exists only in the blood stream. It is remarkable that in spite of the fact that the brain harbours the spirochaetes in all cases of general paralysis, the lymph glands in the neck are apparently not affected; the only tissue that shows a fairly frequent definite syphilitic lesion is the aorta, and definite nodular fibrosis I found to occur in 40 per cent. of 400 male paralytics; this lesion of the aorta occurs as frequently in tabes dorsalis, and possibly this may be a source of infection of the perivascular lymph channels of the posterior columns of the spinal medulla in tabes.

The microscopic examination of brains, of cases of paralysis in which a great abundance of spirochaetes was found, invariably exhibited changes indicative of a severe meningo-encephalitis; the intensity of the inflammatory process was much more marked than naked-eye inspection would suggest. Generally speaking, the perivascular infiltration with lymphocytes and plasma cells, the capillary endothelial and the neuroglial proliferation, together with the venous and capillary stasis, were most marked in those regions (namely, the frontal and limbic lobes) where the spirochaetes were most readily and abundantly found. I have found the spirochaetes in all regions of the brain cortex, once in the white matter, and once in the grey matter of the third ventricle.

The Microscopic Changes in the Cortex in Relation to the Spirochaetal Colonization.

My examinations of the brains by sections stained by silver methods have been attended with unsatisfactory results, except in the case of an early acute case of general paralysis. Small portions of the frontal lobe of this brain, which had yielded very satisfactory results by the emulsion method, were stained by a modified silver Noguchi method, which, by good fortune, deposited the silver on the spirochaetes without staining the neurofibrils. Microscopic examination of these sections yielded some interesting results.

Contrary to the experience of Noguchi, but corresponding

with that of A. Marie, these sections showed the existence of a feltwork of spirochaetes around an inflamed vessel. Further examination of sections of this tissue led me to correlate the perivascular cell reaction with the presence of the spirochaetes; for in this section other vessels could be seen congested, in which, however, there was no perivascular infiltration. Careful microscopic investigation of the proliferated cells of the sheath of the vessel showed lying on and between them spirochaetes, and in the interior of the cells were granules, the products of degenerated spirochaetes (see Fig. 1). Some distance away from the perivascular focus where the spirochaetes were seen, branches of this vessel may be observed in which there are proliferated sheath cells, containing granules. Again, little nodules about a millimetre in diameter may be found, consisting of phagocytic cells, probably reticulo-endothelial cells (histiocytes), filled with granules—products of degeneration of spirochaetes—some of which retaining their spiral form, others undergoing granular degeneration, can be seen lying amidst the cells (see Figs. 2 and 3). It is probable that the cells produce a spirillolytic substance, which causes the granular spirochaetal plasmolysis. This inflammatory reaction to the spirochaetes tends to congestive stasis of the vessels of the brain, especially in those regions, namely, fronto-central, where, owing to the mechanical condition of the arterial supply and the venous return, congestive stasis is favoured in veins and capillaries. Hence these are the regions where spirochaetes are more readily found, and where decay and degeneration of the neurones earliest occur. But the inflammation of the vessels causes, together with the toxins produced by growth of the spirochaetes, first irritative and then destructive effects upon the neurones.

The congestive seizures, according to my experience, are especially associated with microscopic appearances of acute congestive stasis of the vessels, which may in early cases be more or less localized. It is probable that the multiplication of the spirochaetes is associated with the escape into the cerebro-spinal fluid of lipolytic and proteolytic toxins, and therefore they can act at a distance from their seat of production, and so cause, independently of serious active congestive stasis, a progressive widespread decay and destruction of the cortical neurones, such as occurs in the slow dementing forms. The signs of cortical irritation manifested by convulsive seizures, and mental excitement manifested by expansive delirium, are probably indicative of active spirochaetal development, causing a congestive stasis and liberation of toxins. The spirochaetes may undergo an active development in one hemisphere and cause unilateral convulsions. The irritative process is followed by decay and destruction of the cortical neurones of one or both hemispheres, according to the colonization of the spirochaetes in one or both hemispheres. This accounts for the fact that usually one hemisphere is more wasted than the other when examined *post mortem*. Especially is this the case when there have been constant unilateral convulsions; and I have known instances where there has been a difference of 60 grams in weight between the two hemispheres. And in a few cases of tabo-paralysis, where the knee-jerks have been absent on both sides, I have seen the jerk return on the side of the motor convulsions. Such cases have shown a great difference in weight, the hemisphere corresponding to the return of the knee-jerk being much more wasted. Moreover, I have observed that, as a rule, when there has been a marked speech affection the left hemisphere has been the seat of the greater amount of congestive stasis and destructive decay. These facts tend to show that it is the colonization of the spirochaetes with the inflammatory reaction produced which is responsible for the morbid changes observed *post mortem*, and that with these morbid cortical changes may be correlated the signs and symptoms observed during life. The constant existence of the Wassermann reaction in the cerebro-spinal fluid may be regarded as evidence of the presence of spirochaetal toxins; and it may be assumed that the granular appearance of the ependyma of the fourth ventricle, the most characteristic naked eye appearance met with in this disease, is probably in some way connected with a prolonged chronic irritation and proliferation of the ependyma cells, due to the action of the toxin contained in the fluid of this region.

The Spirochaetes in Relation to the Cerebro-spinal Irrigation System of the Brain.

While it is established beyond doubt that tabes and general paralysis are caused by the spirochaete of syphilis, it is still an unsettled question why a relatively small proportion of persons who have been infected suffer with these late manifestations. I have seen cases of undoubted cerebro-spinal syphilis terminate in general paralysis and tabes. Straussler has also recorded cases, but these are rare. It is an undoubted fact that examination of the cerebro-spinal fluid in the secondary stage shows that in a considerably greater number of cases a lymphocytosis exists than clinical symptoms would indicate. This lymphocytosis points to spirochaetal infection of the membranes, although the infection may not cause clinically *perceptible* neural irritation or destruction. Ravaut and later Sézary, Gennerich, Dreyfus, Werther, and other authorities have emphasized the importance of examination of the cerebro-spinal fluid both for cells and by the Wassermann and globulin reactions. The Wassermann reaction may, under treatment, disappear from the blood and be present in the fluid. It is quite possible, therefore, that while treatment may rid the body of spirochaetes, when there has been no infection of the central nervous system, it is another matter when the organisms have established colonies in the central nervous system.

In my Oliver-Sharpey Lectures I pointed out the fact that the cerebro-spinal fluid contained no protein nor leucocytes, and therefore invading protozoa, for example, trypanosomes or microbes, owing to the absence of the natural defences of the blood, found there a safe retreat, and were with great difficulty eliminated by treatment, because mercury, arsenic, and antimony, as well as other germicides, do not pass through the choroid plexus into the cerebro-spinal fluid. There is reason to believe that the cerebro-spinal fluid functions as the lymph of the brain. I have shown the existence of a canalicular irrigation system (vide Figs. 5 and 6). The very instructive and valuable researches of the late Professor Goldman have supported this view. He showed that you could inject 100 c.cm. of a 1 per cent. solution of trypan blue into a vein of an animal without injuring it and without staining its central nervous system. The cells of the choroid plexus alone are stained. If, however, 2 c.cm. of a 0.5 per cent. solution be injected by lumbar puncture into the subarachnoid space the animal often died of convulsions (neuronic irritation). Examination of the central nervous system showed the whole spinal axis and the base of the brain (but not the convexity) stained blue; moreover, microscopic investigation showed the spinal neurones themselves were stained. We shall see that these facts have a very important bearing upon the treatment of syphilis of the central nervous system and the many new methods which have been introduced to rid the central nervous system of the syphilitic organisms by direct destruction or by aiding Nature in doing it. Before, however, passing to a consideration of recent developments in treatment, it is necessary to make a few observations upon the methods adopted by Nature.

The Production of Specific Antibodies in Relation to Remissions.

A large experience in the examination of brains of general paralytics for spirochaetes has led me to think that the inflammatory reaction which is so marked in early cases is the result of toxins produced by the pullulation of the spirochaetes. The toxins themselves and the inflammatory reaction caused by them may be a cause of the irritative phenomena, which take the form of convulsive seizures and psychic irritation, accompanied by mental disorder and delusions. But the inflammatory reaction leads to the production and release of antibodies which cause destruction of the spirochaetes (Figs. 2 and 3). The symptoms are in all probability, therefore, due partly to intense local effects, but also to general intoxication and reaction of the whole cortex to the poison. As the natural defences overcome the specific organism (provided the patient does not die from some intercurrent complication) the active irritative phenomena tend to subside and the mind to recover more or less of its normal functions. But there is, in almost every case, some

degree of neuronic destruction and dementia following an attack. Even those cases which are occasionally discharged as cured are, however, only apparently cured, for sooner or later a relapse occurs due to the fact that some of the spirochaetes have resisted the antibodies produced, and, being immune to them, commence to multiply, producing toxins which cause a fresh outburst of irritative phenomena, which upon subsidence leaves the patient the more demented in proportion to the fresh neural destruction.

This view, based upon facts that I have mentioned, agrees with the opinion of Ehrlich that each relapse may correspond with the multiplication of spirochaetes which are resistive to the antibody formed, and therefore continue to multiply and produce toxins until the tissues have elaborated a new and efficient spirillocide antibody. Such an hypothesis opens up the question how specific agents such as arseno-benzol compounds and mercury act as therapeutic agents; and a number of experiments have been performed relating to this question, an admirable summary of which is contained in a recent paper by Schreiber.

Experiments on Animals in Relation to the Therapeutic Action of Mercury and Arsenic Compounds.

Ehrlich and Hata believed that salvarsan had a direct spirillocide action; the typical fever following an intravenous injection is said to be due to destruction of spirochaetes. In support of this statement may be mentioned the fact that salvarsan exercises a curative influence only on skin lesions which are specific, presumably by destroying the spirochaetes. Ullmann has found more arsenic in diseased than in healthy tissue after injection of salvarsan. Loeb and others found more iodide in syphilitic than in healthy tissues. Doubts have been expressed whether salvarsan owes its therapeutic properties to a direct action on the spirochaetes. There is no doubt that it may excite a strong leucocytosis and so favour phagocytic action, and it is certain that an increase of antibodies and of immunity processes cannot be denied as effects of salvarsan. Gonders and also Castelli have shown that salvarsan *in vitro* does not kill spirilla, but destroys their capability of developing in the animal body. The experiments of Ehrlich and Bechold showed that therapeutic agents which are not active *in vitro* become active in the body. Ullmann introduced into the peritoneal cavity of mice nagana trypanosomes with 1.5 per cent. solution of neo-salvarsan, and found that this sufficed to kill the trypanosomes in forty minutes at the most, a time too short for the production of immune bodies, etc.

Other experiments seem to show that these benzol compounds of arsenic have a spirillocidal action; and this is not due to the benzol independently of the arsenic, but to a chemiotropic action by which the arsenic fixes on the parasite. The fact that (as Gonders showed) trypanosomes may become "arsenic-fast" supports this conclusion. Such trypanosomes probably do not possess a periplasium which is positively chemiotropic to this particular arseno-benzol compound, therefore they can multiply in its presence.

All known mercury preparations can cause a cure of fowl spirillosis. Experiments of Hahn and Kostenbader showed that if too large doses of mercury are given a curative effect is not obtained, whereas smaller doses do effect a cure. Mercury is not a spirochaete poison in the strict sense of the word; in moderate doses it stimulates the production of antibodies; in too large doses, by its devitalizing effects on the tissues, it inhibits the production of antibodies. Salvarsan, on the contrary, is more effective in large doses when injected intravenously. Intramuscular injections of salvarsan are not so effective as intravenous injections, which, according to the work of Meyer, is not the case with mercury.

It is said that the introduction of hydroxyl and amido groups completely changes the mode of action of these groups of aromatic compounds of the metals arsenic and mercury. The evidence so far seems to show that we obtain by salvarsan the death of the spirochaetes if the drug has the opportunity of coming into contact with them, and when followed by the stimulating effect of mercury, introduced either by inunction or intramuscular injection, the immunity reactions of the body are increased and the cure maintained. These are the two therapeutic principles underlying the modern treatment of syphilis and in the intensive treatment these conditions are fulfilled. The above account is a summary of a valuable article by Schreiber.

THE DIAGNOSIS.

I will now refer to my experience as regards the Wassermann reactions of the blood and cerebro-spinal fluid in diagnosis.

The value of the Wassermann reaction in the diagnosis of general paralysis is shown by the control by *post-mortem* examination of a very large number of cases of admissions to the asylums which have had the blood and fluid examined by the Wassermann test. A positive reaction of the blood may occur and even a marked reaction in a large number of people who are not suffering, so far as clinical signs and symptoms show, with disease resulting from the action of the virus. It is another matter when the cerebro-spinal fluid gives a positive reaction, for this is an indication of invasion of the central nervous system by the spirochaete or its toxin. Whereas *post-mortem* records show before the introduction of the Wassermann reaction correct diagnosis of general paralysis in only 75 per cent. of the cases, by the aid of the Wassermann reaction it is rare to find an error of diagnosis in respect to this disease when, in combination with the history and the clinical signs and symptoms, the fluid has been examined.

The test employed by my assistants, Dr. Candler and Mr. Mann, has been conducted on the original Wassermann technique—that is, using specially prepared alcoholic extracts of syphilitic fetal livers and alcoholic extracts of human heart with an addition of cholesterol according to the method of Sachs. The serum is inactivated by heating to 56° C.

A positive Wassermann reaction in the cerebro-spinal fluid was only found in cases of general paralysis, tabes, and syphilitic disease of the central nervous system. The subjoined table shows the results obtained at the laboratory.

Increase of globulin and pleocytosis do not of themselves prove the syphilitic character of a disease of the central nervous system. The strength of the reaction is an important means of determining whether there is an active spirochaetosis. Thus, in nearly all cases of general paralysis the reaction is obtainable in all dilutions.

RESULTS OBTAINED BY MY ASSISTANTS, DR. CANDLER AND MR. MANN.

Positive reactions on cases confirmed as general paralysis at autopsy	=	270
Negative reactions on cases shown not to be general paralysis at autopsy	=	52
Negative reactions on cases found to be general paralysis at autopsy	=	5
Total	=	327
Total percentage of accurate results on all cases	=	98.4 p.c.
Total percentage of positive reactions in cases of general paralysis	=	98.1 p.c.

ASYLUM CASES.

1. *Serum Reaction in General Paralysis.*

The Wassermann test on the serum of 300 cases of general paralysis showed incidence of positive reactions of 98 to 99 per cent. The reaction is generally marked positive, but a number of cases give slight or moderate reactions. (*Archives of Neurology*, vi, 1914, p. 64. Candler and Mann.)

We may conclude that a positive Wassermann reaction with the serum is almost a constant feature in general paralysis, provided that the Wassermann technique is reliable and adequate maximum amounts of serum (0.2 - 0.5) are used.

TREATMENT.

My experience as regards treatment by modern developments has not been sufficient to speak at any length, but from the literature I have read and from the evidence I have heard at the Royal Commission, together with my laboratory experience, I have come to the conclusion that these late degenerative forms of syphilis of the nervous system (and I refer especially to general paralysis) have not been cured nor even greatly benefited by any treatment with salvarsan or neo-salvarsan, whether administered

intravenously or intrathecally. Certainly in tabes the pains have disappeared and the patient has improved, but the same was the case with mercurial inunction. Some of the cases of general paralysis which have died, and in which I have examined the brain for spirochaetes, had been treated by salvarsan prior to admission to the asylum, and in one case very large doses were employed, and yet I found more spirochaetes in that case than any other. I have seen cases during life not only not benefit, but become decidedly worse after intravenous injection of salvarsan. In a study of the literature I have failed to find any clear proof of cure or arrest of general paralysis by any of the methods employed. Those cases in which a remission of symptoms occurred after treatment may, as Oppenheim says, be explained by coincidence, for we know very well cases have remissions without any treatment. Those in which *cure* is claimed by enthusiasts may be due to error in diagnosis. If the salvarsan be introduced into the blood continuously in the hope that eventually traces may pass into the cerebrospinal fluid through the choroid plexus, and thus the drug be enabled to attack the spirochaetes, or if it be introduced intrathecally in small doses, as Ravaut recommends in hypertonic solution, or as others—for example, Marinesco, Robertson, Swift and Ellis, Purves Stewart—have done in the form of salvarsanized serum, the question always arises whether it is able to get at the spirochaetes, and if it does, whether it is in sufficient amount to kill or harm the organism without killing or harming the neurone. The similarity in staining reactions of the neuro-fibrils and the spirochaetes may be indicative of a similar chemiotropic action.

Candidly, I do not think any measure of success has attended any of the methods of treatment so far employed for general paralysis. In respect to cerebrospinal syphilis the value of salvarsan is unquestionable if it is carefully administered and a Herxheimer reaction avoided. Fatal cases have occurred owing to neglect of this precaution. Salvarsan or neo-salvarsan should be given in small doses, gradually increasing the amount, and if there is no urgency it is better even to give a fortnight's treatment with mercury before commencing the salvarsan. By treatment the lymphocytosis will rapidly diminish and disappear even in parenchymatous syphilitic affections. The Wassermann reaction and the globulin reaction, however, are extremely obstinate and certainly they do not disappear, so far as my experience goes, after intravenous or spinal intrathecal injections. We must rather look to the prevention of the spread of syphilis and its early diagnosis and treatment by modern methods as the most hopeful way of combating this terrible malady. Of the total admissions to the asylums of the County of London every year, about 10 per cent. are general paralytics; more than 15 per cent. of the male admissions are general paralytics, and these are recruited from men of all social grades, who, prior to the onset of the disease, for the most part were efficient and productive social units of civic worth and capacity. True, the females are largely recruited from the unfortunate class of women, many of whom are mental defectives, but many have been driven to prostitution by seduction, desertion, and destitution, yet a good number are the innocent wives of men by whom they have been infected, and who are unaware of the real cause of the disease. Moreover, the histories of the families of paralytics show that not infrequently they have transmitted syphilis to their offspring. Incidentally, I may remark of the sixty juvenile paralytics I have collected, in 20 per cent. one of the parents—usually the father—was a paralytic. The inquiry I have made regarding the incidence of general paralysis in the two sexes in the London parishes shows that the females are relatively more numerous in the poorer East-end parishes, and there is a correlation between female paralysis and degraded poverty. Now, it is interesting to note that the higher you rise in the social scale the less often do you meet with general paralysis in the female sex. This is not the case with the male sex, for it is pretty equally distributed in all grades of society. In the juvenile form, where the chances of syphilitic infection are equal, the sexes are equally affected. The incidence of general paralysis, therefore, in a population may be looked upon as a measure of the incidence of syphilis.

DESCRIPTION OF SPECIAL PLATE.

Fig. 1.—Photomicrograph of the brain of a case of acute general paralysis stained by a modified Noguchi silver method. Abundance of spirochaetes are seen in the neighbourhood of a small vessel, the sheath of which shows cellular proliferation. Between these cells are many spirochaetes undergoing plasmolysis, and the cells are black on account of their being filled with the granular products of the degenerated spirochaetes. To the inside of this is seen the lumen of the vessel containing the unstained blood corpuscles. Magnification, 1450.

Fig. 2.—A section of the same brain stained by polychrome blue, showing intense perivascular infiltration; the lumen of the vessels is seen, but so intense is the reaction of the sheath cells that a little nodule is formed at the other end, obliterating or obscuring the lumen entirely. Magnification, 190.

Fig. 3.—Section of one of these nodules showing cells filled with the black granular products of spirochaetal plasmolysis. Some spirochaetes are seen in the middle in process of degeneration. In one part of the section are several unstained outlines of red blood corpuscles; this shows that the spirochaetes seen are amidst the perivascular sheath cells. Magnification, 1550.

Fig. 4.—Section of a nodule in which the spirochaetal destruction is more complete, and within and amidst the cells are the granules of the degenerated spirochaetes. Magnification, 1450.

Fig. 5.—Photomicrograph of the brain of a monkey—experimental anaemia produced by ligature of two carotid and one vertebral arteries — showing two vessels with the dilated perivascular sheaths continuous with the subarachnoid space; both are distended with a clear fluid; fine trabeculae (lined by endothelial cells) can be seen stretching across from the wall of the vessel to the nervous substance, therefore the dilatation is not due to an artefact. Magnification, 200.

Fig. 6.—Photomicrograph of the subcortical white matter of the same specimen as Fig. 5, showing the dilated perivascular spaces distended with a clear fluid; the contained blood vessels and capillaries are collapsed and empty. In the grey matter these pericapillary spaces can be seen connected with the perineuronal spaces, but these are not shown in this illustration. Magnification, 200.

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DISCUSSION.

Dr. PLAUT (Munich) thought that inquiry should be directed to ascertain whether in general paralysis the spirochaete was present in the parenchyma or other organs as well as the brain. He believed, however, that the most important results likely to be obtained at the present stage would be by experiments on animals. He thought that treatment by the injection of salvarsan intraspinally and into the ventricles should be continued. He considered that the only effective treatment would be by the use of salvarsan in the early stages of syphilis.

Dr. J. MCINTOSH said that some time ago Dr. Fildes and he had advanced the theory that parasyphilis of the central nervous system was an active syphilitic process. The failure to find spirochaetes in the lesions was ascribed to their scarcity and to faulty technique—a difficulty which Noguchi had since overcome. Further researches had convinced them that late syphilis of the central nervous system was a tertiary syphilitic process, and was of two types—namely, parenchymatous encephalitis and interstitial encephalitis. The essential difference between these lay in the tissues affected; in the parenchymatous form the nerve tissue proper was attacked, while in the interstitial it was the connective tissue and lymph-vascular structures. An early form of parenchymatous encephalitis occurred in the secondary period of this disease. The conception was that the structures affected in the central nervous system were under the influence of allergy —were hypersensitive to the syphilis toxin. In the encephalitis of the secondary period the amount of tissue reaction was slight, and yet there was reason to suppose that the spirochaetes were as numerous as in other secondary conditions. Again in the chronic parenchymatous lesions, dementia paralytica and tabes dorsalis, though the extent of the lesion was great the number of spirochaetes was usually extremely small. There was thus the same lack of relation between the extent of the lesion and the amount of the virus as was observed in early and late syphilitic lesions elsewhere. This was to be attributed to a change in the susceptibility of the tissues. This hypersusceptibility of the tissues was developed in the later stages of syphilis as an immunity response to the general invasion of the body during the acute stage. Recent researches had shown that the central nervous system was affected very frequently during the acute stage of the disease. In most cases the meninges were alone involved (though it was not improbable that a few spirochaetes might wander into the brain substance proper and there lie dormant). The onset of the symptoms of parenchymatous syphilis at a later period was the result of an increased activity of the spirochaetes which had remained dormant. The spirochaetes, it was believed, entered the lymphatic system of the brain from the blood, and passed up the afferent nerves during the secondary period. The researches of Orr and Rows and others had distinctly shown that the way of the lymphatics was the way of the nerves. Thus the system lesions of parenchymatous syphilis could be explained (tabes optica, etc.). The differential diagnosis of many of these cases was extremely difficult, and any marked and continued improvement, either clinical or serological, in a supposed case of parasyphilis should at once call for a fuller investigation of the symptoms on which the diagnosis was based. A quantitative estimation of the Wassermann reacting power of the serum and cerebro-spinal fluid in all such cases was of the greatest importance in keeping a record of the case and in detecting an early improvement. Treatment was ineffective in parenchymatous syphilis because antisyphilitic drugs in the blood were unable to pass from the capillaries into the nerve substances in order to destroy the spirochaetes. Their failure to reach the brain was not, as some authorities held, due to the drugs not being excreted into the cerebro-spinal fluid by the choroid plexus; the cerebro-spinal fluid was not the lymph of the brain. Recent experiments, as yet unpublished, showed that many chemical substances could pass directly from the blood to the brain substance without the intermediary of the cerebro-spinal fluid. It was, however, true that substances injected directly into the lumbar sac reached the brain quite readily, since they had practically only an endothelial membrane to pass through. Recently this method had been adopted in administering salvarsan and salvarsanized serum in parenchymatous syphilis. In the cases thus treated and observed with Drs. Head and Fearnsides at the London Hospital no improvement apart from that due to the intravenous injection of the drug was noted. The explanation was that owing to the great toxicity of the drug on the parenchyma of the brain, a therapeutic dose could not be administered in this way. Dr. McIntosh said that he and Dr. Fildes were therefore of opinion that intrathecal injections of salvarsanized serum or of neo-salvarsan in its present form would be disappointing. A drug capable of curing parenchymatous syphilis of the brain had yet to be discovered.

Mr. J. E. R. MCDONAGH thought there could be no doubt that the organisms of syphilis reached the central nervous system very early in the so-called secondary stage, and that they invaded the central nervous system in the majority of cases of syphilis. Since the work of Orr and Rows the opinion had gained ground in this country that invasion occurred along the lymph channels and spaces of nerves, but he himself believed that the spore of the *Leucocytozoon syphilidis*, which was, in his opinion, the real cause of syphilis, reached the central nervous system either directly by means of the blood stream, or indirectly by spreading from the meninges—the meninges having been primarily infected through the blood stream. He had found the phases of the *Leucocytozoon syphilidis* in both the pia mater and brain substance in nine of the ten cases of general paralysis so far examined, and the examination of the cerebro-spinal fluid showed that the neuro-recurrences are primarily meningeal lesions. Pure arterial lesions were not infrequently seen early in the disease, giving rise to myelitis if the endarteritis occurred in the cord, and hemiplegia if it occurred in the brain. The lesion need not necessarily be localized as in the above, but generalized, and, if occurring in the brain, gave rise to acute haemorrhagic encephalitis, which was a true syphilitic condition. He had seen a case in which death occurred before any treatment had been prescribed, but its more frequent occurrence after salvarsan threw light upon the nature of syphilis of the central nervous system. The organisms traversed the whole brain substance, but gave rise to no symptoms until the cortex was reached (encephalitis). Later lesions might appear in any position, and in more than one position, along the whole course of the vessel from the basilar artery to its finest branch. This explained how gummata might occur in any part of the brain. Spores could invade the tissue around the vessels and give rise to no symptoms until they completed their life-cycle—months or even years later. Some cases of general paralysis doubtless arose in this way. Other cases of general paralysis and probably most cases of tabes arose from a direct spread of the organisms from the meninges into the nerve substance. In syphilis of the central nervous system the pressure of the cerebro-spinal fluid might be raised, there might be a lymphocytosis, either pure, or containing several

polymorphonuclear leucocytes and endothelial cells; there might be an excess of albumin and globulin, a positive Wassermann reaction might occur, and oxidase ferments could sometimes be found. Homer, Swift, and Ellis had obtained good results by injecting intraspinally serum rich in antibody, but it was feared the treatment was only palliative, and several injections were necessary to obtain a satisfactory result. The patient was first given an intravenous injection of salvarsan or neo-salvarsan, and an hour later blood was withdrawn. The following day the serum was collected, mixed with an equal quantity of distilled water or saline (about 25 c.cm. of each), and after a corresponding amount of cerebro-spinal fluid had been withdrawn, the diluted serum was injected into the spinal canal and the patient placed with his head low down, and the bottom of the bed raised, so as to allow the fluid to gravitate towards the brain. His best results had been in cases of cerebro-spinal syphilis, in which the improvement had been remarkable; but as a rule about eight injections, given at weekly intervals, were necessary before the cerebro-spinal fluid approached the normal. In many cases of cerebro-spinal syphilis, as good results might be obtained by intravenous injections of salvarsan and mercurial inunctions. Some cases of tabes had markedly improved, the pupil reflexes had returned, the crises had disappeared, and the gait had become steadier; but much depended upon the stage the patient was in when treated. Some cases had remained unaltered and a few had been made worse. He knew of five cases in which death resulted, but which would not be published, and he heard on good authority that many of the cases first treated at the Rockefeller Institute had recurred, and that the treatment had not proved as satisfactory as was anticipated. Two cases of general paralysis of the insane which he had injected were undoubtedly made worse; three other cases improved, but only to a slight extent. Cerebro-spinal syphilis, tabes, and general paralysis of the insane were not only extremely closely related, but might merge into one another. If during the stage of the generalization of the virus sufficient salvarsan to cure the symptoms were given but not to sterilize the system, should a recurrence appear, the chances were that it would be generalized and indistinguishable from the original trouble. During the stage of general infection that part of the nervous system which was fed by blood—namely, the meninges and blood vessels—became infested with organisms. Sterilization of the systemic part did not sterilize the meninges. There were no antibodies except in the cerebro-spinal fluid, with the result that a generalized meningitis ensued. Should the organisms spread in the nervous part, but be crippled in the systemic part, as occurred under treatment by mercury, localized symptoms prevailed, with the appearance of two separate types—the pure cerebral and the pure spinal. When the extension of the organisms had become greater and the vascular disturbance more marked, tabes and general paralysis of the insane would follow, and appear late in the course of the disease when the production of systemic antibodies was checked. If adequate treatment were begun before the nervous system was attacked, it would presumably always remain free. If treatment was begun after the nervous system had been attacked, and the treatment was sufficiently powerful early in the disease to stop the host producing antibodies, symptoms of the nervous system, should they arise, would be those of cerebro-spinal meningitis. If the production of antibodies were not stopped till late in the disease, tabes and general paralysis of the insane would ensue. Therefore, if treatment were begun in the secondary stage with mercury alone, or with one or two injections of salvarsan, the patient would run greater risks of getting tabes and general paralysis of the insane. If, on the other hand, several injections of salvarsan were given and supplemented with mercury, cerebro-spinal syphilis was more likely to result. The moral was to diagnose a sore at once and to put the patient under treatment which might be expected to cure the disease completely.

Dr. ALDREN TURNER, who confined himself to the treatment of parasyphilitic diseases by intrathecal injections of salvarsanized serum, based his remarks upon 8 cases: 6 cases of tabes dorsalis, 1 of primary (tabetic) optic atrophy, and 1 of general paralysis. No selection was made. The duration of the symptoms prior to this treatment varied from three months to five years. Some of the patients had been treated previously on old-established lines. He considered results of the special treatment from three sides: (1) As to its influence upon the health of the patient, it might be said that in a general way all the cases showed improvement, and some increased in weight. The results did not differ from those obtained by the older methods, or from what might be expected to follow rest in bed, careful diet, massage and the general hygiene of a hospital course. (2) As to its influence upon the special symptoms and signs of the tabetic disorders, in every case the subjective symptoms were relieved, and in some the pains entirely disappeared. In a case of advanced tabetic optic atrophy it seemed at first as if vision might improve, but this did not occur. Contrary to expectations and to the general experience, the case of early general paralysis showed marked improvement in the mental symptoms even after the first injection, and this was maintained during the patient's stay in hospital. In no one of the cases was there any alteration observed in the physical signs of the disease. The reaction of the pupils, the state of the deep reflexes, the sphincters, the deep muscle pain, analgesia, and the impaired joint sense remained unaltered throughout. The improvement noted in the ataxia was attributed correctly to the use of Fraenkel's exercises. (3) As to its influence upon the condition of the cerebro-spinal fluid, at the first examination all the cases showed a well-marked positive Wassermann reaction. After three injections most of the cases showed a barely appreciable lessening of this reaction; in one case a weak positive reaction was intensified; in no case was a positive reaction rendered negative. The sole change was a definite reduction in the lymphocyte count. This was observed in every case. It was, he considered, too soon to form a clear opinion upon the benefits to be derived from this method of treating parasyphilis. The impression which the cases had made upon his own mind was that the results had been no better, or more quickly obtained or more permanent, than those which might result from a thorough course of mercurial treatment. Until a sure and ready method was available for ascertaining how much arsenic was present in the infected serum, the procedure had about it a flavour of speculation. The introduction of arsenic into the cerebro-spinal lymphatic system rendered possible by this method would be undoubtedly a valuable auxiliary method of combating the disease in conjunction with mercurial treatment; and Ravaut's method of direct injection of neo-salvarsan into the subdural space offered a more ready means of utilizing lymphatic routes in conjunction with mercurial inunction, but Dr. Turner's single experience of the method of direct injection was such that he had no desire to repeat it. The only obvious alteration in the state of the cerebro-spinal fluid was a decrease in the lymphocyte count, and it was possible that this might be explained by the dilution of the fluid which a number of injections of 20 c.cm., 30 c.cm. or more of serum would bring about. As the treatment was free from danger, and as complications, such as temporary increase of the lightning pains or the precipitating of a gastric crisis, were of short duration, further observations would no doubt be forthcoming, but he thought it too early to say whether it would replace the old-established methods, or even aid their results.

Dr. GRAINGER STEWART said that at present he considered it impossible for anyone to speak with confidence as to the ultimate effects of the newer forms of treatment in cases of syphilis of the nervous system. It appeared that intraspinal treatment was sometimes dangerous in cases of general paralysis and did little or no good in cases of tabes. His personal experience of intraspinal treatment had extended over a period of nine to twelve months during which he had treated over 40 cases. He had first of all given intravenous injections of salvarsan or neo-salvarsan and when the reaction of the blood serum had become negative he had then given from three to six injections of the serum intraspinally. Most of the cases had been under observation for six months, and it was yet too early to report on the results of treatment; but in cases of meningeal syphilis or vascular syphilis the results had been good, and the recovery noted had exceeded in extent

and rapidity that obtained by mercury and iodide. At the same time he would always advise the combination of the old and the new methods. He had treated 4 cases of general paralysis all in the early stages, but had not noted any marked change in the direction of improvement, but on the other hand he had not met with any bad results. This was perhaps due to the fact that he had given very small doses. He had treated about 20 cases of tabes and had noted that some improved and that others remained unchanged, but in no case had he seen a greater degree of recovery than had been noted in cases treated with mercury and iodide and Fraenkel's exercises. He had not noted any change in physical signs in tabetic cases although this had been more or less common in cases of meningeal syphilis. The practical point was the distinction between parenchymatous and interstitial syphilis; in the latter intraspinal treatment undoubtedly did good, while in the former its value was not yet known, and despite some of the bad results reported he would favour its use provided small repeated doses were given. He thought that the tendency at present was to rely too much on drugs and not to treat each case individually with a view to assisting nature to overcome the infection. There was no doubt that prevention was better than cure, and in this instance it was easier as the modern methods of treatment held out more possibility of curing the disease shortly after its inception.

Dr. CAMPBELL THOMSON agreed with the previous speakers as to the inefficacy of treatment in parenchymatous syphilis and had seen no definitely beneficial results in the cases he had personally had an opportunity of observing. Referring to Dr. Mott's remarks as to the possibility of the degeneration in some cases of tabes being due to a ferment arising from the organism and not from the organism itself, he expressed the opinion that in such instances the result of treatment ought to be more hopeful, since the source of infection, being outside the nervous system, would be more accessible to the action of salvarsan and other drugs.

Dr. W. FORD ROBERTSON said a remarkable feature of the discussion had been the unanimity with which the speakers had accepted the view that infection of the brain by the *Spirochaeta pallida* was a complete explanation of the causation of general paralysis. He held that in many respects the evidence was defective. The disease had never been produced experimentally by infection of lower animals with the *Spirochaeta pallida*. The failure of antisyphilitic treatment suggested that factors additional to the action of this protozoon were in operation. There was no proof that all of the spirochaetes described as occurring in the brain were of the kind alleged; many of them might be saprophytic forms that had invaded shortly before death, as bacteria very commonly did. It was strange that it had not been thought necessary to study control brains in the same way. He believed that the frequency of the occurrence of the *Spirochaeta pallida* in the brain of the general paralytic had been exaggerated, although there remained a large number of positive observations that were perfectly satisfactory. He had always held that syphilis was an important factor in the pathogenesis of general paralysis, but he also maintained that there was a bacterial factor of equal importance. There was a form of chronic infection, located chiefly in the mucosa of the alimentary tract, by bacilli of the diphtheroid group, which was extremely common. It occurred without complication in a certain type of neurasthenia. It had been demonstrated that these patients were absorbing diphtheroid bacilli from an infective focus, and that these organisms, though for the most part destroyed in the blood, were excreted in large numbers by the kidneys, and could be found, in a disintegrating or living state, in the centrifuge deposit from the urine. The pathogenic action of these bacilli was chiefly a neurotoxic one. A similar diphtheroid infection, with excretion of the organisms in the urine, occurred in cases of dementia praecox, and there was already weighty evidence that it was an important element in the causation of this form of insanity; an hereditary predisposition to the fixation of the toxins by the cortical nerve cells was apparently another element. A similar form of chronic infection had been found in several cases of exophthalmic goitre and in acute and subacute forms of toxic insanity. In cases of the kind named, autogenous diphtheroid vaccines had been found to be curative. In general paralysis a similar chronic infection by diphtheroid bacilli occurred with constancy; the living or disintegrating bacilli could be demonstrated in the urine. But the general paralytic was also excreting these bacilli from the blood stream into his cerebral lymphatic spaces. This was no hypothesis, but a fact that had frequently been demonstrated in various ways. It was probable that the cerebral vessels, in consequence of a syphilitic inflammatory process that had affected them, had been rendered permeable by bacteria circulating in the blood. When other bacteria—such as coliform bacilli and pneumococci—reached the blood stream, as they were apt to do from infective foci in the alimentary and respiratory tracts in these cases, they also tended to pass through the walls of these damaged cerebral vessels. Congestive seizures were commonly caused in this way. He maintained that the diphtheroid intoxication of the brain was an essential part of the pathogenesis of general paralysis. In tabes dorsalis there was always a severe diphtheroid infection of the urethra, until secondary infections displaced it, and consequent intoxication and infection of the posterior root ganglia and spinal cord by way of the lymphatic channels in the pelvic nerves, which, in conjunction with a spinal syphilitic lesion, were, he maintained, a sufficient explanation of the degeneration of the posterior columns in this malady. He thought it strange that Dr. Mott, while treating this view as unworthy of notice, should accept the absorption of syphilitic toxins by the same channels, from a hypothetical syphilitic area somewhere in the neighbourhood, as a satisfactory explanation of tabes dorsalis. In concluding, Dr. Robertson maintained that hope of reaching successful methods of treatment of general paralysis and tabes lay in the recognition of the fact that there was not only a syphilitic element to combat, but also a bacterial one, and in adopting suitable measures against both.

Dr. JOHN THOMSON (Belfast) said that, guided by the view that spirochaetes were the cause of tabes, he had in one case administered urotropine and quinine sulphate. The result had been fairly good, as the patient, who had been blind, became able to see a little. It had been necessary to stop the treatment owing to irritability of the bladder produced by the urotropine.

Dr. A. W. FALCONER said that for the last few weeks he had been giving direct intrathecal injections by means of the technique described by Schubert of Altona. This method had the merit of extreme simplicity, the only apparatus required being an ordinary lumbar puncture needle with a rubber tube and funnel and a 3 c.cm. glass capsule. So far he had not used a dose larger than 0.0015 gram neo-salvarsan. He had carried out repeated intrathecal neo-salvarsan injections in twelve of Professor Mackintosh's cases, but as the results had not differed from those described by Dr. Turner, it was unnecessary to describe them in detail.

AN interesting article upon the prophylaxis of malaria, with special reference to the military service, is published by Captain Charles F. Craig, of the Medical Corps of the United States Army, in the Surgeon-General's *Bulletin* No. 6. Though preventive measures must be largely the same whatever class of people is being dealt with, yet there are some special points applicable to bodies of soldiers, and the author points out that the aim of the medical officer is to prevent the transmission of the disease in the field, in temporary camps, and in permanent posts. Different methods must be adopted in dealing with the varying conditions. After all, there is nothing very difficult about the matter, and any one with ordinary common sense should be able to carry out the measures required if only he commands support and the necessary funds. Captain Craig concludes his paper in the following words: "In conclusion, it may be stated that the malarial fevers are entirely preventable, and their presence to any extent in an army post is a reflection either upon the intelligence of the sanitary officer in control, or upon that of other authorities who, either by indifference to the recommendations of the sanitary officer or unwillingness to supply the necessary funds, have rendered the efforts at prophylaxis futile."

OBSERVATIONS ON THE SPREAD OF ASIATIC SCHISTOSOMIASIS.*

[WITH SPECIAL PLATE.]

BY

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AND

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With a note on "Katayama nosophora" by

G. C. ROBSON, B.A.

FROM 1852, when Bilharz announced the discovery of *Distomum haematobium*, down to 1904 no progress was made in the elucidation of the etiology of schistosomiasis.

In 1904 the London School of Tropical Medicine published as Cragg's Prize Essay an account by Catto of a new form of schistosomiasis in a Chinaman. Catto's disease was almost immediately shown to occur in the cat and dog. It then became possible for the first time to study in small susceptible animals the mode of infection with a human form of schistosomiasis.

Native tradition and the deductions of local practitioners had given rise in South Africa to the view that infection was acquired when bathing.

Looss, failing to find an intermediate host, and noting that the newly hatched embryo is killed in 1 in 1,000 dilution of hydrochloric acid, adopted the hypothesis that the infection took place through the skin, adding that the infective agent is the miracidium and that the metamorphosis into a cercarial form probably takes place in the liver.

In 1911 Matsunra and Yamamoto showed that in animals experimentally infected with *Schistosoma japonicum* by exposure in water from infected rice fields short ciliated larvae occurred in the skin.

In 1913 J. A. Kay asserted that miracidia kept in water for days lost their ciliated covering, but underwent further development to form cell masses, which he believed resulted in the infective stage.

Commenting upon Miyawa's statement that the infecting form is markedly different from the miracidium, Looss maintains that if it be correct the *S. japonicum* must differ in its development from *S. haematobium*.

Numerous workers have, however, failed to obtain infection with either species experimentally by application of miracidia to the skin. It may also be observed that the effect of weak acid upon a ciliated body like the miracidium need not apply to a cercaria with cuticular covering.

In 1913 Katsurada, in a summary of research on Japanese schistosomiasis, abandoned his adhesion to the Looss hypothesis in favour of a relatively simple metamorphosis of the miracidium prior to skin infection. This paper, published in December, 1913, has a note to the effect that he is informed in a private letter from a colleague that Mr. Miyairi of Kiushu had just found a reproductive stage of schistosoma in a *Lymnacus* species.

Work of Special Commission.

In November, 1913, the Colonial Office made a special grant from the Tropical Diseases Research Fund to the London School of Tropical Medicine to enable the Wandsworth Scholar to proceed to the Far East and elsewhere to study the mode of spread of bilharziosis and to obtain if possible definite experimental evidence on this subject. In view of the importance of the inquiry to the navy in the Far East the Admiralty seconded Surgeon Atkinson for the duration of the investigations.

The Commission left England in February, 1914, and was engaged upon the work until the outbreak of war in August, when the investigation had to be abruptly concluded.

Our head quarters were established at Shanghai, partly on account of the ready access from this large shipping centre to both Chinese and Japanese endemic areas, and partly because the most generous facilities were granted there by the medical officer of health and the municipal authorities.

In view of the negative results of previous attempts made in London by the Wandsworth Scholar and elsewhere by others, the Looss hypothesis of direct infection was set aside in favour of one to the effect that the schistosome conformed in essentials to the life cycle of other digenetic trematodes.

The "blunderbuss" method, already used for *Filaria loa* and other investigations, was again relied on. This is, briefly, to submit all likely hosts to an overwhelming infection. The proper host will show a marked, even fatal, susceptibility, while other even closely allied hosts will remain uninfected. For this purpose it was necessary, first, to obtain an animal with such a heavy infection that the eggs could be separated from the faeces with little contamination. None of the cases of schistosomiasis in man approximated this stipulation. After a search lasting nearly three months, and involving a river journey of over a thousand miles, we secured a dog ideal for the work. The motions consisted almost entirely of mucus and blood, crowded with eggs. Dilution with water, a shake, then rapid decantation, left abundant eggs which hatched upon the second addition of clean water.

We observed that in highly acid faeces the eggs were almost moribund, with the cilia on the surface of their embryos characteristically pointing cephalad. Under the most favourable conditions, and in stiff stools, the embryos showed movement when hatched by the addition of water up to the tenth day.

Our second necessity was to localize a small village with a fairly high percentage of infection amongst the inhabitants, and then study the local molluscan fauna and submit the various species to the "blunderbuss" test. Further, by dissection of the various molluscs from such a defined area, naturally infected specimens might be found, and the nature of the infection diagnosed:

(*a*) By certain peculiarities that the cercaria of the schistosome should reveal; and

(*b*) By a second "blunderbuss" test to infect a susceptible mammalian host with material from the suspected intermediary host.

Although the disease is widely sporadic, we failed to localize a village that would meet our requirements in the lower Yangtse Valley. At Soochow and Kashing we saw a number of cases of schistosomiasis in the various dispensaries, but these occurred in peasants who came in from outlying districts and villages to which we could obtain no guidance or which in other ways proved inaccessible. Nevertheless, throughout the whole region we collected, dissected, and compared the molluscan fauna. Of the several developmental forms and cercaria found, none presented the one morphological character—"absence of pharynx"—which would have established in our mind a strong presumption in favour of a hypothetical schistosome larva. We noted, too, that the molluscan species collected were alike over infected and non-infected areas—for example, Kashing, Shaohsing, and Henli.

The up-river hospital records indicated that cases were few, and none attributable to the present season. Examination of numerous dogs gave like results, save in the exception which, as noted above, proved our sole efficient source of eggs. The local explanation of the paucity of cases was that the summer was one of the hottest and driest on record.

All species collected were, however, submitted to a biological test—namely, each was placed in a cylindrical jar containing water swarming with miracidia, and watched with a hand lens to see if the mollusc had a definite attraction for the miracidium, care being taken in large forms to discount results really due to the violent inhalation of water.

While the experiments with the Chinese molluses were proceeding we continued to explore new areas and decided to include Katayama, where Fujinami's early experimental infections of animals by brief immersion in paddy field water had been carried out, and indicated an intense local infection. From this visit the Wandsworth Scholar brought back to Shanghai large numbers of various species, including *Vivipara* and the form described below by Mr. Robson as *Katayama nosophora* n.g., n.sp. The little village of Katayama is easily reached by ricksha run of about three-quarters of an hour from Fukuyama station on the main line from Shimonoseki to Tokio; it is the centre of a highly infected area, and gives the name "Katayama disease" to Asiatic schistosomiasis. Professor

* Being a report published in accordance with the requirements of the Wandsworth Trust.

Fujinami not only kindly instructed our interpreter in Kyoto as to the best means of reaching Katayama, but also advised where the most suitable assistants for the collecting might be got. He also informed us of Miyairi's views, already referred to above.

The molluscs from Katayama were submitted to the biological test in Shanghai, and a small brown form with eight spirals and an operculum, named *K. nosophora* (Fig. 7), showed an extraordinarily marked attraction for the miracidia, as contrasted with the other species. The small dark head and foot speedily became festooned with little white specks, and it was obvious from the agitated manner in which the snail repeatedly attempted to brush them off that their presence was a cause of considerable irritation. As further numbers attacked, the snail hastily left the water or suddenly closed the operculum and dropped to the bottom.

In many specimens the liver was found ramified with long intertwining delicate tubes bluntly rounded at the extremities and containing cercariae with bifid tails. Similar tubes with like contents had already been found in a species of mollusc near Kashing, but the tubes in the Katayama mollusc were longer and more slender, while the cercariae were smaller, showed a gut very short and slightly developed, and there was a complete absence of pharynx (compare Fig. 1, *a* and *b*, with Fig. 6, *a* and *b*).

The adult *Schistosoma japonicum* has a bifurcated gut which reunites much posterior to the ventral sucker, but the young larva, even when it has entered the final host, shows two simple lateral gut branches which unite only after some days' growth. Thus a simple short bifurcated gut was to be expected in the cercaria.

In consequence of the satisfactory result of these experiments a second visit was paid to Katayama, and in a short space of time a large supply of this mollusc was collected by the ricksha boys; owing to transport delays a large number died before reaching Shanghai, but sufficient survived to enable the second series of experiments to be carried out. The livers of a number of these molluscs were teased in fresh water, and the miracidia allowed to become free and to swim about. Laboratory-bred mice, obtained from the Shanghai Municipal Laboratory, were then immersed, none of the fluid being allowed near the mouth. In view of the outbreak of war, a start was then made for home.

The first part of the voyage through the Formosan Channel was very rough, and three of four mice died within the first few days at sea. Just before reaching Hong Kong the animal of our earliest experiment, a month old, also died. It became putrescent before it could be examined, but a single male schistosome was found. This led one to sacrifice at Aden the few molluscs that were still alive. The last remaining mouse was then submitted to infection. This animal was safely transported to London and killed in the laboratory of the London School of Tropical Medicine a month later. Live male and female schistosomes *in copula* were found in the portal vessels. Some were removed, and a permanent preparation was made of the gut with the mesentery undamaged. This, reproduced in Fig. 10, shows the paired worms *in situ* in the mesenteric veins.

The marked attraction of the mollusc for the miracidium, the peculiar morphological characters of the cercaria and the successful infection of a laboratory-bred mouse from cercaria obtained from Katayama molluscs after several weeks' captivity at sea leave no room for doubt that the schistosome has a life-cycle similar to that of other digenetic trematodes.

Developmental Stages.

The thin-walled tubes found in the liver are undoubtedly sporocysts. These tubes are cylindrical, and contain the cercariae usually in single file (Fig. 1, *a*). The ends are bluntly rounded; sometimes an end presents a knob-like constriction. There are here also very fine transverse rugae which appear to bear spines, but these do not extend to any distance along the sporocysts (Fig. 4). The sporocysts in the liver of a single mollusc often appear to be about the same stage of development. This fact, taken with the minute spines, would indicate that these sporocysts are not those originally developed from the infecting miracidia, but are probably daughter sporocysts. We were not able in the time at our disposal to settle this point. The knob-like extremities (Fig. 5) occasionally seen at the tips of the sporocysts might lead one at first sight to suspect that these were really rediae. The muscular sucker, the walled gut, and the "limbs" which should characterize a redia are, however, absent.

This coincides also with our findings in the case of the bifid-tailed cercaria (Fig. 6, *b*) found at Kashing, as well as those of Looss in *Cercaria vivax* and of other observers.

The cercariae (Figs. 2 and 3) measure 0.25 mm. in length with a greatest width of 0.04 mm. The body is 0.1 mm. long by 0.04 mm. broad. The tail is 0.1 mm. by 0.01 mm. The prolongations of the tail both measure 0.05 mm. by 0.006 mm.

The whole cercaria is covered with minute spines. There are no cilia. The oral sucker is enormously developed, occupying almost the anterior third of the body.

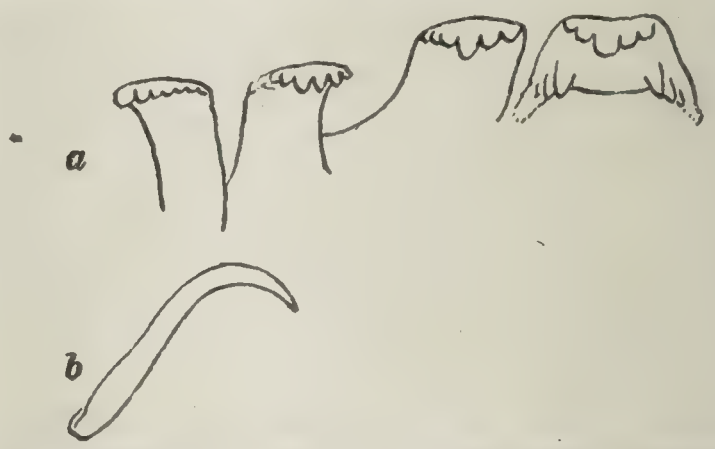


Fig. 11.—*Katayama nosophora*. (*a*) A single half row; (*b*) second marginal as seen when folded over medians and admedians. × 1/12 in. oil imm.

It is urn-shaped, and on its lip there is a series of small tubercles. The dimensions are 0.04 by 0.02 mm. From the oral sucker a delicate tube, representing the oesophagus, passes backwards for 0.01 mm. There is no indication of pharynx; the oesophagus bifurcates into two wide, thin-walled lateral branches, 0.02 mm. in length, which end blindly at the level of the anterior margin of the ventral sucker.

The ventral sucker is small, but very muscular. The lumen is reduced and triradiate. The sucker has a uniform diameter of 0.01 mm. and is slightly protuberant just behind the greatest width of the body, while here, too, the body attains a dorso-ventral thickness equal to the greatest width. On either side of the ventral sucker extending backwards towards the root of the tail and forwards between the two lateral gut branches are oval gland masses, five or more in number, on either side. From these there pass forward, slightly dorsally and laterally, paired ducts which discharge into the oral sucker near the mouth.

In the middle line, immediately in front of the ventral sucker, a clear, pear-shaped vesicle is sometimes visible.

Conclusion.

It would appear that the above results confirm Miyairi's main conclusion as to the transmission of *Schistosoma japonicum*. Unfortunately, his paper is inaccessible, in Japanese and in a journal, *Nissin Igaku*, which leading Japanese booksellers have been unable to procure.

A comparison of the detailed conclusions is for the present therefore impossible. The only information at present available to workers is in an annotation by Kumagawa in the *Tropical Diseases Bulletin* for March 30th, 1914. We find from this that, according to Miyairi and Suzuki, "the miracidium, after penetrating the cuticle of the snail's body, proceeds to the gills and the walls of the digestive canals. After twelve days the first rediae appear and gradually concentrate to the hepatic ducts, elongating, and a number of the second rediae are seen. The authors put mice into the vessel in which the full-grown snails were fed for three hours every day for four days. After three weeks they found a great many *Schistosoma japonicum* in the livers of the mice." The snail, which the authors conclude is the intermediate host, has a dark-coloured shell with seven spirals. This is common in the waterways or ditches.

It will be noted that there are said to be redia stages in the course of the life-cycle, and that the snail shell has seven spirals. No diagnosis of the snail is given, or of the infective agent.

In conclusion, we have to acknowledge the kind assistance given to the expedition by the chairman and secretary of the Shanghai Municipal Council, the cordial help and advice of the principal medical officer of health for Shanghai, and of Drs. Moore and Noel Davis in the Health Laboratory. In our search for hosts we were greatly helped by Drs. Aird, Skinner, Fujinami, Goddard, Jackson, and many others, to whom our grateful thanks are due.

NOTE ON "KATAYAMA NOSOPHORA."

By G. C. ROBSON, B.A.

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THE mollusc used in the experimental transmission of *Schistosoma japonicum* and now described was reported by Dr. Leiper to occur in damp moss and grass on the sides of the irrigation ditches and also on growing plants in the rice fields in very great quantities. It was therefore a matter of surprise to the author, on making a search through the literature of Japanese land and fresh-water mollusca, that no description of the form in question was to be discovered. A very careful study of all the available literature of Chinese land and fresh-water forms (together with those of adjacent countries) was made also, and the author had the advantage of Mr. E. A. Smith's assistance. The result was to confirm the preliminary experience, and in consequence it became necessary to regard it as a new form. That a fresh-water mollusc occurring in such great profusion should to all intents and purposes be undescribed is indeed very extraordinary. Excluding the possibility of its having been described in some inaccessible Japanese publication, we have to bear in mind that it may have been recorded, through ignorance of its anatomical characters, on conchological grounds as referable to some other family. A second and possibly more likely solution may be sought in a suggestion that it may have only recently attained this plentiful development. Mr. E. A. Smith reminds me that *Paludestrina jenkinsi* when first found in England was obtained in large quantities though no previous record had been made of it in the already copious records of the British occurrences.

With regard to the systematic position, it has to be admitted that until more anatomical knowledge is forthcoming the generic position here assigned to this interesting form must be regarded as temporary, as the material was not preserved suitably for dissection.

The radula has been very kindly compared by the Rev. H. M. Gwatkin with those of various hydrobiid genera in his collection. He is of opinion that it is nearest akin to *Pyrgulopsis* and (less nearly) to *Pechydrobis*. Other genera (for example, *Littorinida*) offer a basis for comparison in single teeth, but as far as the material available for study and comparison goes, it appears to be distinct from all the known hydrobiid genera.

KATAYAMA, GEN. NOV.

Radula: Central tooth with three basal denticles and a cutting surface composed of a large median and two lateral cusps a side. The admedian tooth large, with a prominent cusp and five smaller ones; the succeeding teeth having eight and seven cusps respectively (Fig. 11, *a*). The outer marginal has a strongly arcuate extremity when seen in profile (Fig. 11, *b*).

Shell, with eight whorls (Fig. 7) (the last two usually eroded), increasing gradually in size, and exhibiting a moderately convex profile and a fairly well marked suture to correspond. The general shape is acuminate. The peristome is continuous, of a rich chocolate-brown colour, thickened and reflected upon the ventral and columellar lips. In the region of the peristome the body-whorl is abruptly extended and the transverse growth lines tend to assume the character of ribs. The colour is light olivaceous brown, the body-whorl being occasionally straw-coloured and the two apical whorls very dark purplish-black owing to erosion. The texture is horny and fairly solid. Irregular transverse growth lines cross the finely and irregularly granulated surface which in place occasionally exhibits, under a high power, a faint spiral sculpture.

Dimensions of Shell.—Maximum height 8.5 mm.; maximum width 3.1 mm.; maximum width of the aperture 2.75 mm.

Operculum (Fig. 9) spirally coiled, with the nucleus of the spiral markedly eccentric being placed towards one extremity in a lateral position.

Katayama nosophora, n. sp.; with the characters of the genus.

Locality of types: In irrigation ditches and rice fields at Katayama.

The types are deposited in the British Museum (Zoological Department).

ON THE ALLEGED RESPONSIBILITY OF THE MEDICAL PROFESSION FOR THE REINTRODUCTION OF THE RUM RATION INTO THE BRITISH ARMY.

By SIR VICTOR HORSLEY, F.R.S., F.R.C.S.,
CAPTAIN R.A.M.C.(T.F.).

IN former years the soldier was the victim of various forms of extortion and deception. His life, already very hard, was made harder by his being cheated in his pay, his clothing, and his food.

His pay is still subject to numerous deductions called "stoppages," the infliction of which practically render nugatory many of the promises made to him as a recruit, and, though his clothing is now, on the whole, good and his food greatly improved, he is again being cheated in his dietary by the recent reintroduction into the King's Regulations of the old pernicious rum ration, which is given him as a deceptive substitute for real food, reduces his efficiency, and injures his health.

This issue of rum on a regular and gigantic scale is naturally at the present moment a most serious evil to the country in its struggle against Imperial piracy, but it is also a matter of the highest importance to the members of the medical profession because an attempt is being made to place the responsibility for this national injury upon their shoulders. Therefore, for the protection of our soldiers as well as the defence of the interests of the empire in its strenuous life and death struggle, this matter must be dealt with at once, as one of vital concern and for which also some degree of technical information is necessary.

First, we must begin with tradition, for although the rum ration is now admittedly given to the troops as an intoxicant,* and for this purpose is supplied, not by the Army Medical Service, but by the quartermaster, it is still absurdly supposed (according to the Army Regulations, Allowances 34) to have singular powers of making the soldier dry and warm when he has been "drenched and chilled." How this dangerous nonsense became established as a military tradition, and is still for obvious reasons cherished by some persons, we must now consider in the light of history.

The spirit drinking habit was first contracted by the British army in Flanders during Marlborough's campaign at the beginning of the eighteenth century, and no doubt it gained some hold, because the fatal notion that spirits have some sort of medicinal value had come down through the Commonwealth wars from the Tudor period, when spirits were prepared and sold by apothecaries alone, under the curiously mendacious title of *aqua vitae*.

The spirit distilling and drinking widely introduced into this country in the first twenty-five years of the eighteenth century led to the awful development of the gin trade, which Hogarth vividly illustrated and against which the College of Physicians issued to the Government their celebrated appeal which led to restrictive legislation against this new popular disaster.

It is more than a national misfortune that this miserable story of 200 years ago is being repeated, in spite of the expressed opinions of Lord Kitchener, and that our army in Flanders is again being taught (by the issue of rum from home this time) to become victims of the spirit drinking habit, thus undoing the great work of Lord Wolseley and of Lord Roberts during the past forty years for army reform and, above all, army efficiency. At this point it must also be remembered, for the sake of our honour as a profession, that the Army Medical Service, though an absolutely essential part of His Majesty's forces, has not only never been accorded a proper place in the administration of military affairs, but even now has no representative on the Army Council, consequently the medical profession cannot be held to be primarily responsible to the nation for errors in the vital question of army hygiene and the medical and surgical care of the soldier.

In fact, the army is still, even in 1915, constitutionally, and in spite of the efforts of the British Medical Association, in a similar state to that of the days of Queen Anne,

* As Parkes said of the issue of rum, "It was one of those incredible mistakes only made worse by the explanation that it was done to please the men."

when the medical officers of His Majesty's forces had no real position and when the interests and health of the soldier were treated by tradition and beliefs instead of science.

It was during the eighteenth century, therefore, that the spirit ration became part and parcel of the soldier's diet, and hideous punishments—that is, floggings and other tortures—were inflicted in order that discipline (so-called) should be preserved among the unfortunate men whose *moral* was ruined by the rum given to them by their superiors.*

The first scientific evidence that physical injury was caused to troops by the rum ration is contained, as far as I know, in the very interesting memoir by Sir James McGrigor (afterwards Principal Medical Officer of the Army Medical Service) on the health of the Expeditionary Force which the British Government brought from India to Egypt in 1801.[1] Prominent among his facts is the record that in an extremely trying desert march and subsequent movement down the Nile, the men "had no spirits delivered out to them, and not only did they not suffer from this, but it contributed to the uncommon degree of health which they at this time enjoyed."

Perhaps the most striking practical demonstration[2] on a large scale of the harm immediately done to armies by a spirit ration was the experience of McClellan's great army on the banks of the Potomac river in 1862, when, after several weeks of severe hardships in trenches, battles, and exposure to wet, it was determined to issue a spirit ration under the belief that it would, *inter alia*, help to stop bowel complaints, which were very common. By most of the army it was accepted as a boon, but after one month the ration was withdrawn because drunkenness, dysentery, and diarrhoea had increased.

Subsequently the medical officers of the 4th Corps, being ordered to report on the sickness in the camps, unanimously stated that "the use of the whisky (the form of spirit used) ration was injurious, and the Principal Medical Officer of General Smith's Division reported not only that 'the whisky had increased bowel affections,' but also 'that it was nothing but an unmitigated source of evil.'"

Very many military medical records of precisely the same kind can be cited, but I will only quote one other authority. Inspector General William Fergusson has graphically described his experiences[3] of the havoc, misery, and crime caused by the rum ration in the first half of the nineteenth century among our soldiers as follows. After saying that no one would propose to inoculate the troops with an incurable and destructive disease, he continues:

> Yet by making the rum ration an article of daily diet we have done worse than this, and taken the most effectual means of destroying both the mind and the body, the moral sense and physical powers of the individual, the general discipline of the army, and the national character of the country.

All the evils of which these early writers spoke have been thoroughly exposed and denounced through the last hundred years by all the professors of hygiene in the military college and by all army leaders and generals sincerely interested in the welfare of the army.

The disasters of the Crimea campaign, in which rum was regularly issued, and the effect of many years of condemnation and protests by military hygienists and authorities, caused a cessation of the rum evil almost to its extinction until about thirty years ago, when the rum ration was specifically declared by the Regulations to be reserved for the exceptional occasions of flying columns.

Even in 1897 the issue of rum made under the Army Regulations was still restricted to flying columns, and each ration was obliged to be paid for—namely, 1d. by the man receiving it. (This payment for the rum ration has this year (1914) been abolished, and the rum is now freely distributed to all.)

During the next decade the use of the rum ration was pushed forward by the authorities, and in 1910 the Regulation read thus:

> On very exceptional occasions, such as during wet or cold weather at manœuvres, etc.

This, of course, opened the door much more widely to a general issue of rum, and the traditional and absurd excuse of exposure to wet or cold as justifying the issue was for the first time clearly stated in the Regulations. And now, in the most recent edition of the Regulations (September 28th, 1914), the rum ration has been specifically restored to the free ration dietary of the British soldier in opposition to both scientific and military experience.

In the first place, the expression "*manœuvres*" has been expanded into "*manœuvres or training.*" Consequently the rum can be given out to any one, whether recruits or trained men, at any time, for the word "training" is unqualified, except by the initial words of the Regulation, on which I will comment directly. In the second place, the proof that the pernicious rum ration is now completely restored to the Regulations and dietary of the soldier, to his injury and ruin, is shown by the following facts. Until the present year the following paragraph always completed the rum issue Regulation:

> As spirits do not form a portion of the ordinary ration, special notice of the demand must be given.

This very important paragraph of the Regulations has now been struck out, and the rum ration inserted as such into the regular dietary of the British soldier on active service. The nation is therefore by the new Regulations thrust back again to the misery, inefficiency, and demoralization of sixty years ago.

In fulfilment of this new development of the liquor evil in our army just when other nations, and especially our allies, are endeavouring to suppress it, the authorities have contracted for the supply of over 500,000 gallons of rum, of which more than 250,000 gallons had already been sent to France by the end of November, 1914.

The following physiological effects have been observed by military and naval officers to follow from the issue of the rum ration:

> 1. Decadence of *moral*. Causation of grousing, friction, and disorder.
> 2. Drunkenness. Punishments. Degradations in rank.
> 3. Decadence of observation and judgement. Causation of errors and accidents.
> 4. Loss of endurance and diminution of physical vigour. Causation of fatigue, falling out, and slackness.
> 5. Loss of resistance to cold. Causation of chilliness, misery, and frostbite.
> 6. Loss of resistance to disease (particularly those occurring under conditions of wet and cold), namely, pneumonia, dysentery, typhoid fever.
> 7. Loss of efficiency in shooting. (Half the rum ration causes a loss of 40 to 50 per cent. in rifle shooting. The navy rum ration causes a loss of 30 per cent. in gunnery shooting.)

That all these evils, and increase of the difficulties our men have already to contend against on active service, are the direct and invariable result of issuing the rum ration is of course well known, and it is incomprehensible that Lord Kitchener's repeatedly expressed hatred of the alcoholic curse of armies should have been overborne, yet such is the case, and the nation and the army must suffer in proportion.

I must now deal with the rum ration Regulation so far as it directly concerns the honour of the medical profession, which is also gravely involved. The Regulation in its most recent shape is as follows (No. 34, 1914):

> On very exceptional occasions, as when the troops have been drenched or chilled through exposure on manœuvres or training, a free ration of half a gill ($\frac{1}{4}$ gallon) of rum [2½ oz.] may if available be issued under the authority of the G.O.C. when certified by the Senior Medical Officer to be absolutely necessary for safeguarding the health of the troops.

This Regulation embodies a number of specific statements and suggestions which are in every instance incorrect, though frequently asserted in the House of Commons and regularly furnished officially to various inquirers and seekers after the truth.

Thus, to begin with the first words: the rum ration in France is not issued on "very exceptional occasions" but every day, and in one case which has come to light it was

* Any one interested in the study of our national character and the extraordinary merits and qualities of the British soldier in spite of the incredibly horrible treatment he has constantly received, should read the records of military surgery of the eighteenth century, especially the memoirs of Surgeon Donald Monro: *Observations on the Means of Preserving the Health of Soldiers and of Conducting Military Hospitals.* 2 vols. 1780.

issued twice a day. The practice differs according to the views of the officer commanding a unit, but from being sporadic, as ordered in the Regulations, it has now become epidemic and constant up to the present date. The ration being now regularized the troops are therefore receiving a full quantity of spirits constantly and not "very exceptionally."

The next point is the phrase in which the Regulation repeats the old, worn-out, mischievous error that people who are wet and "drenched" are helped to resist any ill effects thereof by a dose of alcohol, whereas in fact the condition is reversed, because the alcohol increases radiation from the wet skin which is already cooling by the evaporation of the moisture. But the Regulation even more seriously misstates the action of alcohol by suggesting it should be given to troops chilled by exposure to wet and cold as a curative procedure. Ignorance of physiology is often brought forward by non-medical persons as an excuse for their taking alcohol, and perhaps the absence of the Army Medical Department from the Army Council must be held partly responsible for this monstrous and fatal mistake.

All physiological researches have shown that alcohol aggravates the effect of chilling in two ways—first, by increasing the loss of heat by radiation from the surface, as already referred to; and secondly, by checking the oxidation in the tissues, so lowering the temperature of the body, diminishing its resistance to cold, and weakening the circulation in the extremities. The folly of taking alcohol in cold weather has been proved up to the hilt by all dwellers, workers, and explorers in cold climates for more than a hundred years.

One of the greatest causes of invaliding in the present campaign is "frostbite"—not the necrotic form so much as a severe vascular paralysis, with secondary oedema and neuritis. No better way of encouraging such frostbite could have been imagined than the issue of the rum ration, since alcohol produces the circulatory changes requisite for the first stage of this incapacitating and painful condition. But the unfortunate soldier wet up to his waist and in freezing water is nevertheless told by H.M. Regulations that rum will "safeguard" his health and comfort him (especially if the "senior medical officer" certifies that this is so).

Probably this liquor trade fiction that spirits are beneficial instead of harmful to people who are wet and cold is more popular than any other excuse for intoxication, but that is no reason why it should be enshrined in the King's Regulations.

Take the next point in the Regulations, the quantity of raw spirit to be given to each man—namely, 2½ oz. Half that quantity, as already stated, ruins the soldier's rifle shooting, and the ordinary ration is enough to make a soldier heady and excitable, incapable of his normal physical endurance or toleration of fatigue and intolerant of discipline.

We now come to the last point in the Regulation, and in one sense the most important because involving (without their consent) the medical profession.

The final statement in the Regulation amounts to this, that the General Officer Commanding the unit may order rum to be issued "when" (but, be it noted, not "*only* when") the "senior medical officer certifies that it is absolutely necessary for safeguarding the health of the troops."

If "when" had been "only when," no rum ration could ever have been issued, for, of course, no medical officer, however old-fashioned, could ever perjure himself by signing any certificate of the kind laid down in the Regulations—namely, that a tot of rum was "absolutely necessary to safeguard the health" of anybody, and, above all, that there would be no health in anybody unless they drank the tot of rum provided by the Government "on very exceptional occasions."

It is interesting to see how this really wickedly ridiculous medical "certificate" has gradually been evolved by our non-medical military authorities.

Years ago, when the rum ration was given really "exceptionally," and only to flying columns, the Regulation included the words "on the recommendation of the medical officer." Around this has grown up a whole cluster of medical myths invented by those whose pleasure in incipient intoxication entirely overcomes any national or patriotic feelings they may once have possessed. These myths have no doubt derived their greatest support from the fact that the War Office informs all applicants and inquirers on the subject that rum is only issued "on the recommendation of the medical officer"—a statement which immediately satisfies the unwary, though the issue of rum has nothing to do with the medical care of the soldier, but really is a matter between the commanding officer and the quartermaster's supply department.

The person who writes to the War Office, and gets this answer, of course tells his friends that the rum is only given to a soldier on the advice of the doctor. These fables reached their highest development about two months ago, when the London correspondent of a celebrated provincial paper assured its readers that no issue of rum was made to the soldier except on the written prescription of his medical officer. What a vivid imagination this correspondent must have possessed to figure to himself the overworked officers of the R.A.M.C. in France at the present time writing out 250,000 prescriptions for rum every day!

But let us return to the impossible form of certificate which the "senior medical officer" is nevertheless supposed by the Regulations to give, namely, that rum is an "absolutely essential" thing to maintain and protect the health of the soldier.

It follows from this Regulation that since the interests of the country demand that every soldier's health should always be at its best, every soldier should have the rum thus absolutely ordered by the doctor, but that is not so. In spite of the so-called medical certificate Mr. Tennant, on behalf of the War Office, stated in the House of Commons on November 16th, 1914, that it was entirely untrue to say that every soldier had rum. On the contrary it was only given to those who asked for it!

By which statement the whole of the War Office case, that rum is issued as a medical provision and on the recommendation of the doctors, was swept away at one blow. By the same statement also the King's Regulation No. 34 was made into as complete nonsense officially as it is of course scientifically. Is it too much to hope that the authorities will now cease this unjustifiable use of the good name of the medical profession?

In the interests of the soldiers there only remains the further point, also extracted from Mr. Tennant on the same occasion, namely, that as rum is only a deception and neither warms nor feeds, and only injures the soldier, what should he receive instead, especially if he has been sufficiently patriotic to follow Lord Roberts's advice and become a teetotaler? Mr. Leif Jones asked this question, and was answered by Mr. Tennant as follows: "If my honourable friend had heard my answer, he would have realized that an alternative is given." But on referring to the said answer by Mr. Tennant (Hansard, col. 202–3, 16.11.14), there is no allusion whatever to any such alternative to the rum ration being given, and, as a matter of fact, none is either given nor is it provided for in the King's Regulations (34 or 35).

Undoubtedly from a physiological standpoint the question of an alternative to the rum ration is one which should be answered by the medical profession, and can be at once. The interests of the soldier require that he should be supported as far as possible against chilling and fatigue, mental and physical. Much has been said of the admirable way our army has been furnished with ordinary food in this campaign all through, though in my opinion a supply of adequate food was but the very least that a wealthy empire should provide for men rendering it such splendid services. But on this matter of food we are cheating these men in the old Georgian way, with the same old deception of a rum ration. Physiology has proved that a man who is doing hard physical and nerve-trying work needs extra warmth and food; above all, hot liquid or semi-liquid nourishment easily assimilated which, by being function-restoring, is genuinely stimulating. In the present trench campaign there is no difficulty in supplying hot milk flavoured with coffee, chocolate, etc., or hot thick soups, in the night or early morning. For troops on the march probably one more "cooker" or field kitchen per unit must be supplied, but the provision of hot liquid food—the real genuine alternative to the cold deception rum—is perfectly simple.

Yet this question of supplying a real alternative for the

rum sham is indeed no small matter, seeing that warm nourishment enables a man to shoot better and encourages him to go forward, whereas rum makes him shoot badly and inclines him to sit still or even go back.

There remains another point of no little national importance too. Probably 200,000 to 250,000 men in the ranks now were teetotalers. At the least the empire ought to provide fully for these men who have followed Lord Roberts's lead, and it should not attempt to ruin their physique and *moral* with a spirit ration, under the false statement that it is "absolutely essential to safeguard their health."

Whatever else happens, if only the foregoing facts are made widely known, the reputation of the medical profession will at least be safe from the accusation that they are responsible for this gross injury done to our country and its defenders.

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BATHS FOR WOUNDED SOLDIERS.*

BY

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IN setting forth the value of medical baths for patients from the military services of the country I shall rely upon a three-fold argument: firstly, historical evidence; secondly, the contemporary practice of other countries; and lastly and chiefly, the known facts as to the action and uses of baths which have afforded in recent years the sure foundation of medical hydrology.

It is not surprising that upon the Continent, which has been so often ravaged by wars, this department of practice should have been studied and followed far more than in our own favoured country. The greatest military empire in history, that of Rome, fully appreciated the value and indeed the necessity of health resorts for its home and colonial populations. We have ample evidence of the fact that not only senators and officials, but the legionaries exhausted by campaigning, had recourse to natural hot baths for periodical treatment and rest. Wherever thermal springs were found bath establishments were maintained by the Government with great care throughout the empire —in Italy, Northern Africa, Egypt, Gaul, Germania, Syria, and Britain. At the sites of many of these baths inscriptions are still found testifying to their medical use by the military. Indeed, for 600 years the Roman *thermae* were regarded as *munera Divum*, and afforded one of the chief means of medical aid to all classes, both for the prevention and the cure of disease.[1] Many of the Roman baths have been irretrievably lost; many were subsequently rediscovered and restored by the Mohammedans; many others have been in continuous use for 2,000 years.

In some Continental countries, as in Italy, the employment of bath treatments for the military has been traditional almost from the Roman period. At the present time there is in many countries an organized system under Government direction.

France.

In France (1) the large military hospitals and (2) the hospitals *militarisés* (that is, civil hospitals used for the reception of military patients) include, in each case, special establishments for the reception of military patients at certain selected watering places and health resorts. These are known as *hôpitaux d'eaux minérales* and *établissements civils d'eaux minérales* respectively.

This branch of the military hospital service is regarded as an essential part of the organization for the after-treatment of soldiers in France. Out of the thirty-three permanent French military hospitals, three are situated at health resorts—namely, that of Vichy with 212 beds, that of Barèges with 225 beds, and that of Amélie-les-Bains with 418 beds. Among the 216 hospitals described as *mixtes* or *militarisés* are included bath hospitals at the well-known spas Plombières, Bourbon-l'Archambault, and Bourbonne-les-Bains, as well as others at climatic resorts such as Nice, La Rochelle, Dunquerque, and Dieppe. In Algeria and Tunisia there are the military establishments of Hammam R'hira (with 50 beds) and Hammam Lif. It will be noted that some of these hospitals have been set up at the seaside as summer resorts, and that others, like those at Nice and Marseilles, have a winter season but are available throughout the year.

A few particulars of the French *hôpitaux thermales militarisés* may be of interest.

Barèges is a mountain spa at an elevation of 4,000 ft., in the Pyrenees. The waters are thermal and sulphided, containing a glairy organic substance—Barègine—and have enjoyed for three hundred years a reputation for old gunshot and other wounds and painful cicatrices. The thermal baths, like the semi-alpine climate, are stimulating and "excitant," and are taken in vast piscines or bathing-pools, in flowing water at 99° F.

Eaux Bonnes is another of the group of sulphur spas in the Pyrenees. The old name, Eaux des Arquebusades, was given to it after the Béarnese soldiers wounded in the battle of Pavia (1525), who resorted thither to be cured.

Bourbonne-les-Bains, in the Vosges, is a hot spring, feebly muriated and calcareous. Dr. Martin tells me that it has been a resort for wounded soldiers for centuries, and the baths are considered good both for rheumatism and for wounds. The military hospital at Bourbonne has more than 300 beds, and is fitted with a modern equipment for the baths, as well as for massage, hydrotherapy, and mechanotherapy.

Algeria.—Upon the conquest of Algeria by the French in the fourth decade of last century, they found here or there some dilapidated but still massive bathing pools or *piscinae* of the Roman age. It occurred to the French military doctors, familiar with the historical practice in France, to use the thermal waters of Algeria for treating the sequelae of wounds, and for the anaemia and debility in the soldiers which resulted from the climate or from fever and the fatigue of war. The engineers were accordingly directed to restore the Roman baths. The *piscinae* were again excavated, made good and fenced in, and at several of the ancient hot springs a kind of camp was organized, where the officials and the sick were lodged in tents. The results following these simple means were so good that a few years later the military authorities decided to erect regular establishments, of which the first in date was that of Hammam Meskoutine, founded by Médecin Inspecteur Bégin in 1843. Complete statistics of the cases treated at Hammam Meskoutine, including diagnosis and results, were kept from the beginning, and case-records of about 2,000 cases have been preserved.[2] It is probable that these figures may be accepted as fairly representing the treatment of medical and surgical military cases at thermal baths. Rheumatism accounts for nearly half the total, or 904 cases, including both the civil and military, rheumatic affections being common in Algeria. Of these, 789 were cured or relieved by the baths. The next group is exclusively military, 509 cases resulting from traumatic lesions. These comprised unhealthy or adherent cicatrix, nerve pains, muscular atrophy, bony deformation, articular and periarticular effusions—all following gunshot wounds; also fractures, dislocations, sprains and other injuries. Of 283 cases resulting from gunshot wounds submitted to the baths, 225 were cured or relieved; of fractures 90 out of 101; of dislocations 10 out of 13; of sprains 19 out of 23. At Hammam R'hira the military bath hospital is furnished with three piscines of moving water, also with bathrooms and douches, and has accommodation for fifty officers and men.

Italy.

Italy is the chief inheritor of the Roman tradition, and for hundreds of years Italian physicians have been foremost in the advocacy of the rational employment of waters and climates. I need only refer to Savonarola, grandfather of the ill-fated prophet, to Baccius of Venice in the sixteenth century, to Giannini of Milan in the beginning of the nineteenth century, to Semmola and Vinaj and Maggiora in our day. Professor Casciani, Lecturer on Medical Hydrology in the University of Rome, tells me that there are at present five military bath stations in Italy (*Stabilimenti Balneari Militari*)—namely, Acqui (160 beds), Recoaro (60 beds), Castellamare-di-Stabia, on the Bay of Naples, and Salsomaggiore (30 beds), besides the hospital at Ischia, founded in 1875, with 120 beds. It is recorded

* Read before the Balneological and Climatological Section of the Royal Society of Medicine.

that the baths of Bormio and Abano were used for soldiers in the sixth century.

In Italy, as in France, most of the great hospitals, civil as well as military, are equipped with appliances for hydrotherapy—that is, for baths at various temperatures and for douches with and without massage, together with the ubiquitous electric light bath, so that in general physiotherapy is available in those countries for hospital patients, including military cases, without recourse to the special treatment of the health resort. Consequently many military patients in those countries obtain bath treatments during their stay in hospital.

The establishments at the Italian health resorts are open in the summer months, and the cure is divided into twenty-day periods, or *mute*. Lists of the cases recommended for treatment are made out in April and "forwarded to the administrative medical officer of the (territorial) division, who prepares a consolidated return, with remarks as to whether the case is suitable or not for undergoing a *muta* in the bathing establishment concerned. This goes to the War Office, and there a general roster of *mute* is prepared and issued to the army corps commanders for necessary action."[3] There is a scale of payments, ranging from 1d. a day for privates to 8s. for general officers. Both officers and men may be sent to any of the sea-bathing resorts (*bagni marini*) for similar twenty-day periods of cure, under local divisional arrangements.

Austria-Germany.

In Germany, in addition to the convalescent homes there are seventeen institutions (*Militär-Kurdnstalten*) for special after-treatment distributed in various health resorts and watering places. Among them may be mentioned the Wilhelm-Heilanstalt, which was established at Wiesbaden for wounded and sick officers and men after the wars of 1864 and 1866. Wiesbaden has a warm salt water, but the establishment is also fitted for simple hydrotherapeutic and medico mechanical treatment. At Landeck there is a similarly equipped *Militär-Kurhaus*, founded after the Danish campaign in 1864.

Teplitz-Schönau in Bohemia is *par excellence* the "soldiers' spa" for Austria-Germany. The *Militär-bade-Institut* was founded by Friedrich Wilhelm III for the Prussian Army in 1825, with accommodation for 3 officers and 56 men. There are also separate establishments for the soldiers of Austria and of Saxony. The fame of these weakly mineralized thermal waters for wounds and injuries dates, like that of Eaux Bonnes, from the experience of a single battle, the great battle of Leipzig in 1813, after which large numbers of the wounded were brought to Teplitz for treatment. I should also mention the military bath hospital at Nauheim (43 beds); and there are other establishments at Driburg (Westphalia), Norderney, Suderode, Salzburg, and elsewhere.

Austria Hungary has military hospitals (*Militär-heilanstalten in Kurorten*) at most of the medicinal spas. According to Surgeon-General Macpherson, to whose writings I am indebted for these notes, they are twelve in number—namely, two at Baden near Vienna, and one at each of the following places: Carlsbad, Teplitz-Schönau (already referred to), Hercules-Fürdo, Hof-Gastein, Pöstyen, Trencsin-Teplitz, Budapest, Topusco, Lipik, and Töplitz. There is also for the Landwehr an establishment at Esiz.

Russia.

In Russia, according to the same authority, there are twenty-three army medical stations (*sanitarniya stantsii*) devoted to the treatment of sufferers from chronic disease, and for special treatments at health resorts.

United States of America.

The Surgeon-General at Washington informs me that the United States Government maintains an army and navy general hospital at Hot Springs, Arkansas, where suitable military cases obtain the natural baths and medical care at a nominal cost. These springs were reserved many years since by Act of Congress for the use of the State. This institution is at present the only one of its kind in America. It is complete in its hydrotherapeutic appliances, provision being made for all forms of baths, as well as for massage and temperature therapy. I am given to understand that all the larger general hospitals for the army and navy in the United States are equipped with a system of hydrotherapy.

Japan.

I am told that in Japan wounded soldiers have been sent to the warm salt springs of Yamanaka and Atami, and for rheumatism to the hot sand baths of Beppu.

British Empire.

There is no military bath hospital in connexion with any of the British waters, either in the three kingdoms, or at the hot springs of the empire—whether in India, New Zealand, or elsewhere. Some of the British health resorts are well adapted for such a purpose, and many years ago our Honorary President, Sir Hermann Weber, proposed the establishment of a military hospital at Bath. It should further be borne in mind that in most of the countries we have mentioned the thermal and other springs are the property of the State; and not only the springs, but even the great hospitals are State institutions. A State recognition of health resorts has not hitherto existed in our country.

Chronic Military Disorders Amenable to Bath Treatment.

The reactions of the body in various conditions of disorder and disease to medical baths have been recognized and defined with some precision, and many of them follow with almost mathematical accuracy the slightest variation in the temperature, duration, or other character of the bath.

With reference to surgical indications, I may quote the summary given in the French *Cliniques hydrologiques*.[4] In simple fracture it is held that consolidation of the bone and restoration of the limb may be accelerated by several months by the use of baths. In compound fractures and where osteitis and necrosis have occurred certain baths, particularly some thermal and sulphur waters, seem to have the power, by modifying the nutrition of the part, to alter the suppurating surface and promote absorption of exudation and the discharge of sequestra. In the case of fractures in the proximity of joints—for example, the knee, with stiffness following immobilization—natural thermal baths at a certain heat bring about decongestion of the tissues and the reabsorption of periarticular exudations and at the same time counteract muscular atrophy and tendinous and articular stiffness. We may note here a familiar observation that the movement of stiff and painful limbs, otherwise almost impossible, may often be performed with comparative ease in deep hot baths. Long-continued baths at a somewhat lower temperature are employed in surgical cases, not only for their general sedative effect, but to reduce oedema, relieve pain, and restore the local circulation.

Every kind of *thermal* bath is contraindicated, not only in the presence of cardiac weakness, but also in febrile cases, and in acute or subacute or inflammatory conditions of all kinds; and these baths, of which the heat is superior to that of the body, should be exclusively reserved for chronic cases, where the tissue reactions are defective and sluggish, or perverted. It may often be observed in the history of a somewhat protracted case that there comes a moment when a stimulating or thermal bath treatment is indicated, although previously inapplicable. Such stimulating measures would be injurious in the early stages of serious sprains, or in peri-articular contusion, or in a traumatic arthritis or synovitis, in which it is above all necessary to allow the acute symptoms to subside. But two or three months after the accident, should the pain and swelling persist, and muscular atrophy set in, salt or sulphur or thermal baths, according to individual conditions, together with massage, movements, and douches, have their proper and invaluable place.

The degree of heat to be employed in surgical cases needs careful consideration. Continued bathing at a moderate heat is by itself favourable to asepsis and to the cicatrization of wounds. But higher or thermal temperatures, to quote again the French *cliniques*, may often be injurious—for example, where an unhealed cicatrix leads to an intermuscular sinus. On the other hand, these thermal temperatures, with or without douches and mechanical treatment, are helpful in the later stages of many injuries, and particularly for nerve lesions, if the

nerve has not been divided or has been reunited, and when motor, sensory, and trophic symptoms result from contusion or concussion of nerves in dislocation of a joint or splintering of bone; and lastly, for removing articular adhesions and contractions, if not of too long standing. The same authorities emphasize the importance in surgical cases of choosing, not only appropriate local treatment, but a bath station which is well adapted to the general condition of the patient's health.

Rheumatic affections bulk largely in the health statistics of armies in times of peace, and the diagnosis "rheumatism" is quite as commonly used for those who are invalided in war. The conditions so designated are, of course, various, but sometimes appear to be analogous to what has been described as "fatigue fever," met with after extreme and long-continued physical exertion—as in forced marches, especially when the men are not fully trained. An excessive muscular metabolism causes in this condition an accumulation of waste products within the muscles, and a slight general septic intoxication, the symptoms being exhaustion and stiffness and acute pain on movement. If the muscular work is too greatly prolonged, what has been called "organic exhaustion" ensues, perhaps with cerebral disturbance.[5]

In slighter cases immediate relief is obtained by stimulating the circulation in the muscles, and so sweeping away the waste products. A good example of this rapid cure of abnormal fatigue is the regulation hot bath after a day's hard deer-stalking in Scotland. We are told that at the front hot baths are now greatly appreciated by men fatigued from duty. Even when the case is serious and of many weeks' duration, the judicious use of hyperthermal baths sometimes gives surprising relief.

Professor Russell of Edinburgh has recently given me a verbal account of some soldiers admitted under his care in the Royal Infirmary from the fighting line in France. Those men had been in the retreat from Mons and in the advance to the Aisne, and had been invalided on account of "rheumatism." One of the men who was in the R.F.A. was so bad before he left the front that he had to be helped on to his horse, and when admitted to the infirmary seemed to have little power in his legs. All the men were very greatly and promptly relieved by a hot bath; the effect in the artilleryman was marked and immediate. The treatment in all the cases was curative. The bath was used as hot as the patient could bear it, and some ammonia was added to the water.

Painful synovitis in a single joint, especially the knee, appears to be common in those who have occupied cramped positions in the trenches. In others there are deposits and thickenings in the connective tissues, more or less generalized, to which the names "fibrositis" and "neuritis" are variously applied. Such cases, when the acute phase has passed away, furnish a large proportion of successes in practice at the health resorts.

Finally, with reference to nervous disorders, to the prevalence of which, especially amongst officers, there is much evidence, we have a sure basis for hydrological practice. It has been proved that treatments operating upon the surface of the body have a powerful influence not only upon the circulatory but upon the nervous system. Moreover, according to the procedure employed, it is within our power to obtain widely different, and indeed opposite, results. For example, with a proper choice of temperature we may stimulate and increase, locally or generally, a depressed nervous action. At another range of temperature we can with equal readiness mitigate and diminish an excessive action, and that is as regards temperature alone. It is not too much to say that functional disturbance in either direction is amenable to surface treatment.

It follows that in many nervous disorders stimulant or sedative baths, skilfully adjusted to the case in hand, can be suitably employed. Where a stimulant effect is desired, hot-air and other thermal baths and douches are to be preferred; but where, as is now too often the case, a more profound exhaustion is shown by irritability, depression, and insomnia, the sedative type of bath, given at a lower range of temperature, and often continued for a considerable time, can be recommended.

In chronic nervous diseases and disorders but little distinction can be drawn between military and civil cases, but the treatment of these affections forms an important chapter in hydrological medicine.

Taken together, the foregoing indications, medical and surgical, appear to point to the conclusion that baths of one kind or another have an important place in the treatment of military cases. The treatment must first of all be in the hospital, if and when such baths are to be found; secondly, in the town, where adequate baths and also means of transport are available; and thirdly, in the last stage, at the health resort.

During the coming year many men will leave our hospitals free from acute trouble, but suffering from its results. Not a few will exhibit, in addition to their local injuries, the effects of physical and mental shock. They cannot be returned to their homes, or even to convalescent homes, without further relief. They will need not only patient and prolonged care, but the knowledge that something is being done for them. The necessary physical and psychical remedies belong to the health resorts. Indeed, the health resort has for its object to apply those remedies with science and sympathy to the problem of incipient and chronic disease.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PETROLEUM IN LARYNGEAL DIPHTHERIA.

I WOULD like to call attention to the treatment I have adopted in four consecutive cases of laryngeal diphtheria sent into Sheriff Hill Isolation Hospital for tracheotomy. Their respective ages were 3, 2½, 4, and 2 years. Two of the cases were in such a condition on arrival that I considered them past operative interference; the other two were breathing badly, yet in such a condition as to foster an idea of success after tracheotomy.

Tracheotomy was not performed in any of the cases. I injected 4,000 units of antidiphtherial serum, and afterwards administered ordinary petroleum oil (the taste being covered with decoctum sarsae co.), in 30 minim doses, for three successive doses, every four hours, and afterwards reduced to 10 minims three or four times daily up to the establishment of normal breathing, which in each case occurred in about forty-eight hours.

From the first the breathing was slightly easier, but not to the extent of dispelling anxiety, yet with each successive dose it became more tranquil. When it became normal the petroleum was stopped, a dose of castor oil given, and a mixture containing tr. lobel. aeth. and vin. ipecac. substituted.

There were no distressing symptoms accompanying the petroleum such as irritation of the stomach, vomiting, diarrhoea, rapid pulse, or rise of temperature. In two cases the petroleum could be smelt in the perspiration, in three cases in the urine and faeces; in the fourth case it was not smelt in any of the excretions.

It is difficult to know how much credit can be claimed for the antitoxin, but suffice it to say that I have seen similar cases die with repeated doses of antitoxin both with and without tracheotomy, yet these four successive cases all recovered without any paralysis or other bad after-effects. I cannot but infer that the petroleum was the agent which brought about the recoveries.

These cases too were *in extremis*, and I feel so satisfied of the efficacy of petroleum that I am convinced many lives would be saved by its early application in the conditions variously diagnosed spasmodic croup, membranous croup, and laryngeal diphtheria.

I believe petroleum to possess great potentialities for other diseases provided it be given a fair and just trial by an unbiassed mind. The petroleum oil used was a good clear specimen obtained for ordinary lighting purposes. I am not certain that oil which may be considered medicinally purified will give the same results, for it is just possible that in the purification the active and necessary agents (whatever they may be) for our purpose may be extracted.

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Gateshead. Medical Officer of Health.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

DISCUSSION ON THE TREATMENT OF THE WOUNDED FROM THE PRESENT WAR.

A DISCUSSION on this subject was opened at the third ordinary meeting of the Branch, which was held on January 14th under the chairmanship of Dr. PURSLOW. The discussion was opened by Lieutenant-Colonel GILBERT BARLING, R.A.M.C.(T.), whose remarks are reported in full, with illustrations, at p. 190.

Captain BILLINGTON, R.A.M.C.(T.), was impressed by the excellent physical condition of the wounded soldiers. They had evidently been well fed and well cared for, and, with the exception of the first batch, who had been wounded in the retreat from Mons, the men arrived in good spirits, and their wounds showed that they had received careful and skilful treatment on the way from the firing line to the base hospital. Only one case of tetanus had occurred amongst the men under his care. The man had received a severe shell wound of the buttock four days after admission. He had lain on the ground for some hours, and his wound was very unhealthy and sloughing. As he had not received a prophylactic injection of antitetanus serum, 600 units were at once administered. Three days later he developed the disease in a moderately severe form. He was treated by large doses of antitetanic serum given subcutaneously and rectal injections of chloretone in warm olive oil. Ultimately he recovered completely. Captain Billington agreed that the removal of bullets in regions where such removal would be attended with risk was best avoided unless complications arose. The most difficult and unsatisfactory cases were septic compound fractures of the femur. When the patients were received the wounds were very septic and considerable deformity existed. The limb was very difficult to immobilize with splints, and extension caused so much pain that it had to be discontinued. On two occasions the fragments were kept in position by means of a long plate and screws, the wound being left quite open and irrigated twice daily with hydrogen peroxide. This method promised satisfactory results, and one of the cases in particular was doing excellently.

Captain W. J. MCCARDIE, R.A.M.C.(T.), said that he had given anaesthetics to more than 300 cases at the 1st Southern General Hospital—men between 18 and 40 years of age. He had found a great difference between the men who had been to the front and those who were training. The former had largely lost their resistance, both mental and physical, owing to the strain of war. The latter were full of resisting power, due to fresh air and good food; like the former, they suffered from chronic cough due to exposure to wet and cold, and often to much smoking, so that their air passages became very irritable. Thus the use of nitrous oxide, ether, or chloroform alone, *ab initio*, caused a good deal of mental and muscular excitement, the latter often being violent. Ether particularly caused respiratory spasm and cough. To lessen these undesirable symptoms all the patients he had anaesthetized had been given an intramuscular injection of morphine gr. $\frac{1}{6}$ and atropine mj from one to one and a half hours before operation. To abolish excitement he practically always induced anaesthesia by the "closed" or "rapid" method—namely, by the ethyl chloride-ether sequence in a Clover's inhaler, and when the patient began to cough he changed to chloroform, and usually obtained a satisfactory type of anaesthesia. He thought that this method was far quicker and safer than the "open" methods of giving ether or chloroform in the type of case dealt with. In dental work he found that nitrous oxide, especially when given by the nasal or prolonged method, was practically useless. He often could not get or keep the patients "under" at all, and only induced mental and muscular excitement. The failures had been so frequent and complete that patients were deterred from coming forward for extractions. Therefore all dental cases, save the very simplest, were prepared in the usual way, given morphine and atropine, and anaesthetized and operated upon on the surgical table under the sequence ethyl chloride, ether, chloroform. The after-effects of anaesthesia were usually astonishingly slight. After-vomiting was rare. The only serious sequelae had been some cases of aggravated cough or bronchitis, and one severe and long case of bronchopneumonia after an operation for hernia lasting thirty-five minutes, the anaesthetic being chloroform after ethyl chloride and ether for two minutes. The operations in themselves were not generally difficult from the anaesthetist's point of view, but the type of patient was a rather difficult one to deal with. The soldier would not be easy to anaesthetize, and especially in a reasonable time, by the later refined methods, such as "open" ether, the Vernon Harcourt inhaler, or "gas" and oxygen.

Major SHORT, R.A.M.C.(T.) said that the two points which seemed to be of the greatest interest in the discussion were: (1) When should a bullet be extracted? and (2) what amount of sepsis arose from internal causes as compared with external? In many cases it was not easy to say precisely what mischief, if any, a piece of metal or bullet embedded in the tissues was producing, and he instanced cases he had seen in consultation with surgeons, and drew conclusions from the results of the treatment. With regard to septic conditions, many of the medical cases showed signs of sepsis without having had any external wound; and he had found the teeth especially likely to prove a focus for septic absorption producing arthritis, pains about the fasciae and joints, and general febrile conditions. Of such cases many had evidently been considered rheumatic, but were really due to septic absorption, and cleared up rapidly after the teeth had been put into a healthy condition.

Major J. HALL-EDWARDS, R.A.M.C.(T.), said that it was interesting to compare the wounds received in the present war with those in the South African war. In the present war, by far the larger number were due to shrapnel bullets, whilst in the South African war, only about 5 per cent. were due to this cause. There was also a difference in the character of the wounds, owing to the form of shrapnel used in the two cases. He was somewhat surprised to note the extensive damage done to bones and joints by the passage through them of the sharp-pointed bullet now in use by the Germans; it appeared to him that the wedge shape of the bullet caused a local expansion in the compact tissues of the long bones, and he compared their action on bones to the action of a pointed instrument on ice. He asked Colonel Barling if he had noted any cases in which the German bullet had been damaged during its passage through bone. He was of opinion that where a deformed bullet was found in the tissues, the deformity had in all cases been caused by striking some hard substance prior to its entrance into the tissues. He did not think it possible that a bullet whose velocity had been so diminished that it failed to pass through a few inches of soft tissue, could possibly be deformed by striking a soft bone. A true conclusion as to the necessity or otherwise of removing a bullet embedded in the tissues could only be arrived at by a careful study of the clinical aspects of the case in conjunction with a good radiograph.

Captain LUCAS, R.A.M.C.(T.), observed that the wounds he had seen in the early days of the war were largely caused by shrapnel bullets or pieces of casing. The majority of the wounds were septic. Latterly, most of the wounds were caused by rifle bullets, and were not septic. He entirely disagreed with statements which have been made that all wounds should be opened up at once and swabbed out with pure carbolic acid. Most of the rifle wounds he had seen had healed without suppuration. Many of these patients had compound fractures, often involving joints, and the results had been extremely good. Wounds caused by shrapnel balls or casing generally carried in pieces of clothing, and were very septic. In these cases it was necessary to open up the wound freely, and, if possible, to remove the foreign bodies. If foreign bodies were not causing any trouble or inconvenience they were best left alone.

Dr. ORTON, speaking as medical officer of Messrs. Courtauld's Hospital for Wounded Soldiers at Coventry, supported Colonel Barling's contention that the shock of battle had undermined the nervous system of many of the men. This was most noticeable amongst the Belgian

troops, who were in some instances markedly hyperæsthetic, even during the dressing of wounds. Systematic massage had had to be carried out in many cases owing to the patients refusing to move a joint in the neighbourhood of a superficial wound, and even after each massaging they would frequently keep the limb immobile.

Reports of Societies.

EDINBURGH OBSTETRICAL SOCIETY.

AT a meeting on January 13th Sir HALLIDAY CROOM delivered his presidential address, in which he discussed some of the problems awaiting solution at the hands of the obstetricians of the future. Touching on the position of women in scientific work, he referred to the work of Mesdames Curie and Victoire Henri, and briefly discussed the place of radium therapy in gynaecology. Discussing next the decline of the national birth-rate, he referred to the work of Dunlop, who drew attention to the significance of delay in marriage, especially on the part of the woman. As compared with twenty years ago in Scotland, there was now one child less per marriage for all ages of the mother under 36 (excepting 32). The mortality of infants born of women in active employment during pregnancy was also mentioned, and emphasis placed upon the fact that the mortality among such children was 62 per cent. higher than among the children of mothers not at work. The possibilities for obstetrics and for medicine generally contained in the theories propounded by Abderhalden, the ultimate benefits or risks of salvarsan, the origin and treatment of cancer, and the cause of eclampsia were amongst the important questions that remained to be settled in the near future. Sir Halliday Croom put in a strong plea for the more general recourse to private hospitals in all cases where complications were to be anticipated in labour. In this way only could the results of midwifery practice in private be greatly improved. Prematernity beds in hospitals were also a matter of very great importance to the nation.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on January 12th Dr. MARY SCHARLIEB, in a paper on *The menopause and after*, said that the periods of the appearance and the disappearance of the menstrual functions, puberty and the menopause, were the most important epochs of a woman's life. Although these epochs were usually accompanied by the commencement and the cessation of the menstrual flow, this was not always the case. Thus a woman aged 30 had never had a menstrual period. She married, gave birth to a child after which the periods came on at regular intervals. Or the menstrual flow might cease, for example, after ovariotomy, and the menopause symptoms be delayed for some years. The involution of the sexual organs, although the chief, was not the only factor of the menopause. Besides the familiar headache, flushing, sweating, less well-known symptoms occurring were digestive troubles, pains in head and neck, numbness and tingling of the extremities. There was a lessening of activity of the digestive organs, musculature, nervous system, the mental processes becoming slower and less accurate. The blood pressure was raised, secretion and elimination by the glands was less adequate. The age of the menopause varied from 35 to 55. It occurred earlier in people of a feeble constitution and in those who had reached puberty late, and later in robust women and in those reaching puberty early. The average age of the menopause was some five years later now than was the case twenty to thirty years ago. Acute illnesses and late child-bearing hastened the menopause. Haemorrhage, a typical symptom of the menopause, should always be carefully investigated, as it might be due to malignant disease. The commoner conditions occurring at the menopause were malignant disease, fibroma, myoma, endometritis. Fibromata and myomata should not be confused; the former were usually hard, multiple, and tended to dwindle after the menopause; myomata were commonly soft, single, and were uninfluenced by the menopause. The breasts were also liable to glandular carcinoma at this period of involution. Attention should be given to the diet, the quantity of meat should be reduced and alcohol should be avoided. The physical and mental activities might require encouragement or restriction. Charcot had advised that women over 60 should spend one day out of seven in bed. But many women did their best work after the age of 50 or 55. Dr. HELEN WEBB said the period before the menopause required careful treatment in order to avoid strain. The patients' intellectual development should be encouraged. Dr. FLORENCE WILLEY considered that an intellectual life made all sexual processes easier. The periods of menstruation and the menopause were *not* times of illness as had been asserted. Haemorrhages were usually associated with periods of amenorrhoea, a profuse loss following one or more missed periods. Haemorrhage into the endometrium occurred, due to bursting of small blood vessels in the senile organism. Erosions at or after the menopause were frequently not malignant and should be explored before operation. Statistics from Vienna (Fraenkel) showed that successes after Wertheim's operation (patient well after five years) used to be 20 to 30 per cent. in cases of certain cancer; since wedges had been cut in suspicious cases, the successes were 95 per cent. She did not advise rest cures, as the patients were tired mentally and not physically; and, as in difficult and painful menstruation, it was important to keep them physically fit. Dr. MADGSHON had worked among the female staff of the Post Office for nineteen years. The women were mostly unmarried and between 40 and 60 years of age. Records of health were kept, absences, retirement for ill-health, etc. Those who reached the menopause might be considered the successes of life. Very little was heard of the menopause at the Post Office. But some members of the medical profession seemed to be obsessed with the idea that all ailments at a certain age were due to the change. Thus a woman suffering from headache and malaise brought her first certificate filled in "menopause," the second one "typhoid fever." The highest number of superannuations (20 per cent.) occurred from 30 to 34; this was the age at which there was most neurasthenia. Women were then middle-aged, and could not get used to it. Dr. MABEL PAINE said the conditions of arterial hypertension (gout, over-eating, etc.) seemed to increase the symptoms of the menopause, especially giddiness, bad memory, cramps in legs. The pulse tension might be 175 to 185 or more. She advised regulation of diet, exercise, aperients, potassium iodide. Dr. HELEN BOYLE said she rarely found any symptoms directly due to the menopause, contributory causes being nearly always present. She found steam baths a useful method of treatment, and patients who perspired freely at the menopause usually did well. Although there was a certain amount of instability at the menopause, it did not account for nearly all the cases of lunacy attributed to it. Dr. CONSTANCE LONG said that the breakdown occurred rather at the age of about 34, when the child-bearing age was practically over, than at the menopause. Women had then often to do uncongenial tasks, and suffered from psychological unrest. Remarks were also made by Dr. AMY SHEPPARD and Dr. JANE WALKER, who was in the chair.

THE third convention of the American College of Surgeons was, we learn from the *Boston Medical and Surgical Journal*, held on November 16th. The President, Dr. J. M. T. Finney, who was in the chair, stated that the subscriptions to the proposed endowment fund of £200,000 already amounted nearly to £50,000. The secretary, Dr. Franklin H. Martin, in presenting the roll of candidates, conveyed to the Fellows the greeting of Sir Rickman Godlee, late President of the Royal College of Surgeons of England, with the gift from him of a gavel designed and used by Lord Lister. The list of new Fellows numbered 646. The first annual meeting of the College was held in the afternoon of the same day, when addresses were delivered, among others, by Dr. John B. Murphy, of Chicago, and Dr. G. Sterling Ryerson, of Toronto. The following officers were elected for the ensuing year: President, Dr. Finney; first vice-president, Dr. W. W. Chapman; second vice-president, Dr. Rudolph Matas; general secretary, Dr. Franklin H. Martin; treasurer, Dr. A. J. Ochsner.

Reviews.

A HISTORY OF THE INDIAN MEDICAL SERVICE.

THE acquisition by an English trading company of sovereignty over the subcontinent of Hindustan constitutes one of the most remarkable events in the history of the world. The gradual progress of this notable achievement has been recorded in numerous volumes, and the share which various agents and agencies have taken in the building up of the British Indian Empire has been minutely chronicled; but, although it is well known that the medical profession has materially aided in this enterprise, no systematic account has, up to the present time, been compiled regarding the men who have served the East India Company and the Crown in a medical capacity or of the work they have done. It is to supply this important defect that Lieutenant-Colonel D. G. Crawford has applied himself in preparing the *History of the Indian Medical Service*,[1] which has recently been published by Messrs. W. Thacker and Co. His task has been accomplished with eminent ability and success. The sources of the information supplied by these two handsome volumes are indicated by a bibliography which gives evidence of laborious research. The archives of the India Office have been exhaustively explored, musty documents in Indian secretariats have been unearthed, and official lists, correspondence, consultations, reports, manuscripts in libraries and museums, and books, ancient and modern, have been laid under contribution. Facts have been gathered from every available record and verified with scrupulous industry and acumen; and it is evident that no material item of information extant has eluded the author's patient and keen investigation, with the result that coherence and consecutive narrative have been evolved from disjointed and resurrected data. The author modestly states in his preface that he has simply "put together a mass of facts." These have been arranged chronologically; and, though he disclaims the merit of having written a history of India or of the rise and progress of modern medicine in India, he has recorded leading historical events on which the development and growth of the medical service have depended, and has given abundant evidence of the fruitful outcome of the labours, professional and non-professional, of this great service.

To present a summary of these volumes would be a difficult and lengthy task. They constitute a mine of information regarding persons and circumstances which may be exploited by leisurely perusal, or explored with the aid of an elaborate index and numerous cross references. Their subject matter arranges itself under three heads, namely—(1) the men who served, (2) the conditions under which they were employed, and (3) the services which they rendered. As regards the first of these heads the record is largely biographical. The notices of individuals are less or more detailed according to the merit of the work which they accomplished, or the importance of the circumstances of their life and service. Sketches of the careers and achievements of distinguished members of the service abound, and the doings of shady or unfortunate individuals are not concealed. These sketches throw a curious light upon social conditions and habits, and possess considerable antiquarian value from this point of view. Separate chapters are devoted to the lives and adventures of Gabriel Boughton and William Hamilton, who rendered memorable aid in obtaining for the Company trading concessions from native rulers. The account of "the legend of Gabriel Boughton" is a good example of the author's careful inquiry and critical caution. "John Holwell and the Fall of Calcutta" and "William Fullerton and the Patna Massacre" are the subjects of two other chapters of intense interest. The personnel of the Indian Medical Service as presented in this work is a mosaic of very various characters and endowments—good, bad, and indifferent—but the general impression derived from its perusal is that integrity, capacity, and humanity were dominant characteristics of the majority.

The conditions affecting the status and growth of the service are fully detailed, both in chronological order and under special headings. The service dates from 1600, in which year a charter was granted to the "Association of Merchant Adventurers" by Queen Elizabeth. The enterprise of Bartholomeo Diaz and Vasco de Gama had opened the Cape route to the East, and during the sixteenth century voyages were made to Oriental countries and islands by the Portuguese, Dutch, French, and English for trading purposes, the Danes following early in the seventeenth century. The earlier voyages of English adventurers were to Sumatra, Java, Borneo, Celebes, Moluccas, Malay, Siam, Cambodia, China, Japan, and Manilla. No permanent footing was retained in any of these places, violent struggles with the Dutch ending in their favour. A list is given of factories founded and the dates of establishment and abandonment noted. The longest held was Bencoolen, in Sumatra, which was ceded to Holland in 1825. The earliest Indian settlements were at Nizampatnam, on the Coromandel coast, and at Surat, on the Gulf of Cambay, in 1611. Madras was acquired in 1640, Bombay in 1668, and Calcutta in 1690. Forts were built and towns grew at these stations, which became the capitals of three independent presidencies, subordinate factories having been established in numerous localities, mostly on the coast. Organization and administrative convenience, affecting the medical as well as other services, were secured by this arrangement, which persisted till 1773, when the Madras and Bombay presidencies were made subordinate to Bengal, and all British India was placed under one Governor-General.

During the first century and a half of the Indian operations the Company was a purely commercial organization, its holdings consisting of factories built on rented or conceded land, its establishments of factors, writers, surgeons, servants, and guards, and its transactions of purchase and sale, collection, loading and unloading. Medical men were appointed to ships and factories, and no organized service existed till the year 1764. The arrangements for selecting surgeons and surgeons' mates—the only grades then recognized—were somewhat primitive. In a very interesting chapter the career of "Surgeon-General John Woodall" is described. He appears to have been a man of considerable ability, and was appointed by the East India Company in 1614 to select surgeons for ships and factories and furnish them with medicine chests. He retained this appointment till 1643. In fulfilling these duties he practised mean peculations at the expense of the men whom he recommended for appointment, mostly his own apprentices, and of the Company. These pioneers of the Indian Medical Service, so selected, appear to have been of an inferior stamp—most of them ignorant and many of them dissipated. Their pay was about £36 a year for surgeons and £20 for surgeons' mates; but they were allowed to supplement it by trading and private practice, as were their successors in civil employ, whose salaries were accordingly moderate. This aspect of the service is dealt with in an interesting chapter on "Contracts and Trade." The mortality among these early medical employees seems to have been very high. The system of appointment by nomination, certification by the College of Surgeons, and examination by the Company's doctor continued to prevail until the year 1855, when competitive examination was instituted, and the entrance conditions and tests were made much more stringent. Very often, through death and dismissal, vacancies occurred which were filled up by "locally entertained" men, subject to home approval. Adventurers and foreigners were thus frequently employed. The first man in the first competition was a native—Soorjee Coomar Chuckerbutty, who became a professor in the Calcutta Medical College. His lead has been followed by a large and increasing number of Indians. Regulations and orders regarding admission into the service are fully detailed in a special chapter. During the period of peaceful commerce the status and duties of the Company's medical officers were purely civil. From 1745 onwards the Company became militant, and war with the French was the prelude to an almost continuous career of struggle and conquest, the tide of war speading over the whole continent until British power dominated throughout. It

[1] *A History of the Indian Medical Service: 1600–1913.* By Lieutenant-Colonel D. G. Crawford, Bengal Medical Service (retired list). London: W. Thacker and Co. 1914. In two volumes. (Royal 8vo, pp. 529 and 535; with 4 plates, bibliography, and copious index. 28s. net.)

became necessary to raise a native army, to recruit European troops, and import English regiments. The Company's medical officers were now attached to battalions, and military service came to be more important than civil. The Indian Medical Service became primarily an army department, its members being lent for civil duties, liable to recall, on occasion, to the flag. As fresh conquests were made and fresh territory acquired and settled, civil requirements underwent increase, and the strength of the service rapidly rose. This is dealt with in a special chapter. At first medical officers in military employ were granted warrants, but in 1788 they were given commissions. Their rank was indicated by departmental titles having a relative army value, but it was not till 1898 that they obtained substantive rank as army officers. During this territorial expansion and multiplication of appointments improved medical organization and administration became necessary, and medical boards were established in the three presidencies, which assisted the Government with advice and exercised direction and control over the executive. These boards came into existence towards the close of the eighteenth century, and continued to render useful service till the year of the Mutiny, when a director-general was appointed. From 1860 to 1865 no appointments were made to the Indian Medical Service, but it was reopened to competition in the latter year, and entered on a new era of prosperity under carefully devised conditions and regulations.

In a series of chapters on rank, pay, pensions, furlough and leave, funds and administration, copious details are given respecting the evolution which the service has undergone in regard to all these matters.

In other chapters information is given about employment in civil work of various descriptions and service in the Indian Navy. The general impression gained from these chapters is that the Indian Medical Service has undergone not only a great increase in the number of members and a marked improvement in organization, but has gradually risen in value, importance, usefulness, and estimation.

Of the work—professional and otherwise—done by the Indian Medical Service, Lieutenant-Colonel Crawford's history supplies ample, if not exhaustive, details. The primary functions of the service have been medical attendance upon officers, subordinates, and servants, and the suggestion and application of measures necessary for the preservation of public health—in short, the practice of medicine and sanitation in the widest sense of these terms. Towards the close of the seventeenth century hospitals were erected at presidential head quarters for the treatment of the servants of the Company and the poorer members of the native community. In a special chapter full information is given regarding the provision of many hospitals — general and special — in Calcutta, Madras, and Bombay, up to the present time. Wealthy inhabitants of these towns contributed handsomely to the cost of building, furnishing, and maintaining these institutions. Asylums were also erected for lunatics and lepers. At subordinate factories and stations hospitals were also built, and, as British rule extended, hospitals and dispensaries were established at district head quarters, at subdivisional stations, and in towns and large villages for the treatment of Indians. Native gentlemen subscribed generously towards the erection and support of these institutions. The system of medical relief which has been gradually spread over British India, including the feudatory States, is one of the most creditable features of Indian administration and has served most materially to impress on the native mind the goodwill of the rulers towards the ruled. In this benevolent work the Indian Medical Service has taken a leading part. Hospitals at head quarters and large stations have constituted centres of medical effort and administration, and have also subserved the important purpose of medical education by which, through the agency of the Indian Medical Service, the public services and the general community have been supplied with educated and skilful officers and practitioners drawn from the population of the country. A large and growing indigenous profession of rational medicine has been, since an early period of the nineteenth century, created by the agency of Government colleges and schools, and private institutions are now being organized for the same purpose. So successful have these proceedings been that the Government of Bengal has recently seen its way to the formation of a council of medical education and registration and the establishment of a State diploma conferring a legal status upon qualified medical men. The rise and progress of medical education in India are described in a special chapter, and efforts made from time to time by means of medical societies and journals towards mutual association and improvement in another.

The introduction of vaccination into India in 1804, and the measures adopted to spread the practice throughout the empire through the agency of trained native vaccinators working under European direction and supervision, is another most creditable and successful enterprise undertaken and developed by the Indian Medical Service, which has also in recent years performed preventive inoculations against cholera and enteric fever, according to Haffkine's and Wright's methods, on a large scale. During the last half-century sanitation has occupied a prominent and growing position in Indian administration and Indian medical officers and subordinates have been in increasing numbers employed in the ministry of public health. The scientific study of the pathology and etiology of tropical diseases has been placed on a practical and productive basis. In addition to the performance of their own proper professional work, members of the Indian Medical Service have willingly undertaken such offices as postmaster, registrar, superintendent of gaols, lunatic asylums, and medical schools, inspector of factories, sheriff, mayor, coroner, and so forth; the Government being always glad to secure the services of educated and trustworthy men for duties of this kind. Indian medical officers have from time to time fulfilled combatant functions in the army. In a chapter entitled "The Double Commissions" the author shows that medical officers have in many instances been given commissions in the army, and that, on the other hand, men who had been medically educated and joined the army as combatants have been appointed to medical charges, while in some cases men have held both medical warrants and military commissions, being given, on reaching the rank of captain, the option of serving as surgeons or soldiers. Indian medical officers have likewise frequently exchanged professional work for civil or political employment.

The "war services" of medical officers are minutely chronicled in a special chapter, and their service in the Indian Navy described in another. Chapters on "Honours and Rewards" and "Courts Martial" supply data regarding the recognition of meritorious service and the reverse. The share which medical officers of both services took in the suffering and glory arising out of the Sepoy mutiny and its suppression is displayed at length in another chapter. Of non-professional labour performed by members of the Indian Medical Service a full account is given in a chapter entitled "Other Extra-professional Work: Exploration, Science, Philology, Literature." In all these departments men have done conspicuous and valuable work. Contributions to general literature have not perhaps been very voluminous, but the bulk of professional literature, including books and communications to the medical press and official reports of every description, many of them of great merit and utility, composed by Indian medical officers, must be prodigious. In addition to the main theme of these elaborate volumes information is given regarding other medical agencies which have existed and worked in and in relation to India. A chapter is devoted to "The Minor Medical Services: St. Helena, the West Coast, Prince of Wales Island, and China." Some notes are also supplied regarding the Army Medical Department, the uncovenanted medical services, and the subordinate medical services—assistant surgeons and sub-assistant surgeons, the two latter recruited, educated, trained, and appointed in India. "European surgeons in the service of Oriental potentates," medical adventurers, private practitioners, European and native medical missionaries, and lady doctors employed by the Dufferin Fund are also included in this category.

Under the head of "General Remarks" an account is given of the nature of the duties which medical officers in military and civil employ are required to perform, and a comparison drawn between the Indian Medical Service as a career and various other spheres of medical employment. These observations will be found to be of great value by young medical diplomates casting about for a life occupation giving promise of useful work and substantial

remuneration. Some notes on mortality and longevity indicate that India is by no means the deadly country which it used to be.

A chapter on "The Future" is largely devoted to a criticism of Lord Morley's proposal to throw open various civil appointments now held by members of the Indian Medical Service to the general profession, thus restricting the growth of that service and favouring the development of an "independent medical profession" in India. This scheme is shown to be objectionable administratively, and likely to damage the public interests and injure the credit, popularity, and efficiency of the service. It has so far remained in abeyance. The application of the station hospital system to the native army is also discussed, and the relation between the military and civil branches of the service, and the establishment of a "regular graded service of lady doctors," is advocated. The author takes a hopeful view of the future of the Indian Medical Service, notwithstanding the unpopularity which recent entrance examinations disclose.

From this cursory review it will be gathered that this work is a very remarkable—we had almost written monumental—product of genius and industry. By officers of the Indian Medical Service on both the active and retired lists it will be heartily welcomed and diligently scanned. Indian officials of other departments will find in it much to interest them, and the relations and descendants of Indian medical officers will derive pleasure from references to the lives and services of their ancestors. Those who wish to study a particular phase of the marvellous building up of the Indian Empire and the not less marvellous government of that empire will discover in these volumes abundance of curious and important information, hitherto buried in musty records and obsolete books, now revealed in orderly and readable form through the persistent and praiseworthy diligence of their gifted author.

WAR AND DISEASE.

MEDALS FOR DISTINGUISHED MEDICAL SERVICES IN THE ARMY AND NAVY.

THE second of the Chadwick lectures on War and Disease, delivered by Dr. F. M. Sandwith at the Royal Society of Arts on January 22nd, was followed by the presentation of Chadwick medals and cheques for £50 to naval and military medical officers "who had most distinguished themselves in promoting the health of the men of their respective services." The recipients—who were nominated for the honour by Sir Arthur May, Director-General of the Royal Navy Medical Service, and Sir Alfred Keogh, Director-General of the Army Medical Service, respectively—were Fleet Surgeon R. C. Munday and Colonel W. H. Horrocks. Sir FREDERICK TREVES was in the chair.

Sir WILLIAM COLLINS explained the purposes of the Chadwick Trust and the objects for which medals were awarded. He remarked that in no other war had so much anxious care been given to the health and welfare of the fighting men, and probably amongst none of the nations engaged had there been so large a measure of success in this respect as among our own. For this the public had to thank principally the great medical departments over which Sir Arthur May and Sir Alfred Keogh presided.

Sir ARTHUR MAY, in presenting Fleet Surgeon Munday, emphasized the importance of matters affecting the health of those in the fighting line, upon whom the very existence of the country depended. It was not generally known how great had been the improvement in the health of the navy in recent years. When he entered the navy in 1878 the daily sick-rate was 47 per 1,000; now it was 25; the invaliding-rate then was 35 and now 15; and the death-rate had been reduced from 6 to 2 per 1,000. The improvement was almost entirely due to attention to years almost he looked to see a reduction in the next five hygiene, and as great as had occurred in the last thirty-eight years.

Sir ALFRED KEOGH, who presented Colonel Horrocks, said that conditions in France had given the department much anxiety, but the army was healthy so far. Sir Alfred Keogh referred to Colonel Horrocks's great services, notably in regard to Malta fever, and mentioned that he had just been appointed an honorary physician to the King.

The medals were then presented by Sir WILLIAM COLLINS.

Dr. F. M. SANDWITH discussed the medical aspects of the South African and Russo-Japanese campaigns. He pointed out that diseases in armies arose mainly from unhygienic conditions, which even the greatest care by the medical department could not entirely obviate. The diseases conveyed by dirt, among which typhoid fever was included, were the most common. Though the causes were not wholly avoidable, antityphoid inoculation provided a means of rendering the soldier to a considerable extent and for a limited period immune. This preventive measure was only imperfectly tried in the South African campaign, where typhoid fever and dysentery caused an appalling number of deaths; but in the present war antityphoid inoculation had been remarkably successful. In the Russo-Japanese war the Japanese had given to the world an object-lesson of the effectiveness of sanitary precautions and the education of the soldier in preventive measures. Dr. Sandwith also dealt with bacillary dysentery and cholera, and mentioned that last October 98 cases of cholera were reported in Austria, besides 231 in Hungary and a few cases in Russia. In November, 33 cases of cholera, with 9 deaths, had been notified in the Austrian army in Silesia. A total of 805 cases had been reported in Austria-Hungary. These figures might sound alarming, but they were small compared with reports from countries where cholera was endemic. For instance, between June and October of last year there were 2,034 cases in the Presidency of Madras, with 1,579 deaths—a mortality of more than 74 per cent. Cholera had been lurking in the Balkans and adjacent countries since it was brought to Constantinople by Turkish troops from Asia Minor, during the Balkan war in 1912, when the disease effectively arrested the advance of the Bulgarians at the lines of Tchataldja. The incidence of the disease in the Bulgarian army had been variously stated at from 16,000 to 30,000 cases. In the following summer returning troops spread the disease in Bulgaria, Servia, Roumania, and Greece, while in the autumn of 1913 some cases were reported from Bosnia, Herzegovina, Hungary, and Austria.

Sir FREDERICK TREVES proposed a vote of thanks to the lecturer and referred to the importance of educating the soldier in regard to such diseases as typhoid. There was a great difference between conditions in the South African war and the Russo-Japanese war in this respect—the Japanese soldier had been instructed and ours had not. In the South African war it was dreadful to see the results of the ignorance of the rank and file. Now much time was spent in instructing the soldiers, and this was a great factor in securing improved sanitary conditions. The hygienic standard in South Africa was fair for that time, but the sanitary arrangements in the present war were unprecedented; there never was a campaign in which soldiers had been better looked after. The sanitary measures to secure the health of the soldiers and their care when ill would go down to history as one of the most magnificent features of the campaign. In regard to typhoid, Sir Frederick Treves remarked that the greatest precautions could not always prevent infection, but further protection was afforded by inoculation. Those who attempted to persuade the soldier not to be inoculated played into the hands of the enemy, and gave the soldier exactly the advice the Germans would be only too pleased to give him. He gave some statistics illustrating the protection afforded by antityphoid inoculation.

[In a letter published in the *Times* of January 26th, Sir Frederick Treves gave statistics brought down to a later date, as follows: "Of the first 421 cases of typhoid fever in the present campaign among British troops, 305 were in men who were not inoculated. In the 421 cases there have been 35 deaths. Of these deaths 34 were men who had not been inoculated within two years. Only one death occurred among patients who were inoculated, and that man had only been inoculated once."]

The vote of thanks was heartily accorded and the proceedings terminated.

British Medical Journal.

SATURDAY, JANUARY 30TH, 1915.

WASTE AND OVER-EATING.

IT is announced officially that a Cabinet Committee, with the Premier in the chair, is considering the rise in prices of foodstuffs. We would point out, to start with, that wealth buys nothing but flavour—things to tickle the palate. The very cheapest foods, wisely chosen, have all the physiological value of the dearest. The cheapest American cheese is as nutritive as Stilton or Roquefort, the herring is as nourishing as salmon, the flank or shin of beef as the sirloin, margarine as butter, starch as arrowroot, cabbage as asparagus. Moreover, by good cooking cheap food can be made as tasty and appetizing as the dearest, and no less good a stimulant of the digestive juices.

One of the most deplorable things in the organization of modern society is that the factory has divorced man and woman from the home life; the old arts and comforts of home have vanished in the last hundred years. The other day we saw a "white pudding," an old Scottish dish, now forgotten, made of oatmeal and dripping, flavoured with herbs and onion, stuffed into a sausage skin, boiled for hours, and then fried in fat; it was a most tasty, nutritious, and excellent meal. The Scots had a magnificent basis of diet in their oatmeal and milk with green stuff from the kailyard, forsaken now for white bread, margarine, and tea. The cottage home in many towns has almost gone, changed into the one or two room tenement; the cooking facilities therein are bad as they can be, and this, combined with factory life and the amusements of the town, lead to the lazy, easy purchase of prepared foods. The rich set the fashion for fancy white bread, the servant class spread it, and the poor suppose that what their richer neighbours eat must be the best.

The miller takes from the wheat berry the outer layers and germ which contain those subtle principles, the vitamines—some necessary for nutrition, others for growth—the phosphates and lipoid bodies, and a part of the wealth of protein the germ contains. These are the very principles of growth; are not the outer layers of the berry the first to soften in the soil and feed the budding germ? These the miller separates and sells for cattle food; and right well the fowls and pigs thrive on the middlings, and the rabbits on bran. The bed-rock diet of the very poor now consists of white bread, margarine, sugar, and tea. Where are the vitamines and the lipoids in these to make the healthy growth of children? Beri-beri devastated the labour world of the East because the miller chose to polish the rice berry and make it white to please the eye. Add the polishings to the diet and beri-beri is at an end. In Britain food has been cheap and plentiful; vitamines and lipoids have been picked up by the poor in milk or eggs, pig's-fry or herrings, tripe and onions, fruit from the coster barrow, or the green stuffs from the market gardens. Malnutrition has been due to the ignorant feeding habits as much as to the poverty of the poor—to their notion that all foods are of equal value, and to the diet of white bread, margarine, and tea. Now that there is a danger of prices rising and poverty spreading, the preference for the white loaf becomes of far greater national import. Flour is bleached wholesale to make it white. The bleaching enables low grades of flour to be sold as white, and enhances the profit of the miller. It is of no value; if anything it tends to deteriorate the flour. Economically it is a wholly unsound proceeding. The human energy wasted in this monstrous process would, if properly directed, relieve a large portion of the misery of the conditions of the very poor. Let the Government once and for all forbid this bleaching and insist on the sale of a household flour of the same standard as our forbears had from the millers whose windmills ground the golden grain. The wheat then will go much further, and the cattle cease to have the best part of the food of man.

It is the bleaching and faking of flour which give opportunity for the millers to form rings and force the prices up in times like these. Bread is sold legally by weight, and too often the baker slack-bakes his loaf and leaves as much water in it as possible; in consequence the bread is less digestible, more dough-like, and less nourishing. Bread ought to be sold as containing a given weight of the food principles found in wheat, not less than so much protein, so much carbohydrate, and containing all the principles which suffice to support the nutrition of pigeons when they are fed on bread and water. In three weeks pigeons fed on white bread and water mope to die. On the wholemeal wheat they live and flourish. This is the true physiological test of bread value.

In the canning of foodstuffs heating to 120° destroys the vitamines. Tinned food, therefore, cannot replace fresh foods. We want the nation to have fresh foods, not faked foods.

Of very high value among cheap foods is the potato. With milk and fat it forms an adequate and healthy diet. Cooked with cheese we obtain a food at once nutritious and appetizing. Waste of protein, of valuable salts and vitamines must be prevented by boiling or baking potatoes in their skins, though for boiling, just a narrow scale of skin can be removed. The ordinary habit of peeling and soaking potatoes not only wastes the good things and flavour in the peel, but allows much of the precious principles in the potato to dissolve out—to be thrown away with the water in which they are soaked and boiled. If it became necessary to add much potato to flour for the making of bread, the nutritive value of the loaf will be lowered, for potato contains a lower percentage of protein and starch than flour; the wholesomeness of the loaf, on the other hand, will not be lessened, but the children will want more slices of such a bread; that must not be forgotten. The water in which meat, bacon, fish, or vegetables are cooked should be boiled down, and become part of the stockpot into which all scraps of food, bread, meat, bones, and vegetables should go. Probably as many people again could be well fed by good cooks on the waste which is thrown away from the kitchens of poor and rich alike.

The waste of food in our country is colossal. There is almost nothing in our raw foodstuffs which cannot be used. The outside leaves and peelings of vegetables, the bones, the waste of broken bread, put in the stockpot make palatable and most nutritious broth. The pig flourishes and waxes fat on the contents of the waste-pail. Children could flourish no less well on the discarded material. The servant class are often most wasteful, from a mistaken, uneducated,

and snobbish view of life. We know of stokers on a great line of steamers who accept nothing but whole loaves of bread and whole joints of meat. All that is left over from each meal is thrown through the portholes. They would tolerate no made-up dishes, the leavings of another meal, which every good housewife serves in appetizing and wholesome form. To waste food, the energizer of life, is against the higher nature of man, and the duty to avoid it should be inculcated as a part of the moral teaching in every school of the land.

The crusade against alcohol has worked wonders, but we want a crusade also against waste, and one prevalent form of waste is over-eating. Many of the well-to-do eat too much, and turn good food into dross, while the poor are under or wrongly fed. The widely held idea that man can feed up his strength is wholly erroneous. Over-feeding leads to excessive bacterial decomposition in the bowel, absorption of toxins, metabolic disturbances, and lessening of health, vigour, and happiness. The amount of food required is determined by the energy output of the body, and to put in more is as useless as pouring petrol into the already filled tanks of a car. The fortunes of the quack pill vendors show the extent of this national vice. There would not be an underfed child in the land if the over-feeders yielded up their excess, and the increased number of good-tempered and happy, healthy people would be astonishing. Many of the children of the rich are nowadays really starved by over-indulgence. Four meals a day and sweets and food between meals sets up in them a chronic derangement of the digestive organs which leads to malnutrition. It is as easy to starve the body by ill-feeding as by deficient feeding; the chronically unclean tongue and disturbed nutrition are the precursors of the decay of teeth. If the immunizing mechanism of the mouth is to be efficient the stomach must be in perfect order, and long fasting periods must intervene between meals. Three meals a day is the right rule, and every man should rise from table not satiated but wishing to eat more. His appetite should be as keen and the tongue as clean as that of a well-kept dog. The sweets, jams, pickles, and spiced meats, the proud handicraft of the old-time housewife, offered a rare feast, the sparse appetizer of the homely meal. Now they are made common truck, and at every meal tempt the appetite to over-indulgence. The nation needs to eat more wisely, and it may well think of this while considering the ways and means of cheapening food.

PARENCHYMATOUS SYPHILIS.

THE address by Dr. Mott on the diagnosis and treatment of parenchymatous syphilis, published this week, contains an authoritative account of the present position with regard to the treatment of syphilis of the central nervous system, set out with his customary great skill and lucidity.

As a result of the improvements made during recent years in the diagnosis and treatment of syphilis, and still more in consequence of the study of its experimental pathology, conceptions of the changes it produces in the central nervous system are becoming much more precise than they were a few years ago. In the same way the terminology of the disease is altering, and names such as "parasyphilis," "metasyphilis," and "quaternary syphilis" are being dropped. "Parasyphilis," for example, was a term coined by Fournier to indicate a pathological condition requiring syphilis as its antecedent, but believed not itself to be an active manifestation of the syphilitic virus, because it was not amenable to antisyphilitic treatment.

During the last few years, however, numerous observers have demonstrated the fact that syphilitic spirochaetes do occur in the central nervous system of patients with general paralysis of the insane and tabes dorsalis, both of them typically "parasyphilitic" maladies. As to the point that they are little, if at all, amenable to antisyphilitic remedies, it has recently been shown that salvarsan and certain other drugs, when administered by intravenous injection, do not, as a matter of fact, gain adequate access to the tissues of the brain; they are selectively excluded by the cells of the choroid plexus, in all probability, and for this reason fail to exert any curative action. It is clear, therefore, that a new terminology is needed. At the International Congress of Medicine in London in 1913 the name "parenchymatous syphilis" was extensively applied to the various chronic late syphilitic affections of the brain and cord. But even this term is not free from objection, for it appears to lay stress on the changes produced in the essential nerve structures of the brain and cord while disregarding the interstitial changes, or changes in the neuroglia and supporting tissues, as Head and Fearnsides[1] point out. These authors therefore prefer to divide instances of syphilitic disease of the central nervous system into those of *syphilis meningovascularis* and *syphilis centralis*. The latter term was chosen to include all those cases in which the degeneration of nerve tracts or nuclei shows that the lesion must lie within the structure of the nervous system itself, including "parasyphilitic" lesions. They believe that, as a name, "central syphilis" is less likely than "parenchymatous syphilis" to lead, in the future, to the erroneous view that the nervous elements alone react in these cases to the toxic action of the spirochaete. In the discussion following the delivery of Dr. Mott's address in the Section of Neurology at the Annual Meeting of the British Medical Association at Aberdeen this point was emphasized by Dr. McIntosh.

These remarks, however, are by the way. Dr. Mott's address is concerned with the pathology of central or parenchymatous syphilis, and certain experimental observations connected therewith. The conclusion reached is that there may be a biological difference between the spirochaetes of general paralysis or tabes and those of primary syphilis, acquired as a result of their prolonged residence in the human body. It is thought probable, too, that complementary changes also take place in the cells of the human body after years of infection with the syphilitic virus, with the result that they become hypersensitive to its action. Here we come to close quarters with that obscure condition described in 1903 by von Pirquet as "allergy," the change in the reactions of the tissues to second vaccination for example, or to second injections of antitoxic serum—when the hypersusceptibility of the tissues due to the action of some toxic constituent of the serum, artificially produced by the first injection, may give rise to the unpleasant or even fatal symptoms of "serum disease" when the second injection is given. Without going further into the question, it is enough to say that the chronic course of syphilis produces many allergic manifestations,[2] and there is reason for believing that in central or parenchymatous syphilis the cerebral tissues are hypersusceptible to the action of the virus. The number of the spirochaetes present in these central lesions often appears to be small, and

[1] H. Head and E. G. Fearnsides, *Brain*, London, 1914, xxxvii, 1.
[2] J. McIntosh and P. Fildes. *Brain*. London. 1914. xxxvii. 141.

their virulence, as Dr. Mott points out, is attenuated. Yet owing to the hypersensitiveness of the tissues the resulting lesions may be both extensive and serious. If it is the interstitial tissues of the central nervous system that are attacked, the type of reaction and degeneration known as gumma will result. But if the nervous elements themselves chance to be affected, tabes or general paralysis of the insane will result; and, as the reparative powers of nervous tissue are very small, the damage done by the degenerative processes will be irreparable and unaffected by any form of treatment at present known to us. The result shows itself in various degrees of paralysis or dementia.

After a careful analysis of the physiology and pathology of the nervous disorders thus produced Dr. Mott proceeds to the discussion of their treatment. Here, alas! he cannot paint the outlook in any hopeful colours. "Candidly," he writes, "I do not think any measure of success has attended any of the methods of treatment so far employed for general paralysis." Prevention is better than cure, and most of all is this true when cure appears to be impossible. One of the most recent methods that has been suggested consists in the injection of minute doses of salvarsan or of salvarsanized serum into the theca of the spinal cord. The hope is that the drug thus injected will gain access in efficient quantity to the spinal cord and brain, and will be able to destroy the spirochaetes lying hid in their recesses. This mode of treatment was considered at length by several of the speakers who joined in the discussion following the address, but none of them had any conclusive or even promising lines of proof to bring forward in its favour. When salvarsan was introduced by Ehrlich in 1910, and neo-salvarsan two years later, there was a great blowing of trumpets by the German school of medicine, and the advent of a new "*Therapia sterilisans magna*" was hailed with the loudest acclamations. It was asserted that now at last we possessed a drug that would sterilize the human body so far as the spirochaete was concerned, and so provide a safe and certain cure for syphilis without injury to its victim. But experience has shown that these rejoicings were premature; it may be noted, too, that these exaggerated claims for the drugs were not made by that experienced man of science Ehrlich himself. Deaths from the therapeutic employment of both salvarsan and neo-salvarsan have occurred, no doubt as the result of an unrecognized idiosyncrasy in the unlucky patient. Still more, further researches mentioned in both the address and the discussion have proved that we are still far from having reached the stage of any "great sterilizing mode of treatment" in syphilis. So far as the rest of the body is concerned, these two drugs undoubtedly represent a great advance in the treatment of syphilis, for they tend to destroy the spirochaete rather than the tissues; to use Ehrlich's own terminology, outside the nervous system they really are parasitotropic rather than organotropic. But in the case of the brain and spinal cord this is not so, and if, by the employment of special methods of administration, salvarsan and neo-salvarsan do gain access to the central nervous system, they act there as toxic drugs. In other words, they are organotropic to the nervous system as well as parasitotropic, and in doses large enough to kill off the spirochaetes also kill the patient. The moral is that the search for an arsenical preparation that will attach itself to the syphilitic virus and not to the patient's nervous tissues has not yet proved successful, and must still be carried on. Meanwhile, the nervous lesions of tabes and general paralysis remain incurable.

WEATHER FORECASTS AND GERMAN RAIDS.

THE science of meteorology has become wonderfully exact within recent years, and in no department of the subject has more substantial advance been made than in weather forecasting. A system of synchronous observations has been in operation over the greater part of the civilized world for several years. For the past three years or so our own splendidly equipped Meteorological Office at Exhibition Road, South Kensington, under the able direction of Dr. W. N. Shaw, D.Sc., F.R.S., has published week by week daily synoptic weather charts for practically the whole northern hemisphere from Vancouver to Japan across the continents of America, Europe, and Asia from west to east, and from Spitzbergen to the Equator from north to south.

In addition to these synoptic charts, the daily weather charts of the British Meteorological Office show in a singularly graphic and fascinating manner the atmospheric conditions—including pressure, temperature, wind, and precipitation—prevailing each day at 7 a.m. and 6 p.m. over a vast region of the earth's surface from Spitzbergen to the Azores and Madeira in one direction, and from Iceland and the North Atlantic (the latter by wireless telegraphy) to Eastern Europe in the other. It is chiefly on the information so obtained that daily weather forecasts are based. The personal element and experience, of course, also play an important part in framing such forecasts.

All meteorologists know that the great weather movements usually advance, over Western Europe in particular, from the westward or south-westward. From this fact it is evident that the British Islands occupy a unique position in relation to weather-forecasting; and it is the most westerly observing stations, such as Valentia and Belmullet in Ireland and Castlebay (Barra Island) and Stornoway in the Hebrides, that furnish the earliest and most important data on which to base a forecast of impending changes in the weather for the continent of Europe.

For some time after the outbreak of the war last August weather forecasting continued as usual, both officially at our Meteorological Office and also locally in many parts of the United Kingdom at the hands of voluntary observers who had become extraordinarily expert in many instances by practice, observation, and experience.

As time went on, however, our naval and military authorities shrewdly began to suspect that the enemy were availing themselves to some purpose of the forecast information innocently placed at their disposal by the elaborate and successful British system of weather observation. In consequence, the circulation of the daily weather report of the Meteorological Office has, since last October, been postponed for a fortnight from the date of observation; newspapers and official publications, such as those of the Registrars-General of the three kingdoms, have curtailed their weather reports, and no forecasts have been issued even by the Meteorological Office, save colourless ones as to temperature and probable weather at certain British (not Irish) health resorts. In these emasculated forecasts neither atmospheric pressure nor wind finds a place.

But all the same, there is not the least reason to doubt that the German naval and military staffs are kept thoroughly well-informed as to impending changes of atmospheric pressure, wind direction and force, and weather conditions generally in the North Sea region. One piece of evidence supporting this

opinion is afforded by noting the times chosen for the warship raid on the coast of Yorkshire and for the recent air-craft raid on East Anglia. The latter, at all events, corresponded very closely with the passage eastwards across North-Western Europe of an anti-cyclone, or area of high atmospheric pressure, in which the barometer rose to 30.6 inches just before the raid. Moreover, Germany is no doubt daily receiving weather telegrams, as before the war, from stations in neutral territories such as the Azores, Iceland, Norway, Denmark, and Holland, not to mention its own stations—Heligoland and Cuxhaven. Probably also there are any number of stations in those parts of Belgium which are in German possession for the time being. Nay, further, it is much to be feared that the fine art of spying, as "made in Germany," extends to whilom innocent observations on the weather made in Great Britain and Ireland, as well as in France.

Of course, the darkness of the nights just before and after new moon is not lost sight of by our foes. But this factor does not count for nearly as much as a high and steady barometer, with its still or stagnant air and the attendant mists and fogs. Such mists and fogs are often limited to the lower strata of the atmosphere close to the earth's surface, while the upper air may be quite clear, so aiding hostile aircraft in their flight, while they are veiled from observation by the thickness of the air below.

It may reconcile British grumblers at the broken weather of the present winter to reflect that the strong winds and gales from westerly points, and the drenching rains which they have brought, have proved successful allies to our gallant fleet in its ceaseless and untiring watch and ward over the storm-swept shores of our island home.

THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION.

A MEETING of the Council of the British Medical Association was held on Wednesday, January 27th. The ordinary meeting in October was not held as it was found that so many members of the Council and of the Committees of the Association were occupied with work in connexion with the war that it was not possible to hold the usual preparatory meetings of the standing committees. Meetings of these committees have recently been held and a large amount of business was brought before the Council from them on Wednesday. A report of the proceedings will be published in an early issue, but meanwhile it will be interesting to members to learn that a Special War Emergency Committee has been appointed, consisting of the chairmen of all the standing committees, to deal with questions arising out of the war. Among these will be the consideration of a proposal made by Dr. Adams, suggesting from his experience as a member of the Scottish Medical Service Emergency Committee, that steps should be taken by the Association to deal in other parts of the country with difficulties due to the withdrawal of so many medical men from civil practice to serve with the forces. The work of the Scottish Medical Service Emergency Committee has been reported from time to time in the JOURNAL, and we may refer especially to the meeting at Glasgow addressed by Dr. Norman Walker, who is the convener of the Scottish Committee, and by Sir Donald MacAlister, President of the General Medical Council (BRITISH MEDICAL JOURNAL, January 2nd, p. 20), and also to the statement put out by the Committee after its meeting on January 9th. This statement was published in the SUPPLEMENT to the JOURNAL of January 16th, and fully explains the kind of work which is being done by the Committee with so much advantage to the profession in Scotland. The Special War Emergency Committee appointed by the Council on Wednesday has power to add to its number.

ANTIVIVISECTIONISTS AND ANTITYPHOID INOCULATION.

IN the BRITISH MEDICAL JOURNAL of January 23rd (p. 171) regret was expressed at the fact that full page advertisements, consisting of misrepresentations and downright falsehoods intended to create prejudice in the public mind against antityphoid inoculation and to discredit the efficacy of that protective measure, had been allowed to appear in *Punch* and the *Evening Standard and St. James's Gazette*. *Punch* took the earliest opportunity of explaining that the mischievous advertisement had slipped through the hands of its censorship owing to the lateness of the time it was handed in. We shall not perhaps be doing injustice to the moving spirits of the British Union for the Abolition of Vivisection, from which the advertisement emanated, if we entertain the suspicion that this lateness was possibly a tactical manœuvre to capture by surprise a position considered to be otherwise impregnable. The advertisers have, it may be hoped, defeated their own ends by bringing on them the emphatic repudiation of any sympathy with them on the part of *Punch*. They have had the further humiliation of being thrown over by those from whom, in this matter at least, they might have looked for support. In its issue of January 27th (p. 76) *Punch* says: "The Treasurer of the National Antivivisection Society writes to complain that we spoke last week of 'The Antivivisection Society,' when we were referring to 'The British Union for the Abolition of Vivisection.' He protests that his society 'does not enjoy being confused with the British Union in this manner,' and concludes by saying: 'It is hard on us to be given no credit by *Mr. Punch* for being reasonable people and for refraining from this particular agitation'—the agitation, that is, against the antityphoid inoculation of our troops." This is distinctly amusing. The treasurer of the National Antivivisection Society, who thinks it hard that he and his society should not be given credit for "being reasonable people and for refraining from this particular agitation" is the Hon. Stephen Coleridge. How "reasonable" Mr. Coleridge is on the subject may be gathered from an article contributed by him to the *Zoophilist* for January in which he sneers at the leaflet on protection against typhoid fever issued by the Research Defence Society, and after calling in question the evidence contained in it, concludes by saying that "the liberty of the subject should surely not be violated, even if the evidence in favour of this inoculation were ever so convincing"! Mr. Coleridge's attitude in this matter is that of one willing to wound and yet afraid to strike, and his reasonableness is shown in refraining from an agitation which he knows to be ill-timed. Turning to the *Evening Standard and St. James's Gazette*, although we have not seen in it any express repudiation of the advertisement which it published on January 19th, we are glad to note that it lost no time in supplying its readers with an antidote to the poison. In a leading article published in its issue of January 21st, it declared that "of medical discoveries that have proved an untold blessing to mankind scarcely one can rank higher than the discovery of inoculation against typhoid." On January 23rd our contemporary, speaking of the recent statements made by Sir Frederick Treves on this subject, says that the figures given concerning our Expeditionary Force cut the ground from under the feet of "the faddists, the 'antis,' when they strive and cry 'that it is improved sanitation and not the serum that has produced the good results.'" We are informed by a correspondent that a similar advertisement to the one here referred to appeared in *T.P.'s Weekly* of January 23rd. We hope that popular journal will

follow the good example of *Punch* and the *Evening Standard and St. James's Gazette* in dissociating itself from a mischievous agitation in the furthering of which it has—we are willing to believe, unwittingly—been made a tool.

SANATORIUM STATISTICS.

THE staff of the Brompton Hospital and the Superintendent of Frimley Sanatorium have issued a valuable report on the after-histories of patients discharged from the sanatorium during the years 1905–10.[1] Detailed tables are provided in three series. The first comprises: (1) Full-time cases with tubercle bacilli in the sputum; (2) full-time cases without sputum or in which tubercle bacilli were not found; (3) and (4) short-time cases similarly divided. The tables of this series classify the patients in accordance with the number of lobes of the lung in which physical signs were detected, and the statistics are of (*a*) the number discharged, (*b*) the number well and able to work, (*c*) the number alive, (*d*) the number dead, (*e*) the number lost sight of. In the second series the after-histories of full-time patients with tubercle bacilli in the sputum are analysed, according to the patients' condition on discharge, into five classes, each of which is defined. The third series deals with the condition of full-time cases (tubercle bacilli present) discharged during 1905–7 at the end of each of the subsequent five years. From the third series of tables it appears that of 549 patients 55.9 per cent. were well and able to work at the end of the fourth year following that in which they were discharged; if only those in whose sputum the tubercle bacillus was present be considered the percentage is 44.5. At the end of the fifth year the corresponding figures for 287 patients are 48.4 per cent. and 38.8 per cent. respectively. It is to be noted that these percentages are not based upon the absolute figures, but upon the latter less the number lost sight of. For instance, of the 549 traced to the fourth year, 59 were lost sight of in that year, and the 274 known to be well and able to work are 55.9 per cent. of 549 less 59. Of 690 discharged the numbers lost sight of in each of the four years subsequent to discharge were 65, 49, 27, and 59. It is not improbable that several of those lost sight of are dead, but it is evidently impossible to include them in reckoning the percentages. The authors remark that the results compare not unfavourably with those relating to sanatoriums in Germany, where patients are treated under the provisions of the Invalidity Insurance Law, but they had hoped that, in view of the careful selection of cases for the Frimley Sanatorium, a larger percentage of successes would have been found. They observe that to ensure the maximum benefit from sanatorium treatment efficient "after-care" and supervision are essential. The tables provide a considerable amount of valuable information, although it is to be regretted that the ages of patients in the various classes could not be tabulated to permit of an evaluation on the lines of Elderton and Perry's recent work.

GERMANS AND THE GENEVA CONVENTION.

LAST week an account was given (p. 165) of the experiences of some medical officers of the British Expeditionary Force and two English doctors attached to the Red Cross Society who had been captured by the Germans, and who were released after having been kept as prisoners of war, in defiance of the provisions of the Geneva Convention, for about five months. We received too late for publication in last week's issue a letter from Captain Hamilton, one of the officers released, in which he says they were treated exactly like the other officers who were prisoners of war. No difference was made in any except as regards pay. At first, one R.A.M.C. officer was paid 600 marks for the first month, this being the rate in the German army for his rank (captain). Afterwards, they all, without distinction of rank, received 100 marks per month. Later, this was reduced to 60 marks, but was made up to the 100 when they came away. This rate—100 marks a month—is the rate received by combatant captains who are prisoners, so that the R.A.M.C. subalterns were slightly better off than other subalterns who only got 60 marks except during the time that all the R.A.M.C.—even field officers—were receiving pay at the 60 mark rate. Captain Hamilton states that from the day he went to Torgau (August 8th, 1914) to the day he left (January 10th, 1915) he never had anything to do with the charge of sick or wounded. He adds: "Why we were sent home is a mystery, and whether any more will be sent off or not is unknown." As stated by Dr. Elliott in the communication published in our issue of January 23rd, the medical prisoners made numerous applications for release under the Geneva Convention, but were put off with such replies as that published in last week's JOURNAL (p. 166). The signatures appended to one of these applications, dated September 17th, 1914, numbered twenty-seven, of whom two were Red Cross doctors; it is to be presumed, therefore, that twenty-two remain in captivity Whether all these are at Torgau is not clear, for whereas Dr. Elliott says the selection of those to be set free was made from a batch of ten, he had previously given the number of British doctors in the fortress as thirty, with a chaplain and some R.A.M.C. orderlies. All these are within the category of the personnel to whom Chapter III of the Geneva Convention applies. As we have said before, the Germans have simply treated the Geneva Convention as a scrap of paper. Sir John Byers, in a letter which appeared in the *Times* of January 21st, pleaded for an interchange of medical prisoners. It may be well, therefore, to point out that the rules as to interchange of prisoners do not apply to medical men; it is expressly laid down in the Geneva Convention that if they fall into the hands of the enemy they are not to be treated as prisoners of war, but when their work among the wounded is "no longer indispensable, they shall be sent back to their army or to their country at such time and by such route as may be compatible with military exigencies." We know that the French Government has succeeded in obtaining the liberation of a certain number of medical prisoners, and we are inclined to agree with Dr. Elliott that it was due to the benevolent efforts of the Geneva International Red Cross Association that he and his companions were set free. The detention of British doctors who have no medical duty to perform, and their treatment as prisoners of war, are therefore flagrant violations of the Convention. Whether our own Government has moved in this matter we do not know. We should be glad to learn that some action has been taken in regard to the medical prisoners still in the hands of the Germans.

A NEW STUDY OF MEDIASTINAL GROWTHS.

THE periodical study of diseases hitherto regarded as incurable is not without its value, even though apparently the immediate progress of knowledge be not accelerated thereby. Mediastinal growths are usually chronic in their course and uniformly fatal in their result. Only the later stages of their history can be ascertained with certainty. From a study of sixty cases, while resident at the Brompton Hospital, communicated to the *Edinburgh Medical Journal* for December, 1914, by Surgeon J. N. McBean Ross, R.N., of H.M.S. *Mars*, it would appear that the incidence of the disease is on the increase. Careful investigation of the clinical history and course of these

[1] Report on the After-Histories of Patients discharged from the Brompton Hospital Sanatorium at Frimley in Surrey, during the years 1905–10. By S. H. Habershon, M.A., M.D., F.R.C.P., F. J. Wethered, M.D., F.R.C.P., P. Horton-Smith Hartley, C.V.O., M.A., M.D., F.R.C.P., J. J. Perkins, M.A., M.B., F.R.C.P., and W. O. Meek, M.B. London. 1914. Junior Army and Navy Stores, Limited, Printers, Aldershot. (2s. 6d.)

sixty cases tends to confirm the conclusions to which previous observers have come. No fresh light has been thrown upon the conditions under which the disease—usually lympho-sarcomatous in type—may have arisen. The frequency of a tuberculous rather than of a malignant history does not serve to establish any definite connexion between the two diseases. Tuberculosis without malignant disease is universally met with, and malignant disease may often run its course without a trace of tubercle. Neither the microscope nor the radiograph have been able to afford any trustworthy aid in the discovery of the cause, or of the initial stages of the primary growths. Dr. Ross's work represents the most recent stocktaking of the experience of the Brompton Hospital, and of the present state of knowledge, on the subject.

CONSUMPTION "CURES" IN AMERICA.

AMERICAN experience is that the wide prevalence of consumption makes this a particularly favourable field for the nefarious operations of quacks. The victims of the disease are in general an easy prey because of the indomitable hopefulness which is almost a characteristic of their pathological condition. In a paper recently read before the New York Academy of Medicine Dr. Adolf Meyer stated that an estimate made by the National Association for the Study and Prevention of Tuberculosis for the five years ending July, 1913, showed that 500 fraudulent cures for consumption had been tried in the United States, yielding a clear profit to the exploiters of £10,000,000. It was also estimated that £4,000,000 were invested in manufacture; that the annual income was £3,000,000; that one-third of the income was spent in advertising, leaving £2,000,000 a year of "blood money" taken from ignorant consumptives. In view of these facts the American Sanatorium Association, which numbers among its members the physicians and other directing officers of all the large tuberculosis sanatoriums in the United States and in Canada, has been moved to make a strong pronouncement against the evil. At its annual meeting, held at the Massachusetts State Tuberculosis Sanatorium, Middleboro, on December 16th, the association declared that it knew from experience that "all of the many advertised medicines and other forms of special treatment recommended by unscrupulous quacks are absolutely worthless." Resolutions were passed emphatically approving of the campaign that had been started against these methods of treatment, and condemning the publication by any newspaper or lay periodical of advertisements of patent medicines or quack remedies and devices purporting to be beneficial in tuberculosis. The American Sanatorium Association has taken the right line. It is the spread of sound knowledge and the suppression of lying statements that is needed. But the law, too, can help if it will insist on the censorship of fraudulent advertisements in newspapers.

"THE JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE."

THE first number of the *Journal of the Royal Naval Medical Service*[1] has been issued—a large octavo of 102 pages. It is edited by Fleet Surgeons R. C. Munday and W. L. Martin, R.N., and will be published quarterly, the annual subscription being 15s. It opens with a series of original articles; the first, by Staff Surgeon E. L. Atkinson, is on the British Antarctic Expedition of 1910–1913; the remainder deal more or less directly with matters arising in connexion with the present war. Thus there are papers on the wounded at the Royal Naval Hospitals at Shotley, Chatham, and Plymouth; on transport and treatment of wounded in the hospital ship *Plassy*; and on the naval action off Heligoland, to which we refer at some length elsewhere (p. 222). The number also contains a series of short clinical and practical notes, reviews of books, abstracts and translations from foreign periodicals, appointments in the service, and obituaries of officers killed in action, in the *Bulwark* disaster, or dying from other causes. An editorial note relates how the late Director-General, Sir James Porter, K.C.B., strongly sympathizing with the wish of a majority of the officers of the Medical Service R.N. to have a professional journal of their own, made a recommendation on the subject, which it fell to his successor, Sir Arthur W. May, K.C.B., to carry through. It had originally been proposed that the first number of the *Journal* should have been issued last autumn, but the outbreak of war entailing a great increase of work at the medical department necessitated postponement. The high importance, however, of such a publication to the service at present was fully recognized, and it was determined last November to issue the first number in January. It was long the custom to publish annually in the blue book on the Health of the Navy some of the original communications received, but it is hoped that the establishment of the *Journal* will result in many of the articles hitherto relegated to obscurity receiving the publicity and recognition to which they are entitled. A subsidiary policy of the *Journal* will be to foster such associations as the Royal Navy Medical Club and the Naval Medical Supplemental Fund. This fund, founded in 1817, for the benefit of orphans of deceased subscribers, is administered by a court of directors, the president of which is the Secretary to the Admiralty. Down to 1862 subscription was compulsory, but since then few have joined, and the benefits are practically confined to orphans of members who entered the service prior to 1861. Two years ago it was proposed to affiliate the fund to the Royal Navy Medical Club, which undertook to administer it, with the provisos that the fund should be kept distinct from the club, that the subscription should be reduced to 21s. a year if possible, and that the benefits should be extended to the widows of all subscribers. The court of directors has approved the proposal, which now awaits the repeal of the original Act by Parliament. If this plan is carried out the fund will start with £10,600 in consols, which should form the basis of a sound and popular insurance scheme for medical officers of the Royal Navy. Criticism of the first number is deprecated on the ground of the high pressure of service work during the time that it was in preparation. No unfavourable criticism is, however, called for; the officers of the service may well be proud of the appearance of their journal, and we hope that the Director-General's appeal for adequate support, both financial and literary, will receive the favourable response it has already earned.

[1] London: John Bale, Sons, and Danielsson. Annual subscription, 15s. Separate copies 4s. net. Subscriptions to be made payable to the Manager, *Journal of the Royal Naval Medical Service*, Admiralty, London, S.W. Papers should be sent to the editors of the *Journal* at the same address.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE BRITISH DEBT TO BELGIUM.

M. PAUL SABATIER, who is well known to many readers as the author of a life of St. Francis of Assisi, which has been translated into many languages, said in the remarkable letter he addressed recently to the President of the International Society for Franciscan Studies at Assisi:

> The noble Belgian nation is doubtless to be pitied, but it is still more to be admired. Its tribulations will pass, but its laurels will not fade.
>
> The Belgians went to certain destruction, with a firmness unexampled in history, in honour of a principle, whereas they might easily have secured handsome payment for granting a right of way through their country, and might also have made millions out of the German troops. Without a moment's hesitation, without giving a thought to these profits, they replied with a *non possumus* of which other nations have not, perhaps, understood the lofty heroism.

These words of the Protestant pastor who for several years (1885–9) was vicar of St. Nicolas in Strassburg, might have served as the text of the book *How Belgium Saved Europe*,[1] by Dr. Charles Sarolea, Belgian Consul in Edinburgh.

Dr. Sarolea contends that, guided by what might have been called enlightened self-interest, Belgium could have made a good bargain at the beginning, preserving her material prosperity, and becoming eventually a part of the Greater German Confederation which we have since been told was to have included also Holland and Switzerland. After Liége, and even later, she might still have made a good bargain without dishonour, for it was never expected of her that she should go on trying to hold up the whole weight of the German army prepared for the invasion of France, without the aid of France and Great Britain, two of the Powers which had guaranteed her neutrality. She preferred to remain loyal to national ideals, "and the first national Belgian ideal ever was freedom." If Belgium had not made the great sacrifice Germany would have had a walk over certainly to Calais and probably to Paris, and "in all probability the armies of civilization would have suffered an appalling disaster from the hordes of barbarism," for "the Belgian war was a crusade of civilization against barbarism, of eternal right against brute force." Therefore Dr. Sarolea asserts, as we think justly, that Belgium not merely did her duty as defined by treaties, but infinitely more than her duty, and that to say that she did nobly that which was her duty does not "give the true measure of British indebtedness."

It is for this reason that we call attention to Dr. Sarolea's book under this heading, for its thesis has a bearing on the work of the Belgian Doctors' and Pharmacists' Relief Fund. We all read from day to day last autumn the story of the splendid resistance of Belgium, but so many things have happened in the last six months in so many parts of the world that the details of the destruction wrought and the massacres and cruelties committed in Belgium tend, as Dr. Sarolea himself says, to become "blurred and obscured from the very immensity of the operations." He does not pretend to be neutral or impassive, but he has sought to refrain from exaggeration, believing that the simplest and most unadorned way of telling the story will be the best. In a series of short pithy chapters he shows how the invading host carried out the instructions of the Great General Staff that "a war conducted with energy cannot be directed merely against the combatants of the enemy State and the positions they occupy: but it will and must in like manner seek to destroy the total intellectual and material resources of the latter." Professor J. H. Morgan, in a note on this passage in *The German War Book*,[2] in which he gives a translation of the book on the usages of war on land, issued by the Great General Staff of the German army, says: "What the passage amounts to is that the belligerent should seek to break the spirit of the civil population, terrorize them, humiliate them, and reduce them to despair." The words "in like manner," if they mean anything, can only mean completely and utterly—hence the deliberate burning of Louvain, a centre of intellectual life, and the widespread destruction of material resources by the burning and harrying, not only of industrial towns, but agricultural villages also. Some of the atrocities in the villages may have been the work of drunken soldiers, for it appears that in some places and for some periods the German organization broke down, and discipline went with it, but the things done under the eye of the officers were horrible, and the more wholesale destruction and massacre were done by their orders. The notice posted at Louvain was "Es ist strengsten verboten Hauser in brand zu setzen ohne Genehmigung der Commandatur." Therefore, as it was strictly forbidden to set fire to houses without the permission of the staff of the command, it follows that it must have been by direction of the command that, in addition to the University Halls and Palais de Justice, 894 houses were burned in Louvain itself and many more in the suburbs, the fire engines having first been destroyed.

A proclamation of the General Commanding-in-Chief, von Bülow, to the inhabitants of the town of Andenne contains the following passage: "It is with my consent that the General-in-Chief has caused the whole locality to be burnt, and that about a hundred persons have been shot." Specimens of the pastilles used for starting the fire have been examined by the Belgian Government Commission, and prove to be made of gelatinized nitro-cellulose.

The destruction of villages and small towns in so systematic a way and over so large an area makes the work of giving relief the more difficult. Acting on information and advice obtained mainly through the American Ambassador and committees of Belgian medical men and pharmacists in London and Brussels, packages of drugs have been sent out, and parcels of instruments are ready to follow, for it is reported by the committees mentioned that the Germans have not only looted drugs of all sorts, but have carried off all instruments, even including midwifery forceps, which have been packed up and sent to Germany.

Even if Belgium were freed to-morrow, the work of reconstruction would be stupendous. Dr. Sarolea, who spent five weeks in his native country during the campaign, says: "Thousands of villages are to be rebuilt, thousands of farms have to be reconstructed and restocked, tens of thousands of crofters will have to be assisted," and the complex fabric of trade and industry remade.

This is for the future; meanwhile something can be done, and is being done, to help the Belgian doctors and pharmacists. Dr. Sarolea, in the last chapter of his book, discusses the problem of the Belgian refugees. He lays stress on the fact that in Belgium, as elsewhere, the social unit is the family; that Belgian families are rather larger than in other countries; and that in exile families cling together even more fondly than in ordinary circumstances. Offers, therefore, of hospitality for individuals do not, except as a very temporary measure, meet the need, and we know that in dealing with Belgian medical refugees British medical practitioners in some districts have found it best to take one or more unoccupied houses for their use. Apart from the question of housing, it is within the power of the profession in this country to do a good deal in the way of meeting temporary distress, and as has been stated on more than one occasion, a special subcommittee of the Executive Committee of the British Committee of the Belgian Doctors' and Pharmacists' Relief Fund has been appointed to consider specific cases. It has the advantage of the advice of Dr. Clément Philippe, representative of the Belgian Medical Society, which has been formed in London. In nearly every one of the cases brought to the notice of the subcommittee the need of assistance has been fully established and small grants have been made.

SCOTTISH COMMITTEE.

The formation and constitution of a Scottish Committee of the Belgian Doctors' and Pharmacists' Relief Fund were noted in our issue for January 2nd, page 34.

The first meeting of this committee was held in the Royal College of Physicians, Edinburgh, on January 23rd, when Dr. Barlow (Glasgow) occupied the chair.

The meeting confirmed the appointment of the secretaries and treasurers who had previously been provisionally appointed; and an executive committee was appointed, consisting of the presidents of the three medical corporations, the three secretaries of the Scottish Committee, and Dr. J. L. Ewing.

Dr. Adams intimated that the British Medical Association was willing and eager to do all in its power to aid the fund, and it was agreed that the organization of the Association should be utilized so as to get into touch with the members of the medical profession all over Scotland. Similarly Dr. Ewing put the organization of the Pharmaceutical Society at the disposal of the Committee so as to press the claims of the fund on the members of the pharmaceutical profession.

The Executive Committee was authorized to draw up a circular containing an appeal for contributions and send it to every medical man and pharmacist in Scotland.

It was announced that up to the present subscriptions amounting to £257 had been received in sums varying from one to twenty guineas.

[1] *How Belgium Saved Europe.* By C. Sarolea, Ph.D.Liége, Litt.D. Brux., Belgian Consul in Edinburgh. With a preface by Count Goblet d'Alviella, Belgian Secretary of State. London: W. Heinemann. 1915. (Cr. 8vo, pp. 256; 1 map. 2s. net paper; 2s. 6d. net cloth.)

[2] *The German War Book.* Translated, with critical introduction, by J. H. Morgan, M.A., Professor of Constitutional Law at University College, London. 1915. London: John Murray. (2s. 6d. net.)

Contributions are being received by the treasurers: Dr. Norman Walker, 7, Manor Place, Edinburgh; Dr. R. McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh; Dr. W. G. Dun, 15, Royal Crescent, Glasgow, W.; and Mr. J. Rutherford Hill, Resident Secretary Pharmaceutical Society, Edinburgh.

BIRMINGHAM COMMITTEE.

A committee has been formed in Birmingham with the following executive:

Mr. GILBERT BARLING, M.B., F.R.C.S., Vice-Chancellor of the University, *Chairman*.
Dr. PURSLOW, President of the Birmingham Branch, B.M.A.
Mr. CHRISTOPHER MARTIN, M.B., F.R.C.S., President of the Birmingham Medical Institute.
Professor KAUFFMANN, President of the Midland Medical Society.
Dr. LILLEY, Chairman of the Central Division of Birmingham Branch, B.M.A.
Professor SAUNDBY.
Sir THOMAS BARCLAY. J.P.
Mr. E. W. MANN, B.Sc., F.I.C., President of the Birmingham Pharmaceutical Association.
Mr. J. POOLE.
Mr. J. A. RADFORD.
Mr. F. SMITH, Honorary Secretary Birmingham Pharmaceutical Association.
Mr. J. WAKEFIELD.

An eloquent circular has been distributed in the district calling attention to the Central Committee which has been formed in London, composed of representative English doctors and pharmacists, to raise money for the immediate relief of members of these professions who are remaining in Belgium, acting in co-operation with a Belgian Committee having similar aims. Professor Saundby, Mr. Gilbert Barling, and Sir Thomas Barclay are among those who have already joined the Central Committee. The circular of the Birmingham Committee recapitulates the chief points in the speech made by Professor C. Jacobs of Brussels at the meeting of the Edinburgh Obstetrical Society on December 9th, 1914, at Edinburgh.[1] The appeal of Birmingham has met with immediate response, and it is notified in its circular that subscriptions for any amount will be gratefully accepted, but only actual payments can be acknowledged. Cheques or postal orders should be sent to Professor Saundby, 140B, Great Charles Street, Birmingham, or to Mr. F. Smith, 221, Soho Road, Handsworth, who are acting as joint honorary treasurers and secretaries. They should be drawn in favour of the "Belgian Doctors' and Pharmacists' Relief Fund" and crossed "Lloyds Bank."

MEETINGS IN NEWCASTLE-ON-TYNE AND SHEFFIELD.

A general meeting of medical practitioners will be held at the College of Medicine, Newcastle-on-Tyne, on Wednesday, February 17th, at 4 p.m., when Professor Jacobs will deliver an address. A similar meeting of practitioners in the Sheffield district has been summoned with the object of forming a local committee.

THE CENTRAL BRITISH COMMITTEE.

A meeting of the Executive Committee was held on Thursday, January 21st, at the offices of the British Medical Association, when the Chairman, Sir Rickman Godlee, explained the satisfactory results of personal visits to the American Ambassador and Mr. Herbert Hoover in respect of the distribution of parcels of medical stores sent out to Belgium through the medium of the International Committee for Relief in Belgium. The Chairman stated that American assistance was taking a similar form, and that a box of instruments which had been selected by the Master of the Apothecaries' Company (Mr. Meredith Townsend) and himself, with assistance in certain directions, was packed ready for the Belgian doctors; definite instructions have been received from the International Committee with regard to the transmission of the box. The Honorary Treasurer, Dr. H. A. Des Vœux, announced that the total amount subscribed was over £5,000, though part of this sum had not been received yet by the Treasurer.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. These will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, in addition to subscriptions amounting to £1,444 previously acknowledged:

Tenth List.

	£	s.	d.
Dr. Greville Macdonald	10	10	0
Dr. Peter H. Abercrombie	5	5	0
Major Horace C. Colman, R.A.M.C.T....	1	1	0
Dr. W. L. Pethybridge	1	1	0
Dr. L. J. Hobson ...	1	1	0
Mr. A. P. Dodds-Parker	2	2	0
Mr. J. E. Burton ...	2	2	0
Mr. A. Bruce Roxburgh	3	3	0
Dr. Harold Swale ...	3	3	0
Mr. J. J. Giles ...	0	10	6
Mr. Maurice F. Squire	1	1	0
Henry Wells Oil Co.	1	1	0
Dr. B. Farquharson	2	0	0
Dr. Arthur G. Phear	5	5	0
Dr. W. Pasteur ...	5	5	0
Mr. E. M. Corner ...	3	3	0
Mrs. Scharlieb ...	5	5	0
Mr. Henry Juler ...	5	0	0
Dr. Harrington Sainsbury	3	3	0
Mr. Arthur Cheatle	5	5	0
Danish Union of Doctors (per Dr. Christophersen, Hon. Sec.) ...	103	7	8
Dr. J. E. MacIlwaine	2	2	0
Mrs. Dawson Williams	1	0	0
Dr. W. Hale White...	5	5	0
Dr. Alfred Parkin ...	1	1	0
Dr. John E. Eddison	5	5	0
Dr. D. A. Alexander	1	17	4
Dr. Alex. Macphail	1	1	0
Dr. R. Percy Smith	5	0	0
Dr. T. Wakefield ...	2	2	0
Mr. R. Lake ...	10	10	0
Dr. Ettie Sayer ...	1	1	0
Sir William Whitla	5	0	0
Messrs. Coleman and Co.	5	5	0
Dr. C. M. Chadwick	3	3	0
Col. H. H. Johnston, I.M.S.	1	0	0
Dr. John Stewart ...	2	2	0
Dr. Gould May ...	3	3	0
Dr. Victor Bonney	2	0	0
"R. L. G."... ...	1	1	0
Dr. L. G. Nash ...	1	1	0
Dr. J. C. Baker ...	1	1	0
Dr. J. J. Pringle ...	5	5	0
Messrs. Allen and Hanburys ...	26	5	0
Mr. Alfred Wright...	0	5	0
Ross and Cromarty Division, B.M.A. (per Dr. E. H. Mackenzie, Hon. Sec.)— Dr. J. P. Smith, Dr. J. Cameron, Dr. E. K. Mackenzie, Dr. R. I. Duncan, Dr. D. Johnstone, Dr. H. Ross, Dr. M., Dr. J. A. Somerville, Dr. Macrae	4	9	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.)— Dr. R. W. Sutherland	0	10	6
Mr. Wm. R. Brown...	1	1	0
Dr. Herbert B. Gibbins	1	1	0
Dr. F. R. Miller ...	2	0	0
Dr. E. J. Hawkins ...	1	1	0
Mr. J. B. Ferguson Wilson	1	1	0
Mr. W. M. Mollison..	5	5	0
Sir John F. H. Broadbent, Bart.... ...	5	5	0
Dr. T. Wilmot ...	1	1	0
Dr. H. Campbell Thomson	2	2	0
Mr. T. P. Legg ...	3	3	0
West Somerset Division, B.M.A. (per Mr. W. B. Winkworth)— Mr. R. Henry F. Routh	1	1	0
Mr. Arthur W. Ormond	5	5	0
Dr. Jas. Bannerman.	1	1	0
Dr. G. F. Still ...	10	0	0
West Herts Division, B.M.A. (per Dr. K. J. Aveling, Hon. Sec.)—			
Dr. A. N. Boycott...	1	1	0
Dr. S. G. Scott ...	3	0	0
Brussels Medical Graduates' Association (per Dr. Major Greenwood, Treasurer), further donation	2	2	0
Sir W. S. Church, Bart....	5	5	0
Birmingham Local Committee (per Dr. R. Saundby)—			
Dr. Harry C. Dixey	5	5	0
Dr. Sam. H. Agar..	3	3	0
Dr. Hamilton Morton	3	3	0
Dr. Ernest J. Beards	2	2	0
Dr. J. F. G. Pietersen	2	2	0
Mr. D. Priestley Smith	1	1	0
Dr. Harold E. White	1	1	0
Dr. Richard Drury	1	1	0
Dr. H. W. Jacob ...	1	1	0
Dr. Cecil Roscrow	1	1	0
Dr. G. A. Wilks ...	1	1	0
Dr. A. B. Creak ...	1	1	0
Dr. W. H. Garbutt	1	1	0
Dr. F. N. Deakin...	1	1	0
Dr. Cyril P. Burd	1	1	0
Dr. H. Hubert Tipping	1	1	0
Dr. J. Ward ...	1	1	0
Dr. H. Troughton Bond	1	1	0
Dr. and Mrs. W. Cassels (proceeds of whist party) ...	9	15	0
Dr. Wilfred Glegg	1	1	0
Mr. H. Anglin Whitelocke	3	3	0
Dr. Rufus E. Evans	2	2	0
Dr. Thomas Procter	1	0	0
Dr. Lloyd Francis ...	0	10	6
Mr. Albert Carless ...	5	0	0
Mr. Hugo Wolff ...	1	0	0
Messrs. Exell Bros.	0	10	6
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[1] BRITISH MEDICAL JOURNAL, December 19th, 1914, p. 1078.

	£	s.	d.
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The following subscriptions have been received from this society through Dr. V. Christophersen, who is acting as honorary secretary to the Danish Fund:

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INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments, contributed by the following donors since the publication of the last list:

Mr. Brown, Weybridge Cottage Hospital.
Dr. W. A. B. Young, Blackburn.
Mr. F. Litt, Hastings.
Dr. B. Lewis Paton, Rugeley.
Mrs. K. E. Raston, Ashford, Barnstaple.

Doctors resident in the Barnsley area of the British Medical Association, per Dr. R. F. Castle, Darfield.

THE WAR.

SURGERY DURING A NAVAL ACTION.

THE first number of the *Journal of the Royal Naval Medical Service*[1] contains a very interesting note by Fleet Surgeon Walter K. Hopkins, R.N., H.M.S. *Fearless*, of what actually happened on board that boat during and after the naval action off Heligoland on August 28th. The dressing station was at a selected spot just below water-line in the after bread-room, one of the few available places in a ship of the class where some of the first aid men could be accommodated; the other half of the party, in charge of the sick-berth steward, were at a similar station forward. The period of waiting was trying, and the party in the bread-room had to rely upon fragments of information shouted down the nearest hatchway from some one in communication with the upper deck. The "rat-rat-rat" on the side from time to time as the boat got into the thick of the action told plainly of shells pitching short and bursting, fragments striking but not penetrating the ship's skin. This was varied occasionally by a tremendous "woomp" when a shell hit the ship.

The *Fearless* was hit fair and square by seven shells, one of which did much havoc in the middle deck, forward, and her sides showed altogether some twenty-three holes of varying sizes, yet her own list of casualties was only eight wounded, none dangerously. It was towards the later part of the affair that six wounded arrived at the dressing station, where their wounds were cleansed and dressed, two or three returning to duty the same afternoon. One man was treated at the forward station, and later in the day another man presented himself with severe contusion and abrasion of the thigh from a spent fragment of shell. Seven of the eight cases were wounds due to fragments of shell and splinters of steel or wood from the ship. The exception was a scald of the forearm sustained by a stoker while investigating a steampipe burst by an exploded shell. When the fleet retired the *Fearless* took in tow the destroyer *Laertes*, temporarily disabled by gun-fire, and Fleet Surgeon Hopkins was sent aboard her to attend to some seriously wounded. The worst case was that of a young stoker who had sustained several shell wounds, one of which involved the left tibia and fibula, some two inches of the tibia being torn away from its middle third. The wounded had all received first aid treatment, the wounds being neatly dressed, but considerable haemorrhage was going on in some. The wounded men were removed to the *Fearless*, as also were several other wounded from other destroyers. The sick bay, which had been prepared to receive the most serious cases, was filled, and other wounded men were sitting or lying on the mess deck near by.

Having visited Shotley sick quarters after the sinking of the German mine-layer *Königin Luise* and the British cruiser *Amphion*, and having seen the wounded and cases of burns lying there, Fleet Surgeon Hopkins became convinced that the most important action on the part of a surgeon on board ship in charge of such wounded was a vigorous prosecution of antisepsis as early as possible. In many of the cases at Shotley suppuration had been very marked, and it was hoped that this might be considerably reduced by early vigorous cleansing and antiseptic treatment. In addition, a number of face masks and strips of picric acid lint had been got ready for the immediate treatment of severe burns.

Fleet Surgeon Hopkins proceeded to put his antiseptic principles into practice in dealing with the wounded on the *Fearless*. Iodine was applied to the majority of wounds and their immediate area, and a fresh temporary dressing adjusted. With the help of the sick-berth steward and two first aid men the next few hours were spent in endeavouring to get the patients as clean as possible. A hypodermic injection of morphine was given at this stage to three or four cases, and again once or twice during the night. It was found to be very beneficial.

Of the total of 27 cases, there were 5 burns or scalds, and 22 shell and splinter wounds, 10 of the latter being Germans.

The wounds were mostly lacerated and punctured, deep or shallow, of all shapes and sizes, with several involving bones, causing compound comminuted fractures. Shock was present in several cases, and severe in three or four. Haemorrhage, of a somewhat severe oozing type, was rather persistent in several cases where wounds were deep; dressings required changing, and wounds had to be replugged.

The procedure was as follows:

1. Careful removal of clothing.
2. Removal with sterile instruments, from the wound and its vicinity, of pieces of clothing, dirt, hair, loose bone, etc.
3. Thorough washing of wounds and their surroundings with warm, very soapy water.
4. Douching with warm water recently boiled.
5. Douching with mercury perchloride lotion.
6. Washing this away with sterile warm water.
7. Drying the wounds and their surrounding areas.
8. Reapplication of iodine in and about the wounds.

In the case of wounded limbs the whole limb was thoroughly cleansed. In the case of a wound in the body or head, a large area around the wound as well as the wound itself received attention. Shaving where necessary was carried out.

In the case of burns, all dirt, loose, blackened or charred skin and hair were removed as far as possible. In several of these cases such large areas as the whole length of the upper limb from finger-tips to shoulder, as well as the face, ears, neck, and upper part of the chest, were involved. The same procedure of cleansing was adopted, a small area being dealt with at a time. The dressings finally used were strips of picric acid lint, freshly wetted for the limbs, and masks cut into strips for the face. This dressing appeared to relieve pain quickly, and the cases did

[1] London: Bale, Sons and Danielsson. (4s. net.) See also p. 219.

well. Some of the burns had already been treated with greasy application, which prolonged the cleansing process.

The courage and endurance of the patients, Fleet Surgeon Hopkins says, were admirable. Some of the Germans were at first rather sullen, but their confidence was soon gained, and though one or two of them hesitated about drinking what was offered to them, they soon thawed, and took their portion gratefully.

The action had begun at about 2 p.m., and at 4 a.m. Fleet Surgeon Hopkins was able to report to the captain that all cases had been dealt with, had been washed, dressed, and fed, and made as comfortable as circumstances would allow. About mid-day on August 29th the more serious cases were transferred to Shotley Sick Quarters and the others to the hospital ship *Liberty*.

In conclusion, the writer says that he had been disposed to wonder whether he had spent too much time in the cleansing in the early stage of treatment, but was much gratified some time later to hear from Staff Surgeon Pick that the cases from the *Fearless* had progressed more favourably than earlier ones received, and that this was put down to the fact that they had received very early and thorough cleansing.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

SCIENCE AND MOBILITY.

IN the last great war waged by Great Britain and her daughter States both bacteriology and radiography played a part, but not one comparable in importance to that which they are playing to-day.

A Contrast.

In 1900 radiography was still in its infancy, and bacteriology was not favoured by the circumstances in which it was pursued in South African camps. The civil surgeons who had come out to assist the Royal Army Medical Corps were for the most part not men who yearned for life within four walls. Hence, when clinical laboratories were established, it was not always easy to find suitable men to take charge of them. A good deal of pathological work was done, but the bacteriological part of it was small and in the main of such a character that the writer—who was himself for a few weeks one of those who performed it—is not disposed to speak of it with enthusiasm. At all events, he forgives the authorities, and all others concerned, for having looked upon its results somewhat coldly.

In the present war things are very different. Thanks to improvements in radiographic apparatus, excellent pictures can be secured even by those not previously deeply versed in radiology, and an enormous amount of really useful localization work is being done. Equally great is the difference in respect of work of a pathological order. Not only is much more of it in progress, but the attitude of the authorities and all others towards its bacteriological part is entirely altered. Bacteriology, in fact, has become one of those personages to whom Mars accords something more than a mere formal salute. Whether this is because it is recognized nowadays that all wars are doctors' wars, and because bacteriology is an esseutial part of latter-day medicine, or because bacteriology in itself is esteemed a science of military value, is perhaps a question; the point of present importance is that the clinical and other laboratories working near what in England is called "the front" are all in charge of bacteriologists.

Bacteriologists at the Front.

Among those that spring to my mind as I write are Sir Almroth Wright, Fleming, Douglas, and Parry Morgan, who are working together as a team; Sir William Leishman, Sydney Rowland, of the Lister Institute; Harrison, of the Military Hospital, Rochester Row, Westminster; Myer Coplans, formerly of Leeds; Petrie, whose work in Manchuria established his reputation; Henry, of Sheffield University; and Broughton-Alcock, of the Pasteur Institute, Paris. These experts are all engaged on work which is of direct utility to the troops, though it is not always of a clinical character; and some of them keep side line researches going as well. I hope one day to be able to give some account of what each is doing, but at the present moment the work of which I wish to write is that being done by Sydney Rowland. Not only is it interesting in itself, but it is being done in a fashion eminently typical of the time—that is to say, of these times of twentieth century warfare.

Thinking of the environment in which this work is in progress one is inevitably reminded of Diogenes and his tub. The tub of Diogenes was a mobile dwelling, and mobile too is Mr. Rowland's laboratory. Externally a cross between an ambulance and a caravan, it resembles the former in point of size, the latter in respect of the solidity of its walls, and both in the fact that it is mounted on wheels. I cannot describe the chassis, for at the time of my visit I overlooked its possible interest; my excuse is that the hour was the late afternoon and the locality one which in ancient days must have been part of the heritage of the Counts of Flanders; it is therefore almost needless to add that a cold wind was blowing and rain falling. The vehicle was in the courtyard of a school; its interior seemed to measure about 8 ft. long by 6 ft. wide and 6 ft. high; down each side was a narrow bench covered with all the paraphernalia commonly seen in laboratories, and in the centre a space just roomy enough to contain one camp and one cane chair. It was well lighted and ventilated.

Typhoid Carriers.

In the course of my visit Mr. Rowland both showed and told me much that was of interest, and proved himself a very clear exponent of the sometimes conflicting view held on various subjects by himself and other bacteriologists. The laboratory assigned to him had, I gathered, been rendered mobile in order to enable him to move about from place to place with his military chiefs, but in effect only one journey had so far been found necessary; this had brought him from the port at which he landed, and in the neighbourhood of which he worked some little time, to the place at which I saw him. When desirous of working with specimens not originating close by, he found it more convenient to send a messenger out in a motor to fetch them rather than move his laboratory and himself. His laboratory fulfilled all his needs, and he regarded himself, I understood, as a kind of criminal investigation department in the matter of typhoid carriers.

He explained to me his method of procedure, and narrated to me several instances in which it had been successful in putting a stop to outbreaks of enteric fever. Two of these that I recall concerned isolated bodies of men among whom one or two cases of typhoid fever had occurred. A prompt inquiry into the environment of the patients led in each case to the discovery among their companions of a typhoid carrier, who was thereupon removed. Similar work is, I understand, being done by other bacteriologists, and to record a complete history of the environment and previous occupation of every patient discovered to be suffering from a zymotic disorder of any kind is part of the prophylactic routine established by the sanitary branch of the R.A.M.C.

I found, however, there was also another form of anti-carrier work going on in this laboratory, and this I believe to be peculiar so far to Mr. Rowland himself. He is working steadily through one whole army corps, with a view to removing from its midst every typhoid carrier. His method is first to secure a nominal roll of all those in this army who have ever had typhoid fever, and then to send out a messenger in a motor car to secure a specimen of the urine of each of them as soon as the men become accessible on the return from the trenches. A nutrient medium, consisting of bile salt lactose neutral red agar, is inoculated with the urine, and in any colonies grown in this medium it is easy to determine rapidly the absence or presence of typhoid bacilli, and therefore the harmless or dangerous character of the urine tested. It may be objected, of course, that when a search for typhoid carriers is in progress, faeces ought to be examined as well as urine. Mr. Rowland's answer to this objection was to the effect that the examination of faeces for typhoid bacilli is so elaborate and takes so much time that it is impossible to conduct it on a very large scale; and that, furthermore, in the circumstances of this war, it is best to rest content with urine examination alone, since this is rapid and certain. While it was true that this might allow a certain number of typhoid carriers to escape

discovery, yet any carriers whose infection was confined to the intestines might be regarded as relatively harmless. It was easy for a typhoid carrier accidentally to wet a finger with his own urine and shortly afterwards to touch the hand of a friend, or some utensil which the friend was about to use, but a man who soiled his fingers with his faeces was not likely to do so without noticing it, and was pretty certain to take some step or other to cleanse them.

However this may be—and the argument seems sound—it is certain that the campaign on which Mr. Rowland has entered must in the long run prove beneficial to the army. At the time of my visit he had already examined many dozens of specimens of urine secured from ex-typhoid patients, but how many of such men, if any, he had found to be still infective, despite a lapse of months or years, I do not remember.

NOTES FROM FRENCH HOSPITALS.

WE are indebted to Dr. A. S. Gubb of Aix-les-Bains for the notes of the following cases. In one of these it will be seen that suture of the femoral artery for secondary haemorrhage was performed, with results which at first seemed to promise a successful issue.

SECONDARY HAEMORRHAGE.

Suture of the Femoral Artery for Secondary Haemorrhage.

(Communicated by Dr. Gubb and Dr. Duvernay of Aix-les-Bains.)

M. G., a corporal, aged 24, a strongly built, robust man, was wounded in the Forest of Apremont on November 25th. He was struck by two bullets, one in the elbow and the other in the left thigh. He had a large wound of the posterior part of the right elbow, exposing the humerus, which was smashed; the wound did not extend into the joint. The wound in the left thigh was extensive and irregular, the soft parts being projected from the front backwards to the inner side of the femur; there was some bleeding at first. He had an injection of antitetanic serum on November 30th.

Suppuration rapidly set in, and he was transferred to Commercy, where the wound was opened up. He was subsequently transferred to the Mirabeau Auxiliary Hospital at Aix-les-Bains. Things seemed to be progressing satisfactorily when, on the tenth day after admission, he suddenly had a tremendous haemorrhage from the thigh. This was on December 2nd at 4 p.m. Bleeding was at once arrested by means of the tourniquet. At 6 p.m. Dr. Cleret of Chambéry freely opened up the wound over the femoral artery, and on its internal aspect he found two ragged longitudinal openings, each about 7 mm. long and 3 mm. wide, and occupying therefore only a small part of the circumference of the vessel. He sutured the apertures with fine linen thread and the circulation was re-established, the foot becoming warm although the artery could not be felt to pulsate at the ankle. The femoral vein was not seen and was not looked for.

The patient's general health improved greatly thereafter, and his state between December 4th and 11th was quite satisfactory. He regained strength, and the wound looked healthy; it continued to suppurate freely, but granulated readily. The circulation in the limb was normal, and there was no pain, no lowering of the temperature in the damaged limb and foot, and no oedema.

On December 12th, while evacuating the bowels, the patient "felt something crack," and the bleeding returned. The tourniquet was at once applied, but not before the patient had again lost a considerable quantity of blood. An hour after the recurrence of the bleeding the wound was opened up again, but no bleeding points could be seen; nevertheless, after diligent search it was recognized (1) that the lateral ligatures had given way, and (2) that the artery had been destroyed by the suppuration for 8 or 10 cm. in length. Its proximal end, blocked by an organized clot, was divided 3 cm. from the first ligature; the distal end was lost in the granulations. The femoral vein which, on the other hand, was found beneath the artery, was open along its side under conditions similar to those of the artery (this explains the absence of bleeding on the removal of the tourniquet). The vein was divided between two ligatures.

From December 13th to 16th no bleeding occurred, but his general state was less satisfactory, the last haemorrhage having profoundly prostrated the patient. The wound was granulating freely and there were no circulatory troubles and no sepsis.

On the afternoon of December 16th a fresh haemorrhage occurred, less sudden in onset, but still enough to cause an attack of syncope. On looking into the wound it was seen that the blood came from the granulations covering the lower end of the femoral artery. These granulations were soft and broke down between the fingers. To arrest the bleeding forthwith we had the choice between amputation of the limb and ligature at the lower end of Hunter's canal. In view of the extreme urgency of the case the latter alternative was adopted and the artery was ligatured. Unfortunately this was followed by complete arrest of the circulation in the limb, though this had been well maintained after the double femoral ligature. The foot became cold, the patient complained of pain therein, and his general state markedly deteriorated. On the following day livid patches made their appearance on the foot and moist gangrene set in, running a rapid course. Amputation was performed *in extremis* on December 21st and the patient succumbed on the 22nd.

The conclusions drawn are that ligature of the femoral artery and even of the vein may be done with impunity in the middle third of its course, but ligature at the lower end of Hunter's canal means death to the limb.

Resection of the Middle Third of the Femoral Artery for Secondary Haemorrhage.

O. P., wounded on September 11th in Alsace, developed a diffuse aneurysm consequent upon rupture of an aneurysm of the femoral artery following contusion of the arterial walls by a bullet. The artery was resected for a length of 10 cm. in the middle of the course, and this was followed by perfect recovery. There was never any oedema of the lower limb, merely a little stiffness of the movements of the knee.

TETANUS.

Death after an Unusually Long Period of Incubation.

(Communicated by Dr. Duvernay of Aix-les-Bains.)

M. C. was wounded on September 3rd at Varennes; crushing of the tibia by shell was followed by sloughing. An injection of antitetanic serum was given on September 28th. The two wounds were large and irregular, and extensive sloughing of the skin ensued. The one wound was anterior, corresponding to the tibia, the other external corresponding to the fibula. The anterior wound was deep and filled with splinters of bone of varying size, which were removed from time to time. The external wound contained three long, thin, pointed splinters sticking in the masses of muscle, which were also in part sloughing; between the two were other masses of sloughing tissue. The wounds were cleansed, trimmed, and dressed with iodoform gauze.

Some of the splinters could not be seized, embedded as they were in the muscles. Others, much deeper down, represented the posterior part of the tibia. For eight days large masses of sloughing tissue were removed daily. Every endeavour was made to preserve the periosteum. The limb was then put up in a plaster splint and granulation began. Matters progressed satisfactorily, the wound appeared to be doing splendidly; indeed, the patient could move the leg so that union of the fracture had evidently taken place, and his general health was decidedly good.

On November 20th, at the morning visit, the patient complained of being unable to open his mouth, and he mentioned the fact that he had already suffered in this way on two different occasions when he had sore throat. There could be no doubt as to the existence of trismus, though it was not very pronounced. Nothing of interest was seen on examining the throat, but the gum was inflamed.

The trismus was not more pronounced next day; no convulsions had occurred, and the patient insisted that he had had the same condition before. On November 22nd the trismus was more marked, and there was unmistakable dysphagia. On November 23rd he could open his mouth only with difficulty, and the sterno-cleido-mastoid muscles were strongly contracted. The neck was retracted and the head fixed. The pulse was 100, and there were profuse sweats but no fever. It was plain that we were dealing with a case of tetanus, and he was given 2 drachms of chloral and two carbolic acid injections.

On November 25th he was rather better, but the trismus was still very pronounced. The neck was not so stiff, and he was able to turn his head. He was given 3 drachms of chloral. Next day he was better, and had been able to rinse out his mouth. He was given a second injection of antitetanic serum. He slept a good deal under the influence of the chloral; the pupils were fixed. On November 27th he had 2½ drachms of chloral, and again on November 28th. On November 29th he was more lively, but seemed stiffer, and the neck was still very stiff. The pulse was

very variable (140 to 80). He passed a restless night till 2 a.m., but then dozed. He washed out his mouth and remarked that movement of the jaw was easier. He drank a big bowl of milk in the morning, but while changing his nightshirt he suddenly became very faint and died in a few minutes.

At the autopsy the organs in general were healthy. There was no pleural effusion, but a little fluid in the pericardium and in the peritoneal cavity, without any indication of inflammation anywhere. The heart was small, hard, and in systole. The liver was big, and showed traces of fatty degeneration. The kidneys were not adherent to their capsules, but on section were seen to be congested. The state of the limb was excellent. Union had taken place, and the knee-joint was movable. The wounds were reduced to two small surface sores the size of a sixpenny-piece and a shilling respectively. The supervention of tetanus at such a late date is of itself somewhat remarkable, yet the symptoms could not be accounted for in any other way, and there was nothing in the mouth capable of causing them, nor was pain there at any time complained of. The urinary secretion was free, though rather difficult, according to the nurse, during the last few days. The urine was clear, and contained no albumin. The disease ran a mild course, since he was improving daily.

As to the cause of death, there was no tetanic myocarditis, as shown by the observation that the heart was contracted in systole. Death could not have been due to the chloral, for he had only taken 9 grams (gr. 144) daily for the previous three days. On the other hand, there seems no reason to ascribe death to anaphylaxis.

NOTES.

ALMERIC PAGET MASSAGE CORPS.

THE Almeric Paget Massage Corps was started at the beginning of the war by Miss French (daughter of Sir John French), and Miss F. Barrie Lambert, M.B., B.S., who is physician in charge of the mechano-therapeutic department at Charing Cross Hospital. Mrs. Almeric Paget undertook the financial side of the work. The scheme was to provide fully trained masseuses to all the military hospitals and similar institutions. The scheme was approved by Sir Arthur Sloggett, and subsequently by Sir Alfred Keogh. Up to date 110 military hospitals and institutions have been supplied, and 150 masseuses are working for the corps. So far over 8,000 cases have been treated and 90,000 treatments have been given. A massage and electrical hospital has been started at 55, Portland Place, which is free to any officer or man. Here, between 70 and 80 cases are being treated daily, and the work is practically entirely voluntary, many London masseuses giving part of their time; in the provinces the greater number of the masseuses are paid by the corps. Dr. Barrie Lambert, whose services are voluntary, is the medical officer in charge of the centre at Portland Place, which was started with the approval of Sir Alfred Keogh, the War Office agreeing to pay the fares of all the men attending there for treatment.

THE MEDICAL SERVICE OF THE FRENCH ARMY.

At the meeting of the Société de Chirurgie de Paris, M. Tuffier, the outgoing president, took occasion to pay a tribute to the courage and devotion of the medical service of the French army during the war. He stated that at the end of December, of 14,000 medical officers, 6,500 were with the forces, and 793 were killed, wounded, or missing. In exact figures, 93 had been killed, 260 wounded, and 440 were reported missing; 507 were sent to hospital sick. This makes a total of 1,300 out of action. All ranks had shown the same courage: 14 superior officers, 50 officers, and 35 assistants had died. The number of names mentioned in dispatches was 155, among them being those of Cunéo, Ombredanne, Launay, Rouvillois, Pauchet, and Proust.

REWARDS FOR GALLANTRY AND HUMANITY.

By special desire of the King, the following have been enrolled as Honorary Associates of the Order of the Hospital of St. John of Jerusalem in England, in recognition of distinguished services and of great humanity shown by them in rescuing and nursing a wounded British officer whose skull was fractured in an encounter with the Germans on the borders of the Commune of Bethisy St. Pierre, Department of Oise, on September 1st, 1914:

L'Abbé Ernest Pierre Marie Louis Bézard, Supérieur des Missionnaires diocésains de Beauvais à Béthisy-St.-Pierre, Oise.
Le Docteur Edmond Lagelouze, Docteur en médecine de la Faculté de Paris, Bethisy-St.-Pierre, Oise.
Soeur Bénoit, née Laurent Marie Clotilde, Religieuse des Ecoles Chrétiennes de la Miséricorde, Béthisy-St.-Pierre, Oise.
Mademoiselle Juliette Caron, Béthisy-St.-Pierre, Oise.

On the evening of January 19th, Dr. Dercle, Médecin-Major in the French army, was, according to *Le Journal*, presented with the cross of Chevalier of the Legion of Honour at the Val-de-Grâce Hospital in presence of the staff and several wounded officers and soldiers. Major Dercle was wounded ninety-seven times, but he remained on duty till three months ago, when he was disabled by three severe wounds. On the day following his receipt of the decoration he returned to the front.

INDIAN TROOPS.

Dr. W. H. Brailey of Hove, Major R.A.M.C.(T.), has been appointed Consulting Ophthalmic Surgeon to the General Hospitals for Indian troops.

MEDICAL OFFICERS WANTED.

Eastern Mounted Brigade Field Ambulance (Reserve).

We are requested to state that there are vacancies for two lieutenants in this unit. Applications should be addressed to the Officer Commanding, Eastern Mounted Brigade Field Ambulance (Reserve), R.A.M.C.T., Drill Hall, Grove Road, Luton.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Prisoner of War.

Captain A. D. O'Carroll, R.A.M.C., formerly reported as missing, is now stated to be a prisoner.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE LIVERPOOL MERCHANTS' HOSPITAL.

THIS hospital, designed for the front, owes its inception to the munificence of Liverpool merchants and patriotic citizens. The building is a light wooden structure, so designed as to be readily and easily moved from place to place. The staff includes Lieutenant-Colonel Nathan Raw, Senior Physician, and Major T. C. Litler Jones, Senior Surgeon. The military chief will be appointed by the War Office; forty-five fully-trained nurses and forty orderlies—all Liverpool people—have already been appointed. The chief object of the hospital is to be as close to the firing line as possible, in order to render effectual aid at once, which at present is often given with great difficulty in permanent buildings unsuited for the purpose, and frequently too far removed from the danger zone of action. It is expected that such a movable hospital will be the direct means of saving life when time and distance are in question, not to mention the speedy alleviation of anguish and pain, so often intensified through unavoidably prolonged transport of the wounded. With such a hospital the delay will be reduced to a minimum, and a diminution of the death-rate among the wounded through timely assistance, to say nothing of the dangers of wound infection, is confidently anticipated; £25,000 have been subscribed, which represents the initial cost and equipment of the hospital, and £1,000 a month for twelve months' maintenance has been guaranteed. Well indeed may Liverpool be proud of its generous citizens, whose action will be highly valued by posterity as worthy of no mean city set upon a hill.

THE LIVERPOOL MEDICAL INSTITUTION.

At the annual meeting of the Liverpool Medical Institution, on January 21st, the following list of office-bearers and members of council was adopted. *President:* E. W. Hope; *Vice-Presidents:* R. J. M. Buchanan, Alexander Stookes, *R. J. Hamilton, *W. J. Fleetwood; *Treasurer:* *Llewellyn Morgan; *General Secretary:* Frank H. Barendt; *Secretary of Ordinary Meetings:* John Hay; *Secretary of Pathological Meetings:* D. Moore Alexander; *Librarian:* Nathan Raw; *Editor of the Journal:* R. W. Mackenna; *Council:* V. C. De Boinville, James Huskie, Robert Jones, W. McAfee, A. C. Ransome, J. H. Willett, Claude Rundle, *Reginald T. Bailey, *Thomas Guthrie, *F. M. Gardner-Medwin, *W. Allen Daley, *W. C. Oram and *Gerald Wallace. Auditors: *V. C. De Boinville and *P. F. Tinne. Those marked (*) did not hold the same office last year.

A MOTOR LABORATORY FOR THE WELSH ARMY CORPS.

At a meeting of the executive committee of the Welsh Army Corps last week it was stated that the first division of three brigades of infantry with details now numbered over 15,000 men; it was decided to continue recruiting for the existing battalions pending the decision as to the formation of fresh units. Mr. Lynn Thomas, who is raising the medical units for the corps, stated that he was strongly of opinion that a bacteriologist should be appointed on the staff of the division; he had learnt from the War Office that the appointment would be sanctioned if a motor bacteriological laboratory, fully equipped, were provided. The cost was estimated at between £1,200 and £1,500, and Mrs. Lynn Thomas, who, owing to illness, had not been able to take an active part in the movement, was prepared to meet this expenditure. The proposal was approved by the committee and a cordial vote of thanks passed to Mrs. Lynn Thomas. The importance of bacteriological work for an army in camp or in the field needs no argument, and the news that such a laboratory is to be provided by the liberality of the wife of a member of the profession will be received with general satisfaction. We understand that sanction has been given by the War Office to form a sanitary section in connexion with the same division, and that Dr. D. Llewellyn Williams has been put in command subject to the confirmation of his appointment by the War Office. The three field ambulances of the division have already obtained their full complement of men, and recruiting for them has accordingly ceased.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE CHAIR OF MEDICINE AT EDINBURGH.

AT a meeting of the curators of Edinburgh University on January 25th, Dr. George Lovell Gulland, M.A., B.Sc., F.R.C.P.E., was appointed to the Chair of Medicine, vacant through the resignation of Professor Wyllie. Professor Gulland graduated M.B. in 1886, and M.D. in 1890, in the University of Edinburgh—on both occasions with honours. He was resident physician in the Royal Infirmary and the Sick Children's Hospital, and in 1892 was appointed assistant physician to the Royal Infirmary, and physician in 1911. In 1913 he became senior lecturer in clinical medicine to the university. Before graduating he was, in 1884–85, research assistant with Sir E. Ray Lankester, and when the research laboratory was established by the Royal College of Physicians of Edinburgh, he was one of the first workers in it. In 1893 and 1895 the research prize of the college was awarded to him, and in 1896 he received the Freeland-Barbour Scholarship. He was appointed physician to the Royal Victoria Hospital for Consumption in 1897, and from that date until 1910 regularly gave clinical courses on diseases of the chest. But the work by which his name is best known to the profession is in connexion with the blood. In addition to contributing a large number of papers to scientific journals on the blood, on pernicious anaemia, and on lymphatic leukaemia, he is the author of a work entitled *The Blood: A Guide to its Examination*. He has served as examiner for the Universities of Glasgow and Edinburgh, and since 1892 for the Royal College of Physicians.

SCOTTISH WOMEN'S FIRST AID CORPS.

Since the beginning of the war good work has been done by the Scottish Women's First Aid Corps (affiliated with the St. Andrew's Ambulance Association). It has trained ladies in first aid and Red Cross work, with the result that during the past five months 429 have passed in first aid, 231 in sick nursing, and 33 in emergency cooking. Four members have volunteered for service abroad—two to France and two to Serbia—and are in hospital near the fighting line. The Red Cross members have also been busily engaged, and have taken their share of work at the rest stations—in Craigleith, in Dalmeny Hospital, in St. Leonard's, and at the Convalescent Home at Murrayfield. Further, a bed (£50) in the Scottish Hospital at Rouen has been supported by the members of the corps, and in other directions help has been freely given

Canada.

[FROM OUR SPECIAL CORRESPONDENTS.]

IMPERIAL RECIPROCITY.

SOME progress has been made towards a settlement of the question of reciprocity between Great Britain and the province of Ontario. As was stated in a previous issue, the General Medical Council of Great Britain has been obliged to refuse the services of physicians licensed in Ontario who wished to practise with the British Red Cross. It was hoped by many that at such a time as the present the regulations might have been relaxed sufficiently to remove such a restriction, although there is no reciprocal agreement between Great Britain and Ireland and the province of Ontario. It is thought by some that were reciprocity in force Ontario in some ways might be the loser, but the opinion seems to prevail that any disadvantages that might accrue would be more than outweighed by the exigencies of the present situation. The matter was discussed on December 22nd at a meeting of the Council of the Ontario College of Physicians and Surgeons, at which Dr. J. MacArthur of London, Ontario, presided. It was decided that the preliminary arrangements should be referred to the executive committee, and that the legislative committee should obtain from the Ontario Government during next session the powers necessary to enable the College to re-establish reciprocal relations between the Ontario Council and the Medical Council of Great Britain and Ireland.

EFFECT OF THE WAR ON HOSPITALS.

The hospitals have been severely affected by the war, and in Montreal it seemed as though the three principal hospitals might have to close their doors. A campaign among the 800 governors of the General Hospital produced $150,000 in two days, sufficient to meet expenses for the next two or three years. The appeal for funds for the Notre Dame and Western Hospitals has been equally successful, and they will remain open at least for some time to come. In Vancouver the staff of the General Hospital have voluntarily agreed to a reduction of from 5 to 10 per cent. in their salaries in order to help the board in its financial difficulties.

Correspondence.

THE LISTER INSTITUTE AND THE MEDICAL RESEARCH COMMITTEE.

SIR,—I must leave it to others to carry on controversy in your columns as to the merits of the plan for abolishing the independence of the Lister Institute and presenting it to an untried Government Committee.

I wish, however, to remark in regard to the "first ground" upon which (according to your correspondent) the Governing Body based its plea for adopting this procedure—namely, that the Lister Institute has no hospital beds, and would under the scheme acquire a small hospital as follows:

The Lister Institute is not allowed (by the articles of incorporation) to spend any of its funds on the building or maintenance of a hospital. It was reasonably held by the founders that any and every London hospital would furnish such clinical opportunities as might be required by workers at the Lister Institute. Further, there is nothing to prevent any one from providing a special hospital for the use of the Lister Institute—if considered needful.

The second and third grounds alleged, namely, that the Lister Institute has "only £9,000 a year" from endowment, and makes a *gross* earning of £15,800 from the sale of vaccines etc.—the permanence of which is extremely doubtful—appear to me to be delusive. The income resulting from the sale of vaccines should be expended, as it largely is, in the preparation and improvement of vaccines, and it may well be decided as a matter of policy to restrict the commercial activity of the Lister Institute in this field. We have only the Governing Body to blame if they have made use of the profits (how much?) of the

vaccine business for general purposes. Whatever that misapplied profit amounts to should be now funded for the use of the vaccine department exclusively, and that department should be properly organized as a quasi-independent business concern, on a sound financial basis. That misapplied profit can be assigned to its proper use without the aid of the Government Research Committee or any special fuss. Our endowment of £9,000 a year remains, and is a very handsome one, which should produce splendid results if managed by a capable Governing Body.—I am, etc.,

London, W., Jan. 26th. E. RAY LANKESTER.

SERUM SICKNESS AND ANAPHYLAXIS.

SIR,—I think the article on serum sickness in your issue of January 23rd calls for a few words of warning lest it lead your readers to place faith in a second or "guarding" dose of serum as a preventive of anaphylaxis.

During the past twelve years I have given or had given many courses of serum treatment, comprising series up to forty consecutive injections. It is upon this experience that the following remarks are based.

True anaphylactic shock may accompany not only the second but any subsequent injection of serum, even if the interval between any two injections has not exceeded more than three or four days. The result of the shock may vary from death within a few minutes or from severe collapse requiring artificial respiration and taking several hours for recovery, to a mere indefinable sensation of discomfort.

In a typical case, within a minute or two of the injection there is slight flushing of the cheeks, the patient becomes very quiet, then complains of an indefinable sensation of feeling "queer." The attack may go no further. If it does the flush extends in area and intensity, the patient sees "funny things" or cannot see at all, vomits, becomes cyanosed, rigid and unconscious, and his pulse almost imperceptible. Death may occur within five minutes or the attack passes off and the patient then has usually no recollection of it beyond having felt "bad."

I do not know of any means of anticipating or avoiding anaphylaxis. The successive doses of serum may all have been given within a few days' interval; "refined" or "heated" serum may have been used, Besredka's method of giving a small initial dose early and the full dose later in the day employed—nevertheless, the catastrophe may occur.

When once a patient has suffered from anaphylactic shock a very small dose of serum, even if administered by the mouth instead of subcutaneously, may cause a mild and modified recurrence of the symptoms.

I should like also to enter a protest against the equivalent use of the terms "serum sickness" and "anaphylaxis." Pathologically they may be related, clinically the two conditions are distinct. The term "serum sickness" should be used for the symptom complex which may follow the first dose of serum, and the term "anaphylaxis" for the generally more serious state sometimes following on a second or subsequent injection. Serum sickness is associated mainly with pyrexia, urticaria, and joint pains, and occasionally with sudden, non-fatal syncope. It is of comparatively gradual onset. Anaphylaxis, on the other hand, is often combined with dangerous cardio-vascular and respiratory symptoms occurring within a very short time of the injection.

Obviously serum sickness also may and actually does occur after a second or later dose of serum, independently of any anaphylaxis, but it does not appear to be in itself a contraindication to serum treatment, nor to render the patient more subject to anaphylactic shock.

In concluding, I should like to refer to the point raised in Dr. Gubb's letter concerning the possibility of a wounded soldier who has been prophylactically injected with antitetanus serum being later exposed to the danger of injection with antidiphtheria serum. It seems to me even more likely that he may return to the front, be again wounded and receive another injection of antitetanus serum. In either event the result may be serious, but in any case the giving of two or more injections on the occasion of treatment of the first wound will not, as your article suggests, afford him any protection against subsequent anaphylaxis.—I am, etc.,

A. S. GRÜNBAUM, Major R.A.M.C.(T.).

The School of Medicine, Leeds, Jan. 25th.

THE STOPPAGE OF ALCOHOL IN DELIRIUM TREMENS.

SIR,—In your issue of January 9th Drs. Harry Campbell and Astley Cooper make kindly reference to the work of the Norwood Sanatorium. May I be allowed a few remarks on the subject concerned?

Ten years' experience at the institution, covering some 1,500 cases, has led to the conclusion that delirium tremens depends in all cases primarily and remotely upon the acquisition of high tolerance of alcohol, and secondarily and proximately upon a sudden and considerable fall in the accustomed quantity of alcohol circulating in the brain and nervous system.[1]

The evidence on which this conclusion is based is purely clinical, and embraces the histories of 109 cases of delirium tremens, counting both attacks occurring in the sanatorium and previously. In a few instances the patients had forgotten the circumstances connected with their attacks, which had taken place years before, but in the large majority they had a clear remembrance of all that had happened before the onset of delirium. In these histories the following facts stand out:

The patients had all been heavy and continuous spirit drinkers for long periods, usually taking the same daily amount, and rarely becoming more than very mildly intoxicated; indeed, many had never shown the least sign of intoxication. Obviously they had all established a high grade of tolerance of alcohol—a condition to which they had only slowly attained.

About three days before the onset of delirium a very large and sudden fall in the amount of circulating alcohol could be safely inferred. But this fall had not always been attained in the same way.

In the majority there had been sudden and complete abstention from alcohol under medical advice; in a few, on the patient's own initiative. In some the medical attendant had allowed a little alcohol, but never in amounts sufficient to preclude a sudden and considerable fall in the quantity circulating in the system. The amount permitted would vary from 4 to 8 fluid ounces of spirit in the twenty-four hours, whereas the patient's accustomed amount was probably 26 to 36 fluid ounces in the same space of time. From the failure of such amounts to prevent delirium, it has been argued that "tapering" is useless.

In many cases (about 26 per cent. in my list) there had been no abstention or partial abstention; the patient had, as the phrase goes, "drunk himself into delirium tremens." But close investigation disclosed that in practically all these cases what had happened was that the patient had drunk himself into gastric catarrh, with persistent and uncontrollable vomiting—a condition exactly fitted to ensure a sudden and considerable fall in the quantity of circulating alcohol. And in these cases the delirium had commenced after the same interval as in the cases where abstention had been practised.

In the sanatorium it has been found that in order to prevent the onset of delirium tremens, it is above all things necessary to avoid any large reduction in the allowance of alcohol during the first three or four days of the tapering process; this is the danger period. It is not easy to gauge the degree of tolerance established; for this, except in strictly sober alcoholists, does not necessarily coincide with the habitual amount of alcohol ingested. But in practice it is found that it is frequently necessary to give, during the first twenty-four hours, 16, 18, or even 20 fluid ounces of brandy or whisky. Subsequently, 2 or even 3 fluid ounces may be subtracted each succeeding day. When, however, the allowance has fallen to 6 or even 8 fluid ounces, there would seem to be no further danger of the complication arising, and the spirit may be finally cut off.

As a result of this practice, the percentage to admissions of delirium tremens in the sanatorium has fallen from 6 to 0.5; and most of the cases making up the small later figure are accounted for by the complication being present on admission, or by misstatements by patients regarding the habitual amount of alcohol taken.

What is true of the causation of delirium tremens is true also of the causation of alcoholic epilepsy, but with some modifications. Major alcoholic fits occur as a rule as the result of a sudden fall in the amount of circulating alcohol

[1] *On Alcoholism.* Francis Hare; London, 1912.

in a patient who has acquired considerable tolerance. Often, indeed, a fit or a succession of fits is a premonitory symptom of delirium tremens. And the onset of the latter is frequently assured by the treatment adopted for the former. In this way. A chronic alcoholist, owing to unusual circumstances, finds himself forced to abstain for, say, fifteen or twenty hours. As a result he has a major fit. The medical man summoned in this emergency always, so far as I can gather, emphatically enjoins strict abstinence from alcohol. The fit may or may not recur, but in either event an attack of delirium tremens is quite likely to supervene after an interval of two or three days. I have seen several such occurrences in consultation practice, two of which proved fatal.

In my opinion an attack of alcoholic epilepsy nearly always demands very cautious tapering, and the presence of marked albuminuria decidedly emphasizes the demand. The reason is simple. An alcoholic fit may sometimes occur in alcoholists who have established only low tolerance; in such there will be little risk of subsequent delirium tremens. But marked albuminuria usually points to prolonged, steady drinking and consequent high tolerance, the which greatly increases the risk of delirium.

It is possible in many cases to abort an attack of delirium which is already present by the proper administration of alcohol. But for success two things are essential. The attack must be in a quite early stage, and the administration of alcohol must be prompt and adequate; it has been found necessary to give as much as 16 fluid ounces of whisky or some other spirit within three or four hours. Given under these conditions the alcohol does not intoxicate but acts as a pure hypnotic. Subsequently tapering on the usual lines should be carried out.

It would seem that the significance of acquired tolerance of alcohol has been very largely overlooked; indeed, I have not yet come across in works on alcoholism any reference to the existence of such a condition.—I am, etc.,

Beckenham, Jan. 18th. FRANCIS HARE.

SIR,—A remark made, with reference to delirium tremens, in the review of Dr. Mercier's *Textbook of Insanity and other Mental Diseases*, which appeared in the JOURNAL of December 19th, 1914, seems to have led to some misconception on the part of some of your correspondents. This was probably due in part to the fact that I did not actually quote the statements that I deemed to be "scarcely justified."

As the point at issue may be regarded as of some practical importance, will you allow me now to quote from the book itself? It is there stated (pp. 241, 242) that delirium tremens "has been shown by Dr. Francis Hare *to be due* to the sudden withdrawal of the whole or a great part of the customary daily quantum of alcohol of those who are accustomed to take regularly a large quantity"; "that an attack of delirium tremens *can be cut short with certainty at an early stage* by the administration of the customary dose of alcohol"; and "that an attack *can infallibly be produced in any one* who has been accustomed for some time to take large doses of alcohol by cutting off or materially diminishing the customary quantity." (The italics are mine.)

These statements seem to me to be too sweeping. (1) There are many cases in which attacks take place when there has been no cessation or diminution of excessive drinking; (2) there are many cases in which the attack cannot be cut short in any stage by the mere administration of alcohol in any quantity; (3) although there may be, and probably are, many cases in which an attack does supervene on cutting off or materially diminishing the customary supply of alcohol of a person who is drinking excessively and taking no other food (for practically in such cases the amount of other nourishment taken is negligible), yet there certainly are many cases of threatened delirium tremens in which unremitting attention to nursing and nourishment (sometimes with the aid of forced feeding), and appropriate medicinal treatment, will work even a rapid cure in conjunction with complete stoppage of alcohol.

I am well aware that the doctrines of the certain danger of stopping the alcohol of excessive drinkers, and of the successful cutting short of delirium tremens by giving alcohol, are very old, and indeed were generally taught, almost dogmatically, up to less than half a century ago; but I cannot doubt that the unqualified statements to which I have called attention will be considered by many experienced practitioners to need revision in the next edition of Dr. Mercier's invaluable book.—I am, etc.,

January 21st. THE REVIEWER.

P.S.—Having seen, by your courtesy, an advance proof of Dr. Hare's interesting letter of January 18th, I beg permission to note (1) that every *sober* regular drinker of alcohol in any form must needs acquire a marked degree of tolerance, though he does not suffer from total abstention; (2) that no mention is made by Dr. Hare of the important matter of nourishment in the treatment of delirium tremens.

COLOUR VISION THEORIES.

SIR,—Mr. Devereux Marshall, in last week's letter, says that he wished in his paper to point out that Dr. Edridge-Green's "deductions as well as his theory have been accepted by a very large body of scientific men." On reading his paper again I fail to find such evidence in support of the Edridge-Green theory, the bulk of the paper being in support of his tests for colour blindness, which I think no intelligent and unbiassed person disputes. At the International Congress in 1913 the favourable reception of Dr. Edridge-Green's paper was limited to his tests, but, as Mr. Devereux Marshall must remember, there were several who demurred to his theory.

May I point out to Dr. Edridge-Green that, in order to support his views on the colour vision of primitive man, which I admit are very captivating, it is necessary for him to show that at one time red and violet were the only colours recognized—that is, that then yellow and green were not seen as distinct hues. It is well known that yellow and green ornaments and pigments were used by the ancient Egyptians, and that yellow was certainly recognized in Homeric times; yet he baldly asserts that "all the evidence points to Homer's vision being dichromic, and that he saw red and violet with a wide neutral region." This, in the face of the leading article on January 9th, in which express reference is made to the Homeric word *ξανθός*, or yellow. No doubt has ever been raised as to the meaning of this word, which is frequently used to describe the golden hair of Achilles and of Ulysses. In one single passage Homer uses the word with a slightly different meaning, *ξανθας ἵππους*, or bay mares, but it can never mean either red or violet. Dr. Edridge-Green entirely neglects this word, *ξανθός*, and urges, in support of his views, the two Homeric words, *ἰοειδής* and *πορφύρεος*, which he asserts mean violet. I believe no Greek scholar, including Liddell and Scott, would admit that either of these words was used to define any definite colour in Homeric times. Further, *ἴον* in the Odyssey means a snowdrop; it only meant a violet in post-Homeric times.

Dr. Edridge-Green expresses surprise at my statements about contrast colours. It is necessary to distinguish between Simultaneous and Successive contrast colours. When one part of the retina is stimulated and attention is directed to a different part of the retina, Simultaneous contrast effects may be induced (as in the instance with green paper on which is a white or grey patch, the whole being covered with tissue paper). These Simultaneous contrast colours are most effectively excited, as Dr. Edridge-Green rightly says, by pale, not saturated, colours.

Successive contrast colours are, however, most distinctly seen when the inducing colour is a saturated one. These are the phenomena that occur when, whether by moving the eye or by moving the coloured object, the *same* part of the retina is subjected to now one and now to another kind of stimulation, as, for instance, in the old advertisements of Pears' soap.

Dr. Edridge-Green is an interesting psychological study. Here is a man who has a sincere and honest faith in his theory. He tells us that he has searched in vain for facts that are inconsistent with it, yet when they are presented to him, or when the arguments that he adduces in support of his views are shown to be faulty, he seems incapable of appreciating the fact. This is surely the kindest way to regard his attitude. He asserts that red and violet were the only colours known to Homer. When it is pointed out that in Homer, in the Zendavesta, and in the Norse Edda

there is no word to express blue, but that Homer frequently uses a word that expresses yellow, he pays no attention to this word for yellow, but gives two Homeric words that never meant blue or violet in Homeric times. Again, in my previous letter I showed that he failed to distinguish between mixing colour sensations and mixing coloured pigments; and now I find that he shows a similar want of discrimination between Simultaneous contrast and Successive contrast effects. Further, his meaning is exceedingly difficult to follow: I would instance his explanation of Benham's top that I quoted in full on January 16th; what impression does he intend to convey to his readers by the expression "red green"?

At the same time his practical tests, and his classification of cases of colour blindness deserve all praise, and his theoretic ideas on the extremely difficult subject of colour vision may possibly be of value from a scientific point of view, although he is unable to express them precisely in words; it may be that they are incapable of such expression.—I am, etc.,

Newcastle-upon-Tyne, Jan. 23rd. A. S. PERCIVAL.

THE "ELDERTON" CONTROL METHOD OF TESTING THE VALUE OF NEW TUBERCULIN.

SIR,—Dr. W. H. Wynn, who has become a convinced advocate of the method of large doses of tuberculin which I made the burden of my Parkes Weber Prize Essay in 1909, criticizes with just severity Dr. Batty Shaw's desultory observations and conclusions upon the value of tuberculin treatment.

Dr. Batty Shaw's work is self-condemned when he presumes to place reliance solely upon the most variable, most capricious, and most elusive phenomena—râles of various sorts—as the essential criteria for estimating improvement. He calmly ignores the recognized and trustworthy evidence furnished by such objective phenomena as the quality and quantity of sputum, the condition of the blood, the state of nutrition, controlled by analysis of the urine, the state of the temperature and pulse, and the general condition of the patient. Both he and Dr. Rigg attempt by this fantastic and untrustworthy scheme to prove, what is admitted by myself and all those who have used large doses, that these small doses have no effect at all in modifying either for better or for worse the tuberculous process. Nearly a quarter of a century ago these small doses were tried and proved to be useless. All statistics furnished by Dr. Lawrason Brown and others tend to show that these small doses are valueless.

It surprises me to find that Dr. Rigg[1] considers a rise of temperature to 99° F. is evidence of a reaction to a dose of 0.000001 c.cm. I have seen the temperature rise to 101 and even 102° after an *injectio vacua*, whether as a result of expectancy or due to some temporary disturbance of thermotaxis, is a matter of conjecture. A rise of temperature *per se* is not a reaction, even though many, who use small doses of tuberculin, will have it so.

I wish to warn the medical profession against sharing Dr. Batty Shaw's obvious error of imagining that the casual administration of a preparation called tuberculin, no matter what the doses may be, or how they are given, or for what period, is a satisfactory way of estimating the value of tuberculin treatment. I trust medical men will rather put their faith in the solid, careful, and unbiassed work of those who have long and carefully studied the various methods of using tuberculin. Nobody has the right either to applaud or to condemn any method of treating pulmonary tuberculosis unless he has watched the effects of treatment for at least five years. As yet Dr. Batty Shaw is not even an apprentice in the use of tuberculin. I would strongly recommend any medical man who has been captivated by Dr. Batty Shaw's way of estimating by means of râles the effects of useless doses of tuberculin in a small group of cases, not even controlled by after-examinations, to visit our tuberculin dispensary at 1, Manor Street, Chelsea, where he will learn by clear and direct evidence, firstly, that these small doses have no beneficial effect, and secondly, that in the majority of cases large doses bring about improvements which manifest themselves in diminution of sputum till it ceases, disappearance of tubercle bacilli from the sputum, increased body weight, marked increase of energy, disappearance of cough, marked improvement of the temperature and pulse, improvement of the physical signs, and often apparent restoration to health.

Dr. Wynn has had abundant opportunities of observing the effects of tuberculin in large doses for a number of years, because it is now four years since he visited my tuberculin dispensary. He is one of the few medical men who wished to see things for himself, and his letter proves conclusively that he is an advocate of large doses, and agrees with me that small doses are useless. No sound authority upon tuberculin treatment would expect Dr. Batty Shaw's method to have any but a purely negative result. Dr. Wynn is a far better guide on the question of tuberculin treatment than Dr. Batty Shaw, because he has not been afraid to use doses large enough to have an effect.—I am, etc.,

January 25th. W. CAMAC WILKINSON, M.D., F.R.C.P., Director, Tuberculin Dispensary.

[1] BRITISH MEDICAL JOURNAL, January 16th, p. 140.

RECOGNITION OF BELGIAN PRACTITIONERS IN THE UNITED KINGDOM.

SIR,—In pursuance of the Order in Council dated January 7th, 1915, by which the Medical Act, 1886, was made applicable to the Kingdom of Belgium, the Executive Committee of the General Medical Council has passed the following resolution:

> That so long as the Order in Council of January 7th, 1915, remains in force, any person who produces evidence satisfactory to the Registrar that he has obtained the degree of Doctor of Medicine in any of the Belgian Universities of Brussels, Ghent, Liége, or Louvain, and is legally authorized to practise medicine, surgery, and midwifery in Belgium, and who satisfies the Registrar as to the other particulars specified in Section 12 of Part II of the *Medical Act*, 1886, shall be entitled to be registered in the *Foreign List* of the *Medical Register*.

It is necessary, according to the provisions of the Medical Act, 1886, that any person applying to be registered in respect of the degree of M.D. of any of the above-mentioned universities should produce to the Registrar documents or certificates as follows:

1. Evidence that he possesses the diploma of M.D.
2. Satisfactory evidence of identity.
3. Satisfactory evidence of good character.
4. Satisfactory evidence—
   (*a*) That the applicant is not a British subject; or
   (*b*) That, being a British subject—
      (i) The said diploma was granted to the holder at a time when he was not domiciled in the United Kingdom, or in the course of a period of not less than five years, during the whole of which he resided out of the United Kingdom; or
      (ii) He was practising medicine or surgery or a branch of medicine or surgery in the United Kingdom on January 7th, 1915, and that he had continuously practised the same either in the United Kingdom or elsewhere for a period of not less than ten years immediately preceding January 7th, 1915.

Application should be made to the Registrar for a form for the use of Belgian practitioners seeking registration. Belgian practitioners who fulfil the prescribed conditions may thereupon, without further examination, be inscribed in the British *Register* and acquire all the rights and privileges of duly qualified British practitioners.

The documents, the prescribed fee (Five pounds), and the cost (One shilling) of the Government stamp, should be transmitted to the address set forth hereunder:

The Registrar of the General Medical Council,
299, Oxford Street, London, W.

—I am, etc.,

A. J. COCKINGTON,
Offices of the General Medical Council, London, W., Jan. 27th. Acting Registrar.

BELGIAN STUDENTS AT CAMBRIDGE.

Textbooks of Anatomy Wanted.

SIR,—We are gradually building up a little Belgian University here for students who, for one reason or another, cannot go to the front, and for professors who are past the age of serving. Altogether we have between one hundred and two hundred students, and some fifteen to twenty professors.

Last term we were able to establish effective teaching in four faculties, and this term we have increased the number to six. In the Faculty of Medicine we are in need of copies of some standard textbook on human anatomy—preferably Gray's.

This University has already found several thousand pounds to support our guests, and will have to find several thousands more to keep things going till next June. Consequently we have to husband our resources very carefully and cannot afford to purchase such expensive textbooks as Gray's *Human Anatomy*.

It may be that some of your readers have copies of this work lying unused on their shelves. If this is so, I should be very grateful if they would send them to me for the use of these students. At present ten or a dozen copies would suffice.—I am, etc.,

Christ's College Lodge, Cambridge, Jan. 25th. A. E. SHIPLEY.

Universities and Colleges.

UNIVERSITY OF LONDON.

Metabolism in Infancy.

A COURSE of advanced lectures on metabolism in infancy is being given in the physiological theatre of Guy's Hospital by Dr. M. S. Pembrey, University Reader in Physiology, and Mr. J. H. Ryffel, B.Sc. The first lecture was given on Thursday last. Subsequent lectures will be given on succeeding Thursdays at 4.30 p.m. up to and including March 11th. The lectures will be illustrated by experiments, and are addressed to advanced students of the university and others interested in the subject. There is no charge for admission, and attendance at the course is recognized in connexion with B.Sc. honours degree in physiology.

Appointment of Professors.

At a meeting of the Senate on January 27th Dr. Edward Barclay-Smith was appointed to the University Chair of Anatomy, tenable at King's College, in succession to Professor David Waterston, and Dr. E. P. Cathcart was appointed to the University Chair of Physiology, tenable at the London Hospital, in succession to Professor Leonard Hill.

QUEEN'S UNIVERSITY, BELFAST.

THE following candidates have been approved at the examination indicated:

M.B., B.CH., AND B.A.O.—W. W. Blair, W. K. Campbell, F. L. Cleland, D. M. Clements, R. Condy, F. J. Devlin, *E. Doherty, G. Gordon, T. B. McKee, *F. McKibbin, T. P. McQuaid, E. W. Mann, S. A. D. Montgomery, J. Park, M. G. Paul, J. C. Robb, F. G. Smyth, *J. K. Stewart, Martha J. M. Stewart, P. W. White, *J. C. Wilson.

* Passed with second-class honours.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

AT a meeting of the Council on January 21st Sir Arthur Chance was re-elected to represent the College at the meetings of the General Council of Medical Education and Registration of the United Kingdom.

CONJOINT BOARD IN SCOTLAND.

THE following candidates were successful at the quarterly examinations of this Board, concluded in Edinburgh on January 25th.

FIRST EXAMINATION.—Chombil Vittil Appunni Menon, Kaikhasru Sorabji Bhiwandiwalla. Four passed in Physics, two in Biology, and two in Chemistry.

SECOND EXAMINATION.—Shapoor Dinshaw Vania, R. G. Battersby, L. L. Steele, T. Jackson, T. R. Wilson, A. Black, Don Adrian Jayasingha, Arukatti Patabendige Frederick Abeysuriya. Two passed in Anatomy, and two in Physiology.

THIRD EXAMINATION.—C. Harris, H. V. Fitzgerald, R. McGregor, W. McAlpine, A. Mathewson, E. Spence, J. A. Smith. Two passed in Pathology and seven in Materia Medica.

FINAL EXAMINATION.—The following were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P.and S.G.: M. M. Fitzgerald, W. H. Wray, Sarah L. Rook, Jacobus Johannes de Waal, H. O. Martin, C. F. Pereira, A. F. Roaddie, H. P. Margetts, G. B. Charnock, C. C. Irvine, H. D. Atherstone, C. T. Darwent, J. K. Garner, G. D. Newton. Four passed in Medicine, four in Midwifery, and ten in Medical Jurisprudence.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*N. W. Rawlings, *†E. M. Townsend.
MEDICINE.—*J. A. W. Robinson, *M. C. Stark.
FORENSIC MEDICINE.—C. D. Banes, W. F. Matthews, J. A. W. Robinson, M. C. Stark.
MIDWIFERY.—C. D. Banes, H. A. de Morgan, W. F. Matthews, D. C. Ogilvie, J. A. W. Robinson, M. C. Stark.

* Section I. † Section II.

Medico-Legal.

STEVENS'S CONSUMPTION CURE.

THE following appeared in the *Daily Telegraph* of January 26th:

"CONSUMPTION CURE."
Charge of Perjury.

At Bow Street Police-court yesterday (January 25th), before Mr. Hopkins, Arthur Alfred Henry Bennett, 54, described as a surgeon, with no fixed abode, was charged on a warrant with committing perjury in the libel action of Stevens against the British Medical Association in the King's Bench Division on July 17th last.

Detective-inspector Burch deposed that he found the prisoner detained at Gravesend Police-station on Sunday evening. When asked if his name was Alfred Henry McFee he said, "My name is Arthur Alfred Henry Bennett, born in Tambouroora, New South Wales, in 1861. I have no legal claim to the name of McFee." Upon the warrant being read to him he replied, "Perjury! It's a nice charge." He had in his possession a memorandum of agreement in the name of McFee.

Prisoner, who appeared to be ill, was remanded for the Public Prosecutor to be represented.

Obituary.

JOHN WAINMAN FINDLAY, M.D.GLASG., F.R.F.P.S.GLASG.

IT is with very great regret that we have to announce the death of Dr. J. W. Findlay, at his father's residence, Lyttle Park, East Kilbride, near Glasgow, on January 16th. He was only 41 years of age, and for the past eight years had been debarred by illness from active medical work, yet in such a short professional career he had demonstrated abundantly the possession of rare gifts for laboratory and clinical investigation, and seemed about to enter on a distinguished career as a physician.

He was born in Glasgow, and was educated at the High School and in the University of Glasgow. From the first he showed more than ordinary promise. His university career was brilliant. He was invariably to be found amongst the first three or four men in every class, and several well-known medals and prizes were won by him. In 1894 he graduated M.B., C.M. with highest honours. The following three years were spent in resident posts in the Western and Royal Infirmaries of Glasgow, and as assistant and pathologist to the Crichton Royal Institution, Dumfries. In 1898 he received the degree of M.D. with honours, and a Bellahouston Gold Medal for a thesis, "The choroid plexuses of the lateral ventricles, their anatomy, functions, and pathology (in relation specially to insanity)," afterwards published in *Brain*, Part II, 1899. As a student he very early showed his capacity for original investigation, the John Reid Prize being awarded in his graduation year for "A research into the histological structure of the olfactory organ." In these few years between graduation and 1906 (when ill-health compelled the abandonment of professional hopes), cut into as they were by a trip to Australia and a year at the South African war, will be found an admirable record of work. And the quality of this work was the greater as it was carried out amidst the harassing exigencies of private practice in a densely populated segment of industrial Glasgow. Findlay's bent was towards pathology in its relationship to medicine, and he made full use of his opportunities in the pathological department of the Royal Infirmary and in the wards of his chief, Dr. T. K. Munro (now professor of medicine in the University of Glasgow). The following are some of the titles of papers published: "On the pathology of acute yellow atrophy of the liver" (BRITISH MEDICAL JOURNAL, 1900); "Changes in the peripheral nerves in a case of diabetes mellitus" (*Glasgow Medical Journal*, 1901); "Tetanus following revaccination" (*Lancet*, 1902); "Chronic lymphatic leukaemia" (*Glasgow Medical Journal*, 1904); "Septic arthritis of ankle-joint during convalescence from mumps" (*Glasgow Medical Journal*, 1904); "Ulceration of palate in inherited syphilis (*Glasgow Medical Journal*, 1905); "On the use of alcohol as a medicine" (*Glasgow Medical Journal*, 1904). In addition to these, many papers covering a wide range of

pathological and medical subjects were written jointly and published in the *Transactions* of various Glasgow medical societies. They also bore out the impression conveyed by other contributions that in John W. Findlay the profession of medicine in Glasgow possessed a young physician who was at once a skilful, patient, scientific investigator and a sound, well-balanced clinician.

His long illness was borne with fortitude and with Stevensonian philosophy, and it is quite possible that he reviled "bluidy Jack" as heartily and as good humouredly as did the beloved R. L. S. But complaint never fell from his lips, and instead of idly thinking of what he might have done with his life (for though a man of quiet modest disposition and of intense humanness, he knew his own capacity), he busied himself with light literary efforts and medico-literary researches. He belonged to a home where literature, and especially Scottish literature, is known and loved, and one of these literary researches will be found in a paper on "Robert Burns and 'Sum Practysis of Medecyne,'" published in the *Glasgow Medical Journal* in 1914. It may have been a surprise to himself—it certainly was to his friends—to discover in these literary amusements a decided gift for dramatic expression. This developed into writing some one-act plays, one of which, we understand, has been accepted by a well known actor-manager. Dr. Findlay did not marry: he had always lived with his parents and beside them he died. His father, Dr. William Findlay, is well known in Glasgow and the West of Scotland by his pen-name "George Umber" as a littérateur and poet and authority on Burns. For him and Mrs. Findlay very great sympathy is felt in medical circles for the premature loss of a brilliant son.

DUGALD MITCHELL, M.D.,

CAMELON, FALKIRK.

DR. DUGALD MITCHELL, of Camelon, Falkirk, who died recently, was a native of Tarbert, Loch Fyne. His preliminary education was received at the local schools and at the Glasgow High School. After leaving school he for three years helped his father in his business as a general merchant. Then he proceeded to the study of medicine. Entering the University of Glasgow in 1875, he graduated M.B., C.M. in 1879. In 1894 he took the degree of M.D For a short period he acted as an assistant, and then he practised for about a year in Tillicoultry, after which, in 1881, he went to Renton, where he remained for some fourteen years, holding the appointment of parochial and sanitary medical officer for the district; for ten years he served on the Cardross School Board. In 1894 he was appointed a Justice of the Peace for Dumbartonshire. On the occasion of his leaving Renton he was presented with a cheque for the purchase of a horse, phaeton and harness; the presentation was made at a function organized by an influential local committee and presided over by the late Lord Overton. From Renton Dr. Mitchell went to Rothesay, where he remained for about five years, until he removed to Camelon in 1900. His activity in professional and public affairs made him one of the most prominent men in the burgh. At the time of his death he was President of the Stirlingshire Branch of the British Medical Association, and was one of the representatives of the local medical practitioners to the Insurance Committee, while he also served on the local Panel Committee. He had a knowledge of matters connected with the operation of the Insurance Act which rendered his work on the Insurance Committee and the Panel Committee particularly useful. Although handicapped by the result of a severe operation which he underwent some years ago, he was unfailing in his attendance at the local medical meetings, and invariably took a prominent part in the discussions. From its foundation in 1902 he was connected with the Falkirk and District Choral Union, and for several years before his death he was its president. He was president of the Falkirk Burns Club for the three successive years 1908–9, 1909–10, and 1910–11. He was a member of the executive committee of the Falkirk Nursing Association, and of the committee of the local branch of the Prison Aid Society. He was also a leading member of the Falkirk and District Highland Society. He was a strong temperance advocate, and was an honorary member of the Rechabites and Sons of Temperance Societies. When the Falkirk and District United Free Church Office-Bearers' Association was formed, towards the end of 1913, Dr. Mitchell was elected president of the organization. He was intimately acquainted with the Highlands and the Gaelic language, and in 1886, when at Renton, he published a volume on *Tarbert, Past and Present*. His most notable work was written in Rothesay, and was entitled *The History of the Highlands and Gaelic Scotland;* it was described by the *Spectator* as "the best and handiest history of the Highlands that has ever seen the light." The last work produced by Dr. Mitchell was *The Book of Highland Verse*. He also contributed to medical journals.

DR. FREDERICK LAING NORRIS, who died on February 10th, received his professional education at the University of Glasgow, where he took the degrees of M.B., C.M. in 1888. He was clinical assistant at Shoreditch Infirmary, House-Surgeon at the Borough Hospital, Birkenhead, and was afterwards Chief Government Medical Officer at Antigua, B.W.I. Latterly he practised at Charlton, in the south-east of London.

DR. ISRAEL J. E. RENSHAW, of Sale, Cheshire, who died recently at the age of 67, received his medical education at Owens College, Manchester, and obtained the diplomas of M.R.C.S. and L.R.C.P. in 1880. In 1887 he became a Fellow of the Royal College of Surgeons of Edinburgh by examination. He had been in practice for many years at Sale and Ashton-on-Mersey and was very popular. He was fond of antiquarian research, and was the author of *Memorials of the Ancient Parish of Ashton-upon Mersey* and of *Memorials of Nonconformity in Sale*. He was associated for many years with the volunteer movement in Manchester, and retired a year or two ago from the R.A.M.C.T.F., in which he held the rank of major. He was formerly a member of the British Medical Association.

DR. ROBERT LEYS, who died recently at the age of 80, was one of the oldest citizens of Ellon, Aberdeenshire. He belonged to the Portlethen district, and studied medicine at Aberdeen. In 1852 he was admitted M.R.C.S.Eng., and graduated M.D. at King's College in 1857. He settled in Ellon sixty-two years ago, and acquired a large practice. He retired some twenty-two years ago, but for a long time many of his old patients continued to insist on having him in consultation with his successor. Dr. Leys was held in the highest esteem socially and professionally, and when he retired from active work his numerous friends and admirers in Newburgh and district presented him with a valuable microscope. When Ellon was formed into a police burgh in 1893, Dr. Leys was elected a member of the first town council—or, rather, burgh commissioners, as they were then called. He sat on the council for ten years, during which period he acted as senior baillie. He was also a justice of the peace for the County of Aberdeen.

WE regret to announce the death of Professor LUIGI GUAITA, Director of the Ophthalmic Clinic and Hospital of Florence. He was born at Bergamo in 1851 and took his doctor's degree at Pavia at the age of 23. He almost immediately began to give special attention to diseases of the eye, and after a period of teaching as *libero docente* at Pavia he was appointed director of the ophthalmic department in the Hospital of Bergamo. In 1884 he was called to Siena to found and take charge of the ophthalmic clinic. It was there that some of his best work was done. In 1900 he was invited to become director of the ophthalmic clinic at Florence. He was a first rate administrator, and was held in great esteem by his pupils as a teacher. He was the author of some sixty publications on tumours of the eye and its appendages, on the normal and morbid anatomy of the vitreous and the changes in that body in cataract artificially matured. He also wrote on the treatment of trachoma and on the therapeutic effects of eserine, cocaine, jequirity, and other substances. He was the author of a work on the relations between the science of colours and painting. At the time of his death he was completing an atlas of the normal and pathological anatomy of the eye.

DR. GABRIEL MONTOYA, of Paris, who has recently died, was at once a physician and a poet. He was for a long time an intimate friend of Rodolphe Salis, creator of the Chat Noir, and used to accompany him on his provincial tours, of which he gave an amusing account in a book that had a great success. Dr. Montoya was also the author of *Chansons Naïves et Perverses* (Ollendorff); *Suzon*, a lyrical comedy; *On en peut mourir*, a novel, and other literary productions.

Medical News.

COMMANDER ERNEST O. BALLANTYNE, who was lost in the wreck of the armoured merchant vessel *Viknor* off the north of Ireland, was, we regret to learn, the son of Dr. Alexander Ballantyne, until recently in practice at Eskbank, Dalkeith, and the brother of Dr. Harold Ballantyne, now of Eskbank.

IT is, according to our American contemporary *Science*, one of the privileges of the Spanish Academy of Medicine that it has the right of nomination to a seat in the Senate. The Academy accordingly has recently elected one of its members, Dr. B. G. Alvarez, to be a senator. Dr. Alvarez is one of the editors of the *Pediatria Espanola*.

IT is stated that a recent convention of county officials of Oregon voted unanimously against the eugenic marriage law under the terms of which a physical examination of all male applicants for matrimonial licences is required in that State. The repeal of this law is advocated on the ground that it has proved ineffective and even harmful.

DR. BURNEY YEO left estate valued at £95,413. He bequeathed £3,000 to the Royal Medical Benevolent Fund to found an annuity fund to be known as "The Burney Yeo Bequest"; £3,000 to the Royal Medical Benevolent College, Epsom, for a similar purpose; £5,000 to King's College (London) Hospital Medical School, for a "Burney Yeo" fund, to be used for furthering the success of the school. Subject to his wife's interest, he left the ultimate residue of his estate as to one moiety to the Royal Medical Benevolent Fund, and one moiety to the Royal Medical Benevolent College at Epsom.

THE City Council of Bath, on January 26th, as a result of a compromise between the various sections, sanctioned the expenditure of £27,750, of which £7,750 is to be spent on renovating, altering, and refurnishing the Queen's Baths, the new Royal Baths, and the Grand Pump Room, and the remaining £20,000 in providing additional accommodation on a site yet to be selected. While these proposals will not satisfy the advocates of a scheme on bolder lines, they mark a movement in the right direction. At the same meeting it was agreed to employ professional advice in the preparation of a replanning scheme dealing with the area between the Pump Room and the Institution Gardens, which would involve the bathing establishment.

BANGKOK, the capital of Siam, has long had an evil reputation as a town with a cholera season. The water supply was more than suspect, and Dr. H. Campbell Highet, the medical officer of health, in one of his reports said: "When the public are no longer dependent upon the natural variations of the year's rainfall, I have no doubt that cholera will be a rarity in place of a usual incident of the dry season." Eventually the construction of waterworks was undertaken; these were completed a short time ago and were opened by the King, who started the first high-lift pump. The works have two large covered reservoirs. The King bestowed upon Dr. Campbell Highet the second class of the Order of the White Elephant.

THE annual general meeting of the Royal Medical Benevolent Fund Guild, which works in association with the Royal Medical Benevolent Fund, will be held at the house of the Royal College of Physicians, London, on Thursday next, February 4th, at 3.30 p.m. Her Majesty Queen Amélie of Portugal will preside, and the annual report will be presented. Lady Tweedy, who is President of the Guild, points out that at this time, when the profession has already lost in the war 73 R.A.M.C. officers, and others are giving up lucrative practices, or the prospect of making a connexion, the need for an organization which, working mainly through women, gives not only assistance in money and kind, but also personal service, is particularly worthy of public support. The annual general meeting of subscribers to the Royal Medical Benevolent Fund will be held at 15, Wimpole Street, on Tuesday, February 9th. The chair will be taken by Sir John Tweedy at 4 p.m.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

STAINES asks whether there is any proof of the efficacy of radium in the cure and prevention of grey hair.

E. R. P. desires to hear of some kind of boot or appliance for a case of "hollow claw-foot" in which there is a slight degree of equinus but no pain. The patient is 10 years of age.

P. asks for advice in the treatment of a man, aged about 40, who suffers from petit mal accompanied by intense sleepiness. The attacks of petit mal are slight but frequent, and do not worry the patient much. The sleepiness does, as he cannot sometimes keep awake on a motor bicycle, and generally falls asleep at talk between the courses. It is not difficult to lessen the petit mal attacks, but, so far, treatment against the sleepiness has been of no avail.

TREATMENT OF SCOLIOSIS.

DR. EDGAR F. CYRIAX (41, Welbeck Street, W.) writes: I am elaborating a new manipulative method for spinal curvature which has proved of value in certain cases. Can any of my colleagues let me have one or two very bad cases of scoliosis? The only request I have to make is that the patients shall be able to attend at my house for treatment—that is, able to walk. Patients with previous *x*-ray pictures preferred.

"UNCONSCIOUS PAINFUL IDEAS."

DR. HENRY W. JACOB (Great Malvern) writes: I commend the following incident to those interested in the "unconscious painful idea." A small boy, aged 6, is asked to lie down and let me show his mother how to perform artificial respiration. He readily complies, evidently regarding it as a new game. After a few movements have been carried out the child becomes unaccountably sulky and flatly refuses to continue, although there was nothing at all uncomfortable in the proceeding. When asked why he would not continue his reply is, "I don't know; I don't like it." The remarkable point about this case is that at this boy's birth it had been my lot to carry out artificial respiration upon him for quite a considerable time, and this had been accompanied by a smart smacking administered at intervals, with the object of stimulating the first cry. Is it not obvious that the carrying out of the same movements, in the presence of the same people as were present at his birth, called up the "unconscious painful idea" of the smacking, and thus rendered the whole performance distasteful? Several speculations arise from such a case as this. Does a child feel pain before it has breathed? Of course there is no reason why it should not. Again, is a painful impression received by the sensorium, while a state of unconsciousness exists, capable of being stored up in the unconscious mind and suggested by it to the conscious mind in certain circumstances?

ANSWERS.

LIP-READING.

W. M. M. J.—A good recent book on lip-reading is *Lip-Reading, Principles and Practice: A Handbook for Self-Instruction.* By E. B. Ritchie. London: Methuen and Co., Limited. (Cr. 8vo. Price 5s.)

LETTERS, NOTES, ETC.

POPULAR FREUDISM.

DR. GEORGE JONES (London, S.E.) writes: May I give the "correct" version of the cuttlefish illustration employed by Dr. Selfe Bennett in the BRITISH MEDICAL JOURNAL of January 16th, p. 139? A rival scholar said of Conington's Virgil that the learned editor, when he came to an obscure passage, poured out a flood of printer's ink and escaped in the midst of it from the difficulties before him; *obscurum per obscurius.*

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

A Report
ON
THE EMPLOYMENT OF ETHER IN SURGICAL THERAPEUSIS,

WITH SPECIAL REFERENCE TO ITS USE IN SEPTIC PERITONITIS, PYOGENIC ARTHRITIS, AND GUNSHOT WOUNDS.

BY HERBERT F. WATERHOUSE, F.R.C.S.,

SURGEON AND LECTURER ON SURGERY, CHARING CROSS HOSPITAL; SENIOR SURGEON, VICTORIA HOSPITAL FOR CHILDREN.

PRIOR to March, 1914, I had for five years frequently employed ether as an antiseptic with a continually increasing confidence in its potency, particularly in the treatment of grossly infected wounds. My first experience was a personal one. During an operation for septic peritonitis consequent upon rupture of a gangrenous volvulus I cut my right forefinger somewhat severely. I tied a strip of gauze around the wound and completed the operation. I then rubbed the cut with a swab soaked in ether, and kept the finger in a bath of ether for ten minutes. The patient died eight hours later; my finger wound healed by first intention, notwithstanding the fact that the exudate swarmed with streptococci, *Bacilli coli*, and an unrecognized long, slender bacillus.

Encouraged by this evidence in favour of ether, I next tried its antiseptic action in two very septic buttock wounds.

(*a*) A farmer, gored by a young bull, was ripped open from the middle of the back of the thigh to a point 3 in. above the iliac crest. The sole treatment he received was the application to the huge wound of a treacle poultice! Five days later I saw the old man. His wound was greenish in colour and exceedingly fetid; his temperature was 103.6°; pulse feeble and intermittent, and he was muttering incoherently. Turning him on his face, I poured ether into the long, deep, grooved wound, and allowed it to boil away, filling up the groove as the ether evaporated for some minutes. Nearly a pint of ether was thus employed. I then loosely packed the wound with sterile gauze soaked in ether, and directed that the wound should be sponged with ether twice daily. Within twenty-four hours the patient's condition was all that could be desired, and the wound healed rapidly with a thick, rigid linear cicatrix.

(*b*) A man, aged 59, waking from a drunken sleep with urgent diarrhoea, sat down too forcibly on a chamber utensil. He was badly cut by the broken fragments of china, and the wounds of his buttocks, perineum, and thighs were fouled with faecal matter. I saw him forty hours later. I washed his numerous deep cuts with ether, and sutured them with horsehair. In spite of the fact that he had had no attention in the meantime, as he resolutely refused to leave his filthy lodging, that his bandages were grossly soiled with faecal matter, and that he had been drunk most of the intervening time, his wounds, when the stitches were removed on the ninth day, were found to be soundly healed.

These two cases, it will be admitted, were severe tests of the efficacy of an antiseptic. I may mention that in neither of these instances was a general anaesthetic employed: in the first, because the patient was in a condition in which the administration of an anaesthetic, in the prone position, would have been dangerous, and, in the second, for the reason that the man was very drunk. After these two results I used ether in a large number of cases. It would be wearisome to detail them, but I may give the following as instances:

1. Psoas and other tuberculous abscesses in which, after incision and flushing with normal saline solution, ether (an ounce and a half was the maximum employed) was introduced into the abscess cavity and the incision sewn up without drainage.

2. Abscesses, the result of appendicitis in which, after incision of the abscess, the margins of the wound were held open with retractors, and an ounce of ether was allowed to boil away in the abscess cavity.

3. Cases of gangrene or perforation of the appendix in which the neighbouring inflamed coils of intestine were washed with ether.

4. Compound fractures. In these cases the wound in the soft parts, the fractured ends of the bones and the torn medulla were freely washed with ether. In two of such cases the fracture was plated, with excellent result.

5. Carbuncles in which ether was injected not only into the slough, but three or four drops were also injected, at intervals of about one inch, into the subcutaneous tissue just outside the carbuncle.

6. Tuberculous glands. Ether—three or four drops—was injected by means of a hypodermic syringe into every gland that was palpably enlarged.

7. Tuberculous synovitis of joints, especially the knee, wrist, elbow and ankle. In all these cases Bier's passive congestion was also employed. Here the best results were obtained in examples of tuberculous hydrops, first described by my old teacher, Professor König.

8. Septic wounds of the soft parts, in which ether surpasses, in my opinion, all other antiseptics.

9. Sinuses, which were filled with ether.

10. Cases of pyogenic osteomyelitis in which, after a gutter had been cut in the bone and all the infected medulla removed, the cavity was filled with ether, the incision in the soft parts being usually left unsutured.

11. Suppurating buboes, especially those due to chancroid (Ducrey's bacillus). Ether is also a perfect application to the chancroid itself.

12. In cases in which an incision had to be made through skin in a part in which asepsis is difficult to maintain—for example, in axilla or scrotum, or when the patient was very stout—I have washed the entire wound with ether prior to closing it.

In all the above instances, and in many others, I have been satisfied that ether was the best application at present known to me. In many cases the results obtained from ether surpassed my expectations, and in no single case, so far as I am aware, was it the cause of any harm to the patient. My faith in the value of ether as an antiseptic was therefore strong, and I was looking about for further applications of the method when, in the Epitome of Current Medical Literature in the BRITISH MEDICAL JOURNAL of March 14th, 1914, I found a reference to a report by Lucien Jeanneret of a desperate case of generalized peritonitis due to appendicitis, happily cured by the instillation on two occasions of 50 c.cm. of ether into the peritoneal cavity.

On reading the report of this case I found references therein to the work of Morestin, who, I then learnt, had since 1901 "systematically used ether in peritoneal infections." The results obtained by MM. Morestin, Témoin, and Jeanneret convinced me that it was permissible to leave ether in the peritoneal cavity instead of allowing time for its evaporation before closing the abdominal incision. Since studying the reports of the above-mentioned surgeons I have not hesitated to introduce 3 oz. of ether into the peritoneal cavity, to close the wound and, in cases in which I have employed a drainage tube, to occlude its distal end for three to four hours, so as to permit the ether to be entirely absorbed prior to the establishment of drainage. The results I have obtained from the use of ether introduced into the peritoneal cavity have convinced me that it is by far the best antiseptic agent at our disposal at the present time for the peritoneal cavity.

I now desire to record my experience of ether as an antiseptic agent, with special relation to its value in three conditions.

A. Infections of the peritoneal cavity and cases in which, in the course of an abdominal operation, soiling of the peritoneum has, or may have, occurred.

B. Cases of acute arthritis proved or presumed to be secondary to a pyogenic focus existing in the body prior to the onset of the joint affection.

C. In the treatment of severe, septic gunshot wounds.

A. ETHER IN PERITONEAL INFECTIONS.

I have introduced ether into the peritoneal cavity on sixty occasions, in fifty-nine patients (one patient was on two occasions subjected to this treatment). The cases may be summarized as follows:

2 of perforation of duodenal ulcer operated upon, the one eleven hours and the other seven hours after perforation.
4 of tuberculous peritonitis, 3 of which were of the ascitic type, 1 of the plastic type of the disease.
2 of intussusception; one rather an advanced case, the other of only ten hours' duration.
1 of perforation of gastric ulcer operated on fourteen hours after perforation.
3 of suppurating pelvic cysts: (*a*) ovarian dermoid; (*b*) two tubo-ovarian abscesses, which ruptured either before or at the time of operation.

4 of acute cholecystitis with opalescent fluid in the peritoneum; in one case the gall bladder had ruptured prior to operation.
2 of inflammation of Meckel's diverticulum.
6 of gastro-enterostomy in which, prior to closure of the abdominal incision, ether was injected into the peritoneal cavity.
2 of pyosalpinx that ruptured, one prior to, the other at the time of, operation.
3 of strangulated hernia: (*a*) Umbilical; (*b*) femoral; and (*c*) inguinal after reduction *en masse*. In all these cases the bowel was seriously damaged but viable.
2 of intestinal anastomosis: (*a*) Entero-enterostomy; (*b*) ileo-colostomy. Ether was injected just prior to the closure of the abdominal incision.
4 of removal of the appendix vermiformis, 2 in the quiescent stage, 2 in the subacute stage, in all of which localized tuberculosis was found to be present in the neighbourhood.
1 of pneumococcal peritonitis and septicaemia.
24 of acute appendicitis, in the great majority of which pus (defensive or offensive) was present in the peritoneal cavity.

In all of the above 24 cases of acute appendicitis, the pulse-rate was above 100 and in several it was 120 to 140. Many presented examples of perforated or gangrenous appendix. I regret that, owing to the fact that many were operated on under conditions unfavourable for careful bacteriological investigation, a bacteriological report was obtained of the peritoneal exudate in only 16 cases. In 12 instances pyogenic organisms were found; in 11 of these the *Bacillus coli* was present, frequently in combination with other micro-organisms, especially streptococci and staphylococci. In one case the pneumococcus was present in pure culture.

Mortality.—Two of the 59 above mentioned patients died. I will relate briefly these two fatal cases. The notes are by C. J. Marshall, M.D., B.S.Lond.

CASE I.

H. W., male, aged 16, admitted with complaint of pain in lower abdomen for past four days; constipation and vomiting. On examination free movement of abdominal wall, no rigidity. On rectal examination there was a tender collar around rectum, high up. Diagnosis, pelvic appendicitis. Operation: low abdominal incision, turbid fluid in pelvis; appendix hanging over pelvic brim, removed. It was found to be normal but for injection of its serous covering; 30 c.cm. ether injected into peritoneal cavity. Incision sutured without drainage. The patient became delirious; temperature remained 103-104° F.; respirations rose to 40 per minute. Dr. Topley examined the blood and found it to contain pneumococci. The patient died comatose. The *post-mortem* examination showed generalized pneumococcal peritonitis. This case was a grievous disappointment to me. It was clearly one of pneumococcal peritonitis and pneumococcal septicaemia. I frankly admit it to be an unmitigated failure of the ether method, but I plead that it is the sole failure attributable to ether in my series of cases and that the dose of ether was too small. Dr. Topley suggests to me a more comforting explanation, namely, that the case was *ab initio* a pneumococcal septicaemia, and that the peritoneum was subject to continual reinfection from the blood stream.

CASE II.

E. G., aged 38, complained of abdominal pain, vomiting and absolute constipation for four days. On examination marked abdominal rigidity; temperature 102°, pulse 116, respirations 26. Diagnosis, appendicitis. Operation: appendix, perforated at distal end, removed; 10 oz. of pus, containing the *Bacillus coli*, escaped from peritoneal cavity; 2 oz. ether injected and incision closed. During the entire operation the patient, though in the hands of one of the best anaesthetists known to me, was a constant source of anxiety to both anaesthetist and surgeon. I ought to have remembered that frequently such unusual trouble means the onset of pneumonia. Sixteen hours later the symptoms of pneumonia were distinct, and the patient died forty-eight hours after the operation. Shortly before death the pulse was uncountable; respirations 52 and temperature 102°. The *post-mortem* examination revealed pneumonia of the whole of the lowest lobe of the right lung, but established, to my great satisfaction, the fact that the entire peritoneal cavity was free from all signs of inflammation, so far as the naked eye could discover. Owing to the fact that death occurred on one of the hottest days of the summer, and that delay in obtaining permission postponed the *post-mortem* examination unduly, it was not considered desirable to make a bacteriological examination of the peritoneal cavity. However, I have every reason to think, from naked eye examination, that the ether had, in this unfortunately fatal case, done its work efficiently. It was a great relief to me to feel that, though death had resulted (from pneumonia), the ether had achieved all that I expected from it.

I now turn to the consideration of the successful cases, giving five only, in which I think that the patient largely owes his or her life to the employment of ether:

CASE III.

(From notes kindly furnished by Dr. Whittingdale, of Sherborne.)

Miss B., aged 16. Fulminating case of appendicitis, with diffuse peritonitis. Temperature 102.6°, pulse 140. Perforated appendix removed; large quantity of pus in pelvis and lower abdomen sponged away; 4 oz. ether introduced into peritoneal cavity through a large drainage tube reaching to bottom of pouch of Douglas. Almost immediately after the introduction of ether the pulse-rate rose to 160. One ounce of ether was then withdrawn, with rapid improvement of pulse-rate. *Bacillus coli* and streptococcus found in peritoneal exudate. Recovery uneventful.

CASES IV AND V.

These two cases were operated on by me—Case IV with Drs. Halstead and Newling, of Sutton; Case V with Drs. Coldstream and George, of Brondesbury—within forty-eight hours of each other. In both instances the patient was a boy of 13 to 14 years old; the onset of perforative appendicitis was very sudden, temperature 102.6–103°, pulse-rate 140. Perforation was in each case probably accelerated by the maternal administration of castor oil. The large quantity of peritoneal exudate contained the *Bacillus coli* and pyococci. Recovery resulted in both cases after 3 oz. of ether had been instilled into the peritoneal cavity, though in Case IV a small abscess lying between coils of small intestine had to be evacuated twelve days after the first operation.

CASE VI.

Miss B., aged 23, operated upon September 9th, at Chesham, with the assistance of Drs. Churchill and Heron. Perforation of appendix and diffuse septic peritonitis. Appendix removed; much foul-smelling pus evacuated; 3 oz. of ether inserted into peritoneal cavity through the usual long drainage tube. For fourteen days this girl progressed in a most satisfactory manner. Then symptoms of intestinal obstruction occurred, which only passed off when operative intervention seemed obligatory. She had four further less severe attacks, from which she recovered, but on December 26th so-called faecal vomiting was noticed, and she was at once admitted into Charing Cross Hospital. On admission, the abdomen was somewhat distended, an indefinite, tender lump was felt in the hypogastrium and per rectum; temperature 102.6°, pulse 130. The abdomen was opened in the mid-line above the pubes. The mass previously felt was found to be the largest tubo-ovarian abscess I have yet encountered; it was in a condition of acute suppuration, and had already ruptured, the pus having a typically faecal odour. The abscess was surrounded by coils of small intestine densely adherent to its wall and kinked in an extraordinary manner. With the utmost difficulty the abscess wall was enucleated and some of the worst intestinal kinks straightened out. Further examination revealed a pyosalpinx on the left side. This was removed. Into the large cavity thus left 5 oz. of ether were poured and allowed to evaporate, all soiled intestinal coils being washed for some minutes in this ether bath. A large tube was then inserted down to the bottom of the cavity, and the abdominal incision having been sutured, 3 oz. of ether were poured down the drainage tube. Though the patient bore the operation well, and left the table with a pulse of 120, half an hour later I found her pulseless, with dilated pupils and respirations almost abolished. I fear that she had received an overdose of ether, that is, that the 5 oz. poured into the cavity had not evaporated when the wound was closed. I desire to call special attention to the fact that this patient and Cases III and VII were the only instances in which more than 3 oz. of ether were injected intraperitoneally, and these were the only cases in which symptoms of an overdose of ether were noticed. Fortunately in this instance artificial respiration soon enabled me to free the patient from the danger of excess of ether, and her further progress left nothing to be desired. Dr. Churchill has since informed me that when he first saw the girl she had a vaginal discharge. At the time of the first operation I am sure there was no hypogastric mass. I imagine she then had bilateral salpingitis, and that the suppuration of the Fallopian tubes was caused by the contact with *Bacillus coli* pus in the pelvis. Dr. Topley found *Bacillus coli* in pure culture in the pus.

CASE VII.

Dr. C., formerly house-surgeon at Charing Cross Hospital, was seized at Leigh-on-Sea at 2 a.m. with intense abdominal pain and vomiting. As symptoms increased in severity Dr. C. B. Wagstaff, having made the diagnosis of fulminating appendicitis, sent him the same day to the hospital and, I think wisely, gave him a hypodermic injection of morphine to enable him the better to stand the journey. I saw Dr. C. at 7 p.m. His temperature then was 102°, pulse 126. He appeared in nowise distressed, and I, overlooking the effect of the morphine, assured him that the appendix had not perforated, but advised its immediate removal as the attack was only of fifteen hours' duration, in order to prevent the possibility of perforation. To my astonishment and chagrin I found on opening the abdomen a large perforation of the middle third of the appendix, and a considerable amount of pus containing *Bacillus coli* in the pelvis. The appendix was removed. Four ounces of ether were introduced through the drainage tube reaching to the bottom of the pelvis. Dr. C. slept rather too soundly for eight hours after his operation, but made an excellent recovery. He is now serving as Surgeon R.N. with the Grand Fleet.

I have related these five cases of appendicitis with diffuse septic peritonitis in order to demonstrate the value of

ether as a peritoneal antiseptic. It will, I think, be admitted that they were all grave and anxious cases. Naturally in their after-treatment I employed the Fowler position and proctolysis, but I cannot but consider that the ether was, to say the least, a valuable adjuvant, and that without its help I should not have enjoyed the satisfaction of being able to record a recovery in every instance. Before leaving this subject, there are five matters to which I would call attention.

I. The dose of ether to be used. In my opinion 3 oz. is the maximum dose that can be safely left in the peritoneal cavity of the adult. On three occasions I have exceeded this amount—namely, Case III, in which I employed 4 oz. but was able to withdraw 1 oz. In Case VII I again used 4 oz., with the result that Dr. C. slept too soundly for eight hours, though no untoward symptom was occasioned. In Case VI I fear I gave an overdose, thinking that the whole of the 5 oz. with which I had washed the intestines had evaporated before I sutured the incision, and introduced a further 3 oz. Fortunately in this instance, too, owing to the employment of artificial respiration, no harm resulted. I have used 3 oz. in both male and female cases, and about that amount in children over 14. The youngest patient in whom ether has been thus employed was 2 years old. In this case (inflammation of Meckel's diverticulum) ½ oz. of ether was left in the peritoneal cavity with good result. Mr. Stibbe informs me that in two children, aged respectively 5 and 9 years, in whose cases on opening the abdomen pus, and in one gas also, escaped, the introduction of 1 oz. of ether sufficed to bring about "uneventful recoveries."

II. The question of drainage. Here my rule has always been, "When in doubt, drain." When there has only been a soiling of the peritoneum with pus, infected bile or faecal matter for a short time, say three hours, I have generally closed the abdomen without drainage. When on opening the abdomen pus has been present I have almost always employed drainage for at least forty-eight hours. In my earlier cases I found that, having inserted the tube down to the bottom of the pelvis, it was frequently a matter of difficulty to inject the ether (even with the help of a syringe) after the wound was sutured. I soon discovered that if openings were made into the tube, one an inch, the other half an inch, above its pelvic end, this difficulty was entirely obviated, and the ether could be introduced by means of a funnel attached to the outer end of the drainage tube. To ensure the retention of the ether vapour in the abdomen it is necessary to suture the incision closely, especially around the tube. It is also obviously necessary to occlude the extra-abdominal portion of the drainage tube, which should be 18 in. long. I accomplish this object by clamping the tube with a forceps or by tying a knot in the tube itself. I maintain this occlusion of the tube for three or four hours; at the expiration of this period the nurse has instructions to remove the forceps or to cut the knot in order that drainage may be established.

III. The fallacy of estimating the gravity of the infection by the naked-eye character of the pus. I venture to utter a word of warning regarding this point. There are two varieties of pus: (1) Defensive, which may be thick and milky and yet be found to consist almost entirely of polymorphonuclear leucocytes whose function is entirely protective, and to be free from micro-organisms; and (2) offensive pus, which may be thin and barely serous purulent and yet contain virulent microbes. I have noticed the latter chiefly in streptococcal infections. I have no hesitation in stating that without a bacteriological examination the surgeon cannot correctly determine by eye alone the nature of the pus, though I admit that he may often recognize *Bacillus coli* infections with his nose!

IV. The *post-operative* course of the patient. I am convinced that this is more easy and free from discomfort than in similar cases in which ether has not been employed. I am also certain that the bowel recovers its tone earlier and that flatus is passed sooner, thus obviating in large measure the discomfort and even danger of extreme tympanites.

V. The part that ether plays in the matter. I frankly confess that I can give no adequate reply to this question. Prior to the investigations which Dr. Topley has so carefully carried out, I was convinced that ether acted as an antiseptic agent, pure and simple. After studying his results this opinion is, I think, no longer tenable. The life-saving action of ether and its value in checking infection in the peritoneal cavity are, to my mind, matters that admit of no doubt, but its action is a complex one, upon which I am not qualified to speak dogmatically. As a practical surgeon I am at present more than satisfied with the results obtained and must leave the scientific explanation of its action to the bacteriologists and the pathologists. If I have to state my opinion, it would be that the action of ether in such conditions is a complicated one, in which factors of importance are (*a*) its antiseptic power, not only in killing many microbes, but also in inhibiting the growth of such as escape death; (*b*) its tonic action on the circulatory and nervous systems, which I believe steadies and strengthens these vital systems when suffering from toxin absorption; and (*c*) its influence in stimulating in some unknown way the defensive powers of the tissues. I admit that the above explanation may sound unscientific and that it is at best a partial one, but it is all that I can at present suggest.

B. Injection of Ether into Joints in Acute Arthritis presumably the Result of Metastatic Pyogenic Infection.

At the very outset of my remarks on this important subject, which I venture to hope will revolutionize, in a manner entirely to the patient's advantage, the treatment of acute (pyogenic) arthritis, I wish to express my indebtedness to the writings of that great surgeon and incomparable teacher, Dr. John B. Murphy of Chicago, Honorary F.R.C.S., because, without the knowledge I had acquired from Dr. Murphy's lecture in his *Surgical Clinics* (August, 1912), I am convinced that my method of injection of ether into the articular cavities in acute arthritis would have proved a failure, whereas I now believe it will become the routine treatment in such cases. I therefore desire to make it clear that the introduction of ether into infected joint cavities is the sole innovation to which I lay claim, and that in all other matters of treatment I have followed the teaching of Dr. Murphy. In this lecture Dr. Murphy sums up the treatment of acute pyogenic arthritis tersely, thus: "Aspiration, no drain, Buck's extension." To this advice I would add, "Inject ether." Dr. Murphy states that "an infected joint is destroyed primarily through the accumulation and pressure of the products of infection held under tension in the joint as well as by the virulence of the infecting micro-organism." He adds, "Relieve the tension, and Nature does the rest." Dr. Murphy injects into the affected joint 10 or 15 c.cm. of a 2 per cent. solution of formalin in glycerine. He deprecates the employment of drainage of the joint as tending to lead to ankylosis, and emphasizes the value of efficient extension in overcoming the second element in producing ankylosis—namely, "the involuntary muscular contraction." In the *Surgical Clinics*, 1913, he states: "Remember every case of acute arthritis is a metastatic infection." With the remarks of Dr. Murphy above quoted I am in complete accord. I have now to relate six cases in which I employed the principle of non-drainage in cases of acute suppurative arthritis.

Case I.

Acute suppurative arthritis of shoulder-joint due to gonococcal urethritis. No micro-organisms found in pus aspirated from the joint. Injection of a 2 per cent. solution of formalin in glycerine into the joint. Extension applied to the arm (8 lb.); recovery within seven days.

Case II.

A stout alcoholic man, aged 58 years, had been ill for twenty-three days with abdominal pains and for six days with pain in the right knee-joint when first I saw him. Four hours prior to my visit he had passed per rectum a large quantity of pus; temperature 104°, pulse 138. Right knee-joint intensely swollen and tender. Aspiration of knee produced thick pus swarming with *Bacillus coli*; 20 c.cm. of 2 per cent. solution of formalin and glycerine injected into joint, and 20 lb. weight extension applied to leg. Next day temperature 101.6°, pulse 104; no pain in knee. Aspiration repeated, pus thinner. Third day, after aspiration of pus, 15 c.cm. of 2 per cent. formalin glycerine injected. For ten days aspiration and the injection of 5 c.cm. of this solution were employed on alternate days when temperature and pulse became normal.

Unfortunately, bony ankylosis of the knee-joint resulted, but surely the method cannot be blamed for the result, as doubtless destructive changes had occurred in the joint

prior to its institution. After this case I resolved to try the effect of the injection of ether by means of a syringe into the affected joint after aspiration of the pus.

The cases number four only; three concern the knee-joint, and one the right temporo-maxillary articulation.

In Cases III, IV, and V, the infection was presumably of metastatic origin; in Case VI it was the result of a stab wound. It must be admitted that in only one of the three former were micro-organisms discovered in the articular pus, but this is only what might have been expected. In metastatic joint infections the microbes are conveyed to the synovial membrane by the blood stream. They set up an inflammation in its substance, not on its surface, at the beginning. The pus that is found in the joint on early aspiration is in 90 per cent. of such cases defensive not offensive, that is, it is sterile. By the time that the microbes have found their way into the joint cavity the case is, to say the least, a late one for preventive treatment. I wish to draw special attention to this point as I have so frequently found in cases of pyogenic arthritis that the practitioner has been misled by a negative bacteriological report of the joint exudate, and thus valuable time has been lost owing to the neglect to institute early treatment. Case V is an excellent example of this difficulty because, on the first day of the arthritis, an excellent practitioner, after aspirating the joint and learning that the fluid it contained was sterile, considered the case rheumatic, whereas two days later the joint was distended with pus which swarmed with staphylococci. Two drachms of ether — the maximum dose employed—caused marked distension of the knee-joint cavity, and this amount should not, in my opinion, be exceeded. In Case V I injected 15 minims into the temporo-mandibular joint above the meniscus, and 3 minims into the smaller cavity below the meniscus.

CASE III.

A patient of Dr. C. J. Woollett was admitted into Charing Cross Hospital suffering from acute pyosalpinx. In accordance with my invariable rule, I left the patient to medical treatment, knowing how quickly the infectivity of the pus subsides in such cases, and how far safer, therefore, is late than early surgical treatment. The day after admission pain was experienced in the left hip, knee and ankle. It rapidly subsided in the hip and ankle, but the knee the next day presented the symptoms of acute pyogenic arthritis. Mr. W. Leslie, M.B., B.S., house-surgeon, aspirated the joint, and injected 30 minims of ether. Dr. Topley reported that the fluid removed contained pus cells; that no organisms were seen, and that the culture was sterile. Extension (7 lb.) was applied to leg. Within eight hours of the injection of ether the temperature fell 3.8°. On the sixth day, after three days' complete comfort, pain returned to the joint. Aspiration was at my suggestion repeated, a second injection of 1 drachm of ether was given, and extension increased to 19 lb. Complete recovery, with perfect movement of the joint, resulted. The report on the fluid removed by the second aspiration was: "No cells seen; sterile." Twenty-six days after admission a right-sided pyosalpinx was excised. It was distended with pus, now sterile. As it ruptured during removal, and was densely adherent to a loop of ileum, and as there had been soiling of the pelvic peritoneum with pus, 3 oz. of ether were poured into the pelvis, and the incision closed without drainage. Rapid recovery followed. This case was seen and treated in the earliest stage as it developed under my own observation.

CASE IV.

The note of this case, by C. J. Marshall, M.D., B.S.Lond., at that time my house-surgeon, is: E. K., aged 36, admitted for acute septic arthritis of right knee-joint. Temperature 103°, pulse 116. Knee-joint distended and acutely tender; immobility absolute. Aspiration of joint gave sero-pus; 2 drachms of ether injected, extension 20 lb. applied to leg. Temperature normal on the third day; joint had recovered complete movement on the twelfth day.

CASE V.

This was a case of suppurative arthritis of the right temporo-mandibular joint (staphylococcal). The patient was a man, aged 42, who, during his fifth attack of gonorrhoea, developed a periurethral abscess, due to stricture in the bulbous urethra. The abscess was allowed to burst spontaneously, and its drainage was clearly insufficient. Acute arthritis of the temporo-mandibular articulation resulted. Aspiration of the joint on the first day of admission gave a slightly opaque fluid, which was reported to be sterile. On the third day pain and rigidity of the jaw became extreme. I found the mandible slightly protruded and rigidly fixed by muscular spasm, and redness and swelling over the side of the face; temperature 103°. Under anaesthesia I aspirated a few drops of thick pus and injected 15 minims of ether into the joint above the meniscus and then 3 minims into the joint below this structure. The pus aspirated from the joint contained *Staphylococcus aureus* in pure culture. Six hours after the injection of ether the condition of the patient was much worse. His pain was, he said, intolerable. Searching for an explanation I recognized that I had not applied extension. How to apply efficient extension to this joint was a puzzle, but a rough and ready way occurred to me which proved satisfactory. I obtained a piece of india-rubber about 1 in. square and ¾ in. thick, and under anaesthesia inserted this between the molar teeth. The effect of this extension was almost immediate relief of all pain. The joint was aspirated two days later, when disintegrated pus and staphylococci were found; 10 minims of ether were injected. So afraid was the patient that when the rubber was removed the pain would return that, in spite of my protest, he declined to have it removed until the fourteenth day, by which time his mouth was in a stinking condition, due to ulceration of the cheek and side of the tongue, owing to friction against the rubber. Seen two months later he could open his mouth normally, though, probably as the result of over-stretching of the joint, he was unable to bite firmly on that side.

CASE VI.

I was summoned to see a young man with streptococcal arthritis of the left knee-joint. I was told that he had fallen and cut his knee seven days before, but I am convinced he had been stabbed. On trying to investigate the history the patient bluntly informed me that if I asked no questions I should be told no lies. The patient was evidently very ill; temperature 103°, pulse 132. There had been only slight stiffness of the leg until the previous day, when his medical attendant had probed the joint through the wound. I painted the margins of the wound with pure carbolic acid and then excised them, suturing the wound firmly; 2 drachms of ether were injected into the joint and 20 lb. weight extension applied. During the night the patient, who declared his leg was being pulled off, insisted on the removal of the weight. Within five minutes he begged that it might be reapplied. The after-progress of the case was very satisfactory. The joint was aspirated on the third and fifth days, and on each occasion 1 drachm of ether was injected. Slight superficial suppuration of the skin wound occurred, but the patient left his bed on the seventeenth day with a freely movable joint, his sole complaint being that the knee "felt weak and wobbly."

CASE VII.

While this article is passing through the press a case of acute purulent arthritis of the shoulder-joint is in my wards at Charing Cross Hospital. A man who had suffered from a mild attack of pneumonia was admitted with acute arthritis of the shoulder-joint and intense inflammatory oedema of the arm. In spite of the fact that the arthritis was at least of seven days' duration and that the capsule of the joint had ruptured, allowing the pus to escape into the periarticular tissues, the injection on two occasions of a drachm of ether into the joint, together with continuous extension (7 lb.) has brought about an extraordinary improvement, as evidenced by the fact that the pulse and temperature have become normal, all pain has disappeared, and the inflammatory swelling has entirely subsided. Dr. Topley found the pneumococcus in pure culture in the pus aspirated from the joint.

C. ETHER AS AN APPLICATION TO GROSSLY INFECTED WOUNDS, WITH SPECIAL REFERENCE TO GUNSHOT INJURIES.

During the past four months I have, in three hospitals, had charge of a large number of wounded soldiers. As almost every wound was septic, and often grossly septic, by the time the patient arrived in hospital I have had ample opportunity of studying the results of such injuries and the comparative value of the various antiseptics in their treatment. I have no hesitation in expressing the opinion that ether has proved more satisfactory as an application than any other antiseptic. I will cite three cases of grossly infected wounds treated with ether.

CASE I.

An officer received, during a night bayonet attack, a large lacerated wound of the buttock. On admission, on the sixth day after being wounded, to the 4th London General Hospital, R.A.M.C.(T.) the wound was covered by a greenish, stinking slough. Temperature 103°. Fomentations were applied. A skiagram revealed the fact that the buttock was peppered with more than thirty fragments of the envelope of a rifle bullet. Two days later, under anaesthesia, the wound was washed with ether, loosely packed with sterile gauze soaked in ether, and some of the largest metallic fragments removed.

The temperature fell rapidly, and the wound began to heal nicely, but on the tenth day the patient had serious secondary haemorrhage, the blood soaking the mattress. Fortunately Lieutenant Ashe, R.A.M.C.(T.), was in the ward next to the patient's room. He plugged the wound with judicious firmness, and applied energetic pressure. On my arrival I had no hesitation in agreeing with Lieutenant Ashe that a haemorrhage of such amount could only come from the trunk of the gluteal artery. I therefore exposed this vessel and found that the artery, just as it was dividing into its superficial and deep

branches, had been punctured by a fragment of the metallic cover of the bullet. A silk ligature applied just above the hole in the artery cut through the softened vessel, and severe haemorrhage recurred. With considerable difficulty a thick silk ligature was passed around the vessel 1 in. proximal to the former ligature—that is, well within the bony pelvis. Both branches of the artery were next ligated, also with thick silk. The deep hole, reaching down to the point of ligation of the gluteal artery, was then filled with ether, the rest of the wound washed with the same, and gauze soaked in ether was used as a dressing.

The patient was removed from the theatre in a very feeble condition, and during the next twelve hours his temperature never rose above 96.8° F. For several days I suffered acute anxiety, fearing a recurrence of the secondary haemorrhage, and wondering what might happen to three thick septic silk ligatures at the bottom of the infected wound. The ether, however, did its work splendidly, and the wound cleaned and closed with remarkable rapidity. Nothing was ever seen of the silk ligatures, and on the thirty-fourth day the patient proudly informed me that he had "walked halfway down Bond Street."

CASE II.

A soldier, during a bayonet charge at Ypres, had the misfortune to be wounded almost simultaneously by a German bullet from the front and by British shrapnel from the rear. The latter wound was extraordinary in that the lowest 4 in. of the posterior wall of the recto-anal canal were blown away, leaving a cavity into which a closed fist could be easily introduced. On admission to Charing Cross Hospital the patient's condition was deplorable, and the stench from the wound was so horrible that the poor fellow told the ward sister that "he was not fit to be put into a clean bed." The vilely septic wound was washed at first twice, and then once, daily with ether. At the end of a month, during which time the pulse and temperature had been practically normal, the wound had healed, and, to my astonishment, a fair degree of continence of faeces has been secured. This was, I think, the dirtiest wound I have ever seen.

CASE III.

A soldier sustained a severe shrapnel wound of the soft parts of the leg. Washing with ether was the sole treatment employed in this very foul wound. Within two days the large infected surface had begun to clean, and rapid healing ensued.

Gunshot Compound Fractures.

I have not employed ether in the treatment of gunshot compound fractures to anything like the extent that I originally intended. It has, however, been used in six cases. The treatment adopted has been to enlarge, whenever necessary, the often small wound in the skin and soft parts down to the seat of fracture. The open wound has then been daily filled with ether, which has been allowed to evaporate. The results in all cases have been excellent, and I regret that I have not made more frequent use of the method. One merit of ether in the treatment of infected wounds deserves mention, namely, its action in dissolving fat, shared, to my knowledge, by no other antiseptic agent.

I desire to express my best thanks to Mr. C. J. Marshall, M.D., B.S.Lond., Surgical Registrar to Charing Cross Hospital, for his careful notes of the cases that were in my wards in that institution. The value of Mr. Marshall's notes is enhanced by the fact that the majority of these patients were under his immediate observation when he was my house-surgeon. I am also much indebted for notes of cases to Mr. E. P. Stibbe, resident medical officer to the Victoria Hospital for Children, to Dr. Whittingdale of Sherborne, and numerous other medical friends.

Before I conclude I desire to take this opportunity to refer to the "iodine treatment of wounds." I do so for the reason that I believe the paper on "Sterilization of the Skin by the Use of an Alcoholic Solution of Iodine," by my colleague Mr. W. S. Fenwick and myself, was largely responsible for the now almost universal employment of this method, and during the past few months some of my friends have said to me, "I am treating gunshot wounds with *your* iodine method." I beg to state emphatically that I have never recommended this use of iodine. I consider it painful, inefficient, and deserving of condemnation. Two of my friends who sustained large flesh wounds agreed that their worst recollection of this awful war was the brush with which the iodine solution was daily applied to their wounds, and my experience has been that many of the most septic wounds that have come under my care have been those which had been painted with iodine. Three soldiers, questioned by me regarding the amount of pain caused by ether, agreed that "it stung a bit for rather less than a minute."

The daily instillation of a drachm of ether into the bladder in an aggravated case of *Bacillus coli* cystitis, consequent upon a bullet wound of the cauda equina, markedly improved the condition and caused no pain to the patient.

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THE ACTION OF ETHER ON CERTAIN MICRO-ORGANISMS.

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IN the preceding paper Mr. Waterhouse has reported the clinical results obtained by the use of ether in cases of various pyogenic infections. The following investigations were undertaken in order, if possible, to obtain some information as to the manner in which this substance acts.

THE BACTERICIDAL ACTION OF ETHER VAPOUR.

Bearing in mind that the body temperature is 2° C. above the boiling point of ether, and also that the area to be dealt with in such a condition as an infected peritoneum is large, it seems clear that the action of the ether vapour must play a large part in any results produced. An attempt was therefore made to determine the bactericidal action of ether in this state.

The method adopted was to bury a sterile 2 c.cm. ampoule in the lower part of an agar slope, so that the mouth projected above the medium. An even surface growth was obtained, the ampoule was then three-quarters filled with ether by means of a capillary pipette, and the mouth of the culture tube closed with a well-fitting rubber cork. Incubation was carried out at 37° C., and subcultures were made at intervals. The organisms were thus subjected to the action of saturated ether vapour at body temperature.

The organisms examined were as follows:

B. coli, 11 specimens.
Staphylococcus albus, 11 specimens.
Staphylococcus aureus, 7 specimens.
Streptococci, 9 specimens.
Pneumococcus, 3 specimens.
B. pyocyaneus, 7 specimens.

The results obtained show that ether vapour exerts a definite bactericidal action on all these organisms. The intervals after which subcultures remained sterile varied from one to forty-eight hours. The *B. pyocyaneus*, the *Pneumococcus*, the *B. coli*, and the *Streptococcus* appeared to be the most easily killed, since three hours' exposure sufficed to kill every specimen of the two former organisms, 8 out of the 11 specimens of *B. coli*, and 6 of the 9 specimens of *Streptococci*. The *Staphylococci* would appear to be more resistant; many specimens survived five hours' exposure, and 3 survived twenty-four hours. It is impossible to exclude the possibility that this difference in resistance may depend on a difference in the nature of the growth on agar rather than on any difference between the actual organisms.

THE BACTERICIDAL ACTION OF LIQUID ETHER.

An attempt was next made to determine how the action of ether in the liquid state compared with that of ether vapour. Considerable difficulty was met with, since it was found impossible to mix the ether and the organisms in such a way as to ensure even action. Many methods were adopted, but the only one which gave anything like uniform results was to mix a saline suspension of the organism (*B. coli*) with an equal quantity of ether by vigorous shaking in a sterile tube closed with a rubber cork. The ether rapidly separated after the shaking ceased; a sterile pipette was plunged through the ether layer and 0.1 c.cm. of the suspension was withdrawn and added to a tube of melted agar at 40° C. After being kept at this temperature for a few minutes to allow the complete

evaporation of any ether which had been transferred with the bacterial suspension, this was poured into a sterile Petri dish and incubated.

One experiment of this kind showed that, after one minute's shaking with ether, 0.1 c.cm. of the *B. coli* suspension, when plated in this way, gave rise to only two colonies after twenty-four hours' incubation. In a control plate, prepared with an identical amount of the same suspension which had been shaken for one minute without ether, the colonies were too numerous to be counted. After three minutes' shaking with ether, 0.1 c.cm. of the suspension yielded no growth. Further experiments gave approximately similar results. It is clear that in these experiments the ether may have caused the death of the bacilli either by exerting a direct toxic action or by extracting from them some essential constituent.

When ether was allowed to act on dry films of living organisms (*B. coli*) on sterile cover-slips, an exposure of four hours sometimes failed to kill completely, though in other experiments fifteen minutes' exposure sufficed for complete sterilization.

It would seem probable that the immiscibility of ether with watery fluids and its action as a fat solvent are important factors from this point of view, and that the efficacy of its bactericidal action will depend in no small degree upon the physical conditions under which it meets the organisms.

As regards the action of liquid ether on spore-bearing organisms only a very few observations have been made. In a single experiment small pieces of cotton-wool were soaked in a broth culture of *B. oedematis maligni*, and then dried at 80° C. The dried pellets were immersed in ether for periods varying from thirty minutes to twenty-four hours, and then dropped into tubes of glucose broth which were incubated anaërobically. Twenty four hours' immersion failed to prevent subsequent growth under these conditions.

THE TYPE OF PERITONEAL EFFUSION PRODUCED BY INJECTION OF ETHER.

Preliminary experiments showed that 1 c.cm. of liquid ether per kilogram body weight is about the maximum dose which can be injected with safety into the guinea-pig's peritoneum. A series of guinea-pigs received intra-peritoneal injections of this amount and were killed after intervals varying from fifteen minutes to nineteen hours. Without entering into details, it may be said that the injection produces a clear effusion, which does not attain its maximum amount for many hours, and is seldom very abundant. At no period does the fluid contain any large quantity of cells. Control experiments made by injecting normal saline always produced a more highly cellular though less abundant exudate. As regards the type of cell present, the endothelial cell predominates during the first two hours, up to which time the polymorphonuclear cells are relatively scanty, but they then rapidly increase at the expense of both the endothelial and small mononuclear cells, and in the nineteen hours' experiment they formed 88.4 per cent. of the cells present.

THE TYPE OF EFFUSION PRODUCED BY INTRA-ARTICULAR INJECTION OF ETHER.

Experiments were made on the knee-joints of rabbits. One cubic centimetre of ether was injected in each case, and the animals were killed and examined after periods varying from one minute to one week. These experiments showed that the absorption of ether is extremely rapid and the resulting effusion into the joint relatively small. No fluid could be detected in a shorter period than fifteen minutes after the injection, and no appreciable quantity was present after a shorter interval than six hours. The cells were always scanty, and, as in peritoneal experiments, cells of the endothelial type tended to predominate during the earlier period, but were replaced later by polymorphonuclear cells. The animals killed after one week showed perfectly normal joints.

THE EFFECT OF ETHER INJECTIONS ON EXPERIMENTAL PERITONEAL INFECTIONS.

A large number of experiments were performed, the animals employed in all cases being guinea-pigs.

The injection of ether almost always markedly increased the severity of the infection. This may, perhaps, be explained by an increased rapidity in the absorption of toxins or bacteria, and it is noteworthy that in three instances a pure growth of *B. coli* was obtained from the heart's blood at *post-mortem* examinations made within a few minutes of the animal's death. It should be noted that the amount of ether which the guinea-pig will tolerate may well be too small to produce any beneficial result.

THE EFFECT OF ETHER INJECTIONS ON EXPERIMENTAL JOINT INFECTIONS.

Three similar experiments were performed; 1 c.cm. of a broth culture of the organism to be examined was inoculated into the knee-joint of each of two rabbits. One animal in each case received an injection of 1 c.cm. of ether five minutes later. The rabbits were killed after seven days in two experiments and after ten days in the third, and *post-mortem* examinations were at once made. Two experiments were performed with a strain of the *Streptococcus pyogenes* and the third with the *B. pyocyaneus*. The results were strikingly similar in all cases Where bacterial culture alone had been injected the joint was found to be markedly swollen and to contain a considerable amount of pus. In the three animals which received ether in addition to the bacterial culture the joints appeared normal, save for the presence of a minute amount of white caseous material, which showed no structure in stained films. It is noteworthy, however, that streptococci were grown both from those joints which had been inoculated with the organism alone and from those which had received ether in addition.

DISCUSSION OF RESULTS.

Experiments made *in vitro* show that ether and its vapour have a definite bactericidal action, but it would be difficult to imagine anything in the nature of a complete sterilization of an infected peritoneum taking place, and both the clinical and experimental results indicate that nothing of the kind occurs.

The nature of the effusions produced by the injection of ether does not lend any support to the idea that an increase in the local leucocytosis is an important factor, since, as indicated above, the cells are always scanty. The various immune bodies which may be supposed to be present in the exudate are possibly more important, but it seems doubtful whether the ether would greatly increase the hyperaemia already present in an acutely inflamed serous membrane, or the amount of exudate in the corresponding serous sac.

Some recent investigations carried out by Gardner[1] have an important bearing on this subject. He examined a large number of peritoneal exudates for the presence of aggressins. He concluded that the aggressive action of such exudates increases proportionately with the multiplication and breakdown of bacteria, and suggests that such substances as ether and colloidal silver may act by killing the bacteria or inhibiting their growth, and thus lessening the output of aggressins.

Possibly a large proportion of the bacteria are directly killed by the ether and its vapour, possibly also organisms which have been modified but not killed are more easily destroyed by the tissues, and it should be noted that all the evidence seems to indicate that the toxicity of the ether to the body tissue is very slight. In this way the mass of infection would be greatly reduced, and this is probably a point of no small importance. These factors, combined possibly with some stimulant action, would in many cases turn the balance in favour of the tissues and against the bacteria.

Any possible action of the ether on the various remote body organs has not of course been considered.

It only remains for me to express my great indebtedness to Dr. S. G. Platts for his valuable assistance during the course of this investigation.

REFERENCE.

[1] A. D. Gardner. Aggressins in Appendicitis and some other Varieties of Peritonitis. *Quart. Journ. Med.* 1914 Vol. vii, 325.

IN the seventy-seventh Legislature of the State of Maine, which met on January 6th, there are twelve medical members—five in the Senate and seven in the House of Representatives.

THE BIOCHEMISTRY OF IMMUNITY REACTIONS.*

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THE chemistry of immunity reactions has been actively investigated and the results constitute an extensive literature. The stage of simplification has not yet been reached, and later work has almost always added to the complexity of the subject.

Few now doubt the chemical basis of the alterations in the tissues and body fluids which constitute acquired immunity. To speak of immunity reactions, however, may be misleading, and it is more accurate to designate them antibody reactions, since the very opposite of immunity, anaphylaxis, may result from so-called procedures of immunization. The manifestations of antibody action are in most cases not peculiar, but consist in physical or chemical alterations which can usually be produced in various other ways. Thus absorption of complement is not effected only by an antigen-antibody complex.

In general, the characteristic feature of an antibody reaction consists in its being brought about by an antiserum, which, apparently, differs from other serums only in one constant feature—namely, its capacity to cause certain changes when associated with the homologous antigen. It is extremely difficult to classify antigens except according to the effects which follow when they are associated with the corresponding antibodies.

Thus it is possible to differentiate (1) antitoxic and antiferment action, (2) agglutination and precipitation, (3) complement fixation, which may or may not be accompanied by cytolytic action, (4) bacteriotropic or opsonic effects; in addition to these there falls to be considered (5) decompositions due to the action of antagonistic ferments—that is to say, substances supposed to be of ferment character, which have the property of breaking down into chemically simpler bodies the compounds in response to which they have been developed. This last class of reactive phenomena has been brought into prominence by the recent investigations of Abderhalden and his co-workers.

In order to obtain a clearer insight into the processes, it is necessary to consider (*a*) the constitution of antigens and the nature of the changes which they excite in the animal body, thereby leading to the production of antisubstances, and (*b*) the phenomena presented by the interaction of the constituents concerned in antibody reactions.

The Nature of Antigens.

The common type of antigen is a foreign protein, and it is immaterial whether it is derived from higher animals and plants or from bacteria or protozoa. The two principal features of antigens are: (1) That they are substances foreign to the species of animal which reacts; and (2) that they are usually so intimately associated with protein that it is impossible to obtain antigens altogether free from protein reactions. The latter characteristic is not shared by all antigens, however, if we are to include those substances which, according to Abderhalden, lead to the development of antagonistic ferments. Thus, Abderhalden found, confirming and extending earlier observations of Weinland, that a comparatively simple substance, such as saccharose, when introduced into the tissues of dogs, might lead to the appearance of invertase in their serum. With the possible exception of the group of bodies which excite the production of antagonistic ferments and also of Ford's amanita-haemolysin and toxin, which he holds to be glucosides, antigenic properties appear to be indissolubly associated with proteins or closely allied substances. The evidence brought forward to show that any of the so-called lipoid bodies, such as "lecithins," in the isolated state can act as antigens is scanty and unsatisfactory. Jobling and Bull found that a haemolytic immune serum, with or without complement, when brought into contact with the homologous blood corpuscles, caused an increase in acidity, which they attributed to the splitting-off of fatty acids from lipoids contained in the red cells. Non-homologous red cells did not yield so much acid as the homologous corpuscles. It was concluded, however, that the action of the specific immune lipase was not essential for haemolysis, since an immune serum, deprived of its lipase, by heating to 70° C., still produced lysis along with complement. There is no evidence that immune body is actually a lipoid (Meyer). Apart from the singular results of Kurt Meyer obtained with tapeworm lipoids (confirmed by Thiele and Embleton), it has not been found possible to produce complement-deviating or precipitating antibodies by injecting animals with lipoids (Fitzgerald and Leathes, Ritchie and Miller). Lipoids are present in a "masked" state in practically all tissues and body fluids, and since it is probably impossible to remove lipoid substances completely without profoundly altering the proteins with which they are associated, it is therefore difficult to determine in how far their presence may affect the antigenic action of proteins. The weight of evidence, however, goes to prove that where the development of antibodies, in response to lipoids, has been claimed, the possible fallacy due to the entangling ("adsorption") of proteins has not been excluded. As is known from the experiments of Friedberger and Fröhner on the development of haemolysins, an extremely minute amount of protein may suffice to lead to the production of recognizable quantities of antisubstances, and in the work of Bang and Forssman, which originally brought into prominence the question whether lipoids could act as antigens, the immune body developed in response to "lipoid" constituents of red corpuscles was exceedingly feeble.

Turning now to the apparently essential element of foreignness in an antigen, it appears that certain infections may so alter the reacting power of the body or may produce such a change in certain tissues that, as a consequence, an individual may develop antibodies to his own cells. Thus the pathogenesis of paroxysmal haemoglobinuria is to be explained by the fact that certain syphilitics develop a lysin for their own blood corpuscles. It is not known whether this haemolysin is produced as a true antibody response to constituents of the red corpuscles or whether it is of "heterogenetic" origin. The question whether autolysins for other tissues may develop and lead to disease merits consideration.

It is not yet possible to arrive at any clear conception with regard to the means whereby antibody production is excited. Recent work on the digestion and resorption of proteins has shown that, in the adult at any rate, the intestinal epithelium rigorously protects against the entrance into the tissues from the alimentary canal of albuminous material with foreign specificity. The direct contact of foreign protein with the tissues, such as occurs in immunization or in bacterial infections, has therefore no parallel in normal processes of nutrition; accordingly, the reactive phenomena following such parenteral introduction of protein must be regarded as essentially pathological. It is noteworthy that a natural infection may differ markedly from artificial immunization as a means of stimulating antibody reaction; thus the antibodies developed in the course of an attack of typhoid fever are in general feeble as compared with those resulting from several injections of typhoid vaccine. This may partially explain the efficacy of vaccine treatment in such conditions.

Phenomena of the Interaction of Constituents concerned in Antibody Reactions.

Here we are hampered by the fact that antibodies have never been isolated in the pure state, and the same is true of most if not all antigens. Consequently, in an antibody reaction one observes effects brought about by the interaction of certain components in a highly complex and irresolvable mixture. The influence of physical and chemical changes on the course of the reaction can be examined and important results have been obtained, but the question usually remains undetermined as to whether an alteration in the essential components has led to any given change, or whether a modification of the medium is primarily responsible. Antibody reactions have been extensively explained by reference to physico-chemical and colloid phenomena. The reacting components appear either to be colloids or else to be markedly influenced by close association with such substances. Thus, they tend

* A paper read in opening a discussion in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association at Aberdeen.

to be fixed by bodies which act in virtue of their surface (adsorption); also, they exhibit frequently "zone-phenomena," a particular effect occurring only when the components are present in certain relative amounts, excess of one constituent or the other tending to inhibit the reaction. Adsorption, however, occurs in characteristic form under conditions which exclude the essential feature of antibody reactions, namely, specificity. It has been shown (*vide* von Szily, also Landsteiner and Prasek) that red blood corpuscles treated with osmic acid can remove from an antiserum the immune body which has been developed by injections of red blood cells of a different species, but this does not explain why a certain portion of the immune body can be absorbed by intact corpuscles only when these belong to the homologous species. Again, the fact that passage through a Berkefeld filter removes complement, but not immune body, from the serum (Muir and Browning, see also Schmidt[2]), does not explain why a protein or a suspension of red blood corpuscles should be able to absorb considerable quantities of complement only when the corresponding antibody is present. Specificity, then, is one of the chief problems of antibody reactions. Specificity for the species has long been known, but recent observations show that a much more restricted degree of specificity may be exhibited by antibodies.

Mackie has found that a powerful antiserum, which agglutinates the culture of *B. coli* by means of which it was developed, in a dilution of 1 in 30,000, is entirely without agglutinating action on numerous strains of organisms derived from a similar source, which appear identical when tested by all the other available criteria; and further, these strains do not absorb the agglutinins from dilute solutions. On the other hand, complement fixation, brought about under the influence of the same antiserum, shows that in addition to the marked specificity for the homologous strain, there is also a wide group specificity, which includes organisms differing markedly in other biological properties such as the power of fermenting lactose.

Experiments of this kind show that the determination of biological relationships by means of antiserums may depend greatly on the particular test employed. Here also it is impossible to generalize from the behaviour of any one species of antigen, and a law which applies to the immunity reactions of a particular group of bacteria may be quite inapplicable to others. According to Ehrlich, the specificity of antibodies is a result of differences in chemical structure of the antigens in response to which they have been developed. This view is strikingly borne out by the work of Obermeyer and Pick, and of Landsteiner and his co-workers who have shown that specificity can be modified by chemical procedures. Thus they have distinguished *structural* from *species specificity*. Proteins altered by physical processes, such as boiling, give rise to antibodies which react only with boiled protein; the latter, however, must belong to the species employed for immunization, that is, the species specificity is preserved. On the other hand, Landsteiner and Jablons have found that rabbits injected with acetylated horse serum develop antibodies which fix complement in the presence of acetylated serum protein from various other animals (hen, rabbit) in addition to the horse, but do not absorb complement with normal or boiled horse serum or with diazo- or nitro-serum protein. Rabbits will also produce an antiserum to acetylated rabbit serum. Accordingly, the process of acetylation has deprived the serum of those characters which distinguished it as belonging to the species horse, and has conferred on it a form of specificity which depends on the presence of the acetyl group (structure specificity). In respect of specificity, it is significant that a clear distinction exists between an animal's tissues and its serum (Fleischmann and Davidsohn), since antibodies obtained by injecting various organs do not fix complement in the presence of serum from the same species.

An antiserum to the protein constituent of haemoglobin does not fix complement along with serum, intact red corpuscles, haemoglobin, or acid serum-albumin (Browning and Wilson).

The antigenic power of different proteins varies extraordinarily; thus serum and red blood corpuscles readily produce antiserums, while tissue proteins are feeble antigens, so that it is difficult to obtain antibodies to them even after many injections (Salus, Joannovics). Most purified proteins are found to have become seriously impaired as antigens (Wells). Again, certain bacterial products, such as the haemolysin produced by streptococci, would appear to be altogether incapable of giving rise to antisubstances (McLeod). The question as to what particular character in proteins confers on them antigenic properties is a very subtle one, and obviously is of fundamental importance, but no satisfactory solution has been offered. There is certainly no constant correlation between toxicity and antigenic action, and the term "ictus immunisatorius" conveys little meaning; except by analogy it is not possible to predict the potency of a given antigen to develop antibodies.

While the specificity of antisubstances developed by immunization is so striking and constant, it must be remembered that similar highly specific bodies occur in serum altogether apart from the reaction to the introduction of an antigen: thus a lytic antibody for ox blood is present frequently in the serum of normal guinea-pigs. Accordingly, the development of an antibody need not necessarily possess any teleological significance. This consideration serves at least to rob of its apparently illogical character the formation of "heterogenetic" antibodies (Friedberger), as when a rabbit injected with guinea-pig's kidney develops an immune body for sheep's red blood corpuscles (Forssman). The introduction of certain foreign proteins into the tissues causes a metabolic change one of the constant manifestations of which is the development of this particular immune body. The capacity to produce a positive Wassermann reaction is probably a somewhat similar heterogenetic phenomenon; thus a property which is common to the serum of many normal rabbits (Browning and Mackenzie), appears in human serum practically only as the result of syphilitic infection. Such a constant phenomenon possesses great diagnostic value, but is probably to be regarded merely as the indicator of pathological processes.

Certain antibody reactions presenting points of special interest will now be considered briefly.

In *antitoxin reactions* the important fact has been recently elicited that the combination remains permanently reversible provided that a dissociating factor is introduced such as acid (Morgenroth and Asher) or alkali (Sachs).

In *agglutination and precipitation* the occurrence of zones, which is so characteristic of colloid interactions, is strikingly shown. Dreyer and Jex-Blake have proved that the explanation of zones as due to "proagglutinoids" does not apply generally. (It was supposed that the agglutinin, as the result of heating, became converted into proagglutinoid, which possessed in marked degree the power of combining with the bacteria, but which had lost the property of causing agglutination.) Thus a suitably heated serum may actually exhibit increased agglutinating power and yet produce a marked zone, whereas a serum much weakened by heat may cause no zone. Further, zones may be produced by heating the bacteria instead of the serum. The analysis of the mechanism of agglutination reactions is complicated by the fact that the visible end result, agglutination, represents not merely the effect of a specific combination of the antibody with the bacteria, but also requires for its occurrence the co-operation of a suitable medium. Bordet[1] showed that, in the absence of a salt (or sugar), as when the bacilli are suspended in distilled water, no agglutination occurs, even although the agglutinin is bound; accordingly the loss of agglutinin by absorption from a serum is the true criterion of reaction. In certain instances agglutination depends on the action of complement as well as of antibody (Muir and Browning), and Bordet and Gay have shown that thermostable constituents of ox-serum (conglutinin) play a peculiar part in causing agglutination in the presence of antibody and complement.

Complement Fixation and Cytolysis.—Certain antibodies, when associated with the corresponding antigens, deprive fresh serum of its complement. The fixation of complement has been explained as due to adsorption. The mere occurrence of a serum precipitate is not sufficient to fix complement; thus, globin when mixed with any serum gives rise to a precipitate, but it is only when an anti-globin immune serum is employed that complement is bound (Browning and Wilson). Dean has shown that the amount of complement absorbed by a serum antiserum complex may depend to a marked extent on

physical conditions, and varies according as the components are mixed simultaneously or the complement is added after the mixture of antigen with antibody has been allowed to stand for some time. It is, further, a noteworthy fact that with certain antigens, for example, serum, zones occur, so that if an excess of antigen is present complement fixation fails to take place; this is obviously of great practical importance. Complement fixation may occur without obvious formation of precipitate; and Arrhenius cautions against the assumption that adsorption takes place in such instances where there is not definitely a solid phase present.*

It is to be noted that the occurrence of adsorption phenomena may depend intimately on the chemical structure of the adsorbing agent, and a slight alteration in constitution may alter markedly the adsorptive property. For example, derivatives of cholesterin which fix lecithin, as tested by inhibition of snake venom lecithin haemolysis, do not differ from those which lack this power so far as can be measured by a physical character, such as the rapidity of precipitation out of emulsions with lecithin (Browning and Cruickshank).

Lytic Action.—Cytolysis may or may not follow complement fixation. A large amount of complement may be absorbed by the combination cell-receptor *plus* antibody, depending on the character and quantity of the immune body present as well as on properties of the complement peculiar to the species or the individual. For the production of lysis a certain minimum amount both of immune body and of complement is required, hence they do not behave as ferments; and there is also no satisfactory ground for regarding the using up of complement as a mere side phenomenon, methaemolysis (see Bordet[2]). As regards the part played by the immune body, Muir long ago observed that on increasing the amount of this component beyond the minimum quantity necessary to cause haemolysis, an increase was also in many instances produced in the amount of complement fixed by the immune body-receptor complex. It has been shown that this property of excess of immune body to lead to increased complement fixation depends to a great extent on the stage of immunization at which the antiserum is taken; thus, an immune body obtained from the rabbit after a single injection of washed ox blood has, when multiple doses are added to the corpuscles, only a feeble power of causing increased absorption of complement, whereas the "mature" immune body behaves as Muir has described (Browning and Wilson, confirmed by Thorsch). Thiele and Embleton describe further striking differences between mature and immature lysins. It is an important fact that the lytic power of a complement depends on the species of animal yielding the immune body through whose medium it is brought into combination with the red corpuscles (Muir); and this holds even when the immune bodies appear to combine with the same receptors of the red cells. The *deviability* of the complement of one individual may differ markedly from that of another member of the same species, and this property is quite independent of the lytic power. On what function differences in deviability depend has not yet been ascertained, but it is a point of the greatest practical importance in the interpretation of the results of complement-fixation experiments, and one which has not hitherto been sufficiently well recognized.† By procedures such as dialysis it is possible to reduce the deviability of complement greatly without affecting practically any alteration in its haemolytic power (Browning and Mackie). The complementing function of a serum is a complicated property and extremely labile, but it withstands the action of ammonium sulphate, and by making use of this reagent in addition to Liefmann's carbonic acid method for the purpose of fractionation much more uniform and satisfactory analyses have been obtained than by the carbon dioxide procedure by itself. Of course, it is not assumed that the various fractions so obtained are homogeneous protein entities, but the fact is to be emphasized that it is possible with great regularity to split complement up into four different components, and that certain combinations, consisting as a rule of at least three of these, quantitatively reproduce the full haemolytic effect of the native serum (Browning and Mackie). This process of reconstitution is not a mere summation of effects, and the fractions do not correspond with the hitherto described end-piece, middle-piece, and third component

In general, the major portion of complement is represented by the following combinations of two constituents: (1) the pseudo-globulin components of each carbon dioxide fraction together, and (2) the pseudo-globulin of middle-piece along with the serum-albumin. Frequently, however, the addition of the albumin to the mixture of globulins is required in order to reconstitute the complement, so that the co-operation of three components may be required. Thus, while the complement factors are distributed over the pseudo-globulins principally and may be wholly contained in these, the albumin also in many instances constitutes an essential element.‡

Attempts have been made to relate the inactivation of complement brought about by heat and other agencies to alterations in surface tension, but Schmidt[1] has shown that no inference can be drawn as to the complement action of a serum from its surface tension. In spite of much effort (v. Liebermann and v. Fennyvessy) no true substitute has been found for complement in the haemolytic system. On the other hand, it is a fact of great theoretical importance that immune body can be replaced by colloidal silicic acid (Landsteiner and Jagic).

It may be taken as definitely established that the component of serum which acts in this case is identical with the complement which causes lysis along with immune body (see Browning and Mackie); but the specificity which characterizes immune body is wanting, as silicic acid sensitizes various species of red blood corpuscles to the action of complement.

The alteration produced in the red corpuscles by immune body is no doubt analogous to that effected by silicic acid, but this does not elucidate the nature of the change, nor does the observation of v. Liebermann and v. Fennyvessy that corpuscles sensitized by immune serum are rendered more susceptible to the lytic action of soaps, explain the process of serum haemolysis. Certain lipoids —"lecithin"—may markedly modify complement action (Cruickshank and Mackie), but there is no evidence that lipoids can replace either immune body or complement in the haemolytic system.§ The difficulty which may attach to the analysis of haemolytic processes is well shown by haemolysis due to brilliant green along with serum (Browning and Mackie).

Ox blood treated with brilliant green is lysed by minute amounts of serum (0.005 c.cm. serum for 1 c.cm. 5 per cent. washed blood suspension) belonging to various species (human, guinea-pig, ox, etc.); but this result does not depend on complement, as Mackie has shown that serum diluted with ten volumes of physiological NaCl solution and then boiled still acts. The following is a summary of unpublished observations of Mackie on these points: The optimum effect is produced when the dye is allowed to act on the red corpuscles, and the latter are then well washed by centrifugalizing with 0.85 per cent. NaCl solution. Lecithin also lyses red corpuscles sensitized in this way. But the addition of small amounts of the dye to the lecithin emulsion or to serum deprives these agents of their "activating" effect. Egg-white does not lyse corpuscles treated with brilliant green; but serum precipitated with alcohol and repeatedly treated with alcohol and ether still acts. The amount of brilliant green which causes the sensitizing action is a minute fraction of the quantity which by itself causes lysis.

At present it is not possible to give any explanation of the phenomenon, but it affords a striking example of the subtlety of haemolytic reactions.

The Wassermann syphilis reaction probably belongs to the group of heterogenetic phenomena. No other non-specific alteration of serum, in the etiological sense of the term "specific," has been found to be so constantly present in any disease or so completely restricted to one particular condition. But the nature of the interaction between the constituents of a positive serum and the lipoid "antigen" remains quite obscure in spite of many ingenious efforts at explanation. Our only means of

* Bechhold's observation that colloidal arsenic trisulphide ceases to be filtrable when mixed with a colloidal solution of Berlin blue, although the mixture is quite transparent, suggests, however, that colloidal solutions may act as adsorbing agents.

† Browning and Mackie have drawn attention to the value of the well-known method of freezing as a means of preserving a standard complement with constant deviability and lytic action over a considerable period.

‡ Euglobulin *plus* albumin often exert marked complementing action, but the addition of one of the pseudo-globulin fractions is required to restore the full power.

§ Chick has found (*Journ. of Path. and Bact.*, vol. xix, 1914, p. 130) that when pseudo-globulin of antidiphtheria serum is dialysed for a long time denaturation occurs, resulting in a precipitate of euglobulin, which ceases to form when most of the phosphorus has been removed from the soluble components, the latter retaining all the antitoxin. This observation is of great interest as regards the rôle of lipoids in relation to antibodies.

estimating it is through the occurrence of inhibition of that equally complex function complement.

The essence of the syphilitic "antigen," whether it be an emulsion of so-called lecithin or of a mixture of lecithin with cholesterin, is that in the presence of syphilitic serum it leads to the fixation of more complement than is fixed under similar conditions in the presence of normal serum; to speak of a pure syphilitic antigen conveys no precise meaning at present, since no chemical entity of the nature of "lecithin" has so far been prepared with certainty. Cholesterin, when added to the "lecithin" antigen, has the remarkable property of increasing the amount of complement fixed in the Wassermann reaction, as was first shown by Browning, Cruickshank, and Mackenzie; under suitable conditions this effect is strictly specific, and cholesterin causes no increase in the anticomplement action of the antigen alone or together with a non-syphilitic serum.

Wassermann and Lange have attempted to obtain an insight into the changes which lead to a positive reaction.

A positively reacting cerebro-spinal fluid rich in lymphocytes was centrifugalized so as to concentrate the cells; a small specimen of the cell-free fluid, and a similar specimen to which the concentrated cell content was added, were then heated for a prolonged period at 57° C. It was found that, as a result of this procedure, the specimen containing the cells reacted more markedly positive than the cell-free portion. Negatively reacting fluids containing cells, from cases of meningitis, were not rendered positive by a similar procedure.

The conclusion is that the reacting bodies may reside within the lymphocytes in syphilis. These suggestive experiments are well worth further analysis.

The question whether the various antibody reactions which may result from immunization with a given substance are really due to separate antibodies is important; the evidence goes to prove that a considerable degree of independence exists. Thus Muir and Martin have shown, in the case of bactericidal, opsonic and agglutinating properties of immune serums, that these functions vary independently; further, Mackie's observations on agglutination and complement deviation in the *coli* group point in the direction of independence of the antisubstances, as do also Hektoen's experiments in which dogs injected intravenously with rats' red corpuscles developed agglutinin and immune opsonin in their blood serum, while the cerebro-spinal fluid contained immune opsonin only.

The analysis of immunity reactions by mathematical methods (Arrhenius, McKendrick) has led to results which, if they could be accepted as general laws, would effect a most acceptable simplification. From the biological aspect, however, such generalizations cannot be regarded as universally applicable in the meantime. There are several reasons for this: (1) The active substances which are being measured—for example, in serum—are modified by the presence of a large quantity of matter which is prone to exert more or less unspecific effects.

Thus the action of complement is retarded or inhibited altogether when it is mixed with a specimen of the same serum which has been heated (Muir and Browning), yet it is certain the complement is not destroyed in the mixture, but merely masked—in this instance complementoid was shown to be largely responsible for the inhibition.

(2) Individual variations constitute an exceedingly well marked feature of immunity reactions.

The independence of deviability and haemolytic power of complement in the serum of different individuals of the same species illustrates this point well. Another striking example is the difference in affinity of antibodies for the respective antigens. Thus the immune body obtained from rabbits injected with ox blood has a high degree of affinity for the red cells, so that the treatment of the antiserum with the blood corpuscles removes multiple doses of the immune body; on the other hand, the normal antibody for guinea-pig's blood contained in ox serum has by itself little or no affinity for the red cells.

These variations among bodies closely similar in biological action, as well as the multitude of interfering conditions, seem to present an almost insuperable obstacle to the elaboration of general formulae.

Antagonistic Ferments (Abderhalden's Reaction).—Abderhalden's conception of antagonistic ferments proceeds from the fact that foodstuffs, especially protein, undergo a marked degree of splitting up in the intestine before they are absorbed into the tissues and there synthetized so as to become genuine constituents of the body. The reason for this process is supposed to be that the protein taken as food is foreign—that is, does not contain the proper proportion or association of the constituents required for building up the animal's own tissues; accordingly the foreign protein is broken down to such an extent as will enable the intestinal cells to pick and choose the proper components in suitable amounts. On this basis Abderhalden has concluded that when foreign protein is introduced into the tissues parenterally—that is, otherwise than by the alimentary canal—the result is the development in the body fluids of ferments which break down the protein in a fashion similar to that which occurs in the process of digestion in the alimentary canal; in addition, the antagonistic ferment thus produced is supposed to be specific for the substrate in response to which it has been developed. Thus, in pregnancy the fetal elements of the placenta obtain access to the maternal circulation, and in virtue of their hypothetical foreign character they are supposed to lead to the production of ferments which digest placental tissue. For the detection of the products of ferment action two methods have been employed—(1) the altered rotation of the plane of polarization, resulting when the serum acts on a solution of peptone derived from the tissue in question, and (2) the demonstration of diffusible products—amino-acids—which pass into the external fluid when the serum and boiled substrate are allowed to act on each other in a dialyser; for this purpose Ruhemann's reagent triketo-hydrindenhydrate, "ninhydrin," has been mainly employed.

The differences in rotation observed by the optical method are generally small. With regard to the ninhydrin reaction, unfortunately a sharp line of demarcation cannot be drawn between the violet colour which is interpreted as a positive result and a complete absence of colour; an intermediate series of yellowish and reddish tints occurs, the true value of which it is extremely difficult to assess. Also, the dialysers vary considerably in their permeability for the substances under consideration.*

The cause of the Abderhalden phenomenon is not yet clear, and the gaps in knowledge regarding it are wide.

An attempt made† to correlate the phenomena with other immunity reactions, has led to the following results:

1. The reaction is a quantitative one; serum along with various proteins will produce diffusible substances reacting to ninhydrin, provided that sufficient serum is employed—for example, normal rabbit's serum acting on egg-white; (2) the reaction is diminished or abolished if the serum is heated sufficiently beforehand (60° C. for an hour); (3) the injection of an immunizing dose of egg-white (5 c.cm. 20 per cent. solution) intravenously into rabbits causes little or no alteration in the power of their serum to give a positively reacting dialysate when tested with egg-white seven to ten days later; (4) the lysis of washed ox blood by the fresh serum of an immunized rabbit gives rise to only a slight degree of proteolysis, as evidenced by the ninhydrin reaction when the mixture is dialyzed in the usual fashion; fresh normal rabbit's serum also gives rise to diffusible ninhydrin reacting substances when placed in contact with ox's blood corpuscles, although practically no haemolysis occurs in this case; heated immune rabbit's serum (one hour at 55° C.) along with ox's corpuscles did not yield a positively reacting dialysate. Normal guinea-pig's fresh serum, although it contains much more complement than rabbit's serum, does not necessarily cause a positive ninhydrin reaction when it produces lysis of ox blood sensitized with multiple doses of immune body from the rabbit.

Accordingly, there would not appear to be any constant correlation between the Abderhalden reaction and other antibody reactions.

As the results of many observers indicate, the diffusible bodies which react with ninhydrin are produced more readily in the presence of coagulated placenta by the serum in pregnancy than by the serums of normal individuals; but this is not an invariable rule, and also certain specimens of placental tissue yield a positive ninhydrin reaction with various non-pregnant serums. De Waele has come to the conclusion that the bodies which react with ninhydrin are derived from the serum and not from the substrate, while Plaut and Leitch independently have shown that serum on incubation with inorganic substances, such as kaolin or glass wool, without any organic substrate, may give rise to positively reacting dialysates; further, a given serum may develop the reaction in the presence of one of these inorganic bodies, and not with another. In view of these results, the specific nature of the reaction for antagonistic proteolytic ferments must be regarded as still extremely doubtful. The idea that in disease the body might produce antagonistic ferments to certain of its own organs opened out a

* This applies even to those dialysers which are supplied as standardized by the accredited dealers.

† Unpublished observations of Dr. McVey, carried out in the Pathological Department, Glasgow University.

wide prospect to investigators, and numerous remarkable results have been recorded; but granting even that the reaction possesses a certain degree of constancy as a phenomenon of pregnancy, the above mentioned facts render it highly inadvisable to conclude that a particular organ is affected solely on the ground that the patient's serum, along with that tissue as substrate, gives a positive Abderhalden reaction.

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ON THE THERAPEUTICS OF ORGANIC EXTRACTS.*

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IT is perhaps curious that a physiologist should be asked to open a discussion on the therapeutics of organic extracts. But I think that it is not inappropriate, since the therapeutic value of every preparation must be tested by physiological methods. The normal body uncomplicated by disease is used, and it is further possible to isolate particular parts of the body and to note directly the effects, if any, which are produced. Again, the therapeutist must always start his investigations with the hope or expectation that a favourable action will be produced, while the physiologist is uninfluenced by this element of expectancy which is so fatal to impartial and unprejudiced observation.

Undoubtedly the observations of the therapeutist have frequently suggested the lines which experimental work must follow. No better example of this can be given than the discovery of the function of the medulla suprarenalis. Schäfer has described how Dr. Oliver found that the administration of extracts of the suprarenal to his son produced sickness and constriction of the radial artery, and how he came to Schäfer asking that he should test the influence of the extract upon the blood pressure of an animal, with the results that when this was done its vasoconstrictor action was at once clearly demonstrated. Upon this observation followed the whole series of physiological experiments which have rendered our knowledge of the functions of the medulla suprarenalis so precise.

Probably the first hint of the production of what are now called internal secretions was given as far back as 1775 by Theophile de Bordeu. But it was Berthold who, in 1849, gave the first clear demonstration of their existence by his experiment of transplanting the testis into capons, and showing that such a transplantation induced the development of the characters of the sexually functional male.

It was not, however, till 1889, when Brown-Séquard presented to the Société de Biologie of Paris his observations upon the effects of the administration of extracts of the testes, that the attention of physiologists was directed towards the action of these internal secretions.

The work done before this date upon the thyroid should have suggested the possibility that such products are formed. Gull, in 1873, had described the condition of myxoedema; and in 1879 Ord had definitely associated it with changes in the thyroid. Kocher and the Reverdins, in 1882, had described a similar condition following removal of the thyroid, and Schiff, in 1884, had demonstrated that the thyroid might be transplanted in the dog, and that the onset of the symptoms of removal of the gland might thus be prevented. The work of Vessale and Gley in 1891, showing that the intravenous injection of extracts of the gland act in the same way, and that of Murray proving that glycerine extracts administered by the mouth are effective, were the natural sequence of these observations of Schiff. The old theory, maintained to this day in a modified form by von Cyon, that the thyroid regulates the supply of blood to the brain, had to be abandoned when it was shown that the mere administration of extracts could prevent the onset of untoward symptoms after the gland was removed.

Apart from the thyroid—with which we are not at present further concerned—Oliver and Schäfer in 1894 in this country, and somewhat later Cybulski and Szymonowicz described definite symptoms, the result of the injection of extracts of the suprarenal bodies.

Since then an enormous amount of work has been done upon the action of these extracts, and one important result has been to explode some of the older views as to the part played by these ductless glands and to throw important light upon the real nature of their functions. For instance, the idea that such structures as the suprarenal act by destroying a hypothetical poison had to be abandoned in the light of the more recent knowledge of the mode of action of extracts of these bodies. It is the study of these extracts which has clearly demonstated that the various ductless glands—to use a not very satisfactory generic title—have for their function the preparation of internal secretions which each produces a specific effect upon the body, either increasing or decreasing the activity of various organs.

Naturally, their exciting or augmenting action was at first the more manifest, and this led Starling to name them "hormones." But since some at least depress activity, the name is unsuitable. Schäfer and others have tried to devise other names indicating the particular mode of action, but personally I fail to see the advantages of such clumsy Greek terms, when the convenient generic title, "internal secretion," is available.

But while the study of these extracts has so markedly advanced physiological knowledge, it must be recognized that this study is fraught with danger, and that it has led many investigators astray, and has produced a very large crop of errors. The dangers are of several kinds.

1. Many extracts of organs are little better than dirty mixtures of the organic and inorganic constituents of the organ in a more or less decomposed condition, and their administration is a return to the dark days of polypharmacy. Because they purge or influence the blood pressure, there is no reason to conclude that their action is due to a specific product of the organ—to a particular internal secretion.

* Discussion in the Section of Pharmacology, Therapeutics, and Dietetics of the Annual Meeting of the British Medical Association at Aberdeen, 1914.

2. A manifest danger is that the extract does not contain the physiological internal secretion of the gland, and that in this way the existence of an internal secretion may be overlooked. This danger is more especially marked when the active principle is either a protein or is intimately associated with a protein. Such bodies—for example, the active nucleoprotein prepared by Beebe from the parathyroid—are not very readily dissolved, and are destroyed by heat, so that their existence may easily be overlooked. It is very probable that other active principles are too unstable to be extracted unchanged. Even adrenalin readily decomposes in an alkaline medium.

3. There is also the danger that, instead of the active principle of the gland, the extract may contain some decomposition product. This danger is exemplified by the extract of placenta investigated by Dixon and Taylor, which was afterwards shown by Rosenheim to owe its activity to certain amines produced as the result of early putrefactive changes. Dale's work upon the vaso-constrictor action of p. hydroxyphenylethylamine extracted from putrid meat by Barger and Walpole and other similar products must make one cautious in interpreting a vaso-constrictor action of any extract as the result of the presence of a normal *intra vitam* product. One product of disintegrating cell protoplasm the presence of which in an extract is very likely to lead to erroneous conclusions is cholin, which separates from lecithin, and which has a marked effect in lowering arterial blood pressure. There can be no doubt that the depressor action which has been ascribed to the internal secretions of many organs—for example, of the thymus and of the cortex suprarenalis—is due to the presence of this substance in the extracts used.

4. But even if the extract contains unchanged the active product of the gland, it is by no means easy to conclude from the action of the massive doses usually employed in physiological investigations what is the actual physiological part played by the product when passed to the blood in the amounts usually present during life. It may quite well be that in the large quantities administered in investigating its action it may produce results quite the opposite to those which it produces when present in its normal amount.

The same difficulty is met in the investigation of the action of many drugs. In small doses they may produce exactly the opposite effect to that produced in large doses. It is the same with nearly all stimuli. At a certain strength they have one effect, at greater or lesser strengths they may have an opposite effect—for example, the influence of temperature on aethalium septicum and of light upon bacteria. The difficulty, so far as it concerns the internal secretions, cannot be better exemplified than in the action of adrenalin. In the doses usually administered in experimental work it has a typical vaso-constrictor action and paralyses the gut. It acts just as stimulation of the true sympathetic nerves would act. But if given in smaller doses, in doses more approaching the amount normally present in the blood, it has a vaso-dilator effect, and, according to Hoskins's results, it may increase instead of inhibiting intestinal peristalsis. Can we conclude, as so many physiologists have concluded, that it is the presence of adrenalin produced in the chromaffin tissue and passed into the blood which keeps up the tonus of the arterioles and maintains the arterial pressure? I think that such a conclusion is unwarranted.

This raises the further question, Although a large dose of adrenalin produces all the effects of stimulation of the true sympathetic nerves, does it ever act during life to produce such a stimulation—a generalized and not a local reaction—does it not rather simply activate the endings of the nerves so that the special part of the true sympathetic which is called into action may more easily produce its effect? Again, when the administration of an extract produces an effect, there is always the possibility that this effect is not directly produced, but is the result of a stimulation of some other endocrinous structure or of a facilitation of the action of some other internal secretion.

Thus it is at least possible that some of the effects of administering thyroid extracts—such as the decreased tolerance of sugar—might be due to a stimulating action on the chromaffin tissue increasing the production of adrenalin and so increasing the mobilization of sugar.

5. Another difficulty in investigating the influence of these extracts is to determine precisely their seat of action. Thanks to the work of Langley and Elliot, we know that adrenalin acts upon the peripheral parts of the true sympathetic system. Dixon's observation that apocodeine blocks the action of adrenalin, but allows barium to exercise its stimulating influence on visceral muscle, seems to point to the conclusion that apocodeine and adrenalin act at a point proximal to that at which barium acts. But some unpublished results of Cathcart and Clark show that nicotine blocks the action of barium, but does not block that of adrenalin. Had these observations been made before Dixon's, the conclusion might have been drawn that adrenalin acts at a point peripheral to that acted on by barium.

As Magnus has so clearly pointed out, nothing is more difficult than to draw definite conclusions from the antagonistic action of drugs. The danger is manifest when their varying action according to the dose administered is remembered. Some observations of Cushny on the action of atropine on the uterus in modifying the effects of stimulation of the nerves, of the administration of adrenalin and of pilocarpine, illustrate this point. He finds that atropine has no action in antagonizing adrenalin or stimulation of the nerve, but that it completely antagonizes pilocarpine. But in some other organs—for example, the salivary glands—atropine blocks the action of nerve stimulation.

I am becoming very sceptical of all theories as to the exact point of action of various drugs and extracts as revealed by this method of studying their antagonism.

6. Another difficulty is introduced by the evidence that the effect of the extract may vary with the condition of the organ on which it acts as well as with the dose in which it is administered. Thus adrenalin generally stimulates the uterus in pregnant or recently pregnant animals, but it may inhibit it in virgin animals.

7. To the therapeutist, endeavouring to apply the results supplied by the physiologist and pharmacologist, there is always the further difficulty that he cannot be sure that even the largest doses administered by the mouth, or even subcutaneously, will produce the effects which can be obtained by the intravenous administration of the substance. This fact is too often forgotten by the sanguine practical physician.

The present time is the age of hormones, the pendulum has swung in the direction of chemical regulation of function, and the influence of nervous and other regulators is ignored. But we must remember how little we yet know of this chemical regulation. The only internal secretions the chemical nature of which is in any way known are adrenalin and iodothyreoglobulin, for we have no real knowledge of the nucleo-protein prepared by Beebe from the parathyroids or of the various crystalline products from the hypophysis separated by Fühner. The evidence we now possess concerning the mode of action of adrenalin clearly shows that its action is secondary to nervous action, and that in the body it merely plays the part of a facilitator of the action of the true sympathetic system.

Even as regards the sex glands or gonads, in spite of the work of Berthold and all who have followed him, our knowledge of the exact part played by internal secretions is inconclusive. We do know that removal of these structures causes marked modifications in growth and in development, both of the body generally and of the secondary sexual characters, and that transplantation may prevent the onset of these modifications. But our evidence of the influence of the administration of extracts of the gonads is very incomplete and conflicting.

Doubt has been cast on the interpretation of the well-known experiment of Nussbaum, in which transplantation of the testes after castration was found to induce the growth of the clasping pad on the thumb of the frog, by the more recent observations of Meisenheimer, which seem to show that the injection of extracts of the ovaries will also induce this development in a modified form. He concludes that the action of the internal secretion of the gonads of male and female is not specific, but that both simply stimulate growth. This view of the non-specific action of these secretions he supports by his experiments of removing the sex glands of butterflies in the caterpillar state, and finding that the insect develops its typical sexual markings.

Perhaps the most striking demonstration that other factors beside the internal secretions of the gonads play a

part in determining the development of secondary sexual characters is afforded by the remarkable case described by Bond of Leicester of a pheasant with male markings on the one side and female markings on the other and with a single mixed ovo-testes. If is difficult to correlate a case of this kind with the action of internal secretions, and it seems to hint that such secretions do not exercise the all-important influence which has been ascribed to them, and that the profound influence of what I have elsewhere ventured to call "hereditary inertia" continues to play an essential part even in post-embryonic life.

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Suprarenal Gland.

WE must remember that the suprarenal glands consist of two parts which have very different functions: the medulla which elaborates the material which affects the sympathetic system; and the cortex, which we have reason to believe possesses a controlling influence over growth and the development of the reproductive system. Some number of years ago a paper appeared by Sequeira and Bulloch which pointed out that children who had hypertrophy or adenoma of the cortex of the suprarenal glands were of abnormal size—a boy of 10 appearing to be about 18, and becoming sexually mature at a very early age. Basing myself on this, I fed several undersized and apparently otherwise normal patients upon dried suprarenal cortex with the hope that it would lead to an increase in their stature; but the results in every case were negative.

The dried medulla, or its active principle adrenalin, may be used for a variety of purposes: (1) In order to diagnose suprarenal inadequacy; (2) to supply the secretion of the medulla in cases in which the secreting power of the gland is temporarily paralysed or permanently damaged; (3) to control haemorrhage from the stomach; (4) as an injection to raise the blood pressure.

In order to diagnose suprarenal inadequacy, the blood pressure of the patient should be measured accurately on some number of occasions, and then 12 grains of dried suprarenal should be administered three times a day for four days; if a material rise in pressure be observed, the drug should be stopped and the blood pressure measured again to see whether it once more falls. If the rise during the administration by the mouth is considerable, the diagnosis of suprarenal inadequacy is fairly certain.

The evidence upon which this is based was obtained sixteen years ago, when it occurred to me that good treatment for haematemesis would be the administration of suprarenal gland by the mouth. Before adopting this line of treatment it was essential to find out whether the administration of the gland by the mouth led to a general rise of blood pressure, because if it were to do this the treatment might do more harm than good. On taking suprarenal gland in large doses I found that my blood pressure was not raised, and on trying it on patients I found that it was only in cases of Addison's disease that the blood pressure went up; this led to my using it as a diagnostic method.

In cases of Addison's disease suprarenal may be administered by the mouth, in order to supply some material which is wanting; but it is quite useless to order 5 grains three times a day; if any good is to result large doses must be administered—20 or 30 grains three times a day, continued indefinitely.

Occasionally it is wise to give adrenalin or suprarenal during temporary paralysis of the secreting power of the suprarenal gland, such as occurs in diphtheria and possibly other toxaemias, whilst an injection of adrenalin hydrochloride has become the regular treatment by some prior to the injection of salvarsan, which is said to cause fall of blood pressure, owing to its inhibitory effects upon the suprarenals.

In my opinion, adrenalin hydrochloride is probably the best drug to control haemorrhage in gastric ulcer.

I have already mentioned that it does not cause a rise of blood pressure. If it is to be administered with any chance of success it must not be given three times a day; that is worse than useless. Repeated small doses (say, 1 c.cm. of 1 in 1,000 solution) every hour are required, because after its removal there is a tendency to reaction, and this can be prevented by keeping small quantities of the drug in contact with the damaged vessel and thereby maintaining its contraction.

As an injection to raise the blood pressure, it has been used in certain cases of shock, and frequently in pneumonia. How far it is useful as a cardiac stimulant is a question which I am not able to answer. I trust that we may hear of some experiments made in order to decide this question. I should be much interested to hear whether any success can be recorded in the treatment of haemophilia by adrenalin. Quite a long time ago I made a statement that in my experience it was useless, and the cases which have been recorded in which it is stated that adrenalin stopped the haemorrhage of haemophilia have never stood investigation. It must be remembered that a case can only be considered one of haemophilia when it occurs in a male and when there is a definite history of the maternal grandfather, or possibly of a maternal grand-uncle, having suffered from the complaint.

The application of adrenalin to the nasal mucous membrane in hay fever is apparently occasionally of great value, whilst in asthma hypodermic injections may produce miracles.

Pituitary Gland.

The physiological action of extract of pituitary suggests a great number of uses in therapeutics. Since it acts on plain muscle direct and constricts the arterioles it may be used with advantage in all cases of a temporary fall in blood pressure. Repeated injections are practically useless, therefore it is not of much value if the cause of fall in blood pressure cannot be overcome rapidly. Physiologists agree that the extract does not lead to any contraction of the renal arteries, and therefore the injection causes an increased flow of blood from the kidneys and an increased secretion of urine, but how far this increased secretion of urine is accompanied by an increased excretion of metabolites is a question which has not been decided. Nevertheless, pituitary extract is indicated in cases of oedema and threatened uraemia.

Since pituitary extract causes contraction of the plain muscle, it would be of use occasionally to make the uterus contract. Certain parts of the pituitary gland possess a substance which increases the secretion of the mammary gland, but whether this has been used in practice I know not. With the exception of the use of the gland for raising blood pressure and meeting shock, I have had very little experience of it except in those cases in which there has apparently been some atrophy of the gland. This, we have been told, leads to a deposition of fat and often to altered mental condition; slighter cases come under the heading of Dercum's disease. The difficulty in treating these is the fact that reliable extract of pituitary or dried pituitary gland is very costly; and, just as in Addison's disease the administration of a small dose of suprarenal daily by the mouth is useless, so, too, small doses of pituitary prove useless when the pituitary gland is atrophied, whilst large doses, as I have already said, cost a great deal of money. Nevertheless, in two cases patients have taken comparatively large doses with apparent benefit—that is to say, their weight has decreased whilst the mental condition has improved. In one of these the diminished activity may have been temporary, as I hear the patient is now able to lead a normal life without taking the daily dose.

When the pituitary gland secretes more than a normal amount, there is apparently a great stimulus to growth in certain parts of the body, especially in the tissues, and this leads to the condition called acromegaly. During the hypertrophic stage the administration of pituitary would probably do more harm than good, and there seems to be some similarity between what takes place with the thyroid and pituitary, although the older views, that the pituitary gland was able to take over the function of the thyroid and that the thyroid was able to take over the function of the pituitary gland, are no longer held; nevertheless there seems to be this similarity—not infrequently after hypertrophy of the thyroid, which leads to exophthalmic goitre, atrophy occurs and causes myxoedema, whilst in hypertrophy of the pituitary gland some degenerative process takes place and leads to its atrophy, and in this latter stage the administration of pituitary gland leads to improvement.

Parathyroid and Paralysis Agitans.

The history of the relation between paralysis agitans and the parathyroid gland is lengthy, but the point of chief interest to us is that Charles Daner in 1893 came to the conclusion upon theoretical grounds that paralysis agitans was due to deficient or altered action of the parathyroids, and found on feeding cases of paralysis agitans with parathyroid for some time, a fairly large percentage improved. Gautier has recorded similar results in the same disease by the administration of thyroid.

My friend, Dr. H. H. Dale, has been so good as to supply me with dried parathyroid gland in sufficient quantities to make observations on two cases, and I should like to express my thanks to him. It is no little work to dissect out and microscope sufficient parathyroids to allow this. The cases received 2 mg. three times a day for several weeks, and in neither case was I able to find the slightest improvement. Possibly a greater quantity for a longer time might do good, although I doubt it, and in any case the quantities I used would make the treatment prohibitive except for the wealthiest of people.

The recent work of Greenwald makes me doubt whether there is really any relation between the disease and the glands; he found that in animals after the removal of the parathyroid glands there was an increased quantity of acid soluble phosphorus in the serum. On making observations upon the serum of patients suffering from paralysis agitans there was no excess. This would not be conclusive evidence if there were any strong evidence in favour, but that of temporary improvement whilst administering a drug is most deluding, especially in the case of a disease which does not run a continuous progressive course.

Thymus.

Extract of thymus gland has been given with alleged success in a variety of diseases but in all probability with most persistence in exophthalmic goitre and arthritis deformans—two diseases which even when presenting typical signs and symptoms run a very variable course. It is this great variability which tends not to errors in observation but to errors in conclusions.

Although I have placed a large number of patients suffering from exophthalmic goitre and also a number suffering from arthritis deformans upon large doses of dried thymus, I have never been able to satisfy myself that the drug has been the cause of improvement; I admit that I am hard to convince.

Kidney Substance.

The administration of kidney substance in renal disease has been advocated by skilled observers, and I have a great admiration for the investigators who are able to come to definite conclusions.

My own experience of renal disease may have been unusual, but during the last few years I have devoted considerable time to the more accurate methods of investigation which permit definite prognosis. I have seen cases that have suggested that the end was close because the oedema has been great, vomiting almost continuous, breathing laboured, and one patient had convulsions which were thought to be uraemic; but on submitting some of these to excretory tests, I have been able occasionally to come to the conclusion that the kidneys were functioning well, and that in all probability improvement would take place for a time, and this improvement has occurred without any kidney substance being administered.

I suggest that it is this kind of case which has led to the impression that dried renal substance is of use in renal disease. It is true we must admit that there are theoretic grounds, but these Biedl sums up as quite insufficient to base an elaborate organo-therapy upon.

Hormonal.

It is alleged that a hormone may be isolated from spleen and other organs, which is responsible for the contractions of, or rather stimulates, the plain muscle of the intestines. It is used to a very considerable extent in cases of intestinal inertia after abdominal operation, and also in some of constipation.

Personally, I have great difficulty in understanding how a single injection of this preparation can lead to permanent cure of chronic constipation; yet in two cases a single injection led to a daily action for three months.

Once more I must sound a warning as to conclusions from these observations. We know that suggestion may cure constipation. An exceptionally remarkable instance of this is illustrated by the case of the man who was operated upon and had a foot of intestine removed. He was under the impression that the bowel was 24 ft. long and that the contents moved on 1 ft. in one hour; hence the daily evacuation. On hearing that a foot had been removed, his bowels acted and continued to act every twenty-three hours, in spite of the considerable inconvenience to which this subjected him.

The impression made by an intravenous injection or an intramuscular injection, which may be followed by considerable pain, is of considerable depth, and a long series of control experiments would be required before I could be convinced that the long-continued effect was due to an inherent quality in the injection.

Organo-therapy, in my opinion, is a transition period, and I trust that the time will come when the organic chemists will not only have isolated the active principles elaborated by the various organs which secrete internally, but also have synthesized them so that the difficulty in obtaining sufficient quantity will be solved for good.

III.—ARTHUR HERTZ, M.D., F.R.C.P.,

PHYSICIAN TO GUY'S HOSPITAL, LONDON.

DR. HERTZ related some personal experiences of the effect of adrenalin in asthma. He said: Before Dixon's researches had shown that adrenalin caused dilatation of the bronchi by stimulating the sympathetic broncho-dilator fibres it seemed incredible that the drug could have any favourable effect, and it was therefore with profound scepticism that I gave myself an injection for the first time during a severe attack of asthma. I used 3 minims of 1 in 1,000 adrenalin chloride. The result was most remarkable. Within a minute my breathing became easier and less noisy, but I felt extremely uncomfortable, my pulse became rapid, and my hands tremulous. In five minutes the asthmatic paroxysm was over and my breathing absolutely quiet, but the unpleasant symptoms did not disappear for another ten or fifteen minutes, when I fell asleep. On the next occasion I tried 2 minims with an equally good effect on the breathing, but with less marked discomfort and tachycardia. Since then I have used 1 minim, or half a minim for slight attacks, and 1½ minim for exceptionally severe attacks. Complete relief to the asthma invariably occurs within five minutes, and the small dose produces no other symptom. It appears as if the adrenalin has a selective action on any muscle which is in a pathological state, the reverse of what is produced by the action of the drug; thus a dose which would be without action on the normal bronchi and is without action on all other organs, produces dilatation of abnormally contracted bronchi. The effect often lasts a considerable time, a single injection being generally sufficient to give a good night, but in bad attacks it may be necessary to repeat the injection if the asthma returns in three or four hours. However severe the asthma is, it is rare for as much adrenalin to be required in twenty-four hours as is commonly recommended for a single injection, so that the danger of any vascular degeneration resulting from its regular use is very small, unless the attacks are extremely frequent. I have never observed any effect on the blood pressure when these small doses are injected. The injections in my own case are infinitely more efficacious than any other treatment I have tried; I have, in fact, only had a single bad night as a result of asthma since I first used the drug three years ago, and that was on one occasion when I had broken the syringe. I have been able to confirm these observations in several other patients, but it must be admitted that some asthmatics respond less well to adrenalin, and a few are entirely uninfluenced by it.

I should also like to draw attention to a unique case of what I believe to have been parathyroid insufficiency. A man of 47 had a large parenchymatous goitre removed in 1908. He remained perfectly well until August, 1910, when he weighed 191 lb. He then suddenly became extremely restless and nervous, he slept very little, and had a universal tremor; he had an enormous appetite, but wasted so rapidly that he weighed only 144 lb. on December 2nd, 1910. His pulse was about 120, his thyroid impalpable, and his eyes sunken. His hair ceased to

grow, but did not become thinner, and he lost all sexual desire. His urine was scanty, but normal. In spite of rest in bed, and an exceptionally ample diet, he continued to lose weight; thyroid gland made him worse, but large doses of opium and bromide relieved the excitement, and his weight became almost stationary. On June 18th, 1911, he weighed 127 lb.; he was given $\frac{1}{10}$ grain of dried parathyroid gland four times daily, and four days later he discontinued the opium and bromide. He gained 6½ lb. in the first four days, 12 lb. the next five days, and 28½ lb. in the first nineteen days. Simultaneously all his symptoms disappeared, and in a month he was well. He continued to take the parathyroid; in January, 1912, he weighed 161 lb., and in December, 1912, 175 lb. He discontinued the parathyroid in November, 1913, but remained well, weighing 189 lb. in February, 1914.

SHRAPNEL WOUND OF THE SPINE, WITH EXCEPTIONALLY LOW TEMPERATURE.

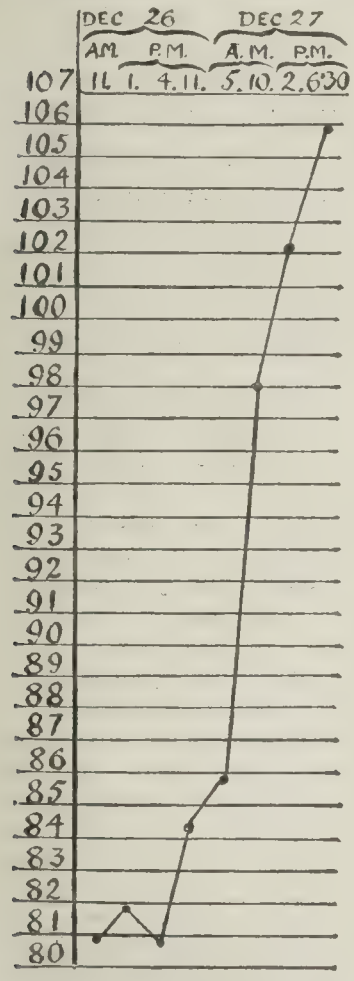
BY

M. W. B. OLIVER, M.A., M.B., B.C.CAMB., F.R.C.S.ENG.,
LIEUTENANT R.A.M.C.,

AND

F. B. WINFIELD, B.A.CAMB., M.R.C.S.ENG., L.R.C.P.LOND.,
LIEUTENANT R.A.M.C.

LANCE-CORPORAL S., aged 19, was admitted to 13th General Hospital, British Expeditionary Force, on December 23rd, 1914. He was very cold; unfortunately at the time no low-registering thermometer was available, but the ordinary clinical thermometer, shaken down to well below 95°, did not register any rise. At first he did not speak, and did not appear to understand when spoken to, but later recovered sufficiently to give an intelligent account. The history he gave was that on December 21st he had been hit by a shell, which exploded behind him. He immediately lost the power in his legs, but apparently did not lose consciousness.



In the neck, in the region of the sixth cervical spine in the middle line, there was a small circular wound which had very nearly healed.

Eyes.—The right pupil was larger than the left; both pupils reacted to light and accommodation. Fundus normal; no nystagmus.

Cranial Nerves.—Normal.

Motor System.—Upper Limbs: Both were quite flaccid. No movements were possible, except slight shrugging of the shoulders. *Lower Limbs:* Rather flaccid. Could draw up and extend both. The ankle and toe movements were relatively good in the right, but in the left there were no toe movements. *Trunk:* Respiration was wholly diaphragmatic, and there was no contraction of the abdominal muscles.

Sensation.—Prick lost to C_3 on the left side and to C_4 on the right.

Reflexes.—Knee-jerks absent on both sides. Ankle-jerks absent. Plantar reflexes equal and extensor on both sides.

A skiagram showed a large shrapnel bullet at the level of the sixth cervical spine, and almost exactly in the middle line, with fracture of the laminae of this and the spinous processes and laminae of the fourth and fifth cervical vertebrae.

On December 26th two low-registering thermometers were obtained, and the temperatures recorded by each were identical as follows:

	Mouth.	Rectum.
11 a.m.	80.6° F.	80° F.
4 p.m.	80.4° F.	86° F.
11 p.m.	84.2° F.	86.3° F.

On December 27th the patient was transferred to an adjoining hospital—No. 7 Stationary—as there were no small rooms available at No. 13. Here he was put in a room with a fire, and the temperature kept at about 70° F., otherwise no special treatment was carried out. The temperatures recorded during the day were:

	Mouth.	Rectum.
7 a.m.	86° F.	88.9° F.
10 a.m.	98° F.	—
2 p.m.	102.2° F.	—
4 p.m.	105° F.	—
6.30 p.m.	105.6° F.	—

At 8 a.m. he was comatose, and remained in this condition until he died at 6.45 p.m.

Post-mortem Examination.—The cord in the region of the fracture appeared somewhat swollen and softened, and there was some haemorrhage into the central canal. Apart from this nothing abnormal was found.

To Dr. Gordon Holmes we are much indebted for his notes on this case.

NOTE ON A SUCCESSFUL METHOD FOR THE EXTERMINATION OF VERMIN INFESTING TROOPS.

BY

S. MONCKTON COPEMAN, M.D., F.R.C.P., F.R.S.,
LIEUTENANT-COLONEL R.A.M.C.(T.); DIVISIONAL SANITARY OFFICER, 1ST LONDON DIVISION, T.F.

WITHIN about a couple of months of the troops of the 1st London Division coming into camp under canvas at Crowborough I learnt through the medical officers in charge of some of the battalions that a certain number of the men under their charge were experiencing the unpleasant effects incidental to infestation by lice.

Steps were at once taken to deal with the matter, but our efforts were at first somewhat handicapped owing to the fact that not only at that time had the men not been supplied with a second service suit, but that a number of those affected were found not to be in possession of a second shirt or change of underclothing. Moreover, it was not possible to obtain assistance from the rural sanitary authority of the area in the work of disinfection, as it did not possess any apparatus for the purpose of dealing with infected clothing and blankets.

As a matter of first instance, all the battalion medical officers were called together for the purpose of informing them as to the various aspects of the question, including the life-history of the body-louse, *Pediculus vestimenti*, an excellent description of which, by Dr. Shipley, was published in the BRITISH MEDICAL JOURNAL for September 19th, 1914. At the same time commanding officers were communicated with as to the necessity for ensuring that all men under their command should be provided with, at least, a second shirt, and, if possible, a complete change of underclothing.

Further difficulty was experienced in providing baths for the men, there being no means at hand of obtaining hot water in large quantities. This was eventually obviated by the purchase of several large second-hand galvanized iron tanks, which were set up near the ablution place in each camp. These tanks were supported over a central trench, on bricks laid in puddled clay. One end of the trench, which extended beyond the tank at either extremity, was fitted with a chimney built up of old bricks, drain-pipes, and puddled clay, while the other end was used as a stokehole. On lighting a fire in the trench, it was found that, even where no cover was provided for the tank, the contained water, to the amount of 200 gallons or more, could usually be brought to boiling point in about an hour.

Bathing was carried out in an adjoining marquee, or, in some instances, in an empty house. Hot water from the tanks was carried in buckets and poured into galvanized iron wash-tubs, in which the men could stand. Recently, however, the troops have been moved into huts, where ablution rooms and bath-rooms supplied with hot and cold water are provided.

The further details of treatment are briefly indicated in

the following copy of a memorandum which was distributed to all the medical officers of the division:

To the Medical Officer.....

Treatment for Destruction of Vermin.

Arrangements should be made for the bathing of affected individuals and other inmates of infected tents.

After drying themselves, men to lather their bodies with cresol-soap solution (water 10 gallons, Jeyes' fluid 1½ ounces, soft soap 1½ pounds), especially over hairy parts, and to *allow the lather to dry on.*

Shirts to be washed in cresol-soap solution made with boiling water.

Tunics and trousers to be turned inside-out, and rubbed with same lather, especially along the seams. *Lather to be allowed to dry on the garment.*

The materials can be obtained from the A.S.C. on indent authorized by A.D.M.S. in the form attached.

(*Form attached.*)

To the Commanding Officer,
Army Service Corps,
1st London Division, T.F.
.....

The following articles are required for the purpose of treatment for vermin. Please supply:

Jeyes' Fluid ... ...
Soft Soap ... ...

Signed.....,
Medical Officer.

Address..... .....

Date .....

Infected blankets were at first treated by soaking them in cresol-soap solution, after which they were sent to a neighbouring laundry to be washed, a small contract rate having previously been arranged. In the first week in November, however, a portable Thresh's steam disinfecting apparatus was supplied to the division, through the Second Army, since when no difficulty has been experienced in the disinfection both of clothing and blankets.

Appended to the article on lice by Dr. Shipley, referred to above, was a series of suggestions drawn up jointly by Professor Nuttall and himself, in which the use of paraffin or petrol was advocated for the extermination of lice. Doubtless these substances would be perfectly efficacious for the desired purpose, but their use was not attempted owing to the possible danger not unlikely to be incidental to the use of substances of so inflammable a nature by large numbers of men.

As matter of fact the simple and inexpensive method which has been employed by us over a period of several months has proved so successful that no necessity has arisen for a trial of other means of treatment. It may, perhaps, be mentioned that a number of copies of our memorandum have been distributed in reply to requests from medical officers of health and medical officers in charge of troops. And, in view of the fact that trouble due to the prevalence of lice has been experienced in other camps in various parts of the kingdom, the medical officer to the Local Government Board and other members of the Army Sanitary Committee suggested that a useful purpose might be served by the publication of a method which has been found so efficacious under service conditions.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

GEOMETRIC AIDS TO X-RAY LOCALIZATION.

IN spite of the many complex instruments, scales, and calculations which have been devised to assist in the localization of a foreign body, the simple foot-rule or centimetric measure holds the premier place for rapidity, accuracy, and convenience. With it we can measure the necessary heights and distances and draw any straight line required.

The position of any point is determined if we know the position of any two lines passing through it, and hence two exposures to *x* rays from different positions of the tube are necessary and sufficient to localize any foreign body.

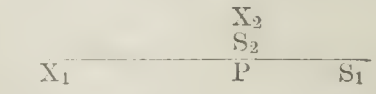
The orthogonal projection on a horizontal screen of the line joining the anticathode, the object, and its shadow is a straight line passing through the point on the screen vertically above the object; and the intersection of two such lines on the screen gives the point on the vertical line of the object.

1. Where there is some method of indicating on the screen the position X of the anticathode—for example, by cross wires vertically over it—the lines X_1S_1, X_2S_2, joining the X_1X_2 to the shadows S_1S_2 of the object, meet at P, the point



vertically over the object. The distance of the object from the plane of the anticathode is given by the formula $\frac{X_1P}{X_1S_1}$–H, where H is the height of the screen from the tube.

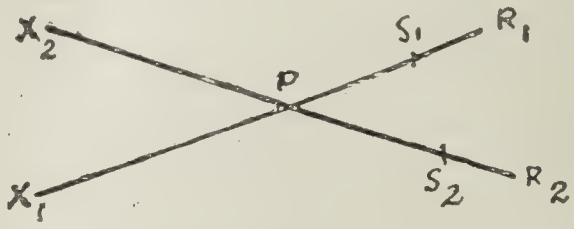
For the convenience of marking the vertical line on the skin, the anticathode can be brought under P. After the line X_1S_1 is marked on the screen (the foot-rule may be laid down as a guide), the tube is moved so that X_1 moves along the line X_1S_1 till it meets S_1 at P. The anticathode is then vertically beneath the object and P.



The distance T from the anticathode to the table is known, and the height of the foreign body from the table, $\frac{X_1P}{X_1S_1}H - T$, can be indicated by a horizontal line on the skin. This line of known height from the table enables the surgeon to put the limb in the required position—that is, with the vertical mark in its proper position over the foreign body—with the least possible delay or disturbance of the patient.

Provided that the relationship of the photographic plate to the limb is properly recorded, two exposures on one plate will enable it to be used in place of a screen at the time of operation.

2. Where there are no means of recording the position of the anticathode on the screen, the lines X_1S_1 and X_2S_2 can be obtained by moving the screen vertically up or down,



and recording the position of the shadow in two positions S_1 and R_1 for each position of the tube. These lines, of course, meet in P, and the distance of the object beneath P is given by the formula $\frac{PS_1}{S_1R_1}\ h$, where h is the vertical distance through which the screen was raised.

The distance of the object, and of the horizontal line, from the table is $H—T—\frac{PS_1}{S_1R_1}h$. If the tube be moved in the direction S_1R_1 until S_1 lies on P, the anticathode can be brought vertically beneath the object.

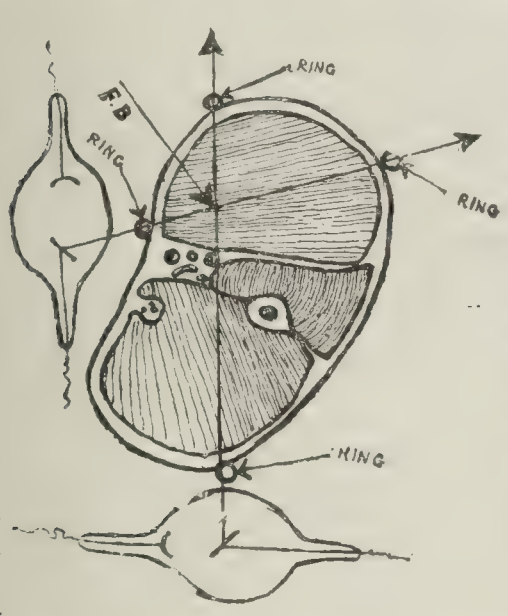
From this it will be seen that by means of two linear measurements on the screen, or photographic plate, the exact position of any foreign body can be ascertained and recorded. The only apparatus required is a holder for the screen which permits of it being placed in any horizontal position over the table and to be raised or lowered. The ordinary upright standard for a lamp can easily be adapted. The fraction-meter will give the values of the formulae without any calculation.

Exeter. DONALD F. SHEARER, M.B., F.R.C.S.

LOCALIZATION BY X RAYS.

REGARDING the articles by Dr. Hernaman-Johnson on *x*-ray localization of foreign bodies, which appeared in your columns on October 31st, 1914, and January 2nd, since the method he propounds is in principle identical with that I described in the JOURNAL of September 12th, 1914, perhaps I may be allowed to make a remark or two thereon.

In my memorandum I tried to show that it is not necessary (1) to make either of the observations in any particular plane of space or of the limb or body, or (2) that the two observations should be exactly at right angles to each other. All that is needed is that they should be "in widely different planes," and this can be obtained in most couches by moving the tube transversely underneath. The diaphragm proper is opened to its widest first, and an obliquely placed secondary diaphragm improvised by means of loose pieces of sheet lead. This is an enormous gain in such parts as the shoulder and hip, though I gladly avail myself of a little rolling of the patient as well, and there must be few cases in which this is quite precluded.



My way of marking is by means of four pieces of 30-ampère fuse-wire moved by means of forceps along a rubber band or tape encircling the part containing the foreign body. If an operation could not at once be performed, I would put a mark on the skin under each ring. In any case it is safer to make sure of preserving the points by putting a stitch in each as soon as the patient is under the anaesthetic.

I am highly gratified that this method is proving so useful. It is so simple and obvious that it is almost incredible that no one should have spoken of it before last year.

W. REGINALD WILSON, M.A., M.B., B.C.Cantab.,
Honorary Surgeon, Doncaster Royal Infirmary.

VACCINATION IMMUNITY.

DR. CROSSMAN'S case in the JOURNAL of January 23rd, p. 185, reminds me that I have in my practice often observed that infants only a few weeks old who are the offspring of well vaccinated parents offer a resistance to vaccinia. It is useless to repeat the operation week after week.

The immunity is, however, only temporary, and so, if Dr. Crossman will revaccinate his case when the child is six months old, I have no doubt that the operation will be successful.

I am the more sure because the Local Government Board lymph has been for long uniformly of high quality.

London, E. JOSEPH LOANE, M.R.C.P.Ed.

WE are accustomed to hear of freak legislation from America, but the fantastic proposals which come under that head usually come from outlying States. It is surprising to read that so staid a body as the Massachusetts Legislature is to be invited during the present session to consider a bill for the regulation of surgical practice which contains the following provision: "No surgeon, physician, dentist, nor other person, performing, directing, or assisting at a surgical or dental operation upon a human, either on public or private property in the State, shall wear the hirsute appendages commonly known as moustache and beard." It reads like a joke, and the language in which the proposal is expressed seems to confirm this notion. But some of our American contemporaries appear to take it seriously.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

A MEETING held on January 25th was devoted to radiography and its relation to the present war. Dr. W. IRONSIDE BRUCE read a paper on *An x-ray director for the removal of foreign bodies in the tissues*, and demonstrated its use. The application of the apparatus was very simple. After localization of a foreign body by the usual methods the surgeon was confronted by the following difficulties: the marks on the skin were useless after the superficial incision had been made; the knowledge of the depth of the foreign body gave little help since the tissues varied greatly in thickness; and, lastly, the foreign body was often missed because it was impossible to continue the operation in the same plane. His apparatus met these difficulties. The first principle involved was the necessity that the position of the limb or trunk at the time of operation should be the same as that at the time of observation. This was accomplished by a combination of *x*-ray couch and operating table, so that when under the anaesthetic the subject was placed in the position previously selected by the operator, and had been firmly fixed in this position by means of sand-bags and straps, the *x*-ray observation was made and the operation immediately proceeded with. The fluorescent screen was essential, so arrangements had been made to enable this to be used in daylight or bright artificial light. A guide was also provided other than a mark on the skin. To accomplish this the apparatus was so arranged that when the shadow of the foreign body fell upon the centre of the fluorescent screen the body itself lay vertically beneath. The screen was detachable, and in its place could be substituted a sterilizable metal guide carrying a director, the point of which was arranged to correspond exactly with the centre of the fluorescent screen. If this director was advanced through the tissues its point must impinge against the foreign body. This procedure provided the surgeon with a director which would unfailingly lead down to the foreign body, permitting him to deal as he pleased with the intervening tissues. Two forms of director were provided, one blunt and graduated, so that the depth discovered by previous localization could be made use of; the other sharp, to be introduced in suitable cases into the tissues until the point came in contact with the foreign body. To the latter director a telephone could be attached to announce the contact of its point with the foreign body. Before using such an apparatus an ordinary *x*-ray examination should have been conducted to settle roughly the position of the foreign body, and a surface localization should have been made to gauge its depth, its proximate position being indicated on the skin. Sir J. MACKENZIE DAVIDSON described the apparatus as ingenious and remarkably accurate. Mr. DONALD ARMOUR said that he could bear out all that had been said with regard to its value. Mr. MAYNARD SMITH said that he always used an *x*-ray screen during the actual extraction of foreign bodies and had never experienced any difficulty from the point of view of sepsis being introduced. Sir J. MACKENZIE DAVIDSON read a paper on *The telephone attachment in surgery*, and demonstrated the use of the telephone probe. The method he advocated was the use of a telephone, preferably with double receivers, connected together by means of a steel or elastic band so that each ear had its separate receiver. The carbon plate was placed upon the patient's moistened skin and held firmly in position by plaster or bandaging. The other end of the telephone should have attached to it a bare wire, preferably of silver, one end of this wire being attached to the telephone terminal, while the other end could be wound round any instrument it was desired to use, or brought into connexion with it by a spring clip. If the instrument was introduced into the body it would, on first contact with any metal, give rise to an unmistakable click carried through the telephone, and then, if gently moved so as to make a rubbing contact with a foreign body, an equally unmistakable loud rattle would be elicited. He thought it was also worthy of trial in ophthalmic surgery in the case of foreign bodies of non-magnetic metal lodged in the eye. Mr. DONALD ARMOUR described a case in which he had used this method for the removal of a piece of shrapnel

which had lodged within the orbit. Dr. HOWARD HUMPHRIS exhibited lantern slides of injuries occurring among the wounded at the 3rd London General Hospital. Among the radiograms were some showing that bullets had penetrated through bone, producing little injury to it. Two other radiograms showed bullets lying against the pericardium. The patient who had been wounded by one of these had returned to the front with the bullet still *in situ*. The meeting was adjourned until February 22nd, when further contributions will be made by Dr. A. C. Jordan, Dr. G. Harrison Orton, Mr. S. Gilbert Scott, Dr. Stanley Melville, and Dr. Robert Knox.

ROYAL SOCIETY OF MEDICINE.

SECTION OF PSYCHIATRY.

AT a meeting on January 26th the President, Dr. MOTT, took as the subject of his address *The application of physiology to the study of mind in health and disease*. His object was to show the importance of the ductless glands in the human economy, and especially their influence on growth and development. He believed that the chief advance in this study had been in the sphere of bio-chemistry as applied to the ductless glands. The overmastering feelings in pregnancy and those which arose with the onset of puberty could not be explained in consciousness, and these feelings brought about a drastic change in the youth's mental condition; he became susceptible to impressions which were formerly indifferent to him, and was the subject of aimless longings and obscure impulses. Insanity was specially common at two periods of life—the adolescent and the climacteric. Could this be explained by disturbance of the equilibrium and of the internal secretions of the ductless glands? The interstitial gland structure of the sexual organs functioned independently of the genetic gland structure. Functionally correlated with the sexual glands were the thyroid, the parathyroid, the hypophysis, and the pineal gland, as well as the cortical portion of the suprarenal gland and the thymus. For a proper study of the subject there should be a systematic examination of all these glands in health and disease, and at all age periods. In cases of myxoedema there was a marked increase of lymphoid and fibrous tissue in the thyroid gland, while the colloid material was much reduced. In the central nervous system there were marked chromolytic changes in the cells, affecting in a grave manner the autonomic bulbar system. He had found an association of the myxoedematous syndrome with acute psychoses. There was a marked increase of the thyroid gland in pregnancy, during menstruation, and at the climacterium. In pregnancy, also, there was an increase in the parathyroids. It was necessary to examine the thyroid gland microscopically, as it might be of normal size and yet consist mostly of fibrous tissue, with very little gland substance. Tumours of the pineal gland occurring in very young people had been associated with precocious development of the sexual functions and of the secondary sex characters. It was thought that this gland might have an inhibitory action on the development of secondary sex characters. With regard to the suprarenals, the emotion of fear was found to liberate adrenalin in excess into the blood. Adenoma of the cortex of the suprarenal was associated with precocious sexual development.

SECTION OF DERMATOLOGY.

AT a meeting held on January 21st, the President, Dr. J. J. PRINGLE, who was in the chair, showed a case of *Pemphigus vegetans* in a soldier aged 28. The disease began in September, 1914, and presented the characteristic bullous lesions on the skin and mucous membranes in abundance, with vegetative condylomatous lesions in the armpits. The serum obtained from the recent blebs was sterile, but pus infection rapidly ensued, and there were marked evidences of sepsis throughout the duration of the case. Remarkable improvement had taken place under treatment by vaccines of four varieties of coliform bacilli found in the faeces, and of staphylococci and *Bacillus proteus* from the bullae; but probably much of the improvement was due to prolonged baths and other local antiseptic measures. The case was discussed by Dr. G. PERNET, Dr. A. WHITFIELD, Dr. J. H. SEQUEIRA, Dr. J. M. H. MACLEOD, and Dr. A. M. H. GRAY. The PRESIDENT replied. Dr. GEORGE PERNET showed a case of *Erythema centrifugum*, which corresponded to the disease originally described by Hebra as seborrhoea congestiva. Dr. H. W. BARBER brought forward a case of *Pityriasis rubra pilaris* in a woman, aged 41, in the seventh month of pregnancy, who had previously given birth to seven children. The PRESIDENT thought the association of the skin disease with pregnancy fortuitous. The case was discussed by Dr. WHITFIELD and Dr. PERNET. Dr. J. H. SEQUEIRA showed a case of *Dry gangrene of several toes* of obscure etiology in an infant. Dr. PERNET suggested the possibility of the existence of Raynaud's disease dependent upon congenital syphilis, and this view was emphasized by Dr. PARKES WEBER and Dr. DOUGLAS HEATH. Dr. WHITFIELD and Dr. BARBER also discussed the case. Dr. J. M. H. MACLEOD presented a woman with *Eczematoid ringworm of the hand*, presumably contracted from her children, who were suffering from small spore ringworm of the scalp; he had reason for thinking that the infection was originally of feline origin, and cited Dr. Colcott Fox's observations on the subject. The PRESIDENT and Dr. SEQUEIRA referred to the frequent discovery of epidermophyton fungus in lesions of the hands, which, without microscopic examination, would have passed as dysidrosis or vesicular eczema. Dr. DORE referred to the frequency of cat ringworm in this country as compared with its rarity in France. Dr. PERNET alluded to a case of feline microsporon ringworm which he had reported some years ago. Specimens and cases were also shown by Drs. SEQUEIRA, Dr. EDDOWES, Mr. J. P. BEDDOES, and Dr. GRAHAM LITTLE.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

AT a meeting on December 4th, 1914, Mr. L. G. GUNN called attention to the fact that *Carcinoma of the prostate* appeared to be on the increase. He discussed some points in connexion with the pathology of the simple hypertrophied prostate and the relation this hypertrophy had to the carcinomatous change occurring in the gland. The early symptoms of this affection were discussed and great stress was laid on the necessity for early diagnosis in such cases. After remarks by the PRESIDENT, Dr. T. T. O'FARRELL, and Mr. D. KENNEDY, Dr. W. D. O'KELLY said he did not know that cancer of the prostate supervened very often. He did not remember a case. All the cases he observed were true adenoma. Referring to the cases mentioned in which there was recurrence after adenomatous growths, he suggested the possibility that they were becoming malignant, and that some of the formation might have been left behind. Mr. GUNN, replying, said that if a patient complained of a good deal of pain and no retention of urine, he would consider this might lead to a suspicion of carcinoma of the prostate gland. The majority of his cases were in men well over the age of 60. Mr. W. S. HAUGHTON related an *Unusual case of intestinal obstruction*, and showed specimens. A girl, aged 20, a cork cutter, was admitted to Steevens's Hospital about the middle of June complaining of constipation and obscure abdominal pains. Her colour was an orange yellow tint. Her abdomen was somewhat boggy; it was not elastic, nor were the muscles rigid, and there was little tenderness. Enemas brought away some faecal matter mixed with small pieces of cork. A few days after admission it was decided to do an exploratory laparotomy. The pelvic colon was found to be in a very much higher position than normal. It was very smooth, and there was no sign of peritonitis. The consistency of the bowel was tough. The small intestine was matted together with subacute peritonitis of old standing. The pelvic colon was opened and found to be packed densely with pieces of cork. Cork was also found on opening the transverse colon near the hepatic flexure. The cork was matted together so firmly that it could not be removed by the finger, and it was necessary to excavate it with a spoon. Some lotion was then got to pass from the pelvic colon down to the anus, showing that section to be somewhat clear. Failure to mobilize the colon led to the opinion that there was no use in further operative interference. The girl died thirty-six hours afterwards. The specimen included the caecum, ileo-caecal valve, and ascending colon. The patient was in the

habit of putting pieces of cork in her mouth in the course of her employment, and unconsciously swallowed them, as she seemed to be unable to explain how the cork got into the bowel. Dr. W. D. O'Kelly showed a specimen of *Tumour of the testis.* Ordinary tumours of the testis appeared to be common, but this was one of teratoma. The patient was aged 35, and up to three months before the tumour was removed he had not noticed any difference in the size of the testes. Microscopically the specimen showed a number of cystic spaces lined with squamous epithelium. The testes were separated from the tumour. Microscopic sections were thrown on the screen showing cystic spaces lined by squamous epithelium. There was also cartilage to be seen. This led to the view that it was one of two things—namely, diphilic teratoma or true teratoma. He could find no hair follicles in the sections. Mr. D. Kennedy showed an *Abnormal caecum.* The woman from whom it was removed four years ago complained of vague abdominal pains, and at that time he opened an abscess in the costal arch and provided drainage, after which the patient appeared to do as well as could be expected, and left hospital with a small sinus. Recently she returned with faecal fistula. The case was thought to be tuberculous. The abdomen was opened, and when portion of the bowel was got free from the abdominal wall a suture was put round the fistula. On examination of the bowel it was found very unhealthy, and it was decided to remove a section of intestine in order to get healthy anastomosis. The ileum was joined to the transverse colon well beyond the hepatic flexure. No evidence of tubercle could be found during the operation. The patient made an uneventful recovery. Dr. O'Farrell said he found the resected piece of bowel to consist of about five inches of ileum, somewhat hypertrophied and dilated, but otherwise normal. The ileo-caecal valve was badly formed, having more the appearance of a pylorus. The caecum was represented by a small fusiform sac, 1½ in. long, lined by epithelium, the wall being composed of two definite layers of unstriped muscle. Two muscular bands covered by epithelium were found arising at the ileo-caecal valve, crossing the bowel lumen obliquely and becoming reincorporated with the caecal wall. No appendix was found, but a slight fossa was present at the usual developmental site of the appendix. There was a very narrow opening between the caecum and ascending colon, the latter being very short, about one and a half inches in length, and containing stercoral ulcers with the opening of the fistula previously mentioned. Mr. Kennedy and Dr. O'Farrell regarded the condition as primarily a congenital abnormality. Dr. Boxwell suggested that the specimen might be primarily of an inflammatory or tuberculous nature. The President also spoke, and Drs. Kennedy and O'Farrell replied.

Section of Anatomy and Physiology.

At a meeting on January 8th Professor D. J. Barry read a paper, illustrated by lantern slides, on *Some experiments on cardiac reflexes.* He described the results obtained in certain experiments on the hearts of frogs and toads. In these he dealt with the effect of perfusing various poisons through the heart so as to stop its action and then endeavouring to restart it by direct and indirect stimulation of the augmentor, accelerator, and inhibitor factors. He concluded that the accelerators were of great importance as driving factors in the cardiac mechanism, and were concerned in reflex modifying influences. Dealing with experiments on dogs and cats anaesthetized by chloralose, he said the action of the vagi in the reflex has not been properly determined; the reflex can take place even if the nerves were cut. Mr. William Caldwell exhibited: (*a*) The *Barium salt of β-hydroxy-butyric acid*, which crystallized in needles, and contained one molecule of water. The salt was used for the purpose of standardizing solutions used for the estimation of β-hydroxy-butyric acid in diabetic urine. (*b*) Some of the *Salts of sarcosine*, and also some complex salts of sarcosine combined with sodium chloride; (*c*) and *Creatine* which was readily obtained from sarcosine and cyanamide. Professor W. H. Thompson made a third interim communication on the *Relation of arginine to creatine formation.* He showed that, although arginine, when administered by intravenous injection, did not appreciably raise the creatine content of muscle, it did lead to an increased output of "total creatinine" by the kidney, the major part of the increase being in the form of creatine. This could not be due to a wash-out from the muscles, the creatine of which was not diminished by the injection.

Section of State Medicine.

At a meeting on January 8th Dr. T. P. C. Kirkpatrick read a paper on *The failure of the Vaccination Acts.* Having expressed his belief in the efficacy of vaccination to prevent small-pox in those who were revaccinated sufficiently often, he went on to say that in spite of the various Acts, the proportion of the population protected from small-pox by vaccination was steadily diminishing, and showed a tendency to diminish more rapidly in the future. It would be impossible either to make the compulsory clauses of the Acts more stringent or to compel persons to be revaccinated. In such circumstances vaccination afforded an unreliable protection from outbreaks of small-pox. The experience of Leicester gave hope that such protection might be afforded by good sanitation. The methods necessary to be adopted were outlined, and it was urged that something should be done at once to meet the growing danger of epidemic small-pox. Dr. Ninian Falkiner said that he believed that vaccination was one of the necessities at the present time for the protection of the people. Referring to the last Act mentioned in the paper—the Act of 1907—the year 1905 might be taken as the maximum of protection by vaccination in England, Wales, Scotland, and Ireland. At that time the percentage of the population vaccinated in the different countries was: England and Wales, 76 per cent.; Scotland, 85 per cent.; Ireland, 82 per cent. The figures for 1911 were: England and Wales, 52 per cent.; Scotland, 58 per cent.; Ireland, 73 per cent.; and when the figures for 1913 were available it was expected that a further decline would be shown in the number of those vaccinated. The percentage of conscientious objectors in England and Wales had increased from 8.4 per cent. to 28.4 per cent., and in Scotland from 5.6 per cent. to 24 per cent. Sir John Moore said he was quite sure that sanitation would not afford any protection against small-pox in Ireland, so long as there were no medical superintendent officers of health except in Dublin, Belfast, Cork, and Londonderry. What was wanted was a Minister of Public Health. The Local Government Board in Ireland complained that the Vaccination Acts were not being enforced, and instead of getting a *mandamus* against the guardians whose duty it was to enforce them, what they did was to approach the Corporation of Dublin and point out the necessity of providing extra hospital accommodation for cases of small-pox which were expected to arise. The most practical and effective protection against small-pox was to be found in aseptic primary vaccination, aseptic secondary vaccination, and, of course, sanitation in the fullest sense of the term. Dr. Rowlette said he did not think that revaccination could at present be made compulsory. As to sanitation, there was only one whole-time medical officer in Ireland. No attempt was made by any section of the community to make sanitation more efficient in Ireland. He pointed out that the community paid certain medical men from £5 to £15 per annum to look after the health of a large district, which showed that the work was not taken seriously; on the other hand, vaccination had been taken seriously, and was fairly well done.

LIVERPOOL MEDICAL INSTITUTION.

At a meeting on December 17th Dr. Frank H. Barendt read a historical note on *Pityriasis rubra* and showed a patient. He referred to three cases and discussed one in detail. Dr. A. Stookes described an *Electrocautery for intrauterine work*, and read a note on the treatment and displacement of the uterus. He believed in the existence of discomfort in cases of uncomplicated retroversion and he described several forms of operation. Dr. Macalister read a paper on *Inco-ordination of function in relation to disease.* He described the interdependence of the organic functions, showing that disease of one kind might produce symptoms referable to another. In his opinion gastric ulcer was

possibly associated with defective chemical co-ordination due to the climacteric of puberty. He instanced psychoses in children which in his opinion depended upon the chemical inco-ordination. He gave several instances of marked improvement under thyroid. The PRESIDENT emphasized the value of education as a therapeutic agent. Major BRADSHAW, Captain WARRINGTON, and Dr. PARKINSON discussed the paper, and Dr. MACALISTER replied.

ULSTER MEDICAL SOCIETY.

AT a meeting on January 21st, the President, Dr. J. S. MORROW, in the chair, Sir JOHN BYERS gave an account of a case of severe *Pre-eclamptic toxaemia* which was successfully treated on the elimination principle; both stomach and bowel were thoroughly washed out. He examined the evidence for and against the existence of more than one form of eclampsia, and against operative treatment as contrasted with elimination; the mortality in the latter had been reduced to 6 per cent. in Petrograd. Professor SYMMERS read a short paper on the *Effect of modern rifle fire at short range.* The wound of entrance was large and ragged and of exit small and clean cut; the jaw bone smashed; some teeth were lying in the tract unbroken, and a fracture of the petrous bone of the opposite side was found, probably caused by the blow on the jaw. Mr. T. S. KIRK read notes of a case of *Fat embolism following fracture of the femur* in which recovery took place. Dr. THOMAS HOUSTON read a paper on *Bacteriological diagnosis;* he illustrated numerous fallacies, such as unsuccessful vaccine treatment, say of boils by a staphylococcus vaccine till it was discovered that another underlying infection existed; the difficulty of distinguishing the active agent in a multiple culture, and other problems. Dr. W. W. D. THOMSON read notes on the investigation of a case of *Chronic interstitial nephritis* with an unusual degree of urea retention by means of Ambard's coefficient; an immediately fatal prognosis was given and the patient died in a few days. He also described a rapid method of preparing an autogenous acne bacillus vaccine. The following specimens were shown:—Sir ALEXANDER DEMPSEY: (*a*) *A tumour of the suprarenal gland*, and (*b*) *Cancer of the body of the uterus.* Professor SYMMERS: Numerous specimens. Mr. A. B. MITCHELL: (*a*) *A carcinoma of the penis;* (*b*) *Ulcer of the stomach resected;* (*c*) *Gall-bladder containing stones.* Mr. R. J. JOHNSTONE: (*a*) A specimen of *Abdominal pregnancy;* (*b*) *A tumour of transverse colon;* (*c*) a very large *Fibroid of uterus.* Mr. FULLERTON: A large series of *Renal calculi.* Mr. HOWARD STEVENSON: A specimen of *Acute haemorrhagic pancreatitis.* Dr. LOWRY: (*a*) *A fibrocystic tumour of the ovary*, which caused intraperitoneal haemorrhage; (*b*) *Calcified tuberculous pyosalpinx* from a woman aged 62. Dr. W. W. D. THOMSON: (*a*) Certain *Crystals found in the cerebrospinal fluid in a case of septic meningitis;* (*b*) a specimen of *Pseudo-chylous ascitic fluid;* (*c*) blood films illustrating *Von Jaksch's disease*, marked mitotic change in megaloblasts in a case of pernicious anaemia. Mr. S. T. IRWIN showed: *Breast with an adenoma and multiple cysts.* Mr. T. S. G. HOLMES: *A kidney with pyonephrosis.* Mr. HICKS: Several gynaecological specimens.

DR. HEISER, Director of Health for the Philippine Islands, recommends (United States Public Health Service, Supplement No. 20 to the Public Health Reports, October 16th, 1914; Washington Government Printing Office), in order to get over the difficulty of chaulmoogra oil being absorbed when given by injection, that the drug should be combined with camphor and resorcin. The mixture he uses is chaulmoogra oil 60 c.cm., camphorated oil 60 c.cm., resorcin 4 grams. The ingredients are mixed, dissolved with the aid of heat on a water bath, and filtered. The initial dose of this is 1 c.cm., the injections being made at weekly intervals in ascending doses, the increase being maintained until the point of tolerance is reached. Considerable difference exists amongst the various patients as to the amount of the mixture they are able to take, and in some instances the dose has to be reduced, the injections being given at more frequent intervals. Under this treatment considerable improvement often takes place, and though the drug cannot in any way be looked upon as a specific yet its usefulness is undoubted. Cases in England have also been treated by this method with very beneficial results.

Reviews.

THE "ZOOLOGICAL PHILOSOPHY" OF LAMARCK.

BIOLOGISTS and men of science generally should be grateful to Mr. HUGH ELLIOT for giving them this complete English translation of LAMARCK's most important work, the *Philosophie Zoölogique*,[1] as well as for his own thoughtful and instructive introduction, which consists of a critical summary of Lamarck's teaching on the subjects of zoology, physiology, and psychology that form the main divisions of this famous treatise.

Although Lamarck's name is still constantly used in biological controversy, and the biologists of to-day who adhere to the doctrine known as the "inheritance (or, more properly, the transmission) of acquired qualities" are frequently styled "Neo-Lamarckians," yet very few have read the works of Lamarck, or are acquainted with his opinions except as touching the one doctrine named above. But a further reason is given, and we think it is an eminently just one, for the appearance of this translation—that the *Philosophie Zoölogique* represents the most comprehensive and philosophical position taken up by naturalists in the era preceding the advent of the *Origin of Species.* Lamarck's book was published just half a century before Darwin's, and its most outstanding feature is its defence of the theory of the mutability of species against that of special and unconnected creations of each species, which was then almost universally current among scientists and theologians alike. "That the inheritance of acquired characters," says Mr. Elliot, "was one of the main factors supposed by Lamarck to account for the evolution of species I do not wish to deny; but that the reputation of Lamarck is to stand or fall by that one theory is a suggestion which can scarcely be made by any one who closely studies the present translation."

The introduction demonstrates fully that the prime object of Lamarck's zoological work was to controvert the belief in the fixity of species, and to set up the theory that if all living species of animals were known they would be found to fall into a linear series, from Monas to Man, and would differ from the species neighbouring them in the scale by imperceptible gradations only. The gaps which would appear in the actual scale Lamarck attributed to undiscovered species, for he did not believe that species had ever become extinct.

In opposing the doctrines of the fixity of species, of special creations, and of catastrophic changes in Nature generally, Lamarck insisted that Nature always works by degrees towards development, and that in the animal kingdom there was an innate tendency to develop towards increasing complexity of structure up to what he believed to be the "perfection of organization" found in man. Such tendency was implanted in the lowliest animals at the moment of their spontaneous generation; and he attributed spontaneous generation only to what he called the lowest forms of animals—Worms and Infusorians—whose existence he believed to be due to the constant "endowment with life" of various portions of inorganic matter. Mr. Elliot's critical remarks concerning Lamarck's leading doctrine of the innate tendency in animals to evolve towards increasing complexity of structure in a linear series, as constituting the first and most fundamental factor in his conception of biological evolution, are full of interest, and show that Lamarck's philosophy was in some respects far ahead of that of his contemporaries, while in others it was far behind even that of his forerunners.

The introduction proceeds to show that the doctrine of the inheri ance of acquired characters, which was first enunciated in detail by Lamarck, and, according to him, operated so largely in the gradual development of species, was the *second* factor in his conception of biological evolution; and it is made clear by critical illustrations that without some such hypothesis as that provided by this

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[1] *Zoological Philosophy.* An Exposition with regard to the Natural History of Animals; the Diversity of their Organization and the Faculties which they derive from it; the Physical Causes which maintain Life within them and give rise to their various Movements; lastly, those which produce Feeling and Intelligence in some among them. By J. B. Lamarck. Translated, with an Introduction, by Hugh Elliot. London: Macmillan and Co., Limited. 1914. (8vo, pp. xcii, 405. 15s. net.)

second factor, the kind of evolution by innate tendency towards increasing complexity of structure could not account for all the various forms of existing animals. So Lamarck taught that if it were not for the effect of environmental influences the innate tendency to develop would be the exclusive factor in operation; and, further, that if the environment remained unchanged, the species living in it might remain unaltered. He therefore held that any change of environment necessitates a corresponding change in the species; and it was such changes in the environment as require an organism to exert certain parts to a greater or less extent than the average that he considered to be the cause of the modifications of structure or slight variations, the inheritance of which he held to be the *second* necessary factor in the evolution of species. Thus what is now called "use-inheritance" was invented to account for a great part of the evolutionary process. "Use-inheritance," in effect, bears the same relation, in Lamarck's teaching, to the conception of the mutability of species, as natural selection does in the teaching of Darwin. But Lamarck assumed, and never tried to prove, his doctrine, while Darwin's hypotheses was a *vera causa*, not invented *ad hoc*.

In this context Mr. Elliot makes the apposite remark that Lamarck, if he had lived in modern times, would just as likely have been a Darwinian as a Lamarckian. For, he says, the only antithesis which Lamarck saw to his own theory of use-inheritance was the doctrine of special creation and fixity of species, and in his desire to attack this doctrine he saw no way to explain evolution without the assumption of use-inheritance. The modern problem concerning the occurrence of use-inheritance never suggested itself to him, nor had he a glimmer of the idea of natural selection. The whole section of the introduction which deals with this subject is especially recommended to readers, as marked by much careful thought. It concludes with the statement that until the transmission of acquired characters, in Lamarck's sense, be actually observed to occur in at least one undoubted instance, use-inheritance will continue to be regarded as an altogether illegitimate hypothesis, and to be rigidly excluded from our account of the factors of organic evolution. We cannot, owing to limits of space, consider this subject further here, but will say only that there are, in our opinion, even still stronger reasons to be adduced against the possibility of the Lamarckian transmission of acquired characters being a factor in the evolution of species than those brought forward by Mr. Elliot.

Want of space also prevents us from noticing at any length the interesting contents of Parts II and III of Lamarck's treatise or the acute comments on them contained in the introduction. In his treatment of Lamarck's teaching on both physiology and psychology, Mr. Elliot adheres to his plan of giving an historical study of his author's science and philosophy. Hence his criticisms are directed with a view both to the scientific and philosophical *milieu* in which Lamarck lived and to the value of Lamarck's teaching when tested by the light of present-day knowledge and opinion. Thus, in dealing with Lamarck's postulate of a "subtle invisible fluid" racing throughout the nervous system (which theory is, perhaps, the chief characteristic of Lamarck's physiology), he points out that this subtle fluid was not invented *ad hoc*, but was recognized as a physical entity, just as "caloric" and the "electric fluid" were recognized by many physicists of his time. Indeed, Lamarck supposed that the nervous fluid was a modification of these others. Mr. Elliot quite successfully shows that Lamarck was not comparable to the modern "vitalists," who invent a factor unknown to any branch of science. He rightly claims, fortified by quotations from his author, that Lamarck was, relatively to the beliefs prevalent in his day, a pronounced mechanist and materialist in questions both of physiology and psychology. It is evident that at the present day Lamarck would have had no truck with our neo-vitalists.

As regards the matter of psychology, Lamarck's book will be found of much interest from both the historical and actual points of view. He denied the existence of the peculiar entity called "mind," "which," he says, "is factitious, not like anything else in Nature, a mere invention for the purpose of resolving the difficulties that follow from inadequate knowledge of the laws of Nature." Mental manifestations are thus effects of cerebral processes, according to Lamarck.

We think, after reading Mr. Elliot's translation of the *Philosophie Zoölogique*, that, in spite of the prolixity of Lamarck's style and the numerous repetitions which are pointed out by the translator as great drawbacks, yet nearly the whole of the book may be read with pleasure and profit by all who are interested in the history of biology and the growth of scientific thought. They will be more struck by the wide reach of thought and the truly scientific spirit which are shown than by the fallacies and assumptions which, in the light of modern science, undoubtedly abound in this work. We are further of opinion that Mr. Elliot's high appraisement of Lamarck as a worker or thinker and a great man imbued with the pure desire of searching out the secrets of Nature for the sole sake of arriving at truth, is fully borne out by a study of this excellent translation. From such a study we learn that Lamarck took all living Nature to be his province, and more or less clearly envisaged many important problems of life and mind which are still the subjects of active dispute among the scientists and philosophers of to-day. It may be that his reach was greater than his grasp, but he reached very far and grasped not a little.

THE SCIENCE AND PRACTICE OF DENTAL SURGERY.

IN a short review it is impossible to do full justice to such a volume as that edited by Mr. NORMAN G. BENNETT, under the title *The Science and Practice of Dental Surgery*.[2] It is a volume of some 800 quarto pages, containing articles on every detail of dental surgery, written by various writers well known to the dental profession, each one of whom has compressed the maximum of information into the minimum of space. Some thirty-four different writers contribute, and the editor deserves praise for the almost complete absence of overlapping. The editor himself contributes an article on "Abnormalities of Position of the Teeth and Abnormal Development of the Associated Parts," and another on "Fractures and Dislocations of the Jaws." He has also in great part compiled the excellent bibliography appended to each section. At the present moment the medical mind will probably judge the book by its attitude to crowns and bridges and to oral sepsis. The article on "Artificial Crowns," by Mr. H. Baldwin, sets forth clearly the principle that the join must be flush and cleansable, and the diagrams show how much may in suitable cases be done by skill and patience to restore the lost natural crown. The section on bridges does not, we think, show the same appreciation of the importance of avoiding sepsis; in particular the figures and description of "cast sectional bridges" seem to us to disprove the claim made for them that they are so constructed that all parts can be readily cleaned. No more than thirty-seven pages are devoted to bridges. The chapter on oral sepsis by Mr. Stanley Colyer, though shorter than the subject deserves, is a clear statement of fact, forming an incontrovertible answer to those who belittle the dangers of the condition. Neither Mr. Stanley Colyer nor the writer on pyorrhoea alveolaris insists on the widespread ulcerative process which some authors consider so dangerous a factor in oral sepsis. In addition to the purely dental part there is a short appendix on dental jurisprudence by Mr. P. B. Henderson, solicitor. As we have said, it is impossible in a short space or a short time to criticize such a book as this, which can only be completely tested by constant reference in difficulties. We can only say that we believe that it will not be found wanting when this test is applied and that it conforms to the highest standards of British medical literature. We commend it as a book of reference to every medical man.

Mr. F. COLEMAN'S handbook on *Extraction of Teeth*[3] has run into a second edition—a proof that its merits are recognized by his dental brethren. The description of the

[2] *The Science and Practice of Dental Surgery.* Edited by N. G. Bennett, M.A., M.B., B.C.Cantab., L.D.S.Eng. With an *Appendix on Dental Jurisprudence.* By P. B. Henderson, B.A.Oxon. Oxford Medical Publications. London: H. Frowde; and Hodder and Stoughton. 1914. (Cr. 4to, pp. 817; 993 figures. £2 2s.)

[3] *Extraction of Teeth.* By F. Coleman, L.R.C.P., M.R.C.S., L.D.S. Second edition. London: H. K. Lewis. 1914. (Cr. 8vo, pp. 185; 57 figures. 3s. 6d. net.)

actual extraction of the various teeth is well and tersely written and admirably helped by numerous illustrations. The difficulties and complications of extraction are well dealt with, but here we confess to finding difficulty in thinking that the manœuvre illustrated on p. 41 of thrusting an elevator through the outer wall of the alveolus beneath the apex of a retained fragment of root and so displacing it is one that is to be recommended or indeed often possible. The author's advice on p. 51 to use specially fine-bladed forceps in these cases commends itself as more possible. The causes and treatment of haemorrhage after extraction are well discussed, though we doubt whether actual plugging of the socket is much resorted to nowadays. In dealing with anaesthetics the author seems to prefer gas, and notes that, provided enough air or oxygen be given, pregnancy is no bar to its administration for tooth extraction. The section on local anaesthesia has been enlarged, but no account is given of regional anaesthesia of the jaws. There is an excellent illustration of the correct position for "gas" administration.

The size of the fourth edition of Mr. J. S. MARSHALL'S work on *Operative Dentistry*[4] might give rise to a fear of unlimited prolixity. The book itself will speedily dispel such fears; it is good and interesting reading throughout. Some 90 pages and 225 illustrations are devoted to the anatomy, histology, and eruption of the teeth. Perhaps there is more histology than the scope of the work calls for. Mr. Howard Mummery's work on nerves in dentine is quoted at length. The author makes special note of the glands of Serres, holding that they play an important part in phagedaenic conditions of the gums. The active evolutionary process going on within the jaws, the lateral pressure induced within the jaws by the contemporaneous evolution of two sets of teeth, and peripheral irritation of the gingival nerves from the pressure of advancing teeth, are given as the causes of nervous irritation accompanying eruption of the deciduous teeth. The symptoms of eruption detailed are, however, we believe, almost entirely of infective origin, and indiscriminate gum lancing is condemned, though the author believes many lives have been saved by its intelligent use. The only note on irregularities of the teeth is made in discussing eruption. Miscegenation is pointed out as a prolific source of malformations of the jaws, and the inheritance of large teeth from one parent and small jaws from another is given as an instance. This is a field of research in which the dentists of the United States of America have unrivalled opportunities of observation. The correction of abnormalities is not within the scheme of the book. Another large part of the work is devoted, as specially noted in the preface, to dental and oral prophylaxis and to local anaesthesia, and much new material has been introduced. The chapters devoted to the former subject are, in effect, a succinct treatise on bacteriology with special reference to the mouth. It is disappointing, however, to find that no further instruction in prophylaxis is given than the advice to brush the teeth after each meal, to use floss silk between the teeth, and to use antiseptic mouth washes assiduously. The chapters devoted to local anaesthesia contain a description of anaesthesia induced by cataphoresis and the apparatus and physical laws governing its application, of the use of drugs—for example, morphine, given shortly before painful dental operations—of local applications to the sensitive dentine, such as zinc chloride and caustic potash; of injection of novocain or cocaine, by high-pressure syringes direct through the dentine into the pulp of the tooth, or subperiosteally, and of the use of nitrous oxide gas and oxygen. This latter method involves a prolonged administration which must not reach the stage of full unconsciousness. The author rightly objects to its being exploited as "absolutely safe in all cases" and insists on a competent assistant. The description of the subperiosteal injection of local anaesthetic agents is too meagre. We think the author has not realized its possibilities. Chapters XVI and XLIV, both dealing with local and general anaesthesia, might well be merged into one. The portion of the book—and it is a large portion—devoted to filling of teeth, treatment of diseases of the pulp, alveolar abscess, and extraction of teeth, are, for the dentist, excellent and instructive reading, though we think, judging from the illustrations, that we prefer the lighter bladed English forceps for extraction. "Pyorrhoea alveolaris" is described under three divisions—one form, "ptyalogenic calcic pericementitis," of purely local origin; the other two, "haematogenic calcic pericementitis" and "phagedaenic pericementitis," of constitutional origin. In our opinion the text does not justify the subdivision. In pathogenesis in general we think "gout" and "rheumatism" are too frequently invoked. Throughout the illustrations are excellent, and of themselves make the book valuable.

Volume xxxix of Lehmann's handbooks of medicine[5] is a textbook and atlas of odonto-stomatological surgery by Dr. PAUL PREISWERK MAGGI of Basel. The volume includes notes on preparation for operation, on anatomy, anaesthetics, extraction, cysts connected with teeth, other tumours, immediate regulation of teeth, surgical treatment of chronic septic roots, sloughing and bone necrosis, replantation of teeth, antral empyema—a list which shows the limits within which the German stomatologist claims to work. The various sections are minutely dealt with—it seems at first too minutely in some cases—but the eventual conclusion is that the author is right in insisting on detail. Of special interest are the descriptions of local anaesthesia and of the operation for resection of root apices in cases of obstinate dental abscess. No statistics of the results of this operation are given, and the reader may be disposed to ask whether the results are so uniformly successful as the text suggests, and whether difficulties are ever encountered. In extraction the author insists on fitting the forceps to the tooth, so avoiding the injury to gum and bone caused by "going wide." He doubts whether it has been proved that granulomata of the mouth ever become malignant. The illustrations are good, and the binocular head-mirror figured on p. 209 seems well worth a trial.

FLORENCE NIGHTINGALE TO HER NURSES.

THIS little book[6] contains a selection of the annual letters or addresses sent by Miss Nightingale to the probationer nurses of the Nightingale School of St. Thomas's Hospital between 1872 and 1900. They were not meant for publication and the proofs were never corrected by her. Miss Nightingale had ever before her mind the notion of perfection, but it was a perfection to be realized through life and work. She took a deep interest in the "laws which register the connexion of physical conditions with moral actions." Her own standard of perfection is expressed in the words—

> Whether in having a drain cleaned out or in ventilating a hospital ward, or in urging the principles of healthy construction of buildings, or of temperance and useful occupation, or of sewerage and water supply, I always considered myself as obeying a direct command of God.

There is no need to discuss the letters in detail; it is enough to say that they are lay sermons inculcating the necessity of the connexion of a high standard of morality with efficiency in technical work in a woman who wishes to be a thoroughly good nurse. If there is a good deal that is platitudinous, it must be remembered that she was addressing women inexperienced both in their profession and in the ways of the world. Traces of the practical spirit that inspired Miss Nightingale in all her work are visible throughout the book. She was a shrewd as well as a saintly woman and knew the little weaknesses to which the modern nurse is most prone. Little hints like the following show her insight:

> I read lately in a well-known medical journal, speaking of the Nightingale nurses, that the day is quite gone by when a novel would give a caricature of a nurse as a Mrs. Gamp—drinking, brutal, ignorant, coarse old woman. The Nightingale nurse in a novel is said to be—what do you think?—an active, useful, clever nurse. These are the parts I approve of. But what else do you think—a lively, rather pert and very conceited young

[4] *Principles and Practice of Operative Dentistry.* By J. S. Marshall, M.D., Sc.D. (Syr. Univ.). Fourth Edition. Philadelphia and London: J. B. Lippincott Company. 1914. (Med. 8vo, pp. 725; 725 figures. 21s. net.)

[5] *Lehrbuch und Atlas der zahnärztlich-stomatologischen Chirurgie.* Von Dr med. P. Preiswerk-Maggi. Lehmann's medizinische Handatlanten. Band xxxix. München: J. F. Lehmann. 1914. (Cr. 8vo, pp. 251; 35 plates, 230 figures. Mk 12.)

[6] *Florence Nightingale to Her Nurses:* A Selection from Miss Nightingale's Addresses to Probationers and Nurses of the Nightingale School at St. Thomas's Hospital. London: Macmillan and Co., Ltd. 1914. (Post 8vo, pp. 157. 1s. net.)

woman. Ah! there's the rub. You see what our name is "up" for in the world. That's what I should like to be left out. This is what a friendly critic says of us, and we may be very sure that unfriendly critics say much worse. Do we deserve what they say of us? That is the question. Let us not have each one of us to say "Yes" in our own hearts. Christ made no light matter of conceit. Keep the usefulness and let the conceit go.

The book hardly touches on the technical side of nursing; it is a series of short notes on the character and morality of the nurse. Though simply written, it is full of a ripe experience, and we recommend it to the careful study of all women who take up nursing in a serious spirit.

NOTES ON BOOKS.

MR. WIDDOWSON in his preface to *Notes on Dental Surgery and Pathology*[7] expresses the hope that the book will be of use to students as a notebook to simplify their work, and to busy practitioners as a ready work of reference. To us the dual objective seems unattainable. However useful a "notebook" may be, by its systematic coding of accepted views and its brevity of statement—and Mr. Widdowson's notes fall short in neither—this very excellence militates against its value as a book of reference even for the busiest. As examples we may quote, "Eruption is not a continuous process, and the periods of rest which occur allow of recuperation, preventing prostration or death from exhaustion"—an unqualified statement which leaves, we think, a very wrong impression of the dangers of eruption; in discussing the treatment of temporary teeth whose pulps have been killed by As_2O_3, the directions, "After death of the pulp remove the coronal portion only, and do not attempt root-filling; fill with a suitable filling material," give little assistance. The note that acute septic inflammation "is due to the presence in the wound of the products of suppuration (blood poisoning)" seems to require explanation. These and other similar faults mar the utility of an otherwise excellent endeavour.

The late Dr. JOHN BONUS, of Felixstowe, had a wide range of acquaintance among well-known people. He was a man of varied intellectual interests, and, after spending some time at Oxford, he studied at Louvain, where he graduated in literature and philosophy. He afterwards studied medicine at University College, London, and, although, we believe, he did not qualify as a doctor, he continued for the rest of his life to take a keen interest in the advance of medical science. He was on terms of intimate friendship with many prominent men in the profession. Among his particular friends was the distinguished biologist, St. George Mivart. With all his interest in natural science, he was of a somewhat mystical turn of mind and was deeply read in the literature of strange religions and ancient, as well as modern, philosophy. With the need of exertion, which would have given him greater concentration of purpose, he might have accomplished much. The little volume of poems,[8] published recently by the pious care of his daughter, suffices to show his gift of expression, his delicacy of feeling and his tenderness of heart. He had a genuine poetic gift which, if cultivated, might have led to the production of really fine work on a larger scale. The volume includes a brief biography, or rather character sketch, by B. Lindsay. It is beautifully printed and contains a portrait of the author and an illustration showing a part of his garden in which he cultivated many herbs, for he was an ardent vegetarian.

Amongst innumerable other results brought about by the present war will probably be a sudden influx of educated women into the ranks of the wage earners. Many of these women will find themselves confronted for the first time with the necessity for finding remunerative employment, and it is with the object of assisting them in their choice of a profession that the fourth edition of the *Fingerpost* has been published under the new and suggestive title of *Careers*.[9] It contains a series of articles on the different professions and occupations now open to women of gentle birth and good education by women who are themselves engaged in them, and who consequently write from first-hand knowledge of the prospects offered by different professions, and the qualities of mind and body demanded of those who wish to adopt them. Full details as to preliminary expenses and length of training, hours of work, average salaries, etc., are given in each article, together with advice which is equally applicable to the newly emancipated schoolgirl and to the woman brought suddenly face to face with the problem of earning her daily bread.

MR. READ'S *Social Chaos and the Way Out*[10] is a somewhat amazing book. The author's view is that the too rapid increase of the unfit section of modern communities is responsible for the bulk of the misery which he considers to be the predominant feature of contemporary life. In his opinion there can be no real happiness unless and until the sexual appetites have the fullest and freest satisfaction. This desideratum is, he argues, unattainable by the use of artificial checks to conception, to the present use of which he attributes a number of ill-effects, mental and physical. The only way out is, therefore, to return to the primitive habit of infanticide, and he gravely suggests the abolition of all legal penalties for this crime. The result would be, he considers, that the unfit would destroy their offspring, and so their stock would be eliminated, while the fit would avail themselves of their immunity only so far as weakly or superfluous arrivals were concerned. Everybody would be happy, and wealth would abound. Happiness based upon unrestricted child murder is too ignoble a conception of social "welfare" to deserve serious consideration.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee twenty-two cases were considered, and grants amounting to £202 voted to nineteen of the applicants. An annuity of £20 was also made to one of the applicants. The following is a summary of the cases relieved:

Wife, aged 48, of M.R.C.S.Eng. who practised at Chesham. Was deserted by her husband in 1905. Has three children, the youngest at Epsom College, others at school. Eyesight defective. Only income about £25 per annum. Previous relief, £14. Voted £12 in twelve instalments.

Widow, aged 74, of M.R.C.S.Eng. who practised at Braintree. Lives with married son, who has large family and only a small income. No income of her own, and unable to work. Was elected to an annuity of £20 per annum. Previously relieved, £2.

Widow, aged 66, of M.R.C.S.Eng. who practised at Heywood, Lancs. Has acted as cook and nurse, but finds it difficult, in consequence of age, to obtain work. Previous relief, £2. Voted £12 in twelve instalments.

Widow, aged 30, of M.B., B.S.Lond., R.A.M.C., who was killed at the front. Since husband's death has undergone severe operation, and quite unable to work at present. Only income War Office pension. Voted £15 towards convalescence.

Widow, aged 67, of M.D.St. And. and F.R.C.S.Eng. who practised at Kidderminster. Present distress caused by the depreciation of securities and the death of her sister, with whom she lived. Health bad. Voted £10, in two instalments.

Widow, aged 34, of M.R.C.S.Eng. who practised at Swansea and died in 1914. Left her totally unprovided for. Right side paralysed. One daughter, aged 6 years. Lives with mother, whose means are very limited. Voted £12 in twelve instalments.

Widow, aged 62, of L.R.C.S.Edin. who practised in Brixton. Present distress caused by depreciation of her dividends and being unable to let her furnished house. Health too bad to allow her to work. Voted £10 in two instalments.

Daughter, aged 59, of M.R.C.S.Eng. who practised at Battle. Unable to work owing to chronic rheumatism. Lives with sister, who is also badly off. Relieved thirty-one times, £242. Voted £12 in twelve instalments.

Widow, aged 77, of M.R.C.S.Eng. who practised at Leamington. Tries to earn a little by taking in lodgers, but owing to age not able to do much. Has the old age pension. Has seven children, none of whom can help. Relieved three times, £36. Voted £12 in twelve instalments.

Widow, aged 59, of L.R.C.P.Irel. who practised at Buckley. Health very indifferent. Only income a pension from another charity of £25. Relieved seven times, £84. Voted £12 in twelve instalments.

Daughter, aged 31, of M.R.C.S.Eng. who practised at Wolverhampton. Suffers from Graves's disease, and unable to undertake any permanent work. Relieved seven times, £46. Voted £12 in twelve instalments.

Widow, aged 58, of M.R.C.S.Eng. who was an annuitant of the Fund. Eldest son used to keep the home, but has joined

[7] *Notes on Dental Surgery and Pathology.* By T. W Widdowson. London: John Bale, Sons, and Danielsson, Limited. 1914. (Demy 8vo, pp. 355; 159 figures. 10s. 6d. net.)

[8] *Thoughts in Verse, For My Friends.* By John Bonus, D.Ph. et Litt. London: Longmans, Green, and Co. 1914. (Demy 8vo, pp. 94. 3s. 6d. net.)

[9] *Careers: Fourth Edition of the Fingerpost. A Guide to the Professions and Occupations of Educated Women and Girls.* London: Women's Employment Publishing Company, Limited. 1914. (Fcap. 4to, pp. 363. 1s. 6d. net.)

[10] *Social Chaos and the Way Out.* By A. Baker Read. London: Hendersons. 1914. (Demy 8vo, pp. 363; 21 figures. 7s. 6d. net.)

the army and is unable to do much. Other son's earnings very much reduced. Relieved once, £10. Voted £2, with leave to apply again.

Daughter, aged 62, of M.R.C.S.Eng. who practised at Watford. Health bad. Only income £20 from another charity and a little from sewing. Has to assist to keep an invalid brother. Relieved eight times, £93. Voted £15 in twelve instalments.

Widow, aged 58, of M.R.C.S.Eng. who practised at Sydney, N.S.W. Has own house, which is heavily mortgaged, and has been empty for five years. Only daughter a professional singer, but, owing to the war, cannot obtain engagements. Relieved three years ago, £10. Voted £10 in two instalments.

Daughter, aged 70, of M.R.C.S.Eng. who practised at Stoke Newington. Lives with two sisters, and they try to make a living by taking in boarders, but, in consequence of the war, have lost several foreign boarders. Relieved twice, £24. Voted £18 in twelve instalments, and recommended for an annuity.

Widow, aged 68, of M.R.C.S.Eng. who practised at Maidstone. Earns her living by taking in paying guests, but, in consequence of the war, has lost two. Only income from friends (which is uncertain) about £20. Relieved four times, £30. Voted £12 in twelve instalments.

Daughter, aged 60, of M.R.C.S.Eng. who practised at Greenwood Hantspils. Health very bad, and lost all her money invested in an apartment house. Earns a little by needlework and friends provide food. Relieved four times, £48. Voted £12 in twelve instalments.

Widow, aged 65, of L.S.A. who practised at Battersea. Suffers from heart trouble. Lost all capital in investments. Takes in a boarder when she can get one, and earns a little by needlework. Relieved twice, £24. Voted £12 in twelve instalments.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

NAVAL SURGERY IN THE EIGHTEENTH CENTURY.

WHEN we read of the luxurious equipment of a modern hospital ship with its lifts, its operating theatres, its comfortable wards, its baths, its nursing sisters, and its large staff of sick berth attendants, we cannot help congratulating our sick and wounded seamen on the change that has taken place since Tobias Smollett served as surgeon's mate in the *Cumberland*. That ship, a frigate of the line, belonged to the fleet which sailed, under the command of Sir Chaloner Ogle, from Spithead on October 26th, 1740, for the West Indies, to harass the trade and attack the settlements of Spain, with which country Great Britain was then at war. In Carlyle's *Frederick the Great* there is the following passage:

> Most obscure among the other items in that Armada of Sir Chaloner just taking leave of England; most obscure of the items then, but now most noticeable or almost alone noticeable, is a young surgeon's mate—one Tobias Smollett; looking over the waters there and the fading coast, not without thoughts. A proud, soft-hearted, though somewhat stern visaged, caustic and indignant young gentleman. Apt to be caustic in speech, having sorrows of his own under lock and key, on this and subsequent occasions. Excellent Tobias; he has, little as he hopes it, something considerable by way of mission in this Expedition and in the Universe generally. Mission to take Portraiture of English Seamanhood with the due grimness, due fidelity; and convey the same to remote generations before it vanish.

The description given by Smollett in *Roderick Random* of the way in which the sick and wounded were treated is even at this distance of time sickening to read. In the sick berth he saw—

> About fifty miserable distempered wretches suspended in rows, so huddled one upon another that not more than 14 inches space was allowed for each with his bed and bedding; and deprived of the light of day as well as of fresh air; breathing nothing but a noisome atmosphere of the morbid steams exhaling from their own excrements and diseased bodies, devoured with vermin, hatched in the filth that surrounded them, and destitute of every convenience necessary for people in that helpless condition.

Clysters were administered by a mate who crept on all fours under the hammocks, and forcing up his head between two kept them asunder with one shoulder till he had done his duty. Roderick Random tried to follow his example, with consequences of a Zolaesque character which need not be described. He was besides fixed as it were in a pillory between two hammocks, and had to be rescued when he was on the verge of strangulation. He had to go close-shaved by way of preserving himself from the parasites which infested the sick berth.

The captain, the morning after he came on board, was waited on by the first mate with the sick list. When he had scanned it he cried: "Blood and oons! Sixty-one people on board of my ship! Hark ye, Sir, I'll have no sick in the ship, by God!" On the mate saying that he only did his duty, the captain cried: "You and your list may be damned! I say there shall be no sick in this ship while I have command of her." This philanthropic commander then ordered that all the men on the sick list should be brought to the quarter-deck to be reviewed. Although this inhuman order shocked Random and his colleague extremely they knew it must not be disobeyed. When they appeared on deck with their patients the surgeon, taking the list, began to examine the complaints of each one as he was able to crawl to the place appointed. The first had just recovered from a fever which had weakened him so much that he could hardly stand. The doctor having felt his pulse protested that he was quite well, and the captain delivered him over to the boatswain's mate, with orders that he should receive a round dozen at the gangway immediately for counterfeiting himself sick; but before the discipline could be executed the man dropped down on the deck and had well nigh died under the lash. The next was a man with a quartan ague, and, "being then in his interval of health, discovered no other symptoms of distemper than a pale meagre countenance and emaciated body, upon which he was declared fit for duty and turned over to the boatswain; but being resolved to disgrace the doctor, died upon the forecastle next day during his cold fit." The third complained of a pleuritic stitch and spitting of blood, for which the doctor prescribed exercise at the pump to promote expectoration, the result being that in less than half an hour he was suffocated with a deluge of blood that issued from his lungs. A fourth was so swollen with dropsy that he could scarce fetch his breath. But his disease was pronounced to be fat occasioned by idleness and excess of eating, and, by way of promoting perspiration and reducing his bulk, he was ordered aloft, and helped to climb by the application of the cat o' nine tails.

We get a picture of the cockpit during an action where the surgeon hid himself, and was only induced to get up by threats that a complaint would be made to the Admiral. Fortifying himself with rum, he went to work, and arms and legs were hewn off without mercy. He could not, however, be got to go up on deck to dress a wound received by the captain.

Random fell ill with what he calls bilious fever, and owed his life to a grateful sergeant whose nose he had mended after a wound during the fight. This man gave him the use of his own berth in the middle deck, which was well aired. They got a new captain, a dandy who sent for Random to bleed him, but distrusted his skill when he saw him. He said to his valet, who from time to time applied a smelling-bottle to his nose: "Dost thou think this wretch"—meaning Random—"will do me no injury? May I venture to submit my arm to him?" He then politely asked Random if he had ever blooded anybody but brutes; before the operation could be performed his own surgeon, in whom he had more confidence, turned up. This picture is painted with the detail of a Dutch artist, and apparently Carlyle thought it a faithful picture, although to some it may seem not untinged with malice, for Smollett had no doubt to endure many indignities more serious than that put upon him by the dandy captain. However this may be, the picture may give a notion of the medical service of the British Navy in the middle of the eighteenth century, and of the way in which the patients—and the medical men—were treated.

DURING 1914 the deaths of 2,205 doctors in the United States and Canada were recorded in the *Journal of the American Medical Association*. Reckoning on a conservative estimate of 153,000 physicians, this is equivalent to an annual death-rate of 14.41 per 1,000. The average annual mortality for the period from 1902 to 1914 inclusive was 15.71 per 1,000. The chief death causes, in the order named, were: senility, heart disease, cerebral haemorrhage, pneumonia, accident, and nephritis. The age at death varied from 23 to 99, with an average of 60 years, 11 months, and 6 days. The general average of age at death since 1904 is 59 years, 9 months, and 19 days. The number of years of practice varied from 1 to 75, the average being 33 years, 9 months, and 29 days. The average for the past eleven years is 31 years, 11 months, and 22 days.

British Medical Journal.

SATURDAY, FEBRUARY 6TH, 1915.

SYNTHETIC DRUGS IN GREAT BRITAIN.

LAST September the Admiralty applied to the Imperial College of Science and Technology to prepare 30 lb. of phenacetine, 50 lb. of hexamethylenetetramine (hexamine), and 1½ lb. of beta-eucaine. It fell to Dr. J. F. Thorpe, as professor of organic chemistry in the college, to undertake the task, and he has given in *Nature* for January 28th an interesting account of the steps by which the object was achieved. The staff and research students of the organic department of the college at once set to work, and they have now forwarded the required quantities to the naval hospitals at Haslar, Chatham, and Plymouth.

Professor Thorpe states that phenacetine, a product of the Baeyer firm at Elberfeld, has never been made before in this country, though it is understood that the immediate needs have been met by the importation of considerable quantities from the United States of America. After numerous experiments the Organic Department of the College of Science found a method suitable to the conditions of a scientific laboratory, and by it ultimately 1½ lb. of pure phenacetine were prepared daily, the by-products being recovered and used again. The preparation of hexamine was found to be a comparatively simple matter, involving the treatment of a solution of formaldehyde with ammonia, and Professor Thorpe states that it is understood that the compound is now being prepared in considerable quantities in this country. The preparation of the local anaesthetic, beta-eucaine—a drug of which there is a serious shortage in this country—was found to be a long and tedious process, and many initial difficulties had to be overcome. Ultimately, however, a general scheme was worked out, which is giving satisfactory results.

With the exception of salvarsan, which is being made by Messrs. Burroughs, Wellcome and Co., and acetyl salicylic acid, which is being made by Messrs. Boots, Ltd., no synthetic drugs, Professor Thorpe says, have been manufactured previously in this country. This is, we believe, rather an overstatement of the case, but he is perhaps correct in stating that as regards drugs from natural sources English firms have probably always produced very much more than the German firms.

The cost of the materials used in the preparation of these three synthetic drugs for the Royal Navy was defrayed by the Imperial College and the services of the workers were given free; but this can only be a makeshift sort of arrangement, and Professor Thorpe has discussed the principle involved in a letter to the *Times*. His remarks are fully in accordance with the statement made in an article published in these columns a fortnight ago, that "it is necessary to face the fact that the production of synthetic chemicals generally, and not only those used in medicine, has attained far greater dimensions in Germany than here.' Business men, Professor Thorpe says, who know exactly the material they require, and precisely how to make use of it when obtained, are firmly convinced that all they have to do is to make known their requirements to their staff of scientific workers in order to attain their ends.

It seems to be supposed that all the chemist has to do is to look up the details of the preparation of any desired material in the German patent literature and then to proceed in the same manner as a chef who wished to make some new kind of pudding. This point of view, Professor Thorpe declares, is due to an entire lack of understanding on the part of the non-scientific person of the principles underlying scientific processes. "A German patent," he says, "is the outcome of close co-operation between astute lawyers and skilful chemists, and is meant to deceive. The published details are, of course, quite correct, and the requirements of the patent laws are met, because a skilful worker, following the directions given, would, no doubt, obtain some of the product. Essential details are, however, carefully excluded, and it is safe to say that an independent worker would, in most cases, have to devote some months to experiments on the scientific scale before he could find the correct conditions for applying a process to the commercial scale. Again, there is the dummy patent, the sole object of which is to mislead competitors as to the line of work followed in the patenting factory. The German patent literature teems with examples of this kind, and a research chemist would have to work for some considerable time before he could realize that he was in a scientific *cul-de-sac*." Works laboratories cannot, he considers, solve these problems and adapt them to commercial conditions within any reasonable period of time. The only way in which the object can be achieved will be by enlisting the services of every trained organic chemist in the country. The Government must organize the knowledge and skill which is, from the industrial point of view, now wasting in universities, colleges, and technical schools, and it is, Professor Thorpe believes, only by such a scheme that the nation will be able to pick out those men who are fitted by temperament to be directors of commercial processes.

Any one who has even a superficial acquaintance with the scale on which synthetic chemicals of all kinds are manufactured by the big German firms will be fully disposed to agree with Professor Thorpe's conclusion. Many of the synthetic drugs which have come into use have been, at first, at any rate, little more than by-products; it has been by systematic resort to research methods and the large scale on which their works are conducted that German manufacturers have hitherto commanded markets in this direction.

"TERRORISMUS."

ATTILA, it has been said, had to lament that his illiterate subjects were destitute of the art which could perpetuate the memory of his exploits so that the historian was driven to base his descriptions of their methods of warfare on those of the Moguls, to whom, indeed, they were nearly related. By them, he says, was exercised the inhuman abuse of the rights of war with a regular form of discipline, which he considered might with equal reason, though not with equal authority, be imputed to the victorious Huns. The captured inhabitants were divided into three classes. The young men capable of bearing arms were impressed or killed; skilled workmen and rich citizens were deported or held to ransom, while "the remainder, whose life or death was alike useless to the conquerors, were permitted to return to the city,

which in the meanwhile had been stripped of its valuable furniture, and a tax was imposed on these wretched inhabitants for the indulgence of breathing their native air. . . . But the most casual provocation, the slightest motive of caprice or convenience, often provoked them to involve a whole people in an indiscriminate massacre and the ruin of some flourishing cities was executed with unrelenting perseverance."

If Gibbon had had to describe the manner in which the German armies devastated Belgium and some parts of France he would not have found it necessary very materially to alter his description of A.D. 450 to make it applicable to A.D. 1914. It is possible that the German view has been to some extent altered by failure—at any rate, for the present—for, as Gibbon remarks: "The laws of war that restrain the exercise of national rapine and murder are founded on two principles of substantial interest: the knowledge of the permanent benefits which may be obtained by a moderate use of conquest; and a just apprehension, lest the desolation which we inflict on the enemy's country may be retaliated on our own."

Gibbon's acid phrases may be almost exactly paralleled from the *Kriegsbrauch im Landkriege*, the usages of war on land, of which the professor of constitutional law in University College, London, has recently published a translation under the title, *The German War Book*.[1] Thus we read that "a war conducted with energy cannot be directed merely against the combatants of the enemy State and the positions they occupy, but it will and must in like manner seek to destroy the total intellectual and material resources of the latter. Humanitarian claims such as the protection of men and their goods can only be taken into consideration in so far as the nature and object of the war permit. Consequently the 'argument of war' permits every belligerent State to have recourse to all means which enable it to attain the object of the war; still, practice has taught the advisability of allowing in one's own interest the introduction of a limitation in the use of certain methods of war and a total renunciation of the use of others. . . . But since the tendency of thought of the last century was dominated essentially by humanitarian considerations which not infrequently degenerated into sentimentality and flabby emotion (*Sentimentalität und weichlicher Gefühlschwärmerei*), there have not been wanting attempts to influence the development of the usages of war in a way which was in fundamental contradiction with the nature of war and its object." The officer is told that he must avoid arriving at false views about the essential character of war by steeping himself in military history, and thus guarding himself "against excessive humanitarian notions; it will teach him that certain severities are indispensable to war; nay, more, that the only true humanity very often lies in a ruthless application of them."

Until last August most men who were not Germans had supposed that the policy of terrorization, "*Terrorismus*," of the non-combatant inhabitants of an invaded country was no longer recognized as a legitimate engine of warfare between nations professing to be civilized. So rooted was this belief that even while the policy was, according to the statements of neutral eye-witnesses, being carried out in Belgium, there were many in this country who refused to believe evidence which ran counter to their preconceived notions of the mentality, the *Kultur*, of the German people. Nay, there are some to-day who refuse to believe, even though similar methods have been practised on their own countrymen and countrywomen, on a scale which is small only because the opportunity for *Terrorismus* is small and its application risky. To all such we commend Professor Morgan's book. In particular we would recommend all medical officers who hold commissions in the Territorial Force or new armies to study the translation of the text of the *Kriegsbrauch im Landkriege*, for though the chapters on the treatment of wounded and sick soldiers, and on the Red Cross ensign and marks, bear lip-service to the Geneva Convention, they are in conflict with the general tone and spirit of the book, which easily account for the numerous infractions of the Convention committed within the last six months by the men to whom it is addressed.

There is a very distinct risk that on the excuse of reprisals this war may become more barbarous even than it has been during the last six months. *The German War Book* classes "the employment of uncivilized and barbarous peoples in European wars," with such "unlawful instruments of war" as assassination, the use of arms which cause useless suffering such as soft-nosed bullets, the killing of wounded or prisoners, and the refusal of quarter to soldiers who have laid down their arms. The definition of "uncivilized and barbarous" rests with the Germans, and it is alleged that the Kaiser has issued orders to his officers that Cossacks are to be treated as robbers; the Tsar is reported to have directed that the crew of the airship which dropped bombs on the unfortified town of Libau are to be considered pirates and tried on a criminal charge without privilege of war. These signs are ominous, and while it is not desirable to seek to increase animosity—we want no hymn or howl of hate in this country—it is folly for a man to go into this war without trying to understand the way in which the usages of war are understood by the enemy, however repugnant the result may be to his own standard of humanity and morality. Medical officers of the British army should realize the tendency there seems to be to reprisals and towards increased brutality. They should be on their guard for themselves and their patients, and should use their influence to ensure that the provisions of the Geneva Convention are always strictly observed.

[1] *The German War Book*. Translated, with critical Introduction, by J. H. Morgan, M.A. London: John Murray. 1915. (Crown 8vo, pp. 167. 2s. 6d.)

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE statutory annual general meeting of the Association will be held this year, and also a meeting of the Representative Body, but at its meeting on January 27th the Council decided that it would not be desirable, owing to the conditions brought about by the war, to hold the usual full annual meeting, with its scientific sections and social opportunities which have been so highly valued in past years. A very large number of members of the Association are directly occupied in work with the army in the field, or with the new armies that are being prepared, or in treating the wounded, while others not so engaged find the calls upon their time and energy, due to the withdrawal of so many medical men from ordinary practice, altogether unusual. Moreover, the annual meeting was to have been held this year in Cambridge, but the special circumstances of a university town deprived of many of its teachers and students by the war, and heavily committed to assist the Belgian universities, the work of

which is entirely suspended in their own country, make it impossible for Cambridge to maintain its invitation for this year. The hope was expressed that by next year matters will have so improved that Cambridge may be able to renew its invitation, for there is a universal desire that an annual meeting should be held in that great centre.

ANTIVIVISECTION AND ANTITYPHOID INOCULATION.

WE have received from Dr. Hadwen a letter containing a version of the incidents preceding the appearance of the advertisement on the subject of antityphoid inoculation in the issue of *Punch* for January 13th, which involves not only reflections injurious to our contemporary, but also a conflict as to matters of fact. We are therefore precluded from publishing it. We have, however, ascertained that the suspicion expressed by us last week that the alleged lateness in sending in the advertisement was possibly a tactical manœuvre to capture by surprise a position considered to be impregnable was unfounded. We therefore unreservedly withdraw the suggestion. We are indebted to the Secretary of *Punch* for the statement that neither he nor the directors would, on any consideration, have knowingly allowed the advertisement to appear. They absolutely adhere to the statement published in *Punch* of January 20th, which has already been quoted in our columns. Dr. Hadwen's letter also contains an explanation of the relative position of his society and the National Antivivisection Society, over whose fortunes Mr. Stephen Coleridge presides. From that gentleman we have also received a letter, but we do not feel under an obligation to ventilate the grievances of these two societies against each other in our columns. With reference to our observations as to the character of the advertisement of the British Union for the Abolition of Vivisection, Dr. Hadwen writes: "I take full and personal responsibility for every statement in that advertisement. . . . Needless to say, I am quite prepared to stand by every word contained therein, and shall be happy to furnish proof—irrefragable proof—of each point." We may refer Dr. Hadwen and others interested to the official figures reported to the Director-General by Sir William Leishman, which are published at p. 264. They would, no doubt, be more conclusive had it been possible to determine exactly what proportions of men of the whole overseas forces were fully protected, partially protected, and not protected by inoculation, but owing to constant changes this has not been found possible. Antityphoid inoculation, though not compulsory, has been for some years very commonly accepted by the soldiers of the regular army, and probably a large proportion of those in the Expeditionary Force have been so protected. We should not be surprised to hear that the proportion was as high as one half or more. The statistics, though they do not afford information as to the comparative incidence of the disease in the inoculated and uninoculated respectively, do throw light on the relative case-mortality. The comparison is very strikingly in favour of inoculation. There is one other point about which there appears to be a certain amount of misapprehension. Some of those who are most vociferous in urging soldiers not to submit to antityphoid inoculation appear to wish the public to believe that paratyphoid fever is an invention of the War Office, or of those who believe in the efficacy of inoculation against typhoid fever; this is one of the grounds on which it is sought to minimize the significance of the statistics. The fact that among the cases previously classified as typhoid fever there were some, usually of mild type, due to a bacillus which was not the true typhoid bacillus has been known for a good many years. It was called the paratyphoid bacillus, and subsequently several varieties of it were distinguished and called paratyphoid A, B, and so on. They are related to a large group of bacilli, many of which are capable of producing in man and animals diseases usually characterized by intestinal disorder. German bacteriologists have applied the term Salmonella, derived from the name of one of the earliest workers on the subject, to the whole group, and by them the disease, called by us and by the French paratyphoid fever, is sometimes termed salmonellosis. This name has been applied to a large number of cases of sickness occurring in their armies in the west, but as the term is not precise, the example does not seem worthy of imitation. We would lay stress on the fact that medical opinion is overwhelmingly in favour of the protective power of antityphoid inoculation. At the present time it would be unwise to neglect anything that offers any promise of being a safeguard against a disease which experience has shown to be the main cause of sickness and death among troops in the field. If a few men have been made ill by the inoculations and even if one or two have died, that would not justify a crusade against a measure which the available statistics—even allowing a considerable margin for error—show to be useful.

PHOSPHORUS AND SHELL WOUNDS.

M. G. URBAIN, who had the opportunity of examining a number of German shells which had failed to explode, found that both the common shell and the shrapnel shell for the most part contained a considerable quantity of a violet-brown powder smelling strongly of white phosphorus. It was found to contain 97 per cent. of a mixture of different varieties of phosphorus, the red variety greatly predominating. In the common shell the phosphorus was enclosed in a cylindrical box, 60 mm. (2.37 in.) long and 25 mm. (0.98 in.) wide, which lay in a cavity formed in the compressed explosive. In the shrapnel shell the balls were contained in a cylindrical box of white metal, and the interstices between the balls were filled with the violet brown powder containing 97 per cent. of phosphorus. As the balls were irregular and had rough places on their surface, a certain quantity of the phosphorus powder adhered firmly to them. He concluded, therefore, that shrapnel bullets or fragments of shell might carry a larger or smaller quantity of phosphorus into the wounds they make. M. Victor Henri, who brought these observations before the French Académie des Sciences on January 11th, considered that they should receive attention from surgeons, since phosphorus brought thus into contact with the tissues was capable of causing localized gangrene, and so affording a suitable breeding ground for microbes, especially anaërobes such as those of tetanus and emphysematous gangrene. The fact, he thinks, affords an additional reason for opening up and thoroughly cleansing wounds produced by shrapnel and fragments of common shell. It is difficult to think of any ballistic object with which phosphorus would be put into shells except possibly to increase their incendiary effect. Probably red phosphorus is used in place of the ordinary white in order that its oxidation may be delayed. Ordinary white phosphorus would burn so rapidly that none of it would reach the ultimate objective of a shrapnel bullet in the form of elementary phosphorus; at the temperature reached the phosphoric acid formed would, in all probability, act on the metal of the bullet sufficiently to convert most of the acid into a harmless phosphate. The red variety does not burn at all until it is heated to about 240° C. Under the action of heat it becomes converted back into the white variety, but as this occurs slowly and apparently only by its being first converted into vapour, which then condenses to form white phosphorus, it is not at all clear that there would be any white phosphorus on the bullets when they struck their object. It is, however, very likely that there would be red phosphorus still unburned, but actively burning, and this would, of course, cause the bullet to make a very much more serious wound than a clean bullet. From the chemical and mechanical points of view there would be

a good deal of difficulty in so enclosing white phosphorus in a shell that it would not be ignited prematurely, and it would be practically impossible to distribute white phosphorus among the bullets in a shrapnel shell; by using red phosphorus this trouble is avoided; probably the effect is that of white phosphorus, but by the use of the red variety the action of the phosphorus on the wound would be greater. If this be really the object of introducing phosphorus into shells, the proceeding would appear to be rather more barbarous than the use of expanding bullets.

ST. HELENA 1815-21.

IF it be a good thing, as so often asserted by the wise, that a busy man should have a hobby, then Dr. Arnold Chaplin is to be congratulated on having had the inclination to compile such a book as he has recently printed for private circulation. He has already written more than one essay on the story of Napoleon's captivity in St. Helena, and we suspect that there are a sufficient number of riders of the same hobby horse to compel him to bring out another edition for publication through the ordinary channels.* The great revival of interest in everything that concerns Napoleon during the last quarter of a century is remarkable. It appears to be due to the combined effects of several causes: there was first the fear, undated but real, that Europe was about to be drawn into another great war against another nation which desired an hegemony, and this in itself was an inducement to study the character and the methods of the greatest of modern commanders; there was, secondly, perhaps the dim feeling that he was the antithesis of the dreary mediocrity which seems to be the ideal of state socialism, for he recognized that special merit deserved special reward; and finally, and perhaps chiefly, there was the extraordinary fascination of the story of the man who did so much yet died at 52 after nearly six years in captivity. It is to this third influence that Dr. Chaplin has succumbed. Nothing that has to do with the story seems to him trivial; many will sympathize with him in the hunt for facts about persons otherwise obscure, and any who have attempted similar inquiries will appreciate the pleasure he must have felt in at length running his quarry down in the Muster Rolls, the Casualty Returns, the Monthly States, or other dusty files, the very existence of which is known only to a few specialists. He has succeeded, too, in illustrating his volume with a large number of portraits lent for the purpose by surviving descendants of collaterals. Among the portraits are those of Dr. Arnott, a typical Scot, and Dr. Alexander Baxter, looking very like John Bull in a frockcoat, but also a Scot, and of Dr. Francis Burton, uncle of Sir Richard, an Irishman from Tuam, who took the death mask after Autommarchi had failed. There are portraits also of some of the ladies in St. Helena—of Mrs. Balcombe, who reminded Napoleon of Josephine, and of Miss Wilks, daughter of Colonel Mark Wilks, who was governor of the island when Napoleon arrived, fully justifying the admiration he expressed for her beauty and charm. The book is entitled *A St. Helena Who's Who*, and contains much curious information. We learn, for instance, of Miss Polly Mason, one of the chief landowners, that she is remembered at the present day in St. Helena "on account of her habit of riding on an ox"; of Mrs. Younghusband, who caused her husband much trouble—nearly a duel—and quite an action at law, with damages of £250 for the lady she had aspersed; of Miss Robinson, "the Nymph"; and of Miss Knipe, "le bouton de rose," daughters of farmers, who attracted the great man's notice by their good looks; and of the escapade of Archambalt, his coachman, who got drunk at the Deadwood Race meeting established by the Captain R.N. who afterwards, as Admiral Rous, was dictator of the English turf. The list of persons employed in or about Longwood is surprisingly long, and one wonders what the twenty others unnamed, "employed around the house each at a salary of £40 per annum," found to do. Dr. Chaplin gives a curious little life table of the residents at Longwood, from which it would appear that most of them lived longer than their average expectation in 1815; the chief exception was Napoleon himself. Captain Crokat, who went to St. Helena in 1819, and was the last survivor of those who saw Napoleon on his deathbed, in 1821, lived to attain the rank of general, and died in Edinburgh in 1879. He was born just twenty years later than Napoleon, but survived him by fifty-eight. Most people have very hazy notions on the climate of St. Helena, and if there be data for it, a chapter on this subject, and particularly on the range of temperature, would be an interesting addition to another edition.

* We understand that a limited number of copies of this edition has been placed in the hands of Messrs. Hatchards of Piccadilly, who will dispose of them at the price of one guinea.

LEECHES.

THE Master of Christ's College, Cambridge, finding last November, as he told us at the time, that General Joffre, General von Kluck, Marshal von Hindenburg, and the Grand Duke Nicholas persist in fighting over some of the best leech-areas in Europe, became alarmed lest this country should suffer from a serious shortage of leeches; his fears were confirmed when he found that there were only a few dozen leeches left in London and that they were secondhand. Accordingly he made some efforts to alleviate the situation by applying to America and Canada, but without success. He is now, with great relief, able to write to the newspapers to say that an application to India was so successful that owing to the kindness of Dr. Annandale, Director of the Indian Museum at Calcutta, and to the officers of the P. and O. Company and to Colonel Alcock, M.D., of the London School of Tropical Medicine, he has succeeded in landing a fine consignment of a leech which is used for bloodletting in India. It is true that the leech is not the *Hirudo medicinalis* of our pharmacopoeias, but a different genus and species, *Limnatis granulosa*. Judging by its size—always a varying quantity in a leech—we may have to readjust our ideas as to a leech's cubic capacity, yet Dr. Shipley believes, from observing their conduct, that they are willing and even anxious to do their duty. They have stood the voyage from Bombay and the changed climatic conditions very satisfactorily, and are, he states, in a state of great activity and apparent hunger at 50, Wigmore Street, London, W.; this is the place of business of Messrs. John Bell and Croyden, Ltd., whose managing director informs us that of the stock of 200 originally received some, including the largest, have not yet been disposed of. The size of some of them, he adds, is indeed surprising, one being over 13 inches long; still they are believed to be safe to use, and withdraw from 4 to 6 drachms of blood. The proceeds of their sale is being given to the Belgian Doctors' and Pharmacists' Relief Fund. The managing director tells us that he has been surprised at the number of medical men who have asked for them, but Dr. Shipley admits that leeches are not employed to anything like the extent they were eighty years ago, when Paris alone made use of some 52 million a year, and we suspect that his alarm will not be shared by most doctors of medicine, although they will congratulate him on the success of his efforts to get a consignment from India. He twits the Germans with attempting to make artificial sausage skins to meet an appalling shortage of such things in Middle Europe, but Dr. Shipley has himself perhaps forgotten that artificial leeches are in fact no novelty. Indeed, we believe that such appliances are now being used with the Expeditionary Force in France, not so much to attain therapeutic ends as to abstract a sufficient quantity of blood for biological investigation with the smallest inconvenience to the patient.

GERMANS AND THE GENEVA CONVENTION.

Elsewhere is published a letter from Sir John Byers in which he again pleads for an interchange of the doctors held in captivity in Germany with those detained by us. Captain Hamilton and the other British doctors were informed, when the announcement of their release was made to them, that no other medical prisoners of war would be liberated until like action was taken by us. We know that several German doctors are or were interned in concentration camps, but we do not know if any are held as prisoners in the military sense. Theoretically there is no such thing in civilized warfare as a medical prisoner. But from the beginning of the present war Germany has behaved in this, as in other matters, as if she were bound by no laws of any kind. Instead of recognizing the special character of the medical officer as one whose work is to heal, not to kill, her armies have in many cases treated him with something of the cowardly ferocity they have shown in dealing with priests. In the Journal of January 2nd (p. 32), and again in our issue of January 23rd, we gave examples of the way in which French medical officers have been treated with every sort of indignity and brutality. M. Siredey, Secretary of the Société Médicale des Hôpitaux, recently presented a report in which he gave the results of an investigation as to the condition of medical prisoners during their captivity. The facts are given on the authority of doctors who, on their return from Germany, made depositions in presence of the physicians, surgeons, accoucheurs, and hospital specialists of Paris at meetings of the society, and in written reports received from various quarters. They testify that when hospitals fell into the hands of the Germans the French doctors were at once prevented from treating the wounded, or were allowed to do so only for some days, after which they were sent to Germany and interned in a camp, or a fortress, where they had for the most part no medical duty whatever. Some, when their hospitals were captured, had only to complain of the arrogant ill-conditioned manners of the officers. Others were attacked by soldiers, more often by officers, who at once set upon them, revolver in hand, abusing them and threatening them with immediate death under the pretext that someone in the hospital had fired upon them. The massacre in the hospital of Gommery, in Belgium, which took place on August 23rd (see Journal of January 23rd, p. 167), is a case in point. Another is that of a young surgeon of the reserve who, on coming out of a house at Mercy-le-Haut, where he had been dressing a wounded officer on August 22nd, was shot in the head with his own regulation revolver by a German officer, and escaped with his life as by a miracle. These are only typical instances, which could be multiplied almost indefinitely. Some state that they were actually captured by German doctors, whose behaviour to them was much worse than that of the officers. Many were robbed of their kit and other personal belongings; these were generally taken by soldiers, but in some cases the thieves were officers. In many cases the provision of the Geneva Convention that the private property of medical prisoners shall be restored to them on liberation, was simply set at naught by the German authorities. After describing the bad conditions in which the doctors were in the concentration camp, where they were detained, M. Siredey concludes his report by confirming the testimony of Captain Hamilton, Dr. Elliott, and Mr. Austin, that the medical officers of the allied armies detained in Germany are not for the most part entrusted with any medical duty. They share the common lot of prisoners of war. They receive the pay to which they are entitled very irregularly; sometimes not at all. Some have suffered ill treatment, and they have frequently witnessed unkindness and positive inhumanity. In Belgium the same disregard of the Convention was shown by the Germans. In the seventh report of the Belgian Commission of Inquiry numerous instances are given of firing on doctors and ambulance men, the bombardment of hospitals, and similar atrocities. The Medical Inspector-General of the Army reports in a letter to the Commission, dated September 22nd, that the enemy detained at Liége some members of the medical staff, though they were not being employed, and sent others to Germany. Other members were detained at Namur. He adds that "the 'Ober-Arzt' declared that it was to the interest of the Germans to prevent our medical men from rejoining the army at Antwerp, in order that it might be deprived of sanitary help—'sickness and epidemics being for them a trump to the good'"! It is believed by many that the conduct of the Germans in the present war is more barbarous than it was in 1870, but at a recent meeting of the Société Médicale de Paris many stories were told on the authority of men like Alphonse Guérin and Giraldès of murder and robbery perpetrated against doctors who were under the protection of the Red Cross. The only change due to forty-four years of intensive *Kultur* appears, according to M. Tuffier, to be a greater refinement of cruelty. In the present war medical officers who have been captured have not only been stripped of their cloaks, but have been robbed of their crosses and even of their spurs. It is not only common soldiers but the "supermen" who command them who act like savages; this is perhaps only natural considering the mental and moral atmosphere in which they live and move. But it must grieve all who think nobly of the medical profession that German doctors should fall to their level.

It was announced in the British Medical Journal last year that Sir Clifford Allbutt had written a book entitled *Arterial Disease and Angina Pectoris*, which was to be published in the autumn by Messrs. Macmillan and Co. We are asked to state that the book was ready, but its publication was prevented by the outbreak of the war. The book, which is in two volumes, is in print, but like so many other literary enterprises of great pith and moment, it is "hung up" for the present, and we believe the publishers do not see their way to issue it in the spring. We hope that a work which embodies the ripe experience of so eminent an authority will be given to the world before very long.

Medical Notes in Parliament.

Parliament met on Tuesday after the adjournment on November 27th. The time of both Houses on that and the following day was almost entirely occupied in the discussion of the degree to which the Opposition shared the responsibility of the Government in respect of the war, and in the preliminary consideration of the business to be taken. On the motion for the adjournment on Wednesday, Lord Robert Cecil asked a question with regard to the attack on the hospital ship *Asturias*, inquiring whether it was clearly marked as a hospital ship, and whether the Government proposed to call the attention of neutral powers to the incident. The Parliamentary Secretary to the Admiralty, Dr. Macnamara, said that at 5 p.m. on February 1st, a submarine with conning tower showing fired at the *Asturias* a torpedo, which missed. The ship was painted white, with a green band and red crosses which were illuminated. She had been notified as a hospital ship to the belligerents by the War Office in accordance with the Convention signed at the Hague on October 18th, 1907, by Germany among other Powers. Article I of the Convention provided:

> Military hospital ships, that is to say, ships constructed or adapted by the States for the particular and sole purpose of aiding the sick and wounded and shipwrecked, the names of which have been communicated to the belligerent Powers at the commencement or during the course of hostilities, or in any case before they are employed, shall be respected, and may not be captured whilst hostilities last. Such ships, moreover, are not on the same footing as warships as regards their stay in a neutral port.

Dr. Macnamara undertook to notify Lord Robert Cecil's suggestion to the Foreign Office, although feeling certain

that the civilized world would need no representation on the part of this country to enhance its sense of horror at this wanton outrage.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

BRITISH MEDICAL ASSOCIATION.

AT the meeting of the Council of the British Medical Association on January 27th the action of the Treasurer and Chairman of Council in authorizing a contribution by the British Medical Association of one hundred guineas to the Belgian Doctors' and Pharmacists' Relief Fund was very heartily approved, as was also the action of the Chairman of Council in causing an invitation to be addressed to the Divisions and Branches of the Association to open subscription lists. Already, as will have been seen from the lists published from time to time, many Divisions have opened subscription lists and made important contributions to the Central Fund. The list of subscriptions published below contains record of contributions received through the Exeter Division (a notably long list), the Bury Division, and further contributions from the Northamptonshire, Bolton, and Canterbury and Faversham Divisions, and a fourth list from the Shropshire and Mid-Wales Branch.

The Tower Hamlets Division of the British Medical Association has decided to open a subscription list for the fund. Cheques should be sent to Dr. W. H. F. Oxley, Honorary Secretary of the Division, 119, East India Dock Road, E., and drawn in the manner indicated on the next page.

MEETING AT LIVERPOOL.

Address by Professor Jacobs.

The meeting of the medical profession of Liverpool and district, held on the invitation of the President and Council of the Medical Institution to hear an address by Professor C. Jacobs of Brussels, took place on January 28th. It was most successful both in point of numbers and the enthusiasm displayed on behalf of the object for which it was convened. The title of Professor Jacobs's address printed on the circular sent to every medical practitioner in the neighbourhood was "Belgium and the Germans: The Belgian Medical Corps and the German Occupation."

The President of the Institution, Dr. E. W. Hope, occupied the chair. He introduced the subject in fitting terms, and admirably expressed the sentiments of those present who were eager to show their sympathy for Dr. Jacobs and his Belgian *confrères*. Dr. Hope alluded to the parlous condition in which the Belgian medical profession was, and pleaded that their condition could be materially alleviated by liberal subscriptions to the "Belgian Doctors' Relief Fund" of the Liverpool Medical Institution. Professor Jacobs was received with sympathetic enthusiasm, the audience rising and acclaiming him.

The first part of his address, "Belgium and the Germans," was delivered in French, slowly and deliberately, so that his hearers could readily follow him. The subject matter was so soul-moving that he felt he could best express himself "de son coeur" in his native tongue. He took as his theme an extract which he read from the letter of the German Intellectuals published broadcast at the beginning of the war. These Teutonic professors laboured to prove that Belgium was a geographical expression, that the Belgians were not a nation *in sensu stricto*, and that in the course of events Belgium must disappear and become absorbed by a more dominant power. The Belgians, it was said, were composed of two distinct races—the Walloons and the Flemings. The former were of Celtic and the latter of Teutonic origin, and it was alleged that history showed that the Teutonic stock was the more virile, and must in the end assimilate if not absorb nations of Celtic stock. It was this extract which Professor Jacobs eloquently combated, and in support of the national existence and persistence of the Belgians he called to witness evidence from science, literature, and art. In forceful language he repudiated the inaccurate statements of the German professors; on no occasion, and at no time did the Belgians ever evince the slightest inclination to be taken under the protection of Germany. He referred in scathing terms to their ideas of *Kultur* which had consummated the destruction of so many priceless monuments of human progress and civilization. Their scientific barbarism, their ruthless conduct, their remorseless actions alike rendered the very name of German abhorrent to all who had been unfortunately brought into contact with them during this desolating campaign in Belgium. Professor Jacobs's periods were frequently accentuated by the enthusiastic applause of his hearers. With a touching tribute to the heroic conduct of the Belgian King and the womanly devotion of the Queen, he brought this portion of his address to a close. Professor Jacobs then passed on to consider the present position of the Belgian medical profession and the German occupation. Not only, he said, had many medical men personally known to him been shot or taken as hostages, but those who had been left alone had suffered plunder, rapine, and destruction of hearth and home in the towns occupied by *ces barbares*. Surgical instruments, drugs, motors, horses, and even ornaments in their houses had been simply stolen. In many cases the patients formerly able to pay their medical advisers were no longer in a position to do so. Thus the source of professional income was strangled. Professor Jacobs also gave instances of medical men whose wardrobes had been pillaged, and owing to want of footgear were unable to carry on their daily tasks. In brief, the plight of the profession was dreadful, and the outlook gloomy. Yet he appreciated with all his heart the noble efforts the British medical profession and that of neutral countries to stem the rising tide of misery among his professional brethren. At the close of his moving and eloquent address,

Professor Jacobs showed on the screen photographs he had taken himself of the various towns, once so *riant*, now a heap of ruins. The pictures called to mind the devastation of an earthquake, so effectively have the Germans put into practice their theory of frightfulness.

A cordial vote of thanks, proposed by Sir James Barr and seconded by Dr. Frank H. Barendt, was passed amid acclamation. Professor Jacobs responded feelingly, expressing his gratitude for what Liverpool was doing for his unfortunate *confrères*.

The Liverpool Belgian Doctors' Relief Fund now amounts to over £375, but it is confidently expected that Liverpool will raise at least £500.

THE SHEFFIELD COMMITTEE.

The University of Sheffield, the Sheffield Medico-Chirurgical Society, and the Sheffield Division of the British Medical Association having called a general meeting of the medical profession in Sheffield and the district to discuss the objects of the Fund a committee was formed, consisting of the following: Professor R. J. Pye-Smith, Professor R. Favell, Professor Sinclair White, Professor D. Burgess, Professor H. R. Dean, Dr. Sophia Witts, Dr. A. J. Hall, Mr. G. Wilkinson, Mr. Graham Simpson, Dr. A. G. Yates, Dr. H. Leader, Dr. A. W. Forrest, Dr. A. Forbes, Dr. R. Gordon, Mr. W. Longbottom, Dr. E. Hargreaves, Dr. C. Wiseman, Dr. J. Stokes, and Dr. R. W. Innes Smith. Dr. A. E. Naish is acting as secretary of the fund. Donations to the amount of £141 15s. were promised at the meeting, and the committee was instructed to find out what offers of hospitality to refugees there might be from doctors in the district.

MEETINGS IN OTHER CENTRES.

In Manchester a strong local committee is being formed, and Dr. Archibald Donald, 2, St. Peter's Square, Manchester, is acting as honorary secretary. A meeting of the local medical profession will be held at an early date.

The meeting to be addressed by Professor Jacobs at Newcastle on-Tyne will be held on February 17th.

THE CENTRAL BRITISH COMMITTEE.

A meeting of the Central Executive Committee was held on January 28th at the offices of the British Medical Association, when Sir Rickman Godlee and Mr. Meredith Townsend announced the dispatch of the first box of instruments to Brussels through the International Commission for Relief in Belgium. The courier of the International Commission has taken charge of a letter to the Belgium Medical Committee in Brussels advising that committee of the contents of the box, and asking for advice as to whether similar consignments will be useful.

The question of providing clothes for the Belgian refugee doctors and pharmacists and their dependants was discussed at some length, and it was decided that steps

should be taken to organize assistance in this direction. The steps have been taken; and those willing to give wearing apparel in good condition are asked to communicate with Dr. Clément Philippe, 3, Hyde Park Street, London, W., where prepaid parcels may be sent. A voluntary group of sympathizers will assist in the distribution.

The payment of the fees for registration of the Belgian refugee doctors who may now be admitted to the Foreign List of the *Medical Register* for this country was considered, but the committee did not consider, speaking generally, that the fund should pay these fees because there seemed to be a discretionary power with the General Medical Council to reduce or remit them. A communication to this effect was made through the chairman of the committee to the President of the General Medical Council.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. These will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, in addition to subscriptions, amounting to £4,480, previously acknowledged; this sum does not include money received by the Scottish or Irish Funds.

Eleventh List.

	£	s.	d.
Shropshire and Mid-Wales Branch, B.M.A., fourth donation (per Dr. A. G. Mackenzie, Hon. Sec.)—			
Dr. Lytle	1	1	0
Dr. George G. Whitwell... ...	0	10	6
British Milk Products Company.....	61	5	11
Mr. Pridgin Teale...	5	0	0
Bradford Medico-Chirurgical Society (per Dr. H. Johnstone Campbell)	25	0	0
Col. W. T. Martin, M.D....	1	1	0
Mr. L. A. Dunn, ...	10	0	0
Dr. Walter K. Hunter	5	0	0
Mr. Walter Thompson	5	5	0
Dr. Wm. Mearns ...	1	1	0
United Hospitals Club (per Dr. J. R. Bosworth, Hon. Sec.)	25	0	0
Col. Harold Hendley, M.D., I.M.S. ...	2	2	0
Mr. Hugh M. Rigby..	2	2	0
Dr. I. K. Hermon ...	0	10	6
Mr. A. W. F. Le Dain	1	1	0
Mr. C. P. Crouch ...	2	2	0
Dr. Eardley Holland	2	2	0
Dr. E. Hyla Greves	1	1	0
Dr. Lambert Lack ...	4	4	0
Dr. P. C. W. Laws ...	1	1	0
Bury Division, B.M.A., Members and Friends (per Dr. P. F. Braithwaite, Hon. Sec.)—			
Dr. R. Crompton...	1	1	0
Dr. F. B. G. Holmes	1	1	0
Dr. H. G. Deans ...	1	1	0
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Drs. J. W. and A. M. Johnson...	1	11	6
Dr. J. M. Johnson	0	10	0
Dr. H. Lawrie ...	1	1	0
Dr. G. A. Jelly ...	1	1	0
Dr. H. E. Strathy	1	1	0
Dr. A. Lucas ...	1	1	0
Dr. P. F. Braithwaite	1	1	0
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Mr. Harold Chapple	2	2	0
Mr. J. A. Thornton	1	1	0
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Mr. A. C. Roper ...	5	0	0
Mr. R. A. Worthington	2	2	0
Mr. B. Dyball ...	3	3	0
Fleet Surgeon H. W. D. Walsh	2	2	0
Mr. R. J. Andrews	0	10	0
Dr. R. D. Stokes ...	0	10	0
Dr. Massy Alleyne	0	10	6
Dr. J. W. Hodgson	1	1	0
Dr. E. O. Kingdon	1	1	0
Dr. R. Martyn ...	1	0	0
Dr. J. A. Pereira...	1	1	0
Dr. J. Mortimer ...	1	1	0
Mr. R. V. Solly ...	1	1	0
Dr. H. Davy ...	2	2	0
Dr. H. Andrew ...	2	2	0
Dr. J. D. Harris ...	1	1	0
Dr. A. Ash... ...	1	1	0
Dr. Mabel E. Gates	1	1	0
Dr. J. W. Miller ...	0	10	0
Dr. M. Cutcliffe ...	1	1	0
Dr. C. H. Berry ...	1	1	0
Dr. A. W. Hunt ...	0	10	0
Dr. L. H. Tosswill	1	1	0
Dr. J. R. R. Pollock	1	1	0
Dr. E. Archer ...	3	3	0
Dr. W. Ashford ...	1	1	0
Dr. C. E. Liesching	1	1	0
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Dr. G. H. Hanna...	1	0	0
Dr. J. R. Thomas	1	1	0
Dr. W. F. Thompson	2	2	0
Dep. Insp.-Gen. S. W. Vasey, R.N.	1	1	0
Dr. C. Beesly ...	1	0	0
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Dr. H. W. Furnivall	1	0	0
Mr. G. A. Wright	1	1	0
Dr. R. Walker ...	1	0	0
Dr. P. M. Deas ...	5	5	0
Dr. J. F. Wolfe ...	2	2	0
Dr. W. Scott Campbell	1	1	0
Dr. J. H. Iles ...	1	1	0
Dr. E. J. Pollock...	2	2	0
Dr. J. A. Bell ...	1	1	0
Dr. C. G. E. Bennett	1	1	0
Dr. R. Eager ...	2	2	0
Dr. F. Ellis ...	1	1	0
Dr. C. H. Maskew	1	1	0
Dr. F. A. Roper ...	1	1	0
Dr. J. A. Goard ...	1	1	0
Dr. D. K. Muir ...	0	10	6
Dr. Bertha Mules	1	1	0
Dr. C. H. Wise ...	0	10	6
Dr. R. L. Patterson	0	10	0
Dr. C. Fenwick ...	1	1	0
Lieut.-Col. Weston, R.A.M.C. ...	1	1	0
Dr. Charles Gordon Gibson	1	1	0
Dr. A. N. Davis ...	1	1	0
Dr. W. Gordon ...	5	5	0
Dr. J. H. E. Jerrard	2	2	0
Mr. J. M. Ackland	1	1	0
Dr. J. H. Whaite...	1	1	0
Dr. J. S. S. Perkins	1	1	0
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Dr. R. Hedden ...	1	1	0
Northants Division B.M.A. (per Dr. Hichens, Hon. Sec.)—			
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Dr. F. S. D. Hogg ...	1	1	0
Dr. William Skelly...	1	1	0
Mr. Percy Flemming	3	3	0
Mr. Waren Tay ...	1	1	0
Mr. R. C. Bailey ...	5	5	0
Dr. F. S. Macintosh	1	1	0
Dr. T. T. Whipham	3	3	0
Mr. C. A. Ballance ...	3	3	0
Mr. George Morgan	1	1	0
Birmingham Local Committee (per Dr. R. Saundby, Hon. Sec.)—			
Dr. and Mrs. John Frew, proceeds of whist party ...	8	0	0
Dr. Robert B. Coleman	2	2	0
Dr. J. G. Emanuel	2	2	0
Dr. W. A. Loxton	2	2	0
Dr. W. J. McCardie	2	2	0
Dr. W. Fraser Annand ...	1	1	0
Dr. G. F. Blake ...	1	1	0
Dr. Fred. H. Haynes ...	1	1	0
Dr. B. Seymour Jones	1	1	0
Dr. Ina S. McNeill	1	1	0
Dr. G. Hyde Melson	1	1	0
Dr. R. Arthur Newton ...	1	1	0
Dr. B. Lewis Paton	1	1	0
Dr. H. C. Quirke	1	1	0
Dr. N. O. Roberts	1	1	0
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Mr. T. Tickle ...	2	2	0
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Peterborough Pharmacists' Committee, collected by, second list (per Mr. J. W. Bodger):			
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Mr. C. H. M. Baxter	0	5	0
Mr. J. Palmer ...	0	5	0
Mr. J. R. Ball (second contribution) ...	0	2	0
Dr. D. Charteris ...	0	10	0
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Mr. E. Thomas ...	1	1	0
Mr. G. S. Dean ...	1	1	0
Mr. J. Kershaw ...	1	1	0
Mr. L. Etherington	0	10	6
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Mr. S. Hall ...	0	10	0
Mr. J. R. Smalley..	0	5	0
Mr. A. F. Corfe ...	5	0	0
Mr. J. R. Cave ...	1	1	0
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Mr. C. Thompson	2	2	0
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Mr. A. Yeates ...	1	1	0
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Mr. T. H. Butler...	0	10	6
Mr. W. H. Richardson	0	10	6
Mr. T. Batty ...	0	10	0
Mr. O. T. Edwards	0	5	0
Miss M. E. White	0	5	0
Mr. D. R. Whitley	0	5	0
Mr. Sidney S. Brown	1	1	0
Dr. J. W. Browne ...	1	1	0
Dr. Langdon Brown	2	2	0
Dr. C. Hubert Bond	2	0	0
Bolton Division, B.M.A. (per Dr. Dr. O'Neill, Hon. Sec.)—			
Dr. J. Young ...	2	2	0
Dr. R. H. Robbins ...	1	1	0
Canterbury and Faversham Divn., B.M.A. (per Mr. Neil Robson, Hon. Sec.)—			
Dr. J. S. Clark ...	1	1	0
Sir Wm. H. Bennett, K.C.V.O.... ...	5	0	0
Victoria (Australia) Medical Benevolent Assocn. (per Dr. Edward L. Gault, Hon. Sec.)...	100	0	0

INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments, contributed by the following donors since the publication of the last list:

Dr. Robert Sinclair, Dundee.
Dr. R. H. Rowell, Newcastle-on-Tyne.
Dr. Beckett Overy, London.
Dr. H. M. Morgan, Lichfield.
Dr. Ethel Lamport, per Miss H. F. Gethen, Long Sutton, Winchfield.

THE WAR.

ANTITYPHOID INOCULATION.

THE following statistics show the number of cases and deaths from enteric fever in the British troops and Indian troops of the Expeditionary Force, and in the former case their relation to antityphoid inoculation. It will readily be understood that there is considerable difficulty in the case of troops in the field in accurately determining whether a man suffering from enteric fever has been inoculated within the period of two years, and with the two doses which are regarded as affording effective protection. The figures here given have been carefully prepared, and were reported to the Director-General by Colonel Sir William Leishman on January 20th, 1915:

Incidence and Mortality from Typhoid Fever in the Expeditionary Force since the Commencement of Operations.

	Cases.	Deaths.	Death-rate per Cent.
British Troops:			
Not inoculated within two years.	305	34	11.11
Inoculated—one dose within two years	83	1*	1.20
Inoculated—two doses within two years	33	0	0.00
Indian Troops:			
Not inoculated	23	3	13.04
Total	444	38	8.55 (average).

* Excluding a second inoculation done within the incubation period.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

SOME INDIAN HOSPITALS.

The Lahore Hospital.

AT one time there were three hospitals for native Indian troops in the immediate neighbourhood of Boulogne, but a little before Christmas one of them—the Lahore General Hospital—moved to a town not far from the place where the battle of Crecy was fought. The surrounding country lies low and at this time of the year looks somewhat marshy; the town itself, however, lies at a good elevation on an abrupt hill, and is esteemed healthy. The military hospital now established there affords about the only evidence offered by the town that not merely martial law, but war itself, prevails in the Pas de Calais. Lying somewhat off the beaten track and on a branch line of railway, and being in itself a very small town, it has no attraction for either the British or French troops other than the few large and well-constructed buildings it contains. One of these—an institution which appears to be a kind of cross between Sandhurst Military Training College and the Duke of York's School for Soldiers' Sons, formerly at Chelsea, now at Dover—has been converted into a hospital for Indian troops. To such purpose it lends itself excellently, for its buildings, standing on four sides of a large square, provide a large number of well-warmed dormitories, dining halls, and class-rooms, as also plenty of lavatories and a series of hot shower baths, such as form part of the complement of some public elementary schools in England. Taken as a whole, this hospital is better off in the matter of housing and surroundings than any of the very many numerous British hospitals now at work in France, and it can provide about 700 beds. At the time of my visit between 300 and 400 beds were already occupied, and the officers were busy completing the fitting up of their operating theatre, *x*-ray room, dispensary, clinical laboratory, and other desiderata. Everywhere such work takes time, and in France, where skilled labour is at present difficult to obtain, the task of getting it done taxes to the full the ingenuity, energy, and resources of all concerned. At the Lahore Hospital the officer in command, Lieutenant-Colonel Bamfield, though he described himself as getting on very slowly, seemed to have already succeeded in providing himself with all the essentials of hospital work, and the wards and their occupants at any rate looked quite comfortable.

The Meerut Hospital.

Of the two Indian hospitals in the immediate neighbourhood of Boulogne, the one at Hardelot—the Secunderabad General Hospital—I have not yet seen. It is reputed to enjoy excellent quarters in hotel buildings, but their arrangement as a hospital was not yet complete when last I was in its neighbourhood. The other—the Meerut Hospital—has been established much longer than either of its fellows, and for a good many weeks has been doing much credit to the Indian Medical Service. The buildings occupied by it lie on the edge of the downs, overlooking modern Boulogne, and are of themselves of interest. They are not far from the column dedicated to *La Grande Armée*, and it is easy to imagine Napoleon's cocked hatted officers—even le Petit Caporal himself—using them as quarters, and impatiently awaiting therein the moment—never to arrive—when wind, weather, and other circumstances should allow of their landing their men at the bottom of the white cliffs visible in fine weather across the Channel. At this date perhaps, and certainly later on, the property belonged to the Jesuit fraternity which here carried on one of the largest of its many establishments; the buildings include a vast oblong erection and ecclesiastical architecture faced with carved stone, and a plaster-faced annexe of probably older date. The fire which occurred a few years ago left the smaller building little damaged, and several big ground floor rooms in the larger one remained still habitable. Consequently the utilization of this ruin as a hospital proved feasible; little by little improvements in the buildings have been effected, heaps of fallen stones removed, the grounds tidied up, woodwork repainted, linoleum laid down, a sufficiency of stoves installed, and the wards made to look, as in fact they are, thoroughly comfortable. There are two operating theatres, both airy and well lighted, an *x*-ray department, and a general reception-room, in which all patients are examined on arrival with a view to deciding to what part of the building they shall be assigned. This room is provided with ingeniously constructed benches. At each of their ends is an upright which, after rising about 2 ft. 6 in. from the ground, spreads out into a horizontal arm. The benches can thus be used either as seats or as stretchers, as the circumstances of the moment may dictate. It seems not improbable that this method of building benches will be adopted elsewhere in the fitting up of receiving-rooms in military hospitals. There was also evidence of thoughtfulness in the preparations that were being made at the time of my visit for turning to advantage the spaces left vacant around the buildings by the removal of rubbish and masses of fallen stone. They seemed to indicate the possession of a landscape gardening instinct on the part of one or other of the senior officers (Majors Wall, Goodbody, and Nesfield).

The *x*-ray department was established in a hut in the grounds and differed from most installations in one important particular. The electricity employed was drawn, not from a public main, but manufactured in the department itself by means of a small petrol engine and a dynamo. The whole of this plant was, I gathered, arranged and put up by the medical officer in charge of the department (Captain D. B. McGrigor, R.A.M.C.). If so, his past experience must have differed from that of many *x*-ray workers, for in my experience comparatively few possess a practical knowledge of the purely electrical side of their work. This is, no doubt, due to the fact that the great majority of all *x*-ray work has hitherto been done in towns, where sufficient knowledge of electricity to utilize a well-arranged switchboard is practically all that is necessary for electro-therapeutic work of the highest kind.

This hospital is nominally a stationary hospital, that is to say, its conventional accommodation is for 200 patients. In reality it provides for five or six times that number, and can do so quite easily, because in the grounds have been erected a series of wood and galvanized iron huts for the reception of various special classes of patients. Practically speaking, in short, the Meerut Hospital does not

conform to any regulation type and in effect is a combination between a general hospital, a convalescent dépôt, a rest camp, and isolation wards for cases of infectious disorders. It would appear that the native Indian troops are prone to acquire minor zymotic diseases, such as mumps, and that, though typhoid fever appears to be a rare disease among the majority of Indian adults, Gurkha and other regiments recruited from among hill tribes seem to require and benefit by prophylactic antityphoid inoculation just as much as do white troops stationed in India.

Organization of Indian Hospitals.

In the matter of organization and administration the Meerut and all other hospitals for Indian troops in France present a good many departures from the established customs of corresponding establishments in India. The staffs, as a rule, include two or three officers drawn from the R.A.M.C., and use is made of a limited number of trained European orderlies, some of whom generally act as ward masters, while others perform duties with which the personnel of an Indian hospital has in ordinary times no occasion to familiarize itself. The general dieting arrangements are of a kind to which Indian troops are accustomed, but there are almost no restrictions imposed in the matter of extras and medical comforts. Apart from the presence of European ward masters, when these are employed, the executive work of all wards is carried out much as in India itself. Officers belonging to the second grade of the Subordinate Medical Department (subassistant surgeons), who hold a professional qualification, perform the duties commonly entrusted to house-surgeons in civilian hospitals in Great Britain, while the general nursing work is in the hands of the Army Bearer Corps and ward orderlies, the latter being fighting men drawn from various regiments. Each ward, too, has its own beestie, or water carrier, its own sweeper, and other servants, who perform duties which only low caste natives will undertake.

Alike from a professional and administrative point of view these hospitals well repay study, but those who enter them in search of the picturesque are doomed to disappointment. An ordinary military hospital ward, with its vivid colouring of red blankets, white sheets, crimson-caped nurses, and more or less numerous vases of flowers, makes an appeal to the eye such as can never be rivalled by a colour scheme consisting in the main of a study in brown relieved only by the dull blue of the Indian patient's bedgown. In other matters, I do not know that the administrator of an Indian hospital in France has much reason to envy his colleague in charge of those for white troops. The methods he has to adopt are somewhat different, but he "gets there" all the same. Nevertheless, his difficulties must often be very great; even the difference between the terms used in the British and Indian armies respectively must sometimes be a source of woe when requisitions are in question; and when hospitals have to be extemporized he and his staff must depend on the assistance of native subordinates who, in addition to being far from their natural environment, seem rather lacking in the initiative, adaptability, and handiness so common among the non-commissioned officers and men of the Royal Army Medical Corps.

DRINKING WATER SAFEGUARDS.

As might be deduced from the highly satisfactory character of the enteric fever returns, great care is being taken in the matter of seeing that the drinking water used by men of the Expeditionary Force shall always be of good quality. The precautions employed are numerous, and in dealing with supplies which there is reason to regard as suspicious the army medical authorities, though they use the bleaching powder process very largely, are not placing reliance on any one method of water purification exclusively. Officers of the R.A.M.C. are very carefully trained in this matter, and of the different methods available they are expected to employ that best suited to the circumstances at the moment. The methods in actual use include, I believe, sterilization by means of electrically produced ultra-violet rays. It would be quite in keeping with the eternal fitness of things that this, the most modern of all methods of dealing with suspicious water, should be adopted in the camp of the most modern of all soldiers, namely, those who form the Aviation or Royal Flying Corps; and in respect of one division of this corps this was the case as long ago as October. The fact was mentioned in one of these notes at the time, in connexion with a brief account of an ultra-ray sterilizing plant at the hospital which the American colony in Paris had then recently established in the Lycée Pasteur just outside the Neuilly Gate. Whether the military use of the system is likely to increase to any considerable extent is another question. Ordinary units of an army in the field rarely have command of considerable quantities of electricity.

As for the method itself, it has long been known that ultra-violet rays are strongly bactericidal, and there seems to be no doubt that the plants available for domestic supplies are convenient to use and quite efficient. There would also seem reason to suppose that the method can be adapted to the needs of large towns. At all events, a French company, which controls the water supply of a good many French towns, has lately taken up the system, and is erecting a large plant for the municipality of Boulogne. For the moment this is of an experimental character, but I understand that the municipality has agreed to take it over if the bacteriological and other tests prove satisfactory. The installation is of a simple character: apart from switchboard and electric connexions, it consists of an iron drum, about 4 ft. long and some 24 in. in diameter, inserted in one of the water mains. Inside the drum are three large mercury vapour lamps, and in proximity to these the water circulates. On the rate at which it circulates depends the extent of the sterilization of the water; even if the water remains within reach of the rays only as long as a second or two 95 per cent. of the contained micro-organisms, including all those of the *B. coli* family, are stated to be destroyed. The rate of circulation can, of course, be varied at will by increasing or lowering the pressure, while a plant big enough to deal with any desired quantity of water daily can be provided by adding to the length of the exposure cylinder and increasing the number of lamps. The apparatus includes an appliance which the moment ultra-violet rays cease to be produced, sets a bell ringing loudly and extinguishes a red lamp on the switchboard. As for working costs and the amount of electricity consumed, I am told that a current of one and a half kilowatts for every 50 cubic metres of water sterilized each hour is an ample allowance. The cost in France of a kilowatt is generally about a penny an hour, and 50 cubic metres of water are equal to about 1,100 gallons of water.

"FROST-BITE."

A FREQUENT cause of invaliding among soldiers in the siege war now being waged in the flooded trenches of Flanders is "frost-bite." Although the cold has not yet been intense enough to cause the terrible results described by Larrey, the amount of disablement, apart from the suffering entailed on the men, is serious enough to justify the attention it is receiving from medical observers. Several communications on the subject have appeared in the JOURNAL, and further discussion may be expected. In the meantime it may be of interest to present a summary of Larrey's observations.

LARREY'S EXPERIENCE.

We may remind readers that Larrey was Surgeon-in-Chief to Napoleon's Imperial Guard and one of the few doctors who enjoyed the great Emperor's confidence. He was a man of shrewd judgement, and his experience of military surgery has probably never been equalled. In the third volume of *Mémoires de chirurgie militaire et campagnes* (Paris, 1812) Larrey devotes a special essay to the dry gangrene caused by cold. This *gangrène de congélation*, as he calls it, was one of the worst troubles the surgeons had to deal with after the battle of Eylau, which was fought on February 8th, 1807. Only a small number of the men of the advanced guards escaped. In some the gangrene was limited to the epidermis of the toes or heels; in others the mortification attacked the tissue of the skin more deeply over a greater or smaller extent, causing the loss of toes or of the whole foot. Larrey notes that although for some days before and after the battle the men had been exposed to the most severe frost, they did not suffer in their extremities. The Imperial Guard in

particular had stood in the snow, hardly moving for more than twenty four hours, yet not one of the men had his feet frozen. Then suddenly the temperature rose several degrees and a thaw set in. At once a number of the men felt intense pain in the feet and numbness, heaviness and tingling in the extremities. The affected parts were dark red in colour, but not much swollen. In some cases there was slight redness towards the base of the toes and on the dorsum of the foot; in others the toes had lost movement, sensibility, and heat, and were already blackened and dried up. Those who went to the fires of the bivouacs to warm themselves suffered most; the wounded in the field hospitals escaped because they had no chance of doing this. The progress of the disease was rapid, but it seldom extended beyond the toes and only rarely spread above the malleoli. Larrey insists that sphacelus of the foot must not be confused with gangrene of the skin. It often happened, he says, that a greater or less extent of the skin of the foot became mortified, without the vessels, deep nerves, tendons, ligaments or bones becoming gangrenous; in that case the patient felt pain when the subjacent parts were touched, but he could move his feet, and the internal heat was preserved. Sphacelus, on the other hand, deprived the limb of movement, sensibility, and all the properties that characterize life; the patient could not feel his foot, and it seemed to him that a foreign body hung to his leg. If the mortification was superficial, the eschars usually became detached between the ninth and thirteenth days, leaving a sore which quickly healed. If the whole of the limb was necrosed the patient succumbed to the sepsis which followed the separation of the eschars.

Larrey expresses the belief that unless the patient has been exposed to the influence of the cold long enough to produce local asphyxia, and unless a second "sedative or narcotic cause" such as alcohol is co-operating with it internally, the partial or general gangrene does not occur while the cold lasts. Travellers pass the Alps and the Pyrenees in the most rigorous cold without evil consequences as long as the temperature does not change. The Poles choose the time when the frost is likely to last to go on long and difficult journeys by caravan, but they dread such journeys at the times when the temperature is variable. During Napoleon's campaign in Holland a large number of men had their feet "frozen," but this happened only when thaw set in. Larrey therefore holds that cold is only a predisposing cause, the sudden application of heat being the determining factor. When the affected parts have already lost mobility and natural heat, and sensibility is blunted, frictions with snow and melted ice are the best means of exciting the paralysed vessels to healthy action. He recommended that the circulation should be maintained by the successive application of spirituous and camphorated tonics, the gradual administration of cordials internally, dry and hot friction over all the body, and continuous but moderate exercise. If there were no snow or melted ice handy he advised that coarse cold red wine, vinegar, and camphorated brandy made cold by plunging it into spring water should be used instead. In hopeless cases amputation when the line of demarcation had formed was, he said, the only course open to the surgeon.

"BIO-KINESIS."

A caricature published recently in one of the French papers showed a soldier lying on his back with his bare feet propped up high above his head against a wall. The legend was: "This may be very good for the feet, but it is very damp for the back." It referred to a method of preventing leg weariness and frost-bite, to which its inventor, the late Dr. Lucien Jacquet, physician to the Paris hospitals, gave the impressive name "bio-kinesis." The tired man was directed to take his boots off, flex the hip to a right angle with the trunk, and resting his heels against a wall, a tree, or the side of a trench, or, failing such conveniences, the back of a comrade, to work his toes and ankle-joints, and, if possible, the knee also, vigorously for five or ten minutes. In this way, Jacquet said, discomfort in the joints, pains in the muscles, and the feeling of heaviness due to long marching were quickly removed. The good effect was attributed to improved blood circulation, and he alleged that even if there were not time to take the boots off it did some good. One of his pupils, Dr. François Debat,[1] has recently recommended it in the treatment of frost-bite and also for its prevention. The pathogeny of the condition which the British are calling frost-bite and the French *gelure*, is for Dr. Debat, as for the majority of those who have studied it during the last few months in northern France and Flanders, vaso-constriction produced by cold due to frost or the evaporation from wet boots and socks, followed by vaso-dilatation. He observed that warm baths made the condition worse, and that rest in bed with cotton-wool dressings did not relieve the symptoms. He argued that the aim should be to improve the circulation, and that the way to do this was by gentle massage, and resort to Jacquet's leg gymnastic. He induced his patients for five minutes in every hour, by day presumably, while lying on their backs, to raise the lower limb, holding it up with their hands, and to work the toes and ankle rapidly and energetically. The rest of the time the patient lies in bed with the foot slightly elevated. No dressing was applied to the foot unless ulceration was present. The movements, Dr. Debat argues, stimulate the arterial circulation, and combine with the elevation of the limb to empty the veins. He relates two cases, chosen, he says, out of many equally successful. In one, a soldier aged 40, robust but alcoholic, had sustained two years ago a fracture of the left leg, which remained very sensitive to cold. On December 4th he suffered severely from cold in the left foot; when he was relieved he could not walk, and the foot was swollen, burning, and painful. After ten days in hospital the symptoms were worse; he then came under the care of Dr. Debat, who found the foot oedematous, the skin tense and hot, but not discoloured, except on the sole and three first toes where there was a big ecchymosis; the man complained of darting and burning pains, and there was complete anaesthesia of the sole and toes. He could not bear any weight on his foot. The foot was massaged twice a day, and he went through the gymnastic described. In two days the oedema had subsided, the pain was less, and sensation was returning. In six days sensation was nearly normal, pain had almost ceased, and he could walk without difficulty. The other case was similar, but there was no oedema. There was, however, a small ulcer under the great toe. The man was treated on the same plan, at once began to improve, and on the seventh day the ulcer had healed. The method of treatment, as has been hinted, has excited some ridicule, but there seems to be a good deal of common sense in it.

HOME HOSPITALS AND THE WAR.

THE MANCHESTER MILITARY HOSPITAL.

WHEN it was announced at the beginning of the war that it was intended to equip a special military hospital (2nd Western) in Manchester with over 500 beds, there was a feeling expressed that Manchester was too far away from the base of operations to be of any great value as a centre for a military hospital. But as a matter of fact, it has been proved by experience that the transit of patients can now be accomplished so expeditiously and safely that Manchester has actually become one of the chief military hospitals of the country, and already treatment has been given to 8,200 sick and wounded men of the Expeditionary Force. This is in addition to the soldiers of the home troops who have received treatment. The original number of 520 beds at the Whitworth Street Hospital has now been extended to 843, and in addition to these there are in the district over 100 auxiliary, civil and private hospitals, which can provide 3,313 beds, making a total of 4,226 beds available for military purposes. The extent of the work that is being done is further shown by the fact that the clerical work alone requires a staff of fifteen men.

No fewer than fifty-nine special ambulance trains have already been sent to Manchester, each having cots in two tiers running the length of the train on both sides, with compartments for patients who are able to sit up. Each train is in charge of an officer of the R.A.M.C., and is provided with a small operating theatre and dispensary, in addition to a kitchen, where food can be cooked for the journey from Southampton, which is generally accomplished in about seven hours. The time of greatest pressure occurred at the end of October, when, it is stated,

[1] *Bull. de l'Acad. de Méd.*, January 12th, 1915.

there were something like 7,000 wounded at Southampton in need of beds. A special effort was then made in Manchester, and in two successive days no fewer than 823 sick and wounded were admitted into the Manchester hospitals. In the early stages of the war the cases sent to Manchester were all, except about 5 per cent., cases of wounded; but since the advent of the bad weather nearly one-third of the arrivals have been cases of sickness due to exposure, including over a hundred cases of frost-bite. The total deaths only number forty-five, and eleven of these have been due to tetanus; of the latter number seven were Belgians who had not been previously inoculated with antitetanic serum. Of the patients, 33 were German wounded prisoners, and 1,270 were Belgian soldiers.

The Enlargement of the 2nd Eastern General Hospital, Brighton.

Since the 2nd Eastern General Hospital (T.F.) was ordered to be mobilized on August 5th, 1914, with its full complement of 520 beds, it has been very considerably extended. There are now five branches—at the Brighton and Hove Grammar School in Dyke Road, at the Howard Convalescent Home, and at St. Mark's Council School (both at Kemp Town), at the Stanford Road Council School, and in Lewes Crescent. The three first named are for surgical, the other two for medical cases. The total number of beds in the five buildings is 1,000. In addition, cases are sent to the Royal Sussex County Hospital, the Eye Hospital, and the Red Cross Hospital; in this way another 150 beds are available.

There are four operating theatres, which are used not only for the treatment of wounded men from the front, but also for the performance of operations on men from the large number of military camps at Shoreham, Seaford, Uckfield, Crowborough, and other places in the neighbourhood. For these men a great many operations—such as for the radical cure of hernia, excision of varicose veins, radical cure of hydrocele, appendicitis, etc.—are constantly being carried out.

It is quite likely that later on considerable further extensions to the hospital may be made by the War Office, and thus Brighton, which already has in addition to the 2nd Eastern General Hospital the great Indian Hospital with its 3,000 beds, will be one of the largest centres for the treatment of wounded in this country.

The following are notes of some cases of wounded men under treatment in the hospital.

Compound Fractures from Bullets.

There have been a large number of compound fractures from bullets, either shrapnel or rifle. Nearly all have been septic, and their treatment has presented many very difficult problems. First, the question of exploration has to be considered. Some authorities recommend the free opening up of all septic compound fractures, with the removal of all loose and detached fragments. The object of this is to prevent these detached fragments from subsequently necrosing, and keeping open sinuses which may later on require extensive operations for their removal. Although this may be true in many cases, free exploration is quite unnecessary in many instances. Every case must be judged on its merits, and those in which the sepsis is slight often heal quite well without any operative procedure.

Fixation is a very important matter. Practically all authorities are now agreed that in septic compound fractures, screws, wires, pegs, plates, or any other similar fixation apparatus are bad. Other methods of fixation must be adopted, and great ingenuity has been shown by French surgeons among others in contriving splints for keeping the fractured ends in apposition. Amputation is rarely necessary for gunshot fracture. The deciding factor here is the amount of injury to soft parts rather than the extent of damage to the bone.

The treatment adopted at the hospital has been mainly to remove loose pieces if necessary, to ensure good drainage, and to fix the bones by some apparatus. The treatment of compound fracture of the thigh has been one of the most difficult problems, for it is by no means easy to find a proper support. Thomas's splints, double Liston's joined by cross pieces, and Hodgen's splints seem to have done well in individual hands. Probably no one form is suitable for every case, and each must be managed on its merits. At any rate, the treatment adopted has been so far successful that practically no major amputations have had to be performed for compound fractures, and the results, both anatomical and physiological, have been quite satisfactory.

Penetrating Wound of the Chest.

In one case the bullet entered the root of the neck, just above the left sterno-clavicular articulation, passed downwards, outwards, and backwards, and made its exit at the angle of the scapula on the same side. The only evidence of any wound of the lung, beyond the direction of the bullet track, was slight haemoptysis, lasting twenty-four hours, but the patient presents what is not an unusual after-effect of bullet wound of the lung—namely, dyspnoea—on slight exertion. This is said to be due to pleural adhesions, or to contraction of the scar of the bullet track. It is quite a troublesome symptom, causing the patient marked disability, and has been often known to last for a considerable time.

In a second case the bullet entered just external to the angle of the twelfth rib, and passed out above and external to the nipple. It must have traversed both liver and lung. All the signs of fluid in the chest—dullness, absence of breath sounds, fremitus, and voice sounds were present. A needle was inserted, and simple pleural effusion was found. This will require aspiration, as it is in considerable amount.

Severe Shrapnel Wound of the Arm.

A man had his hand so injured by shrapnel that it had to be amputated. In addition, the outer aspect of the shoulder-joint was blown away to such an extent that the joint capsule was exposed. Happily the articulation was not infected, and the patient is doing well.

"Frost-bite."

Many cases of "frost-bite" have been admitted. All tell the same tale. They are from the trenches near Ypres, and had to stand for days at a time during the bad weather at the end of November, with practically no intermission, in wet, cold, and slushy trenches, with no opportunity of drying their feet. With one exception in which the hand was affected all the cases were in the feet, and varied in degree; some were in the first stage only, like huge chilblains; others had advanced to the condition of gangrene. In one case the gangrene extended half way up the metatarsus, in both feet, and eventually amputation will be required.

Secondary Haemorrhage.

Secondary haemorrhage occurred from the wound in a man who was shot through the upper arm. This was treated by ligature of the bleeding point in the wound, but haemorrhage recurred, and amputation of the arm was performed.

In another a bullet had traversed the arm, and the patient appeared to be doing well. Suddenly, without any warning, furious bleeding from the wound occurred. The brachial artery was the vessel at fault, and so excessive was the haemorrhage that it was fatal almost at once, before anything could be done.

Varicose Aneurysm of the Popliteal Artery.

In the textbooks, varicose aneurysm is said to be quite a common result of small bore bullet wounds. It is caused by the simultaneous injury of an artery and its companion vein, the artery being only partially divided. Among the cases admitted from the front so far, this condition has been very rarely observed. In one patient who was shot by a rifle bullet through the popliteal space, both exit and entry wounds were quite small and soon healed. But there was an expansile, pulsating swelling in the course of the popliteal artery, over which there was a loud rumbling bruit, and a thrill. The pulsation ceased on compression of the artery above. Arterio-venous communications in the popliteal space owing to the fact that the artery and vein are in close connexion with one another and firmly bound together, are more usually of the nature of an aneurysmal varix than a varicose aneurysm. The treatment so far adopted has been to rest the leg. Owing to the tendency for the sac to enlarge, ligature of the artery above and below the sac, without opening it, was performed with a successful result. Proximal ligature of the artery is very liable to be followed by gangrene of the limb.

Fracture of the Lower Jaw on Both Sides.

In this case the bullet passed through the ramus of the lower jaw on one side, cut away the front half of the tongue, and passed out through the other side of the jaw. Injuries of the tongue itself by bullets are not very common. They are generally caused by a bullet passing through the mouth, shattering the jaw, and injuring the tongue in its passage. In one case under treatment the bullet actually lodged in the tongue, a most unusual occurrence.

Compound Comminuted Fracture of the Clavicle.

In this case the ball entered the front of the neck, just above the centre of the clavicle, and passed almost directly backwards. As there was a sinus which did not heal, and septicaemia with a temperature of 105°, and in addition slight repeated secondary haemorrhages, a hunt was made for the missile. Very considerable difficulty was experienced in finding it, but it was at last discovered and removed, and the patient is doing well.

Wound of the Spinal Cord.

A man was shot through the back, the bullet entering on one side, at the lumbo-dorsal junction, and making its exit at a corresponding point. It caused complete loss of motion and sensation below, with incontinence of faeces and paralysis of the bladder. On admission, three months after being wounded, the following was his condition: Complete loss of the functions of the cord, considerable emaciation, especially of the legs, and pyrexia. He had an enormous bedsore over the sacrum and well-marked cystitis. Suprapubic cystotomy had been performed in France, and the urine was constantly dribbling through the opening. He is being treated by washing of the bladder with boracic lotion and giving hexamine internally. A catheter is kept in to prevent the bladder distending, and it is hoped thus that the suprapubic opening will close. Directly this has healed sufficiently firmly the catheter will be removed and passed several times a day. Every effort is being made to get the bedsore to heal up, but the prognosis is grave. Laminectomy has been suggested, but none of the indications for this operation laid down by Mr. Makins (excessive pain above the paralysed region, or an incomplete or recovering lesion, with good evidence of pressure or irritation by displaced bone or the retention of a bullet) is present.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Killed.

H.M.S. *Viknor*, armed merchantman, was lost with all hands off the north coast of Ireland, about January 20th, probably by a mine. She carried one medical officer, Surgeon Vernon Lickfold Matthews, R.N. He was educated at the London Hospital, and took the diploma of M.R.C.S. and L.R.C.P.Lond. in 1906. After filling the posts of house-surgeon in the general wards, and subsequently in the ear, nose and throat department of the London Hospital, and of clinical assistant to medical out-patients in the Great Ormond Street Hospital for Sick Children, he entered the navy as surgeon on May 19th, 1911. He was posted to the *Viknor* on November 25th, 1914.

NOTES.

WARM CLOTHING.

So many societies have been formed for the purpose of supplying each British ship and regiment with winter clothing and all the little luxuries that mean so much to men on active service that there is a risk of these well-meant efforts overlapping and the energies of the workers being diverted into the wrong channel. This danger had been recognized by the Emergency Voluntary Aid Committee, composed of members of the Empress Club, which now offers to act as a clearing house for similar associations not possessing the same facilities for knowing in what quarters their gifts are most likely to be of use. An interesting account of the manifold activities of the Committee is to be found in the first number of *Rough Notes*, a small periodical published for the benefit of members of the Empress Club, and a cordial invitation is given to intending donors to visit the club work-rooms, whence a constant stream of comforts of every kind for the army and navy, the base hospitals at home and abroad, hospital ships, and Belgian refugees, has issued during the last five months.

MEDICAL OFFICERS WANTED.

East Anglian Casualty Clearing Station, Ipswich.

THERE are vacancies for two medical officers in this unit for foreign service. Pay and allowances as for R.A.M.C., also uniform and kit allowance. Those who have held hospital appointments and surgical experience preferred, and previous military experience is an advantage. Applications should be addressed to Lieutenant-Colonel W. A. Gibb, M.D., R.A.M.C.(T.), Officer Commanding, Drill Hall, Woodbridge Road, Ipswich.

Highland Mounted Brigade Field Ambulance, and Cameron Highlanders.

Medical officers are urgently needed for service with the Highland Mounted Brigade Field Ambulance. There is also a vacancy for a medical officer for the 4th Reserve Cameron Highlanders. Full information regarding pay and duties can be obtained on application to Captain A. Mowat, Commanding Highland Mounted Brigade Field Ambulance, R.A.M.C., Drill Hall, Rose Street, Inverness.

West Lancashire Casualty Clearing Station R.A.M.C.(T.).

There is one vacancy for a junior officer to complete the establishment. Applications should be made to the Officer Commanding West Lancs Clearing Station, Kendal.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE MANCHESTER ROYAL EYE HOSPITAL.

AT the annual meeting of the Manchester Royal Eye Hospital, which was held on January 28th, attention was drawn to the fact that this is the centenary year of the institution. The first home of the hospital was a small house in King Street, Manchester, which was rented for £25 a year, and, after several removals to more convenient premises, the building in John Street was first entered into in 1867, and it was in that year the permission was given for the use of the word "Royal" in the title of the institution. For about twenty years the John Street premises sufficed, but as the reputation of the hospital spread and the patients increased, it was found necessary, while still retaining the hospital in John Street as an out-patient department, to build the present hospital in Oxford Road, which was formally opened in 1886 and considerably extended in 1908. Since the first establishment of the hospital over a million patients have received treatment, the yearly number having risen from about 1,800 in 1815 to an average of something like 40,000 during the last few years. During the past year about 25,000 out-patients were treated at Oxford Road and over 14,000 at John Street; the total was about 580 less than in the preceding year. The accident cases treated at the two institutions numbered 9,523, which is an average of about 30 a day. The in-patients admitted at Oxford Road numbered 2,544, which is a decrease of 122. The decrease in the number of patients treated is attributed partly to so many men being away on military service and partly to the closing or short time at many of the works and mills from which accident cases are sent. In the report of the treasurer it was stated that the ordinary expenditure exceeded the ordinary income by £665, and the extraordinary expenditure was £235 more than the extraordinary income, making a total deficit on the year of £899. It is now announced that, in view of the centenary, several handsome gifts have recently been received. Since the outbreak of the war the board of management has offered to provide 19 beds for soldiers and sailors. This offer has been gladly accepted by the War Office, and already 27 soldiers have been admitted as in-patients.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

DUBLIN CASTLE MILITARY HOSPITAL.

THE emergency Red Cross Hospital in Dublin has been opened. It provides 250 beds, and the Presidents of the Royal Colleges of Physicians and Surgeons have borne testimony to the excellence of its equipment. The success of the scheme is due to the efforts of the Dublin branch of the British Red Cross Society, which has had the cordial support of the Viceroy and Lady Aberdeen. The members

of the medical units of all officers' training corps in Dublin have been recognized as official surgical dressers to the hospital.

FORSTER GREEN HOSPITAL FOR CONSUMPTION.

At the annual meeting of Forster Green Hospital for Consumption in Belfast on January 26th reference was made to the handing over of the out-patient dispensary to the city authorities, who are enlarging it and founding similar ones in other parts of the town. The average length of stay of patients in the hospital had increased from ten and a half weeks in 1913 to thirteen and a half weeks, which proved of help in consolidating the "cures." On admission 109 cases were classified as incipient, 32 as moderately advanced, and 82 as advanced; of these, 186 were improved by the residence, and in a number the disease seemed to be arrested.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

EDINBURGH MEDICAL MISSIONARY SOCIETY.

THERE was a large attendance at the annual meeting of the Edinburgh Medical Missionary Society on January 28th, for the interest of the friends of this old-established society had been quickened by the uncertainty prevailing as to the safety of Dr. Mackinnon of Damascus and of two of the nurses at Nazareth. It was known that the society's hospitals in Damascus and Nazareth were in the hands of the Turkish army, and that all the equipment had been seized, but there was still doubt as to the fate of some of the medical and nursing staff. Emeritus Professor Crum Brown, the president of the society, who occupied the chair, was able to inform the meeting that Dr. and Mrs. Mackinnon and Nurse Morgenstern of Damascus, who had been detained at Beirut (Dr. Mackinnon, it was feared, as a hostage), had safely reached Egypt. Dr. and Mrs. Scrimgeour and their two children (recovering from typhoid) had arrived at Cairo a few days after the outbreak of hostilities on the part of the Turks. With regard to the two nurses (Johncock and Croft) still in Nazareth, it was reported that their services were being utilized in the care of Turkish soldiers in the hospital there (the society's former hospital had been converted into a fort), that they had many friends among the officials, the Germans, and the populace, and that the American Ambassador in Constantinople had, at the request of the directors, received instructions from his Government to endeavour to secure their safe conduct out of the country. The directors hoped that when the war was over the hospital in Damascus would be handed back to them in a condition fit to be used for their purposes. The annual report of the society's work reflected the paralysing results of the war, for whilst there was a short letter from Dr. Scrimgeour telling of medical activities in Nazareth until the outbreak of hostilities, the space usually devoted to a record of the practice at the Victoria Hospital, Damascus, was a blank. Even at home the society's work, consisting in the training of medical students (men and women) as medical missionaries, had been curtailed; three of the present students had joined the colours. The assistant surgeons appointed to Damascus and Nazareth had been in this country when the war began, and one of them (Dr. Ian Macfarlane) was holding meantime a post in the Royal Infirmary, whilst the other (Dr. K. G. Fraser) was in the R.A.M.C. Three old students of the society also had joined the R.A.M.C. Two students who had qualified recently had received appointments abroad—one at Wenchow, China, and the other at Kikuyu, Africa; five other recent graduates were engaged in post-graduate work in this country. The two chief speakers were Dr. J. N. Turnbull of Bhandara, India, who had for a time been one of the society's agents in Damascus, and Dr. J. W. Hitchcock, a former student, whose station was now at Uburu in Calabar. Mr. W. D. Bathgate, a present student, described the work being done by his comrades and himself (the "Cowgate doctors") in the slums around the Livingstone Dispensary and Residence, and spoke of the necessity which existed in and around the Cowgate for more of the kind of work the society was trying to accomplish in that neighbourhood; at the same time he had many encouraging occurrences to relate. Three other medical men (Drs. James Ritchie, J. W. Ballantyne, and Wolfendale of West China) took part in the proceedings. The deficit on the society's funds had been reduced during the year from £1,183 to £952.

WOMEN'S MILITARY HOSPITALS.

At a meeting of the Scottish Federation of the National Union of Women's Suffrage Societies in Edinburgh last week, it was reported that two Scottish hospital units were already serving abroad. That at Creil, one of the chief distributing centres for French wounded and within thirty miles of the trenches, contained at the end of January 52 patients. The estimated cost of equipment, transport, and maintenance the present hospitals and the Calais contingent for the first six months, including the upkeep of motor ambulances, etc., was £12,000; this left a deficit of about £1,500. It is proposed when further funds are forthcoming to meet the desire of the French Red Cross Society and the Servian Government for additional contributions. These may be sent to the honorary secretary, Dr. Elsie Inglis, 2, St. Andrew Square, Edinburgh; or to the honorary treasurer, Mrs. Laurie, Red House, Greenock.

Canada.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE LATE DR. EMILY STOWE.

A BUST of the late Dr. Emily Stowe was presented to the city of Toronto on October 29th by friends of Miss Stowe, who was the first woman to practise medicine in the province of Ontario.

THE ONTARIO WORKMEN'S COMPENSATION ACT.

The question of workmen's compensation was taken up by the Ontario Government in 1910. At that time Chief Justice Sir W. R. Meredith was appointed Commissioner to gather information and report. As a result of his observations—made in the United States, England, and Germany—a bill was submitted to the Legislature about eight months ago. The Act, which is based largely upon the German law and will be administered under a commission, came into force on January 1st, and Dr. W. E. Struthers, of the Toronto Department of Education, has been appointed chief medical officer. Dr. Alexander Mackay has succeeded Dr. Struthers as chief medical officer of the public schools of Toronto. Unfortunately, in the Compensation Act no adequate provision is made for payment for medical services in case of accident or illness. More than two years ago the views on this point of the Toronto Academy of Medicine were presented to the Commissioner and application was made for a hearing; this, however, was not granted. Last year the matter was taken up again by the academy and by the Ontario College of Physicians and Surgeons, but nothing was done. Possibly, after the Act has been in force long enough to give it a fair trial, and if an amendment is then found to be necessary, consideration will be given to the claims of the profession.

TUBERCULOSIS IN THE PROVINCE OF QUEBEC.

On December 14th a deputation from the Laurentian Society for the treatment and control of tuberculosis waited on the Provincial Government with the request that the province of Quebec should grant the sum of three dollars a week for each bed in every charitable institution devoted partially or wholly to the care and support of tuberculous patients. The Premier (Sir Lomer Gouin) reminded the members of the deputation that the present time was one of particular financial stress, but promised that the matter should receive every consideration. The Government of Ontario grants $3.00 a week for each patient, that of Nova Scotia $7.35 a week, Saskatchewan $3.50 a week, and Manitoba $2.80 a week. Dr. Hugh M. Kinghorn outlined the history of the Laurentian Society from the year 1908, when the sanatorium at Ste. Agathe des Monts was built, wherein persons suffering from incipient tuberculosis who cannot afford to pay the usual fees charged by such institutions

are treated. The cost of establishing the sanatorium which has accommodation for between forty and forty-five patients, was $160,000. A fee of $8.00 a week is charged for full medical attendance and maintenance, whereas the cost for each patient amounts to $11.34 a week. The deficit each year had been subscribed by those interested in the institution; in 1913 it amounted to $6,911. During the six years 261 patients had received treatment in the sanatorium, and of these 56 per cent. are living and apparently well, 21 per cent. are still invalids, 19 per cent. are dead, and 4 per cent. untraceable. Dr. Kinghorn stated that 12,000 people died in Canada each year from tuberculosis.

Correspondence.

MEDICAL WAR PRISONERS.

SIR,—In the very interesting remarks in this week's issue[1] on "Germans and the Geneva Convention," there is one point of considerable practical importance to which no reference is made. When the five British doctors were released from Magdeburg, the German authorities stated (as reported in several papers) that they would not liberate any more of our medical men whom they had taken prisoners in the war until we did the same on our side; hence it was that I wrote the letter to the *Times* of January 21st—not in any way with reference to the regulations of the Geneva Convention—suggesting that the military authorities and the nations concerned should agree to an interchange of their medical prisoners.

If we have at present any German doctors who are prisoners of war, surely an interchange could be readily made—to the great advantage of both belligerents—between them and our doctors who are in a similar position in Germany, irrespective of whether they are Red Cross doctors or members of the R.A.M.C., and apart altogether from the regulations of the Geneva Convention.

Unquestionably the detention of doctors who have no medical duty to perform and their treatment as prisoners of war are, as is so clearly pointed out in your article, flagrant violations of the Geneva Convention; but, unfortunately, from the way the regulations of this Convention, as well as the suggestions of the Hague Tribunal, have been treated, it is doubtful if Germany, in her present temper, would listen to any appeal based on the ground of the regulations of the Geneva Convention.—I am, etc.,

Belfast, Jan. 30th. JOHN W. BYERS.

SERUM SICKNESS AND ANAPHYLAXIS.

SIR,—I was much interested in reading the letter by Dr. Gubb on antitetanic serum injection and anaphylaxis, for I have recently come across the condition of which he gives us warning. The facts are as follows: To one of the two private military hospitals of which I am medical officer a convalescent patient was sent from Aldershot. It was considered to be a case of influenza, but undoubtedly he had suffered from a mild and unrecognizable attack of diphtheria; at any rate without a bacteriological examination, as the cases of slight throats amongst the troops can be numbered by the thousand, it is very easy to miss a "carrier."

In two wards which this man occupied sore throats occurred, and one patient in each ward developed well-marked diphtheria; this patient and the alleged carrier were promptly removed to an isolation hospital, where the carrier was found to be "positive." I promptly gave all the patients who had been in contact with the "carrier" a prophylactic dose of antidiphtherial serum, those with any affection of the throat 2,000 units, and those without 1,000 units. Fully 20 per cent. of those infected had constitutional symptoms, more or less severe, occurring within three days, and three showed severe symptoms at a later date—six to ten days.

One man who had had a severe wound, supposed to have been inflicted by a dum-dum bullet, nearly succumbed. His symptoms did not commence until about the sixth day. He took to his bed, refused food, had elevated temperature and rapid thready pulse, and was in a general state of collapse. He had one attack, which, unfortunately, I did not see, but from the nurse's description it seemed to resemble more an attack of pulmonary embolism, during which he nearly died.

Before injecting the patients (about twenty in number) I asked each if he had been inoculated before. Every one had for something or other; one told me he had been inoculated eight times.

Considering the dangers of an outbreak of diphtheria in the hospital, I had to take the risk, and no fresh cases occurred. The average British soldier is medically a modern and well-treated man. He submits to numerous injections, prophylactic and otherwise, for numerous diseases. He is constantly on the move and naturally becomes in due course a patient in hospitals in all parts of the empire. He carries no records of what he has been inoculated with and consequently runs the risk of a further dose of serum and a possible anaphylaxis. As a profession, we know little of this condition; few of us know it except perhaps as a name. Seeing that practically every soldier at the front, when wounded, receives most mercifully a dose of antitetanic serum, the profession ought to realize that there will be shortly a huge body of men for whom it will be a danger to give doses of any preparation of horse serum.

Personally, I have never seen this condition before, and I expect there are many practitioners in the same condition.—I am, etc.,

WILFRED BALGARNIE, M.B.Lond., F.R.C.S.Eng.,
M.O. to the Tylney Military Hospital, Winchfield.

Winchfield, Jan. 27th.

SIR,—I am sure that Dr. Grünbaum is well justified in calling attention to the fact that "serum sickness" and "anaphylaxis" are not interchangeable terms. Serum sickness has been proved by Pirquet to be due to hypersensitiveness. The incubation period of serum sickness has been shown to be eight or nine days, during which the antibodies are formed, without which serum sickness cannot occur.

I have had one definite case of serum sickness, which occurred early in my experience of antitoxin and vaccine therapy. This occurred in a child aged 6 years suffering from a very acute attack of diphtheria. I injected 4,000 units A.D.S. The face became scarlet, urticaria developed, and dyspnoea was marked. Fortunately the child recovered both from the treatment and the disease.

I have had one definite case of anaphylaxis. The patient was being treated by autogenous vaccines for gonorrhoea, and all went well while the spacing was carefully observed. The patient was very anxious to hasten the completion of his course, and I pointed out the danger he was running, but he assumed all responsibility. Severe headache and a temperature of 105°, aching in all his limbs, followed a premature injection during the negative phase. Copious draughts of barley water and a strong diuretic mixture resulted in the disappearance of all the threatening symptoms and a return to normal in twenty-four hours.

In acute cases of organismal disease a small dose of vaccine is indicated, and a large dose is positively dangerous. The idea which obsesses the mind of the tyro is that acute symptoms require drastic measures, and I have been told not infrequently, "I gave a full dose, yet the patient seems worse rather than better," which anybody who understands the *rationale* of this treatment would expect. We cannot employ vaccines successfully by rule of thumb.—I am, etc.,

Bedford, Jan. 30th. S. J. ROSS.

THE RUM RATION.

SIR,—Until I read Sir Victor Horsley's article in the last issue of the JOURNAL I was, like most other people, I think, under the impression that the rum served out to our army in France was purely an emergency ration. When, therefore, I have been asked, as I was asked by a bishop the other day, whether or not I approved of the "tot of rum," I have replied that I did not think it harmful, provided that it be given only when hot drinks, such as coffee or bovril, are unattainable—in fact, that I did not sweepingly condemn it. I was answered that Sir Victor Horsley was very strong in his condemnation of it under any circumstances.

Now Sir Victor Horsley's reputation as a surgeon is

[1] BRITISH MEDICAL JOURNAL, January 30th, p. 218.

indisputable; but it does not by any means follow that what Sir Victor condemns is necessarily an abomination, or that Sir Victor's condemnation clinches the matter, and is the last word to be said for or against the rum ration.

Now, while I am not prepared to regard an emergency ration as an anathema and abomination as Sir Victor Horsley does, I am in entire agreement with him as to the danger and harm to the individual soldier and to the nation of the general rum ration, especially when given in addition to private consumption of alcohol.

It is true, of course, that alcohol is of no value whatever as a food, and its effect in relieving certain discomforts and incapacitating effects of cold and wet and overfatigue is not only evanescent, but tends, later, to aggravate and accentuate these same discomforts by lowering the body's resistance to them. But there are occasions when hot food and drinks, other than alcoholic, such as coffee, cocoa, etc., cannot be obtained or provided, and when something is urgently needed temporarily to bring back life to benumbed and useless limbs and shivering bodies. In such cases I see no harm, but even value, in the emergency ration, provided it be given with a distinct understanding that the effect to be produced is purely evanescent, and is only to be made permanent by the provision at the earliest possible moment of hot food or drinks other than alcoholic.

Moreover it seems to me that while there is no possible necessity for the general rum ration and that every effort should be made to do away with it, and that every effort should be made, as no doubt it is made, to supply the men in the trenches with nourishing hot food and drinks, I think that even the general rum ration, given in the quantity that it is, and strictly regulated as it is, is nothing to complain about compared with the drinking that is going on among the Territorials and recruits of Kitchener's army in this country. I have just returned from three or four days' travelling about the country, and have been greatly shocked and disgusted to see the really appalling amount of drunkenness exhibited by these men, going on or returning from leave, or moving from one part of the country to another.

Again, as a member of the medical profession, I cannot agree with Sir Victor Horsley that we are blameless in respect of the existence of the general rum ration. The officers of the R.A.M.C. are not, he says, to be held responsible, as they are alleged to be, for advising or urging the necessity or advantage of giving a general or even an emergency rum ration. Probably not; but I am not clear, and should like to be assured, that these officers have attempted to make a stand against the giving of such rations. I am loth to believe that the Army Council, whether or not the R.A.M.C. is represented on it, would refuse or has refused to listen to or be guided by the advice given them, asked or unasked, by the chiefs of the Army Medical Department, if the latter insisted on being heard.

Sir Victor Horsley points out that the latest rum ration regulation states that it (the rum ration) is to be given "when" the senior medical officer certifies that it is necessary. Sir Victor urges the regulation should read "only when," and that, if it were so worded, it is unthinkable that any senior officer could certify that such rations were necessary. Knowing, unhappily, what I do, from my experience of the family doctors of the patients in my sanatorium, of the ideas of medical men, in and out of the army, with regard to the harmfulness of alcohol and as to what constitutes a harmless allowance, and in what circumstances it is advisable to be given, I cannot agree with Sir Victor Horsley that to insert the word "only" before "when" in the regulation would stop the senior medical officer from ever certifying for the rum ration. On the contrary, I think such an alteration would make no difference whatsoever to the certifying for such rum rations. It would certainly, however, place the responsibility much more firmly on the shoulders of the senior medical officers of the R.A.M.C. than is the case at present, and, but for the absence of this word "only," I am afraid Sir Victor Horsley would find it more difficult to exonerate the Army Medical Department from responsibility.

The doctors, whether in the army or out of it, who would not sign the orders for these rations with a perfectly easy conscience are, in my opinion, in a very small minority. Were this not so, I do not believe that those responsible for the provision of the rum ration would issue it, nor do I believe that, notwithstanding the omission of the word "only," the R.A.M.C. would certify for the rum ration, as no doubt they are doing, if they held the views with which Sir Victor Horsley credits them, as to the awful effects of 2½ oz. of rum *per diem*. A man who, at all events in peace time, takes anything from 2½ oz. to, say, 10 oz. of whisky a day, is not likely to refuse to sign an order giving the soldier 2½ oz. of rum a day, or feel that he could be in any way to blame for so signing.

Sir Victor Horsley quotes statements as to deterioration in shooting, morals, discipline, etc., and would have us believe that this deterioration is the result of a ration of 2½ oz. of rum *per diem*. I do not know what the authority for these statements is, but I have never seen a man in ordinary physical and mental health in any way harmfully affected in any of these respects by 2½ oz. of good spirits a day.

I can, however, very clearly see how 2½ oz. of rum, that is the rum ration, when added to a man's private consumption of alcohol, could produce all these effects, and that is my main reason for disapproving of the general rum ration. But, above all, I should wish in the interests of the soldier and the nation to see the private consumption of liquor by the soldier (at least on active service and in training for active service) absolutely and entirely stopped, just as it is as a matter of course forbidden to the boxer when in training for a big fight.

It seems to me, however, that Sir Victor Horsley and men who, like him, talk of such a dose as 2½ oz. of rum or some other sound spirit, as producing these awful results, defeat their own very good purpose, namely, the inculcation of total abstinence, and instead of being listened to and having their advice taken because it carries the unquestionable weight of reason and proof, they lay themselves open to ridicule and, what matters far more, fail to achieve their purpose.

An *emergency rum ration* of 2½ oz., given only under the order of the General Officer Commanding, and countersigned by the Senior Medical Officer, can, in my opinion—and I have probably had a great deal more experience of the effect of varying doses of alcohol on mind and body than Sir Victor—have no harmful effect whatever, and can be and is a very decided comfort to the soldier or sailor under exceptional circumstances.

A *general rum ration* of 2½ oz. a day, provided the army were otherwise teetotal, might also be given, although with no benefit to the soldier's health of mind or body, with little harm to the majority because it is such a small dose. But for a general rum ration given to an army which is not, apart from the ration, a teetotal army, there is and cannot be any defence whatever from any point of view, because in such case many of the men will be getting every day a decidedly harmful poisonous dose of alcohol.

It is true that to a small number of the men the 2½ oz. daily ration will be a poisonous dose, and therefore, seeing that the ration is not of real benefit, for this reason alone it would be better abolished altogether. Once more, however, I should like to emphasize the fact that the alcohol consumption going on at home in spite of, or on account of, the early closing of public-houses and the life of the night clubs, are far more serious matters than the 2½ oz. rum ration in France.—I am, etc.,

J. W. ASTLEY COOPER,
Medical Superintendent Ghyllwoods Sanatorium, near Cockermouth.

February 2nd.

SIR,—It may be well to examine some of Sir Victor Horsley's assertions about rum. To examine them all would make this letter as tedious as his own.

The ration of rum is given to the soldier as a "deceptive substitute for real food." For how much of what article of diet is the rum substituted? In other words, what part of the soldier's diet is withdrawn when the rum is given? If none, then the rum is not given as a substitute.

"The rum ration is now admittedly given to the troops as an intoxicant." When and by whom has this admission been made?

"The disasters of the Crimean compaign, in which rum was regularly issued." Does Sir Victor Horsley mean that these disasters were due to the rum, and that they were

in no respect due to insufficient clothing, food, supply of all kinds, and inefficient leadership? Did he never hear of the naval campaigns of the Nile, Copenhagen, and Trafalgar, in which also rum was regularly issued?

"That all these evils [twenty-two of 'em] and increase of the difficulties our men have already to contend against on active service are the direct and invariable result of issuing the rum ration is of course well known." Of course it is—to Sir Victor Horsley. But the rest of us would like some evidence that our troops are all suffering from decadence of *moral*, grousing, friction, disorder, drunkenness, punishment, degradation in rank, decadence of observation and judgement, errors, accidents, falling out, slackness, and the other little defects Sir Victor Horsley mentions. Has he any evidence? Has he witnessed these things himself, or does he get his evidence from others? If the latter, who are they?

He quotes Regulation 34 as follows:

> On very exceptional occasions, as when the troops have been drenched or chilled through exposure in manœuvres or training, a free ration of half a gill ($\frac{1}{64}$ gallon) of rum ($2\frac{1}{3}$ oz.) may, if available, be issued under the authority of the G.O.C. when certified by the senior medical officer to be absolutely necessary for safeguarding the health of the troops.

"This regulation," says Sir Victor Horsley, "embodies a number of specific statements and suggestions which are in every instance incorrect." The regulation does nothing of the kind. It embodies but one statement—that in certain circumstances a ration of rum may be issued—and if this is incorrect, what has Sir Victor Horsley to complain of? We may gather, from the gross inaccuracy of this assertion of his which we can check, how much credit to attach to those that we cannot.

"It follows . . . that . . . every soldier should have the rum thus absolutely ordered by the doctor." I find nothing in the regulation about absolutely ordering rum. Will Sir Victor Horsley kindly explain how rum is to be absolutely ordered, and what the difference is between absolutely ordering rum and relatively ordering rum?

Sir Victor Horsley evinces a zeal for the good name and reputation of the medical profession which is a welcome change from his treatment of the prison medical officers, but a further reform is needed before we can be convinced of his conversion. It scarcely conduces to the good name and reputation of his profession for a Captain R.A.M.C. (T.F.) to make a furious attack upon the King's Regulations which he has bound himself to obey. The violence of a man who is drunk upon $2\frac{1}{2}$ oz. of rum, if that is possible, is unpleasant to witness, but I do not know that it is more distasteful than the verbal violence of a Habakkuk Mucklewrath, inebriated with the exuberance of his own fanaticism.—I am, etc.,

Parkstone, Dorset, Feb. 2nd. CHAS. A. MERCIER.

THE STOPPAGE OF ALCOHOL IN DELIRIUM TREMENS.

SIR,—The reviewer of Dr. Mercier's *Textbook of Insanity*, referring to my letter in your issue of January 30th, states "(1) that every sober regular drinker of alcohol in any form must needs acquire a *marked degree* of tolerance, though he does not suffer from total abstention." (Italics mine.) Surely not. Marked or high degrees of tolerance can be acquired only by drinking, which, in addition to being regular and prolonged, is also excessive. The temperate or moderate drinker can acquire only slight tolerance, and there can be no reason why he should suffer to any extent through sudden abstention.

All the evidence I have collected shows that delirium tremens arises as a result of a large and sudden fall in the amount of circulating alcohol in one who has established high tolerance; that it arises in no other way, or, in other words, that such large and sudden fall is an essential factor in the complication.

But that is by no means to say (1) that delirium tremens is always caused by sudden withdrawal or retrenchment of alcohol; (2) that many regular and excessive alcoholists who have acquired high tolerance cannot suddenly abstain without incurring the complication; (3) that all attacks of delirium tremens can be aborted by alcohol; or (4) that it is possible in all cases by first establishing high tolerance and then suddenly withdrawing alcohol, deliberately to produce delirium tremens.

In the first place, the sudden fall in circulating alcohol may result from a sudden failure of absorption, as undoubtedly occurs quite frequently when severe vomiting sets in, and uncontrollable vomiting often results from an outburst of drinking more excessive than usual, and possibly there are other ways in which a failure of absorption may arise. Again, many excessive alcoholists with high tolerance can be suddenly cut off without any serious consequences. Obviously in every case of delirium tremens at least two factors are involved—namely, the aforesaid sudden fall in circulating alcohol, and the resistance of the patient thereto; and the latter is often so great that the former is powerless to cause delirium. True analogies are, of course, to be found in tuberculosis and other infections. But in practice it is safer to ignore these cases since they cannot always be foreseen, and to taper carefully in all cases of high tolerance. A further reason for this rule is that it is not always, though often, possible to abort by the administration of alcohol an attack of delirium which has actually commenced.

It is highly probable that this factor of individual resistance to the special cause of delirium tremens—namely, the sudden fall in circulating alcohol—can be lowered or raised in many ways. For example, there seems no doubt it can be markedly lowered by the administration of strychnine and atropine; hence these drugs are now never used in the Norwood Sanatorium so long as there remains any question of delirium arising. On the other hand, narcotics of many kinds probably raise the power of resistance, and so enable some patients to escape an attack of delirium which would otherwise have arisen from the sudden withdrawal of alcohol.

The question of food in cases of impending delirium tremens has not seemed to be of much importance, except in so far as any excess may cause vomiting and consequent difficulty in the administration of alcohol. When tapering is carried out the appetite returns in two or three days, and so also does the power of digestion.—I am, etc.,

Beckenham, Jan. 31st. FRANCIS HARE.

SIR,—I have seen delirium tremens treated by the withholding of alcohol, by the gradual diminution, and by putting the patient on ordinary asylum diet and letting him run about in a refractory yard—all ending in recovery.

The pathology which appealed to me was that which explained the phenomena in the same way as the delirium of starvation, the delirium called the typhoid state, etc. There is starvation of tissue, which is often seen with sleeplessness. The obtaining of sleep with good nourishment and surroundings has brought all, including the patient with delirium tremens, most quickly to a rational and healthy being. The continuation of alcohol with good surroundings, as in an inebriate retreat, may bring sleep, as alcohol is somewhat of a soporific. Many will remember the huge doses of alcohol given in pneumonia and in typhoid. But, although I am not a teetotaler, I think convalescence is very much prolonged.

The fact that delirium tremens continues along with excessive drinking is quite enough to disprove the theory that it comes with the stoppage of alcohol. It is not uncommon to see it disappear with a single night's sleep, without other drugs, except a dose of Epsom salts if required. Good food is necessary. Most patients I have seen with delirium tremens I have seen simply drinking ardent spirits and eating next to nothing.

The above contains only common knowledge, but I think it is a pity the pages of the JOURNAL should be filled with article after article without a reference to knowledge at hand.—I am, etc.,

London, W.C., Feb. 1st. J. REID.

SIR,—About two years ago a medical friend said to me: "The cause of delirium tremens is an excess of alcoholic antibodies in the circulation." I gather from Dr. Hare's letter in the JOURNAL of January 30th that this is also his opinion. It would be interesting to know what alternative view can be brought forward by those who withhold alcohol in cases of delirium tremens.—I am, etc.,

February 2nd. A. C. T.

COLOUR VISION THEORIES.

SIR,—I must confess that I strongly object to the tone adopted by Dr. Percival. I call upon him to produce a single fact in support of any of his statements. Let me take them one by one. He first states that I failed to distinguish between mixing colour sensations and mixing coloured pigments. Will he kindly point out by quotation where this confusion is made? He now states: "I find that he shows a similar want of discrimination between simultaneous contrast and successive contrast effects." I have never mentioned successive contrast in connexion with the Benham top at all.

Perhaps it would be better if I put my solution of the Benham top in simpler language. My solution depends upon the fact which I discovered—that the well-known Purkinje phenomenon was to be found for limited areas of the retina as well as for the whole. When we go from a light to a dark room the eye becomes in a condition in which it is more sensitive to green light than it was before; when, therefore, the eye has been viewing the black portion of the Benham top, it becomes more sensitive to the green rays which are reflected from the white portion. The white, therefore, is really seen as pale green, and the black lines appear red through simultaneous contrast. He next states, in reference to my explanation of Benham's top, quoted on January 16th, "What impression does he intend to convey to his readers by the expression 'red-green'"? If the reader will refer to the quotation, he he will find that I have not used the expression "red green" at all! Mr. Devereux Marshall could, if he had wished, have given equal evidence in support of my theory, as, for instance, foreign textbooks in which it is given preference as explaining the facts more satisfactorily than any other, or when it was discussed at the International Medical Congress at Budapest very freely in two sections, not only without a single word of adverse criticism, but with the strongest approval.

Gladstone states that *ξανθός* was applied by Homer to chestnut, auburn and bay, and not to yellow. Homer used *ἰοειδής*, violet-coloured, for the sea, which it often is, especially in the Mediterranean. Then violet-like is used as an epithet for iron. What term could better describe the colour of many iron implements? He also refers to the iron heaven; and the sky, especially towards evening, is often a deep violet. Finally, the term is applied to wool, which would be correct if it had been dyed violet. Gladstone suggests that wool dyed to a deep purple would not be an unlikely interpretation. Gladstone alludes to "the curious travelling backwards and forwards of so many of Homer's colour-epithets, between a real red at the upper end of the scale and some very deep purple at the other."

Not only has Dr. Percival not given a single fact against my theory—and I may mention that the large number of readers of the BRITISH MEDICAL JOURNAL who have spoken to me about the correspondence are in complete agreement on the point—but Dr. Percival's objection, as I showed in my last letter, was strongly in support of my explanation.—I am, etc.,

London, N.W., Jan. 30th. F. W. EDRIDGE-GREEN.

SINCE our correspondents admit, as we understand, that they are not experts on Homeric Greek, we invited a scholar of competence in the matter to read the article in the JOURNAL of January 9th and subsequent correspondence, and to give us his opinion. He has been good enough to write as follows:

Dr. Edridge-Green's position that Homer's vision was dichromic is open to several objections. In the first place it seems to involve an assertion that one Homer wrote and composed every line of the *Iliad* and the *Odyssey* as we now have them; but this is not merely an untenable doctrine—it has never at any time been maintained. If, again, he merely postulates unity of authorship of the Homeric poems, this theory, though well supported and perhaps sound, has against it so many distinguished names that it cannot safely be made the basis of a dependent theory concerning colour vision. Further, he overlooks the unquestionable fact that the Homeric poems do recognize yellow (*ξανθός*, *χρύσεος*), and green or greenish-yellow (*χλωρός*).

On the other hand, it is, in my judgement, impossible to accept Mr. Percival's view that neither *ἰοειδής* nor *πορφύρεος* describes any definite colour; *ἴον* (*Od.* ε. 72) cannot mean a white flower, and does mean probably the violet (*Viola odorata*), or (as Ruskin has suggested), the blue or purple iris, and if it means either the one or the other, *ἰόεις* and *ἰοειδής* must indicate a corresponding colour. As to *πορφύρεος*, it means, in my opinion, purple. Leaf, who is inclined to depreciate the Homeric colour vocabulary, says that the word "is used of what we call the 'cold' colours, from blue to violet." Sometimes, no doubt, it appears merely to signify that the object referred to is dark or gloomy, but the adjective *κυάνεος*, formed from a substantive (*κύανος*) denoting a dark blue material, is similarly used.

The only facts material to the controversy which seem to emerge from a study of the Homeric poems are that the author uses colour language somewhat vaguely, and that he does not distinctly recognize either bright blue or bright green. On the other hand, *ἰόεις* and *ἰοειδής* may be thought to indicate a brighter hue than *πορφύρεος* and *κυάνεος*; *χλωρός* is used of bushes; and *χλωρῆις* (said of the nightingale) seems to mean "living in the green wood." And it is to be observed that (so far as I am aware) the Greek language has no word for bright blue, unless it be *ἀέρινος*, which does not appear to have been used in the sense of sky-blue until the second century after Christ, and that the only words signifying green are *χλωρός*, *πράσιος*, or *πράσινος* (which must mean primarily leek-green), and *βατράχειος* (frog-green), which seems to be a comic word.

The signification of the word *γλαυκός* in the Homeric poems is uncertain, but in later Greek it does appear sometimes to mean light blue.

It should be understood that some of the matters dealt with are highly controversial. This fact alone seems to render it undesirable that any attempt should be made to rest a physiological argument upon an Homeric basis.—M. G. D.

THE DIAGNOSIS AND TREATMENT OF PARENCHYMATOUS SYPHILIS.

SIR,—Having been prevented by duties in another section from taking part in the discussion on the above subject at the recent Aberdeen meeting, may I, now that the discussion has been published, add a short contribution to it?

I note that the consensus of opinion of those who took part in the discussion was to the effect that the treatment of parenchymatous syphilis by intrathecal methods had yielded no better results than conventional antisyphilitic measures, and that none of the speakers had succeeded in rendering a positive reaction of the cerebro-spinal fluid negative. In a paper published in the JOURNAL[1] I refer to three cases of tabes in which this result was rapidly achieved, and I have had similar cases since. Only last week a tabetic patient presented himself for a third intrathecal treatment. Before the first injection in May of last year the fluid gave a positive reaction to the Wassermann and globulin tests, and a pleocytosis of fourteen. Six weeks after, before the second injection, the Wassermann and globular reactions were negative, and the cytosis had fallen to three. The fluid was, in fact, normal. A recent examination, that is, more than six months after the second injection, shows that this improvement has been maintained. All three examinations were made by Dr. Braxton Hicks. This patient, a level-headed professional man, is satisfied that he has in all respects greatly improved since he came under treatment, and is more than by anything else impressed by the fact that his brain works better than it did before treatment and by the improvement in his vision.

The results obtained by the intrathecal treatment will necessarily differ according to the technique employed, and it is desirable that in all publications on the subject this should be described in detail, as also the changes effected in the cerebro-spinal fluid, affording as they do the most accurate test of the efficacy of the treatment. Before every intrathecal injection a specimen of this fluid should be secured, and a record made of the Wassermann reaction, the lymphocyte count, the globulin reaction, and the percentage of albumin.

Records should also be made of the effect of treatment as regard such clinical features as cannot be influenced by suggestion, for example, the light reflex, the knee-jerks,

[1] March 14th, 1914. See also a letter to the JOURNAL, May 9th, 1914

and the patient's weight. Observations on the former two demand particular care, and should always be checked by a second observer.

By comparing the results obtained by different methods in a large number of patients we may hope to discover the most efficient one.—I am, etc.,

London, W., Jan. 31st. HARRY CAMPBELL.

THE DEARTH OF RESIDENTS FOR HOSPITALS.

SIR,—May I appeal through your columns for help in carrying on the work of this hospital? It is possible there may be doctors who, if they knew of the difficulties under which hospitals are now labouring, would be willing to come into residence and help them during this temporary crisis. We have exhausted all the regular methods of obtaining resident doctors, and unless we can procure such help, we shall be compelled to close a large part of the establishment, which at the present time would be a great calamity for the sick children of this neighbourhood.—I am, etc.,

W. M. WILCOX,
Secretary.

East London Hospital for Children, Shadwell, E., Feb. 1st.

BELGIAN STUDENTS AT CAMBRIDGE.

SIR,—The medical profession, as generous as ever, has supplied me with enough copies of *Gray's Anatomy* to satisfy the present needs of the Belgian students at Cambridge. The publisher and editor have increased my sense of gratitude by presenting some copies of the new edition.—I am, etc.,

Cambridge, Feb. 3rd. A. E. SHIPLEY.

Obituary.

BASIL GORDON MORISON, M.D.Edin.

WE regret to record the death of Dr. Basil G. Morison, of Islington, which occurred on January 28th. He received his medical education at the University of Edinburgh and graduated M.B., C.M. with first class honours in 1878; in 1892 he took the degree of M.D. For a time he was assistant demonstrator of anatomy in the University of Edinburgh. After settling in the north of London, he became medical officer to the provident department of the Metropolitan Hospital and surgeon to the Holloway and North Islington Dispensary. He was treasurer of the Aesculapian Society and a Fellow of the Royal Society of Medicine. During his career he contributed several important papers to current medical literature.

Although his colleagues were aware that he had been off duty and was quietly resting for the last three months, yet it was not generally known that he was seriously ill, and his passing came as a surprise.

For many years Dr. Morison has taken a prominent part in all medical matters connected with the St. Pancras and Islington Division of the British Medical Association. Every effort made for the increase of social intercourse among medical men or the advancement of scientific work found in him a staunch supporter. When the insurance controversy arose he threw himself into it with unsparing vigour. This gave him a wider sphere of influence, but probably led him to work beyond his strength. He fought the medical clauses of the bill consistently and persistently, in season and out of season, believing that they interfered with the freedom both of the doctor and the patient. This belief he held to the end. His was a fight for freedom. The members of the Division in which he lived showed their confidence in him by electing him their chairman. They also sent him to represent them on the council of the Metropolitan Counties Branch, and for the last two years the Division appointed him to the Representative Meeting. In all these capacities he did splendid service. He had the pen of the ready writer, and he was ever willing to use it for the good of the profession. At public meetings and private meetings, among his friends in the Division, and at the Represensative Meetings his voice was heard on the side of every good cause. Although he felt the strain of all this extra work, yet he laboured on with unwearied devotion, seeking above all things to do his duty.

His colleagues recognized in him a man of strong convictions, high ideals, and transparent integrity. They respected him, and those who knew him best loved him most.

JOHN BROWN BUIST, M.D., B.Sc., F.R.C.P.Edin.

DR. J. B. BUIST died suddenly in Edinburgh on January 28th. He had suffered for some years from heart trouble, but had not made any special complaint until the afternoon of the day of his death, when he said to his wife that he would have preferred to have remained quietly in the house, but felt that he must go to his work as vaccinator at the dispensary; his duties having been accomplished there successfully, he went on to visit a patient, was taken ill in the house, and died before medical help could reach him. Dr. Buist was near the close of his 69th year. He was the son of a farmer near Newburgh in Fife, where he was born. He received his medical education in Edinburgh in the University and the Royal College of Surgeons, graduating M.B. in 1867, C.M. in 1870, and M.D. in 1871; he took the degree of B.Sc. in Public Health in 1902, was elected a Member of the Royal College of Physicians in 1878 and a Fellow in 1879. He was also a Fellow of the Royal Society of Edinburgh. For a time he lectured on general pathology in the Extramural School of Medicine; but he devoted his life with enthusiasm to vaccination. He was physician and vaccination officer to the Western, the Livingstone, the Provident, and the New Town Dispensary, and he was the Local Government Board teacher of vaccination. His chief writings were all upon vaccination, although he contributed an obstetrical article of value to the *Transactions* of the Edinburgh Obstetrical Society, of which he was a Fellow. He wrote upon "Vaccinia and variola, a study of their life-history," in 1878; upon "The life-history of the micro-organisms associated with variola and vaccinia" in 1886; upon "The microbes of vaccinia" in 1900, and upon "Recent advances in our knowledge of some pathogenic micro-organisms" in 1901. There is some reason for thinking that his work on the bacteriology of vaccinia and variola has hardly received the attention it deserves. Dr. Buist was twice married. The funeral took place on February 1st.

Universities and Colleges.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on January 28th, Sir Thomas Barlow, Bt., K.C.V.O., the President, being in the chair.

Announcements.

The President announced that he had appointed Dr. Sidney Coupland to be the Harveian Orator, and Dr. J. Michell Clarke to be the Bradshaw Lecturer for 1915, and that the Council had appointed Dr. Samson J. Moore (M.O.H. Huddersfield) to be the Milroy Lecturer for 1916.

Election of Members.

The following gentlemen, having passed the required examination, were admitted Members of the College: Jivraj Narayan Mehta, M.D.Lond., L.R.C.P., John Tattersall, M.D.Lond., L.R.C.P., and William Wilkinson Uttley, M.B., Ch.B.Vict., L.R.C.P., (Lymm, Cheshire).

Licences.

Licences to practise physic were granted to 114 gentlemen who had passed the necessary examinations.

Diplomas in Public Health.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to:

Chandry, Kishori Lál, M.B., B.S.Punjab, Punjab and University College; Chohan, Noormahomed Kasembhai, L.M.and S.Bomb., Bombay and Cambridge; Fankhauser, Herbert William, M.B., Ch.B.Melb., Melbourne and R. I. Pub. Health; Marlin, Thomas, M.D., Ch.B.Glasg., Glasgow and University College; Ross, Lucy MacBean, M.B., Ch.B.Glasg., Glasgow and University College; Shinnie, Andrew James, M.D., Ch.B.Aberd., Aberdeen and University College.

Election of Councillors.

Dr. A. G. Barrs, Dr. H. G. Turney, Dr. H. Morley Fletcher, and Dr. L. Humphry were elected Councillors.

Election of Representatives.

Sir Francis Champneys, Bt., was re-elected a representative of the College on the Central Midwives Board for one year from April 1st next.

Sir Dyce Duckworth, Bt., was re-elected a representative member of the Court of the University of Liverpool.

Dr. J. H. West was re-elected a representative member of the Court of Governors of the University of Birmingham.

Mr. Mark Lemon Romer, K.C., was elected a senior standing counsel to the College in the place of Lord Parmoor.

After some further formal business the President dissolved the Comitia.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examination indicated:

FIRST COLLEGE (*Part IV, Practical Pharmacy*).—W. Agar, P. A. Ashcroft, C. M. Burrell, W. J. Dearden, H. G. Dresing, D. C. Farquharson, W. V. Gabe, S. C. Ghose, G. D. Gripper, D. P. Guilfoyle, C. G. W. Hahr, R. W. Hodgson-Jones, L. Horsley, H. L. Hughes, J. S. Lewis, E. S. Mawe, G. S. Mitchell, I. Mortada, C. C. Okell, H. P. Price, T. L. Price, E. D. Richardson, E. S. Rowbotham, E. W. L. Sharp, Edith G. Sherwood, F. H. Smith, M. D. B. Tonks.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

DEPUTY INSPECTOR-GENERAL S. F. HAMILTON has been granted a Greenwich Hospital pension of £50 a year in the vacancy created by the death of Staff Surgeon H. H. Smith.

TERRITORIAL FORCE.

THE Territorial Decoration has been conferred upon the following officers of the Territorial Force who have been recommended for the same under the terms of the Royal Warrant, dated August 17th, 1908: Colonel James Harper, M.D., of the Army Medical Staff, Lieutenant-Colonel John J. O'Hagan, M.B., F.R.C.S.I., of the 1st West Lancashire Field Ambulance, and Major Henry D'A. Blumberg, attached to the 7th Battalion, King's (Liverpool Regiment).

CONDITIONS OF SERVICES OF MEDICAL OFFICERS.

LIEUTENANT-COLONEL JOSIAH OLDFIELD, Commanding 3rd (Reserve) East Anglian Field Ambulance (Dean's Court, Peterborough) writes: In spite of the various documents that have been issued explaining the duties and privileges that are being given to medical men taking a commission either for foreign or home service, I find that, owing to the numerous inquiries that have reached me, a great number of men hesitate to join either the regular army or the Territorial Force because they have personal problems which seem to them difficult of solution.

May I through your columns renew my offer of willingness to answer questions from men wishing to take any part in the present war, and to send applicants a copy of the paper that I read before the R.A.M.C. College on the difference between the work in a field ambulance and that of a regimental medical officer?

Owing to some extension of the age limit, a number of men whose services would be of the greatest value at the present time for treating the troops, and who are now eligible, have hitherto refrained from applying for a commission.

While the work of an R.A.M.C. officer at the front is full of excitement, it must not be forgotten that the duties of those who elect for home service are also full of interest, and that those who enjoy outdoor life and want to renew their youth and vigour by learning horsemanship or taking up anew their practice in riding, which has been lost in so many cases by the advent of the motor car, should remember that an R.A.M.C. officer's life in England gives the finest possible opportunities in these directions, as well as a delightful comradeship in work.

Public Health AND POOR LAW MEDICAL SERVICES.

THE NOTIFICATION OF ANTHRAX.

THE city coroner (Dr. F. J. Waldo) recently concluded a protracted inquiry, at the Southwark coroner's court, into the death from anthrax, on December 17th, of a butcher's manager named Charles Tarrant, of Mitcham, Surrey. The deceased was under treatment at Guy's Hospital, and in the same ward was a lad coming from the same neighbourhood, and also suffering from anthrax. The boy recovered. Later, the coroner received information that a man died from anthrax at Croydon General Hospital, and was buried on December 18th. The local coroner was not notified in that case. The deceased, Tarrant, showed a pustule on his neck to the son of his employer; this man also became infected, but recovered under treatment.

Dr. T. M. Legge, H.M. Medical Inspector of Factories, said that Guy's Hospital voluntarily notified all cases of anthrax received there. The law required all cases occurring in factories and workshops to be notified, but butchers' shops did not come within that category. Local authorities could make anthrax compulsorily notifiable; this was done in Bradford, and he thought it a wise policy. In order to obtain information of all cases, the Home Office had arranged with the Registrar-General to forward copies of the death certificates in all cases of anthrax to the chief inspector of factories. He agreed that coroners should be notified also. An inquest was useful in calling attention to the danger. Even when death did not occur, cases should be notified to the medical officer of health.

Dr. Legge did not agree with a suggestion made at the opening of the inquiry that the source of infection was the skins of frozen rabbits imported from Australia or New Zealand; the source was more likely to be fresh meat, and the Coroner read a letter from the High Commissioner of New Zealand, stating that there had not been a case of anthrax in the Dominion since 1907, and that it had never been traced to rabbits.

The jury returned a verdict of "Death from anthrax," adding that the evidence did not show how the disease was contracted. They added a rider that all cases of illness from anthrax should be compulsorily notifiable to the local authority, and that all deaths should be reported to the local coroner.

The Coroner said he agreed with the rider, and would send copies to the Local Government Board and other authorities.

Medical News.

UNDER the title of *The Minor Horrors of War*, Messrs. Smith, Elder, and Co. will publish a number of the articles by Dr. A. E. Shipley, the Master of Christ's College, Cambridge, which, since the beginning of the war, have appeared in the BRITISH MEDICAL JOURNAL. These articles deal with various insect and other pests, which cause disgust, discomfort, and often disease amongst our troops now fighting in all quarters of the globe. The book, which will be fully illustrated, will be issued in February.

DR. ANNARATONE, Surgeon-Captain in the Italian army, has been appointed private physician to the Emperor of Abyssinia. According to *Il Policlinico*, the previous holders of this important post have been Germans or French.

DR. M. S. PEMBREY, lecturer on physiology at Guy's Hospital, will open a discussion at the Royal Sanitary Institute, on Tuesday next, on tall *versus* short men for for the army. The chair will be taken by Surgeon-General Sir W. Launcelotte Gubbins, K.C.B., at 7.30 p.m.

AT the instance of the Professional Classes War Relief Council the Lord Mayor of London has summoned a public meeting at the Mansion House on Tuesday, February 16th, at 4 p.m., to consider how distress among the professional classes attributable to the war can best be prevented or relieved. Among the speakers will be the Archbishop of Canterbury and Sir Edward Clarke, K.C.

THE Austrian Academy of Sciences has awarded to Professor Wagner v. Jauregg a prize of £250 for his researches on goitre.

A CONFERENCE of Belgian architects, municipal councillors and others will be held at the Guildhall, London, on February 11th and 15th, to consider the subject of the rebuilding of Belgium. Among the speakers will be M. Hallepute, the Belgian Minister of Agriculture and Public Works, and Mr. Herbert Samuel, President of the Local Government Board. There will be an exhibition of plans, diagrams, etc., in Gray's Inn Place, and during the conference a visit will be paid to garden city and suburb and municipal schemes. The conference has been arranged by the International Garden Cities and Town Planning Association in conjunction with the Town Planning Institute, the Royal Institute of British Architects and the Surveyors' Institute.

THE Hunterian Oration before the Royal College of Surgeons of England will be delivered by the President, Sir W. Watson Cheyne, on Monday, February 15th. Among the course of lectures arranged for 1915 is one by Mr. Harry Blakeway on the treatment of hare-lip and cleft palate on February 17th, and one on February 19th by Mr. F. C. Pybus on some infections of the tonsil. Professor Arthur Keith will give on February 22nd, 24th, and 26th, and March 1st, 3rd, and 5th six lectures on the anatomy and mechanism of the alimentary canal. On Monday, March 8th, Mr. W. Sampson Handley will lecture on entero-colic ileus; and on March 10th Mr. J. Howell Evans will deal with some congenital lesions of the small intestine, their origin, clinical bearings, and treatment. Mr. Rupert Farrant will lecture on March 17th and 19th on the effect of toxins on the tissues; on March 22nd Dr. F. Wood Jones will speak on the influence of the arboreal habit in the evolution of the reproductive system: and on March 29th and 31st Dr. David Waterston will lecture on further recent investigations in the development of the human body.

IN the *Times* of February 2nd appeared a letter signed "H. M. Lefroy, Professor of Entomology, the Imperial College of Science and Technology, South Kensington, S.W.," stating that a simple remedy existed which killed lice and conferred immunity for a time. He stated that it was uninflammable but had a distinct smell, and that the authorities were testing it. As some delay must, he said, occur in making it available, and as a shilling purchased enough for more than one person, he offered to give information to any who desired to send some to relatives or friends at the front or in this country. Application for information brings a printed slip dated from the Imperial College, and headed "Pediculus and Phthirius." The slip states that two preparations can be obtained from two different manufacturers at the price of 1s. a tin with 4d. for postage. No information is given as to the composition of the applications beyond the fact that they are jellies. The recommendation of secret remedies is contrary to the custom of the medical profession, and not one, we believe, hitherto followed by biologists. It is a surprising course for a professor in the Imperial College to take. We should like to know the view our contemporary holds of the use which has been made of its columns.

IN announcing that, as was stated last week, Queen Amélie of Portugal would preside at the annual general meeting of the Royal Medical Benevolent Fund Guild at the Royal College of Physicians of London on February 4th, some of the papers spoke of Her Majesty as holding a medical degree. The legend that Her Majesty is a graduate in medicine has been repeated so often in the most various quarters that it is in danger of passing into the region of historic fact. We may therefore recall that nineteen years ago, in the BRITISH MEDICAL JOURNAL of February 1st, 1896, p. 291, we had occasion to correct this very error, into which we had inadvertently fallen. We were informed authoritatively that, although the Queen took a keen interest in medicine, it was untrue that she had ever thought of studying medicine in a professional way or of passing examinations with a view to taking a medical degree. Her interest in the subject was, we were assured by those in a position to know, purely philanthropic. Those interested in the Guild but unable to attend the meeting should communicate with Lady Tweedy, the chairman of its council, at 100, Harley Street, S.W. The president of the Guild is the Dowager Lady Broadbent.

THE utmost pleasure and gratification was afforded to his old medical colleagues when it was announced that Mr. R. Lewis Willcox, M.R.C.S., M.R.C.P., had been the recipient of a handsome presentation on his retirement from medical practice at Warminster, in the County of Wilts. A committee, representative of the whole community in the town and neighbourhood, presided over by the Marquis of Bath, organized this project, and so successfully was it carried out that not a word regarding it leaked out to Mr. Willcox or his family, until a most kind and appreciative letter from Lord Bath reached him, conveying to him a cheque for the handsome sum of 1,500 guineas. An illuminated address follows the monetary gift. Mr. Willcox has practised in the town and neighbourhood of Warminster for the long period of forty-five years. He was a student at King's College, London, and House-Surgeon at the Hospital in the days when only one student held the post. It was a great honour and advantage, therefore, to have held that office, and to be responsible to such pioneers of surgical science as the late Sir William Fergusson, Professor Richard Partridge, and Mr. John Wood. Mr. Willcox started practice at Warminster in 1869, first as assistant to the late Mr. P. Grubb; subsequently he took over the practice of Messrs. S. and C. Vicary. For years he has been the chief recognized consultant in the south-west of Wiltshire and the adjacent part of Somerset. His name was a household word in that large area, and all the medical practitioners readily sought his aid. He took the greatest interest in the town of his adoption, and was a most active surgeon, performing the most intricate and advanced surgical operations in the Warminster Cottage Hospital. The recent death of his son, Dr. Hubert Willcox, who had joined him in partnership, and his own increasing ill health, have occasioned his retirement. The generosity of the community amidst which he was a devoted life-long toiler shows the esteem and regard in which he was held, and now that the shadows of eventide are gathering round his long and useful life, though he leaves the sphere in which he worked, he carries with him the best wishes of his numerous friends and colleagues and the hope that he, and Mrs. Willcox also, may be spared for many years to enjoy their well-earned retirement in Salisbury.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

X. Y. asks for assistance in the diagnosis of the following case of a medical man residing in a tropical country, of temperate habits, leading a regular life, and free from all specific diseases, who had a sudden attack about eight years ago of vomiting of blood and purging of fluid blood, which led to fainting. The attack has returned every five or six months since. He is now aged 48, and is leading a quiet life in a sanatorium. There is an enlargement of the spleen and pain and tenderness in the splenic region.

LETTERS, NOTES, ETC.

MR. GRAVES STOKER, F.R.C.S. (London), writes: As *x*-ray work is at present receiving considerable attention in the JOURNAL, I think the following should prove interesting: An officer who was badly wounded in the lower abdomen is at present under my care at one of the Red Cross hospitals in London. He was *x*-rayed by the military authorities. The negatives, which were failures, were accompanied by a report which stated that there must be something in the man's body which absorbed the rays. Will some *x*-rayists favour us with their views?

A DISCLAIMER.

DR. J. H. MORRIS-JONES of Colwyn Bay, who has recently returned from France, desires emphatically to say that he was not in any way responsible for the publication of a paragraph which appeared in certain daily papers—chiefly, he says, Welsh editions of Liverpool and Manchester papers—purporting to describe an operation for bullet wound of the skull performed upon an officer, and of his wonderful recovery. The paragraph mentions that the account came from a Colwyn Bay doctor at present serving in France. Dr. Morris-Jones had written to a friend and professional colleague in Conway describing the operation, and asking him to acquaint the wife of the officer, who lived in the same town, of his progress and the nature of his wounds. The lady did not consider it necessary to regard this communication as confidential, and by the time it reached some one connected with the press it appeared to have assumed "a gloss and glamour" which it did not originally possess.

MINERALIZED PEARL BARLEY.

DR. J. C. MCWALTER (Dublin) writes: When one orders barley water for an infant he does not anticipate dosing the child with mineral matter, but the laboratory report of a famous firm of chemists declares that of the samples of pearl barley examined by them during 1914 several contained talc. Adulterated samples showed an ash of 1.16 to 1.81 per cent., which might mean an unexpected intake of 10 or 12 grains of talc by the unfortunate infant every day.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

WILLIAM HUNTER AND HIS WORK IN MIDWIFERY.

THE HUNTERIAN SOCIETY'S HUNTERIAN ORATION, DELIVERED AT THE BARBERS' HALL ON WEDNESDAY, FEBRUARY 10TH, 1915.

BY HENRY RUSSELL ANDREWS, M.D., B.S., F.R.C.P.,

OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL, ETC.

[AFTER some preliminary observations, in the course of which he stated that one of the rules of the society laid down that the primary purpose of the oration was to commemorate the life and work of John Hunter and his brother, William Hunter, Dr. Andrews continued as follows:]

William Hunter was born at Long Calderwood in Lanark in 1718, of a younger branch of an old Scotch family. In 1731 he went with a bursary to Glasgow University, where he remained for five years. He then began to read for the ministry, but changed his mind, finding that he "could not subscribe to the dogmatical articles of faith," and applied for the post of schoolmaster of his native village, but fortunately failed to get the appointment. From 1737–1740 he lived with Dr. Cullen at Hamilton. There seems to have been some sort of partnership between the two men, and an arrangement was made by which one of them attended the medical school during the winter, while the other looked after the practice. Cullen said of him: "His conversation was remarkably lively and simple, and his whole conduct was more strictly and steadily correct than that of any other young person I have ever known." Cullen later became Professor of Medicine at Glasgow and afterwards at Edinburgh. The friendship between Hunter and himself, begun early in Hunter's career, continued to the end. In 1740 Hunter attended Alexander Monro's lectures in Edinburgh. In 1741 he came up to London, bringing a letter of introduction from Mr. Foulis, printer at Glasgow, to Dr. Douglas, another Scotsman, who lived in Covent Garden. For a short time he lived with Smellie, who at that time was in practice in Pall Mall. After a few months he became assistant to Dr. Douglas, an obstetrician of considerable eminence, who was then engaged on an anatomical work on the bones, which he did not live to complete. William Hunter became a trusted and valued friend of Douglas and his family. While assistant to Douglas he entered as a surgeon's pupil at St. George's Hospital under Dr. James Wilkin, and as a dissecting pupil under Dr. Frank Nichols, and also attended lectures on experimental philosophy by Dr. Desagulier.

"A society of navy surgeons had an apartment in Covent Garden, where they engaged Mr. Samuel Sharpe to deliver a course of lectures on the operations of surgery. Mr. Sharpe continued to repeat this course, till, finding that it interfered too much with his other engagements, he declined the task in favour of William Hunter, who gave the society so much satisfaction that they requested him to expand his plan to anatomy, and at first he had the use of their room for the lectures. This happened in 1746. At first he practised both surgery and midwifery, but to the former of these he had always an aversion. James Douglas had acquired considerable reputation in midwifery, and this probably induced Hunter to direct his views chiefly to the same line of practice.

"He owed much to his abilities and much to his person and manner, which eminently qualified him for the practice of midwifery, and soon gave him a decided superiority over his countryman, Dr. Smellie, who to the weight of great experience united the reputation he had justly acquired by his lectures and writing; but his person is said to have been coarse, and his manner awkward and unpleasing, so that he never rose into any great estimation among persons of rank" (Simmons). His lectures, which began in 1746, were continued until 1783. In 1747 he was admitted to the Corporation of the Surgeons of London. In 1748 he made a tour through Holland to Paris, and on his way visited the Dutch anatomist Albinus at Leyden, whose "admirable injections," as he afterwards told Dr. Cullen, "inspired him with a strong emulation to excel in that elegant and curious branch of anatomy" (Simmons).

In 1748 John Hunter, who was ten years younger than his brother, came up to London to William, having written to ask leave to do so, saying that if his brother would not take him he would enlist in the army. In this year William was appointed physician-accoucheur to the Middlesex Hospital; in 1749 surgeon accoucheur to the British Lying-in Hospital. In 1750 he graduated Doctor of Physic of Glasgow, and in 1751 he was admitted to the Faculty of Physicians and Surgeons of Glasgow. In this year he settled in practice at 42, Jermyn Street. In 1751 he visited his old home at Long Calderwood, and it is said that from this time until his death in 1783 he never left town except to see some patient in the country. In 1755 he became physician to the British Lying-in Hospital without actual election. In 1756 he became a Licentiate of the Royal College of Physicians of London and a member of the Medical Society. The Corporation of Surgeons notified their disapproval of his desertion of them in favour of the Physicians by fining him £20. In 1764 he was appointed Physician Extraordinary to the Queen. "William was the first man that ever attended any Queen in any country. Queen Charlotte had been attended by a woman in her first confinement . . . and these medical ladies were well educated for their profession, and were commonly the daughters of medical men or clergymen's daughters." (From a letter from Mrs. Agnes Baillie to her brother, Dr. Matthew Baillie (Paget).) In 1767 Hunter became F.R.S. In 1768 he built a house, lecture theatres, dissecting-rooms and museum in Great Windmill Street. In the same year he became Professor of Anatomy to the new Royal Academy. His life was a very full one; Dr. Simmons says, "Although . . . he was established in the practice of midwifery it is well known that, in proportion as his reputation increased, his opinion was eagerly sought where any light concerning the seat or nature of disease could be expected from an intimate knowledge of anatomy." He was a bachelor. He spent a great deal of time dissecting, lecturing, and in building up his museum. He collected books, papers, engravings, pictures, MSS., coins, and curiosities. His library contained more than 12,000 books. Over a hundred years ago the trustees of the British Museum offered £20,000 for only a portion of the coins and medals in his collection. He spent about £100,000 on his museum. Among his friends he numbered Reynolds, Hogarth, Gainsborough, and Johnson. John Hunter, as has been said above, joined him in 1748. The two brothers worked together for some years, John being William's pupil. "If John did at last surpass him, it was William who set him on the way to do it, and until John Hunter went to London, William was the elder brother of the parable, and John was the younger brother in the kingdom of science" (Paget). "William was the pioneer; if it had not been for William we never could have got John." "Of course, to William Hunter, of the two brothers, the general public are mainly indebted; but not entirely so, for John devoted ten years of his life to helping forward the work of William's museum, but it would be akin to sacrilege for us to discrepate between the two brothers or to magnify one at the expense of the other. Their work in connexion with science is one and indivisible; these men will live and speak through us, the heirs of their achievements" (Mather).

In 1755 William took John into a sort of partnership in the lectures; "a certain portion of the course was allotted to him, and he was expected to supply the doctor's place when professional engagements prevented his own personal attendance" (Adams). William used sometimes to say in his lectures: "In this I am only my brother's interpreter." "I am simply the demonstrator of this discovery—it was my brother's" (Adams). "The frequency of such expressions naturally inspired all his pupils with admiration of Mr. Hunter's skill in anatomical researches, and of the doctor's ingenuous conduct" (Adams). In the preface to his *Atlas* William speaks of John "whose accuracy in anatomical research is so well known that to omit this opportunity of thanking him would be in some measure to disregard the future reputation of the work itself."

In 1780 William Hunter was elected Foreign Associate of the Royal Medical Society at Paris, and in 1781 President of the Society of Physicians in London. Mather, in

his book *Two Great Scotsmen: the Brothers William and John Hunter*, says that William was unanimously elected President of the Royal College of Physicians of London. This is probably a misprint, Dr. Mather's meaning being that he was elected President of the Medical Society or of the Society of Physicians in London. In 1782 he was elected Foreign Associate of the Royal Academy of Sciences at Paris.

Hunter's ruling passion was anatomy. He himself said: "Anatomy is the only solid foundation of medicine; it is to the physician and surgeon what geometry is to the astronomer. It discovers and ascertains truth, overturns superstition and vulgar error, and checks the enthusiasm of theorists and sects in medicine, to whom, perhaps, more of the human species have fallen a sacrifice than to the sword itself or to pestilence" (Mather). In 1812 Sir Charles Bell wrote that the school "founded by the Hunters has made all the anatomists of the present day at home and abroad." Teacher says: "The best part of the anatomical museum is the obstetric collection. This comprises over 400 preparations, anatomical and pathological, which represents all that is permanent of the material foundations of the works on which chiefly rests the fame of William Hunter—namely, his immortal work, *The Anatomy of the Human Gravid Uterus Exhibited in Figures*." Dr. Matthews Duncan considered that William Hunter was "certainly one of the greatest anatomists that has ever flourished in this country or in any other." His observations were "all true and containing all the truth." "His name has been kept constantly before the profession as the founder of the science of obstetrics." "Yet it is necessary with a view to justice to point out that his obstetric fame is chiefly anatomical, and that his greatest claim on our admiration and gratitude arises from his anatomical work and influence" (Harveian Address, June, 1876, *Edinburgh Medical Journal*, vol. xxi).

I will conclude this short sketch of his life with two extracts from Paget and Simmons.

William Hunter "looks in his portraits a fastidious, fine gentleman; but he worked till he dropped, and he lectured when he was dying. His school was at its zenith, and he gave his whole mind to it; he stood high above the men of his time for the charm and eloquence of his lectures. He held two hospital appointments, and his private practice was one of the largest in London" (Paget).

"All who knew him allow that he possessed an excellent understanding, great readiness of perception, a good memory, and a sound judgement. To these intellectual powers he united uncommon assiduity and precision, so that he was admirably fitted for anatomical investigation" (Simmons).

"Dr. Hunter, at the head of his profession, honoured with the esteem of his Sovereign, and in the possession of everything that his reputation and wealth could confer, seemed now to have attained the summit of his wishes. But these sources of gratification were embittered by a disposition to the gout, which harassed him frequently during the latter part of his life, notwithstanding his very abstemious manner of living.

"At length, on Saturday, the 15th of March, 1783, after having for several days experienced a return of wandering gout, he complained of great headache and nausea. In this state he went to bed, and for several days felt more pain than usual both in his stomach and limbs.

"On the Thursday following he found himself so much recovered that he determined to give the introductory lecture to the operations of surgery. It was to no purpose that his friends urged to him the impropriety of such an attempt. He was determined to make the experiment, and accordingly delivered the lecture, but towards the conclusion his strength was so exhausted that he fainted away, and was obliged to be carried to bed by two servants. The following night and day his symptoms were such as indicated danger; and on Saturday morning Mr. Combe, who made him an early visit, was alarmed on being told by Dr. Hunter himself that during the night he had certainly had a paralytic stroke. As neither his speech nor his pulse were affected and he was able to raise himself in bed, Mr. Combe encouraged him to hope that he was mistaken. But the event proved the doctor's idea of his complaint to be but too well founded, for from that time till his death, which happened on Sunday, the 30th of March, he voided no urine without the assistance of the catheter, which was occasionally introduced by his brother.

"The latter moments of his life exhibited an instance of philosophical calmness and fortitude that well deserves to be recorded. Turning to his friend Mr. Combe, 'If I had strength enough to hold a pen,' he said, 'I would write how easy and pleasant a thing it is to die'" (Simmons).

I have included part of the last paragraph to show that, in spite of their quarrel over priority in certain anatomical discoveries, to be mentioned later, the brothers were reunited at the end of William's life.

William Hunter lectured from 1746 until within a few days of his death in 1783, with John as an assistant or partner for four years, 1755–1759. Teacher says: "Dr. Frank Nichols professed to teach anatomy, physiology, and the general principles of pathology and midwifery in 39 lectures; Hunter's course extended over four months, and consisted of about 112 lectures—2 introductory, 80 anatomical, 15 on operative surgery, 3 on making preparations and embalming, 12 on midwifery, about half of them anatomical." Parts of some of these lectures were what we should now call gynaecological. There are many manuscript copies of his lectures on midwifery, but none of them authorized by himself. It is to be regretted that he did not authorize some copy, for, as Matthews Duncan says, "None of us who are teachers would confide the accurate statement of our words to tradition through the pens of students." An example of this is seen on page 23 of the MS. copy of notes from his lectures in the Royal College of Surgeons' library: "As to the distribution of the arteries and veins (in the umbilical cord) they are different, some are regular twisted, some are not twisted at all, but run quite straight, these twistings occasion perhaps the knots so that from the number of lumps it is easy to tell how many children a woman will have afterwards!" We can only speculate as to the explanation of this. It may be that Hunter referred, in passing, to some old wives' tale or superstition, in which midwifery is still rich. He told his students that he did not profess to teach them midwifery, but only to give them a few general rules. "Notes of these lectures were treasured by their owners as valuable books of reference all through their lives. . . . Hunter desired his students to attend two courses, which they were able to do in one winter, and during the first to take no notes. 'His business is first of all to get clear ideas of everything, his eyes and ears are to be employed in that service only. He is first to understand, let him remember as he can.' In the second course of lectures he should take careful notes and rewrite them afterwards" (Teacher). Adams, who attended the lectures, wrote: "His person, though small, was graceful; his cast of features regular and interesting; his voice musical, his manners attentive and flattering. In short, Hunter was a polite scholar, an accomplished gentleman, a complete anatomist, and probably the most perfect demonstrator as well as lecturer the world has ever seen." In reading the manuscript notes we learn that Hunter impressed points on the students by passing round specimens and preparations from his museum, sometimes with such a remark as this: "Now let me set all modesty and all appearance of it aside and say here is the finest preparation in the world." There are a raciness, an enthusiasm and an evidence of a sense of humour running through his lectures which would keep the students' attention from wandering; for example, "You cannot conceive anything lying snugger than the foetus *in utero*. This puts me in mind of Hogarth. He came to see me when I had a gravid uterus to open, and was amazingly pleased: 'Good God,' cries he, 'how snug and complete the child lies, I defy all our painters in St. Martin's Lane to put a child is such a situation.'" "As the child lies in this snug position there is a strong expression of a pleasant sleep, a seclusion or retirement from the world; it is very expressing." "This miscarriage I know as well myself as I do a man's face from a sheep's, it is as distinct from any other sort of membrane." After explaining to the students that the fetal circulation was distinct from that of the mother, he said: "There is one account of a woman who flooded until she was dead with the child within her, afterwards the child was taken out, and found to be without any red blood. This is alledged as a proof that the blood passed from the mother, or in this case rather from

the child, who as well as the mother, died from a loss of blood. Thus it is inserted (*sic*) but they are deceived, for I have seen many of these cases. The child in such cases has died, but on opening it we found it always to be just as full of blood as ever. There is no believing these things unless they come from a man of great accuracy and delicacy. He should be accurate in his observations, and faithful in his narratives. These two qualifications do not combine together among philosophers and learned men once in a hundred times; most philosophers, most great men, most anatomists and most other men of eminence lie like the devil!" After describing a case of "mortification of the vagina" in which the "whole of the inside of the vagina entirely sloughed off, and the side of the thighs and hips, etc., sloughed away," and the woman recovered, he says: "Now you will say, gentlemen, that this is one of *Hunter's cases*, but if you *do* say so it will not be of so much use, as I mean it because there has not been the least circumstance exaggerated." "A contracted uterus can be no more inverted than a stiff jack-boot, but when it is soft and relaxed you may invert it." In talking of the weaning of infants he says: "The first night afterwards a little sac whey with barley water is the best thing in the world. This makes them a little drunk, they all like it, and afterwards go to sleep very comfortable." "There are two things at the time of labour which I am frightened at (all the others I do not care a sixpence for), one is a flooding and the other convulsions." It is interesting to note that Dr. Hunter had a "great opinion of bleeding and giving opium in large and frequent doses in cases of puerperal convulsions."

In reading his lectures one is much struck by the common sense of his teaching, the freedom from mystery, and by his refusal to follow in a groove simply because it is a well-worn one. Again and again one notices what a modern note is in his views. His attitude is accounted for by the following remark: "I have as great a deference to what is natural before what is artificial as I have to the great Superintendent and Creator of the World before all the whims of the greatest philosophers." As regards the position of the child *in utero* he says: "Common opinion is that it sits upright, and that in the later months of uterine gestation the child turns itself. and the head gets downwards." Hippocrates taught that the child presented by the breech up to the seventh month, when it suddenly turned over and presented by the head. This has often been described as the "culbute." Hunter remarks in the MS., published after his death: "With regard to the mother, the most common situation of the child by far is with the head downwards and its nates at the upper part of the uterus. Once, perhaps, in twenty or thirty cases, it is the contrary, and presents, as they term it in midwifery, with its posteriors. All the observations that I have been able to make in dissections and in the practice of midwifery would persuade me that the child's head is naturally downwards through all the later months of utero-gestation, and that neither reason nor instinct teaches it at a particular time any trick of a tumbler or rope-dancer." "The management of pregnant women should be very simple; she should live when with child just as at another time . . . it is rather an absurd practice for a man midwife to be called in for all the diseases of child-bearing. He may as well be called in to set a fractured leg because a woman is with child." Miscarriage is most likely to occur at the third month; "this I have learnt from experience, and I much dislike what is said by writers, because I find it so different from what appears to me in practice." Maubray, who was one of the chief obstetricians in the early part of Hunter's time, preferred a seven months' to a nine months' gestation, on account of "the influence of the moon and the mystical value of the number seven" (Fox). This was a survival of mediaeval views, still believed in by many laymen, and, unfortunately, though not with the same explanation, by many medical men at the present day.

Hunter in his lectures says: "At seven months a child may live, but it generally dies; at eight months most children live as well as at nine." A good example of accurate observation and common sense "discovering and ascertaining truth, overturning superstition and vulgar error, and checking the enthusiasm of theorists." "Some have a notion that a live child helps itself (in labour) but this is certainly a mistake as far as I have been able to observe."

His honesty is shown by the way in which he was not afraid to chronicle his own mistakes, if by so doing he could impress a point on his students. He gave a detailed account of a case in which he ligatured what he had taken to be a fibroid polypus in a nullipara. The patient died, and he found that what he had ligatured was an inverted uterus with a sessile tumour in the fundus. "When I can be of any service by telling a failure of my own I shall relate it readily, though not with that pleasure as a case wherein I have been successful." He did not pretend to knowledge which he did not possess, and was not afraid of his remarks appearing to be bald and scanty if he had no certain opinion to give on the subject. For example, all that he says in his lectures on the subject of sterility is: "Barrenness proceeds from many causes and is quite inexplicable."

His account of the management of labour is well worth reading for its shrewd common sense, and his advice to students as to how to manage the patient. "In most cases though I pretend to be doing something yet I do very little for them, and hardly anything more than to take off the reproach of my doing nothing at all." We will consider his advice about the management of the third stage of labour later. "I think the best way of managing the menses is to pay very little regard to them. Mothers are concerned for their daughters, they all believing if they have ill health that it is always to be imputed to the menses, and on this account they think that you should begin particularly to set the menses to rights. Now my opinion is that you should not pay any regard to them, but endeavour to put her to rights in other respects. If you cure the other disorders you cure the irregularity in her menses which is the consequence only, and not the cause of her complaints. . . . This is my serious opinion in which I am confirmed daily more and more." He shows how two patients, one of whom is bleeding too much and too often, while the other is losing too little, may both be cured by exactly the same general treatment. This is an early example of the importance of treating the patient rather than the symptoms.

The Anatomy of the Human Gravid Uterus Exhibited in Figures.

This, Hunter's greatest work, was begun in 1750, and published in 1774. In the preface, after speaking of the engravings and descriptions of the anatomy of many parts of the body, he says, "Most of the principal parts of anatomy have in this manner been successfully illustrated. One part, however, and that the most curious and certainly not the least important of all, the pregnant womb, had not been treated by anatomists with proportionable success; let it not, however, be objected to them that they neglected what in fact it was rarely in their power to cultivate. Few or none of the anatomists had met with a sufficient number of subjects, either for investigating or for demonstrating the principal circumstances of utero gestation in the human species." In 1750 Hunter procured the body of a woman who died suddenly when nearing the end of her pregnancy. The blood vessels were successfully injected, a most thorough dissection of the uterus and its contents was carried out, and sketches and engravings were made by capable artists. Ten plates were finished in the course of a few months, but their publication was delayed, as more material for investigation came to hand. There are thirty-four plates in all, many of them containing several separate illustrations, and there is a full description of each plate in Latin and in English. Thirteen bodies were dissected, as well as several abortions. Hunter did not allow the artist to paint from memory or imagination, but only from immediate observation. Many plaster-of-Paris casts now in the Hunterian Museum at Glasgow were made from the dissections. "After the last plate was finished, he had an opportunity of procuring drawings to be made from a younger embryo than he had till then seen, and likewise from a very curious case of a conception in the Fallopian tube, which confirmed two opinions which he had before entertained concerning the gravid uterus. It showed that the enlargement of the impregnated uterus does not happen mechanically from the increasing bulk of its contents; it proved at the same time that the spongy chorion or membrana decidua belongs to the uterus and not to the ovum, or that part of the conception which is brought from the ovarium. These drawings he intended to have

offered to the public in the way of a supplementary plate" (Simmons). In 1851 the Sydenham Society published a new edition of the *Atlas*. Matthews Duncan (Harveian Address) said: "This immortal work is one of the staple foundations of the science and art of midwifery, and cannot fail in all future ages to be as valuable and useful as it is now." Waldeyer considered that it contained the foundations of our present knowledge of the anatomical relations of the membranes and the gravid uterus. Professor Gross of Philadelphia (Mather) said: "In midwifery William Hunter stood pre-eminent. His *Anatomy of the Human Gravid Uterus*, a magnificent folio volume on which he was engaged for nearly thirty years, alone was sufficient to insure his immortality." Teacher says: "The nature, origin, and anatomical relations of the decidua are here described and figured as well as they are now or can be." To go to Hunter's *Atlas* from the illustrations of books on midwifery before his time is to go at one step almost from the Middle Ages to the present day. Hunter's other chief work is *An Anatomical Description of the Human Gravid Uterus and its Contents*. He left this as an unfinished MS., and it was first published by Matthew Baillie in 1794, eleven years after Hunter's death. In reading this book, just as in reading the MS. of the lectures, we are struck again and again by the modern character of many of the views expressed, and by the evidence of William Hunter's courage in discarding ideas sanctioned by tradition in favour of those which resulted from his own dissections and investigations; to use his own words, "from all these experiments and observations, which have been often repeated and diligently attended to with no other desire than to discover truth." His observations on the situation of the round ligaments, on pendulous abdomen during pregnancy, on difficulty in delivering the placenta when it has a cornual attachment, and on the arrangements of the uterine fasciculi, among many others, are proofs of his infinite capacity for taking pains in accurate observation. His description of the placenta is extraordinarily careful and accurate. In his understanding of the structure of the placenta, which is marvellously accurate when we remember that he worked without the aid of a microscope, he owed a good deal to his studies in comparative anatomy. He had examined the placentae of many animals, and had studied the development of the chick before he was able to demonstrate to his own satisfaction the structure of the human placenta. As was said above, Hunter's MS. of the *Anatomical Description of the Human Gravid Uterus and its Contents* was left unfinished. Matthew Baillie, when he edited it in 1794, added to it a description of the decidua from what he considered to be William Hunter's views, which, on the other hand, really represented those of John. Fortunately the lectures contain a sufficiently full description of the decidua for us to know William Hunter's own views. From the remarks of Dr. Simmons quoted above, made in the year of Hunter's death, there is no doubt that the correct view—that of William—was understood at the time. Rigby, who brought out a new edition in 1843, showed clearly where Hunter's MS. finished and where Matthew Baillie's addition began. This unfortunate action of Matthew Baillie undid the good work done by William Hunter, as it was generally thought that the account of the decidua published in the book represented William Hunter's later and considered opinion. In 1780 John Hunter communicated to the Royal Society a short paper "On the Structure of the Placenta," with the intention of establishing his own claim to some discoveries made in 1754. He gave some of the credit to Dr. MacKenzie, who had been assistant to Dr. Smellie. William wrote to the Royal Society claiming the discovery as his own; then John wrote again. The society refused to take up the dispute or to publish John Hunter's paper. "As to the absence of communication between the circulation of the mother and that of the foetus, the fact that 'nothing can pass from the one to the other without rupture or transudation' was proved by William Hunter. He described the placenta as being made up of two parts, the one, uterine, being decidual, the other, foetal, being formed by the prolongations of the branchings of the vessels of the umbilical cord. These two elements he was able to separate in the placentae of many of the lower animals; also, however finely he might inject the vessels of the uterus, those of the umbilical cord always remained uninjected. 'It was this appearance in the cat and bitch that first led me into the apprehension that the human placenta was the same.' Needham had been of the same opinion one hundred years before, and Harvey at about the same time had said that there was no mixing of the two bloods. But Hunter supplied actual anatomical proof. Before the results of Hunter's researches were published the prevailing idea had been that maternal blood passed into the foetus and came back again to the mother. 'From all that I can make out by injections and every other way, I shall certainly conclude that the red blood does not pass from the mother to the child. I no more doubt this than I do that the blood does not pass from the hen to the chick.' As regards the nutrition of the child, 'the child is entirely nourished by the navel string.' 'For my part I think that all this is done by absorption, and the navel string and its branches are like the roots of a child which are bathed in the blood and juices of the mother, which they absorb and take up and carry to the child, and no doubt what is redundant in the child is returned to the mother.' In 1780 John claimed 'placenta as the root' as his own" (abstracted from Dr. Teacher).

Matthews Duncan wrote: Hunter's "positive assertions in regard to the decidua are that it is continuous with the substance of the womb; that it is the inside of the womb; that it forms the uterine part of the secundines; that it forms the uterine part of the placenta; that it is not extended across the passage in the neck of the womb; that it is continued down into the inner membrane of the cervix; that the Fallopian tubes are not closed by it, but open into its cavity; that in the early weeks it is a thick membrane of a soft or gelatinous texture; that it is abundantly supplied with uterine arteries and veins; that it has a cribriform or punctated surface; that the decidua reflexa is continuous with the decidua vera; that the decidua reflexa is permeated by vessels; that the reflexa thins as it becomes more distant from the placenta, and that it becomes thin from extension, in consequence of the growth of the ovum."

To these may be added the following extracts from Hunter's lectures: "Decidua" or "caduca" instead of "false chorion" or "spongy chorion." "This decidua we shall see is a layer of the uterus . . . the fact is it is the internal lamella of the uterus itself . . . every time a woman conceives and every time she throws off that conception this membrane exfoliates from the uterus; it falls off as staggs' horns or birds' feathers when they shed. This is a very extraordinary membrane which here never was before an idea of." "From anatomical observations, then, we are to conclude that probably the juices do not pass from the mother to the child as red as (*sic*) blood. There is no communication between the vessels of the uterus and those of the foetus, thence probably the child takes its nourishment from the womb of the mother by something analogous to absorption."

Hunter's teaching on the management of the third stage of labour is worthy of being considered at some length:

"Before and during Dr. Smellie's lifetime, 1697–1763, the practice was to deliver the placenta as soon as possible after the birth of the child by pulling on the cord, pressure on the abdomen, and, if necessary, by introduction of the hand into the uterus. The reason for the rapid delivery of the placenta was the fear that the cervix might close up, if time were allowed to elapse, with consequent imprisonment of the placenta. Maubray recommended that the placenta should be extracted 'with all imaginable speed after the child is born, even before the navel-string is cut, because the womb immediately contracts itself.' Chapman says: 'the moment the child is born I slip my right hand into the womb and gently with it assist in extracting the placenta . . . nor would I advise any one to trust to its coming away of its own accord, nor to leave the expulsion of it to Nature'" (Glaister). Smellie said that he had to thank William Hunter for his assistance in reforming the wrong practice of delivering the placenta. Hunter, in his lectures, said: "The hurrying away the placenta is just as bad as hurrying on the labour, and forcing away the placenta is a terrible practice. . . . Nature does work much better for the mother and child than art, therefore no force should be used. . . . I know this to be an improvement of infinite consequence. . . .

In hurrying away the placenta parts of it are apt to be left behind or mischief done to the womb. . . . I set (*sic*) with a lady whom I delivered some time ago for 2 or 3 hours beyond the 24, but it at last came away whole and entire. If I were allowed to give an account of myself I may say I have never been of more service to mankind than in making this my practice and advice. Therefore, leave ye placenta always to Nature. In common cases nothing, or almost nothing, can be done, and notwithstanding this, I feel that whenever I commit an error it is in consequence of my being too much in haste . . . the great art in conducting a natural labour is to do little and wait patiently" (MS.). It is impossible to exaggerate the value of this teaching of Hunter's when we consider the terrible danger that must have attended the insertion of a hand into the uterus as a routine practice in preantiseptic days.

Hunter's teaching on the use of midwifery forceps is well worth study. He insisted on the importance of allowing moulding to take place, so that the presenting part should come down as low as possible before their application in cases in which forceps must be applied, and emphasized the importance of pulling in the axis of the pelvis, more and more forwards as the head descended. He says: "In few cases, I think the forceps an useful instrument; to a poor woman that is quite exhausted they may be of considerable service, but I wish to God they had never been contrived. I am convinced that the forceps has killed three—I may say ten—women to one that it has saved, and therefore, we should never use it on any occasion but where it is absolutely necessary." "A new practice, salutary and useful, perhaps, in a few rare cases, may very naturally by an indiscriminate and frequent use do much more harm than good. This sentiment will not surprise those of the profession who know my opinion of the forceps, for example, in midwifery" (quoted by Glaister).

Dr. Simmons quotes: "I admit that it may sometimes be of service, and may save either the mother or the child. I have sometimes used it with advantage, and I believe never materially hurt a mother or child with it, because I always used it with fear and circumspection. Yet I am clearly of opinion from all the information that I have been able to procure that the forceps (midwifery instruments in general I fear), upon the whole, has done more harm than good." Matthews Duncan said of Hunter: "He knew more of Nature and of its powers, and reverenced it and trusted it more than his contemporaries." In his lectures Hunter says: "We are greatly improved in midwifery within these twenty years past. What is the great improvement? Why, I am proud to have a share in it; it is bringing it back to Nature."

In Hunter's *Anatomical Description of the Human Gravid Uterus and its Contents* (page 5) is the following:

"It must be observed that the cavity does not always correspond with the outward figure of the gravid uterus. In one instance which I met with in a dead body, and still preserve, and in another which I was very sensible of in a living woman, a part or band of the inner stratum of the flesh of the uterus had not stretched in the same degree with the rest, but made a considerable partition internally; a circumstance which might have increased the difficulty, as well as the danger, of rudely turning the child or taking away the placenta with the hand."

I have not found any comment on this important observation. It seems to refer to what is now known as a "contraction ring," which is a more common cause of dystocia than has been realized until recently. For a long time "contraction rings" and "retraction rings" have been grouped together, with the result that there has been much confusion. Dr. Clifford White (*Transactions of the Royal Society of Medicine*, December 5th, 1912) has given the best description of a "contraction ring": "a localized thickening of the wall of the uterus due to the contraction of the circular fibres over a point of slight resistance, most frequently over a depression in the child's outline or below the presenting part." The body of the uterus above a contraction ring is usually relaxed and not tender. The cause is early rupture of the membranes or intrauterine manipulations, not obstructed labour as in the case of a retraction ring, which is the junction of the thinned lower uterine segment with the thick retracted upper uterine segment.

Dr. Eardley Holland has suggested the term "active retention of the fetus by the uterus" as explaining the cause of the difficulty in cases where a contraction ring occurs. Smellie described a case which occurred in 1743. "A laborious one; the uterus contracted before the shoulders of the foetus." This case and Hunter's observation recorded above seem to have been lost sight of for many years. The late Dr. Herman used to insist on the importance, for a thorough knowledge of midwifery, of a study of the works of the men who had gone before.

Hunter has been credited with having been the first to describe retroversion of the pregnant uterus. In Plate XXV in his *Atlas* he figures retroversion of the gravid uterus with retention of urine. In the fourth and fifth volumes of *Medical Observations and Inquiries by a Society of Physicians in London* reference is made to a lecture of his on the subject delivered in 1754. Hunter himself, in the fourth volume (1770) refers to his lecture in 1754. He said in 1770 that he preferred the term "retroversion" to that of "inversion," which had been sometimes applied to the condition. He recorded several cases treated successfully by the use of catheter and clysters, followed, if necessary, by manual reposition. He stated that M. Gregoire had mentioned a case of retroverted uterus in his lectures in Paris, and had advised manual correction, but did not say in what year M. Gregoire's lecture had been delivered. Simmons says: "This disease, although it had been mentioned by M. Gregoire in his lectures in Paris, and my friend, M. Peyrilhe, the learned author of the *History of Surgery*, thinks he has discovered some trace of it in the writing of the ancients, was certainly not understood until Dr. Hunter described it first in his lectures in 1754, and afterwards in one of the volumes of the work in question (*Medical Observations and Inquiries by a Society of Physicians*), since which it has been generally known." Hunter at first suggested that it might sometimes be good practice to tap the uterus and draw off the liquor amnii, but later advised keeping the bladder empty and pushing up the uterus, if it did not go up spontaneously. In his lectures in 1775 he gave the following advice: "Draw off the urine and empty the rectum by an enema, then put the patient upon her knees with her head low, and if the tumour is small get hold of the os tincae and pull it down or force up the body of the uterus by pressing behind till it rises into the abdomen" (MS.). His later advice is followed at the present day, although some textbooks still agree to some extent with his earlier advice, in so far that they advocate emptying the uterus if that organ cannot be pushed up. Experience, however, shows that if the bladder is kept empty the uterus can nearly always be pushed up, and that if it cannot be it is not of much consequence, unless there is ascending infection of the urinary tract. Sooner or later the patient will regain control over her bladder, in spite of the fact that the pelvis is to a large extent filled up by the uterus, and the uterus will, even if only in labour, regain its normal position. Dr. Hooper, in Volume V, showed how well he had profited by Hunter's teaching in the management of two cases. He hoped that keeping the bladder empty would enable the uterus to go up by itself, and if it did not do so he pushed it up.

I have selected typical examples of William Hunter's teaching in which he made notable advance, and hope that I have shown something of the debt that we owe to his untiring zeal and skill as an investigator and teacher.

In Hunter's teaching tradition, superstition, mystery, and guesswork are left behind, and the results of "exact observation, experiment, and the application of anatomical and physiological science" take their place. By his "observations and experiments, which were often repeated and diligently attended to with no other desire than to discover truth," William Hunter built up a position and has left an example and tradition which will last as long as there are a science and an art of medicine.

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A CASE OF MÉNIÈRE'S DISEASE.

BY

THE LATE SIR ROBERT M. SIMON, M.D., F.R.C.P.,

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A MEDICAL man who had been overworked and disturbed, but not distressed, by unusual mental excitement in the summer of 1910 had planned to take a golfing holiday in Scotland.

On the day of departure he was summoned to a case in Gloucestershire, with the result that only after much travelling was he able to reach Edinburgh about ten o'clock at night.

He slept badly, and started early next morning, in order to reach his destination. He did so by ten o'clock, and, though very tired and unfit for exertion, played two rounds of golf that day Next morning, about 6 o'clock, he was waked from sleep by a horrible feeling of vertigo, the pictures in the room seeming to go round, and the bed in which he lay to oscillate from side to side. He was very slightly sick, and quite unable to raise his head without extreme giddiness. He sweated profusely; gradually all symptoms disappeared, except a feeling of extreme prostration.

Not unnaturally, perhaps, he ascribed his experience to fatigue and stomach disturbance, due to over-exertion after much work and over-much travelling.

Six months previously he had had a similar experience, also about 6 a.m., which was thought to be due to a bilious attack. This soon passed off, and in the course of a few hours he was able to get up, eat breakfast, and go to work. With this exception his health had invariably been excellent and his digestion perfect. His only trouble had been increasing deafness in the right ear and a never-ceasing tinnitus, slight on the left, extreme on the right side. This he had learnt to accept as inevitable and incurable. No association between the ear symptoms and the two attacks of early morning vertigo had crossed his mind.

For three days he remained in Scotland, golfing too much; smoking, perhaps, too much, but careful in diet and quite abstemious in the matter of alcohol. Giddiness and very slight vomiting occurred each morning, but he soon recovered and became fit for the day's exercise.

After four days he had to leave hurriedly and go to Cornwall. Though he was naturally tired, he began at once to play golf, and during the first week had several recurrences of early morning vertigo and sickness. Then one night, after chatting with a friend, about 11 o'clock he left the room to go to the lavatory on the other side of the corridor.

Suddenly, while lighting the gas, he felt as though some one had hit him a terrific blow on the head. He fell prone, not losing consciousness, but feeling deadly sick and horribly giddy.

He felt his eyes oscillating violently and vomited uncontrollably. Despite the unpleasantness of this, he was unable to move; any attempt to lift his head was associated with giddiness beyond the power of words to describe. He sweated profusely and lay for perhaps half an hour in the greatest prostration. Finally, he managed to slide to the open door and call out to his friend in the room opposite. By this time he had realized what had happened—that he was suffering from Ménière's disease—so he was able to reassure his friend, and got him to pull him by the heels along the passage into the other room. He could not to save his life have raised his head or have attempted to walk. After lying on the floor for a couple of hours, he was lifted on to a sofa, and remained there sweating and prostrate until 6 o'clock. He was able then to struggle up to bed and to sleep.

Beyond great prostration and weakness no ill effects could be noted, and in a fortnight he was able to leave the west and go to Harrogate. During the fortnight he had several attacks of giddiness, but no sickness, and at no time had he any headache either before or after the severe seizure.

Very foolishly he acted on the advice to have some rather exhausting baths at Harrogate, and in three days again had a severe attack. After a good breakfast he suddenly became very giddy, slipped out of an armchair and lay on the floor vomiting and sweating for two or three hours. Again no loss of consciousness—no headache.

Very slowly he began to gain strength, but any attempt to take exercise or undergo fatigue resulted in an attack of such giddiness that he had to fall or lie down. In the course of a month he was well enough to return to active work, but had to live very quietly and subordinate everything to his duties in hospital or practice.

Once only did he fall down, and that in the street after a very fatiguing day. He frequently got the impression that he was going to be giddy and felt a curious sensation of warmth all over the body as though he were going to sweat, but if he refrained from exertion he was able to avert further trouble.

After two years' incessant watchfulness and care he regarded himself as cured. To-day the deafness of one ear and the tinnitus remain as at the onset, but he is not giddy nor is he ever sick. Two distinctive features characterized each attack—one the feeling of warmth of skin followed by sweating, and the other, when an attack occurred, a feeling as though his brain were loose inside the cranium and being dashed from side to side. For two years the condition was very distressing, on account of a terrible apprehension that he was going to be giddy.

The foregoing is typical of the worst class of cases of Ménière's symptom; there were only three absolutely uncontrollable attacks of giddiness when he fell as though poleaxed, and two or three when he had to lie down, but from 1910 to 1912 there were numerous occasions when he got the sensation of his brain being loose and when he felt warm and sweated. No specific treatment was of use—hybrobromic acid upset his digestion and bromide depressed him.

I have seen a considerable number of cases during the last few years, and my experience of treatment confirms my friend's experience. All the cases have done well, and in every case the only useful treatment has consisted in the correction of imperfect digestion, of hypermetropia, of anaemia, and of any other symptomatic conditions, but chiefly in the avoidance of fatigue.

Ménière was of opinion that in certain cases haemorrhage into the labyrinth was the cause of symptoms, but it is quite certain that haemorrhage could not have occurred each time my patient was uncontrollably giddy, though it was possible there might have been some on two occasions.

Most cases occur in people of advanced middle age, and in a large proportion of those among them who have acquired gout, or are undergoing ossification of the structures of the internal ear.

Such changes might predispose to the attacks, but are almost certainly not the cause. Many things point to a vasomotor disturbance being at the root of the trouble, especially the sensation of warmth and the sweating. This suggestion would explain the analogy of somewhat similar symptoms arising from the abuse of tobacco and from sea-sickness.

It is in the highest degree important to discriminate between the vertigo of Ménière's disease and that due to gastric causes, aortic disease, and arterial sclerosis. So many people are unaware that they are deaf on one side that the examination of the ear should be a routine procedure in every case of vertigo.

It has been said that deafness follows Ménière's disease; it might if haemorrhages occurred, but it is infinitely more common to find deafness, slowly and hopelessly progressing, preceding it.

THE late Major Edwin Bedford Steel, who died of wounds on November 23rd, 1914, left estate of the gross value of £1,192, with net personalty £1,176.

CERTIFICATION UNDER THE MENTAL DEFICIENCY ACT.*

BY W. A. POTTS, M.A., M.D.,

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MENTAL defect is a disease not taught in any medical school, yet it is a province of medicine which requires special study, and furnishes cases for which the necessary diagnostic acumen is not afforded by a qualification awarded entirely on a knowledge of other branches of medicine. The recognition of mental defect is often difficult; the differential diagnosis from insanity, epilepsy, the state of being merely dull and backward, want of education, the exhaustion of physical illness, or the abnormality due to sense deprivation, aside from other rare diseases, is not always easy.

I would advise every member of the profession to provide himself with a copy of the Act and also with a copy of the Provisional Regulations; they can be obtained at a cost of 4½d. and 3½d. respectively from Wyman and Sons or any of the Government stationery offices, or through any bookseller.

I will consider very briefly the medical aspect of the certificate. On the prescribed form are two headings for the medical man to fill up:

(*a*) Facts observed by myself.
(*b*) Facts communicated by others.

As to (*b*)—facts communicated by others—the full names of those who give the information should be stated, and also their relation to the patient, although this is not obligatory; the evidence of more than one, if it is to the point, will obviously strengthen the certificate. The following quotations from actual certificates will serve to indicate the kind of facts required: "Has always been dull and backward." "Has never been like other children." "Has never grown up." "Can do no useful work." "Never works except under supervision." "Loses his way." "Cannot take care of himself." "Cannot go any errands." "Cannot be trusted with money." "Has never been able to earn anything." "Cannot keep a situation." "Is abnormally passionate." "Is extraordinarily obstinate." "Is open to any suggestion." "Will never wash himself." "Is very slow and stupid." "Has no memory." The Birmingham (Special Schools) Committee, of which I was chairman for ten years, found that among the high grade feeble-minded who are able to get work after leaving school, mental defect often makes itself plain by a constant change of situation (seven or eight a year), and inability to earn a living wage.

As regards (*a*)—the facts observed by the medical man himself—there are two headings:

1. At the time of examination.
2. Previously to examination.

The date of the previous observations must be recorded. When the patient has been seen before and the same conditions found it is clearly important to record it, especially if there has been a considerable interval, as that proves the disease is no passing disorder of mind.

There is no examination and no set of tests which provide an absolute standard. The opinion of an expert, after a few minutes' conversation and observation, is far more valuable than the records of a long series of tests conducted by a tyro, who judges by the results only. All the same, tests are useful, especially as a mere statement that a person is feeble-minded will not be accepted by the Board of Control, which states in Regulation 37 that "an order shall not be made upon a certificate which is not founded wholly or in part upon facts observed by the certifier." There is, however, no difficulty if we remember that peculiarities of appearance, of manner, and of conversation are facts which can be stated. A few years ago I read to the Branch a paper on tests of intelligence in which I detailed the most useful. It is therefore unnecessary for me now to do more than recall one or two. Let me return, however, to the threefold basis I suggest for certification—namely, peculiarity of appearance, manner, or conversation. I will consider the appearance first. If the defective conforms to one of the recognized types of primary mental defect, namely, Microcephalic, Macrocephalic, or Mongolian, a statement to this effect is an important fact. If the bodily configuration shows no such complete abnormality, but exhibits several stigmata of degeneration, that is a fact suggestive of amentia; the important point is that while isolated peculiarities are often seen in normal individuals, they are usually multiple in defectives. In the large majority of cases, however, not only does the patient conform to no special type, but he shows no stigmata either. In some instances numerous scars of cuts and burns will be found, suggestive of the patient's inability to take care of himself. In others the slovenly, dirty and torn clothes give a useful clue. The manner of the patient is of the utmost importance, and may be the only evidence for certification. How does he enter the room? How does he meet a stranger? Gait and carriage must be carefully observed. How does he conduct himself during the examination? Does he take an intelligent interest, or is he quite indifferent? What is his capacity for attention and concentration? Even when the appearance and manner leave no doubt, an examination should be made to confirm the diagnosis; in most cases it is essential. If the patient cannot read or write, or tell the time, or perform simple calculations in spite of training, little further evidence is required. If he has such elementary knowledge, he may still fail in very simple tests. In all of these allowance must be made for age and also for any lack of education.

The kind of examination can be best described by citing extracts from actual certificates. "Slow and dull in manner and conversation, very slow and awkward at undressing, slow and inaccurate in simple calculations." "He told me that 2s. 6d., 6d., and 1s. together made 10s., and also told me that a horse has feathers on its head." "Does not know the date." "Does not know when Christmas day is." "Does not know when his birthday is." "Does not know how long he has been in this institution." "Told me that a penny was a halfpenny and a shilling a threepenny bit." "Says a horse has two legs." "Does not know which is his right hand." "Does not know which is the fourth finger of his hand." "Does not see any necessity for earning his own living." "Does not know how many brothers he has." "Cannot say what he had for dinner." "Does not remember anything unusual that happened last Christmas day." "Says the word 'insensible' means 'Are you sensible?'" "Says the 'opposite of honest' is being very careful with money, and not spending what is not yours." "Says the 'opposite of ugly' is 'Are you ugly?'" "Cannot describe how he came here."

Special tests sometimes useful are the following:

1. Turn his coat sleeves inside out and tell him to put it on.
2. Give him a knotted cord to untie.
3. Give him a match to strike.
4. Saying what is missing in a figure.
5. Crossing out test; letters or groups of dots.
6. Distinguishing the ugly from the beautiful in a pair of faces.
7. Tell him to repeat as many words as he can in three minutes; a child of 11 should be able to give at least sixty. An adult ought to give nearly sixty per minute.

An unlimited number of such tests can easily be devised. Often the most important point is not whether the correct solution is obtained, but how the problem is approached and carried out. Recently I certified as defective a woman, now under guardianship, who failed in no intellectual test; she was quick, accurate, and logical, but her torn dress, for which she accounted in a very stupid way, her obvious complete dependence on others and lack of initiative showed a degree of incapacity for shifting for herself and resisting the temptation to drink, which has been her ruin, that amply justified a certificate, especially as there was evidence of lifelong peculiar conduct, such as curtseying elaborately to any man she may meet on the road.

It is sometimes best not to give the details of tests in a certificate, but simply to say, "Could not perform certain simple tests." If necessary, the tests can be explained in court.

A word may be said in conclusion about moral imbeciles; no one can be certified as such unless he exhibits some sign of mental defect in addition to being criminal or vicious. A careful examination will generally reveal some

* Abridged from a paper read at a meeting of the Birmingham Branch of the British Medical Association on November 12th, 1914.

weak spot. Great stupidity in attempts to conceal the crime, and absence of motive, are important clues; the man who steals a loaf of bread to give to his starving family is probably normal; the poor boy who robs his sister's money-box, and then scatters the coins among a crowd of children in the street, is probably defective.

INSECTS AND WAR:

XI.—*THE MOSQUITO* (*Anopheles maculipennis*).

BY

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(*Continued from p. 106.*)

> There in a wailful choir the small gnats mourn
> Among the river sallows, borne aloft
> Or sinking as the light wind lives or dies.
> JOHN KEATS, "To Autumn."

THE female imago hibernates. Finsch made observations and found it hibernating on the frozen Siberia Tundras, beneath the moss and snow. Sterling found them in North America when the snow was melting, in great numbers, and he and his party were terribly bitten. There is no doubt that female imagines live throughout the winter, and they can be found in England as a rule hibernating in cellars, old out-houses, chicken-houses, or disused farm buildings. These hibernating females disappear early in May, presumably having laid their eggs. Dr. Thayer of Baltimore describes these creatures, having found them on the roofs and walls of barns near New Orleans, and although some may pass through the winter months in the egg state, probably the great majority of them hibernate as imagines. Whether the male also hibernates is doubtful. Grassi says he never found the male of *A. maculipennis* in the winter, only fertilized females. But as the warm weather sets in the female generally becomes active and bites, and the native Indians consider these elderly and famished females to give more annoyance than any other stage in the life-cycle. In the warmer climate of Southern Italy they not infrequently hibernate in grottos and caves. At times they occur in such numbers that they can be swept up. After depositing her eggs the hibernating female probably dies. This usually happens in May.

In the old days we used to collect gnats, keep them in a receptacle unprovided with any food, and when they died of starvation after a couple of days, we wrote poems or essays on the "Transitoriness of Life" and the "Evanescence of Time."

> The thin-winged gnats their transient time employ,
> Reeling through sunbeams in a dance of joy.
> MRS. NORTON.

Nowadays we feed them. Bananas, sweetened milk, pine-apple, or almost any other vegetable juice is their diet, and they live in captivity for weeks. At Cambridge in 1900 (July to August) Professor Nuttall was successful in keeping females alive on a diet of bananas and water from two to eight weeks, but it was found essential to keep the atmosphere fairly moist and the food fresh. Grassi found that he could only keep *Anopheles* alive in his laboratory in Rome for a month.

Both *Anopheles* and *Culex*, at any rate in captivity, lay their eggs early in the morning. Apparently the nature of the food has some effect upon their fertility, certain observers stating that when male and female are fed on vegetable food alone there is no fertilization and no oviposition. A diet of blood evidently assists the female to lay her eggs, and perhaps to get them fertilized. One female *Anopheles* laid a batch of 146 eggs, and subsequently laid six more. But, as a rule, a fertilized female does not lay a second batch unless she receives a second meal of blood. The eggs are laid two or three days after the meal. There is also some evidence that a meal of blood is necessary if fertilization is to be effected. As Austen says in the report of the Sierra Leone Expedition of the Liverpool School of Tropical Medicine, "the following law is likely to hold good for the *Culicidae* which feed on man—at least for the common species; although these gnats can live indefinitely on fruit, the female requires a meal of blood both for fertilization and for the development of the ova. In other words, the insects need blood for the propagation of their species." Undoubtedly, if mosquitos ever talk, they would talk like Mr. Waterbrook, Hamlet's aunt, and the "simpering fellow with weak eyes" talked when David Copperfield dined with the first-named at Ely Place, Holborn. The burden of their song was: "Give us blood."

But a word of caution must be given here. Most of these deductions are based upon mosquitos in captivity; whether the same is true of them in natural conditions is not quite certain. If it be so it is difficult to see how these countless millions of gnats and mosquitos which dwell in the barren regions around the Polar circle ever keep going.

It very frequently happens in the animal kingdom that females are much more numerous as well as much larger than the males. As Kipling tells us: "The female of the species is more deadly than the male." Professor Nuttall and I did not notice that this was the case with *Anopheles*. There is some evidence that the male hatches out earlier than the female, and that in Southern Europe there may be three or four generations in the course of the season, the first beginning in April and the fourth taking place between the middle of September and the middle of October. After that date no larvae were found. About four generations also occurred in the neighbourhood of Cambridge, according to observations of Professor Nuttall. Kerschbaumer has calculated that if the average number of eggs laid by a female be 150, the number of the descendants by the fourth generation would amount to 31 millions. This readily accounts for the fact that in certain parts of the world they occur in perfectly enormous numbers, and if it be true that blood is essential for fertilization and oviposition, very few of these potential mothers can breed. In nature they will feed on a great variety of vegetable juices—melons, wild cherry blossom, bananas, oranges, over-ripe mangoes; they suck the "juices" of allied species of insects just when the imago is issuing from the pupa case and before their integument is hardened, or they pierce the soft skin of the cicada, and occasionally attack the chrysalids of a butterfly. One of the most curious sources of food is very young trout. The adult insect attacks the *petit poissons filiformes*, "literally sucking out their unsuspective little brains before they could escape." Grassi is doubtful whether the adult males feed at all. He states that he never found any food in their stomach, nor has he ever seen a male feed. But Professor Nuttall's experiments in Cambridge prove that males were seen repeatedly to feed, and to feed hungrily, on cherries, dried fruits, dates, and bananas.



Anopheles maculipennis (female) sucking my arm.

As mentioned before, the proboscis of the male is too weak to pierce the human integument, but Howard notes that it will suck up water, molasses, and beer; and Gray, at Santa Lucia, mentions that in that island *Culex* had developed a great fondness for port wine. One particularly favourite food is rose-buds covered with aphides, probably due to the sweetened secretion which these insects exude. The feeding is sometimes very ravenous, so that the insects become distended, the bright colour of the blood readily shines through the joints of their chitinous armour, and sometimes, like Baron Munchausen's horse after the adventure with the portcullis, what goes in at one end comes out at the other. In fact, as Dr. Johnson said of the children at a school "where discipline was maintained without recourse to corporal punishment," "But, sir, what they gain at one end they lose at the other"!

The reaction to heat and cold is that common to many insects. During the winter the imagines become torpid, quiescent, and cease to worry one. With returning warmth they become lively again, and generally wake from their winter sleep in a state of considerable hunger. They are insects which prefer darkness to light, and during the daytime congregate in caverns and grottos, under the shade of trees and bushes, beneath bridges, in barns, and so on. As the sun sinks they emerge from their hiding places and fly during the night.

Cambon, writing on *Anopheles maculipennis* in the Roman Campagna, says that imagines "appear a few minutes after sunset and disappear a few minutes before sunrise." We were able to confirm this at Cambridge. The insects retired into the shadiest parts of the boxes in which they were living until the time of sunset, when a loud buzzing was heard, and the insects promptly fed on the food which they had neglected during the day. We kept our tame mosquitos in a huge gauze tent, and at night they invariably accumulated on the side which was illuminated by a lamp. Such mosquitos as were kept in a glass lamp chimney, closed with gauze at each end, invariably flew towards the end which was held towards the light. People who are experienced with mosquitos sometimes keep the room in which they are sleeping dark and place a light in an adjoining room, leaving the door ajar and thus lure them away. It seems a curious thing that, while these insects are repelled by the diffused light of the sun, they are attracted by the more concentrated light of a lamp or candle, but such is the psychology of *Anopheles*.

It is not perhaps solely the influence of light; it may be the influence of colour, for light is very rarely entirely colourless. In the many experiments carried on in Cambridge in the natural history of the mosquito, *A. maculipennis*, not the least interesting were those directed to ascertaining the insect's preference for colour. It had been noticed by many observers that they frequented dark-coloured areas rather than light. Austen had pointed out that in a room with a dark dado it was on the dado that the mosquitos were found rather than on the whitened walls above. Buchanan noted that the men when collecting *Anopheles* in an Indian hospital found they were to be most easily got by hanging up a dark coat or two upon the walls. A white coat they always avoided. The proverbial yellow dog in the West is much less bitten than the Newfoundland, and persons wearing dark socks and black shoes are more bitten than those who wear light ones. Natives, although they suffer less in health, having acquired a certain immunity, are undoubtedly more bitten than the Europeans.

The experiments we carried on at Cambridge were as follows: In the large gauze cubical tent in which the mosquitos were bred and kept a number of pasteboard boxes without lids, measuring 20 by 16 by 10 cm., were piled up. The boxes were lined with seventeen different coloured cloths, and were placed in rows one above another, and the order was changed each day, so that no question of height from the floor or better illumination entered into the problem. Counts were made of the inhabitants of each box on each of seventeen consecutive days, with the following results:

Colour of Box.	*No. of Mosquitos in each Box.*
Navy blue	108
Dark red	90
Brown (reddish)	81
Scarlet	59
Black	49
Slate grey	31
Dark green (olive)	24
Violet	18
Leaf green...	17
Blue	14
Pearl grey	9
Pale green	4
Light blue (forget-me-not)	3
Ochre	2
White	2
Orange	1
Yellow	0
Total	512

It will be noted that about the level of the pearl grey there was a marked drop. Pale green and pale light blue, ochre, white, orange, and yellow, especially the last two colours, seem positively to repel the insect. Our khaki clothed soldiers have other advantages than invisibility to the foe. This matter is worth pursuing further, and it might be possible to design mosquito traps lined with navy blue; by periodically sweeping out the contents considerable numbers of mosquitos might be destroyed. A dark blue sticky solution might be even more effective. Some of these results were published in this JOURNAL on September 14th, 1901, and on September 17th, Mr. J. Cropper of Chepstow wrote in it as follows:

> Seeing your article on Colour Selection by *Anopheles* reminds me that I found the dark navy-blue lining of my tent this summer (in Palestine) extremely attractive to mosquitos, almost entirely *Anopheles*—and when the sun got hot I always noticed an increase in their numbers, presumably as they came from the herbage and trees near by. No one ever slept in the tent, and I never found *Anopheles* bite in the daytime.

SURGICAL EXPERIENCES AT THE ANGLO-AMERICAN HOSPITAL, WIMEREUX, FRANCE.

BY

HUGH LETT, M.B., F.R.C.S.,

SURGEON TO THE LONDON HOSPITAL, WITH CHARGE OF OUT-PATIENTS,

AND

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COLWYN BAY, NORTH WALES.

THE following notes refer to cases that have been admitted to the Anglo-American Hospital (Lady Hadfield's), Wimereux, and treated by us during the last two months.

In addition to the patients suffering from bullet, shrapnel, or shell wounds, several cases of appendicitis were admitted, and one of acute intestinal obstruction due to a Meckel's diverticulum. This last case will be referred to in detail later.

Nature of Wounds.

The great majority of the wounds were in a more or less septic condition, especially when they had been caused by shrapnel or shell, and where there was extensive laceration of the tissues at the wound of exit.

Tetanus.

We were fortunate in not having any case of tetanus, in spite of the fact that many of the wounds were lacerated and soiled with mud and clay. The absence of tetanus was no doubt accounted for by the prophylactic injection which had been administered at the field ambulance. Inquiry was invariably made in every case, and an injection of 30 c.cm. was given to any patient who had not been previously inoculated, as well as to those about whom there was doubt.

Antisepsis Vaccine.

We made use of Sir Almroth Wright's vaccine in a few cases. Though their number is not sufficiently large to enable us to draw any positive conclusions, our experience leads us to the belief that in the majority of cases it is unnecessary, and that where used as a curative agent the cases should be chosen with discrimination. As a prophylactic, however, the progress of the cases in which we have employed it has been such as to encourage us to continue its use, especially in those cases in which there is extensive laceration of the soft parts, with a large open wound. But it is in the highest degree important to regard the vaccine merely as an adjuvant to ordinary clinical treatment, and to realize that it cannot in any way replace it.

General Treatment.

Simple bullet wounds of the soft parts, if the bullet had passed out, rapidly healed. The wounds of entry and exit were painted with iodine, a dry dressing applied, and the part kept at rest. In those cases in which a bullet remained, as shown by the *x* rays and by the absence of a wound of exit, provided that there was no injury to important blood vessels and no evidence of reaction as shown by inflammation, pain, and rise of temperature, no

attempt was made to remove the bullet unless it was quite superficial, in view of the fact that we were under orders to evacuate our patients as soon as possible for transfer to England.

There is, however, an extremely important group of bullet wounds—those in which there has been what is known as an explosive effect. As an example we may refer to the case of a man who was admitted with a bullet wound of the forearm. The wound of entry was quite small, and slightly to the inner side of the anterior aspect of the forearm. The wound of exit extended over the middle two-fourths of the posterior aspect of the forearm; an inch and a half of the ulna was comminuted and partly shot away, some of the muscles were completely severed, and there was a marked protrusion of the remaining soft parts.

All cases of lacerated wounds, whether caused by bullet as mentioned above or by shell or shrapnel, were dressed under an anaesthetic. Some shrapnel wounds resembled bullet wounds in that the wounds of entrance and exit were comparatively small and healed well, but suppuration occurred more frequently than in the case of bullet wounds. Small fragments of shell also occasionally remained buried without causing any reaction, but these were exceptions to the general rule, which was that shell wounds were lacerated, often extensive in area, and suppurated freely.

Treatment of Lacerated Wounds.

All débris, such as particles of hair, clothing, dirt, fragments of shell or shrapnel, were carefully and deliberately removed. All fragments of bone, unless their connexion with the surrounding parts appeared to be sufficiently extensive to secure an adequate blood supply, were also removed. In this connexion we may allude to cases of gunshot wounds involving the metacarpal and metatarsal bones. These cases usually showed considerable comminution of one of the bones. Our practice was to remove these fragments freely in order to provide adequate drainage, which was maintained by means of a tube passed through from the dorsum to the palm of the hand or sole of the foot. In the absence of a wound of exit in the palm or sole, a counter incision was made on to a pair of sinus forceps introduced from the dorsum to admit the passage of a tube. All obvious débris was removed by forceps or by wiping with a swab, and the wound was treated by prolonged irrigation with hot saline solution.

For the first few weeks it was our practice to complete the operation by irrigation with hydrogen peroxide, but latterly we have resorted to swabbing the wound with pure carbolic acid and subsequently irrigating it with saline. Our impression is that we have obtained better results with the latter method than with the former. When pure carbolic acid was used the affected part was placed in a saline bath within four hours of the operation and the wound sprayed frequently with hydrogen peroxide. Constant attention is necessary to ensure satisfactory results. If baths can be given at short intervals, replaced by hot wet dressings, and the wound sprayed frequently, we have found that the sloughs rapidly separate and the wound looks clean in thirty-six to forty-eight hours. If, however, circumstances prevent this frequent attention to the wound, it is better not to use pure carbolic acid, as the wound will become very offensive and the result less satisfactory than if it had been treated by wet dressings and hydrogen peroxide. In all cases the greatest care was taken to provide adequate drainage.

After-Treatment.

In the after-treatment of these cases we feel that we cannot emphasize too strongly the excellent results we have seen from the use of baths of saline solution, 2 drachms to the pint. The routine treatment has been to place the arm or leg in a saline bath for two hours. It is then removed, syringed or sprayed with hydrogen peroxide, and a boracic fomentation applied. At the end of two hours the fomentation is taken off, the wound again sprayed with peroxide, and the limb placed in another bath. During the night, except in very severe cases, baths were not given, but the fomentations are renewed every three hours, when the wound is again treated with peroxide. In some cases the patient has been able to keep his arm in the bath for a much longer period than two hours, but it is not always possible to do this as it tires the patient. Not only do these baths improve the appearance of the wound, but the men themselves have volunteered an expression of their appreciation of the comfort which they gave them

In the case of lacerated wounds of the thigh, the same treatment has been secured by transferring the patient bodily into a large bath, but in these circumstances the treatment lasted for one hour instead of two.

Continuous Saline Irrigation.

In two cases in which amputation was done in the upper third of the thigh for deep-seated gangrene, the wound was necessarily left open, and no sutures were inserted. In both cases continuous irrigation with hot saline was employed by means of Souttar's infusion apparatus made by Allen and Hanburys. The flow of the saline was regulated, so that a continuous stream passed over the stump at the rate of two pints an hour. A single layer of gauze was placed over the wound, which helped to distribute the fluid uniformly by capillary attraction. The great value of Souttar's apparatus lies in the fact that the fluid is maintained at an even temperature. The fluid is most conveniently collected by arranging a piece of mackintosh in the form of a skirt around the stump as high up as possible, and by lightly fixing it with a piece of elastic, the fold of the mackintosh conducting the fluid into a bed-pan. In this way the wound is kept clean, any discharge is washed away as soon as it is formed, and the hot saline gives great comfort.

An additional advantage of this treatment in the case of gangrene is that the stump is constantly exposed to the air, and can be sprayed at frequent intervals with peroxide. Our patients were isolated in small wards, containing two beds, and in spite of the cold weather were able to enjoy the very thorough ventilation obtained by having the large windows constantly open.

Anaesthesia.

In practically all cases chloroform has been the anaesthetic used, and has been given on a Skinner's mask. The results have been most satisfactory. The patients have taken the anaesthetic well, they have been singularly free from any unpleasant after-effects, and in no case has there been any vomiting. In a few cases an injection of $\frac{1}{4}$ grain of morphine with $\frac{1}{100}$ grain of hyoscine and $\frac{1}{120}$ grain of atropine was given before the operation. In one or two cases, where there was extreme shock, spinal anaesthesia was employed by an intrathecal injection of stovaine. During the operation a very small quantity of ether was given by the open method to overcome the mental shock which the amputation of a limb produces on a patient who is fully conscious.

We have been exceptionally fortunate at this hospital in having a very perfect surgical equipment, thanks to the generosity of Lady Hadfield, and we also wish to acknowledge our appreciation of the nursing, which has been done under the direction of the matron, Mrs. De Winton. We cannot speak too highly of the constant care and attention given by the Sisters and nurses to the patients under their care, and the excellent results which have been obtained are very largely due to them.

We append details of a few of the most interesting cases.

CASE I.—*Volvulus of Meckel's Diverticulum: Intra-abdominal Abscess: Strangulation of Small Intestine.*

Private J. P., aged 24, while on duty in the trenches two days before admission, was suddenly seized with severe pain in the right lower abdomen. He was admitted to this hospital on December 16th. The patient looked very ill; temperature 99°, pulse 96. The bowels had not been opened for four days. There had been some vomiting, and he had had three enemata within the last twelve hours without result. The tongue was dry and brown. On examination of the abdomen it was found much distended, especially in the lower half. It was tender and rigid and did not move on respiration. As no urine had been passed for twenty-four hours, a catheter was introduced and 24 oz. of urine withdrawn.

Operation was at once performed. A vertical incision was made through the right linea semilunaris. An abscess was found behind, to the right of and below the umbilicus. Leading up to it was a Meckel's diverticulum, the thickness of the index finger. It was tensely drawn out and terminated in the abscess cavity. It also tightly constricted a loop of small intestine, which, however, was not sufficiently injured to necessitate resection. The small intestine above the strangulation was

greatly distended and the peritoneal coat injected and covered with lymph. The abscess was carefully packed off from the rest of the abdominal cavity and opened. It contained very offensive pus, and the distal end of the diverticulum, which was rotated twice, gangrenous and attached by its distal end to the umbilicus. The pus was carefully wiped away and the diverticulum traced to its origin about 12 in. above the ileo-caecal valve. It was then resected and its attachment to the small intestine closed by two layers of sutures. One tube was placed in Douglas's pouch through a suprapubic incision and another through a small incision immediately below the umbilicus leading into the abscess cavity. After the operation, saline was given per rectum, but the first half-pint was immediately returned with a large quantity of faeces. For six days after operation there was slight pyrexia due to mild suppuration around the abdominal incision. Subsequent progress uneventful. The patient was discharged for England on January 14th with a small granulating area.

CASE II.—*Bullet Wound of Thigh, involving Femoral Artery: Gangrene: Amputation.*

F. C., aged 23, three days before admission, whilst walking, was wounded at a range of 250 yards. He lost a large quantity of blood, and was taken to the field hospital, where he was dressed, and the bullet, which was lying under the skin on the opposite side of the thigh, extracted. The leg was dressed twice under an anaesthetic before he reached this hospital. On admission the patient was blanched and had evidently lost a great deal of blood. The right thigh was much swollen, and there was a bullet wound in the line of the femoral artery. No pulsation could be detected in anterior or posterior tibial arteries.

Operation.—An incision was made over the swelling in the line of the femoral artery; a large traumatic aneurysm was found. The incision was prolonged upwards and the superficial femoral artery tied in the upper third of Hunter's canal. The clot was then evacuated and a ligature applied to both sides of the wound in the artery. It was noticed that the femoral sheath was oedematous and had a greenish tinge. For the next three days the patient was very ill, and complained of pain in the calf. The foot remained warm and of good colour. On the third day the calf was swollen and very painful. An anaesthetic was given and a vertical incision made in the middle of the calf. The superficial structures, including the gastrocnemius muscle, appeared normal, but on incising the deeper muscles they were found to be green and gangrenous. A circular amputation was performed at the junction of the upper and middle thirds of the thigh. No attempt was made to fashion flaps. It was found, however, that the gangrene had spread along the outer side of the thigh, which necessitated the removal of more skin, fat, and superficial muscles. The condition of the patient at the time of operation was so grave that the question of amputation at the hip-joint could not be considered.

Eight days later, as the patient remained seriously ill with much pyrexia, the rest of the femur was disarticulated at the hip, and, as we anticipated, we found that the medulla of the bone was filled with pus.

Subsequently he began to improve, but a week after the last operation a large abscess, containing a pint of pus, was incised in the left gluteal region. The stump was treated by exposure to the air, irrigation with saline, and spraying of the wound with hydrogen peroxide every few hours. The patient was discharged for England on January 10th with a healthy granulating stump.

CASE III.—*Bullet Wound of Skull: Laceration of Occipital Lobes: Loss of Sight: Operation: Recovery.*

W. T., aged 42, two days before admission, while advancing to attack, was wounded by a bullet fired at 150 yards' range. He lost consciousness, but could not tell how long for; when he became conscious again he found that he had completely lost his sight, and could not distinguish between light and darkness.

Condition upon Admission.—Mentally dull, and history obtained with difficulty. Pulse 60; temperature 98.6°. He complained of severe frontal headache. No paralysis. Knee-jerks and plantar reflexes normal. Pupils medium size and equal. He could now distinguish between light and darkness, otherwise there was complete blindness. He was deaf, more so on the left side than on the right, but gave a history of some deafness previous to injury. On examination of the skull a small wound of entrance could be seen 1 in. to the left of the external protuberance and 1 in. above it. An admirable *x*-ray photograph, taken by Dr. W. A. Propert, showed the fractures in the skull with the depressed fragments lying in and on the brain.

Operation.—After shaving the scalp, a small wound of exit was seen two inches to the right and above the external occipital protuberance. A large horseshoe flap was turned down, including the two wounds. The two openings in the skull were clearly exposed, and brain matter escaped from the wound of entrance. Both openings were enlarged, to the size of half a crown on the right and a two-shilling piece on the left, and the intervening bridge of bone removed. The dura mater had been torn from one opening to the other, and brain matter bulged out freely. The opening in the dura was enlarged, and an irregular piece of bone—roughly half an inch in diameter—was removed from the posterior end of the left occipital lobe, and a similar somewhat smaller piece from the right. Throughout the operation a continuous stream of hot saline was directed on to the exposed area. The lacerated tissues around the wounds of entrance and exit were swabbed with pure carbolic. The flap was then sutured, but free drainage was secured by strips of rubber, one being inserted at each angle, two small ones through the bullet wounds, and a fifth through the most dependent part of the base of the flap. On recovering consciousness an hour after operation, the patient volunteered the statement that he could distinguish between nurses and orderlies. There was also apparently considerable improvement in his hearing. Subsequently steady improvement was maintained. For the first three days there was a slight rise of temperature ranging up to 99.5° or 100°, and on two occasions the pulse dropped to 56. There was also for three days some bulging through the opening in the skull. A certain amount of discharge escaped along the rubber drains for the first four days. The wound healed up soundly by first intention. Headache and giddiness persisted after operation, but daily became gradually less, and ceased at the end of a week. Colonel W. T. Lister kindly saw the patient on several occasions, and reported that there was no optic neuritis. The field of vision steadily improved, and at the time of his discharge, twenty-three days after operation, there was only a small central scotoma, and the patient was able to read large handwriting.

TREATMENT OF CEREBRO-SPINAL MENINGITIS BY ANTI-MENINGOCOCCUS SERUM COMBINED WITH AUTOGENOUS VACCINE.

BY

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THE case of cerebro-spinal meningitis here described may be of interest, as from Sir William Osler's article in the BRITISH MEDICAL JOURNAL for January 30th it appears that there are other foci of the disease among the troops.

A boy, B. S., aged 9 years, was quite well up to January 11th, 1915. On the morning of January 12th he complained of pain in the head and vomited twice. Dr. Dighton, when he saw him the same day, found him semi-conscious, restless, and with a temperature of 105°. On the next day Dr. Dighton asked me to see the patient with him, and we saw him together each day until the boy's death.

On January 13th the boy was unconscious, delirious, lying with thighs and knees flexed, restless, but resenting being moved. Some purpuric spots were present irregularly distributed over the trunk and limbs. The abdomen was retracted, no enlarged glands could be felt, and no abnormality was detected in the heart or lungs. The pupils were equal and reacted to light, there was no strabismus and no retraction of the head. Kernig's sign was very marked, the plantar reflex was irregular, and the knee-jerks were present. It was evident that we were dealing with some form of meningitis and it remained to determine its nature.

At Dr. Dighton's suggestion, I had brought apparatus for lumbar puncture, and drew off 15 c.cm. of cerebro-spinal fluid, which came away under considerable pressure. The fluid was very turbid and on standing left a deposit of nearly half an inch of pus in the bottom of the test tube. A few Gram-negative diplococci were found after long search through the pus cells. Cultures made from the fluid yielded a good growth of Weichselbaum's diplococcus. Subcultures were made on a dozen tubes, from which a vaccine was prepared. The patient became quite conscious after the lumbar puncture and passed a good night.

On January 14th I removed 20 c.cm. of cerebro-spinal fluid and injected intrathecally 16 c.cm. of antimeningococcus serum (Burroughs, Wellcome and Co.). After this the patient became very restless and remained very restless all night. The next day the patient was unconscious and the pulse was so extremely feeble that we did not think it safe to perform rachicentesis. His head was now markedly retracted, and the left eye showed conjunctivitis and some opacity in the anterior chamber. Autogenous vaccine, containing half a million of the *Diplococcus meningitidis* was injected subcutaneously.

On January 16th he seemed distinctly better—much to our surprise, as we had not expected to find him alive. He had passed a good night, and taken nourishment well. The pulse was stronger, and he was conscious. We decided to give a second injection of the antimeningococcus serum. Dr. Dighton gave him a little chloroform,

as he had done on the previous occasions, and I drew off cerebro-spinal fluid. As the fluid came away the pulse gradually became weaker; when 12 c.cm. had come away the pulse was imperceptible at the wrist; we then stopped, and injected 8 c.cm. of the antitoxin. As this was done the pulse again appeared at the wrist. The remainder of the phial of serum was injected subcutaneously. He did not sleep at all that night, and on the morning of January 17th the nurse gave him an injection of pituitary extract, as his condition became very bad. We found him later quite unconscious, with scarcely perceptible pulse, 150 to the minute, and the head still more retracted. The anterior chamber of the left eye now contained thick, curdy-looking pus. He was again injected with half a million of his autogenous vaccine. The evening of the same day he was again seen by Dr. Dighton, who found him extraordinarily improved; he was able to take food by the mouth, was rational, and looked as if he was now really going to recover. At 4 o'clock the next morning, January 18th, he took a sudden turn for the worse, became cyanosed, the pulse failed, and he died the same morning.

The only comment I have to make on the case is that we were disappointed with the antimeningococcic serum, which, as far as we could judge, produced no clinical improvement. On the two occasions on which the vaccine was given a notable improvement followed. The sterilization of the vaccine was effected by heating to 58° C. for thirty minutes.

PRELIMINARY NOTE ON TWO CASES TREATED BY RIB TRANSPLANTATION.

BY

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Two recent cases of transplantation of bone have impressed on me the usefulness of portion of a rib as a transplant instead of the anterior crest of the tibia, which is more usually employed.

Congenital Dislocation of the Hip.

In this case the child, aged 4, was treated unsuccessfully by Lorenz's method. The following operation was performed on March 5th, 1914, through Kocher's posterior incision. The upper and posterior rim of the acetabulum was freely exposed, and the bone in this region freshened by light touches of a gouge and chisel. A finger-length of one of the upper ribs was removed in a position where the curve seemed suitable for re-enforcing and deepening the posterior portion of the acetabulum. Before reduction of the dislocation three single sutures of fine aluminium bronze wire were passed through the bone in the required position with a strong fully curved needle. The head of the bone was then levered into place and the rib fixed with its centre at the point where the head of the bone appeared to escape most easily from the socket.

Skiagrams taken at frequent intervals showed, first, the rib in good position; afterwards it almost disappeared, and later still a well-defined shadow marked the position of the transplant.

The head of the bone, judging by the skiagrams, did not appear in the best position, and the joint was again exposed through Murphy's "goblet" incision eight months after the first operation. The head was found, after rotation of the leg inwards, to be in normal relation to the acetabulum, and the latter showed an excellent formation of new bone deepening the socket considerably at the site of introduction of the rib. The shape and size of the new bone corresponded in a large measure to the original transplant.

Modification of the Albee Operation for Spinal Caries.

In this case the child, aged 5 years, was operated upon on January 19th for ever-increasing kyphosis in the mid-dorsal region of the spine. She had been treated without success since May, 1914. Absolute rest with extension on a Whitman's splint and subsequently with a spinal jacket did not arrest the progress of the disease. Skiagrams showed active caries in three vertebrae.

An incision was made slightly to one side of the spines of the vertebrae and carried well above and below the disease. The laminae and transverse processes were cleared of the soft tissues and the exposed bone freshened with Jones's arthrodesis gouge. The articulations of the adjacent ribs were freely exposed. A superficial horizontal incision approximately at right angles to the vertical incision was carried forwards in the direction of the ribs. The erector spinae muscle and dense aponeurosis was carefully preserved and pulled backwards. The rib was divided with bone forceps just outside the articulation and was easily separated forwards under the muscle to the required length and removed. The curve of the rib suited admirably the kyphotic curve of the spine. The rib was laid on the freshened bone and held firmly in position by interrupted sutures of catgut through the divided soft parts. The fragments of bone detached during the freshening of the vertebrae were carefully preserved and placed deeply in the wound.

The application of the graft alongside of the spinous processes after Jones's method, instead of the original plan of splitting the spinous processes to receive it, and the procuring of the transplant from the operation area with very little addition to the original incision, made the operation simple and rapid.

The size and shape of the graft, as in the first-mentioned case, was admirable.

In both cases, in trying to save the periosteum of the rib, the pleura was injured, but at the time of operation it was obvious that this was avoidable; and in neither case did the patient suffer any ill effects from the development of transient pneumothorax.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUGGESTED FORM OF TREATMENT FOR TETANUS.*

THE bacillus of tetanus produces toxins which affect the nervous system. No doubt the toxin becomes incorporated with the nerve centres—it passes to the nerve centres, not by way of the lymphatics of the nerve, but through the plasma of the nerve fibres. I can well imagine why the treatment of tetanus with antitoxic serum so frequently fails to cure. Flexner states that *Trypanosoma gambiense* can be suppressed by drugs in the blood and lymph vessels without being destroyed in the central nervous organs, and the virus of poliomyelitis prevented from developing through intraspinous injections of an immune serum that is without effect when introduced into the blood. I may add that when I was working on pellagra in Columbia, S.C., I gave monkeys subdural injections of a bacillus which I found in the nodes of patients who suffered from pellagra; in twelve hours I made a lumbar puncture and inoculated ascitic veal broth tubes with the cerebro-spinal fluid which was withdrawn. In twenty-four hours I had a vigorous growth of the same bacillus.

The treatment by antitetanus serum is a general treatment, but what we require is a local treatment to come into contact with the local infection of the nervous centres of the brain and cord. We certainly have not had brilliant results in treating syphilis of the nervous system by injecting salvarsan into a vein—in other words, by general treatment—and it is dangerous to inject salvarsan directly into a subarachnoid space. Swift and Elliott† were the first to employ the serum of salvarsan-treated patients for intraspinous injection, and many brilliant results have been met with by this generalized local form of treatment. As Flexner remarks, it is known, for example, that the cerebro-spinal liquid produces a means of direct and immediate contact with the structural tissues of the brain; whatever chemical is introduced into this liquid will immediately find its way to the supporting elements—the nerve cells and fibres of the cortex.

Why not treat tetanus by the same method as syphilitic diseases of the nerve centres? The cases are parallel. We recognize the fact that the toxin or toxins of the tetanus bacillus are incorporated with the nerve centres and fibres. We know that general treatment with anti-

* Abridged.
† *New York Medical Journal*, 1912, 10, 10653.

tetanus serum will not as a rule reach the nerve centres, etc. The treatment which I suggest may have been tried, but, if not, I think that a patient's chances of recovery would be much greater by using a generalized local treatment than by using the general treatment alone. I would inoculate the patient who has tetanus with an antitetanus serum, and in twenty-four to thirty-six hours I would employ the spinal local treatment by using the patient's own blood serum and injecting it into the spinal canal. The amount injected would depend upon the amount of cerebro-spinal fluid withdrawn. I am inclined to think that a cure would be more likely to be obtained by this generalized local treatment than by the general treatment alone.

Montreal. A. E. VIPOND, M.D.

X-RAY LOCALIZATION OF FOREIGN BODIES.

AMONG the memoranda published on January 23rd is a note on "An arithmetical help towards *x*-ray localization." There seems to me to be something in this, but only in certain conditions. These are (1) as mentioned, (*a*) that the screen touches the skin surface, and at the same time (*b*) the point of first shadow is on this spot; and (2) that the line of movement of the ray centre of the tube is parallel to the surface of the screen. This I will try to show.

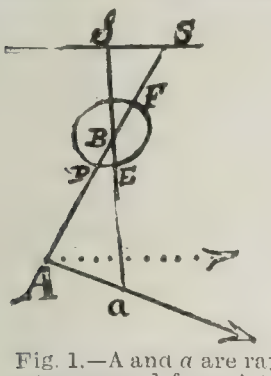


Fig. 1.—A and *a* are ray centres moved from A to *a*. B is foreign body within circumference P E F. S and *s* are shadow points on screen plate corresponding to B for exposures from ray centres at A and *a*.

If A *a* are the tube centres (Fig. 1) moving from A to *a*, in any angle, and S and *s* are the shadows of B, and A S cuts the skin circumference in P and F, then

$$\frac{A\,B}{A\,a} = \frac{\sin a}{\sin B} = \frac{\sin a}{\sin (180^\circ - A + a)}$$

$$\therefore A\,B = \frac{A\,a \times \sin a}{\sin (180^\circ - A + a)}$$

$$\therefore P\,B = A\,B - A\,P = \frac{A\,a \times \sin a}{\sin (180^\circ - A + a)} - A\,P.$$

These can all be determined, and therefore P B can be determined. In a similar fashion, F B can be shown to be

$$= \frac{S\,s \times \sin s}{\sin (180^\circ - S + s)} - S\,F$$

and, if F and S are made to coincide, then S F = 0, and

$$F\,B = \frac{S\,s \times \sin s}{\sin (180^\circ - S + s)}$$

all of which can be measured.

If now, and further, the line of movement of the ray centre of the tube is parallel to the surface of the screen, we have, since B F *s* and B A *a* are similar triangles,

$$\frac{B\,F}{F\,s} = \frac{B\,A}{A\,a} = \frac{F\,A - B\,F}{A\,a}$$

$$\therefore \frac{B\,F}{F\,A - B\,F} = \frac{F\,s}{A\,a}$$

$$\text{or } \frac{F\,A - B\,F}{B\,F} = \frac{A\,a}{F\,s}$$

$$\therefore \frac{F\,A}{B\,F} = \frac{A\,a + F\,s}{F\,s}$$

$$\therefore B\,F = \frac{F\,A \times F\,s}{A\,a + F\,s}$$

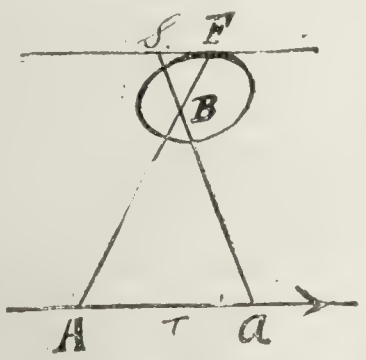


Fig. 2.—A and *a* are ray centres of tube. B is a point on foreign body within circumference. F is shadow point of B upon screen (parallel to A *a*, and touching circumference at F). S is shadow point of B upon screen when ray centre is moved to *a*.

that is, the depth (B F) of the foreign body from the surface is obtained by multiplying F A, the distance of the anticathode from the screen, by F S, the amount of excursion of the shadow of the screen, and dividing by (A *a* + F *s*), the sum of the amount of displacement of the tube and the amount of the excursion of the shadow; but, here is the point, when the displacement of the ray centre of the tube is parallel to the surface of the screen.

There are other interesting formulae for localization, but that given by Dr. Bramwell seems neat and exact.

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Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

BROMLEY COTTAGE HOSPITAL, KENT.

RUPTURE OF INTESTINE AND LACERATION OF MESENTERY: OPERATION: RECOVERY.

[For the notes of this case we are indebted to Dr. H. J. ILOTT, under whose care it was.]

F. D., aged 45, a taxi-cab driver, was driving his car, with a passenger inside, to Hayes, on the night of November 11th. The night was very dark, and the road at the place of the accident took a sharp bend. He was going at a good pace, and collided with a two-horse van proceeding in the opposite direction: it had a pole between the horses, and was loaded with vegetables for the London market.

His passenger was badly shaken, and had a deep wound in the neck under the chin; but D., who was thrown violently forward on to his driving wheel, sustained much graver injuries.

When seen he had been removed to a room in an inn near by; he was groaning with pain, and rather collapsed. He had a compound comminuted fracture of the right patella. The abdomen was not retracted, but very tender. As soon as possible he was removed on an ambulance to the Bromley Cottage Hospital, arriving there at 1 a.m. The next morning, November 12th, at 10.30, Dr. Ilott operated, assisted by Drs. A. Price and Dr. Codd. The patient was anaesthetized, clear urine being drawn off by catheter. Feeling sure that he had some grave internal injury, probably ruptured bowel, an incision was made in the middle line above the pubes. On opening the peritoneum, blood-stained, turbid fluid escaped; a considerable degree of peritonitis was present. On raising the small intestine a laceration of the lower part of the ileum, about an inch long, running in a longitudinal direction, was found. The margins were of everted mucous membrane, and liquid intestinal bilious fluid was escaping freely. The mesentery was also torn to a depth of about three inches, but there was no active bleeding going on from the mesenteric wound. The injured loop of bowel, which was much bruised, was brought outside the abdomen and clamped with Doyen's clamps on either side of the laceration. This was then closed by two layers of suturing—the first, through all coats of catgut; the second, Lembert stitches in silk. The mesenteric rent was next closed by catgut sutures on the two aspects. A quantity of blood clot and fluid was then sponged out of the pelvis, the bowel washed with warm saline solution, and the parts about, including Douglas's pouch and the iliac fossae and flanks, sponged with sterile swabs. Owing to the grave abdominal injury and the time occupied in dealing with it, it was not thought advisable to attempt wiring the patella, particularly as the fracture was comminuted and by direct violence, and there was no wide separation of the fragments. The skin was carefully cleansed, painted with iodine and sterile gauze bandage, and a back splint applied.

The patient's state after the operation was not bad, but as he still had pain a hypodermic injection of morphine gr. ¼ was given, and rectal saline, half a pint four-hourly, was ordered. Vomiting, which had begun before the operation, ceased for some hours, but then began again, the patient pumping up large quantities of dark-green bilious fluid. Ampoules of pituitrin were given every eight hours. The stomach was washed out, a turpentine enema administered, and afterwards calomel in gr. j doses hourly.

These measures giving no relief to the vomiting, and the patient's condition suggesting intestinal obstruction, Dr. Ilott communicated with the consulting surgeon of the hospital, Mr. D'Arcy Power, who came down at 9 o'clock

on the evening of November 14th, and at once decided to reopen the abdomen and explore. It was found that the peritonitis had subsided, but that the injured portion of bowel had become glued down by lymph to the brim of the pelvis, and so had become kinked. Having brought the bowel outside, Mr. Power did a lateral anastomosis between the part of the bowel above and that below the seat of injury.

This proved to be the turning-point in the history of the case, for, although the patient remained in a critical state, he passed flatus on November 15th, and the bowels acted freely on November 17th, after eight hourly injections of strychnine mv and calomel gr. ½ every hour until 5 grains had been taken.

He still continued to vomit occasionally, but this gradually ceased after giving hot water and sodium bicarbonate by the mouth and liq. bismuthi ʒi in water every four hours. He was then put on peptonized milk, Benger's food, and Brand's extract.

As some infection of the wound in the middle part with *Bacillus coli* and localized sloughing next showed itself, the sutures in the centre were removed and the part cleansed with hydrogen peroxide, and boracic fomentations ordered. Some sloughs and catgut sutures came away, and then a faecal fistula formed.

This continued to discharge freely for some days, but the wound gradually granulated and cleaned, the union of the extremities of the wound holding. The bowels continued to act regularly.

The fracture of the patella remained aseptic and very little effusion took place into the joint. The patient gradually improved in health, the faecal fistula contracting. He left the hospital for his own home on December 29th, the fistula almost closed. On January 8th it had quite healed; his health was good and the patella fracture was uniting by close fibrous union, there being good movement in the knee-joint. He was advised not to bend the joint too freely for another two weeks, but is able to stand and walk a little.

Observations by Mr. D'Arcy Power.

The case is interesting both from the points of view of diagnosis and treatment. A rupture of the small intestine is always difficult to recognize, and it reflects credit upon the staff of the Bromley Cottage Hospital that they followed the sound surgical rule of exploring the abdomen rather than waiting until the appearance of undoubted signs had placed the man's life in jeopardy. The second operation showed that the suturing of the ruptured bowel and torn mesentery had been perfectly satisfactory. Unfortunately the injured bowel had become obstructed by the results of a local adhesive peritonitis. It became a question whether the bowel should be resected or short-circuited. I chose the latter in consideration of t e patient's state, and the result justified the means. The operation was completed within a few minutes and the patient left the operating table in no worse condition than when he was placed upon it. If a long and difficult resection of the inflamed bowel had been undertaken it is probable that he would not have lived till it was completed.

THE registration statistics of thirty American universities for 1914, published in *Science* of December 25th, show that the largest medical school in the States is that of New York, which has 439 students; Michigan has 378, Columbia 378, Johns Hopkins 374, Tulane 343, Harvard 321, Pennsylvania 290, Illinois 287, and Ohio 281.

ACCORDING to the *Boston Medical and Surgical Journal* the recenty-published annual report of Dr. William C. Gorgas, surgeon-general of the United States Army, embodies the results of a study of the health and sanitary conditions of the army for the calendar year 1913. During that period the hospital admission-rate was the lowest on record and a reduction of 18 per cent. over the previous year. The rate of disease was highest in the Philippines and lowest in Alaska. In a total mean strength of 90,752 men there were only four cases of typhoid fever and no deaths. Two of these patients had not received anti-typhoid inoculation, another had had only one inoculation, and the fourth had been immunized two years before. The rates for malarial fevers were the lowest since 1898, when American troops were first permanently stationed in the tropics.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

A MEETING was held on Wednesday, February 3rd, with Dr. PRIESTLEY SMITH in the chair.

Furnace Workers' Cataract.

Mr. BERNARD CRIDLAND showed a case of "glass-workers' cataract" in an iron smelter (puddler). Iron workers were not included in the schedule. Considering the number of hours of exposure to the glare of the molten metal, his surprise was that there were not more cases, especially as these men rarely wore protective goggles. He suggested that a more inclusive term should be applied to the cases of cataract so caused, such as "ray cataract."

Mr. C. B. GOULDEN said he had a case now under care in a welder, and thought investigation would disclose that the condition was more common among iron workers than was generally believed. The man who preceded his patient at the work also lost his sight. It was not until quite late that the workers complained, because, owing to dilatation of the pupil, they were able to see round the cataract.

Dr. LEGGE, H.M. Inspector of Factories, asked what proportion of iron workers were affected, as it was necessary, in considering the scheduling of diseases, to proceed tentatively. In the case of glass-blowers' cataract there could be no question as to scheduling, as he examined the lenses of 513 glass-blowers, and found cortical cataract in sixty-four in the right eye, and in seventy-two in the left.

Mr. J. H. PARSONS said that, as secretary of a committee of the Royal Society on the subject, he sent many inquiries to ophthalmic surgeons practising in iron-working districts, and the negative replies he mostly obtained led him to the belief that it was the custom of moulders to wear tinted glasses. He asked for further evidence for this committee.

The PRESIDENT suggested the name "furnace-workers' cataract," seeing that furnace work was common to all.

Secondary Glaucoma: Rupture of Cornea.

Mr. N. BISHOP HARMAN showed a case of spontaneous rupture of cornea in secondary glaucoma caused by dislocation of lens. An injury caused total dislocation of one lens into the posterior chamber, where it was loose. The resulting glaucoma was absolute, and vision was lost. The cornea was anaesthetic, the iris quite retracted and immobile. The condition remained for two years without ulceration of cornea or splitting of Descemet's membrane. Three months later, however, without any further accident, the cornea was split horizontally, and membranes were prolapsed. The cause of the rupture was a retro-choroidal haemorrhage.

Trench Periscopes.

The PRESIDENT (Dr. Priestley Smith) showed a form of trench periscope he had just designed. At the top of a narrow shaft, 6 ft. in length, is fixed, at an angle of 45 degrees, a plane mirror, about 2½ in. in diameter, and an exact counterpart lower down, the distance from the first being adjustable by pegs and holes. Only the top mirror projects above the trench, and this can be largely concealed by a piece of earth. By looking straight into the lower mirror, all movements can be plainly discerned without incurring danger.

Lieutenant-Colonel ELLIOT thought that, in order to estimate the distance of the enemy, it was necessary to use a binocular form of periscope.

Cerebral Degeneration associated with Macular Changes.

Dr. F. E. BATTEN and Mr. STEPHEN MAYOU, in a paper on this subject, pointed out that a curious pigmentation occurred at the macula, and usually also around it, and that considerable optic atrophy was also present. Several of the examples of the condition which had been under care died at Darenth Asylum. The pedigrees of two families were exhibited. In one case the changes in the macula were the last occurrences in the march of degeneration. The brains did not present any macroscopical abnormality; they had the usual convolutional pattern, as well as the normal weight and relationship to

the cerebellum. The brain and nervous system were examined by several staining methods. There was found to be some degeneration in the medullated fibres; in the cerebellum the myeline was breaking down, and degeneration was present in the cells of Purkinje. The most profound change was in the Betz cells; instead of the Nissl granules, there was a curious accumulation of fine granules around the nucleus. In the cerebellum were large granular cells not normally seen; their significance was not apparent. The most marked change was found in the child who had the disease longest—namely, three and a half years. There were marked changes in the fundus, a shrinking of the convolutions, and in some cases the Betz cells were too degenerated to show the vacuolation. This group was similar to the Waren Tay-Sachs cases of amaurotic family idiocy, but occurred at a later age, and was not race-selective. The disease now described was characterized by progressive blindness, progressive paralysis, and progressive dementia, but changes in the macula were not always present.

Mr. MAYOU, in speaking of the pathology of the eye condition, said that the child he examined had evidently lost all perception of light, but that was not so in all the cases. Immediately after death the eyes were injected and stained. The changes were confined to the retina, but varied enormously in different parts of the fundus. The principal change was round the macula region. The internal nuclear layers had disappeared altogether, also the rods and cones, and there was some migration of pigment from the retinal pigment cells.

The paper was discussed by Mr. PARSONS and Mr. TREACHER COLLINS, and the authors replied.

Cases.

Dr. COCKAYNE and Dr. ATTLEE showed a case of amaurotic family idiocy, in an English child, not Jewish, as was the rule.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on January 19th, Dr. MANKNELL in the chair, Dr. MITCHELL gave an *X-ray demonstration*, a large variety of plates being shown. Of special interest were a series of plates showing multiple fractures from a case of osteomalacia and also a series showing the stomach after a bismuth meal in various gastric diseases. Dr. HOOTON showed a *Radiograph of both kidneys in which were large stones*. This case was said to be unique as being the largest bilateral renal calculi on record. Dr. RABAGLIATI read a paper on *The functions of the connective tissue*. After describing the anatomy of the connective tissue, he laid great stress on the continuity of the areolar tissue throughout the body, and pointed out that this was of great importance in relation to the spread of infection. He proceeded to elaborate a theory that the connective tissue cells were organs of sensibility, inasmuch as they were the organs which received sensations, while the nervous cells and tissues carried out their function of interpreting these sensations.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting held in Manchester on January 15th, Dr. WILLETT (Liverpool), President, in the chair, Dr. WALLS (Manchester) exhibited a specimen of *Rupture of pregnant uterus through old Caesarean section scar*. It was removed from a patient, aged 30, who had had three previous Caesarean sections. She was seven months pregnant when sudden severe pains commenced, followed soon after by general collapse. The abdomen was opened and the peritoneal cavity found to be full of blood, which was oozing from the top of the old Caesarean section scar in the uterus. Supravaginal hysterectomy was performed, but the patient died from shock the same evening. Dr. Walls also showed a specimen of *Caesarean section for accidental haemorrhage*. The patient had had one previous Caesarean section, and was within ten days of full-term pregnancy for the second time when symptoms of accidental haemorrhage appeared. Caesarean section was performed, during which the abdominal cavity was found to contain a large quantity of blood; this was oozing from the lower part of the old Caesarean section scar in the uterus, which was very broad and thin, and would probably soon have opened out along its whole length. Supravaginal hysterectomy was performed and the patient made a good recovery. Dr. FLETCHER SHAW (Manchester) exhibited a specimen of *Spontaneous rupture of old Caesarean section scar in a full-term pregnant uterus*. The patient had had one previous Caesarean section, and was within a week of full term in her second pregnancy, for which Caesarean section was again going to be performed, when severe abdominal pain began during the night while she was in bed. Six hours later she walked to the hospital, arriving in a collapsed condition, still complaining of severe pain in the middle line of the abdomen from the umbilicus to the pubes, and this portion of the abdomen was very tender. The pulse was fluttering and uncountable and the temperature subnormal. The abdomen was opened, and the old uterine Caesarean scar was found to have completely opened up, so that the child was delivered without any enlargement of this wound being required. The placenta was on the anterior surface of the uterus and plugged the wound. At the time of operation no further bleeding was taking place, but the lower part of the abdominal cavity was filled with blood clot. Supravaginal hysterectomy was performed, and the patient made a good recovery. Dr. W. E. FOTHERGILL (Manchester) presented a communication on *Marsupialization of degenerated and infected fibroids*. He mentioned two cases of large fibroids he had met with—one in 1899, the other in 1914—in which the adhesions were so dense and so universal that the growths could not be removed. In each case the degenerated tumour was scraped away by hand through the abdominal incision, until nothing but a thin shell was left. The capsule was then stitched to a portion of the abdominal incision. In one case the cavity was packed with gauze, while in the other double drainage was provided by a long rubber tube, one end of which passed down into the vagina, while the other opened through the abdominal wound. The latter method gave the better result as to rapidity of healing. Dr. Fothergill described the injuries in a case in which the patient's medical attendant performed version and subsequently discovered a *Complete rupture of the uterus*. The woman was aged 40, and the labour was her tenth at full term. She had also had five abortions. On admission to hospital the pulse-rate was 144, and she had lost so much blood that she was gasping. The abdomen was opened, and its wall above the pubic symphysis was seen to contain extravasated blood. The peritoneum was torn from the pubic symphysis in front to a point near the lower pole of the right kidney. The bladder was exposed with the exception of its trigone and the lower part of its left lateral aspect. The ureter and the blood vessels on the right side could not be traced through the mass of blood clot and lacerated tissue which occupied the right side of the pelvis and lower abdomen. The caecum and appendix were torn from their bed. The uterus was quickly removed and the peritoneum was drawn together. A gauze drain was left in for forty-eight hours. The patient did well for four days, but suppuration occurred, which was confined to the pelvis, and she died on the sixth day. This was the seventeenth case of serious rupture of the uterus treated at St. Mary's Hospital, the first having been done by Dr. W. K. Walls in 1905. Of these 17 cases, 12 recovered, and in these cases the women doubtless owed their lives to the removal of the uterus. Suture of the rent was not enough in serious cases of uterine rupture.

THE annual report of the United States Navy, which has recently been issued, is summarized in the New York *Medical Record* of January 2nd. During 1913 the health of the men showed a satisfactory improvement as compared with the preceding year. The incidence of malaria increased from 11.63 per 1,000 in 1912 to 12.07 in 1913; this increase was accounted for by the fact that the cases occurred in ships on Mexican waters. Enteric fever continued to show a very marked degree of decrease. The incidence of tuberculosis was about the same as in the previous year, and there was a considerable decrease in venereal diseases. There was a diminution in alcoholism, but a slight increase in the amount of mental disease as compared with the previous year.

Reviews.

THE VACCINATION QUESTION.

EARLY last year Dr. C. KILLICK MILLARD enunciated in a course of Chadwick lectures the conclusions he had been led to form with respect to the efficacy of compulsory infant vaccination in controlling small-pox. His views naturally gave rise to discussion, and formed the topic of numerous letters which were published in our issues of February 14th and 28th, March 14th and 28th, and April 4th, in some of which his conclusions were criticized. He has now restated his evidence and conclusions at length in a volume entitled *The Vaccination Question*.[1]

Dr. Millard's position can be summarized in a very few words. He is firmly convinced that recent vaccination is an invaluable prophylactic against small-pox, but he believes that infant vaccination is not only insufficient to protect the community, but, in the absence of revaccination, a positive danger to the public, since modified small-pox as found in persons vaccinated in early life is difficult to diagnose, with the result that infection may be widely disseminated before any measures of segregation, following on recognition of the disease, are enforced. Since, in his opinion, compulsory revaccination as a routine measure is beyond the scope of practical politics, he holds that infant vaccination as by law established should be abandoned, that attention should be concentrated on improved sanitary administration, in the widest sense of the term, including the provision of adequate hospital accommodation, vaccination of contacts, or, in the event of a serious epidemic, universal vaccination, and better education of the profession in the diagnosis of small-pox.

In reviewing a work of this kind, which certainly merits the dispassionate consideration of epidemiologists, we do not wish to distract the reader's attention by dwelling upon minor faults. Dr. Millard at times is betrayed into apparent inconsistencies of statement, and he adopts a rather superior attitude in his comments on the views of other observers perhaps not less well qualified than himself to form an opinion; he also does not seem to realize fully that variations in the type of small-pox are commonplaces of epidemiological literature, and that this aspect of the problem has been touched upon by one who, whatever opinion may be formed as to the justice of his conclusions, deservedly ranks among the greatest historians of disease—we mean Dr. Charles Creighton.

These matters are, however, of quite secondary importance; the main point is the method by which Dr. Millard essays to establish his principal proposition. That proposition is, in effect, that the experience of Leicester proves that regard for sanitary administration, with neglect of infant vaccination, will adequately safeguard the community against small-pox. Dr. Millard's train of reasoning is as follows: He cites three instances of towns, in which the vaccinal state of infants was fairly satisfactory and the general sanitary administration unsatisfactory, which experienced severe outbreaks of small-pox. He also shows that the case-rate in Leicester during 1904, when small-pox was epidemic in several large towns, was the lowest in the short series quoted, so that the Leicester experience was not less favourable than that of at least some towns in which presumably both vaccination and sanitation were attended to.

Plainly such facts are sufficient to dispose of the argument that infant vaccination alone is all that is necessary, but they are no reply to the question: Would not better results be obtained by combining good sanitary administration with infant vaccination? To meet this Dr. Millard quotes various instances of the spread of small-pox through the appearance of the disease in a modified form among vaccinated persons, but does not seem to us to deal with the problem satisfactorily. The old chancery maxim that "he who seeks equity must do equity," finds an application here. Dr. Millard's testimonial to the efficacy of the Leicester method is expressed in the form of statistics, and it is incumbent upon him to show that on the average, not in special cases alone, towns which have attended both to sanitation and vaccination have a record not superior to that of Leicester. Such a demonstration does not appear in his book, and cannot be replaced by general reasoning, even reinforced by special illustrations, as to the communal danger of modified small-pox. Dr. Millard's proper course would have been to tabulate all the county boroughs with respect to (*a*) their small-pox experience during a period of, say, ten or twenty years, (*b*) their proportions of vaccinated infants, (*c*) their sanitary administration. To carry out such a tabulation is, we think, practicable, but it would require both time and labour. Were reports of medical officers of health prepared upon a uniform and detailed plan, the process would be simple; but, unfortunately, such is not the case. To illustrate the difficulty, we may mention that while reading Dr. Millard's work we examined a considerable number of reports, with the object of extracting (1) the number of small-pox cases in the period 1902–11, and (2) the proportion of successful vaccinations to registered births in 1911. The required data were only recorded in the case of twelve of the county boroughs in our available series. These boroughs did indeed show a negative correlation between the mean annual incidence of small-pox and the percentage of successful vaccinations in 1911—that is, the greater the proportion of vaccinated children the lower the case rate of small-pox, but the relation was too slight, in view of the small size of the sample, to justify us in basing any argument thereon. The point is that only by means of a similar but more comprehensive analysis can a statistically valid conclusion respecting the question in dispute be attained, and the fact that Dr. Millard does not appear to have realized the necessity of any such investigation is, we think, a sufficient reason for declining to endorse his conclusions. Dr. Millard has cited in his book several utterances of medical men which could not have been made by any one imbued with the spirit of modern statistical science. But he himself has not avoided the pitfalls with which the path of the statistical epidemiologist is beset, and a valid comparison between the experience of Leicester and that of other communities still remains to be made.

[1] *The Vaccination Question in the Light of Modern Experience: An Appeal for Reconsideration.* By C. Killick Millard, M.D., D.Sc. London: H. K. Lewis. 1914. (Demy 8vo, pp. 243; 9 plates, 11 diagrams. 6s. net.)

OPHTHALMOLOGY.

THE thirty-fourth volume of the *Transactions of the Ophthalmological Society of the United Kingdom*[2] shows no lack of energy on the part of the members of that society. In the few days they now devote to their meetings their recorded work fills 340 pages, and includes many very fine black and white and colour drawings. The address of the president, Dr. Priestley Smith, dealt with the work of the society in public affairs, such as in the campaign against ophthalmia neonatorum, and in the promotions of research amongst its members. The Bowman Lecture, by Professor Uhthoff of Breslau, dealt with the diagnostic and clinical data on the affections of the optic nerve (choked disc, optic neuritis, and optic atrophy) in intracranial disease. His statistics of bilateral choked disc show the overwhelming frequency of the presence of tumour of the brain as the cause of the symptom. Brain tumour accounted for 71 per cent. of the cases, tuberculosis of the brain or meninges 3.6 per cent., or these two together 74.6 per cent. Cerebral syphilis comes next with 12 per cent. Other conditions—abscess, meningitis, nephritis, anaemia and so forth—only figure in the minority of cases with 1 to 2 per cent. for each. On the vexed question of the diagnostic importance of unilateral choked disc, the lecturer concludes as follows: "It is by no means always possible in tumour of the cerebrum to draw the conclusion from unilateral choked disc that the seat of the tumour is situated on the same side; only in 56 per cent. of the cases in question was the brain lesion on the same side as the choked disc (ipsolateral); in 44 per cent. it was on the opposite side (contralateral)." A discussion on post-operative complications of cataract extractions was opened by Mr. Treacher Collins, whose communication is of particular value on account of the quality of the pathological researches contained therein, which are illustrated by a number of reproductions of microscope sections. One of the most frequent

[2] *Transactions of the Ophthalmological Society of the United Kingdom.* Vol. xxxiv. Session 1914. London: J. and A. Churchill. 1914. (Demy 8vo, pp. 462; illustrated. 12s. 6d. net.)

conditions predisposing to infection of the eye after extraction is the prevention of the early closing of the wound due to the entanglement of the lens capsule therein. The ununited margin of the wound becomes infiltrated with inflammatory exudate. At one time he thought this was the effect of irritation, as though the capsule acted as a foreign body, but he now concludes that it acts by keeping open the wound, and permitting the easy entry of organisms from the conjunctiva. These organisms find an excellent culture medium in the mixture of lens substance with the aqueous. Amongst the individual papers, those of particular interest deal with "Flat sarcoma of the choroid with multiple metastases," by Messrs. Affleck, Greeves, and Gordon Holmes; "The appearance of pigment in the eye of the child," by Mr. Bishop Harman; and "Cases in which homonymous hemianopia is the principal or only evidence of organic disease," by Dr. C. O. Hawthorne and Mr. Richardson Cross. No great novelties in operative measures were proposed for this year.

The fourth edition of MAY and WORTH'S *Manual of the Diseases of the Eye*[3] well maintains the character of this book for general excellence as a handbook for the use of students and young practitioners. The descriptions of the various diseased conditions and natural defects of the eye, and the manner of their treatment, are simple and sufficient. The illustrations are profuse and just sufficiently diagrammatic to be precise. In this new edition the chapter on the use of vaccines in ophthalmology has been revised and brought up to date by Mr. S. H. Browning, bacteriologist to the Royal London Ophthalmic Hospital, and his summary of this complex department of eye work is well worth reading. He very rightly states that "the use of vaccines does not imply that all other methods of treatment should be omitted, for they are an adjunct to, and not a substitute for, the usual treatment." In this chapter are some hints on the bacteriological examination of the conjunctiva before intraocular operations, and there is a warning against the common practice of bandaging the eyes before operation, as this promotes the growth of bacteria and definitely increases the risk of post-operative infection. One of the new features of the book is a chapter on colour vision and colour blindness, written by Mr. Devereux Marshall. It covers only seven pages, but it is far and away the best and most illuminative short statement of the case we have read. The various theories of colour vision, the evolution of the colour sense, the degrees of defect and their relation to labour conditions, and the most approved methods of discovering these defects are all clearly stated and discussed.

WORKMEN'S COMPENSATION.

THE bulky seventh volume of *Butterworth's Workmen's Compensation Cases*[4] contains the reports of such cases decided in the Appeal Courts of the United Kingdom between October, 1913, and October, 1914. The fact that there are some 300 of these decisions shows that the difficulty of interpreting the Act have not yet been overcome by the legal profession; but all those who are concerned with the administration of this important branch of the law will be grateful to the reporters and editors who are responsible for these records of judicial opinion.

Law reports are meant primarily for lawyers, and with many of the cases recorded in this volume the medical profession are not concerned. The practitioner, however, will note with interest what the Master of the Rolls has to say as to the function of a medical assessor. In giving judgement in Lewis *v.* Port of London Authority (at p. 588 of the volume), he said:

> There does not seem to be any doubt about the position of the assessor. He was compared, and rightly I think, to a nautical assessor—an elder brother in the Admiralty Courts, and there is no doubt about his function. He is there to give his advice—in the one case upon nautical matters, and in the other case upon medical matters. He is not there to give a judgement or to find the facts, and his advice is no part of the judgement, and may be disregarded by the judge, as it has been in the Admiralty Court on not very infrequent occasions.

It may be mentioned that it is now admitted—and there is abundant evidence of the fact in the pages of the volume before us—that the services of medical referees are bespoken with increasing frequency in these cases. Indeed, members of the legal profession are often heard to say that the decision in three out of four cases depends entirely upon a medical opinion.

A case in which the question whether a man should receive compensation or not depended entirely upon medical evidence is also published in this volume. In Walsh *v.* Locke and Co. (p. 117) a miner, who had crushed the middle finger of his right hand, received voluntary compensation from his employers for nine months. Eventually he was advised to have the finger removed, four doctors saying that the operation was without risk, and would soon enable him to work again. He refused unless the doctors gave a "guarantee of success," which they declined to do. His compensation was stopped. Another case which the medical profession will be interested to note is that of Rocca *v.* Stanley Jones and Co. (p. 101). There a workman whose radius was fractured went to a bonesetter, by whom the arm was only bandaged and put in a sling, with the result that there was bad union. The employer having dismissed him for not doing his work properly he sought compensation. It was held that he was entitled to nothing, as the incapacity was due not to the accident but to the treatment he received. This decision was based on a previous case in the Court of Appeal, where the Master of the Rolls pointed out that "an employer does not insure his workman so as to be liable in any case where the medical man, the chemist, or the nurse is guilty of gross negligence."

SCHOOL DINNERS.

FOOD, as Sir George Newman has pointed out, is of more importance to school children than drugs and surgical treatment, and if regular meals were provided for them there would be much less need for school clinics. Miss M. E. BULKLEY, of the London School of Economics, in her book on *The Feeding of School Children*,[5] has collected in a most admirable volume all the conditions that have gone to the making and marring of many experiments made by voluntary workers and educational authorities in this field of practical sociology during the past eight years. The history of the movement in favour of feeding the children is given, the legislative enactments, the actual working of schemes now in existence, the extent and causes of malnutrition, the effect of school meals on the children, and the effect on the parents, are considered.

The general conclusion is that school meals are best worked by the school authorities, and not by caterers in independent centres. And with this our own experience agrees. In the hands of the school authorities the meal time can be made a real part of the school curriculum to the advantage of the manners and customs of the little folk. When the meals are "done" by a contractor at some centre the serving of the food lends no dignity to the proceeding, which is apt to degenerate into an uncouth scramble.

What can be done by a union of school and voluntary work is shown by Grassington in Yorkshire. "When, eighteen years ago, the teaching of cookery was introduced, it was resolved to combine with that instruction the provision of a hot mid-day meal. The children not only cook the dinner themselves, but they take it in turns to order and pay for the materials, thus acquiring the valuable knowledge how to buy. They are taught the value of the different foodstuffs, and learn how to make a good substantial dinner at a little cost. A two-course dinner, ample and varied, is provided daily at the school. Each child is allowed to eat as much as it wants, but no waste is allowed. Marvellous as it appears, the payment of 1d. per meal covers the cost of the food." Menus for two weeks are given, and the list is most attractive.

[3] *A Manual of Diseases of the Eye.* By C. H. May, M.D.New York, and C. Worth, F.R.C.S.Eng. Fourth edition. London: Baillière, Tindall, and Cox. 1915. (Demy 8vo, pp. 452; 22 plates, 337 figs. 10s. 6d. net.)

[4] *Butterworth's Workmen's Compensation Cases*, Vol. VII. Edited by His Honour Judge Ruegg, K.C., and Douglas Knocker, M.B., M.R.C.S., etc., and Edgar T. Dale, Barristers-at-Law. London: Butterworth and Co. (Demy 8vo, pp. 1097. 12s. 6d. net.)

[5] *The Feeding of School Children.* By M. E. Bulkley. With an introduction by R. H. Tawney, Director of the Ratan Tata Foundation. London: G. Bell and Sons, Ltd. 1914. (Cr. 8vo, pp. 295, 1 chart. 3s. 6d. net.)

THE MASTER OF THOSE WHO KNOW.

IT is comforting in these days when the angel of death is abroad and the spirit of destruction is sweeping over fair countries, to read an account of the life of a man who gave himself wholly to constructive work. Such a man was Louis Pasteur, of whose labours in the cause of truth and humanity an admirable record has been written by Mr. STEPHEN PAGET. This volume, *Pasteur and After Pasteur*, is the first of a series of medical history manuals which is to be published by Messrs. Adam and Charles Black under the editorship of Dr. COMRIE, of Edinburgh.[6] The editor says in his introduction:

> For the most part noteworthy improvements in medicine have arisen out of definite new discoveries in the physical sciences, have followed upon the development of fresh processes in the arts, or have been gained by the labour of outstanding individuals. The present series of medical history manuals has for its object to describe some of these discoveries, processes and individuals, and to trace in each case the epoch that has resulted.

Mr. Paget in this volume outlines the life of Pasteur and describes many means for the prevention and expulsion of disease which have developed out of his work. It is founded on the well-known life by Vallery Radot, the son-in-law of the famous scientist, and Mr. Paget hopes that his little book may be regarded as a signpost pointing to the reader the way to the study of that fine work. The biography proper occupies but a small part of the book, the rest being devoted to accounts of Pasteur's achievements in chemistry, fermentation, rabies, and the diseases of silkworms. Excellent summaries are given of the results that have followed his discoveries when applied to tuberculosis, diphtheria, cholera, plague, and typhoid fever, Malta fever, malaria, and yellow fever. A particularly interesting chapter is that on the relations between Pasteur and Lister and the influence of the great Frenchman's work on that of the founder of modern surgery. The book, which is illustrated, is written in a clear and simple style, and gives one of the best accounts known to us of what modern medicine owes to the genius of Pasteur and to the science of bacteriology which he created. It further shows the vast possibilities of future developments that lie in his discoveries. There could be no better way of arousing an intelligent interest in the aims and methods of scientific medicine than the study of this book. We commend it to all intending to enter the profession as an excellent intellectual preparation for the work they will have to do. Even still more strongly do we commend it to the ordinary reader as a trustworthy exposition of the principles that are the foundation of sound doctrine in regard to the nature, prevention, and treatment of disease. No mind imbued with the teaching of Pasteur can ever be misled either by the gross pretensions of quackery or the more subtle sophistries that lead so many clever people astray when they dabble in medicine.

NOTES ON BOOKS.

MOTHERCRAFT.

THE preservation of infant life, already a pressing problem before the war, is likely to demand even more anxious attention in the near future, when the disastrous results to the nation of the wholesale slaughter of its manhood are more widely known and realized. The instruction of girls in the care and upbringing of children is therefore of the most vital importance to the country, and as time goes on there will be more and more need for the future mothers of the race to be fully equipped in every respect for the duty that lies before them. Attempts have already been made in different quarters to introduce lessons in mothercraft into the school curriculum; and Miss FLORENCE HORSPOOL has recently published a very useful handbook called *Mothercraft for Schoolgirls*,[7] founded on a course of lectures already delivered with signal success to the girls of the elementary schools in Swansea. These lectures, which deal with the care of babies from their earliest days, are couched in the simplest language, and might well be taken as models of what such lectures should be. The book is illustrated with numerous photographs, and contains a preface by Lady Mond, at whose suggestion it was written.

The foundations of good health are laid in early childhood, but many mothers do not realize that the cornerstone of these foundations is in large part composed of the food they give to their children during the first years of life. Erroneous methods of feeding children are not exclusively confined to the class that sees no good reason why a young baby should not share the family dinner, and the most highly educated and conscientious parents are liable to make mistakes, which their children will find themselves called upon to expiate in later life. Those anxious to learn what a child ought and ought not to eat will find a guide, philosopher, and friend in Dr. JOHN LOVETT MORSE, whose book on the *Care and Feeding of Children*[8] forms part of the series known as the Harvard Health Talks, besides dietaries suitable for children of varying ages. The volume contains advice as to their clothing, education, and general upbringing, and the treatment of infantile ailments.

Dr. CURGENVEN has prepared a second edition of his little book on *The Child's Diet*,[9] which was first published some ten years ago. The author was among the first to give attention to a much neglected subject, and it is to be noted that in his preface he expresses the hope that before long measures may be taken by the legislature to ensure that the public are able to get a purer and cleaner milk. The new edition has been revised and somewhat enlarged, but its plan and purpose remain unaltered. It contains chapters on the feeding of infants and of children, on gastric catarrh (acute and chronic), on mastication, on constipation, in which liquid paraffin (a tablespoonful at bedtime for a child of 5) is recommended, and a classification of foods, diet tables at various ages, and a number of recipes.

It has been said that the rearing of the first child is always more or less of an experiment, and this must inevitably be the case so long as girls are allowed to marry knowing nothing of what will probably be their chief care and occupation during the early years of their married life. This ignorance, which is to be found amongst educated and uneducated mothers alike, has long been recognized as a serious menace to the future prosperity of the race. A series of lectures delivered last autumn under the auspices of the National Association for the Prevention of Infant Mortality at the Royal Society of Medicine and the Charing Cross Hospital Medical School has recently appeared in book form, and from *Mothercraft*[10] the expectant mother may now learn how to avoid the mistakes which in past years have cost the State so many valuable lives. The subjects dealt with cover a wide range of ground, from the safeguarding of the baby's health before birth to the choice of a layette, and the lectures are characterized by their practical sense and their intimate knowledge and appreciation of the average mother's difficulties and needs. The list of contributors includes Dr. Amand Routh, Dr. Eric Pritchard, Dr. David Forsyth, and many others, and the book will prove invaluable not only to the mother herself but to the parish nurse, the health visitor, and to those attached to Infant Welfare Centres.

MEDICAL AND SURGICAL APPLIANCES.

Ventilated Elastic Stockings for Varicose Veins.

SIR MALCOLM MORRIS (London) writes: The medical profession will, I think, be glad to have their attention called to a ventilated stocking which I have recently been employing in cases of varicose veins associated with eczema. In these cases patients often complain bitterly of the almost intolerable itching provoked by the heat inseparable from the use of stockings of solid elastic. The substitution of perforated bandages is but a partial remedy for the drawback, the necessary overlapping of the folds of the bandage neutralizing to some extent the effect of the perforation. The intense irritation suffered in an exceptionally severe case of mine prompted me to consult Messrs. Maw Son and Sons as to the practicability of constructing an elastic stocking on the principle of cellular

[6] *Pasteur and After Pasteur.* By Stephen Paget, F.R.C.S. Medical History Manuals. London: A. and C. Black. 1914. (Post 8vo, pp. 164; 8 illustrations. 3s. 6d. net.)

[7] *Mothercraft for Schoolgirls.* By F. Horspool, L.O.S., C.R.S.I. With a preface by Lady Mond. London: Macmillan and Co. 1914. (Cr. 8vo, pp. 75; illustrated. 1s. net.)

[8] *Harvard Health Talks: The Care and Feeding of Children.* By J. L. Morse, M.D. London, Toronto, Melbourne, and Bombay: H. Milford, Oxford University Press. 1914. (Fcap. 8vo, pp. 53. 2s. 6d. net.)

[9] *The Child's Diet.* By J. Sadler Curgenven, M.R.C.S., L.R.C.P. Second edition. 1914. London: H. K. Lewis. (Crown 8vo, pp. 115. Price 2s. 6d. net.)

[10] *Mothercraft.* London: The National League for Physical Education and Improvement. 1915. (Cr. 8vo, pp. 250. 3s. net.)

clothing. The attempt was made, and made successfully, for I have tried the stocking in a number of appropriate cases, and have found that it admirably fulfils the desired purpose of affording support without heat. The stocking, composed of finely meshed silk and elastic, supports the distended veins not less effectually than does a stocking of solid elastic, while permitting free ventilation. For reasons which are obvious, in cases in which there is discharge it must not be applied until the exudation has ceased. Where economy is an important consideration, cotton can be substituted for the silk; and, whether made of the one material or of the other, the stocking can be employed with advantage in cases of uncomplicated varicose veins as well as those in which there is associated eczema.

A Waistcoat Pocket Medicine Case.

Messrs. Savory and Moore, 143, New Bond Street, W., ask us to call attention at the present time to their medicated gelatine lamels (or leaves), which they consider are particularly well adapted for personal use by officers in the present campaign. We do so with pleasure, because we judge them to be well fitted to meet the indication. A lamel measures about 3½ in. by 2 in., and is divided into twenty four squares, each containing an ordinary therapeutic dose. Those sent to us range from tincture of ginger (10 minims) and extract of cascara (2 grains) to phenacetine (3 grains) and morphine hydrochloride (⅙ grain). The thickness of the lamels necessarily varies with the dose; the tincture of ginger is no thicker than a postage stamp, the phenacetine is necessarily more bulky. The lamels were first introduced some thirty years ago, and the manufacturers tell us—and we can well believe it—that whenever a war of any magnitude occurs the demand for them rapidly increases. Advantages claimed for them are that they are compact, and avoid the risks in war which must attend the carrying of glass bottles on the person. It is also easy to replace them, as a lamel can be sent by post. The firm also believes that they may be useful to officers of the R.A.M.C. for use in emergency in the trenches. The only weakness is that they are affected by damp, and to obviate this the little wallet in which the lamels are generally enclosed is provided with a waterproof case.

MEDICAL TREATMENT OF MEN IN THE NEW ARMIES.

As was stated a few weeks ago, we have received a certain number of letters from medical men in various parts of the country expressing the opinion that the medical arrangements for the treatment of at least the minor ailments of men in camp in this country were not in all places working satisfactorily. Some of the criticisms had reference to antityphoid inoculation, to vaccination against small-pox, and to the alleged difficulty in obtaining suitable drugs.

ANTITYPHOID INOCULATION.

With regard to the first point, antityphoid inoculation, it is clear that, if any carelessness exists, the officers guilty of it are acting in contravention of the very careful instructions issued by the War Office, as follows:

INSTRUCTIONS FOR CARRYING OUT INOCULATION AGAINST ENTERIC FEVER.

1. *Nature of the Vaccine.*

The vaccine consists of a sterilized culture of typhoid bacilli, to which a small amount of antiseptic has been added to guard against possible contamination after the phials or capsules have been opened. All the vaccine has been thoroughly tested for sterility before issue, and the dose determined by the various methods of standardization. Each capsule is *labelled*, the following particulars being entered on the label:

1. Serial number of the vaccine.
2. Date on which the sterility was determined.
3. Dose for an adult (in cubic centimetres and in minims) for "first" and "second inoculations."

2. *Form in which the Vaccine is Issued.*

In order to minimize waste, the vaccine is sent out in phials and capsules containing different quantities, the larger ones to be employed when a number of men are to be inoculated at one time, the smaller ones for single inoculations or for a few individuals.

In view of the labour involved in the preparation and standardization of the vaccine, it is requested that every effort be made to economize it, as far as possible, by arranging for the simultaneous inoculation of groups of men by selecting phials whose contents correspond as nearly as possible to the number of doses required.

The vaccine is issued (*a*) in small glass capsules, containing single doses for first or second inoculations; (*b*) in sealed glass phials of 5 c.cm., 10 c.cm., and 30 c.cm. capacity. In all cases these capsules or phials *must be well shaken* before they are opened and their contents withdrawn for inoculation.

3. *Method of Drawing off the Vaccine into the Hypodermic Syringe.*

(*a*) *Method of Sterilizing the Syringe.*—The syringes used for inoculation are graduated in tenths of a cubic centimetre, and are of 5 c.cm. capacity. A scale is marked on the stem of the piston in tenths of a cubic centimetre, and by means of this scale and the travelling button which moves upon it, the requisite dose for each man may be accurately measured, or a whole-glass syringe of smaller size graduated either in minims or in tenths of a cubic centimetre may be used if preferred. The syringe is most easily and quickly sterilized by filling it with sweet oil which has been brought to a temperature of 160° C. The oil may be heated over a spirit lamp in any shallow vessel, and, if a Centigrade thermometer is not available, a small piece of breadcrumb may be placed in the oil and the point noted at which it begins to turn brown, which indicates, approximately, the desired temperature. It is well to fill and empty the syringe with the oil two or three times whilst the temperature of the oil is being raised, otherwise the sudden exposure to a temperature of 160° C. may crack the glass. The needle may either be fixed firmly on the syringe before sterilization, or may be dipped in the hot oil and subsequently adjusted with a pair of forceps.

The syringe must be allowed to cool before being filled with the vaccine.

(*b*) *To Fill the Syringe from the Glass Capsules or Phials.*—After shaking thoroughly, a mark may be scratched on the glass near the pointed end with a file; this end is then sterilized by holding it for a few seconds in the flame, and the tip then broken off by a tap or by means of sterile forceps or scissors. Now hold the sterilized syringe, needle upwards, and invert the capsule or phial over the point of the needle. The vaccine may now be drawn off aseptically into the syringe. When drawing out the piston of the syringe care must be taken to keep the point of the hypodermic needle continuously below the surface of the fluid in the capsule.

When the contents of the syringe have been used up and the syringe is to be refilled, the needle must be sterilized afresh by passing it through the flame or by dipping it in the hot oil. It is unnecessary to resterilize the syringe.

4. *Instructions as to the Method of Injecting the Vaccine.*

(*a*) *Choice of a Site for the Injection.*—With a view to diminishing the pain which is consequent upon serous effusion and facilitating the absorption of such serous effusion, it is advisable to inoculate into the outside of the arm at the level of the insertion of the deltoid muscle, or into the infraclavicular region.

These considerations are of especial importance in dealing with lymphatic persons, in whom a not inconsiderable amount of effusion is prone to occur.

(*b*) *Method of Making the Injection.*—The most convenient method of making the injection is to pick up a thick fold of skin between the finger and thumb, and then to pass the needle well down into the subcutaneous tissue in the centre of this fold.

The skin should previously be *sterilized* with antiseptic lotion, alcohol, and ether. If a series of men are being inoculated at the same time this may be entrusted to an assistant, while the operator confines his attention to the injections.

The needle of the syringe should be sterilized between each injection by dipping in hot oil.

5. *Dosage.*

As the result of experience it has been found that the best results, as regards development of protective substances in the blood, are obtained by dividing the dose of vaccine in two parts, one-third being given as a *first inoculation*, and the remaining two-thirds as a *second inoculation*, ten days after the first. The amount of vaccine constituting each of these doses is determined for each brew of vaccine, and is marked on every phial and bottle, both in cubic centimetres and in minims.

The inoculated should be given clearly to understand

that the maximum degree of protection against enteric fever will not be attained unless *both* inoculations are carried out.

The dose is in all cases that for an adult. In dealing with women and children, or with those of feeble physique, the dose should be proportionally reduced, as follows:

For children from 7 to 12 years, ¼ dose.
from 12 to 15 years, ½ dose.
from 15 to 18 years, ¾ dose.

No inoculation should be given to children under 7 years old.

6. *Clinical Symptoms which may be expected to Result from the Antityphoid Inoculation.*

The clinical symptoms which result from antityphoid inoculations are subject to considerable individual variations.

(1) *Constitutional Symptoms.*—Some degree of malaise may be expected in every case. In a small percentage of cases there may be a tendency to faintness and occasionally a definite rigor. These symptoms may be expected between the first and the sixth hour. Where they are at all severe, it is the rule for them to come on before the expiration of the third hour.

These preliminary symptoms are followed by a certain amount of fever. The average temperature which is attained is about 101° F. In exceptional cases the fever may go as high as 103° F. The fever generally passes off completely at the end of eighteen to twenty-four hours, but it may, in exceptional cases, persist for another twenty-four hours.

(2) *Local Symptoms.*—In every case a certain amount of local tenderness will develop. This will generally begin to make itself felt about five to six hours after the inoculation. Somewhat later a red blush will appear around the site of inoculation; the local tenderness will be at its worst in about eighteen hours. In many cases the skin will then be red over an area of 4 in. to 5 in. square, and lines of injected lymphatics will sometimes be traceable radiating from the site of inoculation; there may in addition be slight tenderness in the armpit. These local symptoms will have practically passed away after the expiration of forty-eight hours.

In some cases, where the constitutional symptoms are severe, there is an almost complete absence of local reaction.

7. *Suggestions as to the Treatment of the Symptoms.*

The most important point which has to be attended to after the inoculation is the possibility of the supervention of faintness. This may be best guarded against by enforcing upon the patient the necessity of remaining as quiet as possible after the inoculation. Exposure to the sun in tropical countries and violent exercise are at any rate to be avoided. These ends are, in the case of soldiers and others, most easily achieved by choosing the late afternoon as the time for the performance of the inoculations. The patients are to be enjoined to lie down if they feel at all ill.

It is best not to interfere in any way with the fever which supervenes.

In connexion with the alleviation of the local swelling and tenderness, it will be found that the tendency to serous effusion will be greatest in persons whose blood coagulability is abnormally low. The serous effusion can, in such persons, be held in check by the administration of 30 grains of calcium chloride, *cryst.* This dose may be administered at the time of inoculation, and may be repeated six or twelve hours afterwards. The local tenderness and stiffness which supervene from the inoculation may always be sensibly relieved by the application of hot water stupes.

The serous effusion is aggravated by alcohol, and all those inoculated should be advised to abstain for at least forty-eight hours.

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Pathological Laboratory, R.A.M. College, London.

In addition to these general instructions, special instructions have been issued from time to time in various commands. The following, issued by Surgeon-General Kenny, D.D.M.S., of the Northern Command, may be taken as an example:

Instructions for Carrying out Inoculation against Enteric Fever.

Information having been received that in some instances sufficient precautions are not being taken in conducting the operation in a satisfactorily aseptic manner, the following technique will be observed:

Detailed printed instructions are issued with the vaccine, but sometimes it may happen that these are not included, or, if included, are not read by medical officers unused to the operation.

Instruments, etc., Required.—Inoculation syringe with *two* needles, dissecting forceps, supply of vaccine, vessel for sterilizing syringe and needles, sweet oil or carbolic solution, tincture of iodine and brushes, spirit lamp and tripod, thermometer (if available); two assistants.

Sterilization of Syringe, etc.—Sterilize the syringe and both needles either by means of oil at 160° C. (as laid down in the printed directions), or by means of boiling in a solution of carbolic (1 in 40). *The solution should remain at the boiling point during the whole of the time occupied in inoculating.*

Withdrawal of Fluid.—Sterilize the forceps by passing through the flame of the spirit lamp and remove the syringe; adjust one of the needles also by means of the forceps and allow the whole to cool. While cooling, place the syringe in such a position that the needle end cannot be liable to contamination. Thoroughly shake the bottle, sterilize the rubber cap by passing it rapidly through a flame and invert the bottle, then give the bottle to an assistant to hold by the butt end in an inverted position.

Pick up the syringe, sterilize the needle afresh in the flame, hold the syringe needle uppermost, and withdraw as much fluid as is required by plunging the needle through the rubber cap (bottle still being inverted). Take care to keep the point of the needle well below the surface of the vaccine in the bottle when withdrawing.

Preparation of Patients for Inoculation.—While the above is being done by the medical officer the patients to be inoculated may be prepared by an assistant. The site of the inoculation should be bared, and the assistant should paint over an area of approximately a 2-inch circle with tincture of iodine. Thus a queue of men will be prepared awaiting inoculation.

Detail of Inoculation.—Remove the needle from the syringe by means of the sterilized forceps and place it in the oil or boiling carbolic. Pick up a fresh needle from the vessel and adjust on to the syringe. See that the syringe is full and no air space remains. Adjust the dose required by means of the travelling button on the piston stem. Bring up the first man and inoculate him, withdraw the syringe and change the needle used on this patient by means of the sterilized forceps, replacing it by the needle from the boiling vessel. The site of inoculation should again be painted with iodine by an assistant after the operation has been completed. The second patient is now inoculated, the needle being newly sterilized. Thus continue through the series of inoculations, always changing the needle between each case. When the second painting with iodine is dry and particulars have been entered up in A.B.64. (Soldiers' Pay Book) the patients may go. They should be warned of the necessity of keeping as quiet as possible after inoculation, and that alcohol in any form should be abstained from for forty-eight hours.

If one syringeful is not sufficient for the number to be inoculated, the syringe itself need not be resterilized before refilling, but otherwise the whole process detailed should be carried out.

If single cases are being inoculated the procedure is essentially the same, aseptic precautions being taken in opening the small glass capsules.

It will be found that boiling carbolic is more convenient to work with than oil; the latter tends to make the syringe slippery and splutters unpleasantly when the needles are put in for resterilizing.

VACCINATION.

With regard to vaccination against small-pox, here again, if any carelessness exists, it is due to want of attention to the instructions issued. These are dated April 12th, 1910, but they are still in force, and we presume that all officers are supplied with a copy.

ARMY MEDICAL DEAPARTMENT.
Instructions to Vaccinators.

1. The medical officer must ascertain whether the soldier is in a fit and proper state of health to be vaccinated.
2. The lymph used for vaccination must be used within a week of its receipt; in the interval the lymph should be kept in a cool place.
3. The medical officer must keep such record of the lymph he uses for vaccinating as will enable him always to identify the lymph used in such operation.
4. The vaccination should be performed by an instrument of such a character, and in such a way as will obviate the drawing of blood; a lancet with a metal handle or a needle may be used.
5. The instrument should be sterilized by first placing it in methylated spirit, and afterwards passing it through the flame.

6. The medical officer must keep in good condition the lancets or other instruments which he uses. When he vaccinates, he must cleanse and sterilize his instrument after one operation before proceeding to another. When once he has unsealed a tube of lymph he must *never* attempt to keep any part of its contents for the purposes of vaccination on a future occasion. Under no circumstances should the mouth be applied directly to the tube in which the lymph is contained for the purpose of expelling the lymph; an artificial blower must be used for this purpose.

7. Vaccination should at every stage be carried out with aseptic precautions. These should include, first, the cleansing of the surface of the skin before vaccination; secondly, the use of sterilized instruments; and, thirdly, the protection of the vaccinated surface against extraneous infection both on the performance of the operation and subsequently.

8. The cleansing of the skin should be carried out as follows:

(*a*) Wash the surface of the arm thoroughly with soap and hot water, and then dry it with a sterilized towel, sterilized lint, or wool.
(*b*) Wash the cleansed area with alcohol.
(*c*) Wash the same area with sterilized water.

9. A protective covering must be applied in such a manner that the vaccinated surface is not tightly constricted; this requirement can be fulfilled by means of strapping suitably adjusted. Boric lint cut into pieces about 3 by 2 in. forms a suitable protective dressing.

10. The vaccinated person must be instructed to report himself or herself immediately if the protective dressing has slipped, that is, if any of the vaccinated surface has become exposed.

11. Vaccinated cases should be dealt with as out-patients, and, if, necessary, seen daily; this is particularly important from the fifth to the tenth day, during which period the arm should be kept in a sling.

12. If the protective dressing adheres to any part of the vaccinated surface, it must be removed with the utmost care, sterilized water being used for this purpose. The arm should be re-dressed at intervals as required in each case, until the vaccinated area has healed.

13. In all cases of vaccination the medical officer must aim at producing four separate good-sized vesicles or groups of vesicles at least half an inch from one another. The total area of vesiculation resulting from the vaccination should not be less than half a square inch.

War Office, Medical Division,
April 12th, 1910.

DRUGS.

The list of authorized medicines given in the Regulations for the Army Medical Service[1] is stated (paragraph 422) to have been "framed with the view of placing at the disposal of medical officers such a choice of remedies as it is presumed will be sufficient to meet all the wants of the sick; but only such articles and quantities as are actually required should be asked for. Demands for articles not included in the list will be accompanied by an explanation."

The list (Appendix 14) appears to be fairly comprehensive, and we are inclined to think that it can only be in very rare cases that a medical officer will not find in the list a suitable drug. Supplies are to be obtained by indents on the proper form, and a separate form is used for intermediate demands when the number of medicines required is not large.

Other regulations deal with emergencies in which some special drug is required, or when there is a local shortage. They are as follows:

441. *Local Purchases.*—Under specially urgent circumstances not admitting of reference to the D.D.M.S., medicines, surgical materials, etc., may be purchased locally, but medical officers so purchasing will at once apply for covering authority, stating fully the grounds for urgency.

442. *Payment for Local Purchases.*—Local purchases, which should be accounted for in the periodical returns of medicines, will be certified by the medical officers as having been absolutely necessary, and obtained on the best and cheapest terms, and the bills will be sent to the D.D.M.S. (at Netley, the Officer in Charge, Royal Victoria Hospital), who will, after examining them, pass them for approval previous to local settlement.

All men reported sick are, we believe, in the first place seen by the medical officer as "out patients," to use a civilian phrase, and any patient seriously ill, or for other reasons not suitable to attend as an out-patient, is, according to the regulations, at once to be sent into hospital. We believe that hitherto it has not always been found easy to provide hospital accommodation in the immediate neighbourhood of camps, but we understand that any defects in this direction have been or are being remedied.

[1] Regulations for the Army Medical Service. 1906. (Reprinted with amendments up to September 30th, 1914.) To be purchased from Wyman and Sons, Fetter Lane, E.C.; H.M. Stationery Office, 23, Forth Street, Edinburgh; E. Ponsonby, Ltd., 116, Grafton Street, Dublin. 4d.

DUTIES OF MEDICAL OFFICERS OF REGIMENTS.

Sickness.

In some hints for the guidance of medical officers attached for duty to regiments, also issued by the D.D.M.S. of the Northern Command, the medical officer is advised to endeavour to organize a local Voluntary Aid Detachment hospital for the slighter cases of sickness in his regiment; a grant of 2s. a head a day will usually be allowed to the V.A.D. Serious cases of illness among the troops, if fit to travel, should be removed to the nearest Territorial general hospital or military hospital, the commanding officer of the hospital being notified beforehand. Serious cases of injury or illness unfit to travel should be admitted to the nearest local civil hospital, authority being first obtained from the D.D.M.S., and the cost of maintenance stated in each case. Indents for drugs, etc., for reserve units should be submitted to the D.D.M.S., local purchase being resorted to only in cases of emergency and to meet immediate requirements. The medical officer of a regiment is advised to get into communication with the M.O.H. of the district where the regiment is located and co-operate with him on all matters relating to the health of the troops. He is directed to notify any infectious disease occurring among the troops to the D.D.M.S. and to the M.O.H., and to make arrangements through the latter with the local authority for the isolation of infectious cases in the civil isolation hospital in so far as the accommodation allows.

Sanitary Duties.

The duties of officers in medical charge of units in regard to sanitary work are comprehensive. They are directed to have regard to the personal cleanliness and general health of the troops, the sufficiency, quality, and condition of their clothing, including footgear, and the provision of proper drying arrangements. They must also superintend the food supply in relation to quality, quantity, cooking, and variety, and the importance of the "stockpot" is insisted on. They are also responsible for the cleanliness of cookhouses and cooking utensils, and the proper provision of tables, shelves, and washing cloths. They must have special regard to the personal cleanliness of the cooks, must note that they wear clean overalls, and must ascertain whether at any time they have had enteric fever. The same inquiry must be made with regard to mess orderlies. They must also see that feeding tables and mess utensils are kept clean, and inspect the source, quality, quantity, and storage of the water supply, and supervise the work of the water party. They must see that the general arrangements for ablution—benches, basins, footbaths, and baths—are adequate and kept in proper order. They are also responsible for inspecting beds, bedding, and blankets, and for seeing that the number of the last named is adequate, and that facilities for disinfection are provided. They must supervise the collection and disposal of refuse, liquid and solid, and see that the latrines and urinals are adequate and of proper type, and are kept clean.

Responsibility of Commanding Officer.

The medical officer is directed to bear in mind that while the commander of every unit is responsible for the sanitary condition of the quarters or localities occupied by his command, and for taking all measures necessary for the preservation of the health of those under his care, the medical officer is responsible for bringing all matters bearing on the health of the troops to the commanding officer's notice. He is also responsible for the efficient performance of the work of the regimental sanitary detachment. It is the duty of the medical officer to record in a book kept for the purpose (A.B. 39) all notes of his sanitary inspections and necessary recommendations, based also on the daily report of the N.C.O. of the sanitary orderlies, who should be detailed to visit billets daily and report to their N.C.O. The notes are to be handed to the officer commanding the unit, through the orderly room, to be initialled and for remarks. This officer takes steps, if he concurs, to remedy defects and carry out recommendations.

THE ROYAL MEDICAL BENEVOLENT FUND AND GUILD.

ANNUAL MEETING OF THE FUND.

SIR JOHN TWEEDY occupied the chair at the annual meeting of the Royal Medical Benevolent Fund held at 15, Wimpole Street, W., on February 9th, when Dr. SAMUEL WEST presented the accounts and the annual report. The report stated that the chief event of the year had been the incorporation of the Fund under the Companies' Acts. The cost of this had been to a great extent defrayed by a donation for the purpose by the President. The Fund had been able to distribute £5,302 10s. 8d. during the year, an increase of £182 5s. 8d. as compared with the year before. The working expenses amounted to £400 13s., or about 7 per cent. of the income—a sufficient testimony to the economy with which the Fund was administered. In addition, £540 8s. 7d. had been distributed by the Guild, making the total sum distributed £5,842 19s. 3d. The balance sheet showed that the income of the Fund was £6,044 16s. 10d., and of the Guild £1,332 12s. 5d., the total income, with receipts from investments, being £7,480 15s. 1d. The balance in hand amounted to £1,012 15s. 3d., of which £435 had been invested. In the grant department the total subscriptions received during the year amounted to £2,481 3s. 1d. Grants were made in 254 cases, and the sum so expended amounted to £2,881 4s. The annuity department accounts showed that £1,509 12s. had been received in legacies, and that £2,065 10s. had been placed in new investments. Amongst the contributions received were 100 guineas from the Medical Insurance Agency, 429, Strand, W.C., 100 guineas from the Medical Sick Insurance Society, £50 from Mrs. Musgrave (who wrote that she desired to make a special donation, as she feared that at such a time as this the needs of the Fund were likely to be forgotten), £50 from Sir Alfred Pearce Gould, 50 guineas from the late Dr. Siordet, £50 from Sir John Tweedy, and £50 from Mrs. Webb. The Fund was represented by its president and treasurer on the Professional Classes War Relief Council. Much distress was likely to arise owing to the war, and co-operation would be advantageous to both societies. The coming year would be one of much anxiety and uncertainty, and calls upon the charitable would be very heavy. Hitherto the subscriptions to the Fund had not shown any serious diminution, but the demands upon it had already greatly increased. Cases arising out of the war had proved the advantage of an emergency fund. It had made it possible to give help which could not have been given through ordinary grants. In view of the need for increased support, the committee hoped that every subscriber would enlist another before the end of the year.

The CHAIRMAN remarked that the incorporation of the Fund was an important change in its position and status, but did not affect the nature of its work in any way. Incorporation secured what was called "perpetual succession," and put the Fund practically in the same position as if it had obtained a Royal Charter.

The report and balance sheet were adopted, and the steps taken by the Committee in securing incorporation were approved.

A vote of thanks was accorded to Sir John Tweedy for his interest in the Fund, and, in acknowledgement, the CHAIRMAN said that the more he saw of the work of the Fund the more he was convinced of its value. He concluded by moving an expression of thanks to the Honorary Treasurer, Dr. Samuel West, for his continued care and watchfulness over the financial interests of the Fund. This was carried with acclamation.

Thanks were also accorded to Dr. Newton Pitt, to Mr. Parker Young, the Chairman of the Committee; to the trustees, and to the honorary auditors, Messrs. Deloitte, Plender, Griffiths, and Co., also to the Editors of the medical journals and the lay press, and to Mr. Guy Elliston, Financial Secretary of the British Medical Association.

The Vice-Presidents were reappointed, and the Committee of Management was elected as follows: Sir John Tweedy, Dr. Samuel West, Dr. G. Newton Pitt, Mr. J. H. Morgan, Mr. C. J. Symonds, Mr. Parker Young, Dr. E. C. Beale, Miss M. E. Broadbent, Mr. S. H. Byam, Sir Wm. Church, Dr. F. Churchill, Mr. F. Durham, Dr. S. G. Felce, Dr. R. Hutchison, Mrs. Liveing, Mr. J. R. Lynch, Mr. H. D. Rolleston, Mr. W. E. Sargant, and Mr. W. H. P. Sheehy.

ANNUAL MEETING OF THE GUILD.

QUEEN AMÉLIE OF PORTUGAL presided at the fifth annual meeting of the Royal Medical Benevolent Fund Guild, held in the library of the Royal College of Physicians on February 4th. There was a large attendance. With Her Majesty were the Marquis de Soveral, Mdlle. de Gama, and Count Galnear.

An address of welcome to Her Majesty was read by Sir THOMAS BARLOW, President of the Royal College of Physicians. He mentioned that the Treasurer of the College (Sir Dyce Duckworth) and he had the opportunity of taking part in the International Medical Congress held at Lisbon, and there they saw abundant evidence of Her Majesty's interest in the progress of medical science. He was sure Her Majesty would take an equal interest in another side of their craft—that concerned with the relief of distress amongst members of the profession and their dependants. The workers in the Guild were for the most part the wives and daughters of medical men, who knew the precarious character of much medical work, and the hard life and uncertain remuneration that often attended the short nights and laborious days of the doctor.

Sir JOHN TWEEDY, on behalf of Lady Tweedy (Chairman of the Council of the Guild) read the annual report, which noted an increased interest in the work, and emphasized the need for the formation of new branches in suitable centres. The war had taken its toll from the medical ranks; seventy-three members of the R.A.M.C. had lost their lives already. The Father Christmas Fund had done a kindly and much appreciated work in distributing Christmas gifts amongst the recipients of grants from the Benevolent Fund, and the Clothes Committee reported a considerable increase in the number of donors and in the number of garments distributed. The special aims of the Guild are the addition of gifts of personal service and sympathy to the money grants of the Benevolent Fund, and the Visiting and Care Committee reported a number of instances of happy results achieved through help rendered at critical periods, sometimes in educating the children of a doctor's widow so that later on they might become the support of the household. Money so expended was often repaid in after-years. The report stated that the distress amongst the widows and families of medical practitioners was often beyond belief, and the difficulty frequently lay in tracing cases that needed help. Details were given of a family raised from the direst poverty and gradually rendered self-supporting through the ministrations of the Guild.

The financial statement, presented by Mrs. SCHARLIEB, M.D., showed receipts amounting to £1,666. The administrative expenses were £224. Gifts of clothing represented a money value of £460, and the balance in hand amounted to £836 19s., part of which would be invested.

The QUEEN OF PORTUGAL proposed that the report be adopted. Dr. NORMAN MOORE seconded, and the resolution was carried.

The Hon. Mrs. MARK HOVELL proposed a vote of thanks to the medical and lay press. Dr. SAMUEL WEST, in seconding, remarked that most of the appeals now appearing in the press related to war funds, and it was important that old-established charities should not be forgotten.

Viscountess Goschen, Viscountess Bryce, and Lady Alice Shaw Stewart were added to the list of vice-presidents; Lady Dyce Duckworth and Mrs. Slack (Bristol) were appointed to the council, and Lady Fripp and Mrs. Steeves were added to the General Purposes Committee.

Lady BROADBENT proposed, and Sir JOHN TWEEDY seconded, a vote of thanks to the Royal College of Physicians and to the Harveian Librarian for the use of the library of the College for the meeting. This was carried.

Mrs. SCHARLIEB proposed a vote of thanks to the Queen of Portugal for presiding. By her presence, she said, Queen Amélie had shown her sympathy for members of a profession who in peace as well as in war often gave up their lives in the service of humanity.

Sir DYCE DUCKWORTH, in seconding, said the Guild would receive a valuable impetus owing to the presence of the Queen of Portugal.

HER MAJESTY acknowledged the vote of thanks, and the proceedings concluded.

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SATURDAY, FEBRUARY 13TH, 1915.

MEDICAL ORGANIZATION FOR WAR EMERGENCIES.

THE number of men who have enlisted in the new armies was not given during the debate in the House of Commons on Monday. Mr. Tennant, the Under Secretary of State for War, said that recruiting had been very satisfactory, and every one in this country knows that the number of men in the new armies is already very large, but Mr. Tennant added that we want more men—that every man will be needed in the great life and death struggle in which we are engaged. Every one knows, too, that a modern army is a very complex machine, and that, though the man with the rifle is in the immense majority in any army and forms that part of it for which all others, even the artillery, exist, yet he cannot be maintained in camp at home or in the field without the combined work of many auxiliary departments. It stands to reason, therefore, that as the number of recruits in the battalions increases, so must the departments increase in due proportion. This applies to the medical as to all other departments, and it is, therefore, only common prudence for the medical profession to assume that the serious calls already made upon its personnel must tend to increase, and to increase at an early date rather rapidly, as the new battalions become more numerous and more fully organized into units of the military machine. The Treasury minute issued on Monday evening stated that the establishments as they existed at the outbreak of hostilities not only have little relation with the establishments as they exist at the present time, but will necessarily be subject to considerable modification when they are reconstituted after the restoration of peace.

The medical profession has therefore to meet a novel condition of things, the duration of which is uncertain. It has, on the one hand, to do its part in safeguarding the health of the troops and to treat wounded and sick at home and abroad; and, on the other, to ensure that the civil population does not suffer from lack of adequate medical attendance and treatment and efficient public health administration.

If this is to be done in a manner to reflect honour on the profession, organization of our resources will be necessary. The difficulties ahead were realized first in Scotland, perhaps because a fine patriotism had led a large proportion of medical men to take service in the Territorial Forces, and the sudden withdrawal of many from sparsely populated areas at once brought up some of the problems which elsewhere only became acute a little later. However this may be, the rest of the United Kingdom has reason to be grateful to the Scottish Medical Emergency Committee for the pioneer work it has done, and the Council of the British Medical Association so fully appreciates this that the Special Committee through which it is acting in this matter recommends the Branches and Divisions in England, Wales, and Ireland to take the statement put out by the Scottish as a guide.

All this is more fully set out in the SUPPLEMENT this week, and elsewhere will be found a report of a meeting at the Royal College of Surgeons in Edinburgh last Monday, at which the President of the College, Sir Donald MacAlister, President of the General Medical Council, and Dr. Norman Walker, the Convener of the Scottish Medical Emergency Committee, explained the nature and urgency of the problems with which it is dealing. Meanwhile it is gratifying that the Under Secretary of State for War, after praising in the highest terms the work of the Royal Army Medical Corps in France, both in respect of the treatment of the wounded and in the prevention of disease, was able to assure the House of Commons that, though certain difficulties had arisen in respect of the new armies at home owing to the fact that almost the whole of the regular army medical service was engaged in the field operations, yet, thanks to the patriotic eagerness of the medical profession, it had been possible to obtain a high degree of efficiency at home, while the ideal efficiency was being approached day by day. The new army medical corps for the new armies was, he said, in course of formation. By this, we understand him to refer to the large increase in the Royal Army Medical Corps which must obviously be necessitated by the large increase of the military forces raised in this country. The duties of an army medical service may be roughly divided into those concerned with sanitation, the maintenance of the health of the troops and the treatment of their minor ailments and illnesses on the one hand, and on the other the treatment of severe cases of illness or severe wounds requiring hospitalization for considerable periods. With a greatly increased army we want more medical officers for duty in each capacity, and more hospital beds for sick and wounded.

Although the medical profession has already responded to the call of the navy and army in the war in a manner which has excited universal admiration, and to an extent which has depleted its ranks more severely, perhaps, than any other, it seems certain that still further calls must be made upon it by the army before the year is much older. The response of the medical profession in Britain overseas has been magnificent, and we have no doubt that they will respond with no less disinterested patriotism to any further demands which it may be necessary to make on them. They will willingly send many men and good men, and some are already on their way, but the brunt numerically must fall on the more populous home countries.

We have good reason to know that very many of those who have not yet offered their services to the War Office are prepared to make the inevitable sacrifices which the abandonment of their civil practices for an indeterminate period must entail if and when they are assured that the army really wants them. It is fully understood by the responsible heads of the War Department, and by none better than by Sir Alfred Keogh, how great the sacrifices are, and how contrary to public policy it would be unnecessarily to disturb the medical service of the civil population, which must be carried on efficiently at whatever strain on individuals. We are quite sure that no unnecessary calls will be made, but it is clear that further calls must be made, and the question for the profession is how best they may be met.

We have all along, founding ourselves on the highest authority, advised young medical men who have not yet formed family or professional ties to offer their services to the Medical Department of the War Office. We had at one time to counsel patience, and we believe that the virtue has not in their case been sorely tried. We have now to offer the same counsel to those a little their seniors, to men, say,

between 30 and 40 or 45. The general result of the examination of the present position is to show that this country now wants, or will shortly want, all the medical men available in the country for its own use for the King's forces and the civil population. It will probably, therefore, be thought desirable by the British Red Cross Society and the St. John Ambulance Association to withdraw from service all British surgeons now acting with hospitals or other Red Cross units of the French forces. It follows also that medical men should not engage with volunteer units or home defence guards except in a medical capacity. Their services as medical men are certain to be required at an early date.

With regard to medical students who enlisted in various non-medical units at the beginning of the war, it seems desirable that they should return to their medical schools in order to qualify at as early a date as possible. The number who so enlisted cannot be very large, and we have no doubt that any case submitted to the Director-General would be sympathetically considered on its merits.

It may soon be the duty—if, indeed, the time has not already come—for medical men acting as combatant officers in the Territorial Force to offer themselves for service as medical officers. Should their offer be accepted for the Royal Army Medical Corps, they would, we understand, serve in the substantive rank of temporary lieutenants, and draw the consolidated pay of 24s. a day of that rank.

But the work of the profession for the population at home must be carried on, and as Dr. Norman Walker very truly said at the meeting in Edinburgh on Monday, if after due consideration and conference with members of the profession in his neighbourhood, a man in middle life decides that it is his duty to stay at home, he will be serving his country, and the army also, by undertaking the work of one who has gone, and so loyally respecting his interests that the other shall have gone with an easy mind. For those who are older their place is at home, to take their part in the never-ending warfare against disease and suffering among the civil population. They may be reinforced by those who have not too long retired from practice, who should offer their services through the Scottish Emergency Committee, or through similar committees which we hope will be set up by the Branches and Divisions of the British Medical Association in other parts of the United Kingdom.

THE ASSOCIATION'S USUAL BUSINESS.

IT is probable that when the war is over one of the things to which we shall look back with pleasure and even surprise will be the way in which, in spite of all the distractions and anxieties of the times, so much of the ordinary business of the country was carried on. This will certainly apply to the work of the British Medical Association. Though many of its most active workers are at present engaged in military duties, and those who are not so engaged have their hands full with the increased professional work which has been thrown upon them, the great bulk of the work of the Association still goes steadily on. No better proof than this could be given of the necessity for the Association's activities: it would be impossible at a time like this to induce busy men to interest themselves in its work unless they were convinced that it was of practical importance to the profession. The report of the proceedings of Council printed in the SUPPLEMENT of February 6th will give some indication of the great output of work by the Committees of the Association during the past six months, and certain reports dealing with matters of considerable professional interest will shortly be printed in the SUPPLEMENT in order that they may receive the attention of the Divisions. It is hoped that in spite of their necessary preoccupation with other work, members generally will find time to discuss the matters thus laid before them and express their opinions upon them.

It is interesting to note also that the work of the Association in protecting the interests of individual medical practitioners and classes of practitioners is as necessary now and is being carried on as vigorously as ever it was. To illustrate this we may cite a few of the cases which have been dealt with during the past few months by the Public Health Committee. To this Committee is entrusted the special duty of considering matters connected with the Public Health and Poor Law services, and at each of its meetings there are presented reports on cases in which the help of the Association has been sought. Many of the reports are concerned with cases in which salaries have been offered by public authorities below the minimums laid down by the Representative Body, though some are instances of individual hardship in which no question of minimum salary, or indeed of remuneration at all, arises. A number of the recent cases have been examples of attempts to appoint practitioners who would be virtually chief tuberculosis officers, though the exact status of the appointments was carefully veiled in the advertisements, at a salary of less than £500, the Association's minimum. In three such cases where salaries of £400 were offered, the salaries were ultimately raised to £500, though not until considerable opposition had been overcome. These successes were obtained partly by the refusal to insert advertisements in the columns of the JOURNAL and the use of the Notice as regards appointments in its advertising columns, partly by securing the co-operation of other medical journals, partly by representations made direct from the central office to the authorities concerned, and partly by the action of the local Division in bringing its influence to bear on the local authority. Several cases have been reported in which attempts were made to appoint assistant tuberculosis officers at less than £350 per annum, and assistant school medical officers at less than £300 per annum, and these had all failed.

Another very interesting case was one in which a local authority offered what can only be described as a ridiculous salary for the post of medical officer of health. On this occasion a member of the Association appealed for advice, and, as a result of the co-operation of the member, the Secretary of the local Branch, and the head office, the salary was increased five-fold. Another case was one in which the fight was for the principle of security of tenure of a post as Poor Law medical officer. Some years ago a board of guardians succeeded in inducing the Local Government Board to allow it to appoint its Poor Law medical officer for a period of three years, in spite of the energetic protests of the Association and of the Poor Law Medical Officers' Association. An attempt was recently made by the guardians to renew the appointment for a further period of three years, but this time, owing to the opposition of the two associations, the Local Government Board took a stronger line and the medical officer was appointed without reference to time.

It may possibly be said that the successful results obtained were due to the present scarcity of applicants for all medical posts, and no doubt this has

been an important recent factor; but long before the war, in fact ever since the reorganization of the Association in 1903, there has rarely been a meeting of the Public Health Committee at which a similar record of successes was not forthcoming.

The Association, of course, does not win every fight in which it engages, but it may be safely said that, given a good case and an active Division which applies in good time for the help of the head office, a very large percentage of these fights can be and is won. It would have been as easy to take as illustrations successes won in defending the interests of general practitioners, or of any other class of practitioners; but in view of the great activities of the State in matters concerning the health of the people, it seems specially necessary just now to keep a vigilant eye on the salaries and conditions that are being offered for medical officers in the service of the State or of local authorities. Incidentally the above examples show how short-sighted, not to say ungrateful, those members of the public health service are who fail to join or to remain members of an association which does so much for them. It is not long since such members of the profession were roundly reproached in an article in the *Medical Officer*, a journal specially devoted to the interests of medical practitioners in the public health service, and we feel that such a record as the above, combined with the fact that practically all the recent advances in the remuneration and status of medical officers in the service of local authorities are due to the activities of the Association, gives it a special claim on the loyal support of such officers.

MINISTERIAL CHANGES.

Of the Ministerial changes recently announced, that which possesses chief interest for medical men is the resignation of Mr. Masterman of his seat in the Cabinet. He ceases, therefore, to be Chairman of the Joint Committee of National Insurance, and he is to be succeeded by Mr. Montagu, recently Secretary to the Treasury. Mr. Montagu has made the reputation at the Treasury of being one of the most efficient secretaries that the department has had for many years. He is credited with possessing a singular capacity for mastering details and at the same time preserving a firm grasp of general questions of policy. We hope that Mr. Montagu will have time to deal carefully with the very important matters of detail as well as of general policy which, we would believe, need the constant attention of an efficient Minister representing the National Insurance Joint Committee in the House of Commons. From all we can learn, there is every reason to believe that he will approach medical questions with an open mind and with the single desire of making the service efficient and smooth in its working. Notwithstanding the war, it is certain that in the near future important questions with regard to medical benefit will fall to be decided in connexion with the arrangement made in 1912 for the continuance for at least three years of the special supplementary vote for the medical services.

PROFESSOR R. A. REEVE OF TORONTO.

THE Medical Faculty Council of the University of Toronto has entered on its minutes a resolution passed at the beginning of last term on the withdrawal of Dr. R. A. Reeve to the ranks of the professores emeriti. The Council expressed its deep regret that it was called upon to record the retirement of Professor Richard Andrews Reeve, B.A.Toronto, M.D.Queen's, LL.D.Toronto, Fellow of the American College of Surgeons, and Past-president of the British Medical Association. From the beginning of its revived existence he had occupied the chair of ophthalmology and otology; and, indeed, his connexion with the university as a teacher began much earlier, as during a score of years preceding 1887 he discharged the duties of the chair with great distinction in the Toronto School of Medicine, which was affiliated with the university. Thus Dr. Reeve's departure was the actual close of well-nigh fifty years' duty without a break and without the shadow of a single disagreement. In addition there had been no movement for the promotion of the university's interests and development, no single step in the advancement of education, and no smallest effort to improve the students' opportunities and welfare in which he had not played an important and, very frequently, a leading part. Dr. Reeve was Vice-President in the Section of Ophthalmology at the annual meeting of the Association at Montreal in 1897, and President of the Association in 1906–7, delivering the President's address on the occasion of the annual meeting held in Toronto in August, 1906. He was Dean of the Medical Faculty of the University of Toronto, as well as lecturer on ophthalmology and otology. It is the hope of all who have been privileged to be associated with him in the British Medical Association that he may be spared to enjoy a long period of honoured retirement from official duties.

SYNTHETIC DRUGS BY FANCY NAMES.

M. ALBERT ROBIN has been known to us hitherto as an authority on therapeutics whose utterances have been couched in staid and even formal language. At a meeting of the Académie de Médecine in Paris, which very nearly coincided with the publication of Professor Thorpe's article on synthetic drugs to which we drew attention last week, M. Robin, in dealing with the subject, uttered some pleasant gibes which may serve the better to arrest attention, and had at once the effect of inducing his colleagues to refer the matter to a committee for report. He began with hexamethylene-tetramine, and showed how it had been made and its therapeutic properties described to the Société de Thérapeutique by Dr. G. Bardet in 1894, and how later on it came with raddled cheeks and false nose, masquerading as a German discovery with the fancy name, "urotropine." Bardet, because it was a derivative of formol, proposed for it as a convenient name "formine," but the meretricious German name was accepted in France, as in England, with the result that France has paid an enormous annual tribute to Germany for a medicament French in origin and easily manufactured, but sold owing to a mere change of name very much above its real value, at 100 francs a kilogram, M. Robin said, in place of 20, or £4 in place of 16s. He reproached French doctors for continuing to prescribe acetylsalicylic acid under the name of aspirin, the drug made by Bayer still getting into France by way of Italy with Italian labels. It is certainly odd that this sort of thing should be done both in France and in this country, for members of the medical profession are at least as patriotic as those of other callings. M. Robin quoted some observations made recently by M. Fréjacques, president of the Pharmaceutical Society of the Côte d'Or, recalling action taken by the French Pharmacists' Association in June, 1913. By their commercial organization, he said, the Germans had forestalled the French market by ruining or buying up the French houses which stood in the way of their schemes. Now forestall was in early English "foresteall," and meant to waylay in order to commit highway robbery; later it was limited to buying up a commodity privately to sell it at a high price—in former days an indictable offence. The German system is a variety of the modern trust, and hexamine was and is sold for five times its value because it was labelled urotropine. The French Pharmacists' Association unanimously resolved in 1913 that they would boycott (*boycotteraient*) the invading drugs and

support the French manufacturers by giving them a preference when buying. The result, it is said, was immediate; certain large French drug houses, assured of the support of the pharmacists, embarked in the contest, and were every day regaining lost ground, even before the war. The *British Pharmaceutical Codex* represents the action taken at a considerably earlier date by British pharmacists. It was action along the right lines, and might have been more effective if the book had not been so big and expensive, or if a shortened and cheaper edition had been published. British law in this matter is more slow-moving than French, but the information was available to the profession in this country in the publication mentioned and in others easily accessible. In this country, at any rate, the remedy for a state of things which every one in theory deplores lies almost entirely in the hands of the medical profession. The pharmacist must dispense what the doctor orders and is not free to replace a substance ordered by a German fancy-dress name by the same substance sold under its true scientific name. If that be so, as we believe, it is for the medical profession to stop the present abuses. Some of the synthetic drugs in most general use have been introduced into the new *British Pharmacopoeia*, and can and ought to be ordered by their official names. Most of the others are in the *British Pharmaceutical Codex* and can be prescribed by the name there given, followed by the letters *B.P.C.* In this way the prescriber ensures that the standard of the substance dispensed shall be the standard of purity considered necessary by the Pharmacopoeia Committee of the General Medical Council or by the Council of the Pharmaceutical Society of Great Britain, and not the standard of the commercial integrity of a German company.

ACETYLSALICYLIC ACID.

AT the meeting of the Pharmaceutical Society on Tuesday last a paper was read by Professor H. Llewellyn Smith on "Acetylsalicylic acid" in which an account was given of an investigation carried out into the exact composition of the different makes of this substance now obtainable. Professor Smith stated that he had been led to the investigation through having been assured by a medical man that the acetylsalicylic acid which he had been using had caused some irritation of the stomach which he had not observed from the administration of aspirin. The particular make of acid used in this case was one of those examined together with samples of aspirin and of other commercial makes, and a sample or samples prepared by Professor Smith himself in the laboratory. It was found that the sample complained of contained a small proportion of free salicylic acid, and one other commercial variety contained the same impurity, together with an appreciable proportion of another impurity, which was apparently acetyl-salicyl-salicylic acid. Professor Smith's investigation included a determination of the rates of hydrolysis of the various samples in water, in acidified solution corresponding in acidity to gastric juice, and in an alkaline solution corresponding in alkalinity to intestinal secretion. Most of the samples showed no appreciable difference from aspirin in any of these respects. Professor Smith's conclusion was that most of the samples obtained were identical with the proprietary article aspirin, and that where differences in action were to be observed this might be due to the presence of salicylic acid or other impurity or to the presence of traces of solvent adhering to the crystalline powder and so impeding the solubility and therefore the hydrolysis of the substance. Both samples which proved to be unsatisfactory would have been rejected if they had been carefully submitted to the official tests. It is evident from these results that it is important that all supplies of this article should be carefully tested to see that they comply in every respect with the tests of the *British Pharmacopoeia*, and that if this is done there is no need to discriminate in favour of one particular brand in prescribing this drug.

"A CALL ACROSS THE YEARS."

DR. STEWART GEIKIE has published for the benefit of the Red Cross Society at Ayr[1] a sketch he wrote of the life of Admiral Collingwood on the hundredth anniversary, some four years ago, of the death of that great sailor and great Englishman. The story ought to be well known to every one, but it contains a moral in these days when some are inclined to share the disappointment of Admiral Koster, President of the German Navy League, as to the deeds done by the British Fleet, and with him almost believe that the spirit of Nelson no longer lives in the hearts of the British seaman. Collingwood was Captain of the *Barfleur* on the "glorious first of June" (1794) and of the *Excellent* at the battle of St. Vincent on February 14th, 1797, and in the *Royal Sovereign* he was second in command to Nelson at Trafalgar on October 21st, 1805; but in the long intervals he was engaged in the wearisome work of blockade. Probably no naval officer ever kept the sea so continuously as Collingwood, cruising for months at a time without entering harbour; on one occasion he was twenty-two months without dropping anchor. It was very weary work, but, says Dr. Geikie, "it made the seaman who saved England." Collingwood was a very lovable man, very fond of his home near Morpeth, which he so rarely saw—from 1793 to his death in 1810 he was only one year in England—and very careful of the health and comfort of his men. Dr. Geikie quotes from one of his letters: "I have been long at sea, have little to eat, and scarcely a clean shirt . . . yet with all this sea work, never getting fresh beef nor a vegetable, I have not one sick man on my ship"; and again: "I have not let go an anchor these fifteen months, and on the first day of the year had not a sick list in the ship—not one man. The doctors are the only people who are in danger of scurvy, if want of employment be a cause of it." How it was done we do not know in detail, but the constant interest of the captain must have been one of the chief causes. Dr. Geikie has put on the cover of his inspiring essay the flags that expressed Nelson's famous signal. "I wish," said Collingwood, when his attention was called to it as the fleet went into action, "I wish Nelson would make no more signals, for we all understand what we have to do." But when he learnt what it was, he bade it to be made known to the crew. Of no man can it be more truly said that he did his duty throughout the whole of his service than Cuthbert, Lord Collingwood, Vice-Admiral of the Red.

NURSING ETHICS.

MODERN nursing may be said to have arisen from the foundations laid by the Nightingale School for Nurses in 1860, but it is only within the last twenty-five years that its existence as a profession has been fully recognized. The ethics, or rules of conduct which should guide it in all its relations, have grown up with it and are still growing. The fully trained nurse of to-day, who is equipped with knowledge as well as experience, possesses power for good or ill far greater than that wielded by the untrained attendant of former days. Such power calls for control in some form or other, and this control must be exercised by the bonds of self-respect and loyalty, forged by the universal observance of the rules of conduct laid down by the profession itself, for no legislative enactment can secure a high standard of ethics, though it may assist its attainment. An interesting lecture bearing upon this question has recently been published by Dr. Kirkpatrick, Registrar of the Royal College of Physicians in Ireland;

[1] *A Call Across the Years. Cuthbert, Lord Collingwood, Vice-Admiral of the Red.* By J. Stewart Geikie, M.D. Ayr: Stephen and Pollock. 1914. (Demy 8vo, pp. 47. 2s. 6d. net.)

he points out some of the many phases of a nurse's career which call for the exercise of self-control and discretion in the course of public or private service. As every nurse must learn her work in a public institution before she is entrusted with the care of private patients, it is of the greatest importance that she should have the clearest perception of her personal position with respect to both classes of service. In the hospital she is an officer of the establishment and, like other officers, must be obedient to her superiors and loyal to the institution itself. Obedience to orders, whether they seem good to her or not, is essential, and any dissatisfaction that may be felt must not be expressed outside the hospital. Above all, it is necessary that the nurse in hospital, of whatever standing, should always remember that she stands to the patient in the relation of host to guest. The patient enters the hospital as the guest of the authorities, who undertake to do their best for him in his trouble. Like other guests, he is expected to conform to the rules of the house of his host, but these rules need never be enforced with harshness, even though the patient may not at first recognize the need for their observance. In the case of private nursing these conditions are reversed. The nurse for the time being is the guest in the patient's home, and is entertained as such in return for her services. Hence she is bound to accommodate herself to the customs of the house, and to strive to give as little trouble as may be consistent with her patient's needs. Whether in public or in private work, professional secrecy must be observed as faithfully as in the professions of medicine, the church, or the law. The common tendency which womankind shares with mankind to gossip about the affairs of their neighbours must be rigidly withstood where the interests of patients or doctors are concerned. The qualities of tact, patience, sympathy, and perseverance are not vouchsafed to every one, but they are all required to the fullest extent before success in nursing can be achieved, in spite of complete training and the highest honours by examination. The honour of the nursing profession is in the hands of every one of its members, and each one should feel her responsibility in this respect.

SUBCUTANEOUS INJECTION OF OXYGEN.

DR. JOHN MCCRAE has used hypodermic injections of oxygen in 33 patients[1] and finds that method of use in (1) accidents from anaesthesia; (2) oedema of lungs, oedema glottidis, and accidental interference with respiration by disease of the upper part of the respiratory tract; (3) marked dyspnoea with defective oxygenation, as in cardiac and renal disease; (4) asphyxia of infants at birth; (5) syncope; (6) electrocution. In 11 cases of pneumonia oxygen injected hypodermically sometimes gave comfort and lessened cyanosis, but had no effect on the course of the disease; this is what we should expect, for Peabody (1912) observed that in pneumococcus bacteriaemia the oxygen-combining power of the blood fell with the progress of the disease. McCrae used the ordinary high-pressure oxygen cylinder, with the usual valve and wheel by which the escape of the gas is regulated. Rubber tubing of about 1 cm. diameter and a small needle completed the equipment. The injection was made at some part where the skin was loose, usually the upper part of the thorax. The skin was sterilized and tincture of iodine applied. The needle was placed under the surface of alcohol or sterile water, so that the rate of flow might be observed. Just short of a continuous stream of bubbles he found answered best, although the rate did not appear to be of much moment. The needle was then pushed through the skin. Usually a lump appeared, and within a minute gradually increased to the size of half a football. The needle was withdrawn, and the opening closed by plaster; in a few minutes the gas was absorbed, but for several hours crepitus could be felt over the spot. The distension had never been complained of as painful, not even when the injection had been made fairly quickly. McCrae was not able to measure accurately the amount of oxygen injected by his apparatus, but he seems to have had no unfavourable effects of any kind. In France, where the hypodermic injection of oxygen gas has been most widely used, a specially devised instrument called "Martinet's oxygenator" is now usually made use of.

[1] *Amer. Journ. of Med. Sciences*, December, 1914, p. 836.

THE HOUSE-FLY IN WINTER.

A REPORT just issued by the Local Government Board[1] has a double interest. It has always been assumed that the common house-fly, *Musca domestica*, like the mosquito, hibernates in the form of a fertilized female which survives the winter months in a state of torpor hidden away in some crevice or sheltered crack in an unfrequented tool-house or other outbuilding. Undoubtedly a few such females do live through the cold period in places permanently warmed, such as hotel kitchens and bakehouses; but these must necessarily be few in number. The recent inquiry of Dr. Copeman and Mr. Austen into the hibernating habits of the house-fly has brought to light one especially interesting and unexpected point, and this is that after the most careful search no single specimen of the house-fly, *M. domestica*, was met with among a considerable number of hibernating flies of other species collected from the situations which hitherto had been regarded as the special winter resorts of the house-fly. The investigations of these two inquirers afford no support to the view that the house-fly hibernates in this country in the adult stage, and for the present the method in which the interval between one fly season and another is bridged over is a mystery. Possibly it is the pupa that survives the cold of winter. The report dwells on another question of equal interest, but more speculative, and by no means brought to a sound conclusion. The results obtained by Mr. Hesse, and corroborated by Dr. Bernstein, demonstrate that flies can "be killed with certainty by causing them to ingest bacterial spores, cultivated in artificial media, from the bodies of Empusa-infected flies, and show that the flies thus destroyed under strictly controlled experimental conditions, succumb with all the appearances typical of infection by *Empusa muscae*. But it is at present impossible to make any definite assertion as to the precise relationship, if any, which exists between *Mucor racemosus* with the spores of which the flies are fed, and *Empusa muscae* from attack by which these flies invariably die." The exact relation, however, of the mould which was eaten, *Mucor racemosus*, to the deadly fungus *Empusa muscae* is still a matter which requires further inquiry.

[1] Further Report to the Local Government Board. No. 7, On Flies as Carriers of Infection.

LECTURES IN MILITARY HYGIENE.

WITH the concurrence and assistance of the Army Council a course of nine lectures on "The Health of the Army in the Field" will be given at the Royal Army Medical College, Millbank, S.W., by Major P. S. Lelean, F.R.C.S., D.P.H., R.A.M.C., at 5 p.m., on February 22nd, 24th, and 26th and March 1st, 3rd, 5th, 8th, 10th, and 12th. The course will form an introduction to the problems of hygiene of forces in the field for (1) qualified medical men without military experience, (2) combatant officers about to proceed to the front, and (3) others interested in the subject (provided the accommodation is sufficient). In the allocation of tickets preference will be given in this order. The subjects to be dealt with in this course of lectures will be the hygiene of active service, sickness in the army, organization and administration in the field, water and water supplies, and conservancy on active service. Arrangements will be made, if desired, for visits of inspection to a typical

camp. The Acting Vice-Chancellor, Sir Alfred Pearce Gould, informs us that the University has received assurances from more than one quarter that a course of this nature will be greatly appreciated, and will not in the least degree overlap with the provision already made by the army medical authorities. The fee for the course is 1 guinea, and early application should be made to the Academic Registrar at the University of London, South Kensington, S.W.

THE Marquess of Londonderry, whose unexpected death, after a few days' illness from pneumonia, has caused widespread regret, was an honorary member of the British Medical Association. Lord Londonderry was elected in 1893, on the occasion of the annual meeting of the Association held that year at Newcastle, in recognition of the great interest he had taken in the work of the Association both at the Newcastle Meeting and on the occasion of the Association visiting Dublin in 1887 during his office as Viceroy of Ireland.

Medical Notes in Parliament.

The Medical Service of the Armies.

IN the debate on the Army Estimates, which began on Monday, the Under Secretary of State for War, Mr. Tennant, said, with the general approval of the House, that he would not indicate the number of men under arms. Recruiting had been very satisfactory, but more men were wanted, and he feared that the time would come when it would be necessary to make further inroads upon employment in important industries.

The Territorial Force.

Though it was no part of the duty of the Territorial Force to undertake foreign service, yet, in spite of the very large additions made to it, the overwhelming proportion of its members had taken upon themselves that obligation, and recent events had placed beyond doubt the value and efficiency of the force. He admitted that it had not been possible quickly to overcome all the difficulties which presented themselves when recruiting on a large scale was first established; in particular, there had been difficulties in the housing of the new army, and, although it had been hoped to put all into huts, the contractors were much behind time and the troops had to be billeted. When the huts were approaching completion the heavy rainfall upset calculations and men were put into them before the work was actually completed. At the present time, however, a very large number of troops were comfortably housed in huts, and it was hoped that before long the accommodation required for all would be available.

The Army Medical Services.

He then turned to the discussion of certain aspects of the medical treatment of the wounded in France, upon which he made the following observations: I do not think there is very much that I can add to the narrative which I gave to the House in November last of the methods adopted by the Royal Army Medical Corps in bringing the wounded from the front to the clearing stations, thence to the base hospitals, and finally home here. Important as those functions are, the prevention of disease is even more important, and this is rightly regarded as the primary function of this corps. I think I am right in saying that this is the first war in which we have been engaged in which an organized sanitary service has existed. We owe the establishment of this service to my noble friend Lord Haldane. Since its establishment we have been gradually perfecting its organization during the last five or six years. When we look back to the fact that during the Napoleonic wars only 3 per cent. of the deaths among our troops were due to wounds, and 97 per cent. due to sickness or disease; when you also remember the fact that during the Crimean war more deaths occurred from disease during the first three months than during the whole of the rest of the campaign, it is impossible to lay too much stress upon this preventive function of the Royal Army Medical Corps. How has this function been carried out? I have to thank Mr. Arnold for the very interesting and able report which he made to me after a visit which he paid to Paris, during which he got a great many figures. All the evidence which he brought, and which comes to me officially, goes to show that by far the greatest amount of sickness amongst our soldiers at the present moment is due to the wet and the cold. Frost-bite and rheumatism are, I am sorry to say, very prevalent. We have issued from the War Office, through the Army Medical Department, a small leaflet to officers and non-commissioned officers telling them how to prevent frost-bite amongst their men. Mr. Arnold reports to me that, assuming the conditions of exposure of officers and men to be identical, frost bite is three times as prevalent among the men as it is among the officers. I do not suppose it is possible to assume that the conditions are quite identical, but you may be certain that the exposure of the men is not three times as great as that of the officers. If this result is due to the officers having better boots, leggings, and equipment generally, it proves that there is a certain amount of preventability of frost-bite, and I hope by the steps we are now taking that this disease may be prevented to a larger extent than has been the case in the past.

Coming now to the question of enteric fever, I am glad to say that cases of this disease are luckily rare, and they have occurred almost entirely among the uninoculated. The evidence is accumulating in favour of making inoculation compulsory. This is one of those subjects which ought to be settled without prejudice. Mr. Arnold, who gave me this most interesting report, holds strongly that inoculation against typhoid ought to be made compulsory (see JOURNAL, February 6th, p. 264). The figures had been published in a leaflet to all soldiers, with a prefatory note by the Secretary of State for War impressing upon all soldiers the great importance of inoculation. I have not time to go in detail into all the preventive measures taken by the Royal Army Medical Corps, but I should like to mention the sanitary squads, the water purifying sections, and the travelling hygiene and bacteriological laboratories to which I drew attention in my speech in November. This is an entirely new feature, and these branches in particular are doing extraordinary and valuable work. Lastly, the Sanitary Commission sits at the War Office to advise the Secretary of State upon all matters relating to the health of the troops both at home and abroad. What I have said relates to the army abroad, and it may be asked, What are we doing for the health of our troops at home? Owing to the almost entire absence of the regular Army Medical Service engaged upon field operations, certain difficulties have arisen, but, thanks to the patriotic eagerness of the medical profession, we have been able to obtain a high degree of efficiency. I cannot claim that complete efficiency has been achieved, but day by day the ideal is being approached. The new Army Medical Corps for the new armies is now in course of formation, and I believe will be able to do excellent work should the occasion arise.

Mr. Long, who followed, said that much of the difficulty with regard to hutting was due to the fact that the War Office had ignored local opinion and local advice in the selection of sites for camps and in the letting of contracts.

Lord Robert Cecil congratulated the Army Medical Service on having in the earliest stages initiated the reform of allowing nurses to go to clearing stations, and hoped that system would be continued and extended, as two were not enough. He thought the House should express its very warm sense of what the whole of the medical services had done in the war. From the heroism of the Royal Army Medical Corps, which had been past all praise, to the services of the orderlies in the hospitals, everything had been dictated by the highest patriotism and the highest heroism, and the House would not be doing its duty if it did not record its appreciation of the services that were being rendered by the medical profession.

Sir Courtenay Warner urged that a nurse was a better person for attending to the wants of a sick man than an orderly. He knew that there was a shortage of army trained nurses, but even so, he would prefer a woman, although not so efficiently trained, to a hospital orderly; orderlies were very good indeed and had done splendid

work, even risking their lives in the trenches, but in some of the base hospitals, where they had been under civilian doctors, discipline had been slack.

Enteric Fever: Immunization.

When the debate was resumed on Tuesday Mr. Peto referred to antityphoid inoculation. There was, he said, a very strong case for taking the line that no man should go to the Continent or on active service without having been inoculated. This was in accordance with the opinion of the whole expert medical profession in the country. He quoted experience in India and of the Canadian Expeditionary Force. It was, he said, not fair to send out to fight side by side with men who had patriotically submitted themselves to immunization others who had refused that protection. It was true that British troops were not suffering seriously from typhoid, but when a drier season came and dust prevailed a very different state of things might occur among troops marching and fighting in infected areas. He also criticized the way in which huts had been erected. The whole process had been inverted, beginning by carrying material on to wet ground, which was quickly cut up, and only making roads at the last.

Mr. Chancellor complained that pressure was brought to bear upon men joining the military forces to submit to vaccination against small-pox and inoculation against typhoid. If not compulsory in theory, typhoid inoculation should not be compulsory in practice. He had no objection to officers and men using influence and persuasion and precept and example, but objected to compulsion, direct or indirect. He denied that the inoculation was useful, urging that in the South African campaign many men who had been inoculated suffered from typhoid fever, while others who had not, escaped, and alleged that the practice of antityphoid inoculation depended upon the suppression of truth and the gagging of persons opposed to it. It was an attempt to undermine all our liberties.

Mr. Hayes Fisher and Mr. Roberts discussed the bad treatment of British prisoners in Germany, and Sir Henry Craik reverted to the question of antityphoid inoculation. He was glad to say that almost without exception those who had fought against experiments on animals had expressed no opposition to antityphoid inoculation, and had agreed that it was not only efficacious but perhaps a necessary preventive. He strongly resented the attack made on the medical profession, and such statements as that that profession, to which the country owed so much and to which at the moment it was specially indebted, throve upon the constant oppression of the troops. He thought the War Office would have done better to have the courage of its opinions, and to say to the men, either you accept the inoculation or you are not fit to go abroad and run the risk of carrying infection to your comrades.

Dr. Addison's Reply.

Dr. Addison, who replied for the Government, after paying a compliment to Mr. Chancellor for having had in the House the courage of his opinions, said: I think sometimes one is apt, in dealing with the details of a question like this, to rather lose the sense of proportion. After all, the essential question is whether this inoculation is desirable in itself, and is it desirable as a preventive of the recurrence of typhoid fever among our troops abroad to a sufficiently material extent, thus protecting the lives of our men and diminishing the risks of contagion? That is a big question. After all, it is not so much whether a man dies after inoculation, but whether one is convinced that where the inoculations are carried out with care, particularly where a man can rest the next day, they are effectual, and that the number of cases which do badly are infinitestimal, as there is no question whatever that they are. Even if a man dies at a particularly vulnerable moment, as the result of inoculation, that does not prove that it is not a very efficient preventive of typhoid fever, any more than it would prove that chloroform is not an anaesthetic because a man died under it. I think we should get away from details of that kind. I was glad to hear my hon. friend state that he had not a word of objection to inoculation; but I must say that he dissembled his impartiality with uncommon skill. It is not for me to say anything as to any infractions of discipline that may have taken place, or as to what has happened with regard to the War Office Orders. I have no doubt my right hon. friend will deal with that point when he comes to speak. My hon. friend the member for Haggerston, in dissembling his indifference on the question of inoculation, committed himself to a statement which I think in his calmer moments he will hardly maintain. The hon. gentleman has complained that my right hon. friend yesterday said that there were only 421 cases, which he thought too small and petty a number to be quoted by my right hon. friend.

Mr. Chancellor: I said too small to generalize from.

Dr. Addison: That is the whole point. The point is that we have a great force on the Continent and to ship to the Continent greater than we ever had before, and out of six months we have had three months of the most atrocious weather imaginable; and yet there have been only these 421 cases. The fact of the figures being so small is a triumphant vindication of the value of that inoculation.

Mr. Chancellor: How many troops are inoculated and how many are not?

Dr. Addison: I am not in a position to give that information. If I were I do not think it desirable to state the numbers. They might be stated in percentages, and I do know that a very considerable percentage of the troops have not been inoculated, and I also know that a very large percentage of those in the Expeditionary Force were inoculated. The hon. member said that the whole practice seems to thrive upon oppression of the troops. I do not know what practice the hon. member refers to. I should have said myself that nothing but good could arise from full and frank discussion of the whole subject, and the more the records of this remedy are examined the greater is the satisfaction which the War Office has received from them. The figures from America and other places, which have been alluded to here, are a fine advertisement for typhoid inoculation. The hon. member referred to South Africa and the effect upon those inoculated, but I have never heard it contended, and I do not know that any of the advisers of my hon. friend would contend, that this is not a thing which must be learnt by experience. Since then twelve years have elapsed, which is a long time in a matter of this sort, and in many countries during that period there has obviously been a very large improvement. We do not claim that inoculation for typhoid is an absolute protection. The point is, Is it so much a protection that it so diminishes the incidence of the disease of our troops abroad as to be worth doing? That is the whole point. There were 58,000 cases—that is more than an army corps—and up to the present we have the number 421 quoted, and if we go on at that rate—you can put it at what you like, for I do not expect for one moment we shall convince my hon. friend—it synchronizes with the application of this particular inoculation ——

Mr. Lynch: May I ask my hon. friend a question which is vital to the statistics on this very point, and it is this: Taking the number of inoculated and the number not inoculated, and taking the number of deaths respectively, are the numbers comparable in ratio, or do they show a great advantage in favour of those inoculated?

Dr. Addison: I cannot give the absolute figures, as I have not got them here, and I do not think it would be desirable to do so if I had them. What we learn from the American army is that not only is the incidence of the disease among the inoculated enormously diminished, but that the mortality from the disease is diminished as well. The hon. member for Haggerston referred to those who refused to "violate their consciences," and expressed condemnation of those who have tried to oppress their consciences in an opposite direction. I think a good many men might find their consciences more or less asleep on this subject had it not been that somebody or other made it their business to go about among all the camps distributing leaflets of the kind I have here, and which, I dare say, galvanized the consciences of a good many men. Here is a leaflet which begins:

True patriotism. Is it patriotic to oppose the vaccination and inoculation of our soldiers?

That is not a question of the freedom of the individual. "Is it patriotic to oppose the vaccination and inoculation of our soldiers?" That is the question that is asked, and in the first line the reply says, "Certainly it is." That is not a campaign directed towards the preservation of the

freedom of the individual, but it is a campaign against typhoid inoculation, and is not in defence of personal rights at all. The very heading of the leaflet shows that it is not so. Do not let us confuse the issues. A good many of those men no doubt asserted their freedom quite honestly without having arguments of this kind to induce them to so exercise it. I think, however, that the hon. member must remember that if he expects officers and others who believe in inoculation not to press it on any of their men then he must at least ask his own friends not to adopt an opposite course.

Mr. Chancellor: I never asked that officers should not endeavour to persuade their men. I said that that was legitimate, but what I did object to was oppressing the men who did not yield to their persuasion.

Dr. Addison: As I have already said, that is a question with which I have no doubt my right hon. friend the Under Secretary will deal. The point I am trying to make is this, that this particular leaflet did not make out this campaign as a campaign on the question of the rights of the individual, on which I admit the hon. member has made out a very strong case. The campaign carried on was whether these men ought to be inoculated. After all, whilst there may be, and I daresay there are in different parts of the country, excesses of enthusiasm on the part of men who sincerely believe that the troops under their command will be safer out in France if inoculated, yet one can understand that if a man is taking a battalion out there, and if he thinks that the burden of his transport will be less, and the sick will be less numerous, and that he will have more fighting units in the firing line—and that is the final test of his efficiency—because the men are inoculated, then I say one can understand little excesses now and then on different men's parts in trying to get their men inoculated. I do hope, however, that we shall not allow this great question to be clouded over merely by questions of little trivialities. Do let us try and look at it as a whole, and if it is a good thing for our troops in France, and if it is sufficiently good to warrant us in pressing it on to protect men against this disease, which is really the most fatal in all campaigns, then I am quite sure my hon. friend will be quite ready to sink any minor prejudices of his own, if he is convinced, as many of his friends are who are against inoculation, that it is, after all, sound policy to take, and that probably it is the wisest course to take, and I am sure he and his friends will, at all events, co-operate with the War Office in placing no undue obstacles in the way of its being carried out.

Attitude of Opposition.

Mr. Walter Long said that he was glad Dr. Addison had taken the matter out of the rut of common controversy, and had said that this was not the moment to discuss questions on percentages of cures and preventions and deaths in the ordinary form. The Opposition would give the Government now and hereafter all the support in its power if they thought it necessary to take the strongest measures to secure the health of the troops at the front. If an epidemic of typhoid fever broke out, men would be mown down on all sides; they would have to be taken back to the base, where doctors, dressers, nurses, and attendants would have to be provided to look after them. All this work, if it could be saved, and if the House had the courage of its opinion, should be saved in the interests of the army itself.

After some further discussion, in which repeated attention was called to the defects in the hutting arrangements, Mr. Baker, the Financial Secretary to the War Office, admitted that owing to the desire to get men into the huts at the earliest possible moment the proper order of procedure had been in some encampments neglected, so that roads, paths, and drains had been left to last instead of being made at the earliest stage.

Mr. Duncan Miller said that he thought the cases of soldiers returning suffering from injury deserved special consideration. He believed that the War Office was sympathetic in the matter and was making arrangements to have such men treated in private and suitable hospitals in the United Kingdom, and that they should not come under the lunacy administration.

Mr. Lynch said that, in regard to antityphoid inoculation, the opinion of the medical profession was settled and that it was recognized as a valuable preventive. It was compulsory in the German army, and he thought that if the War Office believed its own argument it should decide to make antityphoid inoculation compulsory in the British army.

Mr. Tennant's Reply.

In winding up the debate for the Government on Wednesday, Mr. Tennant said that nothing that had occurred during it led him to modify the statement he had made at its beginning, to the effect that evidence in favour of compulsory inoculation was accumulating. The figures for the South African war were significant, but the Indian figures were almost more significant. In India, without compulsion, over 90 per cent. of the army was inoculated. In the pre-inoculation days up to 2,000 cases of typhoid fever used to occur annually. In 1912 the number recorded was only 118, and in 1913 only 85. The question of making inoculation compulsory in the future was under consideration, and he hoped shortly to make a definite statement. The question between Mr. Chancellor and himself was not, he thought, so much one of medical authority as of discipline. The commanding officers, as to whose conduct Mr. Chancellor had complained, had no doubt been actuated by the belief that the refusal of some to be inoculated was prejudicial to the health of the great bulk of the men under their command. He had sent out instructions pointing out the undesirability of such action as that which was taken in one case. He felt strongly, however, that there was a real danger from men going on leave without having been inoculated, since they might bring back infection. Lord Kitchener felt so strongly on the point, that he was about to give instructions that leave must be sparingly given in the case of men who declined to be inoculated. If unpleasant duties were cast upon men who refused inoculation there might be a real reason for it. A certain amount of work had to be done in barracks, and if a large number of men were off duty owing to having been inoculated, those who had not been inoculated had to do their work. Taking the percentage of inoculated men in the British forces in France as 30 at the beginning of the war, though he thought it probable that it was more like 50, it appeared that thirty-four-thirty-fifths of the deaths had occurred among men who had not been inoculated. Turning to other subjects, he said he thought that the Army Medical Corps, the Red Cross Society, and other agencies deserved the praise lavished on them, and it was gratifying to know that the St. John Ambulance Association and the British Red Cross Society, which were at one time in rivalry, were now working together through a joint committee. Some criticism had been made as to the early removal of the wounded from the base hospitals. The War Office was most anxious that the sick and wounded should be left in the hospitals as long as possible, but at a recent date only 700 beds were vacant at Boulogne. The women nurses at many of the clearing stations numbered four, five, or six.

Antityphoid Inoculation.—In reply to Mr. Peto, Mr. Tennant said that, so far as the War Office was aware, there had only been one death which could in any way be connected with antityphoid inoculation, that of Corporal Nichols, of the 3rd Battalion (Reserve) City of London Regiment. Mr. Tennant said that he had at first informed the House on November 27th that the cause of death was pneumonia, but when the death certificate was received it was seen that the cause was given as "(1) Antityphoid vaccination; (2) pneumonia." The case had been investigated and submitted to Sir William Osler, who considered that death was due to an eight-mile march which the man took within twenty-four hours after inoculation, and not to inoculation directly. Instructions had been given that care must be taken that men recently inoculated were not given hard work until their condition justified their undertaking it without risk. In reply to various other questions, Mr. Tennant said that he was advised that to make antityphoid inoculation compulsory legislation would be necessary, and that there was no present intention to introduce a bill, though the matter might be further considered should necessity arise. He also gave the figures of recent experience of the British army in France (see BRITISH MEDICAL JOURNAL, February 6th, p. 264). In reply to Sir J. D. Rees, the Attorney-General said that the question whether pro-

ceedings should be taken under the Defence of the Realm Act against persons who incited soldiers to decline to submit to antityphoid inoculation was under the consideration of the military authorities. In reply to Mr. Peto, Mr. Tennant said that 95 per cent. of all ranks of the Canadian contingent had been inoculated against typhoid, and that there had been no case of death or serious illness.

Pay of Army Medical Officers.—Mr. Stewart asked the Under Secretary of State for War whether medical officers in the new army were paid £1 4s. a day, whereas medical officers who had served for years in the Territorial Force, and who had now volunteered for service anywhere, receive only 15s. 6d. a day; and whether he could see his way to remedy the grievance of the Territorial service by putting them on the same scale of pay as the surgeons in the new army.—Mr. Baker, in reply, referred to the answer he had given on August 27th last (SUPPLEMENT to BRITISH MEDICAL JOURNAL, September 5th, 1914, p. 164), and, in reply to a similar question by Mr. Walter Guinness, he said that certain civilian medical practitioners appointed to temporary commissions were receiving a higher rate of pay. It was sometimes necessary to give higher rates to those commissioned on emergency, but it was not intended to make this universal. In reply to Mr. Walter Guinness, Mr. Baker said that there was no difference in the pay of officers holding temporary and permanent commissions in the Royal Army Medical Corps (Territorial Force). The rate for captains was 15s. 6d., and for lieutenants 14s. a day.

Treatment of Soldiers.—In reply to Mr. Duncan Millar, Mr. Tennant said that every endeavour was being made to treat soldiers suffering from traumatic neurasthenia and mental strain in such a manner as to avoid sending those not certifiable into asylums. For this purpose arrangements had been made to treat such cases in certain private and civil hospitals in the United Kingdom, and a Red Cross military hospital had been opened in Lancashire for their reception. This latter hospital was administered by, and the patients were under the care of, medical officers holding commissions in the Royal Army Medical Corps.

Indian Medical Service.—Mr. Rawlinson asked the Under Secretary for War whether his attention had been called to the reduced rate of pay of medical officers of the Indian Medical Service who were now on active service with field ambulances; and whether he could see his way to raising their pay to the amount which they would receive if they were working for the Indian Medical Service in India during times of peace.—Mr. Roberts said that subject to certain exceptions which were at present under discussion with the Government of India, officers of the Indian Medical Service withdrawn from their ordinary duty for active service received not less than the military pay and allowances ordinarily attached to their rank and position, and in some cases special higher rates provided for field service appointments The Secretary of State recognized that the rules might sometimes entail loss of emoluments to Indian Medical Service officers withdrawn from civil appointments, but liability to recall to military duty was a well understood condition of civil employment in the case of the Indian Medical Service, and he saw no sufficient reason for modifying the rules.

THE *Bulletin* of the Office International d'Hygiène Publique gives statistics available down to December 31st, 1914, of the prevalence of cholera. In Austria there were, from September 23rd to December 5th, 3,468 cases and 893 deaths, including 386 cases and 39 deaths in Vienna; and in Hungary, from September 27th to December 5th, 3,006 cases, but the number of deaths is not stated. In Austria the disease was most severe in Galicia, where 2,053 cases and 731 deaths were recorded. In Hungary, the district in which the largest number of cases (697) was that surrounding Budapest, the city itself having 336. In the German empire the disease produced in Silesia, between November 8th and December 12th, 49 cases, not including some cases among prisoners and wounded, and there were a few cases in Brandenburg and near Posen. According to a *Morning Post* telegram from Berne under date February 7th, the danger of small-pox in Austria-Hungary has led Austrian medical associations to petition the Minister of the Interior to make vaccination compulsory without delay, not only in Vienna, but throughout the Austro-Hungarian empire.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE MANCHESTER COMMITTEE.

AN important committee has been formed at Manchester and a circular is on the point of being issued to the local members of the medical and pharmaceutical professions setting out the position of their Belgian colleagues. The circular is signed by Dr. Alfred Brown, President, Manchester Pathological Society; Mr. J. Gray Clegg, President, Manchester Clinical Society; Dr. Archibald Donald, President, Manchester Medical Society; Mr. James Grier, President, Manchester Pharmaceutical Association; Dr. T. Arthur Helme, President, Manchester Medico-Ethical Society; and the following members of the central committee: Sir William Milligan, Professor G. Elliot Smith, and Mr. William Thorburn. Dr. E. M. Brockbank, Northern Assurance Buildings, Albert Square, Manchester, and Mr. Tom Miller, pharmacist, 5, Yarburgh Street, Whalley Range, are acting as honorary secretaries. The committee proposes also to appeal to the public through the lay papers.

Subscriptions may be sent to either of the secretaries, who will acknowledge their receipt, and pass them on to the Central Fund. They will be acknowledged also in the medical and pharmaceutical papers Cheques should be crossed "Lancashire and Yorkshire Bank, Limited."

Contributions of surgical instruments likely to be of use to the Belgian doctors may be sent to the Library of the Medical Society, University of Manchester, where they will be sorted and sent on to the Master of the Apothecaries' Society, London.

LIVERPOOL.

The Liverpool Belgian Doctors' Relief Fund is intended for the relief of Belgian doctors, and we are informed that the Liverpool Chemists' Association is forming a local fund for the relief of their professional colleagues. The money in the hands of the Liverpool Medical Institution amounted on February 4th to £382 10s. 3d. The Fund is still open and subscriptions should be sent to Dr. T. R. Bradshaw, at the Institution, 65, Rodney Street, Liverpool.

Second List of Subscriptions.

	£	s.	d.		£	s.	d.
Dr. G. A. Crace-Calvert	5	5	0	Dr. C. Alston Hughes	1	1	0
Dr. John E. Gemmell	5	5	0	Dr. W. Hardy Fleetwood	1	1	0
Dr. R. Wyse ...	5	0	0	Dr. R. Paterson ...	1	1	0
Dr. A. S. Parkinson (2nd subscription)	4	4	0	Dr. A. F. Seacome ...	1	1	0
Dr. J. E. Stott ...	2	2	0	Dr. W. Macfie Campbell	1	1	0
Dr. J. C. M. Given ...	2	2	0	Dr. John Robson ...	1	1	0
Dr. A. A. Mussen ...	2	2	0	Dr. H. Wycliffe Fisher	1	1	0
Dr. A. C. E. Harris...	2	2	0	Dr. David Morgan ...	1	1	0
Dr. A. C. Wilson ...	2	2	0	Dr. W. Sanderson ...	1	1	0
Dr. Walter C. Oram	2	2	0	Dr. O. F. Evans ...	1	1	0
Dr. J. F. Gordon ...	2	2	0	Dr. F. F. German ...	1	1	0
Dr. T. Glynn Morris	2	2	0	Dr. Albert E. Davis...	1	1	0
Dr. T. B. Grimsdale	2	2	0	Dr. Isaac Harris ...	1	1	0
Dr. A. E. Hawkes ...	2	2	0	Dr. A. A. Meeson ...	1	1	0
Dr. W. Morland Hocken	2	2	0	Dr. E. I. Claxton ...	1	1	0
Dr. G. S. Stansfield	2	2	0	Dr. R. G. Sheldon ...	1	1	0
Dr. Harry Holmes ...	2	2	0	Dr. W. Cash Reed ...	1	1	0
Professor J. M. Beattie	2	2	0	Dr. K. V. Trubshaw	1	1	0
Mr. ArthurEvans ...	2	2	0	Dr. R. Lucius Wood	1	1	0
Dr. Harriet Jones ...	2	0	0	Dr. J. J. Tisdall ...	1	0	0
Dr. Douglas Moffatt	1	1	0	Dr. F. Ingall ...	1	0	0
Dr. Bennett Jones ...	1	1	0	Dr. A. C. Lewis ...	0	10	6
				Dr. N. H. Blair ...	0	10	6

THE DURHAM AND NEWCASTLE DISTRICT.

Mr. A. S. Percival, 17, Claremont Place, Newcastle-on-Tyne, who is acting as one of the joint secretaries of the movement in this district, has issued the following appeal:

"We are under a lasting obligation to Belgium for her magnificent stand against the German invaders; indeed, it is an obligation that can never be fully repaid, and it should be regarded as a privilege to have this opportunity of showing our sympathy with our fellow practitioners. Chiefly with this end in view, a meeting will be held at the College of Medicine, Newcastle-on-Tyne, on Wednesday next, February 17th, at 4 p.m. An address will be given by Professor Jacobs of Brussels, who will give evidence of certain startling facts that for ruthless and savage barbarity have no equal. All doctors and pharmacists are invited to attend the meeting, at which it is

proposed to form a committee for dealing with Belgium's appeal. Meantime, any subscriptions that are sent to me in aid of the Fund will be gratefully acknowledged and duly reported in the medical journals."

CENTRAL BRITISH COMMITTEE.

Certain cases of distress have been relieved immediately, on the representation of Dr. Clément Philippe, the President of the Society Belge de Médecine et de Pharmacie en Angleterre, and there has been some success in finding work for Belgian practitioners, under the recent privilege of British registration. It seems doubtful whether the General Medical Council will be able to reduce or remit the fees of Belgians desiring to register, and it may devolve upon the Fund to advance the money in some cases. No Belgian doctor was found to fill a post where an unmarried man was required. The receipts of garments, both for men and women, at 3, Hyde Park Street, London, W. (Dr. Philippe's house, kindly lent for the purpose), have been satisfactory, and the hours of distribution have been arranged as follows: Wednesday, 10 a.m to 12 noon for men, and Friday between the same hours for women.

The case of surgical instruments designed for Belgium was forwarded to Brussels, via Rotterdam, in the s.s. *Vesuvie*, which sailed on February 1st.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. These will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, in addition to subscriptions amounting to over £5,000 previously acknowledged; this sum does not include money received by the Scottish or Irish Funds.

Twelfth List.

	£	s.	d.
Mr. W. Thomson Walker	5	5	0
Brussels Medical Graduates' Association (per Dr. Major Greenwood, Treasurer), third donation	2	2	0
Dr. Lauriston Shaw	5	5	0
Miss Lilian T. Rowland, M.B. ...	2	2	0
Professor J. A. Kynoch	2	2	0
Oldham Medical Society, collected by (per Dr. F. L. Pochin)—			
Oldham Medical Society... ...	10	10	0
Dr. Lawrie ...	5	0	0
Dr. Robertson ...	5	0	0
Dr. J. Fort ...	3	3	0
Dr. W. White ...	3	3	0
Dr. Olive Claydon	3	0	0
Dr. Cammock ...	2	2	0
Dr. Fawsitt ...	2	2	0
Dr. Henderson ...	2	2	0
Dr. Hutton ...	2	2	0
Dr. Kinnear ...	2	2	0
Dr. Yates ...	2	2	0
Dr. H. G. Gill ...	2	0	0
Dr. Anderson ...	1	1	0
Dr. Corns ...	1	1	0
Dr. Doble ...	1	1	0
Dr. Fulton ...	1	1	0
Dr. Godson ...	1	1	0
Dr. Heap... ...	1	1	0
Mr. J. W. Leach ...	1	1	0
Dr. McGowan ...	1	1	0
Dr. Martland ...	1	1	0
Dr. Pochin ...	1	1	0
Dr. Radcliffe ...	1	1	0
Dr. Ross	1	1	0
Dr. W. B. Yates ...	1	1	0
Dr. R. Bowes ...	1	0	0
Dr. H. Gill ...	1	0	0
Dr. Broomhead ...	0	10	6
Dr. Mawdsley ...	0	10	6
Dr. Wilkinson ...	0	10	6
Dr. Wood ...	0	10	0
Dr. Thompson ...	0	5	0
British Milk Products Co.... ...	73	19	9
Dr. J. Duncan Kendry	1	1	0
Dr. Burra (per Dr. Larkin)	1	0	0
Dr. A. J. Turner ...	2	2	0
Captain Shingleton Smith, I.M.S. ...	30	0	0
Messrs. Dolbear and Goodall	1	1	0
Dr. Alex. MacLennan	1	1	0
Mr. J. P. Ellerington (La Pharmacie Française), fourth donation	5	0	0
Dr. H. J. Roper ...	2	2	0
Dr. G. Ransford ...	2	2	0
Dr. S. E. Whitnall...	0	10	6
Lieut.-Colonel D. G. Crawford, I.M.S ...	5	0	0
Sir Donald MacAlister, K.C.B. ...	10	0	0
Ontario Medical Association (per Dr. J. Gibb Wishart)...	102	13	4
Dr. James Arthur ...	1	1	0
Anon (per Mr. J.Y.W. MacAlister)	2	8	0
Messrs. Jay, Richard Attemborough, and Co., Limited ...	1	1	0
Dr. R. Prosser White	2	0	0
Mr. Lawrence Jones	3	3	0
Lincoln Chemists' Association (per Mr. John Hague, Treasurer) ...	3	3	0
Dr. E. G. Boon ...	1	1	0
Staffordshire Branch, South Staffordshire Division, B.M.A. (per Dr. H. C. Mactier, Hon. Secretary)—			
Dr. J. A. Codd ...	1	1	0
Mr. F. W. Joynes	1	1	0
Mr. H. Ruskin Hancock ...	1	1	0
Dr. David Mann ...	1	1	0
Dr. Edith Serjeant	1	1	0
Dr. H. C. Mactier	1	1	0
Mr. H. Betham Robinson ...	2	2	0
Dr. Irene Bastow ...	1	1	0
City Division, B.M.A. (per Dr. C. F. Hadfield, Hon. Treasurer)—			
Dr. J. O. Adams ...	5	0	0
Anon.	1	1	0
Dr. Frank Butler	1	1	0
Dr. Effie Brander	1	1	0
Dr. N. Benoly ...	1	1	0
Dr. Oliver Beddard	1	1	0
Dr. Reginald Brown	1	1	0
Dr. E. H. Crisp ...	5	0	0
Dr. Leslie Durno...	2	2	0
Dr. Cuthbert Dixon	1	1	0
Dr. J. C. Dunn ...	1	1	0
Dr. I. Dorran ...	1	1	0
Dr. C. E. Evans ...	1	1	0
Dr. G. E. Froggatt	1	0	0
Dr. E. W. Goodall	2	2	0
Dr. Major Greenwood	1	1	0
Dr. A. Wither Green	1	0	0
Dr. C. F. Hadfield	1	1	0
Dr. J. W. Hunt ...	1	1	0
Dr. J. Moore Hall	1	1	0
Dr. G. B. Hicks ...	1	1	0
Dr. I. Jaffe ...	1	1	0
Dr. H. L. Jenkins	1	1	0
Dr. Gerald Johnston	3	3	0
Dr. A. D. Lewis ...	1	1	0
Dr. G. Lowsley ...	1	1	0
Dr. J. J. Macnaboe	1	1	0
Dr. G. O. Moriarty	0	10	6
Dr. J. Mansie ...	1	1	0
Dr. T. W. Maddison	1	1	0
Dr. I. B. Muirhead	3	3	0
Dr. E. J. Moore ...	1	1	0
Dr. J. Maguire ...	1	1	0
Dr. A. L. Marshall	5	0	0
Dr. J. O'Dwyer ...	1	1	0
Dr. David Petty ...	1	1	0
Dr. H. C. Powell...	1	1	0
Dr. J. H. Porter ...	1	1	0
Dr. H. Vaughan Pryce	1	1	0
Dr. T. Rushbrooke	1	1	0
Dr. B. Rowlands ...	2	2	0
Dr. David Ross ...	1	1	0
Dr. A. H. Rideal ...	1	1	0
Dr. A. G. Southcombe	1	1	0
Dr. Montague Smith	1	1	0
Dr. Roland Smith	1	1	0
Dr. A. T. Swan ...	1	1	0
Dr. R. Taylor ...	1	1	0
Dr. Wm. Taynton	1	1	0
Dr. W. Whitelaw...	1	1	0
Dr. A. W. Webb ...	0	10	6
Dr. Elizabeth Wilks	2	2	0
Dr. T. C. Winn ...	1	1	0
Dr. S. Wilson ...	1	1	0
Dr. John Young ...	1	1	0
Dr. A. C. Williams	1	1	0
Dr. W. J. O. Ray ...	1	1	0
Eastern Hospital, Homerton Grove (per Dr. J. Whitaker)—			
Dr. J. Harvey ...	1	0	0
Dr. J. Enright ...	1	0	0
Dr. M. Mayers ...	1	0	0
Dr. J. Whitaker ...	1	0	0
Corner Whist Club (per Dr. Des Voeux)	5	0	0
Dr. F. D. Bennett ...	2	0	0
Mr. Alban Doran ...	1	1	0
Dr. J. B. Martin Kennedy	1	1	0
Dr. H. Willingham Gell	2	2	0
Mr. Harold Barwell..	3	3	0
Dr. William Clow ...	1	1	0
Dr. E. M. Skeete ...	1	0	0
Mr. W. H. Battle ...	10	0	0
Mr. Somerville Hastings	3	3	0
Birmingham Local Committee (per Dr. R. Saundby, Hon. Sec.), sixth donation—			
Dr. W. H. Pollard (Ambulance Class Fee)	5	5	0
Dr. F. R. Sutton ...	2	2	0
Dr. D. S. Murray...	1	1	0
Dr. Frank Hues ...	1	1	0
Dr. R. S. Ellis ...	1	1	0
Collected by Mr. Pollard of Worcester—			
Mr. T. P. Gostling	1	1	0
Dr. T. P. Cavenagh	1	1	0
Dr. H. F. Seymour	1	1	0
Dr. C. Pollard (additional) ...	1	1	0
Dr. H. A. Watson	0	10	6
Dr. A. H. Williams	0	10	6
Mr. C. S. Legge...	0	10	6
Dr. G. W. Crowe	0	10	6
Dr. S. W. Coombs	0	10	6
Dr. T. Bates, jun.	0	10	6
Dr. R. T. Slinger	0	10	6
Dr. D. Bower ...	2	2	0
Cardiff Pharmacists' Association (per Mr. W. R. Williams) ...	25	0	0
London Pharmaceutical Association "Script" Shilling Fund (per Mr. H. Skinner)	20	6	6
Public Pharmacists' and Dispensers' Association, collected by Mr. G. W. Gibson	2	10	0
Mr. A. Hagon ...	1	1	0
Mr. R. T. Clarke ...	0	10	6
Miss E. Hardwicke...	0	10	0
Miss M. Gibson ...	0	5	0
Mr. R. J. Perkin ...	0	5	0
Mr. A. Hodgson ...	1	1	0
Dr. G. E. Armstrong	20	0	0
Dr. A. H. Martin, President, Postal Medical Officers' Association of England and Wales ...	1	1	0
Tower Hamlets Division, B.M.A., per Dr. W. H. F. Oxley, Hon. Sec. (£20)—*			
Dr. Rome Hall ...	2	2	0
Dr. G. R. Young ...	2	0	0
Dr. D. Spillane ...	1	1	0
Dr. A. Harvey ...	1	1	0
Dr. G. A. Milne ...	1	1	0
Dr. D. Hume ...	1	1	0
Dr. T. G. S. Suffield	1	1	0
Dr. G. Paxton ..	1	1	0
Dr. C. K. Toland ...	1	1	0
Dr. B. Byrne ...	1	1	0
Dr. H. Richardson	1	1	0
Dr. F. Spurr ...	1	1	0
Dr. B. Hogan ...	1	1	0
Dr. G. H. Arthur	1	1	0
Dr. E. A. Campbell	1	1	0
Dr. W. H. F. Oxley	1	4	6
Dr. L. Turiansky	0	10	6
Dr. B. I. Rahim ...	0	5	0
Dr. Hessenauer ...	0	5	0

* The following members of the Division had previously contributed:—Drs. Cursham Corner, Dr. J. D. Hendry, Dr. C. Spurrell, Dr. W. Skelly, Dr. J. McLoughlin.

INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments, contributed by the following donors since the publication of the last list:

Anonymous (per the Oldham Medical Society).
Dr. W. L. W. Marshall, Huddersfield.
Dr. G. W. Collins, Wanstead, Essex.
Dr. Cosgrave George, Colwyn Bay.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[From a Special Correspondent in Northern France.]

FIELD AMBULANCE WORK.

THE theological disputants of a past generation, who were no mean judges in the matter, used to talk much of "internal evidence" and to attach great weight to it when producible. Consequently it is worth noting that the ease with which conventional field ambulance work has been adapted to the conditions prevailing during the last few months in Flanders affords something in the nature of internal evidence of the soundness of the general principles underlying the medical arrangements of the Expeditionary Force. In treatises on war operations in general, and on the work of field ambulances in particular, nothing is said which suggests that the authors ever anticipated a position precisely corresponding to that of the opposing forces at the present time. From the point of view of field ambulance work the matters of principal importance at present are that (1) the work of collecting and moving the wounded cannot usually be commenced until nightfall and must be completed by daybreak; (2) owing to the great range of weapons that are being used, dressing stations must be kept further back from the fighting line than has hitherto been the practice; (3) the inconveniences which would arise from the fact that bearer sections of field ambulances have to do their work at a great distance from the tent sections are partly eliminated by the utilization now of automobile vehicles for transport purposes. As every one knows, the British line extends over a distance which formerly would have been considered immense, and there are so many differences in the environment of the various divisions that there can be no absolute uniformity in the practice of the field ambulances serving them. The officers in command of the latter are meeting the conditions in which they have to do their work in a variety of ways. On a later occasion it may be interesting perhaps to deal with the matter in detail, but at the present moment the only point on which it is desirable to dwell is the fact that there is nothing in the field ambulance work now going on which represents any real departure from the general principles on which British field ambulances have done their work for many years past. Consequently, it is by no means desirable that those who are engaged in training field ambulance units at home should alter their systems of instruction. In reality, the factor which chiefly helps to modify the apparent character of field ambulance work at the present time is the practically stationary position of the divisions to which the various field ambulances are attached. But this is in all probability merely a passing feature; sooner or later trench fighting must come to an end, and other tactics will take its place. In that case field ambulance work will be done once more on lines familiar to those who have studied it at manœuvres in peace time and in annual training camps, with the exception that the tent subdivision will as a rule be housed in farms and the like. Meantime, the chief effect of the stationariness of the divisions to which the field ambulances are attached is that those in command of the latter are able, if they please, to run their tent sections much on the lines of a clearing hospital, and that they usually have a good idea where their bearer sections will be required at nightfall. In view of the latter circumstance, and of the desirability of not a moment being lost when the time for action arrives, it appears to be common for commanding officers of field ambulances to separate their bearer sections from their tent subdivisions, and to station the former permanently as close to the fighting line as they can get. If a building of some sort is available in the desired position this is utilized; if not, the men dig themselves in much as do troops in the firing line, and remain under cover until night falls and they can join hands with the regimental bearer parties in getting the wounded out of the trenches and back to the place where the tent sections are established. At some parts of the line, I hear, field ambulance bearer parties and regimental bearer parties share the same quarters, and if ordinary clearing hospitals are close by the commanding officers of field ambulances sometimes park their tent subdivision equipment and devote their whole energies to bearer and transport work.

THE VAGARIES OF RIFLE BULLETS.

Among a number of incidents recently related to me by a first-rate observer were two or three which well illustrate some of the vagaries of which modern rifle bullets are capable. I understood from him that in each case the facts stated were noted on *post-mortem* examination of the bodies of individuals who had either been killed instantaneously or had died so rapidly that the observed condition must have been primary; or, in other words, could not have been the result of anything that occurred between the moment that the wound was inflicted and that at which death had occurred.

In one case the bullet had entered just in front of the ear, and having passed through the body of the sphenoid, made its exit at a corresponding point on the opposite side of the face. Its track was perfectly straight, but though the wound was merely one of the face, it nevertheless proved instantly fatal. The reason was obvious on opening the skull and raising the brain. The under surface of the frontal lobes had been reduced to a structureless jelly. The case illustrates what has been said by more than one authority as to the bruising and devitalizing action a bullet may exercise on the tissues if at the moment of impact it is travelling almost at its initial speed. It might perhaps be expected that the greater the speed of the bullet the more knife-like would be its action on the tissues, but almost the converse would appear to be the case. The extent of the momentum possessed by a bullet which has not travelled more than 200 or 300 yards leads to the production of waves of force emanating from it in all directions the instant it meets with the slightest resistance; this seems all the more liable to occur if the initial impact of the bullet has not been at right angles to the general surface. In the present case the subsidiary lines of force seem to have been so powerful that even the fact that a bony diaphragm lay between the track of the bullet and the brain did not suffice to protect it. What are probably precisely analogous waves can be produced experimentally in many different ways. If a finger be passed through a basin of water the surface of the latter will be undisturbed if the movement be slow; if quick, a proportionate ripple will result.

The second case was one in which the bullet had probably travelled a considerable distance—say, 1,500 to 2,000 yards—before it reached its mark, and its residual momentum was small. The wound was in the forehead and the bullet was found just inside it. Behind the bullet, however, and in a line with the hole in the forehead, was a track leading right through the brain to a distinct bruise on the inner plate of the occipital bone. It was concluded that the bullet, after penetrating the frontal bone and the brain, had struck the occipital bone and rebounded back along its original track. In this case there was no general bruising of the tissues surrounding the track, and it was considered that the momentum of the bullet on impact had fallen so low that when the frontal bone and brain had been traversed the elasticity of the occipital bone sufficed to drive it back. Cases in which the opposing forces are so nicely balanced must be rare. Clinically the different effect of fast travelling and slow travelling bullets is suggested by the fact that cases in which a bullet has penetrated but not perforated the skull are among the most hopeful of their class. It may be that in the case of the brain quite small differences in the momentum make very great difference in the extent of the injury inflicted. I have in mind cases in which the perforated portions of the brain have been seemingly identical but the clinical phenomena materially different.

In the third case death was due to a penetrating wound of the chest. The opening was rather larger than is usual with those caused either by shrapnel or rifle bullets. On *post-mortem* examination no foreign body of any kind could at first be discovered, but at length a rifle bullet was found embedded sideways in the body of a vertebra, that is to say, the long axis of the bullet was parallel to the long axis of the spinal column. The case was believed to be an illustration of the fact that rifle bullets sometimes

turn over in their flight, for the character of the external wound and the position of the bullet in the vertebra were held to prove that it had struck and entered the chest when midway in a revolution round its short axis.

Another statement sometimes made about rifle bullets is to the effect that, owing to the extreme rapidity of their flight, they grow very hot through friction with the air. I do not know that any direct proof of this assumption has ever been forthcoming, though it is often adduced in explanation of the fact that so many rifle wounds are sterile. Consequently the following incident, related to me by a different observer, is of some interest: When undressing a patient, a bullet was found lying inside his clothes at the level of the top of his trousers. This bullet was not the cause of the injury for which the man had been sent to hospital; it had, in fact, apparently hit him only with just sufficient force to penetrate his clothing. This in itself was a little curious, but what seemed really noteworthy was the fact that on the man's skin, just where the bullet was found, there were two distinct burns such as might be caused by twice pressing against the skin a piece of hot metal the shape and size of a bullet. Probably it was a spent bullet which, after passing through his clothing, had had its progress arrested by some hard object and had then dropped to his waist, where it was held against the skin by his belt.

THE USE OF CARBOLIC ACID.

Some five or six weeks before Christmas, when discussion of wound treatment was at its height, the use of carbolic acid was very strongly advocated at the Medical Society of London and elsewhere. By that time it had become recognized that as a rule infection of the wounds seen in this war was simultaneous with their infliction, but it was argued that the natural consequences thereof would be avoided if surgeons at the front took advantage of the powers of carbolic acid. On their arrival at the clearing hospital the patients, it was said, should have their wounds thoroughly painted with liquefied carbolic acid; such cauterizing effect on the tissues as it might have was no real disadvantage, while all germs would be destroyed with certainty, and the cases might thereafter be expected to pursue an aseptic course, or at all events would present no evidence of serious local or general infection. There were many who saw weak points in the arguments used, but the view itself was upheld with much ability, and evidence as to the value of pure carbolic acid in the initial treatment of compound fractures such as are seen in civil life was forthcoming from many quarters. Consequently the medical authorities in France determined to have carbolic acid tried upon lines calculated to test thoroughly the statements made in respect of it. For this purpose one of the consulting surgeons was asked to select fifty cases on their arrival at the clearing hospitals, and to cause their wounds to be submitted, under his own supervision, to a careful process of disinfection in the fashion prescribed by the advocates of carbolic acid treatment. The cases so selected and disinfected were to be specially labelled before they were placed on an ambulance train, and on their removal therefrom they were, if possible, all to be sent to one particular hospital. Effect was given to this scheme, but the results of the trial were not favourable to the views of those who maintain that sepsis in general and gas gangrene in particular can be prevented by the use of pure carbolic acid. Of the 50 cases, 39 were admitted to the hospital whose officers were taking part in the test proceedings, and a special note was made as to their condition on admission and as to their after-progress. In no instance does the clinical picture presented by these cases seem to have differed materially from that of the ordinary run of cases, and in each of them the observations conducted by Sir Almroth Wright and his assistants showed, I understand, that the *Bacillus aerogenes capsulatus* could be grown from the secretions with ease. It should be noted that these cases were not of exceptional gravity; their wounds were representative lesions—some slight, some severe—and among them were a considerable proportion due to rifle bullets. Consequently the results of this trial are not in favour of the belief that great improvement would follow the general adoption of carbolic acid treatment at the clearing hospitals. It is, no doubt, a powerful bactericide, but it can only affect organisms with which it comes into direct contact. It may be easy to bring about such contact when the infection is superficial—that is to say, when the micro-organisms are merely smeared on the surface, as in the case of a fracture of the thigh rendered compound by extrusion of a fragment—but quite otherwise when the infecting organisms are introduced into the wound at the moment of its causation, and driven deep into the surrounding tissues. When so placed they are, it is contended, safe from the attack of any bactericide other than that carried by the blood stream itself. It is also, of course, to be remembered that the cavity of these wounds is very irregular, and that even when they have been opened up with much freedom it may be impossible to make certain that a carbolic swab has been brought in effective contact with every portion of their surface.

The results of these trials have no direct bearing on the question of the utility of carbolic acid used in moderately strong solution in the ordinary dressing of suppurating wounds. In many of the hospitals in France solutions of carbolic (1 in 10 or 1 in 20) are habitually used for syringing out wounds, and are esteemed to be helpful in establishing and maintaining a healthy condition of the tissues. There are those, however, who are opposed to using carbolic acid in any form; they maintain that when it is used pure, its cauterizing effect is merely an addition to the injury already sustained by the tissues, and delays the moment when the natural resistance of these to microbic invasion will become effective. They hold, too, that much the same consideration applies to the use of solutions of carbolic acid in the course of ordinary dressings, where the real aim is to wash the cavity free from all accumulations of pus, whence toxins might be absorbed into the system, and such evacuation is just as easily effected by plain water as by a carbolic solution. No bactericide can affect bacteria which have already got below the surface of granulation tissue, and the vitality of such tissue is probably lowered by carbolic acid, even in weak solution. The logical course, they argue, if carbolic acid is to be used at all, is first to wash out the wound thoroughly by prolonged irrigation with some indifferent fluid, such as warm saline, and then to throw in a small quantity of carbolic acid solution of just sufficient strength to inhibit the growth of bacteria in any fluid whose evacuation it has been impossible to secure.

"FROST-BITE" OR "CHILLED FEET."

DR. W. A. PROPERT sends the following notes illustrating the change in character that the more recent cases of frost-bite admitted to the Anglo-American Hospital, Wimereux, France, have exhibited.

The earlier cases for the most part were of the subjective type, if one may use the word in that way. There was little enough to see, temperature was for the most part normal, and there was generally anaesthesia in the toes, the ball of the foot, and the heel, combined with hyperaesthesia of the arch and sides of the foot. The patient was nervous, slept badly, and was subject to sharp pains in the feet and ankles at night. The specific gravity of the urine was low in almost all cases—1004 to 1003.

With the new year the character of the symptoms began to change, the subjective cases became fewer, and the objective cases multiplied. The feet were now for the most part very large, red, and blistered. In three cases admitted one night the whole dorsum of the foot was one large bulla. In each case the temperature was over 102° F., in one case over 103° F. In two of the three there was oedema of the legs reaching almost to the knees. The specific gravity of the urine was in each case over 1030. There was complete anaesthesia of the whole foot, but the patients complained of considerable pain from the ankles upwards to the knees. The temperature remained high in the first case for three days, in the second came down to normal on the second day, and in the third oscillated between 99° and 101° for over ten days. The bullae, when emptied of their clear fluid, showed purplish bases, and the discoloured patch remained for some days and finally came away. In two cases smaller bullae with purulent contents appeared on the second day, but gave no trouble. Subcutaneous haemorrhages on the sides of the toes have been a constantly

recurring symptom, but in few cases have I seen the skin broken. The black discoloration of the under surface of the toes, the great toes especially, has been marked, and in several cases the tissues underneath have been softened, the skin has given way at one part, and the entire substance of the pad of the toe has come away in a sanious offensive fluid. Paronychia, especially of the great toe, is frequent and one case has already lost five nails. The last case, in which the temperature has been constantly up, is the most severe case of this sort I have seen; there is extensive ulceration of the dorsal surface of both great toes and most of the others, and the glands in both groins are enlarged and tender. The nail of the great toe was removed without the patient feeling it, and in his case, as in the others that have ulcerated, the entire thickness of the epidermis is loose and coming away. The men of this series have reported in almost every instance that their boots were good and easy fitting, and their socks sound and thick. They noticed nothing wrong till the evening of the third day in the trenches, when their feet began to feel numbed, on the next day they felt pain in the ankles and calves, and their march back to their billets three and a half miles away can scarcely have been an enviable experience. Whether the severity of this batch of cases and their similarity was in any way due to the fact that their trenches were dug in ground where numerous Frenchmen had been buried, I cannot say.

As to treatment I have found that immersion of the feet, or preferably the whole body where it is possible, for an hour at a time three or four times a day in a saline bath (1 drachm to the pint) added greatly to their comfort and well being. Between the baths the feet were in the milder cases well dried, dusted with boracic and zinc oxide powder and raised on a thick pillow, the toes separated with gauze and the bedclothes supported with cradles. Where there was ulceration they have been sprayed with hydrogen peroxide (10 vols.), and dressed with zinc sulphate lotion (2 grains to 1 fluid oz.), while in the severer cases we have recourse to boracic fomentations every two hours. I cannot tell from personal observation what the duration of these cases may be, but of the few we have been able to keep in the hospital so long it may be said that when once the surface is sound and massage can be commenced, recovery is quicker than in the cases of the earlier type.

In the severe case mentioned above I have thought it advisable to try skin grafting on one big toe and three others, so great has been the loss of superficial tissue.

We are indebted to Dr. W. J. McCARDIE (Birmingham) for giving us a reference to the following note which appeared in a recent issue of the *Journal of the American Medical Association*:

A German translation has recently appeared of a Japanese work describing the measures to protect against cold which were found most effectual in the Japanese army during the winter campaign in Manchuria. Every man had an extra pair of boots, mittens, and foot-cloths, to change at night. They were made to eat often, and to keep awake those inclined to drop to sleep on the march or in changing guards. They were kept from doing exercise that would make them sweat, and they were not allowed to lie down on snow. When straw was not available, they had to shovel the snow away so as to lie on the ground. The clothes and shoes were made larger for winter than for summer wear, to allow for layers of air. The buttonholes and other openings were protected with special care, after small frozen areas had been found on the chest of some of the soldiers, corresponding to the buttonholes. The fingers and feet were rubbed with tallow or other unsalted fat, and mittens were worn over gloves. The mittens were sometimes packed with straw or feathers and the shoes with horse bedding. Fur keeps out the wind better than woollen, and a fur abdominal band proved a great help in extremely cold weather. Flannel suspensories were found indispensable to protect at the latrines. Muffs of fur or felt and wristlets of wool or fur are highly recommended. Whenever the hands were found frozen, it was learned that the men had been wearing knitted gloves. The foot-cloth worn instead of socks can be dried in emergencies by wearing it next the body. Wrapping the toes in paper, or the whole foot in a pig bladder was also found useful at times. Battalions were provided with flint and steel for starting a fire when matches were lacking or too damp to light.

Army Leaflet.

The leaflet referred to by Mr. Tennant in his speech on the Army Estimates, points out the importance of establishing, for the prevention of frost-bite or chilled feet, an effective system thoroughly understood by all units which have to occupy trenches in cold or wet weather. The leaflet gives instructions as to reliefs and recommends that the men should thoroughly smear and rub their feet, legs, and, if necessary, their bodies, with animal fat or animal oil. When feet or hands have become frost-bitten or chilled attempts should be made to restore circulation by gently rubbing with oil or camphorated ointment. They should on no account be held near a fire or placed in hot water.

CANADA.

THE CANADIAN RED CROSS.

THE Canadian Red Cross was first organized by Colonel G. Sterling Ryerson in 1896; it was then called the Canadian Branch of the British National Society for Aid to the Sick and Wounded. In 1909 its organization was enlarged and completed and its present name adopted. There are now 165 branches of the society distributed throughout the Dominion. The Canadian society is not a branch of the British Red Cross, but is affiliated with it, and it has for its objects and aims the collection of funds and material and the provision of assistance in time of war. The society was able to render some assistance in the Spanish-American war, and during the South African war it expended 30,000 dols. in various aids to the sick and wounded, and sent large quantities of medical supplies to the front. On the declaration of the present war the collection of money and supplies was begun at once, the hospitals at Valcartier and Quebec were provisioned, and when the troops embarked for England the hospitals carried with them large quantities of stores supplied by the society. Since then supplies in large quantities have been sent to the Canadian Red Cross Commissioner, Lieutenant-Colonel C. A. Hodgetts, in London. These supplies are sent to the Canadian hospitals or to the British Red Cross. In addition, 75,000 dols. in cash has been forwarded to the British Red Cross Society, twelve motor ambulances have been supplied to the British society, and seven motor ambulances and a complete motor kitchen to the Canadian contingent. The average cost of the ambulances supplied to the British society has been 2,000 dols., and of those supplied to the Canadian contingent 2,500 dols., while the motor kitchen cost 3,500 dols. The executive committee have also paid the cost of one coach in the Red Cross train (9,500 dols.), and have provided all the equipment in the Duchess of Connaught Canadian Red Cross Hospital at Cleveden, Berkshire, at a cost of 10,000 dols. Large quantities of supplies have been ordered to be sent to the Queen Mary Canadian Military Hospital at Shorncliffe, and to the Franco-Canadian Hospital at Dinard, Normandy.

THE MCGILL GENERAL HOSPITAL.

The universities of Canada have responded nobly to the call to arms, and at each university a large number of students and graduates are now in training. The needs of the army medical corps have not been forgotten. In Toronto fifty men of the final year are at present undergoing training so as to be qualified on graduation for positions as medical officers. They will all be needed, for, in addition to those who went with the first contingent and those who are preparing to accompany the second contingent, the War Office has requested two further hospitals from Canada. Two months ago the Medical Faculty of McGill University offered to provide the entire personnel, with equipment, of a general hospital on the lines of communication. The offer was accepted both by the Canadian Government and by the War Office. The officers will be chosen from the teaching staff of the faculty, and must speak both French and German. The nurses will be chosen from amongst the graduates of the Royal Victoria and General Hospitals, and must possess a knowledge of French. The medical students required will be available on graduation, and arrangements have been made to graduate these latter before the departure of the hospital (probably in April). The personnel is still awaiting confirmation by the military

authorities. Each member will receive a month's military training at the army hospital at Quebec. The hospital will have emergency accommodation for one thousand, and the entire equipment will be taken from Canada. With the equipment will be provided a number of horses for use in the preparation of serums. Dr. Birkett, the Dean of the Medical Faculty, will command the hospital. Dr. Birkett, whose administrative ability is well known, has spent years of enthusiastic military service. The hospital will be fortunate in having at its head a man thoroughly fitted for the post, and a staff of specially trained men, congenial, and accustomed to work together. Sir William Osler, with his usual interest in Canada and in McGill, has offered to act as a supernumerary in case of an outbreak of typhoid fever. His Royal Highness the Governor-General has expressed his interest in the unit and in the work of organization.

THE CANADIAN ARMY MEDICAL CORPS.

The B Section of the Canadian Army Medical Corps, which will form part of the second contingent, left Victoria on January 16th for Winnipeg. The section is in charge of Captain Anderson, and includes eighty-one men, all of whom have a thorough knowledge of first-aid and ambulance work, recruited for the most part in Vancouver and Vancouver Island, British Columbia. The section will join two other sections—one recruited in Winnipeg and one in the west, and together they will form a field ambulance brigade.

Dr. George H. Wilson, of London, Ontario, has been appointed medical officer of the 7th Regiment Canadian Mounted Rifles. Dr. R. J. McEwen, of Saskatoon, has received a commission as captain, and is on his way to join the Princess Patricia's Canadian Light Infantry at the front. Dr. George C. Hale, of London, Ontario, has been commissioned as medical officer of the 18th Battalion for overseas service with the second contingent, and is on duty at Queen's Park Encampment, Kingston. Major Archibald V. Becher has been appointed sanitary officer of this camp. Dr. T. E. Kaiser, of Oshawa, Ontario, was recently appointed honorary major in the Canadian militia in recognition of services rendered by him in connexion with the building of the Oshawa armoury, and for assistance in the collection of troops, and in connexion with the Patriotic Fund.

The following, who took the qualifying course in Montreal in November, have been granted certificates as lieutenants, A.M.C., December 28th: S. M. Asselstine, Kingston; E. W. Archibald, F. B. Gurd, W. W. Francis (the assistant editor of the *Canadian Medical Association Journal*), L. J. A. Mignault, J. McCombe, W. H. Smyth, G. Fisk, L. L. Reford, C. C. Birchard, C. R. Bourne, T. P. Shaw, T. F. Cotton, A. R. Pennoyer, C. W. Vipond, D. W. McKechnie, W. G. Turner, J. G. Adami, J. L. Todd, D. A. Hingston, J. G. Browne, H. C. Burgess, W. Bourne. S. G. Ross, A. B. Walter, H. C. Dixon, H. W. E. Lockhart, G. A. Trenholme, L. H. McKim, J. A. MacMillan, A. H. Gordon, E. J. Mullally, H. P. Wright, R. H. M. Hardisty, C. F. Moffatt, T. A. Starkey, C. K. Russel, J. C. Meakins, H. M. Little, J. C. Wickham, and W. H. Jamieson, of Montreal.

ANTITYPHOID INOCULATION.

Captain Harry Morell, Canadian Army Medical Corps, who is at present in this country, has stated that when the first Canadian Expeditionary Force was in the concentration camp at Valcartier, Quebec, 27,000 men submitted to antityphoid inoculation. This involved 57,000 injections, probably the largest number on record in one force at one time. No cases of severe constitutional reaction, nor any infected arms, followed the injections. We are indebted to Captain Morell for the following particulars of the technique followed:

The serum was prepared at the laboratory of the Ontario Board of Health, Toronto. The primary dose was made up so that 1 c.cm. of the serum represented 500 million killed bacilli. The secondary dose, 1 c.cm., contained one billion killed bacteria.

The "Record" serum syringe, the capacity of which is 10 c.cm., was used, so that each syringeful did ten men. An assistant close at hand charged and made ready the syringes for the operators.

The usual site of injection was in the region of the insertion of the deltoid on the left arm. The skin over the injection area was painted with 10 per cent. tincture of iodine. The men came into the tent in single file, the left arm bared to the shoulder and passed to an assistant, who applied the iodine. The operator injected the serum; this took about seventeen seconds. After the needle was withdrawn it was wiped with absorbent cotton impregnated with alcohol and then flamed in a lamp. The operator was now ready for the next man. Two operators could inoculate over a thousand men in a morning easily.

The inoculation was done under the direction of Lieutenant-Colonel C. A. Hodgetts.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died.

CAPTAIN JAMES ALEXANDER TERRAS BELL, who is reported to have died in Egypt, was educated at Edinburgh University, where he took the degrees of M.B. and C.M. in 1895, and the M.D. with honours in 1902. After filling the posts of clinical assistant at Brompton Hospital for Consumption and assistant house-physician of Cardiff Infirmary, he went to the Cape, where he served as assistant resident surgeon of Somerset Hospital, Cape Town, and as plague medical officer at Port Elizabeth, and also held a commission as Surgeon-Captain in the Cape Medical Staff Corps. Finally, he settled at Christchurch, in New Zealand, where he was honorary physician to the Christchurch Hospital, and accompanied the New Zealand contingent to Egypt for service in the war.

Wounded.

Temporary Lieutenant John Reginald Waddy, R.A.M.C.

NOTES.

ANTITYPHOID INOCULATION.

IN France a polyvalent antityphoid fluid is used, and to obtain the maximum immunity four, or at least three, injections are made at intervals of seven to ten days. Surgeon-General Vincent, who is the director of the antityphoid laboratory of the French army, in discussing the possibility of carrying out antityphoid vaccination in an army mobilized, or actually engaged in war, admits[1] that the necessity of allowing any men who show reaction to rest for a day is a serious difficulty, although elevation of temperature was only observed in 1.5 to 2 per cent., and painful local reaction in 5 per cent. He, however, gives evidence, from the experience both of the French and Italian army, that the majority of the men who received only two injections were immunized for a year. For this purpose he considers that two injections at an interval of eight days, one of 1 c.cm. and the other of 2 c.cm., is sufficient. He gives the following statistics of the effects of antityphoid inoculation in the French force in Morocco:

	Cases.	Deaths.
	Per cent.	Per cent.
First period: January 1st to December 31st, 1911, before antityphoid inoculation	13.82	2.23
Second period: First year (1912) of antityphoid inoculation	3.96	0.53
Third period: 1913 (Inoculation compulsory after March 1st) to October 30th, 1913	0.68	0.11

THE AFTER-TREATMENT OF SOLDIERS AT THE BRITISH HEALTH RESORTS.

A committee has been appointed by the council of the Section of Balneology and Climatology of the Royal Society of Medicine to collect information and to advise the War Office in the scientific distribution of cases suitable for treatment at the British health resorts. Local committees are being formed in various localities, and it is hoped that individual health resorts will furnish full information as to the treatment employed, the indications for its use in military cases, the accommodation available, and the expenses, if any. The committee will endeavour to set up a uniform system of card case-records, as it is believed that such records showing diagnosis and the result of treatment would be of permanent value.

[1] *Bulletin Mensuel*, Office International d'Hygiène Publique, December, 1914.

AIR RAIDS.

We stated a month ago that arrangements were being made, with the approval of the police, to ensure that prompt aid should be given in the case of persons being wounded in London or its neighbourhood by a German air raid. The Royal Society of Medicine have now organized a voluntary service of surgeons, assistants, and anaesthetists who are prepared to give assistance in any district in the metropolitan area, or at any point on the east coast from Dover to the Wash. The Great Eastern Railway Company has promised to give special train facilities, and the Royal Automobile Club to provide motor cars to convey parties to any district in London.

MEDICAL OFFICERS WANTED.

The Third 1st Home Counties Field Ambulance.

SEVEN medical men are required as officers of this unit which is now being raised for foreign service. Applications should be addressed to the Commanding Officer, Lieutenant C. Killick, F.R.C.S., The Old Palace, Maidstone.

Major H. S. Fremlin, Officer Commanding 1st London Sanitary Company, informs us that in response to the request published in the JOURNAL of January 2nd, he has now obtained the services of a very suitable officer.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

ANNUAL MEETING OF THE ASSOCIATION OF PUBLIC VACCINATORS.

THE annual meeting of the Association of Public Vaccinators of England and Wales was held in London on January 29th. Dr. Jackson (Plymouth), the retiring president, was heartily thanked for his services. Dr. J. Foster Palmer (London) was elected president for the ensuing year. As is the case with many other associations, it had been decided not to hold the annual dinner this year. The balance sheet and the report were adopted and the council elected.

The newly elected president then delivered a most interesting address on "Certain Psychological Analogies in Relation to Vaccination and National Defence." In the course of it he said that, concentrated as our minds were upon the great war now waging against one of the greatest military organizations upon earth, there was danger lest we should lapse, through the neglect of other subjects, into a kind of general and national monoideism. The Association of Public Vaccinators was also at war—war against an organism not yet definitely seen, which hid itself behind invisible trenches, but which, if our defences were relaxed, would inevitably bring his artillery to bear upon us, and exact his toll from the nation. Its assaults could be prevented; but there was another foe to reckon with, not on the physical but on the psychical plane, a foe even more elusive because more implacable. Some would be inclined to describe it as the demon of ignorance and credulity, but this was a superficial manner of regarding it. It lay far deeper than this, and was to be traced to the mental constitution of the race connected with certain stages in the evolution of mankind, especially that phase of it belonging to the process of psychical evolution. So far as the sequence could be expressed in words, he believed it to be connected with the relative persistence of neural impressions. The question of perseveration or the persistence of neural impressions had, Dr. Foster Palmer said, been worked out by the late John Gray, B.Sc., and the degrees of persistence were illustrated by a diagram and references. Doubtless antivaccinators did not all belong to one class, nor did opposition to vaccination always spring from the same causes. It had, however, been suggested by more than one anthropological observer that antivaccinators should be included in the group of persons with fixed ideas arising usually from sentiment. They had no wide associations. An idea once impressed remained, and was not removed by later impressions, and was not accessible to outside influences. Such ideas were usually so fixed as to be unaffected by any arguments against them, however sound such arguments might be, and however incontestable the facts on which they were based. The one idea took so firm a hold that it became dominant, and remained in undisturbed possession, in spite of all suggestions of a different character, and of proofs, however strong and well supported. This was usually the result of sentimental causes appealing to the emotions rather than to the understanding.

There seemed to be an intimate relation between antivaccination on the one side and little-navyism and antimilitarism on the other. Not only was it the same type of mind, but it was constantly found that it was the very same people who opposed vaccination and who opposed all preparation for the defence of our country. This fact had been brought into still clearer relief since the war began. There was a certain relation between high neural persistence on the one hand and opposition to vaccination, inoculation, and national defence on the other. It would seem that this neural condition was abnormally prevalent in this country. Very little of it was heard in foreign countries or in British overseas dominions, and even in the Isle of Man it appeared to be less prevalent, as shown by recent legislation. Public vaccinators were engaged in a great work of national defence. How great a work none could say at present. The enemy might well become more formidable than aeroplanes, submarines, and artillery combined. How formidable no one could even imagine who had not seen small-pox in its worst developments and uncontrolled by vaccination.

THE LONDON COLLEGE OF AMBULANCE.

The College of Ambulance in Vere Street, Marylebone, is a remarkable institution. It originated in the desire of old ambulance pupils of Mr. James Cantlie at the London Polytechnic and elsewhere to present him with a testimonial in recognition of his life-long devotion to ambulance work. By his wish it took the form of a gift towards the foundation of an ambulance school, with a museum, and rooms and appliances for training ambulance workers, including all the various squads which go to make up a Voluntary Aid Detachment. Last September the promoters of the scheme were able to make a very satisfactory start in a new building, erected for use as offices, placed at their disposal by Mr. James Boyton, M.P. for Marylebone. The place is already sufficiently well equipped for lectures and a great deal of useful practical instruction to be given in it, and additions to the equipment are constantly being made. The lecture room is well supplied with models and diagrams, and on one floor there is a large room for stretcher drill. The stretcher bearers are provided with yoke-shaped carrying straps, which distribute the weight on the bearers' shoulders and are a very great improvement on the old-fashioned straps, which cause pressure on the back of the neck which quickly becomes irksome. With the yoke straps two women bearers easily lifted and carried a third without strain.

On some unoccupied land at the back of the building Mr. Henry M. Pritchard, A.R.I.B.A., of London and Cardiff, has put up a small hut to demonstrate a type of hutting he has designed. The structure is of wood, roofed with a special form of felting, which is said to stand well for years. It was a little difficult to form an opinion on the practical value of the hut, which was put up in a confined space and was not quite complete when we saw it, but it undoubtedly possesses many good points and embodies many ingenious dodges.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

SCOTTISH MEDICAL EMERGENCY COMMITTEE.

AT a meeting of medical practitioners and senior students in the Royal College of Surgeons of Edinburgh, on Monday, at which Mr. Hodsdon, President, was in the chair, Dr. Norman Walker, convener of the Scottish Medical Service Emergency Committee, delivered an address on the medical profession and the war.

The Chairman said that very shortly after the war broke out the chairman of the Scottish Committee of the British Medical Association, Dr. Hamilton, recognizing the serious dislocation that must ensue, called a meeting in Edinburgh, at which a committee was formed called the Scottish Medical Service Emergency Committee; that

committee during the months that had elapsed had been at work in various ways to assist their medical brethren who were with the colours. Instancing one of the problems which had arisen, he said that owing to military reasons a practitioner attached to a North of Scotland unit might find himself perhaps in the middle of England, and a practitioner in the South of England might find himself in the North of Scotland. They could not attend to their civil practice, which would otherwise have been possible with the time at their disposal. The Director-General had now issued an order by which it was possible to exchange, so that the man from the North of Scotland might go back to his own district still do military duty there, just as many of them in Edinburgh were doing, and carry on his civil work at the same time.

Dr. Norman Walker said that the Emergency Committee had set out with the idea of being a sort of clearing house to bring together those who wanted locumtenents and those willing to do such work, but its scope had been very greatly extended. As more demands would undoubtedly be made upon the profession, resources would have to be very carefully husbanded. Something over one-sixth of the medical profession were already serving, and more were required. He hoped that no licensing body from a sort of morbid patriotism, would admit to the profession insufficiently trained students. It would not be fair to the men at the front, or to the public on whom they would be let loose when the war was over. The student's business was to work hard, and the teacher's to give more care to his teaching than he ever gave before, so that the student completed his course in the shortest possible time. It was the duty of every young graduate to ask himself seriously, "Is there any valid reason why I should not go?" and if there was no such reason, then it was his duty to offer his services. The duty of young practitioners was a more difficult problem. It seemed hard to jeopardize a practice the foundations of which had just been laid, and harder still when the walls were rising. If a man had given hostages to fortune the balance should perhaps incline him to stay at home, but such a man still served his country if, by undertaking the work of one who had gone, he so loyally respected his interests that the other went with an easy mind. The work in Flanders, and later in Germany, would be very hard, and the men who were preparing for it should train as if they were preparing for an international football match. As for those of them who were older, their places were in the "home defence" army, for the country districts were crying out for doctors, and those who had not been too long retired from practice should take down their armour, polish it up, and gird it on again. Dr. Walker then touched on a matter to which, he said, he referred with some reluctance, though he thought he ought not to ignore it, since it had been brought to his notice again and again, directly and indirectly. It was that young graduates—or middle-aged ones, for that matter—who joined for the period of the war were paid at a very considerably higher rate than those who might have served many years in the Territorials. He would not speculate on the reason for or the explanation of this anomaly, but he would only say that if any authority thought it necessary to bribe young medical men to serve their country in the field they were wrong. To raise the question of an increase in the pay of the R.A.M.C. at this moment would not be seemly, and similarly it would be unwise to propose now to reduce the pay of temporary officers, but appreciating and sympathizing with the Territorial officers of junior rank in the R.A.M.C.(T.). it seemed unfair that those who had borne the burden and heat of many summer camps should be worse off than those who had joined at the ninth, tenth, or eleventh hours. Those with a sense of humour could reflect that they had gone one better than the heroes of the parable of the workers in the vineyard who could complain only that the late comers got the same remuneration as they.

Sir Donald MacAlister, President of the General Medical Council, said that the authorities of the Army Medical Service had responded readily to the appeal made to them; and though they naturally felt that the military medical service must be the first consideration, they recognized that the civil population must not be sacrificed if it could be saved. It was quite clear that the civil service must dispense with its ordinary superabundance of practitioners if the army was to be supplied, and the question was whether a proper reorganization of the civil service could be achieved. He believed that by a redistribution of their forces there could be provided a respectable medical service for all the civil population, but while there was a superabundance in some places there was a very deficient service in others. The organization of the necessary redistribution of the work would be a difficult problem for the Emergency Committee, and would entail personal sacrifice on the part of a great many. It had been suggested that the country might dispense with the luxury of the full-time medical officer for the inspection of school children, and also that retired medical practitioners might give an hour or two a day, and that registered volunteers from neutral and friendly countries might be asked to stay here. No doubt all these resources would be called upon. A certain number of Belgians would be available, and the reciprocal privilege of practising in Belgium after the war would be no small one. He believed there were also coming to this country about a hundred Canadian registered surgeons, a certain number of Australians, and a certain number of Indians. Referring, in conclusion, to the fact that senior students who had joined the R.A.M.C. as orderlies had now been sent back to complete their studies, he said he hoped these students would recognize that what had been done was no reflection on them, but a compliment to the immeasurably greater service they would be able to render as fully qualified practitioners six months or so hence.

Dr. John Playfair moved a vote of thanks to Dr. Norman Walker and Principal Sir Donald MacAlister, making special reference to the valuable work which had been accomplished by Dr. Walker on the Emergency Committee.

THE SCOTTISH POOR LAW MEDICAL OFFICERS' ASSOCIATION.

The report presented to the annual meeting of the Scottish Poor Law Medical Officers' Association stated that, though the number of vacant appointments during the past year had not been so large as usual, all cases brought to notice were carefully investigated. In one instance a medical officer had resigned after five years' service, during which he had had to endure many petty annoyances from the parish council; that council had hitherto failed to obtain a successor. The Highlands and Islands (Medical Service) Grant Act now in force would, it was believed, do much to render the position of medical officers in the Highlands and Islands more satisfactory both in regard to remuneration and status, and incidentally the Act had given to them that security of tenure which the whole of the Scottish Poor Law medical officers had for so many years vainly striven to obtain. It was hoped that the Local Government Board would assist the association in getting this security of tenure for other Poor Law medical officers in Scotland. Owing to the position of parliamentary business it was hopeless to seek legislation for Poor Law officers' superannuation, but the council would keep in touch with other Poor Law officials' associations in order that joint action might be taken when opportunity occurred. The financial statement presented by the treasurer, Dr. F. Stewart Campbell, 19, Westercraigs, Glasgow, showed a balance in hand. Information as to the work of the association can be obtained on application to Dr. W. L. Muir, 1, Seton Terrace, Glasgow.

THE MORISON LECTURES.

The Morison lectures before the Royal College of Physicians of Edinburgh will be delivered this year by Dr. W. H. B. Stoddart, lecturer on mental diseases at St. Thomas's Hospital. The subject of the lectures will be the new psychiatry. The first, to be given on Monday, March 8th, will deal with fundamental psychical mechanism; the second, on Wednesday, March 10th, with the aims, uses and technique of psycho-analysis; and the third, on Friday, March 12th, with its applications and results. The lectures will be delivered on each day at 5 o'clock.

THE late Dr. Walter Holbrook Gaskell, of Cambridge, left estate valued at £29,408.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Longford County Infirmary.

At a recent special meeting of the Council of the Irish Medical Association a discussion took place on the proposed dismissal of the surgeon of the Longford County Infirmary. The facts of the case were published in the British Medical Journal of January 23rd, p. 182, together with the text of the resolution passed by the committee of the Longford County Infirmary. This resolution expressed disapproval of Dr. Mayne's action and requested the Local Government Board to concur in his dismissal.

The following is the text of a resolution proposed by Professor Kinkead, seconded by Dr. L. Kidd, and unanimously carried by the Council of the Irish Medical Association:

> That the Council of the Irish Medical Association protest against the action of the Governors of the Longford County Infirmary in dismissing Dr. Mayne from the office of surgeon to the infirmary.
> Dr. Mayne, as surgeon to the institution, was ready, willing, and able to give the necessary treatment to the patient proposed to be admitted by Lord Granard on December 13th, 1914.
> In refusing to admit another surgeon to operate in the infirmary, Dr. Mayne acted correctly, prudently, and in accordance with the rules of the institution. This opinion is supported by the fact that a proposal recently made by the War Office, that certain consulting surgeons with the rank of Lieutenant-Colonel in the R.A.M.C. should have power to enter and operate in hospitals in which soldiers were inmates, was withdrawn owing to the remonstrance of the hospitals concerned.

At a special meeting of the governors of the infirmary the incident was discussed at length, and it was decided to appoint a subcommittee to interview Dr. Mayne, and to ask him to place 20 beds for the soldiers at the disposal of the surgeon to the troops at Longford. Some of the governors seemed to desire to force the Local Government Board to hold an inquiry, but we hope that the more conciliatory resolution now adopted may lead to an adjustment of the difficulty, which appears to have been due to the Committee of the Infirmary acting at first with undue precipitation.

Fees for Operations in County Infirmaries.

At a recent meeting of the County Clare Infirmary it was proposed that the infirmary surgeon should not be allowed to charge fees for any operation which he might perform on paying patients. The Irish Medical Association has passed the following resolution with regard to the proposal:

> The report of the meeting of the Clare County Infirmary Committee was before the Council of the Irish Medical Association, and the Council is of opinion that the surgeon of a county infirmary is entitled to charge fees for operations on patients who pay any sum in excess of their maintenance and are a source of income to the institution.

Correspondence.

THE SUPPLY OF LOCUMTENENTS.

Sir,—May I trespass on your space for a few remarks on this very vital question? When war broke out necessarily a large number of medical men who belonged to the R.A.M.C. were immediately obliged to take up their duties, and many others have since in ever-increasing numbers loyally and patriotically, in obedience to their country's call, voluntarily thrown up lucrative practices and applied for commissions, and by no means a small number have enlisted in the fighting ranks.

Necessarily, therefore, a largely increased demand has arisen for locumtenents to safeguard the practices at home of those who have nobly offered their services and lives for England's honour. Owing to many of those who had hitherto been available as locumtenents also responding to the call, it has become increasingly difficult to find enough reliable substitutes, and I regret to have to say that there is a tendency on the part of a few to take advantage of the shortage to demand fees quite incompatible with the services rendered. May I through your columns implore all who are in any way able to take up duty again to offer their services in the present crisis?

I am glad to say that many retired practitioners up to 70 years of age have loyally come forward and most satisfactorily filled some of the gaps, and some of our Belgian allies who can speak English a little have been of great assistance for temporary work, but more are urgently needed if we are to ensure that the practices of those who have so nobly rallied round the flag shall not suffer.

There is plenty of work for every available qualified man, especially if prepared to show his patriotism and loyalty to his profession by accepting fees in some measure proportionate to the size of the practice he is taking charge of. Qualified lady doctors are also eligible for some posts.—I am, etc.,

London, W.C., Feb. 8th. Percival Turner.

THE DIMINISHING NUMBER OF MEDICAL STUDENTS.

Sir,—Many practitioners have no doubt read with interest the remarks made by the President of the General Medical Council in his contribution to the British Medical Journal of December 26th, 1914. The correspondence is of interest when it is seen that in the near future there will probably be a less number of qualified men to add to the *Medical Register*, which will diminish the reserve supply at an emergency.

In what other profession or occupation requiring a large initial outlay of capital, not to speak of the many years of study required to pass the examinations necessary for qualification, do the fathers of the rising generation distribute their hardly earned moneys to keep up a reserve of unemployed men for the benefit of an unappreciative public?

In any other scientific walk in life, when men arrive at middle age and over their services are looked upon as superior to that of the younger generation; not so with medicine. If a man possess the highest qualifications in medicine and surgery, with the experience of past years, and having kept up with current literature on professional subjects, and be looking for something to do, his age debars him at once from all employment, even though he is in perfect health and vigour.

In looking down the advertisements for practitioners in the medical papers, it is apparent that the salaries now offered for their services are much increased, but this is quite temporary owing to the war. After the war is over a few fortunate ones on good panels may be able to live by working some eighteen hours out of the twenty-four; the less fortunate ones can go on the reserve.

Some time since surgeons in the mercantile marine, now advertised for at £15 a month, could be obtained from £4 upwards for the same period, and with cabin accommodation sometimes placed next the ship's lavatory or the hairdresser's shop, and on a deck where any ventilation was impossible in rough weather, as the ports had to be kept closed. These were considered suitable quarters for a man possibly coming from a decent home. Let any man contemplating a sea life inspect his future quarters before taking up such a position. His cabin is his home, not a temporary abode, as that of a passenger.

A general practitioner on a panel, if in a scattered country district, is compelled to keep a motor and a man, and is frequently called out at night to places where it is impossible to use a car; so, in addition, he has to keep a horse for night work or do miles on foot. What is his position at the end of the year? Not one in a hundred knows where to turn for a few pounds to spend on a well-deserved holiday after the expenses incidental to his practice are paid.

These remarks naturally do not apply to the medical and surgical geniuses, but to the ordinary average practitioner who has never in the memory of man, owing to overcrowding of an honourable profession, been adequately recompensed for services rendered; hence the shortage of medical students. Unless more inducements are offered to medical men they will become a diminishing quantity.—I am, etc.,

January 1st. A Disinterested Observer.

ALCOHOL AND DELIRIUM TREMENS.

SIR,—I have been reading with some interest the correspondence in the JOURNAL concerning the cause and treatment of delirium tremens, for I happen to have seen and treated, in years long past, a considerable number of cases. My experience was such as led me to believe strongly and teach persistently that there are but few cases of uncomplicated nature that cannot be successfully dealt with in any stage by quiet surroundings, careful tending, occasional soporifics, and, perhaps before all, good nourishment, without giving any alcohol whatever, no matter how deeply the patients may have been drinking up to the moment of coming under care. Ingenuity and perseverance will surprisingly often succeed in inducing patients who are sorely sweating and trembling and "seeing things" to eat even solid food; and, if such means should fail, there is the alternative of artificial feeding. I venture, therefore, to endorse the opinions expressed by Dr. J. Reid in the JOURNAL of February 6th, and also to comment on those of Dr. Francis Hare, whose great experience in the study and treatment of drunkards makes what he says on this subject worthy of all consideration.

It appears that Dr. Hare now admits that delirium tremens is not always the result of cutting off alcohol, and is not always aborted by giving alcohol; but he maintains that a large and sudden fall in the amount of alcohol in the circulation is an essential factor in the production of delirium tremens—that is, that without such fall there can be no delirium. He rests this statement on the mere hypothesis of the delirious drinker having established a "high degree of tolerance" of alcohol, and assumes that a rapid lessening of alcohol in the circulation in such a case must necessarily cause the delirium which supervenes. Moreover, he assumes that when there has been no explicit deprivation of alcohol the fall in the amount may be, or is, due to failure of absorption of alcohol—for example, in cases where there may be vomiting, and so forth. Still another hypothesis is introduced to account for cases where, as he says, "excessive alcoholists with high tolerance can be suddenly cut off without any serious consequences" (meaning, I presume, "delirium" by "serious consequence"). This hypothesis is the "resistance" of such patients to the sudden alcoholic fall, which resistance "is often so great that this fall is powerless to cause de irium."

It seems to me that this kind of reasoning is not only a species of "hedging," but is also unsound, as it starts from a mere hypothesis, framed *ad hoc* without any attempt at verification. The hypotheses of "tolerance of alcohol" and of "resistance" in many cases to the sudden cutting off of alcohol, are indeed merely postulated in an attempt to explain the genesis of delirium tremens. One fails to find anything near *proof* in the following statement explicitly made by Dr. Hare, namely, "All the evidence I have collected shows that delirium tremens arises as a result of a large and sudden fall in the amount of circulating alcohol in one who has established high tolerance; that it arises in no other way, or, in other words, that such a large and sudden fall is an essential factor in the complication."

It is, of course, needless to argue that mere hypotheses which even fully cover the facts of an inquiry may, nevertheless, be false. In this instance Dr. Hare's hypotheses, quite apart from their lack of verification, can scarcely be said even to cover the facts.—I am, etc.,

London, W., Feb. 7th. H. BRYAN DONKIN.

SIR,—I am sure that any medical man who has had practical dealing with alcoholics will acknowledge the common sense of Dr. Francis Hare's arguments in favour of the gradual discontinuance of alcoholic stimulant, as against total stoppage in borderland and actual cases of delirium tremens. On long ocean journeys on passenger boats I had many opportunities for practical study of this question, and have considered and treated it from every point of view; and the only safe, satisfactory, and reliable method in my experience was as recommended by Dr. Hare—the tapering carefully of the daily allowance of alcohol, the ship's bar was "shut" to the patient, and a supply of his accustomed stimulant stored in the dispensary; thither he proceeded, or was brought at intervals during the day and received his allowance which, diminishing by gradual stages, shortly reached a normal supply. This method is described in my *Hints to Ship Surgeons* (London, 1907). This system appealed to the patient, who was generally in terror lest his liquor should be cut off suddenly; it promoted his confidence in his doctor, whom he soon regarded as a friend—an important point—and it guided him safely and easily through a dark and clouded way, instead of plunging him remorselessly into the abyss of D.T.s so well called "the horrors."—I am, etc.,

Rostrevor, co. Down, Feb. 6th. JOHN F. ELLIOTT.

THE RUM RATION.

SIR,—The letters appearing in the last issue of the BRITISH MEDICAL JOURNAL fail, so far as I can see, to refute a single argument, amongst those which have been put forward by Sir Victor Horsley, against the issuing of the rum ration to our soldiers in the trenches. If I read Sir Victor Horsley's article aright, his main object is that of clearing the medical officers of the army from the charge, which is in many quarters being made against them, of being responsible for the issue of rum to our troops in the trenches. In the face of our present day scientific knowledge of the effects of alcohol, it is nothing short of a libel upon the whole of the medical service of the army to leave the public and the profession to assume—as assume they must, unless the responsibility is placed upon the right shoulders—that the ration of rum is served out to the troops at the front "under the orders and with the consent of the Senior Medical Officer, because it is absolutely necessary for safeguarding the health of the troops."

Now, first of all, What are the actual conditions obtaining with reference to this issue of rum, which, according to the regulations, is supposed to be supplied in quantities of 2½ oz. per man? Living as I do in a garrison town, and working, as I have since the commencement of the war, amongst the soldiers, I have had ample opportunity of discussing this question with men who have returned from the front. I had a conversation with two such men upon this topic only a few days ago, one of whom told me that on one occasion when he was in the trenches and feeling cold, he drank his portion of rum; I asked him, with what result? His reply was, that for a short time he felt warmed up, but afterwards he became colder than ever. Now this man could neither be called a scientific faddist nor a rabid teetotaler; he was only a straightforward, honest Tommy, and out of his own personal experience he had solved the question for himself. Another man with whom I discussed this question told me that the manner of distribution was as follows: A quart of rum is allotted to one section; a section normally consists of twenty men, but by the fortunes of war it may be reduced to fifteen or even twelve men; the same quantity of rum, however, is served out to the survivors as though the section were intact, so that the amount of 2½ oz. must be considered as only a minimum dose; it may reach 3½ oz. or more. I have been told by a soldier that at one time he had his water bottle nearly full of rum which had been served out to him on different occasions.

But this, although an important point, is really outside the question at issue just now. Has Dr. J. W. Astley Cooper, who ridicules what he represents as Sir Victor Horsley's description of the awful effects of 2½ oz. of rum, ever seen or heard of a latent craving for alcohol, which only needs the taste of spirit to rekindle it in all its former potency? Now many of the men who are going to the front are men who before the war were taking alcohol in smaller or larger quantities, but who, in response to Lord Kitchener's appeal, in tens of thousands of cases are taking a pledge of total abstinence for the duration of the war. Is it fair, I ask, to force upon these very men when in the trenches a substance—a drug—which will arouse within them all the old craving for alcohol which for the sake of their country they have voluntarily given up, and drive them, when opportunity offers, to seek to satisfy that craving by taking still more, to their own undoing and that of the cause which they represent? I consider that the regulation allowance of 2½ oz. is undoubtedly dangerous because of its immediate results, and that it is remotely dangerous in the manner I have indicated.

I think I can answer the question propounded by Dr. C. A. Mercier, who throws a doubt upon Sir Victor's statement that "rum is a deceptive substitute for real food."

I asked one of my soldier friends this question: Supposing a man refuses to take his portion of rum, what is given to him in place of it? His answer was, Nothing. I submit that this man's answer supports Sir Victor Horsley's contention. Rum is served out to these men, and they are told that it is to do them good, a man says "I don't want rum, give me something instead of it to do me good," and he gets nothing; therefore the rum is given as a substitute for something else that would be of benefit to the men in the trenches. Dr. Mercier has failed utterly to grasp Sir Victor's contention respecting regulation No. 34. Sir Victor gives reasons why he considers the statements and suggestions in this regulation to be incorrect, reasons which ought to be conclusive to any ordinary mind, and which certainly do not leave him open to the charge of "gross inaccuracy" made against him by your correspondent.

I quite agree with Dr. Cooper that enough is not being done to save the men of the army now in training from the effects of alcohol. I consider that the sweeping reform made by Russia at the time of the outbreak of the war ought to have been an object lesson to this nation; as it is undoubtedly a fact that it was owing to the sobriety amongst her soldiers that Russia was enabled to mobilize her army weeks before it was ever expected she could have done so—a factor which played no unimportant part in the happenings during the first six weeks of the war.

When England is prepared to take her courage in both hands and follow Russia's example a better state of things will prevail, but until that happens, for goodness sake let us be consistent, and not give men when face to face with the enemy what we know to be bad for them when undergoing training at home.—I am, etc.,

Plymouth, Feb. 8th. ROBERT SIMPSON.

EXTERMINATION OF VERMIN INFESTING TROOPS.

SIR,—I have read with much interest Lieutenant-Colonel S. Monckton Copeman's "Note on a successful method for the extermination of vermin infesting troops." Like all other troops, we have had our share of these pests in this brigade. I have found that a powder consisting of three parts of black hellebore root and one of borax freely dusted over the men's blankets, clothing, etc., is the easiest, cheapest, and most effective way of getting rid of them, a single application often being successful.

I am greatly indebted to Staff Sergeant C. Hinton, M.P.S., for this information, and I strongly advise every officer in medical charge of troops to try it, not only as a cure, but also as a preventive, and I feel confident that if once they do so they will always keep a plentiful supply of it on hand.—I am, etc.,

EDWARD J. CROSS, M.D., D.P.H.,
Lieutenant-Colonel R.A.M.C.(T.),
Commanding Eastern Mounted Brigade Field Ambulance.

SIR,—The remedy referred to in my letter to the *Times* of February 2nd was described in the *West Indian Bulletin* in 1902, in *Indian Insect Pests*, 1906, and in my *Bulletin* on Insecticides in 1910. It is not new or secret.

I did not refer to it by its descriptive name as druggists would have produced preparations which came within the name but would not contain the ingredients necessary to render it efficacious or safe to use. I took care to get the proper ingredients, put it in the hands of the military medical authorities, and did what I could to make it available. It is not a secret remedy; its composition has been explained to all medical men who have consulted me and to all firms likely to produce it.

If my procedure appeared irregular, it was due to the unexpected flood of letters, which made a written answer to each impossible; we have dealt with 1,100 letters up to to day. In view of the fact that the sufferings of our men are not being exploited by a quack remedy and with a knowledge of the pitiful situation revealed by the letters, I think that the best was done to meet a difficult situation.—I am, etc.,

H. M. LEFROY.

Imperial College of Science and Technology,
South Kensington, London, S.W., Feb. 9th.

*** In the *West Indian Bulletin* (1902) Professor Lefroy describes the "crude oil emulsion" pretty fully. It is made of:

10 lb. of whale oil soap
5½ pints of crude Barbados petroleum
4 oz. naphthalene.

When made by the directions given this is said to form a jelly, which from the description appears to be very similar to one of the samples obtained from one of the manufacturers mentioned in the printed circular supplied by Professor Lefroy in response to inquiries. It is largely diluted with water for use as an insecticide, the purpose for which it was devised having been the spraying of plants. In *Indian Insect Pests*, 1906 (which is a monograph by Professor Lefroy published by the Indian Government) the particulars given are less full. He says that the best emulsions containing crude oil are made by a special process. "Such an emulsion containing 80 per cent. of crude oil with 20 per cent. of whale oil soap is prepared and sold under the name of 'crude oil emulsion.' It was made at the entomologist's suggestion, and analysis shows it to be pure, containing the ingredients given above. . . . Obtainable in 5 gallon drums from chemists." It is not quite evident why Professor Lefroy should not publish the formula. There is apparently no reason to suppose that the Barbados crude petroleum would have a different action from any other variety, and in fact it appears to have been adopted at first because it was cheaper in the West Indies than the American crude. If the formula were published now there should be no difficulty in a satisfactory article being made by any manufacturer.

Medical News.

DR. WILLIAM DUNN, of Uppingham, has been appointed to the Commission of the Peace for the County of Rutland.

PROFESSOR VIVIAN B. LEWES will begin his course of Fothergill lectures at the Royal Society of Arts on motor fuels on Monday next; they will be continued on February 22nd and March 1st, at 8 p.m. on each day.

AT the meeting of the Royal Microscopical Society at 20, Hanover Square, W., on Wednesday next, at 8 p.m., Professor G. Sims Woodhead will deliver his presidential address, which will deal with some of the microbiological problems of the present war.

AT the general meeting of members of the Royal Institution on Monday, when the Duke of Northumberland was in the chair, special thanks were returned to Dr. H. D. Rolleston for his generous gift, in the name of Miss Davy, niece of Sir Humphry Davy, of a bust of that great chemist executed by Samuel Joseph in 1822.

AT the meeting of the History of Medicine Section of the Royal Society of Medicine on Wednesday next at 5 p.m., Sir Alexander Simpson of Edinburgh will read a paper on Jean Anstruc (1684–1766), the historian of syphilis and of the Montpellier School. Nowadays he is more famous as the founder of the higher criticism of the Bible, and it is this aspect that will be considered.

WITH reference to the article on synthetic drugs in Great Britain in the last issue of the JOURNAL, Messrs. Burroughs, Wellcome, and Co. inform us that they made phenacetin on a small scale many years ago, but as they could not compete in price with the Continental product they did not continue to manufacture it. They are also able to prepare beta-eucaine, although they may not be able to supply it in competition with the price at which it has hitherto been obtainable on the Continent. With regard to hexamethylene-tetramine, they state that they have been manufacturing this for some time in large quantities and of a high standard of quality.

A DEMONSTRATION of the Coolidge x-ray tube took place at the meeting of the Röntgen Society on February 2nd, when a paper also was read by Mr. Sidney Russ, physicist to the Middlesex Hospital, giving some measurements he has been conducting on the radiation from the Coolidge and other tubes in clinical use. The Coolidge tube, as has already been explained, consists of a bulb almost completely exhausted, and of a spiral tungsten cathode, which is raised to white heat by means of a current from a few storage cells. The electroscopic measurements brought forward by Mr. Russ were directed towards a test of the character of the radiation for different spark gaps and for several values of the heating current, and also towards an estimate of the yield of x rays emitted under various conditions. The results of the tests were embodied in very elaborate tables and figures, but, put briefly, Mr. Russ finds that the radiation given out is heterogeneous, and that if the spark gap be kept constant the character of the radiation varies, but not very greatly, with the heating current. A comparative estimate of the yield of x rays emitted by the tube under various conditions was made by measuring the ionization produced in

the electroscope, and the two features of interest that Mr. Russ noted were, in the first place, a large increase in the yield of x rays produced by a small increase in the current used to heat the electrode, and, in the second place, a relatively large yield of "hard" (or more penetrating) x rays than of "soft" when the heating current was increased. Mr. Russ emphasized the warning already given in our previous article that the precautions which may have sufficed for tubes hitherto used by no means necessarily hold good for this new arrival.

NEARLY two years ago the Metropolitan Water Board and its workmen obtained exemption from the Insurance Act, and the Board undertook to provide gratuitous medical attendance for its 3,000 workmen. It was arranged that each medical officer should receive an inclusive payment of 10s. a year for each man on his list, this sum to include attendance, medicines, and all certificates required by the Board. It was arranged that every practitioner who was attending not less than twenty-five of the permanent employees should be included among the medical officers, and eighty-four district medical officers were so appointed. The scheme has worked well, and the appointments, with a change in one case, were recently renewed.

Obituary.

ROBERT BURNET, M.Sc., M.B., D.P.H.,

M.O.H. COUNTY OF CORNWALL.

THE news of the death, by accident, of Dr. Robert Burnet, medical officer for the county of Cornwall and the Cornwall Education Committee, will have b en received with deep regret. He was at the time serving as sanitary officer with the division at Exeter. He had joined the Territorial Force at an early stage, and had served with the 2nd Wessex Field Ambulance, holding the rank of captain. In 1913 he was promoted major upon appointment as divisional sanitary officer. On mobilization he moved with the division first to Salisbury, and was promoted lieutenant-colonel at the early age of 39. He was riding in the neighbourhood of Exeter, where his division was stationed, with a brother officer, when his horse bolted and threw him, causing fracture of the skull, which produced death in a few minutes.

Robert Burnet received his medical education at University College, Liverpool, and graduated B.Sc. in the Victoria University in 1897 with first class honours and a scholarship; M.B., Ch.B. in 1900, and M.Sc. in 1901. We are indebted to Dr. A. Bygott, medical officer of the West Suffolk County Council, for the following sympathetic notice of Dr. Burnet's short career:

I first met Robert Burnet in 1902, soon after his appointment as district medical officer for the parish of Birmingham, and have been very intimately connected with him ever since. The appointment was a somewhat remarkable one, being the result of an attempt by an enlightened board of guardians to organize their outdoor medical department on the best possible lines by availing themselves of whole-time officers at what at that time was considered a substantial salary. Four men holding these offices in Birmingham afterwards became county medical officers—in the West Riding of Yorkshire, Derbyshire, Cornwall, and West Suffolk. Burnet took a keen interest in this work, and did his best to develop it, as far as possible, on the lines upon which it was intended. but he found that he was undertaking a practically impossible task. This is well shown in the very valuable evidence he gave before the Royal Commission on the Poor Law in 1907, in which he suggested that the medical services controlled by the boards of guardians should be transferred to the public health authorities, and when this policy was adopted in the Minority Report he supported it on every available occasion.

In 1908 he obtained the D.P.H. of the University of Birmingham, and within a few days of receiving it was selected for an appointment as M.O.H. for Handsworth, which he did not obtain. Within three months, however, he was elected as M.O.H. for the county borough of Bury, in Lancashire, and was soon afterwards appointed superintendent of the large combined isolation hospital in the neighbourhood. He was especially fortunate in succeeding two such distinguished sanitarians as Dr. Howarth and Dr. Brindley, who had brought the sanitary work there to a very high level, which level he fully maintained. He developed the work of medical inspection, which had been commenced by Dr. Brindley, and assisted the council in starting a municipal hospital for tuberculosis, which was made possible by the benefaction of a private donor. He also gave evidence before the Parliamentary Committees in support of a comprehensive General Powers Bill.

In autumn, 1910, he was appointed county medical officer for Cornwall, an office presenting considerable difficulties, as this county is large and populous, and does not contain a single large town. Here he found a fitting scope for his very considerable abilities, and from personal knowledge it can be said that he was well fitted for such a herculean task. During his first year of office there was a very serious epidemic of poliomyelitis in the county, in the investigation of which he proved himself indefatigable, and in connexion with which he received a very serious blow. His only son, a brilliant boy who was destined for the navy, fell a victim to this disease; his life was spared, after a very serious illness, leaving him paralysed. Dr. Burnet read a very excellent paper on poliomyelitis at the annual congress of the Royal Institute of Public Health in Paris. He devoted much energy in the inception of the tuberculosis scheme for the county of Cornwall.

Dr. Burnet's early career was brilliant. He was a man of varied talents, and possessed no mean gifts as an artist and musician, though the strenuous life which he led in later years left him little opportunity for following these and other hobbies. He was singularly alert, throwing himself with ardour into every detail of anything he undertook. In his work he was one of the most conscientious men that I ever knew. In 1912 I spent several days with him in Cornwall. We made a housing survey together, and I was struck anew with his capacity for extracting enjoyment from the daily routine. Our busy lives diverged, and though we constantly corresponded, I only met him once again. His life was cut short at its highest point of fulfilment. Success had crowned his efforts in no light measure, and although one can wish a man no happier fate than that he should, in the prime of life, give that life for his country, yet a host of friends will mourn his loss, and the deepest sympathy will be felt for his young widow and his fatherless children.

COLONEL RICHARD EXHAM, C.M.G., A.M.S. (retired), died at Plymouth on February 1st. He was born on September 27th, 1848, the eldest son of the late Thomas Exham, of Monkstown, Cork, and was educated at Edinburgh, where he took the diplomas of L.R.C.S. and L.R.C.P. in 1871. He entered the army as assistant surgeon on April 1st, 1871, became surgeon in March, 1873, and surgeon-major on April 1st, 1883. He was promoted to colonel on November 20th, 1899, and retired on August 19th, 1903. He served in the South African war from 1899–1901 as principal medical officer of the Natal Field Force and of the lines of communication, and took part in the defence of Ladysmith and in the operations in the Orange River Colony, being twice mentioned in dispatches, in the *London Gazette* of February 8th, 1901, and of September 10th, 1901, and receiving the Queen's medal with four clasps and the C.M.G.

Universities and Colleges.

UNIVERSITY OF SHEFFIELD.

MR. ARTHUR J. HALL, M.A., M.D., F.R.C.P., has been appointed Lecturer in Medicine.

TRIPLE BOARD IN SCOTLAND.

War Service in Lieu of Curriculum.

THE Committee of Management of the Triple Qualification of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow, makes the following announcement: The Committee of Management of the Triple Qualification begs to announce to students who have undertaken approved service with His Majesty's forces that applications for partial recognition of such work in lieu of curriculum will be individually considered. Steps will be taken in each case to grant such concessions as appear to the Committee to be in accordance with the Recommendations of the General Medical Council.

The Services.

THE ROYAL ARMY MEDICAL CORPS.

PENSIONS.

IN the House of Commons on November 18th, 1914, as reported in our columns at the time, Sir Philip Magnus asked the Financial Secretary to the War Office whether a medical practitioner now serving in the Royal Army Medical Corps with a temporary commission was entitled to a pension for wounds at the same rate and under the same conditions as officers holding permanent commissions; and whether, in the event of his death, his widow and orphans would be entitled to a pension, and, if so, at what rate. The reply of Mr. Baker was (*Official Report*, col. 423) as follows: Yes, sir; the rates and conditions are fully set out in the Pay Warrant.

It may be convenient that we should reproduce here from the Royal Pay Warrant,[1] 1913, the relevant parts of Section X dealing with wounds, pensions, and gratuities.

SECTION X.—WOUNDS, PENSIONS AND GRATUITIES.

1. *Wounds and Injuries received in Action.*

639. *Loss of Limb or Eye: Gratuity.*—A gratuity according to the following scale shall, in the first instance, be granted to an officer who has received a wound in action which has occasioned the loss of an eye, or a limb, or of the use of a limb:

Colonel	£600
Lieutenant-Colonel	450
Major	300
Captain	250
Lieutenant	140
Second Lieutenant	100

640. *Pension.*—From the expiration of one year from the date of the wound or injury, the wounded officer referred to in Article 639 may, subject to the conditions laid down in Articles 641, 642, 652, and 653, be granted a permanent pension, according to the following scale:

Rank of Officer at the Date of the Wound or Injury.	Yearly.
Colonel	£300
Lieutenant-Colonel	300
Major	200
Captain	100
Lieutenant	70
Second Lieutenant	70

641. *Loss of Sight Must Occur Within Five Years.*—A pension shall not be granted for the loss of an eye consequent upon a wound received in action, unless loss of vision occurs within five years after the wound, and is solely attributable to such wound.

642. *Claim for Each Limb or Eye Lost.*—An officer may be recommended for a gratuity and a pension for each limb or eye the loss of the use of which has been caused by a wound received in action.

643. *Injury Equivalent to Loss of Limb, etc.: Gratuity.*—An officer who has received in action bodily injury certified by the regulated medical authority to be equivalent to the loss of a limb shall, in the first instance, receive a gratuity as laid down in Article 639.

645. *Very Severe Wound: Gratuity.*—An officer who has received in action a bodily injury, certified by the regulated medical authority to be very severe, though not equivalent to the loss of a limb, may, at the discretion of Our Army Council, be allowed a gratuity according to the scale laid down for his rank in Article 639 if he has been disabled for a year from performing military duty. If the disablement has lasted less than a year, a proportionate gratuity may be granted, the minimum being one quarter of the amount laid down in Article 639.

2. *Wounds and Injuries received Otherwise than in Action.*

648. *Loss of Limb or Eye or very Serious Injury: Pension.*—If an officer of Our Regular Forces, Special Reserve of Officers, Reserve of Officers, Militia, Territorial Force or Volunteers loses, through the performance of military duty, otherwise than in action, a limb or an eye, or sustains any other injury or injuries reported by the regulated medical authority to be of a permanent and very serious nature, he may be recommended for a pension not exceeding that shown in the following table.

The rate of pension and the period of its continuance shall be determined by the merits of each case, special regard being had to the fact of the injured officer being or continuing to be disabled, or otherwise, from the performance of his duties, and to the degree of contributory negligence (if any) attributable to him. The pension shall, in all other respects, be subject to the conditions applicable to officers injured in action.

Rank of Officer at the Date of the Wound or Injury.	Maximum Pension.
Colonel or Lieutenant-Colonel ...	£250 a year
Major	150 ,,
Captain	75 ,,
Lieutenant or Second Lieutenant ...	50 ,,

651. *Temporary or Local Commissions.*—Officers holding temporary or local commissions in Our Army, and paid out of army funds, shall be entitled to gratuities and pensions for wounds or injuries under the conditions laid down in this section of this Our Warrant.

652. *Wounds Pensions Tenable with Pay, etc.*—A pension for a wound or injury may be held together with any other pay and allowances to which an officer may be entitled, and may be granted to, and may continue to be held by, an officer after leaving Our Service.

653. *Period for Claiming.*—No claim to a wounds or injury gratuity or pension shall be entertained unless the officer applies for the same within five years after being wounded.

PENSIONS TO THE FAMILIES OF OFFICERS.

The pensions and gratuities allowable to the families of officers of the Regular Army, the Special Reserve of Officers, and the Territorial Force, and to the families of officers holding only temporary commissions for the purposes of the present war, are as follows:

Widows and Children.

	CLASS A. Families of Officers killed in action or dying of wounds received in action within seven years after having been wounded.				CLASS B. Families of Officers dying from disease caused by fatigue, privation, or exposure incident to active operations in the field or from wounds or injuries sustained on duty (not in action) within seven years after removal from duty for the disease or injury.	
Rank of Officer—that is, permanent rank, unless the Officer holds *only* temporary rank.	Pension to Widow (during widowhood). Yearly.	Compassionate Allowance for each child (Sons till 18, Daughters, unmarried, till 21). Yearly.	Gratuity in addition to pension, etc. Widow	Gratuity in addition to pension, etc. Each Child.	Pension to Widow (during Widowhood). (No gratuity is payable in these cases).	Compassionate Allowance for each Child (Sons till 18, Daughters, unmarried, till 21) (No gratuity is payable in these cases).
					Yearly.	Yearly.
	£	£	£	£ s. d.	£	£ s. d.
Lieut.-Col.	180	24	450	150 0 0	135	20 0 0
Major ...	140	21	300	100 0 0	105	17 10 0
Captain ..	100	18	250	83 6 8	75	15 0 0
Lieut. ...	80	15	140	46 13 4	60	12 10 0
2nd Lieut.	80	15	100	33 6 8	60	12 10 0

Motherless Children.—Twice the above rates of compassionate allowance may be granted to motherless children. If an officer (Class A) leaves a *daughter only* (unmarried and under 21) she may be granted, in lieu of the above rates, a special allowance varying from £40 to £90 a year, according to rank. These awards are in addition to the gratuity.

Mothers.—If an officer (Class A) leaves neither a widow nor legitimate child, his mother, if a widow without other pension or adequate provision, may be granted a special pension varying from £40 to £90 a year, according to rank, provided that she had been mainly dependent on the officer.

Sisters.—If an officer (Class A) leaves neither widow, legitimate child, parent, nor brother, a similar pension may be granted to his sister or sisters, jointly, if unmarried, subject to the above proviso.

Applications.—All applications for the grant of pensions, as above, should be addressed to the Secretary, War Office, Whitehall, S.W.

[1] Royal Warrant for the Pay, Appointment, Promotion, and Non-Effective Pay of the Army, 1913. To be purchased, either directly or through any bookseller, from Messrs. Wyman and Sons, Fetter Lane; H.M. Stationery Office (Scottish Branch), 23, Forth Street, Edinburgh; E. Ponsonby, Ltd., 116, Grafton Street, Dublin, or from the Agencies in the British Colonies and Dependencies, the United States of America, the Continent of Europe and Abroad, of T. Fisher Unwin, London, W.C. 1s.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

M.D. desires to hear of an institution into which a nurse, who has suffered for about twelve months from neurasthenia, could be admitted for treatment; she is under 40, and has had about seventeen years' nursing experience; her total income is about £25 a year.

ANSWERS.

Dr. Herbert M. Boshouwers, M.D. (Santiago, Chili), writes in reply to "Ignoramus" (December 5th, 1914, p. 1004): Milk in the breasts without other signs of pregnancy in a woman who has had one or more children is not so uncommon as is supposed. I saw some cases myself, and published particulars about them in *Nederlandsch Tijdschrift voor geneeskunde, 1904.* To get the breasts dry, apply a dressing giving support and pressure and prescribe antipyrine, 8 gr., thrice daily.

Treatment of Minor Epilepsy.

F. writes in reply to "P." to suggest that if he be taking potassium bromide he should substitute sodium bromide, and also, as quickly as possible, cease eating meat or fish of any description.

LETTERS, NOTES, ETC.

Miniature First Aid Pouch.

"Octogenarius" has sent us for inspection a miniature first aid outfit, which his son, who has been in the trenches and is going to the front again, has carried in his pocket without any incumbrance when on active service. It consists of an ordinary gutta-percha tobacco pouch, into which is folded a tinfoil receptacle containing 2 oz. of boracic powder. The pouch likewise holds two bandages (one 3-inch and the other 1-inch) that have been soaked in a solution of potassium permanganate, so as to be sufficiently antiseptic for use; half a dozen safety and other pins, six ½-grain opium pills in a tinfoil tube, one to three to be taken to relieve pain if necessary; a dozen cigarettes and as many wax matches, with the rough side of a ma chbox. The pouch is easily compressible into a flat pad to suit the pocket. To the above contents our correspondent has added a tube of cyanide paste, as recommended by Mr. Cheatle in the Journal of December 12th, 1914, p. 1006. That writer had found powder impracticable, wind and rain preventing it from reaching the wounds, and its application to the under surface of parts being impossible without turning over the patient or limb. Our correspondent considers that while the first objection has some force, the second may be got over by thickly spreading the powder on the bandage one foot from the end, and, when applied, bringing the ends of the bandage to the top and crossing them, thus fixing the bandage by the first fold. A few inches of the end should be left free. The bandaging may be managed by bringing the last fold over the first, when the two ends can be tied together, making it secure from loosening and obviating the use of a pin. By aid of the contents of this pouch a soldier is enabled to render first aid to himself immediately on being wounded or to any near comrades.

First-Aid French.

Inquiries have been received from military medical officers who expect to serve in France with regard to books which would help them to converse with French, and, if necessary, with German patients. We have not been able to return entirely satisfactory answers, but we are informed that the best first-aid vocubulary (London: Polyglot Printing Company, 1913) is that prepared by Mr. Samuel Osborn, F.R.C.S., and Mr. Albert M. Oppenheimer, of the Order and Brigade of St. John. The origin of the vocabulary is that the editors presented such a book in English, German, and French to the members of the first International First-Aid Congress held in 1908; the appreciation with which the gift was received induced them to add Spanish, Italian, and Dutch equivalents, and the volume published in 1913 shows on an opening the six languages—English, German, French, Dutch, Italian, and Spanish; there are six vocabularies arranged in alphabetical order under the different languages.

The need for supplementing the average Briton's extremely fragmentary knowledge of French and German has led to the formation of language classes for recruits of the new army, and many pocket dictionaries and conversation manuals have been published from time to time for the use of the men already in the field. Amongst the latter it would be difficult to find anything better than Captain Keyworth's *Easy French* and *Easy German.* Small enough to be carried inside an ordinary pocket-book, these leaflets contain phrases and words most likely to be required by the soldier, and a similar manual of *Easy Hindustani* compiled by the same author in collaboration with Colonel Alexander Masters, is equally practical both in the contents and arrangements. In each a phonetic rendering of every word is given, a plan which is followed by "Ajax" in his *Soldiers' Language Manual*, an excellent little handbook of English and German conversation. A more ambitious work on the same lines is the *Vade-Mecum for the Use of Officers and Interpreters in the Present Campaign*, by M. Eugène Plumon, who is at present acting as interpreter to the British Forces in France. A thorough study of this book should not only carry the British officer through the war, but help him to acquire a knowledge of conversational French that cannot fail to be of service to him for the rest of his life. Yet another method of learning the rudiments of French in the shortest possible time is Mr. Montague Fordham's *Simple French Song and Play Book for Soldiers and Civilians.* Mr. Fordham, who has held French classes of his own for soldiers, has found that learning by heart is of great assistance in enlarging the vocabulary and giving facility and confidence in speech. The following are particulars of these books:

Easy French for our Men Abroad, and How to Pronounce It. By Captain Keyworth. Published by Combridges, 56, Church Road, Hove. Price 3d.

Easy German for our Men Abroad, and How to Pronounce It. By Captain Keyworth. Published by Combridges, 56, Church Road, Hove. Price 3d.

Easy Hindustani for our Men Abroad, and How to Pronounce It. By Colonel Alexander Masters and Captain Keyworth. Published by Combridges, 56, Church Road, Hove. Price 3d.

The Soldiers' Language Manual (English-German). By Ajax. Published by E. Marlborough and Co., 51, Old Bailey, E.C. Price 3d.

Vade-Mecum for the Use of Officers and Interpreters in the Present Campaign. French and English Technical and Military Terms. By Eugène Plumon. Published by Hachette and Co., King William Street, W.C.

A Simple French Song and Play Book for Soldiers and Civilians, with Music. Illustrations by M. Louis Moorkens, and pronunciation of words in the songs set out in Marlborough's "Self-Taught" Phonetics. By Montague Fordham, M.A.Cantab., with an introduction by J. H. Badley, M.A., Head Master of Bedale School. Published by E. Marlborough and Co., 51, Old Bailey, E.C. Price 3d.

"Nutrition and Meat Extract."

Mr. Chas. E. Sohn (London, N.) writes: I ask for no space in which to reply to Professor Thompson's merciless attacks, but merely for the opportunity of pointing out that his last figures for weight increases are *averages* which mask the all-important fact that these increases were in general not maintained after the first few days in spite of repeated doses of extract, nor do they show the increases after non-meat-extract periods. Therefore to say that the extract has "a body building power ten to twenty times the amount taken" is incorrect, and such advertisements as embody those words (I enclose a specimen) can do no credit to their originator.

Vitamine.

Dr. James Oliver (London) writes: Vitamine is not an organic mineral compound, but an organic complexity of mineral substances. It exists in the polishings of rice. It is eliminated from white flour in the roller process of milling wheat. It exists in milk, but has its virtues impaired when milk is sterilized or even pasteurized. That it is of the utmost importance to the animal organism we have abundant proof. Its absence or deficiency in cases where polished rice is virtually the only food supplied produces gastro-intestinal disturbances, neuritis and beri-beri. Its elimination from white flour has been shown to be the cause of a form of beri-beri in the case of some of the poorer inhabitants of Labrador whose diet during the winter months consists chiefly of white bread and tea. Its altered chemical constitution in milk produced by superheating is a cause of rickets and impairment of the elasticity of the tissues generally. Vitamine, however, is as a matter of fact nothing more nor less than organic combinations of those mineral substances which hitherto have attracted but little attention, and which are so essential for the maintenance of all the vital processes in the animal body.

Chloral Hydrate in Tetanus.

Dr. S. H. Churukian (Simbellawein, Egypt) writes to express the opinion that chloral hydrate has a specific action against the toxins of tetanus. He gives large doses so as to induce deep sleep. He has recently sent records of cases so treated to the Public Health Department of Egypt.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
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A whole column	3	10	0
A page	10	0	0

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Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks
ON
GUNSHOT WOUNDS OF THE HEAD.

MADE IN OPENING A DISCUSSION AT THE MEDICAL SOCIETY OF LONDON ON FEBRUARY 8TH, 1915.

[WITH SPECIAL PLATE.]

BY SIR VICTOR HORSLEY, F.R.C.S., F.R.S.,
CAPTAIN, R.A.M.C.(T.),
CONSULTING SURGEON, UNIVERSITY COLLEGE HOSPITAL; SURGEON, NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN SQUARE.

THE subject of gunshot injuries of the head is, of course, an enormously wide one, and it includes not only the important question of how the actual injury to the brain is produced, but the subject can clinically also be profitably discussed from another point of view altogether, namely, causes of death and how to prevent them.

I shall to-night speak more in the former direction, and especially because I have not been permitted to see any cases in the present war, except a few exceptional instances which happened to be referred to me unofficially.

PHYSICAL EFFECTS PRODUCED BY HIGH VELOCITY BULLETS.

I made a large number of experiments[1] on this subject over twenty years ago when the .303 rifle was introduced into the services, and the results were fully confirmatory of those in part arrived at previously and independently on the Vetterli rifle by Professor Kocher, especially as to the so-called explosive effect of high velocity projectiles. It occurred to me then that what was required was a registration method. To this end I employed modelling clay, a substance which roughly resembles the tissues in that it contains a considerable percentage of water in its interstices, but differs with advantage in that, when disrupted, it remains exactly as the explosive force had deformed it, so that all that was necessary was to fill the cavities produced by the bullet with plaster-of-Paris and thereby obtain an absolutely accurate record of the whole effect of the shot. The method immediately showed several things: First, that the so-called explosive effect was directly proportional to (1) the sectional area of the bullet, (2) to its velocity, (3) to the amount of water present in the substance through which a bullet passes, and (4) that the forces of disruption were at an angle to the axis of the flight of the bullet, which I have never been able to completely determine. I have obtained by means of the clay-plaster method further points concerning the ballistics of the projectile which could not be reached in any other way. The most practically important for our present subject are: (1) Where in the course of the bullet is most mischief done? and (2) by what force?

(1) *Where Most Mischief is Done.*

The casts show that the maximal disturbance is produced, of course, as soon as the bullet at its highest velocity is surrounded by the largest mass of wet tissue.

In the animal the conditions are governed by other considerations, of which the most important is that the water-holding material is surrounded by an elastic skin, and that the so-called larger aperture of exit necessarily results from the driving out of the limb or trunk all the fragments of tissue, bone, and particles of fluid to which the velocity of the bullet has been communicated. The larger aperture of exit is a matter, therefore, of what happens to be struck in the interior of the skin envelope.

(2) *Forces Producing the Injury.*

These relate to the two movements of a bullet: First, its progression forward; secondly, its spin around a central axis given to it by the rifling.

It is ordinarily assumed that the progression forward movement is the more important, but in my opinion it is not so, although, of course, the amount of injury naturally depends on the length of traverse of the body by the bullet.

The most important movement from a pathological point of view, I suggest, is the rotary spin, and I came to this opinion by observing, to my surprise, that the rotation of the bullet was still visible on the plaster cast even up to the moment when the bullet ceased to penetrate any more.

It is quite clear that in these circumstances the disruption of the tissues must be attributed in the main to the rotating forces of a bullet, and the transverse section of a plaster cast of a bullet fired into wet clay, in which, therefore, there is a maximum disruption due to the water, shows that the particles of fluid are thrown off practically at right angles to the axis of flight.

It is interesting to notice also in some of the casts that these disruptive tears have very often a spiral direction antero-posteriorly, the turns of which are of the same length as the spirals of the grooves of the rifle.

Sometimes these have also shown an interesting degree of direction backwards, and then the tear is circumferential to the axis of flight, which reminds one very forcibly of the compression waves of air shown in Professor Boys's beautiful photographs of a .303 bullet during its flight. It is clear that if the density of the clay varied suddenly, as it does not infrequently, the results would be a fixation in the plaster of the disruption wave quite comparable to that of the more labile fluid air, as in Professor Boys's experiment.

Shape of the Bullet.

We must now consider the question how far the shape of a bullet affects the question of degree of destruction.

(a) *Sectional Area.*

The so-called explosive bullet, or dum-dum, is a soft-nosed lead bullet, which deforms very easily, and by its expansion greatly increases the sectional area.

Very considerable confusion seems to have arisen recently, because the modern jacketed rifle bullet having been made more and more pointed until there is a very great contrast between the long sharp nose and the flat base, it has actually been supposed that this bullet makes a much worse wound if it advances through the tissues base foremost instead of the apex, whereas, of course, the result being proportional to the sectional area, it makes no difference.

This brings me to the next point, of which a good deal has been made on purely hypothetical grounds—namely, the question of the modern pointed bullet turning over during its passage through the tissues. Undoubtedly turning over of an elongated projectile is a very common event. To find out whether it was more common now with the modern shaped bullet than with the old conical projectile, I asked Mr. Daw, of Messrs. Hollands and Hollands, to kindly make for me some .22 calibre cartridges with bullets of the same weight as the ordinary conical pattern, but pointed like the modern service projectile, and, of course, with the same load. This he very kindly did, and photographs are reproduced (Figs. 1, 2, and 3) of the records of experiments made by the clay method under as nearly as possible similar conditions, the first being an imitation service bullet, the second the old conical pattern (both these being .22 calibre), and the third the larger .310 soft lead bullet, to contrast with the service bullet, and to settle again the question of the deformity caused by the various projectiles. This point, I may mention, I had already dealt with in my first experiments twenty years ago, which, as I have already stated, went to show that the apex of a bullet had no bearing on the immediate question of amount of destruction. I have also dealt with it in a report furnished to Lord Kitchener and published by him.[2]

Turning over.

Some misconception as regards turning over has arisen, because it seems to be imagined that a very pointed bullet might turn over and over round a transverse axis through the middle of its length, progressing in fact like a wheel, but this is not the case; it only turns over once. Turning over is very common, but, as is shown when the bullet enters clay or soap, it does not happen until nearly half its course has been passed over, that is, when the progressive velocity is greatly reduced, and the advance of the bullet becomes more sensitive to obstructions which will first affect the light tip, the momentum of which is very different to that of the base. Further, in consequence, no doubt, of the greater obstruction and friction set up when the bullet travels at right angles to its long axis,

its traverse of the tissues is much reduced, but the spin due to the rifling continues to the end

As regards the disturbance of the tissues caused by turning over, the net result is conversion of a tubular wound (see esp. Fig. 1) into a cleft which is nearly triangular in cross-section, a narrow isosceles triangle, the base of which is caused by the base of the bullet, and the apex, of course, by the point. When turning over has reached its complete development, there is certainly rather more appearance of disruption, but on measuring the circumference of such a cast there is little difference between the "turned over" region with the immediately pre-cursory cylindrical part of the bullet's course. The practical conclusion which follows from these facts is, of course, that "turning over" is not to be credited, as it has been, with doing much harm, the real cause of great destruction of tissue, etc., being, of course, the high velocity and rapid spin.

Fragments of Bone.

The clay-plaster method showed me another fact that I had not considered fully. It is that the deep penetration of the brain by a fragment of bone is in the first place the simple consequence of the high velocity of the bullet being communicated to such bodies much lighter than itself, and therefore capable of proceeding as far and even farther than the shot.

In view of the fact that any such fragment may be infected, it follows that at the first operation every reasonable search must be made for fragments, as they certainly may later cause the death of the patient.

Dr. Bruce's beautiful radiogram reproduced in Fig. 4 is an interesting example, because the shrapnel bullet, partly caught by the edge of the hole, nevertheless has sent on five fragments, one streaked with lead, deeply into the brain. This was the case of an officer who came under my care some ten days after he was wounded at the end of August. There was a foul small round wound above the left frontal eminence which Dr. Spitta found was infected with *Staphylococcus aureus*, and it led into an abscess cavity about 2 in. deep. I removed the purulent débris, fragments, etc., cut away the original wound in skin and bone, and disinfected with sublimate lotion, hydrogen peroxide, and weak carbolic. Vaccination with autogenetic vaccines was carried out by Dr. Spitta for two months. The patient has made an excellent recovery; the cavity has, after three months, cicatrized and he has returned fit for light duty.

The distance of penetration of the bone fragments in this case is exaggerated, of course, by the retention of the shrapnel bullet on the inner edge of the hole.

CLINICAL FEATURES.

Perhaps the most important subdivision of clinical conditions which are special is that of causes of death.

1. *Concussion.*

Several cases have been reported of fatal concussion without penetration of the skull. These are, of course, perfectly possible because they fall into the same category as the deaths caused by the simple blow of a cricket ball. They are apparently due to direct paralysis of the respiratory and cardiac centres in the bulb. Mr. Walter Spencer and I showed many years ago that mere pressure on the unopen skull, if sufficiently severe on thin parts, could affect the intercranial tension so as to interfere with the functional activities of these centres.

2. *Rise of Intercranial Pressure.*

Duret showed many years ago that the most paralysing effects on the centres of organic life were produced most easily by force applied in what he called the fronto-bulbar axis, and he showed that the effect of shock applied to the frontal region was transmitted largely by the cerebro-spinal fluid to the interior of the ventricles and even to the fourth ventricle. This is undoubtedly the first effect of a gunshot wound to the head and evidenced by functional inhibition of the respiratory centre, as Kramer and myself showed first in 1897. Concurrently, one has, of course, immediate haemorrhage, and therefore an equal immediate rise of intercranial pressure. If this is not relieved, the embarrassed respiratory centre fails. At the same time the vagal centre is at first stimulated and causes very slow beats of heart, and, as the pressure rises, this gives place to paralysis of the vagal mechanism, and then begins the fatal and final stage. Probably a certain number of deaths in cases of this kind could be saved by immediate operation, and I have under my observation now an officer, whose radiogram is shown in Fig. 5, whose life was so preserved by Major Sherran, R.A.M.C., who, recognizing the urgency of this condition just described, operated at the field dressing station within a very few minutes of the infliction of the wound by trephining and washing out the extravasated blood, thus releasing the pressure and saving the patient's life. The patient is now gradually recovering. In many cases, if there is a good blood pressure, the intracranial tension often prevents a rapid haemorrhage.

3. *Sepsis.*

This is of course primarily and in the vast majority of cases due to incomplete disinfection of the original wound, but also to the fatal and detestable practice of "leaving head cases alone," which, being the outcome of ignorance, both of the functions of the brain and of the principles of antiseptic surgery, led many surgeons of the old school (some of whom apparently still survive) to leave a patient to steadily die rather than perform the duty of attempting to save him.

I believe this wicked tradition was also in part created by the fact that the leucocytic barrier, whether subdural or intracerebral, was occasionally quite equal to fighting off the infection; and because such a neglected patient got well, the non-comprehending surgeon said, "Let us leave head cases alone as a rule!" It is to the credit of the British Army Medical Service that they showed in their observations and work during the Boer war the falsity of this error. We may hope, therefore, that the example of the brilliant surgery of officers like Major Sherran will prevent cases arriving in England under conditions hopeless for restoration both of life and function.

One word on general septic infection. Suppose the subdural space is infected and cerebro-spinal meningitis results. Are these cases necessarily fatal? Evidently they are not, as, indeed, Mygind has always contended.

What is to be our routine? A case I saw with Dr. Fraser at Southampton, and which I hope he will publish, suggests that the course adopted in that instance might be generally tried—namely, free opening and disinfection by irrigation of the cranial subdural space at the seat of the injury, a liberal lumbar puncture (1½ to 2 oz.), repeated if improvement arrested, and autogenetic vaccine treatment.

I understand that at Cambridge repeated lumbar puncture has been most efficacious in the treatment of the parallel condition of epidemic cerebro-spinal meningitis.

4. *Hernia Cerebri.*

A great deal of unnecessary importance used to be given to the condition known as hernia cerebri, as its occurrence was proportionate to the septic decomposition which characterized the condition of most of the wounds. In consequence of this latter factor we must divide the subject under the two headings of aseptic and septic hernia.

Aseptic.—In consequence of the explosive effect of a bullet on the normal brain, if portions of the bones of a skull are carried away—as, for instance, in the formation of a gutter—then the rise of intracranial tension will cause a certain amount of extrusion of the brain substance. This is accompanied by extrusion of the lacerated brain against the edges* of the opening in the skull. Owing to haemorrhage in the brain substance produced by the explosive effect, such a hernia tends to remain only just so long as there is increased intracranial tension, as, for example, in the cases of removal of cerebral tumour, where aseptic herniae can be studied not infrequently.

Septic.—I come now to the more difficult question of septic herniae and their significance. An infection of the bruised brain may present simply a localized suppurating cavity, in which case there is no hernia. If, however, the leucocytic barrier of the cavity is imperfect and the hemisphere in consequence happens to become the seat of general cerebritis, then hernia of necessity follows, and if the mischief spreads the hernia increases because of the spreading infective

* Thus aiding in the formation of a subdural leucocytic barrier, as was first made clear by Schäfer.

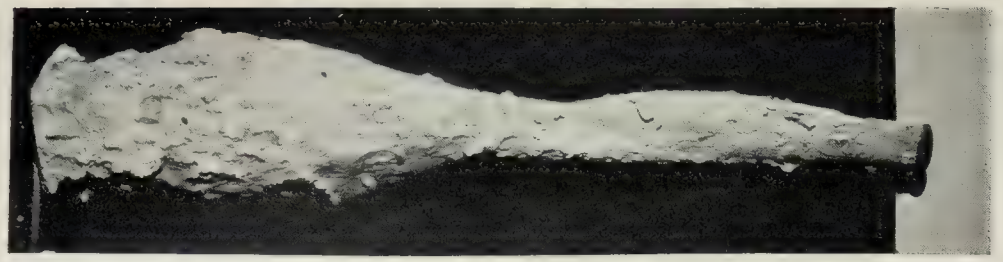


FIG. 1.—Pointed (Service) Bullet, .22 cal.; Cast of Effect in Clay. The tapering of the cast shows the gradual loss of velocity. The bullet is seen at the end of the cast, apex upwards. The narrow part of the cast is where the bullet began to turn over, and the track of destruction changed from cylinder to flat tear.

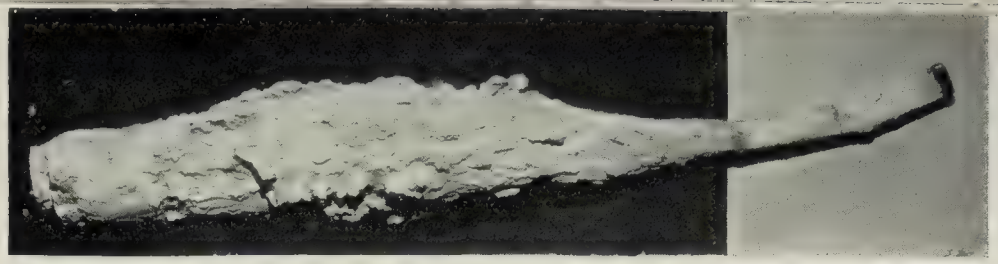


FIG. 2.—Old Conical Bullet; Cast of Effect. Similar cast of the effect of the old pattern bullet, which also turned over, so that the end of its course is a flattened cleft. The net amount of destruction is the same as in Fig. 1.

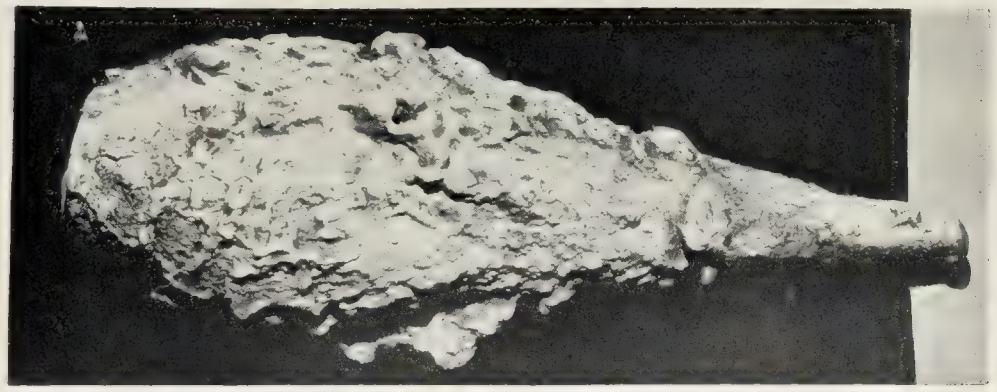


FIG. 3.—.310 Soft Lead Bullet; Cast of Effect. This cast shows the much greater destruction caused by a bullet of larger sectional area, and one which, being soft, deformed easily. Its penetration is proportionately lessened.



FIG. 4.—Shrapnel Bullet, showing Fragments of Bone Penetrating Brain deeply. The bullet is seen caught on inner edge of hole in skull. In front of it five fragments of bone, some streaked with lead, have passed into the frontal lobe. Around these was a 2-in. deep and wide abscess cavity, partly indicated in the radiogram taken by Dr. Bruce.



FIG. 5.—Fissuring Destruction of Skull and Subjacent Brain. In this case some of the bone was removed by Major Sherran's operation fifteen minutes after the wound to arrest the haemorrhage from the lacerated brain. The radiogram by Dr. Bruce shows well the fissuring of the skull produced by the high velocity of the bullet.

oedema of the brain. The subdural leucocytic barrier may be quite effective in some cases, and yet the hernia increases. This was what one finds referred to very largely in the writings of the old surgeons, and in this case undoubtedly after some time some of the increase is due to the development of granulation tissue in the brain that projects. Such herniae, if the subdural barrier is good, yield completely to treatment with absolute alcohol and cutting away as the surface rapidly necroses. Various substances have been used for this purpose—for example, formalin—but for many years I have never found anything better than absolute alcohol.

FUNCTIONAL DISTURBANCE OF THE BRAIN.

The first and most important practical question is how far compensation for loss of functions due to loss of cerebral substance occurs; possibly this is a question which, though attacked by neurologists for fifty years, must remain essentially indeterminate until the function of every part of the brain is accurately ascertained. It will be simplest, perhaps, to consider the matter by two examples — first, a sensory region of the cortex, and secondly, the kinaesthetic.

I desire to premise my examples by suggesting that in the human adult there is no evidence of compensation by education or substitution of function in other parts of the brain for function lost by reason of permanent destruction of given areas. Recovery due to absorption of haemorrhage and re-establishment of partly blocked circulation, however, may be expected to go on for several years if not interrupted by epilepsy and secondary mental change.

(*a*) *Sensory Cortex.*

The most specialized centre, and most clearly arranged topographically, is the visual area. I will therefore confine my remarks to that sensory function, and a case that I saw in October last with Dr. Simpson illustrates very well the problem. The patient, an officer in an infantry regiment, was hit by what was apparently a Mauser bullet on the right side of the head just below the parietal eminence. The bullet passed through the occipito-temporal region, making a deep gutter through the brain and under the skull, emerged through the middle of the right half of the occipital bone, and buried itself in the muscles at the back, where it was extracted by an incision on the field. The patient, who was totally blind, reached London (namely, the 3rd London Base Hospital) on about the fourth day after receiving the wound. Nothing was done to the wound on the head, so far as can be ascertained. When I saw him in a nursing home on the seventh day both wounds were inexpressibly foul; the posterior two-thirds of the head was oedematous, the patient, who, as before stated, was completely blind, could with difficulty be roused to an order, and his temperature was 101°. Under an anaesthetic the apertures in the scalp were explored by a large flap incision, and it was then found that in addition to the comminution of the skull at the apertures of entry and exit, there was also a line of fracture and comminution about 4½ in. long connecting the holes. Further, the whole lambdoid suture was started so that the occipital bone was loose—that is, both halves. On clearing away the fracture, blood and pus came from underneath the bone, but I considered that the subdural leucocytic barrier had already sealed off much of the subdural space. The wound was very thoroughly disinfected, irrigated with hydrogen peroxide, and sublimate lotion. As the flap incision was a very free one, no further incisions were made in the oedematous skin on the left side of the head. All lacerated portions of brain tissue were removed. Besides pus, there were several sloughy and dark pieces of tissue obviously necrosed. The bacteriological inspection of the head wound gave (by Major Embleton) an almost perfectly pure culture of the bacilli of malignant oedema. The patient has made a good recovery so far, after frequent dressings with hydrogen peroxide and weak carbolic lotion.

The immediate question in this case, however, is the recovery of sight. This began to return in the top right-hand corner of both fields, and has now spread until the patient can see probably over most of the upper right quadrant, but he is not a good witness. The first recovery of the upper part of the field in this central case interests me because I have shown that in peripheral lesions—that is, optic neuritis—the pressure is most severe on the upper half of the nerve and disc, and therefore preservation of sight is chiefly in the upper quadrants. (This patient had a remarkable congestion of his discs, but no true swelling.)

My immediate point is that no recovery has taken place in the gravely injured lobe, neither, I fear, can any be expected.

As regards the representation of the upper and lower halves of the visual field in the lower and upper parts of the calcarine cortex and the bearing of this further consideration on the present case, nothing can justly be said, seeing that the whole occipital suture being started there must have been bruising of some degree, even if slight, affecting the left calcarine region. Mr. Cruise, who has had charge of the case ophthalmologically throughout, will very kindly report on the case.

(*b*) *Kinaesthetic Cortex.*

The consideration of the loss of function of the Rolandic region is much more difficult, since paralysis of movement is no simple question of the destruction of a so-called motor centre, but also that of a number of sensation conditions and memories.

1. *Loss of Movement.*

So far as the loss of motor function alone may be discussed, I desire to suggest from the experience of cases who were wounded in the Boer war that the chief movements of the hand are not restored if the whole arm area of the anterior gyrus has been destroyed.

2. *Loss of Kinaesthetic Memories.*

The retention of power to move a segment of a limb at all is one thing, but the ability to effect that movement without clumsiness is quite another.

This depends on the conservation of what I term the topognostic sense, namely, the relation of a spot touched on the body, to our knowledge and conception of our position in space, and that chiefly in the relation of the spot touched to (*a*) the distance from the body—that is, "proximality"—and (*b*) the distance to the mid-line of the body, or "axiality."

The loss of the sense of appreciation of these relations and distances is what we call, in popular language, clumsiness, and I have shown that this topognostic sense is represented in both central Rolandic gyri. Further, I believe it is permanently lost if the arm area of both gyri is permanently destroyed. Thus far, therefore, there is no compensation possible by substitution activity of the lower centres.

Coarser co-ordinated movements of shoulder, elbow, wrist, and even of the hand, however, can be furnished by such lower activities.

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[1] *Proceedings of the Royal Institution of Great Britain*, vol. xiv, p. 228, 1895. [2] BRITISH MEDICAL JOURNAL, November 21st, 1914, p. 896.

DR. ALFRED C. HENDERSON, of New York, has published four cases of diabetes mellitus treated with fluid cultures of the lactic acid bacillus (*Journ. Amer. Med. Assoc.*, February 6th, 1915). Great care was taken about previous dieting; in three the diet enforced was equal to a carbohydrate intake of 15 grams. The conclusion Dr. Henderson draws from these four closely observed cases of diabetes is that no improvement was effected either as to the glycosuria or the acidosis.

AT the annual meeting of the Federation of American Societies for Experimental Biology held in St. Louis on December 28th a resolution was adopted in which the Federation, after setting out that various European nations with which many members of the Federation were related by birth, descent, or intellectual friendship were now at war, extended to the scientific men within these nations the hope of an early and enduring peace which would leave "no permanent cause of rancour towards each other, and would ensure to each the glories of scientific and humanitarian achievement in accordance with its own conception of those ideals." The resolution may be taken as an indication of the desire of our American brethren to preserve strict scientific neutrality, and to hope for the best. The resolution is signed by the presidents of the Physiological Society and of the societies of Biological Chemists, for Pharmacology and Experimental Therapeutics, and for Experimental Pathology.

THE WASSERMANN REACTION IN OPHTHALMIC PRACTICE.

A RECORD OF 250 CASES.

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IN the past it has been necessary, in assessing the part played by syphilis in the production of ocular lesions, to place reliance on: (1) The admission on the part of the patient of previous syphilitic infection; (2) the previous history of the patient as regards symptoms indicative of syphilis; (3) the nature of the lesion—for example, the comparatively rare occurrence of iritis with a gumma on the iris or retinitis syphilitica; (4) the presence of other known syphilitic lesions at the time of examination; (5) pathological examination in some instances; (6) the response to antisyphilitic treatment.

While in many cases a clear history of previous syphilitic symptoms may be elicited, in other instances it is quite impossible to obtain actual evidence, owing to the fact that the patient aims at concealing the essential facts, that he may have forgotten the occurrence (several years before) of the characteristic primary and secondary lesions, or that the primary and secondary symptoms may never have developed in their characteristic fashion or may have been altogether suppressed. If other well-recognized signs of syphilis are present along with the ocular disease, then there is the strongest presumption that the eye condition is due to syphilis, as in the case of interstitial keratitis associated with the various evidences of congenital syphilis or when iritis develops as part of the secondary stage. On the other hand, ocular lesions may develop as isolated phenomena unaccompanied by other symptoms—for example, primary optic atrophy as the earliest symptom of spinal tabes and iritis is occasionally the only sign of syphilis present at the time of examination.

In ophthalmic practice it not infrequently happens that the nature of the lesion indicates the possibility of a syphilitic origin, but by clinical methods alone it is impossible to make more than a tentative diagnosis. While it has long been accepted that interstitial keratitis is in the majority of cases due to syphilis, cases occur which are undoubtedly non-syphilitic. In iritis, also, while the syphilitic virus may be responsible for the disease, a condition clinically similar may be produced by other infective agents. Again, while paralysis of ocular muscles may be definitely due to syphilitic lesions, the same effects are produced by other pathological conditions, such as intracranial haemorrhage or malignant tumour.

Clearly, therefore, as a diagnostic method, a specific serum test, such as the Wassermann reaction, is of great value in determining the syphilitic nature of eye lesions. By submitting to the Wassermann test without any selection based on history, accompanying symptoms, etc., the serums of patients suffering from various ocular conditions recognized as possibly of syphilitic nature, we have been able to obtain direct evidence of the proportion of these conditions which are due to the syphilitic virus, and by extending the researches to other conditions, we have in some instances elicited the existence of a possible syphilitic basis where none has hitherto been suspected—for example, myopia with choroiditis. Obviously a more definite statement can be made from the results of such an objective test than from conclusions drawn entirely from the personal or family history of the patient concerned.

Granted that the Wassermann reaction is carried out by an accurate and reliable method the positive results obtained are indubitably valid. The conclusions to be drawn from negative results are less definite, since in the tertiary and latent stages of the disease only 75 per cent. and 50 per cent. respectively yield a positive result.[1] Thus any estimate of the frequency of syphilitic lesions based on the results of the Wassermann reaction is bound to be an understatement. A positive Wassermann reaction obtained under the most reliable conditions is in itself conclusive proof of the presence of syphilis, even where there is no other clinical evidence of the existence of the disease, and therefore a positive reaction in a clinically suspicious case affords a very striking confirmatory test.* It may also be mentioned here that the test is of inestimable value in eliciting admissions from patients regarding their previous history; thus in a number of cases of iritis in which no history of syphilis was at first obtainable, and where subsequently a positive Wassermann reaction was found, intimation to the patient of the fact that he must have been infected was followed by complete confession.

The method employed has been the lecithin-cholesterin method of Browning, Cruickshank and MacKenzie (Browning and MacKenzie).

The essential feature of this method depends on the characteristic power of cholesterin to increase the amount of

Table of Cases taken as they appeared at the Clinics of the Glasgow Eye Infirmary.

	Cases.	Positive	Negative.	Doubtful.
1. Congenital corneal opacities	1	0	1	0
2. Interstitial keratitis ...	63	56	7	0
3. Pemphigus of conjunctiva	1	0	1	0
4. Episcleritis and scleritis ...	6	2	4	0
5. Sclero-keratitis	3	1	2	0
6. Iritis and iridocyclitis ...	50	27	22	1
7. Cyclitis	3	0	3	0
8. Choroiditis and choroidal atrophy	26	5	20	1
9. Sympathetic ophthalmitis	4	0	4	0
10. Retinitis pigmentosa ...	3	0	3	0
11. Retinal detachment ...	5	0	5	0
12. Neuro-retinitis with haemorrhage	8	2	6	0
13. Optic neuritis	6	3	3	0
14. Optic atrophy	21	12	8	1
15. Vitreous opacities	2	1	1	0
16. Congenital cataract... ...	2	1	1	0
17. Paralysis of ocular muscles	13	7	6	0
18. Nystagmus	2	0	2	0
19. Dacryocystitis	3	1	2	0
20. Cerebral syphilis	1	1	0	0
21. Disseminated sclerosis ...	1	0	1	0
22. Myopia with choroiditis ...	6	2	4	0
23. High myopia	2	1	1	0
24. Trachoma	2	0	2	0
25. Retro-ocular tumour (fibrosarcoma)	1	0	1	0
26. Glaucoma	4	1	3	0
27. "Strumous keratitis" ...	8	0	8	0
28. Parinaud's conjunctivitis...	1	1	0	0
29. Choroideremia	1	0	1	0
30. Paradoxical pupillary reflex	1	1	0	0
	250	125	122	3

The cases recorded in the above table have not been in any way selected apart from the two following considerations: (1) Where syphilis is one of the known etiological factors; thus a series of unselected cases of interstitial keratitis, episcleritis, scleritis, sclero-keratitis, iritis, iridocyclitis, cyclitis, choroiditis, choroidal atrophy, optic neuritis, retinitis, ocular palsies, were examined irrespective of the presence or absence of other symptoms; (2) where no definite etiology is known.

* Of course, diseases common to this country are alone under consideration.

complement deviated by a syphilitic serum in the presence of "lecithin." While strongly positive serum may along with "lecithin" alone give a very striking degree of complement deviation, weakly reacting serums, on the other hand, may exhibit very little deviation with the "lecithin" antigen by itself. The determination of the result, then, depends on the difference between the amounts of complement deviated by serum *plus* lecithin-cholesterin and serum *plus* lecithin. In addition, each of the results was determined only after comparison with those obtained with known negative and positive serums tested under precisely similar conditions as the serum in question. In this way fallacies due to the variability of different specimens of guinea-pig complement were eliminated.

Extreme accuracy, combined with delicacy may be claimed for this method, and the extensive investigations of Watson have established a very striking proof of the specificity of the reaction (Browning).[2]

Interstitial Keratitis.—In this, the largest class of cases, the reaction was positive in 88.8 per cent. In general the reaction was most markedly positive, even although in many instances the disease had been quiescent for a long time, the patients attending the infirmary only for the resulting opacity of the cornea. One of these was a man aged 80. The families of four of the patients were examined; in two of these brothers or sisters gave positive Wassermann results and showed signs of choroiditis without subjective symptoms. This series of cases was examined at two periods, with an interval of ten months intervening. The first group consisted of 37 cases, and showed 35 positives and 2 negatives; in the second group of 26 cases, 21 were positive and 5 negative. The interest here lies in the fact that each group showed a very large and approximately equal percentage of positive cases.

Strumous Keratitis.—The results were negative in all.

Iritis and Iridocyclitis.—These cases were also obtained in two series; 22 in the first group gave 12 positive and 10 negative results. In the second group of 28 cases, 15 were positive, 12 negative, and 1 doubtful. Thus, 54 per cent. of the patients with iritis and iridocyclitis are proved to be syphilitics, and in a number there was also a definite history of gonorrhoea.

Cyclitis.—This condition, uncomplicated by affection of the iris, was diagnosed in three cases, and it is interesting to note that these were all negative.

Choroiditis.—Parsons[3] states that "syphilis is one of the commonest causes of choroiditis," and refers to the information obtained from the scanty records of cases in which the syphilitic element was undoubted. From this point of view our results are interesting. Of 26 cases examined 5 gave positive and 20 negative results, while 1 was doubtful. These results do not suggest that syphilis is the preponderating factor in the causation of choroiditis. Two of us in connexion with a series of cases availed ourselves of the luetin reaction of Noguchi for testing patients who gave negative Wassermann results. According to Noguchi, the value of the luetin test lies in its capacity for giving positive results in cases of syphilis which are negative to the Wassermann reaction.[4] Of 5 cases of choroiditis which gave a negative Wassermann reaction the luetin test was also negative in four; these additional results lend further support to the conclusion stated above, and indicate that in the majority of cases of choroiditis some other causal agent than syphilis must be sought for, contrasting with what is found in cases of iritis and iridocyclitis. It is an interesting fact, therefore, that inflammatory conditions of the uveal membrane differ in their etiology according to the site of the lesion.*

Sympathetic Ophthalmitis.—Of the 4 cases examined all gave negative results. One of these was of special interest since the patient returned five weeks after enucleation of the injured eye, suffering from this disease; mercurial inunction seemed to produce a good effect and the patient left the hospital with very useful vision, a not unknown but very exceptional result.

Retinitis Pigmentosa.—Three cases were all negative. These results support the generally accepted view that the disease is unconnected with syphilis.

Retinal Detachment.—We failed to find any positive reactions in 5 such cases.

Inflammation of the Optic Nerve and Retina.—Only 5 positive cases were obtained out of a total of 14.

Optic Atrophy.—Of 21 cases of optic atrophy 57 per cent. gave positive results, and it is interesting to note that 10 diagnosed as *primary* optic atrophy were all positive.

Paralysis of Ocular Muscles.—Seven out of 13 cases were positive. The following is the grouping of the paralyses:

	Positive.	Negative.
Third nerve	4	0
Fourth nerve	1	0
Sixth nerve	1	6
Sixth and third combined	1	0

Dacryocystitis.—One out of these patients reacted positively. This case was atypical. The swelling, redness, etc., in the region of the lacrymal sac suggested acute dacryocystitis, but the induration and chronicity were suspicious. After performing our routine examination and being strengthened by the possession of a positive result we were able to elicit a history of syphilitic infection ten years before.

Myopia.—The cases of myopia accompanied by choroiditis are interesting as showing that syphilis may be a factor in the production of this lesion.

Glaucoma.—Four cases were examined, with one positive result. In view of the association of vascular disease with syphilis, it is important to note that Fergus[5] has drawn attention to the possibility of glaucoma being in some cases due to venous stasis. Our results are, of course, too small in number to permit of a conclusion regarding the part played by syphilis in the causation of glaucoma; but such cases, whenever they are met with, would be well worth examining from this point of view.

As a result of these investigations, in which the Wassermann reaction has been employed as a means of arriving at a direct diagnosis apart from the uncertainties of clinical methods, we have been enabled to collect some information as to the prevalence of syphilis in ophthalmic practice.

The interesting fact emerges that, excluding such conditions as ocular injuries, conjunctivitis, cataract, and the ordinary errors of refraction, if all other ocular affections without selection are analysed on the basis of the Wassermann test, practically 50 per cent. of these collectively are associated with a positive reaction. Since many of such lesions occur in the tertiary and latent stages of syphilis in which only a certain proportion yield a positive result, it is a justifiable presumption that this is probably an under-estimate, and that syphilis plays an even more prominent part in the production of ocular disease than our figures show.

The results of the Wassermann reaction are, however, striking in themselves, and the conclusions to be drawn are exceedingly instructive. We are strongly of opinion that, apart from the previously mentioned conditions (injuries, etc.), all cases presenting themselves at an eye clinic should be submitted to the Wassermann test; if this were carried out systematically the clinician would have at his disposal direct evidence which would be of great value in respect to effective treatment, and in a very large number of cases clinical inference would be converted into practical certainty. Moreover, certain etiological obscurities might be definitely resolved as the result of such systematic and extensive investigations.

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* The results of Mackie and Manson on the luetin reaction in diseases of the eye will shortly be published.

THE late Dr. Henry Charles Hilliard, of Bletchingley, Surrey, left estate valued at £10,587.

RUCHER, in the United States Public Health Reports for 1914 (Supplement No. 15, June 12th, 1914; Washington Government Printing Office, 1914), lays it down that the objects of a yellow fever campaign should be (1) to prevent the breeding of *Stegomyia calopus*; (2) to locate all persons sick of yellow fever or suspicious fever as early as possible in the disease; (3) to prevent *Stegomyia calopus* from biting them and becoming infected; and (4) to destroy all infected mosquitos. All details are fully described, including the arrangement of the staff, the location of the cases, and the destruction of the mosquitos. Such a pamphlet should prove of considerable use to communities where yellow fever is liable to occur.

DUPUYTREN'S CONTRACTION.

BY

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DUPUYTREN'S CONTRACTION was described by Sir Astley Cooper in the early part of last century, but it was not till 1831 that the first case was dissected by Dupuytren, who found that the disease was due to a thickening and shortening of the palmar fascia, and not to a contraction of the tendons.

Mr. Robert Jones of Liverpool[1] has recently described the process as a plastic inflammatory one, a "fibrositis of the palmar fascia, not associated with any inflammatory thickening of the skin."

A wound, abscess, or burn of the hand may lead to flexion of the fingers and simulate Dupuytren's contraction, but the contraction in them is due—for example, "miners' beat-hand" and glass-blowers' "hook-hand"—to the formation of scar tissue (which contracts), and is not limited to the palmar fascia. The congenital condition of finger contraction, not infrequently seen and generally involving the little finger, is due not to a thickening and contraction of the palmar fascia, but in part to a shortening of the finger-joint capsules and in part to a contraction of the skin and tendon sheaths. Several writers have erroneously termed this condition a "congenital" form of Dupuytren's contraction.

PATHOLOGY.

The condition is due to a thickening and contraction of the digital processes of the palmar fascia; the main body of the fascia is affected secondarily. As a result of the thickening and contraction, the fingers become more or less drawn into the palm; the flexor tendons are not actively contracted. In extreme cases the interphalangeal joints may become partially dislocated. Microscopically the thickened palmar fascia is found to consist of fibrous strands intermingled with cellular infiltration, indicating a plastic inflammation.

The skin over the thickened fascia, normal in the earlier stages of the disease, may become puckered owing to the contraction of the fibres of the palmar fascia attached to the skin; in the later stages the skin generally becomes closely adherent to the fascia. The results of investigations to ascertain the presence of micro-organisms have been negative. The condition appears to be not unlike the sclerosis occurring in the tertiary stage of syphilis.

COURSE AND SYMPTOMS.

The disease has been described in four stages by Dr. Collis and Mr. Eatock.[2]

1. In which the palmar fascia only is involved.
2. In which the palmar fascia is involved and one or more digits are slightly flexed.
3. In which the palmar fascia is involved and one or more digits are semiflexed.
4. In which the palmar fascia is involved and one or more digits are totally flexed.

In a bilateral case the two hands may be affected in different stages. The disease is very chronic; in some cases it may remain stationary for many years and in others it may develop comparatively rapidly, Stage 4 being reached in the course of a few months from the onset of the disease.

In the first stage a cord-like thickening of the palmar fascia is felt extending backwards from the base of one or more digits; in a few instances this has been preceded by or associated with a little pain in the palm, but generally the disease comes on painlessly. Next, the skin over the thickened, cord-like fascia usually becomes puckered at one or more places in a characteristic way. As the disease progresses the affected digits become more and more flexed into the palm and the skin intimately adherent to the fascia. Lastly, the interphalangeal joints may become dislocated.

The disease may affect one or both hands; when unilateral the right hand is the more frequently involved. Some observers, who appear, however, to be in the minority, believe that the disease is more often bilateral. My figures are as follows:

Bilateral	104
Unilateral—	
Right hand	89
Left hand	47
Total	240

Dr. Hume[1] collected 118 cases among men and found 40 bilateral and 78 unilateral cases (57 right hand, 21 left hand). On the other hand, Dr. Keen[3] of Philadelphia noted that in 184 cases both hands were involved 103 times and one hand 81 times (right hand 58, left hand 23).

The digit most commonly affected is the ring finger, next the little finger, then the middle finger, then the thumb, and lastly the forefinger. Some observers have stated that the little finger is most frequently involved, but this is not the experience of the majority.

Etiology.

Sex.—The disease occurs in men much more frequently than in women. I examined the inmates of the Nottingham Workhouse and found 57 cases of Dupuytren's contraction among 270 old men, or 21 per cent., and only 3 cases among 168 old women, or 1.8 per cent. Of the 240 cases collected by me, 19 only were women. Dr. Keen noted the sex in 227 cases of the disease, and of these 187 were men and 40 women, but his figures are not of great value, as he does not state the numbers of the men and women examined. Noble Smith[4] examined 700 aged inmates of London workhouses, and found 55 cases of the disease among the 300 men, that is 18.3 per cent., and 15 cases among the 400 women, that is 3.75 per cent.

Age.—The disease occurs in middle and late life. The average age of the 270 old men examined by the writer at the Nottingham Workhouse was 63, and of these 21 per cent. were afflicted with the disease. De Lom, a surgeon in the British army, found only 3 cases among 203,000 soldiers between the ages of 17 and 35.

Heredity.—The disease often runs in families, and the hereditary tendency has been repeatedly observed. Keen found, out of 198 cases in which the family history was noted, that in 50, that is 25 per cent., members of the patients' families had been affected. Dupuytren's contraction has been known to occur through three and even four generations.

Class.—It has repeatedly been said that the disease in the non-working classes is as common as or more common than in the working classes. The only figures that bear on this question of the class affected are those of Dr. Keen and my own. Keen collected the records of 123 cases of this disease where the occupation was given; of these 49 were working class and 74 non-working class. In order to obtain information on this point I communicated with a number of general practitioners in the Nottingham district and received replies from 135, giving particulars of 131 cases of Dupuytren's contraction. These cases were analysed as follows:

Males	115
Females	16
Right hand	52
Left hand	29
Bilateral	50
Working class	63
Non-working class	68

The occupations of the affected persons were recorded.

These figures show a smaller difference in favour of non-working class than the figures given by Keen.

Associated Conditions.—Rheumatism or gout has been found to be associated with Dupuytren's contraction by many observers in numerous cases. Keen noted a history of gout in 95 out of 198 cases—that is, 48 per cent. of his cases had a gouty history. Luff believes there is no connexion between this disease and gout. It has been observed by several writers that in rare cases the disease is associated with a similar affection of the plantar fascia. Diabetes was found by Teschemacher[5] to be associated with 33 out of 213 cases observed by him.

CAUSATION.

As to the cause of Dupuytren's contraction there are two antagonistic theories—namely: (1) That the disease

is brought about by external agencies—that is, palmar stresses; and (2) that it is due to an internal or constitutional factor. Some authorities believe that there is a combination of both causes.

The palmar stresses may consist of repeated blows or pressures in the palms of the hands, causing many slight injuries, with resulting chronic inflammation, and, finally, fibrosis and contraction; thus the use of the chisel by carpenters, the reins by cabdrivers, the spade by gardeners, and, among the non-working classes, the use of the oar, the gun, the golf club, the polo stick, the cricket bat, and so on, are all suggested as capable of causing palmar stresses.

The supporters of the constitutional theory of the causation of the disease include a number of writers, such as Sir William Fergusson,[6] Little,[7] Keen, [3]Adams,[8] and William Anderson,[9] the last three being probably the leading writers on the disease. Keen states: "Its cause lies deeper than any local influence, and a constitutional vice like gout or rheumatism, if sought for, will nearly always be found." Adams states: "It always depends upon a constitutional rather than any local cause." William Anderson doubts whether occupation predisposes to or causes the condition, and states: "There is no question that the earlier observers greatly exaggerated the importance of this factor. It appears, indeed, that in various callings which involve much rough treatment of the palm, the affection is even less common than in the rest of the community."

In 1910, Mr. Wardle, the Secretary of the Amalgamated Society of Operative Lace Makers, having found a large number of the lace "twisthands" or "minders" of lace machines in Nottingham affected with the disease, communicated with the Chief Inspector of Factories, with the result that Dr. Edgar Collis, one of H.M. Medical Inspectors of Factories, and Mr. Robert Eatock, the Inspector of Factories in Nottingham, made a careful investigation.[2] They examined 1,156 "twisthands" employed in 182 factories, and found 85 cases of Dupuytren's contraction—that is, 7.35 per cent. They also examined 652 tinplate makers and 1,003 granite dressers, finding no cases among the former and only three among the latter. Their conclusions were as follows: "(1) The disease is more than usually prevalent among the lace-machine minders; (2) this prevalence has a direct relation to (*a*) the frequency with which the levers and wheels of the machines are manipulated, and (*b*) the power to actuate these levers and wheels, and their size, shape, and position."

A Departmental Committee, consisting of Mr. Ellis Griffith, K.C., M.P., Sir Clifford Allbutt, K.C.B., His Honour Judge Ruegg, K.C., and Dr. Morrison Legge, was appointed by the Home Secretary to inquire into this matter. The Committee examined "minders" of lace machines at work in the city and district of Nottingham and took evidence from various persons, including a number of medical men from different parts of the country. The minutes of the evidence and the report of the Committee have been published.[1]

Some medical men gave evidence that palmar pressures or stresses were the exciting cause in all cases, and prominent in upholding this view was Dr. Collis. Others, like Dr. F. Shufflebotham, stated that the disease might be due to this or some constitutional cause. Mr. Robert Jones thought that the cause was probably a predisposition in an individual with palmar irritation as the exciting cause. I was among those who suggested that the cause was internal or constitutional.

The evidence I gave before the Committee was based on information derived from various sources. First, there was the return from the medical practitioners in the Nottingham area already referred to, which showed fewer cases among the working class than among the non-working class. Secondly, I had examined the in-patient records of the Nottingham General Hospital for the seven years 1905 to 1911 inclusive, and out of 21,471 in-patients found only one case admitted for Dupuytren's contraction, whereas during the seven years 1903 to 1909 at St. Thomas's Hospital, out of 50,224 patients admitted there were 21 cases of the disease; this shows that the disease is more rare in the Nottingham Hospital than in St. Thomas's Hospital. Thirdly, I examined the hands of 1,329 lace machine "minders" or "twisthands" at work in the city and district of Nottingham employed in 68 factories, and found 23 cases of Dupuytren's contraction among them—that is, 1.7 per cent. of the twisthands examined were affected with the disease. There were various cases of congenital contraction, contraction following a wound, abscess, or burn, but these were, of course, disregarded as not being cases of Dupuytren's contraction. The discrepancy between my percentage—namely, 1.7, and that of Dr. Collis, who found 7.35 per cent. affected—may perhaps be accounted for by the latter having visited a larger number of the small tenement factories where most of the older men were to be found. There were very few cases of the disease to be met with in the large factories, where for the greater part the "twisthands" were younger men. I examined 1,329 men in 68 factories, Dr. Collis 1,156 men in 182 factories. Fourthly, I examined all the inmates of the Nottingham Workhouse at Bagthorpe, and noted, in the cases of the males, their ages, occupations, and the periods for which they had worked. The results were these:

	Males.	Females.	Total.
Number examined	270	168	438
Cases of Dupuytren's contraction	57	3	60
Percentage	21	1.8	13.7

The statistics obtained regarding the 270 males were analysed as follows:

	Average Age.	Average Number of Years at Work.
57 men affected with Dupuytren's contraction	67.6	41.8
213 men free from the disease	61.8	40.4

It will be seen that the average age of the men affected with the disease was 5.8 years higher than those unaffected, whereas the average number of years worked by the former was only 1.4 higher. Thus the length of time a man is at work seems to be a less important factor than his age.

The 57 cases of the diseases are analysed as follows:

	Total.	Average Age.	Average Number of Years at Work.
Cases in the 1st stage	19	68.8	35
Cases in the 2nd, 3rd, or 4th stage...	38	67	43.6

This table shows that the first or earliest stage of the disease occurred in men who were older but had done much less manual work in their lives than those affected with the disease in its later stages. And on comparing this table with the previous one it appears, curiously, that the men unaffected with the disease had on an average done much more work than the men affected in the first stage. Of the 270 inmates, 20 had worked as lace twisthands, and of these 20 only 3, that is, 15 per cent., were affected with Dupuytren's contraction, a percentage less than the average, in spite of the fact that the lace twisthands had worked longer than the average. The figures are analysed as follows:

	Average Age.	Average Number of Years at Work.	Number Affected with Dupuytren's Contraction.	Percentage.
Total inmates, 270...	63	40.7	57	21
Twisthands, 20 ...	64.1	43.7	3	15
Total excluding twisthands, 250 ...	62.9	40.5	54	21.6

Advocates of the theory of "external causation"—that is, that pressure or stress is the cause—of Dupuytren's contraction have explained (1) the greater prevalence of the

disease in the male sex as being possibly due to the hands of males, as a class, being subjected to rougher usage than those of females; (2) the greater prevalence among old men as being possibly due to their hands having been subjected to stress for longer periods than those of younger men; and (3) the prevalence among men of the leisure class, equally with those of the working class, as being possibly due to individuals of the former class having played games, such as golf, polo, and cricket, which give undue work to the hands.

These three explanations are interesting rather than convincing, for, as regards the first, it may be noted that there are other diseases, such as cancer of the stomach, which are rarer among women than among men. As regards the second, we have, as shown above, statistics showing, for workhouse inmates, a greater prevalence of Dupuytren's contraction in the first stage among men who had used their hands for a *longer* than among those who had used them for a *shorter* period; and, as regards the games of the leisured class, it cannot readily be believed that the amount of pressure or stress to which the hands of a golf player are subjected (and golf is almost the only game which to a large extent is practised by men who have left their youth behind them) has any approximation to the stress on the hands of a working man.

Even the further suggestion that the greater prevalence of Dupuytren's contraction in the right hand (the hand most used) supports the theory of "external causation" must, I fear, be discarded as being plausible rather than satisfactory, for we must not forget, first, that in a right-handed person there is a greater blood supply to the right hand than to the left; secondly, that cases of Dupuytren's contraction have been found in the left hands of right-handed persons; and, thirdly, that in nearly one-third (more than one-third in my experience) of the unilateral cases the hand affected is the left.

The tendency of Dupuytren's contraction to affect both hands, which would seem to be opposed to the theory of external causation, has never yet, so far as the writer can ascertain, been explained satisfactorily. One of the attempted explanations is that the disease becomes bilateral by "sympathetic" inflammation, and is akin to the "sympathetic" inflammation of the right eye when the left eye is inflamed and vice versa. This explanation (indeed the whole theory of "sympathetic" inflammation) is scarcely worth serious attention, in view of recent investigations showing that particular examples of what used to be regarded as "sympathetic" inflammation were due actually to the direct conveyance of organisms from one part of the body to another. Another attempted explanation of unilateral cases of Dupuytren's contraction becoming eventually bilateral is that when one hand is affected with the disease the other hand is required to do more work. This explanation is not very important, for it seems to be applicable exclusively to the rare cases in which a man's right hand is rendered so useless that he has become, and has remained for a great many years, a left-handed man.

It has already been mentioned that in rare cases of Dupuytren's contraction of the hand the plantar fascia of the feet has been found to be similarly affected—an indication, apparently, of the disease being entirely independent of the mechanical causes assigned by the advocates of the "external causation" theory. Nor on this theory is it apparent how the *hereditary* tendency of the disease can be explained, or the fact that "beat-hand," an affection due to external stress, is rarely, if ever, followed by Dupuytren's contraction. Though I realize that in the existing state of our knowledge it would be unscientific to assert that the disease is wholly unconnected with external pressure, I must decline to admit that the advocates of the "external causation" theory have, as yet, proved their case. I even venture to surmise that the true cause, or at least the principal cause, of Dupuytren's contraction will eventually be recognized to be a certain internal condition (possibly akin to a gouty or rheumatic condition) among persons of advancing age.

TREATMENT.

The treatment of Dupuytren's contraction requires great care and patience, but the results are often most encouraging.

Non-operative Treatment.—In the earlier stages of the disease, when there is the slightest tendency to contraction, the patient should wear, at night only, a well-padded splint on the affected finger, for the purpose of hyper-extending it. Care must be taken to avoid giving pain, for pain would indicate that the extension was excessive, and more harm than good would be done. In combination with "extension," manipulations, massage, hot water, and Bier's treatment are useful. Fibrolysin injections have been tried, but the results cannot, on the whole, be regarded as encouraging. Ionic medication has also been tried. Leopold-Levi,[10] who believes that Dupuytren's contraction is a symptom of thyroid deficiency, tried internal treatment with thyroid extract in 7 cases, with favourable results in 5. The daily dose consisted of 10 centigrams of thyroid powder, and in one case as many as 163 doses were given.

Operative Treatment.—When non-operative treatment fails, and in advanced cases of the disease, an operation is necessary. Apart from amputation (which, of course, must be reserved for exceptional cases of a very troublesome kind) there are two operations, known as the open and the subcutaneous respectively. In the *open* operation skin flaps are dissected from the palmar fascia; the palmar fascia is then excised and the wound is closed. The greatest care must be taken to keep the parts aseptic, for if the wound suppurates the operation will fail and the contraction will become excessive. The operation is by no means easy; it requires much patience; the dissecting back of the skin flaps from the adherent palmar fascia is troublesome, and the excision of the fascia from the sheaths of the flexor tendons must be done bit by bit. When this excision has been completed the digits, in favourable cases, will be found to be free and capable of being almost completely straightened. At this stage some surgeons rub fibrolysin into the open wound. The skin is then closed, and a well-padded splint is attached to keep the digits as straight as possible. The splint must be worn for some weeks uninterruptedly and afterwards at night only, until the digits are straight and all tendency to contraction has been overcome. The *subcutaneous* operation gives excellent results if carefully carried out after the manner described by Adams.[8] A very fine tenotomy knife is inserted between the skin and the tense bands of the palmar fascia, all of which, through as many punctures as may be necessary, are carefully divided. Generally, from six to ten punctures suffice, but in extensive cases as many as twenty punctures may have to be made. A properly devised finger splint is then applied and worn continuously until the digits are straight; afterwards the splint is worn at night only for several months. In the event of a relapse, which is uncommon, the operation can be repeated.

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DR. A. L. GARBAT publishes in the *Journal of the American Medical Association* of February 6th an article on sensitized *versus* non-sensitized bacteria in the prophylaxis and treatment of typhoid fever, with a report of 17 cases treated with sensitized vaccine. Dr. Garbat concludes that the treatment of typhoid fever by sensitized typhoid bacteria offers a more rational therapy from an immunological point of view than treatment by the ordinary non-sensitized vaccine. The repeated inoculation of large doses of sensitized vaccine, even in patients already very ill, was not attended by any harmful effects or a distinct negative phase. The general course of the disease seemed milder, and the complications fewer. Improvement was usually gradual, but crises occurred in a small percentage of cases. Dr. Garbat suggests that perhaps more striking results may be attained by a larger number of smaller doses more often repeated.

POPLITEAL ANEURYSM IN A GIRL: MATAS'S RESTORATIVE OPERATION.

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THE case is interesting on account of the rarity of pathological aneurysm in children:

C. B., a girl aged 12½, whose father, mother, two brothers, and a sister were all healthy and robust, had always been considered delicate, though she had had no serious illness. She did not begin to walk till she was 3½ years old. She was about 5 ft. 8 in. in height and very slender; she had recently menstruated for the first time rather profusely. There was no history of bleeding or of being easily bruised, but any cuts or abrasions had always been very slow in healing.

On July 17th, whilst standing in the yard, she felt a sudden sharp pain in the back of her knee. She had not been making any exertion, was in her normal health, and had been at school the day before. The pain was so bad that she could not move. She was carried into the house, when it was found that the knee was much swollen.

When I saw her next day the knee was semiflexed and rigid, the slightest attempt at movement giving extreme pain. The outline of the knee seemed normal from the front, but the popliteal space was filled with a hard tender mass, non-fluctuating and non-pulsating. Around the margin was some slight ecchymosis. The foot was cold but not blue, and there was slight oedema round the ankle. Pulsation could be faintly made out in the posterior tibial artery. Pressure on the femoral artery did not relieve the pain or reduce the size of the swelling. Pulse, heart, and temperature were normal, and the other arteries showed no evidence of disease. As there was evidently a rupture of the politeal artery, I advised the leg to be well elevated, evaporating lotions to be applied, and prescribed calcium lactate gr. xx to be taken night and morning for four days.

In a few days the swelling was a good deal diminished, and the pain almost gone except on deep pressure. The knee could be fully flexed without pain, but could not be extended beyond a right angle.

On August 30th slight pulsation could be felt in the popliteal space, which was still filled up by a hard mass, and a very loud systolic bruit could be heard over the whole length of the space. On September 9th there was visible pulsation, definitely expansile, and accompanied by a very distinct thrill. Pressure on the femoral artery stopped the pulsation, and when it was relaxed the swelling could be seen to fill up and pulsate. There was practically no pain unless an attempt were made to extend the leg forcibly. Continuous digital compression of the femoral artery for twenty-four hours was tried, but it had no effect on the aneurysm, which seemed to increase in size daily.

Operation.

On September 23rd anaesthesia was induced by open ether, and the limb was exsanguinated by elevation, an elastic bandage, and a tourniquet half way up the thigh. A median posterior incision was made in the popliteal space, the external saphenous vein and nerve well drawn to the outer side, and the popliteal artery exposed. The popliteal vein was stretched out and very adherent to the back of the sac; it was extremely friable, and unfortunately tore, but I was able to suture it with fine silk. The sac was then opened along its whole length without making any attempt to free it from the surrounding tissues. It was about the size of a small hen's egg; the walls were about ⅛ in. thick, with a well-marked endothelial lining. It contained a very small quantity of soft dark clot. The blood clot was removed, the cavity washed out, dried, and smeared with vaseline. At the inner side there was a slit-like opening about ¼ in. long, which communicated with the main artery. The opening into the artery was closed with a continuous suture of fine silk on the smallest curved intestinal needle, both being well smeared with vaseline as recommended by Carrel.

The sac was then sewn up with 0000 chromic catgut in three tiers of continuous sutures, completely obliterating the cavity, and one silkworm gut suture passed through the skin and sac walls and tied on the outside.

The tourniquet was then loosened. There was no haemorrhage accept from some small veins, which was easily stopped. The artery could be seen pulsating.

The skin was united with horse-hair covered with collodion gauze, and a poroplastic splint was applied; the patient was returned to bed, and the limb was raised on three pillows. The foot and leg were warm and a good colour.

After-History.

Recovery was uneventful. There was no pain or discomfort beyond some tingling in the little toe due to irritation of the external popliteal nerve, and this disappeared in a few days. Stitches were removed on the tenth day when the wound was perfectly healed. The knee could then be fully extended without pain. No pulsation could be felt in the popliteal space. She was kept in bed for three weeks, during the last of which gentle passive movements were commenced.

According to Matas,[1] popliteal aneurysm is very rare under 15 years. Syme records a popliteal aneurysm in a boy of 7, and Hodgson a carotid aneurysm in a girl of 8. Poynton[2] states that aneurysm in childhood, apart from those due to malignant endocarditis, is a very rare event. In this case there was no evidence of cardiac disease, no syphilitic taint, and no other evidence of arterial disease except the general fragility of the system, or, as Osler says, "in the make-up of the machine, bad material was used for the tubing." The case also shows the short time required to form a definite sac lined with a well-formed coat of endothelium, and the very little effect that the twenty-four hours' compression had on the formation of clot in the sac.

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"HERNIE PAR GLISSEMENT."

BY
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"HERNIE par glissement," or sliding hernia, is a hernia of large bowel in which, as its name implies, the bowel slides down into the inguinal canal, taking its mooring—the mesenteric attachment—with it. The hernia usually forms a large swelling, as the parts have undergone considerable inflammatory hypertrophy, but it is with difficulty diagnosed before operation; small intestine is nearly always present as well in the sac. It is of fairly common occurrence, having been met with twice amongst the last 67 cases of inguinal hernia in my practice. In one of these the hernia occurred on the right side, when the caecum, appendix, about one foot of colon, and three feet of small intestine were found in the sac; the other occurred on the left side, where the descending colon and part of the pelvic colon were the portions of gut involved.

The *hernie par glissement* may descend into a peritoneal pouch already present in the inguinal canal, as was the condition found in the first case. Here there was a patent funicular process, and into this the caecum, appendix and colon had slid, together with small intestine, so that when the bowel was returned to the abdominal cavity there was still the funicular process to deal with. But in the second case the ilio-pelvic colon had apparently slid down into the left inguinal canal, making its sac as it went; when the bowel was returned to the abdominal cavity the sac was obliterated and a hole in the anterior parietal peritoneum remained, which was the original incision made in opening the sac. The condition is recognized at operation by finding large bowel attached to the back of the sac by its mesentery.

The importance of these cases lies in the method of radical cure adopted. In the first case I was content with returning the bowel into the abdominal cavity, closing the opening in the peritoneum, and carefully suturing the internal oblique muscle and conjoined tendon to Poupart's ligament, as in an ordinary radical cure. Within a few months the patient returned with the hernia as bad as ever, and this one could not be surprised at, considering the lax condition of the musculature of the inguinal canal—as is the case in all large herniae—and the mobile state of the large bowel, which would be likely to extrude itself again through any weak spot in the abdominal wall. In order, therefore, to attain a satisfactory radical cure these two conditions—that is, laxity of abdominal wall and mobility of colon—have to be remedied.

The abdominal wall is best strengthened by incorporating a wire filigree between the internal oblique muscle and external oblique aponeurosis above the inguinal canal and another behind the cord and in front of the internal oblique and conjoined tendon sutured to Poupart's ligament in the length of the canal.

The mobility of the colon is remedied by suturing the lowest part of the mobilized bowel—that is to say, the caecum on the right side and the ilio-pelvic colon on the left to the peritoneum lining the iliac fossa and to the fascia and muscle lying under it. This is done through a separate rectus incision, so as not further to weaken the abdominal wall by dividing the internal oblique muscle across its fibres.

The results of this line of treatment in these two isolated cases have been excellent.

INSECTS AND WAR:

XII.—*THE MOSQUITO* (*Anopheles maculipennis*).

BY

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(*Continued from p. 285.*)

The tiny trumpeting gnat can break our dream when sweetest.—TENNYSON.

It is now pretty well accepted that the auditory organs of the mosquito are situated in the antennae. Sixty years ago Johnston of Baltimore was investigating the hearing apparatus of a gnat, and came to the conclusion that "the animal may judge of the *intensity* or *distance* of the source of sound by the *quantity* of the impression; of the *pitch*, or *quality*, by the consonance of particular whorls

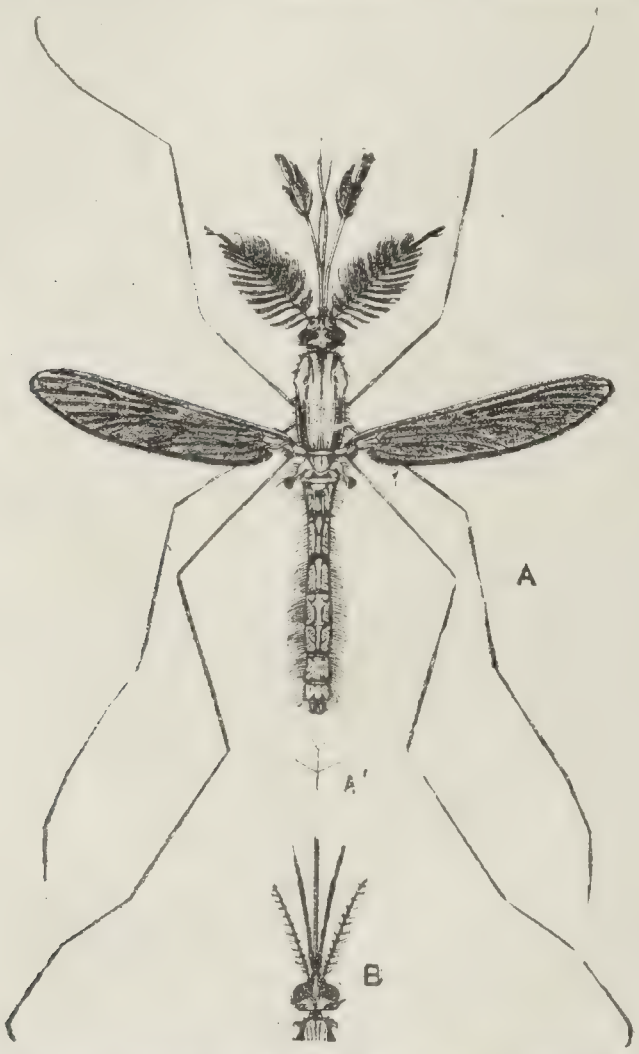


Fig. 1.—A, *Anopheles maculipennis*, male, showing large, feathered antennae. B, Head of female, showing antennae, little developed.

of stiff hairs, according to their lengths; and of the *direction* in which the modulations travel, by the manner in which they strike upon the *antennae*, or may be made to meet either *antenna*, in consequence of an opposite movement of that part. That the male should be endowed with superior acuteness of the sense of hearing appears from the fact that he must seek the female for sexual union either in the dim twilight or in the dark night, when nothing save her sharp humming noise can serve him as a guide." Johnston also notes that the male mosquito is the more difficult to catch. The bushy, complicated antennae of the male shows that of the two sexes with the mosquito, as with man, the male is primarily the hearer or the listener.

Another American, Mayer, twenty years later made some interesting experiments confirming the views held by Johnston. He managed to cement with shellac a species of *Culex* on to a glass slide, and, placing it beneath a low-powered microscope, watched the response of the antennae to tuning-forks of varying strengths. He found that under the influence of a fork producing 512 vibrations per second certain hairs of the antennae vigorously vibrated, whilst others were left unmoved. He measured the amplitudes of the vibrations of these hairs under the influence of the sound emitted by various tuning-forks. Different hairs were seen to vibrate to different notes. Mayer also observed that when the sound came from a direction in line with the long axis of the antennary hair vibrations ceased altogether. Hence he argued that the antennae could register the direction whence the sound came. Observing the antennae under the microscope, he confirmed the view that the vibrations ceased when the hairs pointed towards the source of sound, and on drawing a line in the direction in which the hair pointed, he found that it always cut within 5° of the position of the source of sound. He concludes:

"The song of the female vibrates the fibrillae of one of the antennae more forcibly than those of the other. The insect spreads the angle between his antennae, and thus, as I have observed, brings the fibrillae, situated within the angle formed by the antennae, in a direction approximately parallel to the axis of the body. The mosquito now turns his body in the direction of that antenna whose fibrils are most affected, and thus gives greater intensity to the vibrations of the fibrils of the other antenna. When he has thus brought the vibrations of the antennae to equality of intensity he has placed his body in the direction of the radiation of the sound, and he directs his flight accordingly, and from my experiments it would appear that he can thus guide himself to within 5° of the direction of the female."

There has always been some divergence of opinion as to how the buzzing sound to which the male so readily reacts is produced. Howard once thought that it was due to vibrations of certain chitinous processes in the large tracheae. Our experiments showed, however, that when the wing was cut off closer and closer to its origin the

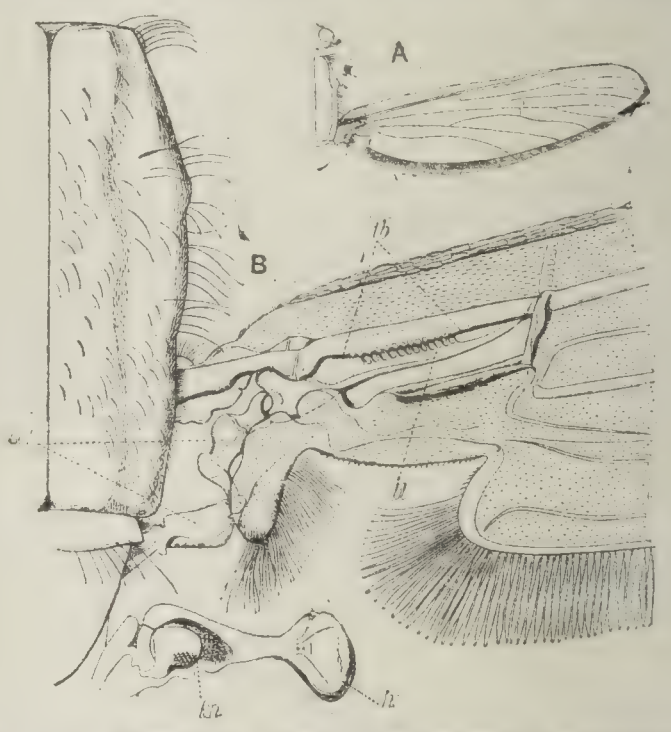


Fig.—2.—B. Right half of thorax of *Anopheles maculipennis*, Meig, with base of right wing and right halter, magnified about 90-100. A, The same magnified about 15 to show the area which bears the stridulator. *tb*, The teeth which rasp on the ridges borne by *d*. *d*, Distal chitinous sclerite bearing a claw which works in. *kn*. Papillae on knob. *h*, Distal end of halter. *scl*, Chitinous thickenings.

sound decreased in volume but the note progressively rose. The males at all times gave a higher pitched note than the female, and in both sexes the note rose after feeding. "The greater the meal the higher the note." This is, however, by no means confined to mosquitos. It is a matter any one must have noticed when assisting at a public dinner or when dining in a College Hall.

Three unfed females gave a note of from 240 to 270 vibrations. One unfed female gave an abnormally low note of about 175 vibrations. Four other females which were arranged in the order of the distension of the abdomen after food gave notes corresponding to 264–281–297–317 vibrations; whereas three unfed males all gave exactly the same note corresponding to 880 vibrations. The explanation of the higher note of the males is probably that their wings are markedly narrower and shorter than those of the females.

Whilst working at *Anopheles* Mr. Edwin Wilson, the artist who was drawing our plates, observed at the base of the wing a structure which may possibly account for the tone which is so characteristic a feature of the buzzing. The articulation of the wing with the body is extremely complex. There seem to be a series of structures like a

series of minute knuckle bones articulated with one another, and at the outer end of the series are two ribbed rods which may play some part in the production of the over-tones. One is a chitinous bar with some fourteen or fifteen well-marked teeth. In certain circumstances we consider that this rod can rasp across the ridges of the bar below it. As the wing is raised and lowered it seems probable that the slightly movable rod A would be drawn across the ridged bar B. (See Fig. 2.)

We have mentioned above that the mosquito's note increased in pitch as the wings were shortened until a very short stump was left. But as long as these stumps were left a note was heard, and these stumps would undoubtedly include the apparatus just described, for it is next and nighest the insertion of the wing into the body. But Dr. Nuttall found that when even this short stump was removed all perceptible sound ceased, which is certainly an argument in favour of these rods and bars playing some part in the production of the buzzing, and in opposition to the view of Howard and others that the buzzing is caused by certain chitinous structures in the tracheae.

M. J. Perez[1] has carefully gone into the question of the production of sound in the Diptera. He claims to have shown experimentally that the stigmata take no part in the production of sound. "Les causes du bourdonnement résident certainement dans les ailes." He, too, points out that if the wings are cut short the note becomes more acute, until the *timbre* resembles that of certain interruptors which break and make an electric conductor. This sound we should attribute to the stridulator described above. M. Perez definitely states that both in the Diptera and in the Hymenoptera the buzzing is due to two causes, "l'une, les vibrations dont l'articulation de l'aile est le siége et qui constituent le vrai bourdonnement; l'autre, le frottement des ailes contre l'air, effet qui modifie plus or moins le premier." The apparatus we have described is, we believe, the mechanism by means of which the first vibrations are produced.

In the same periodical M. Jousset de Bellesme[2] confirms the statement that both Dipterous and Hymenopterous insects emit two sounds, one deep and one acute, and states that the latter is usually the octave of the former. It is this double note which gives rise to the peculiar buzzing associated with these two orders of insects. M. de Bellesme, like M. Perez, discards the view that acute sounds are due to any action of the issuing air in the stigmata, and attributes it to the vibrations of the pieces of the thorax which support the wing, and which are moved by the muscles of flight. It is usually stated that these muscles are not inserted into the wing, but into the sides of the thorax, to which the wing is so attached that when the lateral walls of this part of the body are deformed by the action of the muscles the wings move up and down. But whether this be the case or not, it is clear that the vibrations of the sides of the thorax caused by the muscles of flight—and causing the vibrations of the wing—will synchronize in number with these wing vibrations, and will give forth the same note. The existence of the higher note—"usually the octave" of the one produced by the wing vibrations—is unexplained by this view. It is, however, easily explicable if such a stridulating organ as we have described at the base of the wing in *Anopheles maculipennis* be found in other Diptera and in Hymenopterous insects.

In our paper Mr. Wilson and I thought it well to figure the upper surface of the halter as seen under a high magnification. The drawing showed the hinge on which the halter quivers—the certain basal papillae, as Weinland[3] calls them. There is little doubt that the main function of the halteres is that of balancing and orientating the insect. They may, however, have a secondary function; in some flies they are known to vibrate with extreme rapidity. It is just possible that in these rapid vibrations the papillae of the concave surface rubbing against those of the convex basal plate may produce a note. As long ago as 1764 von Gleichen-Russworm[4] observed that when the halteres of the common house-fly are removed the volume of the buzzing diminished. This, however, in all probability is due to the diminished activity of the wings. On the other hand, Professor Stanley J. Gardiner informs us that he has noticed that mosquitos still continue to give forth a faint note even when their wings are quite at rest, and this note may possibly be caused by the halteres.

The part which sound plays in the life of the mosquito has not been very fully recognized. Grassi says that people who are talking are more liable to be bitten by *Anopheles* than people who are silent—and quite properly, we think; people are apt to talk too much, especially in trains. Joly observes in Madagascar that mosquitos are attracted by music. When he played a stringed instrument the quiescent mosquitos in his room began to fly about, and if the windows were open mosquitos were attracted from the outside into his room, and he notes that mosquitos are attracted by musicians when at work.

Two curious instances, one recorded by Howard and the other recorded in a letter to the *Times*, of the attraction that electric buzzings have on these insects should be given. Mr. A. de P. Weaver, an electrical engineer, of Jackson, Miss., U.S.A., records that, when engaged in some experiments in harmonic telegraphy, he observed that when the note was raised to a certain number of vibrations per second, all the mosquitos, not only in the room, but from the outside, would congregate near the apparatus, and were, in fact, precipitated from the air with a quite extraordinary force, hurling their frail bodies against the buzzing machinery. This machinery formed, in conjunction with sticky fly-paper, an excellent means of capturing them. Mr. Weaver then devised a means of electrocuting the pests. He used a section of unpainted wire screen mounted on a board with pins driven through the meshes, the heads of the pins being flush with the surface of the screen. The bodies of the pins were then electrically connected together, and the whole forming one electrode of the secondary coil of an induction coil, whilst the wire screen formed the other electrode. An alternating current of high potential was passed, and when the note was sounded the insects precipitated themselves to their doom, being electrocuted the moment they touched the apparatus.

A somewhat similar story is told by Sir Hiram Maxim in the *Times* of October 29th, 1901. One of the lamps in an installation which was put up in Saratoga Springs, New York, hummed in an agreeable manner, and he noticed that night after night this lamp was covered with small insects. On closer examination he found that they were all mosquitos, and all males.

REFERENCES.
[1] *Compt. Rend. Acad. Paris*, lxxxvii, 1878, p. 378. [2] Ibid., p. 535. [3] *Zeit. f. wissensch. Zool.*, li, 1891, p. 55. [4] *Geschichte der gemeinen Stuberfliege*, Nuremberg, 1764.

THE VALUE OF SALICYLIC ACID IN THE TREATMENT OF WOUNDS AND TYPHOID FEVER.

BY ALBERT WILSON, M.D.,
LONDON.

I WAS so impressed by the value of dry salicylic acid powder in the treatment of the wounded soldiers in France that I recently formulated the following series of experiments *in vitro*. I am indebted to Mr. J. Gilbert Hare, now Bacteriologist to the Hospital of the Alliance, Yvetot, for affording me the use of his laboratory and giving personal supervision; and also to Mr. Dudley-Ward for the accurate carrying out of the technique.

Some have attributed to this drug a saponifying action, but this is surely a term limited to alkaline hydrates in the presence of fats. It has, however, a liquefying action, but of what nature I cannot explain. I was repeatedly struck with its effect in causing dense, often fibrous, sloughs to disappear quickly. The bright red granulating surfaces which followed negative any suggestion of caustic action. The offensive odours would disappear in perhaps twenty-four hours. It caused neither pain nor irritation, however freely applied to wounds. This important fact should be noted by any who may hesitate to use it on account of its well-known solvent action on horny material—corns, etc. It may even be introduced into the abdomen in septic cases.

In former years, when I had a number of cases of typhoid fever to treat, I obtained a large measure of success by the use of salicylic acid as an intestinal antiseptic; and the same in diphtheria (dissolved in glycerine). In typhoid fever I gave it in water, which is rather difficult, as the drug must be rubbed down in a mortar; or mixed with bismuth and mucilage as a vehicle. It had a distinct

effect, not only on the temperature but also on the whole clinical picture.

The effect of salicylic acid in varying strengths was tested on the organisms which attack the intestinal tract as well as those responsible for inflammation, septicaemia, and tetanus. The ordinary agar was found to take up only to 0.5 per cent.; higher strengths than this caused liquefaction of the media—the very process which is useful in removing sloughs when the powder is freely dusted on the wound.

The strengths of the agar tubes were arranged from 0.5 down to 0.025 per cent. of salicylic acid. In these strengths it had no effect on the *B. coli communis* nor on the *B. pyocyaneus* In 0.5 per cent. the *B. pyocyaneus* did not produce the typical greenish-blue tint in the media, but a faint reddish-brown colour; below 0.5 per cent. the colour was unchanged.

B. dysenteriae (Shiga), *B. typhosus*, *Staphylococcus aureus*, and *B. subtilis* were all absolutely prevented growing by the addition of salicylic acid to the media in strengths of 0.1, 0.2, 0.3, 0.4, and 0.5 per cent. They grew at 0.05 and 0.025 per cent.

Streptococcus pyogenes, *B. diphtheriae*, *B. pneumoniae* (blood serum agar used for this organism) were likewise prevented from growing by salicylic acid in strengths of 0.2, 0.3, 0.4, and 0.5 per cent.; but grew on strengths 0.1, 0.05, and 0.025 per cent.

An active culture of *B. tetani* was procured, and salicylic acid was mixed with glucose agar in the same strengths, but at 0.05 per cent. the medium became liquid, and would not solidify. Strict anaërobic precautions were observed. After a week's incubation it was found that the organism grew freely in strengths of 0.025, 0.05, and 0.1 per cent.; on the other hand, the organism was absolutely inhibited in strengths of 0.2, 0.3, and 0.4 per cent.

I strongly commend these experiments to the consideration of those engaged in the present campaign. In typhoid fever I suggest the use of 3 to 5-grain doses of salicylic acid given with milk, so as to be carried more quickly into the bowel, or in suspension with bismuth and mucilage. The effect of excessive dosage in normal individuals is a slight diarrhoea with dryness of the evacuations. In typhoid this would not give rise to any complication nor depression.

For wounds I would urge the use of salicylic acid as a first dressing on the field to be applied by the patient or his comrades. A convenient method would be pads of salicylic wool between layers of gauze, after the style of gamgee tissue. In hospitals it could be dusted on from an ordinary perforated container.

I have not had the opportunity of testing *in vitro* the various anaërobic organisms which have been so troublesome and conspicuous in the western war area, but my clinical experience there amply proved the value of salicylic acid in destroying these organisms.[1]

Apart from its convenience and easy application, salicylic acid has special advantages over carbolic acid or iodine. The former is hardly reliable under 5 per cent., while 2 per cent. iodine, besides being painful, has a doubtful and unproved reputation, and may lead to sloughing in damaged tissues. Security is obtained by 0.5 per cent. salicylic acid, while antisepsis actually occurs at 0.2 per cent., or 1 in 500. The fresh serum, being alkaline, takes up the full dose of salicylic acid, so that the threshold of invasion is constantly bathed in a protecting antiseptic.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, November 7th and December 5th, 1914.

THE TREATMENT OF TRICHIASIS BY MEANS OF THE X RAYS.

BY CHRISTOPHER KEMPSTER, M.R.C.S., L.R.C.P.,
PHYSICIAN IN CHARGE X-RAY AND ELECTRO-THERAPEUTIC DEPARTMENT, QUEEN'S HOSPITAL FOR CHILDREN, LONDON.

TRICHIASIS, or ingrowing eyelashes, is a most painful and distressing trouble of the eyelids, causing constant irritation, and frequently more or less severe ulceration, which at times leads to actual loss of vision, and even to destruction of the eyeball.

The treatment hitherto has consisted of (1) repeated epilation by forceps, an operation which requires to be repeated from time to time on account of the hairs being incompletely removed, and also on account of the normal lining of the hair follicle being left in a healthy condition for the reproduction of a further crop of hairs; and (2) various operations which aim at a radical cure of the trouble, and consist of different methods of attempting the removal of the hair-bearing area of the eyelid; but they require the administration of an anaesthetic and skilled after-attention and surgical dressings, and, in the event of failure of complete relief, neither the surgeon nor the patient will readily make a second attempt.

A consideration of these conditions has led me to adopt a line of treatment, in a case which came under my care, consisting of the epilation of the ingrowing cilia by means of the *x* rays, with a result which is so satisfactory to the patient that she declares that she has not known such comfort for many years, the proof of the sincerity of the statement being demonstrated by the disappearance of the chronic inflammation of the orbit and the improvement in her general health and appearance.

The technique of the operation is simple but requires care, both with regard to the protection of the eye and surrounding parts from the rays and also in the delivery of the proper quantity and quality of the rays, as an underdosage will be labour in vain and an overdosage may lead to severe inflammation of the eyelid and subsequently to scarring and contraction of the tissues.

The method adopted by me was the close range method, which I employ in cases of tinea tonsurans. The eyeball was rendered anaesthetic by the introduction of a few drops of 2 per cent. solution of cocaine hydrochloride. A thin sheet of lead, suitably shaped and long enough to protect the lower lid by overlapping it, was enclosed in an envelope of several layers of indiarubber tissue, sealed smoothly by chloroform and introduced beneath the upper eyelid

The upper lid was now closed and held in position by a piece of adhesive plaster placed upon the skin of the upper lid and fastened securely to the cheek. A thick sheet of lead-rubber, having an aperture suitably cut in it, was placed over the face, so as to protect the eyebrow and face generally from the *x* rays, and fastened by strips of plaster. The tube was now brought into position, so that the anticathode was 10.6 cm. from the skin of the upper lid. The exposure lasted five and a half minutes, the tube being of a medium hardness, such as is used for tinea tonsurans; the milliampèremeter registered 0.8. The pastille which was placed upon the lead-rubber protective sheet, and thus as near the irradiated skin surface as possible, showed a colour corresponding to Tint 5 on Dr. Hampson's disc, the dose received being therefore somewhat under the $1\frac{1}{4}$ erythema dose of Sabouraud.

I saw the patient at the end of two weeks, when some of the cilia were beginning to fall. There was no inflammation of the eyelid and she had not experienced any inconvenience. At the end of three weeks the cilia were falling freely and were quite loose in their follicles, and at the end of four weeks they had nearly all fallen; the remaining few, which only needed to be lifted from their sockets, I removed with forceps. The eyeball by this time was wonderfully improved in condition, the inflammation had gone, and the chronic watery appearance had ceased.

A second full dose of *x* rays was now administered with the same protective precautions as upon the first occasion; this also did not produce any inconvenient symptoms.

From time to time I have removed one or two thin weak hairs which have appeared, but they came away quite easily and are now quite absent.

Whether it will be necessary at some future time to administer a further dose of the *x* rays time alone will show, but at present such a repetition does not need to be considered.

The first irradiation took place on August 5th, now more than four and a half months, a period which would give ample time for a regrowth of hairs had any been about to take place. The result of the treatment therefore appears to be very satisfactory.

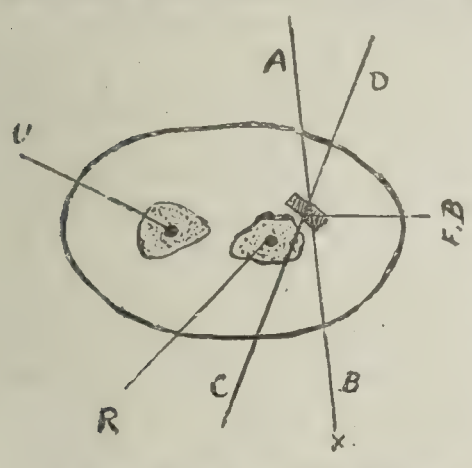
IN a paper in the *Boston Medical and Surgical Journal* (February 4th) Dr. Orville F. Rogers, jun., analyses sixty-nine cases of children giving positive skin tuberculin reactions to von Pirquet's method. He concludes that the mortality among children up to the age of 10 who react to the von Pirquet test is much higher than that of normal children.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LOCALIZATION OF FOREIGN BODIES.

I HAVE read the articles in the BRITISH MEDICAL JOURNAL of January 2nd on the localization of foreign bodies, and wish to explain a method which I have used with some success. It requires neither stereoscopic negatives nor elaborate apparatus. For the sake of illustration let us suppose that a bullet requires localizing in the forearm. The patient places his arm on the table in a supine position, and the observer "centres" the rays upon the foreign body. A metal pointer is then passed between the fluorescent screen and the anterior surface of the patient's arm until its point corresponds with the shadow thrown by the foreign body. Here a mark is made on the skin. The pointer is then passed posteriorly to the patient's arm, and when its shadow and the shadow of the foreign body correspond, another mark is made on the skin. The patient's arm is then placed in semi-pronation and fixed with sandbags, and again marks are made above and below according to the correspondence of the shadow of the tip of the pointer with the shadow of the foreign body.



A, Line of rays passing through points A and B; D, line of rays passing through points C and D after slight pronation; F.B., foreign body; R, radius; U, ulna; X, point of emanation of rays.

A piece of lead tape is then moulded round the arm to cover the points marked on the skin (this must not pass completely round the limb), and on the tape marks are scratched corresponding to the four marks made on the skin. The tape is then removed without bending, and a tracing is made on paper from its inner circumference with the points of marking shown by dots. In the resulting diagram draw a line between the first and second marks, and another between the third and fourth marks; the intersection of these two lines will give the position of the foreign body and show its depth from the skin at any point. In fact, the resulting diagram is a cross-section of the arm showing the depth of the foreign body in the plane of the original marks, which still remain upon the skin. I realize that this simple method is probably most suitable for foreign bodies in limbs, but it may be used on the trunk with equal success, as I have shown in an article published in this JOURNAL last year, entitled "Pneumotomy for Foreign Body." The degree of error is small, and the method evades the interpretation of a stereogram and the calculation of angles.

NOEL BRAHAM,
Lieut., R.A.M.C.
No. 3 Motor Ambulance Convoy,
British Expeditionary Force.

BULLET WOUND AFFECTING THE MOTOR FIBRES OF EXTERNAL POPLITEAL NERVE.

MAJOR A. H. TUBBY, M.S., R.A.M.C.(T.), in the BRITISH MEDICAL JOURNAL of January 9th, remarks:

> It is also possible to conceive that in certain large nerve trunks, such for instance as either of the popliteal nerves where the motor fibres can be split up for a very long distance from the sensory, either a motor or a sensory bundle may be injured, so that in one case motor paralysis alone may exist, and in another sensory symptoms may be present.

The following case appears to exemplify this. L. J. H. was struck by a bullet on October 21st, 1914. It entered on the inner side and a little above the knee, emerged a little external to the middle line behind the knee-joint, re-entered an inch lower down perforating the outer head of the gastrocnemius, and finally emerged on a level with the head of the fibula and 1½ in. posterior to it.

The knee-joint and femur were apparently uninjured, but there was considerable venous bleeding and subsequently much oedema of foot and leg. There was no anaesthesia, but knee and ankle were very stiff and movement was not encouraged.

The wounds healed without suppuration. Massage was not commenced for a few days as it was considered that there was danger of liberating a thrombus from the popliteal vessels.

As the oedema and stiffness passed off it became evident that the foot could not be flexed. On November 4th foot-drop was very evident, and there was a small patch of impaired sensation (one inch square) over the dorsum of the great toe. On November 12th there was very slightly impaired sensation a little above the external malleolus. No other paraesthetic areas were present.

On pressing or pinching the external popliteal nerve in the popliteal space (above the line traversed by the bullet) sensation was produced in the leg and foot. It was considered that the nerve was intact, but that its motor function was in abeyance owing to concussion.

There was not an opportunity of testing electrical reaction. The part was examined with the fluorescent screen, but no foreign body was seen.

Treatment consisted in massage, faradic electricity, and rest. Later, the patient was allowed up. He was advised to wear a stiff boot, and massage and faradism were continued.

Recovery from the motor paralysis had not taken place when the patient passed out of my care (January 1st), but I anticipate that it will do so, irrespective of whatever form of treatment it may be considered necessary to adopt.

E. T. MEAGHER, M.R.C.S., R.N.

A CASE OF TETANUS: RECOVERY.

ON October 26th, 1914, a wounded Belgian soldier was admitted to the military ward of the Royal Southern Hospital, Liverpool. He had been shot in the left forearm, and was suffering from a bad compound fracture of the radius, with cellulitis extending up towards the axilla. The wound had been inflicted on October 20th.

Under an anaesthetic the arm was freely incised and drained with rubber tubes. On October 28th—that is, on the evening of the eighth day—he complained of some pain in the jaw, and next day was unable to open his mouth. He was ordered 1,500 c.cm. of antitetanic serum every six hours, and 15 minims of a solution of 1 in 20 carbolic acid every two hours, by injection under the skin of the right arm. Half a drachm of chloretone was given in an ounce of olive oil by enema at night, but no morphine. The wound was irrigated with hydrogen peroxide and the iodine arm bath used at intervals. Dressing the arm produced intense spasm; he was unable to open his mouth, and was fed with fluids through a gap in his teeth. The condition of the arm gradually improved, but on account of the swelling and spasm no splints could be applied to the fracture. On November 3rd he had an extensive serum rash, most marked on his chest and abdomen; he could not open his mouth, but the spasms were not increasing in intensity. The serum was stopped on November 4th and the carbolic injections continued. On November 11th, as he was decidedly better, the carbolic injections were only given three times a day. On November 16th he was allowed up, all injections were stopped, and splints were put on his arm in order to overcome the contraction. He is now in excellent health, his arm has healed, but there is some pronation of the forearm and inability to hyperextend the wrist perfectly, though these movements are steadily improving. The fracture has firmly united, but there is a good deal of callus.

The primary wound was no doubt caused by a rifle bullet striking the extensor surface of the middle of the forearm, smashing the radius and tearing its way out on the flexor surface below the elbow-joint, giving rise to a huge lacerated wound; there was no carboluria. Though it is difficult to say which of the two remedies was the more efficacious, after an experience of several cases in civil practice I should always use the carbolic injection whether I combined it with serum or not. He had altogether seventeen doses of serum, each consisting of 1,500 units. The short period of incubation is interesting.

G. P. NEWBOLT, M.B., F.R.C.S.Eng.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

THE fourth ordinary meeting of the Branch was held at the Medical Institute on February 11th, when Dr. PURSLOW was in the chair. Major KAUFFMANN, R.A.M.C.(T.), opened a discussion on a study of the medical cases at the 1st Southern General Hospital. His subjects were: Frequency of rheumatic cases, compensation in old-established valvular disease, arterio-sclerosis in the young, trench rheumatism, pleurisy, diseases of the gastro-intestinal tract, typhoid fever, and organic and functional nervous diseases. Major SHORT, Drs. STOCKS, HAWKINS, UNDERHILL, and PURSLOW joined in the discussion.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

GUNSHOT WOUNDS OF THE HEAD.

AT a meeting of this society, held on February 8th, the President, Sir JOHN BLAND-SUTTON, being in the chair, Sir VICTOR HORSLEY opened a discussion on gunshot wounds of the head. His paper appears in full at page 321.

Sir DAVID FERRIER expressed his high appreciation of the admirable exposition which Sir Victor Horsley had given of the mechanism of this class of injuries. His own experience was limited to the after-effects in the form of permanent lesions of different parts of the brain. These did not differ from those of lesions caused by disease or other forms of injury, and corresponded in their symptomatology with the position of the lesion according to the recognized principles of cerebral localization. Thus, there might be met with hemiplegia, or monoplegia of different types; aphasia, motor or sensory; affections of vision, hemiopic or quadrantic; as well as notable absence of either sensory or motor impairment in cases of lesions of the frontal lobe or other so-called silent areas. It was astonishing what extensive lesions of the brain were compatible with a fair degree of both mental and physical health. One of the frequent and distressing effects of lesions of the motor area was the liability—apart from the monoplegia or hemiplegia—to Jacksonian epilepsy, conditioned, without doubt, by the septic character of the lesion, and the tendency of this epilepsy to persist even after repeated operations, with a view to removal of the irritating focus. Sir Victor Horsley was well acquainted with a case of this kind—an officer wounded in the Boer war, who was still hemiplegic and epileptic after a severe wound of the left motor area, though he had been operated upon on several occasions since that time. The immediately or rapidly fatal effects of gunshot wounds of the head were not the result of the cerebral lesion as such (provided it was not in the medulla oblongata), but, as Sir Victor Horsley and Dr. Kramer had shown, of the hydrodynamic effect of the passage of bullets of high velocity through the incompressible semi-fluid contents of the cranium. This caused compression, or compression with effusion, and consequent paralysis of the vital centres in the medulla oblongata. The primary cause of death, as these two observers had shown, was paralysis of the respiratory centre. Cushing was of opinion that the cessation of respiration was secondary to vasomotor paralysis, but the experiments of Dixon and Halliburton had amply confirmed those of Horsley and Kramer. They had found that when the pressure of the cerebro-spinal fluid was artificially raised by the injection of saline into the subcerebellar cistern, the respiratory centre failed before either the cardiac or vasomotor centres, and that death occurred unless artificial respiration was kept up. This had an important bearing on treatment. Sir Victor Horsley had pointed out that in certain cases death might be warded off by timely artificial respiration. This, of course, would only be available in cases in which there was no intracranial effusion. But it might be possible that, with artificial respiration and free opening of the skull to relieve the intracranial tension, life might be saved. Perhaps some of the surgeons at the front, when they read of the proceedings of that evening, might be induced to resort to such treatment when appropriate occasions arose.

Mr. RICHARD WARREN said that he had seen a number of recent cases in the service of the Belgian Field Hospital at Furnes, mostly the result of shell fire, bullet wounds being relatively uncommon. He dwelt on the importance of injuries affecting the cranial wall alone, insisted on the significance of the fact that the dura and brain were usually penetrated in these cases, and that the risks of infective meningitis and encephalitis were great; in spite of this a number of cases recovered after receiving the most severe wounds. As regarded treatment, the importance of trying to maintain asepsis and of avoiding pressure on the brain by operations of the decompressive type, were mentioned as the chief points, as well as the necessity of removing foreign bodies, such as bullets and fragments of shell, at the outset of treatment whenever possible.

Mr. W. H. H. JESSOP said that he had been surprised by the number of cases of papilloedema resulting from gunshot wounds causing fracture of the vertex. It was characterized by oedema of the optic nerve without haemorrhages and without the massive effusion and the vessel changes seen in other cases. Afterwards the disc recovered completely. Mr. M. W. B. Oliver had detected this condition in 16 out of 30 cases of fracture of the cranial vault. Mr. Jessop mentioned a case in which there had been 3 dioptres of swelling in the left eye and 3 dioptres on the nasal side of the right, but no swelling on the temporal side of the latter. There had never been loss of vision and the man recovered completely. The recovery in all the cases followed decompression, performed as soon as possible, and therefore with practical certainty the condition was due to pressure. He also recorded a case of gunshot wound of the head which resulted in complete paralysis of the third and fourth nerves and the first division of the fifth. By radiography no fewer than six pieces of some foreign body were seen lying by the petrous portion of the temporal bone, but no other signs had at present developed.

Major L. BATHE RAWLING, R.A.M.C.(T.), said that the remarks which he had to make were related to such cases of head injury as were seen after their admission into military hospitals in this country—namely, of men wounded from three days to three weeks previous to admission here. His experience had been such that he was more than ever convinced that operative interference should be carried out at the earliest possible moment. Such methods of treatment had been advocated by Bowlby, Makins, Spencer, and others in the Boer war, by Lawford Knaggs and himself in this country, and by many others. He could not understand the attitude of those surgeons who advocated and carried out an expectant form of treatment. He had had the opportunity of observing the conditions associated with and arising from both varieties of treatment. There was no comparison between the results obtained. The expectant treatment was followed by a much higher rate of mortality, and, in addition, in those patients who recovered without operation, the presence of depressed bone, blood clot in relation to the membranes and brain, and foreign body, would certainly assist in the development of those remote effects of head injury which were so well known, of such frequent occurrence, and so difficult to remedy. Consequently, he advocated most strongly early operative interference. This consisted (1) in the treatment of the wound of entry or attempted entry, and (2) in the removal of the foreign body. The presence of a foreign body, whether embedded deeply in the brain or not, might be determined with reasonable certainty by investigating the exact nature of the wound, whether direct, glancing, etc., though, so far as his experience went, the absence of foreign body in the brain was the exception rather than the rule. In all cases, however, *x*-ray pictures should be taken before the operation—stereoscopic if possible. Such pictures would not only show the position of rifle bullets, shrapnel bullets, or casing, etc., but would also afford direct evidence as to the presence and position of depressed and in-driven fragments of bone. The fact that nearly all serious cases of head injury were septic merely strengthened his argument for early operation. The prolongation of suppuration was dependent on the presence

of these depressed fragments and foreign bodies, and it would continue as long as these were allowed to remain, with the consequent daily threatening of brain abscess, hernia cerebri, and meningitis. The head should be completely shaved, thoroughly washed with scrubbing brush and soap, dried, and painted over with iodine. When this had been done the scalp tourniquet should be applied, for it was important that the loss of blood from scalp vessels should be controlled efficiently. The scalp wound should then be enlarged freely in the required directions, the flaps thrown back, their edges touched up with pure carbolic acid, and their under surfaces with iodine. The condition of the bone could then be investigated. Fractures limited to the external or internal tables were rather more of textbook prominence than of actual occurrence, and it was necessary in practically all cases to trephine or remove loose fragments of bone in such a manner as to expose freely the underlying dura mater and brain. Depressed fractures should be elevated, small, loose fragments of bone picked away, and larger fragments treated in a similar manner or thrown back if they retained any direct connexion with scalp or pericranium. In any case it was advisable to obtain a good view of the dura mater, and the surgeon should err on the side of removing too much bone rather than too little. Blood clot, derived from torn meningeal vessels or from diploic tissue, should be wiped away and bleeding controlled, dural vessels being under-run and diploic foramina blocked with wax. With a dry field, the dura now remained for inspection. If uninjured, the scalp wound might be approximated, with free and efficient drainage. If torn, the dura should be slit up and a careful investigation carried out for fragments of bone or foreign body, all of which might be carried deeply and widely throughout the underlying brain substance. All such loose fragments must be gently picked away, with all respect to the surrounding brain substance. During this procedure a stream of saline solution, at a temperature between 110° and 115° F., would help to keep a clean field, washing away blood, débris, etc. The ordinary probe would assist in the detection of such foreign bodies and the telephone probe, in the presence of metallic substances. He was not enamoured of the telephone probe; the presence of any foreign body could be detected with the ordinary probe with almost equal facility, and it mattered not whether the foreign body was osseous or metallic—it must be removed. Though of opinion that a considerable area of bone might require to be removed in the investigation of the injury, he thought that one should be much more judicious in the search for the foreign body in the brain. Needless probing could only do harm, and, unless the foreign body was detected with ease, it was preferable to wait, further skiagrams being taken to investigate its exact position, and a second operation being performed later. The position of a bullet might demand that the operation should be carried out over an area distinct from that of the entry of the bullet. Drainage must always be of the most efficient type, even to leaving a considerable area of brain exposed to the surface. No perforating wounds of the skull had come under his care, doubtless due to the fact that they were so frequently fatal. The more favourable cases were those in which the osseous and cerebral lesions occupied the frontal and temporo-sphenoidal regions. The more fatal were situated in the posterior half of the skull, especially in the cerebellar region. He would suggest that, after the lapse of a few years, the society should hold an inquiry into the after-results of these head injuries. There would, he feared, be plenty of material, and he would add that he was sure that the material would be all the more plentiful if present operative interference was inadequate or postponed, and more especially if such methods were not carried out at all.

ROYAL SOCIETY OF MEDICINE.

SECTION OF LARYNGOLOGY.

AT a meeting on February 5th Sir WILLIAM MILLIGAN read a note on *The after-treatment of submucous resection of the nasal septum without splints.* Having used Whitehead's varnish for painting between the perichondrial flaps, and stitches and varnish for the line of incision for several years, he had arrived at the conclusion that there was less discomfort and better drainage than after packing the nose. The after-results had been good, and there had been no haemorrhage or haematoma of the septum. Dr. WATSON-WILLIAMS said that packing the nose might cause serious disadvantages, as in cases of sinusitis. Sir STCLAIR THOMSON agreed, but stated that in simple cases his practice had been to replace the whole of the septum in small pieces, and to pack the nose with sponge tissue so that the parts remained in position. Sir WILLIAM MILLIGAN also showed a woman, aged 30, with *Chronic lymphangitis of the nose*, commencing three years earlier. Dr. WATSON-WILLIAMS said that he had seen similar cases with latent sinusitis. Mr. TILLEY suggested a cultivation of the blood with a view to vaccine treatment. Dr. BROECKART had obtained excellent results by excision of the hypertrophied tissues. Mr. E. D. DAVIS showed a boy, aged 14, from whom he had removed a *Large naso-pharyngeal fibroma.* The tumour was completely enucleated with a strong dissector without splitting the palate, the operation being facilitated by the administration of intratracheal ether. Mr. Davis also exhibited three *post-mortem* specimens illustrating *Diseases of the pituitary body* which had previously been treated by Killian-Hirsch operations. Dr. HILL referred to the dangers of these operations, and mentioned a case in which death occurred from haemorrhage. Mr. HOWARTH said that it was important to distinguish the cases in which the disease was below the sella turcica from interpeduncular and pontine tumours. The latter were generally fatal. Dr. W. H. KELSON showed a man suffering from *Laryngeal obstruction* following acquired specific disease. Sir STCLAIR THOMSON produced a report of his specimen of laryngeal growth, exhibited December, 1914, stating that the disease was early squamous-cell carcinoma. Dr. JOBSON HORNE demonstrated microscopical sections of *Pachydermia of the larynx.* Mr. W. STUART-LOW showed a man, aged 53, with *Dyspnoea caused by tracheal compression.* Skiagrams of the chest showed a definite shadow, but there was doubt whether this was caused by aneurysm or mediastinal tumour. Dr. KELSON suggested the possibility of a syphilitic mass. Dr. STUART-LOW showed a patient with *Epithelioma of the pharynx treated by diathermy.* The glands of the neck had also been punctured with the cautery with marked improvement. Mr. C. I. GRAHAM showed a similar case after operation and dissection of the neck. Dr. JOBSON HORNE showed an *Epithelioma of the tonsil* in a woman aged 43. Mr. H. L. WHALE showed *A circular piece of tin removed from the gullet by oesophagotomy*, the patient having made an uneventful recovery. Mr. C. W. M. HOPE, Mr. BUCKLAND JONES, and Dr. JOBSON HORNE showed soldiers who had had gunshot wounds of the larynx or pharynx. Dr. DAN MCKENZIE showed a patient with *Synechiae of the nose* treated by diathermy with excellent result. Mr. HERBERT TILLEY exhibited three children, aged 7, 8, and 10, who had suffered from acute suppuration of the nasal accessory sinuses. Mr. C. I. GRAHAM showed a patient with *Tuberculosis of the nasal fossae*, with sections of the tissue containing tubercle bacilli stained *in situ*.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

AT a meeting held on February 4th, when the President, Dr. W. S. A. GRIFFITH, was in the chair, Dr. HERBERT SPENCER read notes of a case in which *Ruptured unilateral solid cancer of ovary* had been removed, with subsequent pregnancies and good health. The patient, aged 27, had a ruptured soft, solid growth of the left ovary, measuring $5\frac{3}{4}$ in. by $3\frac{1}{2}$ in., with about a gallon of free blood-stained fluid in the peritoneum. The tumour was removed; the other ovary, appearing healthy, was left behind. The patient subsequently had two children and remained well seven years after the operation. Similar cases were recorded by Hofmeier and von Velits. The tumour had the microscopic characters of a medullary carcinoma. Dr. Spencer did not agree with Pfannenstiel's opinion that in all cases of unilateral papillary tumours, cancer, and endothelioma of the ovary, the other ovary should be removed, for he had seen examples of all those conditions remain well seven years after unilateral ovariotomy. He suggested, however, that, notwithstanding its microscopic characters, it was possible that the specimen shown was not

malignant. Dr. CUTHBERT LOCKYER was not convinced that the specimen was a carcinoma; it might be an endothelioma. The long immunity from recurrence would then be easier to understand, as in the ovary endothelioma was far less malignant than solid carcinoma. Dr. BRIGGS remarked that the tumour raised the unsettled problem as to the true nature of these new growths. For over fifteen years he had ranked them among solid adenomata in the departmental museum of the Liverpool University, where they awaited an advance in histology. Dr. AMAND ROUTH asked how Dr. Spencer would decide whether such a tumour were malignant at the time of operation, and what course he would pursue in respect to the other ovary if he considered the tumour were carcinomatous. In reply, Dr. SPENCER stated that the tumour was structurally a typical medullary carcinoma, quite unlike the endothelioma he had met with in a dermoid. In the case of this tumour, so soft as to resemble a spleen when fresh, rapid sections could hardly be cut at the time of operation. He had not yet decided if the tumour was malignant, but had made suggestions on that subject in his paper. He would treat similarly any similar case. If the ovary grew after operation, although apparently normal at the time, he would remove it, but he had little hope that malignant disease affecting both ovaries would not recur. Dr. GORDON LEY (for Dr. Russell Andrews) read a short communication on *Squamous-celled carcinoma occurring in a cystic teratoma of the ovary*. Dr. MAXWELL read a short communication on *Inversion of the uterus: (1) acute, (2) chronic*. The subject was discussed by the PRESIDENT, Dr. HEDLEY, Dr. ROUTH, Dr. BRIGGS, Dr. SPENCER, Dr. HOLLAND, Dr. COMYNS BERKELEY, Dr. STEVENS, and Dr. BLACKER. Dr. GORDON LEY demonstrated a specimen of *Fibroid of the uterus, showing invasion by tubercle*, which was discussed by the PRESIDENT, Dr. STEVENS, and Dr. CUTHBERT LOCKYER. The PRESIDENT showed an example of the *Bowel pack* suggested by Dr. Aymard of Johannesburg in the *Lancet* of January 16th, p. 150, which he had made, and found that it answered the purpose well. It was made by coiling fine wire on to a pad of "cellular" cloth, the wire being sewn by a running stitch along its whole length. The wire he used was No. 22 gauge pure tin fuse wire, and was covered in by a single layer of lint sewn on to the pad. When one of appropriate size was placed in position it kept the bowels out of the way of the area of operation, and was a valuable improvement on the ordinary pad. It could be bent into any shape without injury.

CLINICAL SECTION.

AT a meeting on February 12th, Mr. CHARTERS J. SYMONDS, President, in the chair, the following clinical cases were exhibited:—Dr. J. GALLOWAY: *Splenomegaly* with anaemia and haemorrhages in a boy aged 8½, regarded as a case of splenic anaemia; the question of splenectomy was raised. The white blood cells numbered only 840 to 860 per cubic millimetre. Mr. H. MORRISTON DAVIES: (1) *Suppurating mediastinal teratoma* in a man aged 21. By repeated operations the greater part of the tumour had been removed after separating it from its attachments to the pericardium, aorta, and surrounding structures. (2) *Bronchiectasis* in a boy aged 17, *treated by ligature of the branch of the pulmonary artery* going to the lower lobe of the right lung. Turbid fluid containing streptococci was afterwards drained from the pleural cavity. Recovery was uneventful, and the patient had returned to work. (3) *Bronchiectasis treated by rib mobilization* (Wilm's operation) in a girl aged 15. The patient's general condition had greatly improved. (4) *Osteitis fibrosa cystica* of the upper end of the shaft and neck of the left femur in a girl aged 14. A short discussion on so-called frost-bite in the trenches is reported at page 353.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

AT a meeting on January 15th, Dr. M. J. GIBSON, President, in the chair, the PRESIDENT exhibited *Two broad ligament tumours*. Dr. SPENCER SHEILL showed photographs of a child born with a *Congenital oral defect*, and unusual fraenum between the upper maxillary bone and the lip. Dr. BETHEL SOLOMONS read a paper on *Fixed chronic retroversion of the uterus*. He advocated operation in all cases where there were symptoms. Curettage and any necessary vaginal plastic work were done first. The abdomen was then opened, and, having treated the adhesions and any adnexal abnormality, he suspended the uterus either by Kelly's method or by shortening the round ligaments as the case directed. Where pus was present he drained with iodoform gauze through the posterior fornix and vagina. He considered the abdominal route excellent for drainage, but preferred the vaginal because there was less pain in the removal of the gauze; there was no opening left in the aponeurosis; hence hernia was less likely, and the convalescence was usually shorter. If pus was present it should always be taken for culture. He reported a case in his practice of fixed retroversion complicating pregnancy, where he opened the abdomen when the patient was about two and a half months pregnant, separated the adhesions, many of which were dense and required ligating, and suspended the uterus. The convalescence was normal, and she was delivered naturally at term. He advised operation in all such cases. An active discussion followed the reading of this communication, in which Drs. SPENCER SHEILL, GIBBON FITZGIBBON, MADILL, E. H. TWEEDY, MCALLISTER, and the PRESIDENT took part. There was great variety of opinion as to whether all cases showed symptoms and required operative treatment. The PRESIDENT said that chronic fixed retroversion was always due to infection, and that there were no symptoms which could be associated with the malposition alone. Dr. SOLOMONS replied.

Reviews.

EDUCATION AND EYE TRAINING.

IT is always of interest to see ourselves or our work in the light of the criticism of some acute mind, and it is the more interesting when that examination takes the form of a statement on medical matters by a layman who is an expert in affairs closely related to that branch of medical work.

In *Studies in Questions Relating to Eye Training*,[1] by Professor WILLIAM PHILLIPS, we have such a work. The writer is an acknowledged expert in educational matters. He is the professor of education in the University College of South Wales, and his interest has been directed to a statement often found in Government papers and in various medico-educational works concerning the "training of hand and eye." He has set out to discover what basis in fact there is for the assumption that the eye could be trained. Eye training implies that the eye could be improved as an optical instrument by certain measures. Was this supposition justified in fact? The author has not set out any experimental work of his own, but he has ransacked medical and physiological literature for any evidence bearing on the question, and this he has set out in a most illuminating manner. Withal he has added succinct criticisms, which give the book just that touch of freshness that is required in such a symposium.

His answer to the main question of his thesis is: "We have failed to find any grounds on which we could justify the introduction of special exercises, such as sloyd, in order to train the eye as an optical instrument, except that it appeared as if good might ensue, in some cases, from exercising it in looking at objects lying between its points of far and near vision." This negative finding does not, however, leave the matter of the eyes and school work a subject of indifference to the doctor or the teacher, and by far the greater part of the book is taken up in examining the manner in which work of the eyes may affect them adversely. He concludes: "That the school ought, in the first place, to allow the eyes to function in rooms that comply with the reasonable demands of hygiene; and, in the second place, it should determine with as much care as possible, the amount of work to be demanded of them. The school ought also, through its medical officer, to secure that proper attention is given to those eyes that suffer from any form of disease or malformation." This statement is a complete justification of the many efforts that have been made by medical officers

[1] *Studies in Questions Relating to Eye Training*. By W. Phillips, M.A. London, Glasgow and Bombay: Blackie and Son. 1914. (Fcap. 8vo, pp. 138. 1s. 6d. net.)

of schools, past and present, to secure good lighting, well-shaped desks, good books, and shorter hours of close work for the children, and efficient treatment of defects, and it is the more satisfactory as it comes from the pen of a layman.

Perhaps the most interesting chapters of the book, at any rate for the general reader, are those that deal with "The vision of the savage," "The supposed special sensitiveness of the blind and deaf," "Women's supposed special sensitiveness to colour differences." In these chapters there is collected and put in convincing order evidence that has an explosive effect upon many cherished popular beliefs. The book is well worth the reading of all interested in education or in the peculiarities of our most precious organ of sense.

FREE WILL.

THE freedom of the will, opened as a question first of all, perhaps, by Aristotle's twofold division of mentality into cognition and will; denied by the "universal necessity" of the Stoics; reaffirmed on theological grounds by the early Christian writers, and again refuted by the predestinarians of the Calvinistic churches, has been a matter of the keenest controversy by every successive school of philosophy. The controversy, moreover, has continually shifted its ground, and has been a burning question in philosophy, in theology, in ethics, and in psychology. A notable contribution to the subject is that of Professor BERTHOLD VON KERN, who delivered a series of lectures, being a critical study of the will, before the Gesellschaft für positivistische Philosophie of Berlin in 1913. These lectures have recently been published in a book.[2] The whole subject, in Professor Kern's view, being overlaid and obscured by misconceptions, he clears the ground in his first chapter, on "The Concept of the Will," by a critical examination of the various views which have been held as to the nature of the will, ranging from that which regards will as an ultimate and separable mental element, distinct from and superior to affective or intellectual processes, to that of the most extreme associationists, which excludes the will altogether from the mental elements and regards it as an intellectual abstraction. Professor Kern's penetrating observations in the course of this preliminary investigation upon the confusion which naïve thought, mysticism, and scholasticism have produced, particularly in respect to the application to volitional processes of such terms as "force" and "energy"; the entire lack of justification for separating will as an "activity principle" from cognition; his particularly lucid explanation of the subjective awareness of this activity, and of the direct relation subsisting between the strength of this "activity-feeling" and the wealth and duration of affect-laden processes intervening between stimulus and reaction, between motive and action, are all hard to pass by without quotation.

For Professor von Kern the will is neither an independent element of the mental life nor an effective cause of action, either as initiator or even as mediator between presentation and conduct, but is a very complex concept—something like a mathematical expression of *plus* and *minus* quantities—of presentations and feelings in the form of desires or aims—in fact, "the unitary combination of the intellectual conditions of conduct." Nevertheless, when the will is considered as part of a logical system of ideas, Professor von Kern concedes that it may be permitted to speak of the will as governing the motives, and as the directing principle of reason and conduct, just as a State composed of individuals—an apt comparison—may be considered as governing the individuals of whom it is composed. According to this view, controversy about the freedom of the will is foredoomed to sterility; and even the term itself becomes meaningless, for purely logical concepts have nothing in common with the world of reality, in which alone can one speak of freedom. The same argument applies with equal force to the concept of the will as the logical idea of union of motive and conduct; and, finally, if the concept of the will be regarded as representing the motive force of competing motives, the attribution of freedom or unfreedom to an intensity-value is, he says, equally absurd. Room for further discussion on this matter is afforded only if the concept Will be applied diffusely to the whole intellect, which at once changes the ground of controversy from freedom of the will to that of freedom of mental processes; on this sole ground, as a matter of fact, Professor Kern says, this matter can be properly debated.

One of the principal props of the argument for freedom of will is the well-defined and immediate feeling of freedom experienced by the subject. Professor von Kern therefore opens his second chapter—on freedom—by an analysis and explanation of this feeling, after which physical and biological freedom, moral freedom, and psychological freedom, are examined before passing to the following chapter on freedom of the will as a logical idea. Perhaps the most valuable part of this deeply interesting study is contained in the fourth chapter—on the agreement of freedom of the will and determination—in which is sought the ethical solution of this many sided problem. Enough has been said to indicate the main trend of Professor von Kern's argument and, it is hoped, to draw attention to a book which will well repay careful study.

[2] *Die Willensfreiheit.* Von B. von Kern. Berlin: A. Hirschwald. 1914. (Med. 8vo, pp. 75. Mk. 2.)

SOCIAL PATHOLOGY.

ONE of the most characteristic features of modern literature is the growing tendency to what may be called collective authorship. In medical and other sciences, as one result of the subdivision of each main branch into a number of superficially independent specialities, it has become impossible for any single writer to deal comprehensively with almost any subject. Or so at least we have come to believe, judging by the constant issue of many-volumed cyclopaedias and of circulars urging the indispensability of each. This mania for collective authorship is in danger of being carried too far; we think it has been carried a little too far in the case of *Human Derelicts*,[3] a volume of medico-sociological studies edited by Dr. T. N. KELYNACK. Within the compass of 341 pages we find a series of contributions by no fewer than nineteen medical men and women. Each of them is no doubt perfectly competent to discuss adequately the particular aspect of the general topic assigned to him or her; but the space at the disposal of each is too brief to permit of such adequate discussion. The book has consequently a somewhat scrappy and disjointed effect; the essays give enough information to stimulate curiosity but not nearly enough to satisfy it. The reader's memory is unduly taxed by transition from one subject to another, and no general and comprehensive impression emerges of the causes which produce human derelicts or of the methods by which their production can be stayed or minimized. At the same time we gratefully admit that the book embodies a great deal of valuable information, and that the contributions, so far as they go, are in all respects worthy of their respective authors. The book is well defined by the editor as a contribution to social pathology and preventive medicine, and as such is a gratifying sign of the times. It indicates the near approach of the day when the medical profession as a whole shall have recognized and accepted its collective responsibility in regard to social problems, in so far at least as these are concerned, as they nearly all are in a high degree, with the health of the body politic. We cannot proceed far with the study of idiocy, lunacy, epilepsy, inebriety, crime, or prostitution, without coming face to face with the question how far the prevalence of these morbid conditions among individuals is symptomatic of economic or social abuses.

THE COLLECTED THOUGHTS OF A GREAT CHEMIST.

THE name of James Campbell Brown is, perhaps, little known to the present generation of students, but it will always be held in remembrance in Liverpool, where for over forty years he laboured as a teacher and pioneer in the field of chemical industry. It was said of him that he "took life at a gallop, but was not satisfied with any attainment short of absolute precision and completeness." In the years between 1886 and 1908, when he was an acknowledged leader, he had occasion to deliver addresses

[3] *Human Derelicts: Medico-Sociological Studies for Teachers of Religion and Social Workers.* Edited by T. N. Kelynack, M.D. London: C. H. Kelly. 1914. (Post 8vo, pp. 363. 5s. net.)

from time to time to students' societies and others, and a selection of these *Essays and Addresses* has recently been published in a single volume[4] at the request of his widow. Although many of them deal with social and economic conditions of times now long past, the shrewd practical advice they contain remains as pungent as ever. In the application of chemical knowledge to manufacturing industry he taught that the most successful man would be he who had the most perfect knowledge of Nature's facts and who worked in simple obedience to them. Through all the essays and addresses contained in the present selection the practical aspect of the subject under consideration is never left out of sight. His own spirit of energy and thoroughness is infused into all those that are directly addressed to students, whether it be with regard to the future prospects of extended education or the interesting retrospect of the life of some great chemical forerunner. Especially important at the present time is a contrast between French and German methods of production as it appeared to him twenty years ago. The disproportion is, perhaps, less striking at the present time. The subject of "aquiculture" and the means whereby potable water may become contaminated, as shown by analysis of the deposit left on pipes and other channels, is the theme of one of the addresses, and contains information which has an interest for every one. Not less important is the question of the application of chemistry to the detection of crime, which is discussed in a final chapter, full of interesting reminiscences of personal experience in the solving of medico-legal problems.

THE "EXTRA PHARMACOPOEIA."

ALTHOUGH it is only about two and a half years since the last edition of MARTINDALE AND WESTCOTT'S *Extra Pharmacopoeia*[5] was published, the very considerable amount of additional matter contained in the new edition, representing information which has become available in the interval, would be ample justification for the appearance of this, the sixteenth edition; apart from this, the issue of a new *British Pharmacopoeia* has entailed a revision of the statements in regard to many of the official preparations, and other references to the official work. It is quite unnecessary to dwell on the general features of the book, as there is probably none better known or more widely used by every one connected with medicine and pharmacy. On the last occasion of republication, it was found necessary to divide it into two volumes; this division is now maintained, and the line of demarcation between the contents is somewhat more defined.

The first volume is intended to include everything the medical practitioner or pharmacist is likely to require for immediate reference on therapeutic matters; this has the familiar features that have made "Martindale" so useful, comprising information on almost everything used at all as a medicine, with doses and methods of administration, and brief notes on clinical use, with references to original papers; the sections on vaccine-therapy and organotherapy and the therapeutic and general indexes are also contained in the first volume.

The second volume comprises somewhat full analytical notes on official and some other drugs, and the "organic analysis chart" originally published as a separate volume is also included. Other sections in this volume deal with the antiseptic properties of a large number of chemicals, physiological standardization, mineral waters, proprietary medicines, etc.; under the last heading are included a considerable number of the analyses of secret remedies originally published in this JOURNAL.

As indicating the large amount of matter in the two volumes in spite of their small size, a publisher's notice states that the first volume contains three quarters of a million words, and the second half a million; the number of new abstracts from scientific journals in this edition is given as 2,300. These brief abstracts, with references to original papers, form one of the most useful features of the book. Under the headings radiology, iontophoresis, colloidal metals, vaccines, tuberculins, etc., useful dissertations are given, with notes embodying published papers down to a recent date. Salvarsan and its congeners appear in a section on organic arsenic compounds, occupying about thirty-one pages; cacodylic acid and cacodylates come first, then sodium arsanilate (atoxyl) and its derivatives, and these lead on to arsenobenzol or salvarsan, the history of which from its introduction is presented in brief form; besides its use in syphilis its application in other diseases, such as malaria, leprosy, and pernicious anaemia, is discussed and results are summarized, and the principal methods of administration are described. Needless to say, papers reporting adversely or critically on salvarsan are quoted in the same way as those favouring it. In the second volume, in addition to the matter alluded to above, nearly a hundred pages are devoted to bacteriological and clinical notes in relation to the chief diseases of bacterial origin; abstracts of original papers again constitute the greater part of this.

The two volumes together form an invaluable compendium of information for the busy practitioner, and probably most or all of those who possess an earlier edition will feel it to be well worth while to become possessed of the new one.

[4] *Essays and Addresses.* By the late J. Campbell Brown, D.Sc.Lond., LL.D.Aberd. London: J. and A. Churchill. 1914. (Med. 8vo, pp. 208; 22 figures. 5s. net.)

[5] *The Extra Pharmacopoeia of Martindale and Westcott.* Revised by W. H. Martindale, Ph.D., F.C.S., and W. W. Westcott, M.B.Lond., D.P.H. Sixteenth edition. In two volumes. London: H. K. Lewis, 136, Gower Street, W.C. 1915. (16mo, vol. i, pp. 1113, 14s.; vol. ii, pp. 469, 7s.)

SQUIRE'S POCKET COMPANION.

HOWEVER well compiled and up-to-date an official pharmacopoeia may be, it can never meet the requirements of a medical practitioner for information in regard to drugs so well as is possible for an unofficial work containing information as to prescribing, and particularly in regard to the use of new drugs; and there are two or three works of this nature which are so well known and widely used that they occupy the position of standards, with scarcely less authority than the *British Pharmacopoeia.* Among these SQUIRE'S *Pocket Companion*[6] occupies a high place; it came into being in 1904 by a process of fission from Squire's *Companion*, the editions of which were then well up in the teens, so that the new edition, nominally the second, is actually the successor of a long line. In dividing the matter so as to produce a smaller book, all that is of particular interest from the prescriber's point of view was selected for the pocket volume, omitting the matters chiefly of use in the laboratory. There is, nevertheless, so much matter in the book that it is only by the use of thin India paper that it is kept of a pocket size; the present edition contains well over a thousand pages, but is less than an inch thick. All particulars relating to official substances have been revised in accordance with the new *British Pharmacopoeia;* in addition, the whole of the matter has been brought up to date and added to in the light of recent advances.

The general arrangement of the book is alphabetical; galenicals are described under the principal drug contained in them. Two of the most useful features are the "Prescribing Notes" on the most important drugs, comprising practical information in regard to the best compounds for administering them, and the condensed abstracts of original papers published in the columns of this and other journals, giving the experience of many practitioners on the usefulness or otherwise of the various drugs dealt with. As an example of the information given, salvarsan and neo-salvarsan may be mentioned; they occupy together about fourteen pages, and the notes cover, besides general information as to composition, solubility, etc., directions for their preparation and administration by various methods, and abstracts of twenty-nine papers on their employment. A useful section of the book is that on therapeutic agents of microbial origin, this including, of course, antitoxins, tuberculins, vaccines, etc.; this section is contributed by Professor R. Tanner Hewlett. Sufficient has been said to show that the contents of this *Pocket Companion* fully justify its name; it can be strongly recommended to practitioners.

[6] *Squire's Pocket Companion to the British Pharmacopoeia.* By P. W. Squire. Second Edition. London: J. and A. Churchill. 1915. (Fcap. 8vo, pp. 1050. 10s. 6d. net.)

NOTES ON BOOKS.

NOTES ON THE NEW "BRITISH PHARMACOPOEIA."

As soon as the *British Pharmacopoeia* became available for inspection a series of articles on the alterations and additions were published in the BRITISH MEDICAL JOURNAL. Since its official publication the volume has provided material for a number of small books summarizing the principal alterations or, in some cases, the whole of the formulae, whether altered or not, for the convenience of those who do not wish to study the original volume for themselves. *The British Drug Houses Guide to the "British Pharmacopoeia 1914"*[1] contains a series of short paragraphs dealing with the whole of the monographs of the *Pharmacopoeia*. Additions and alterations are indicated by marginal lines, and attention is drawn to the more important features of the official requirements for each article. A few critical notes on the *Pharmacopoeia* are also included, which conclude with the expression of the opinion that the new *Pharmacopoeia* may be pronounced without hesitation or reserve to be the best so far published in this or any other country. In a *Conspectus of the British Pharmacopoeia 1914*,[2] published by Messrs. Corbyn, Stacey and Co., Ltd., the matter is even more condensed, the particulars given for each article being confined to the dose and in some cases notes on the strength, or on the alterations which have been made. By the use of different kinds of type attention is drawn to new, altered, or omitted substances. Mr. H. WIPPELL GADD'S *Synopsis of the British Pharmacopoeia 1914*[3] is the eighth edition of a tabular arrangement which has been published from time to time. The matter of all the official monographs is condensed and tabulated in a form very convenient for reference. Another section is devoted to the tests for official chemicals and the poison schedules, and the principal features of Poison Law are also given. Messrs. Jewsbury and Brown publish a set of *Posological Tables*,[4] in which the doses of the 1914 *Pharmacopoeia* are given in tables in both metric and imperial quantities, the strengths and the doses of the 1898 *Pharmacopoeia* being given in parallel columns.

AN UNOFFICIAL INSURANCE PHARMACOPOEIA.

Under the title *Standard Prescriptions for Insurance Practices*,[5] Dr. C. H. GUNSON has published a selection of formulae in a small book which can be carried in the waistcoat pocket. These comprise mixtures, pills, tablets, lotions, etc., such as are most frequently required in practice. If such a set of formulae could be agreed on for the whole of the country it might no doubt prove very useful and convenient, but as the names of many of the medicines for which formulae are here given are already commonly applied to the formulae of the *British Pharmaceutical Codex* and other well-known works, there would be a probability of prescriptions in which such names appear being dispensed differently in different places. While Dr. Gunson appears to have made a good selection of formulae and published them in a very convenient form, it is to be feared that any such unofficial collection must have a very limited sphere of usefulness.

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[1] *The B. D. H. Guide to the British Pharmacopoeia 1914.* London: The British Drug Houses, Ltd. 1915. (16mo, pp. 175. 1s. net.)

[2] *A Conspectus on the Principal Changes in the British Pharmacopoeia 1914.* By J. H. Williams, F.C.S. London: Corbyn, Stacey and Co., Ltd. 1915. (16mo, pp. 64. 1s. net.)

[3] *A Synopsis of the British Pharmacopoeia 1914 and of the Poison Laws of Great Britain and Ireland.* By H. W. Gadd, F.C.S. Eighth edition. London: Baillière, Tindall and Cox. 1915. ($4\frac{1}{4} \times 2\frac{3}{4}$; pp. 196. 1s. net.)

[4] *Posological Tables of the British Pharmacopoeia 1914.* Manchester: Jewsbury and Brown. 1915. (16mo.)

[5] *Standard Prescriptions for Insurance Practice.* By C. H. Gunson, M.B., Ch.B. London: The Scientific Press, Limited. 1914. (Post 32mo., pp. 101. 1s. net.)

MENTALLY DEFECTIVE CHILDREN.

THE Board of Education has issued a circular (No. 888) to local education authorities, calling their attention to the duty imposed upon them by the Elementary Education (Defective Epileptic Children) Act, 1914, which came into force on January 1st, of making provision for the instruction of educable mentally defective children between the ages of 7 and 16.

Authorities are further reminded that they should submit for the approval of the Board of Education the arrangements they propose for carrying out their duties under the Mental Deficiency Act, 1913.

These duties may be summarized as follows:

1. To make a complete survey with a view to ascertaining
   (*a*) The number of defective children requiring education.
   (*b*) The nature and extent of the provision necessary for their instruction.

This will devolve on the school medical officer or one or two of his assistants.

2. To consider what further accommodation, whether in the way of day school or a boarding or residential school, may be necessary.

The circular is accompanied by a minute which sets out the conditions under which grants will be paid to local education authorities amounting to half the approved expenditure incurred by them in sending mentally defective children to residential schools. This grant will in all cases be paid direct to the local education authority. The grants for day school provision remain as before.

In regard to the policy to be pursued the circular offers some useful practical guidance. It is considered that one day school will be required even in the case of smaller urban areas. Residential schools will be needed for those not in reach of or for some reason unsuitable for a day school. Where the number of these is small they may be sent to a school provided by some other authority or by a voluntary body. Authorities may combine to make the requisite provision, and the authorities for a non-county borough or urban district may relinquish its powers and duties to the county council.

A most important and valuable suggestion is that the local education authority should in all cases act in close co-operation with the local control authority, so that the kind of instruction devised by the education authority may be such as the experience of the control authority with defectives over 16 shows to be best suited to their requirements. Unless this is steadily borne in mind there is a danger of money being wasted on instruction which will be of little practical benefit in later life.

THE PRESENT POSITION WITH REGARD TO CERTAIN GERMAN PATENTS AND TRADE-MARKS.

IT is a matter of general knowledge that special legislation, passed shortly after the commencement of the war, gave power to the Board of Trade to make drastic alterations in regard to the continuance of patent rights and trade-mark rights in this country held by alien enemies, but probably most of our readers are not aware of the precise extent to which effect has been given to those powers; a few notes on the present position, in regard to medicinal substances only, may therefore be useful.

It will be best to explain briefly the position before the beginning of hostilities. A number of substances used in medicine are made by processes for which letters patent have been granted. It must be noted, however, that a substance, or the production of a substance by any means whatever, is not good subject matter for a patent. Patent rights are granted for a particular process for making a substance, and if no other process is known this amounts, of course, to a virtual monopoly in the production of such substance until a new process, lying outside the scope of the patent, may be discovered; but if a new process is found which will give the same product, it may be prepared by such process and the rights of the holder of the original patent are not thereby transgressed. This has happened in the case of many chemical substances used in medicine; adrenalin may be mentioned as an example. This was originally put on the market by a firm which had patented a process for its production, and for some time no other make was available; other firms, however, worked out new processes for its production and many makes have since appeared upon the market.

In regard to trade-marks, a registrable trade-mark must contain or consist of at least one of the following essential particulars:

1. The name of a company, individual, or firm represented in a special or particular manner.
2. The signature of the applicant for registration or some predecessor in his business.

3. An invented word, or invented words.
4. A word or words having no direct reference to the character or quality of the goods, and not being according to its ordinary signification a geographical name or a surname.
5. Any other distinctive mark; but a name, signature or word or words other than such as fall within the descriptions in the above paragraphs (1), (2), (3), and (4) shall not, except by order of the Board of Trade or the court, be deemed a distinctive mark.

When a registered trade-mark is used in the patent specification describing the process for the production of the article to which the trade-mark is applied, the expiry of the letters patent also terminates the proprietary rights in the trade-mark. Apart from such lapse, however, the registration of a trade-mark may be renewed every fourteen years, and, subject to the payment of fees for its continuance, it continues in force indefinitely. In actual fact, a number of trade-marks applied to patented substances continue in force after the expiry of the patent, apparently for no better reason than that they are not challenged.

The Patents, Designs and Trade Marks Act which was passed last year after the war had begun in order to deal with the matter, gave power to the Board of Trade to order the avoidance or suspension in whole or in part of any patent or licence granted to a subject of any State at war with His Majesty, or the registration of any trade-mark the proprietor whereof is such a person. No action is taken unless a definite application is made to the Board of Trade, and somewhat stringent rules have been laid down to guide the Board in those cases in which an application for an avoidance or suspension is made. The two important clauses in these rules are, first, that the applicant must be intending to manufacture the goods in respect to which the application is made, and, secondly, it must be shown to be in the general interests of the country, or of a section of a community, or of a trade—in other words, for the public interest and not merely for the private interest of the applicant—that the rights previously existing should be suspended. The usual procedure has been to grant licences to applicants to manufacture under particular patents, in some cases a condition being that a royalty is to be paid after the termination of the war to the present owners of the patent rights; in the case of trade-marks suspension is only granted as a rule when the trade-mark is the name of a patented article and a licence is granted under the patent protecting it, or when it is the only practicable name of an article manufactured under an expired patent, or in accordance with a known process or formula.

A study of the proceedings in the various cases in which applications have been made show that the Board has been guided solely by a consideration of the importance, from the public point of view, of keeping in existence the production of certain articles, and has never avoided or suspended the rights of patentees or the owners of registered trade-marks merely on the ground that they were alien enemies, or that it would be to the interest of particular persons or firms in this country for such rights to be extinguished.

The principal substances of interest from the medical point of view which have come before the Board are aspirin, formamint, heroin, lysol, salvarsan and neo-salvarsan, sanatogen, stypticin, and urotropine.

The position in regard to these is as follows:

Aspirin.—Only trade-mark rights existed in this case, the patent which was originally granted for the manufacture of the substance having been proved to be invalid some years ago. The position as regards the trade-mark was a somewhat curious one, this having been registered separately by two firms, Farbenfabriken vormals Freidrich Bayer and Co., Elberfeld, Germany (No. 221,673), and Bayer and Co., Ltd., London (No. 322,523). The former of these two registrations has been avoided on the ground that the proprietors are alien enemies, but as Bayer and Co., Ltd., is a company registered in Great Britain its rights have not been interfered with, although the matter is still under the consideration of the Board.

Formamint.—An application for the suspension of the rights in this trade-mark in favour of the applicant was refused.

Heroin.—Mr. H. S. Wellcome, of Messrs. Burroughs, Wellcome and Co., applied in September for permission to use this name for the product manufactured by his firm. It was stated, however, on behalf of the owners of the trade-mark that the stock of the drug in this country was sufficient to last for six months, and the hearing was therefore adjourned.

Lysol.—In this case the word "lysol" is used in the patent specification referring to the process of manufacture, and this patent has now expired by lapse of time. The name "lysol" has, therefore, been declared open to any one to use as a description of an article of the proper composition, but the original owners of the trade-mark, Messrs. Schuelke and Mäyr, of Hamburg, having registered a particular device with the word "lysol," this device remains as a trade-mark on the register. Lysol is now being manufactured in this country by Messrs. Charles Zimmermann and Co., who were formerly agents for the German product, and by a number of other firms, some of whom, however, have adopted distinctive names for their own product, while others are using the word "lysol." The Liquor Cresol Saponatus of the new *British Pharmacopoeia* is practically the same thing as lysol, and this name, of course, is applicable to the product of any firm if made according to the *Pharmacopoeia*. As things stand, a large number of disinfectants are on the market under various names but differing only in quite unimportant respects among themselves or from the original article.

Salvarsan.—In this case both patent rights in the process of manufacture and trade-mark rights in the name existed. A suspension of both patent rights and trade-mark rights in favour of Messrs. Burroughs, Wellcome and Co. has been granted, subject to the payment of a royalty. At the conclusion of the war salvarsan will, no doubt, again come to this country from Germany; in order, therefore, to distinguish their product from any which may be so imported in future, Messrs. Burroughs, Wellcome and Co. have adopted the further brand "Kharsivan," and are now selling as Kharsivan Brand Salvarsan the substance manufactured by themselves identical in all respects with the salvarsan of German manufacture. The patent rights for the manufacture have also been suspended in favour of Poulenc Frères, Paris. The latter firm, however, does not propose to use the trade-mark Salvarsan, but is putting its make of the product on the market with the name "Arseno-benzol," under which it is described in the *British Pharmaceutical Codex*.

According to the information hitherto made public, the position in regard to neo-salvarsan would seem to be substantially the same as for salvarsan, but the final decision of the Board does not appear to have yet been given.

Sanatogen.—Various applications have been made for the avoidance or suspension of the rights in this trade-mark, but unsuccessfully. A large number of firms, however, are manufacturing products similar to or identical with sanatogen, and selling it under various new names. We understand also that a similar product will appear in the forthcoming addendum to the *British Pharmaceutical Codex* under the non-proprietary name Caseinum Glycerophosphaticum.

Stypticin.—An application for the suspension of this trade-mark was unsuccessful, the present owners undertaking to supply it in the required quantities at the usual price.

Urotropine.—An application in September for the suspension of this trade-mark was adjourned, and does not appear to have been decided since. The substance, which in chemical constitution is hexamethylene-tetramine, is made, as is well known, under a considerable number of other proprietary names, and is now official under the name Hexamine. The continued use of trade-mark names in this case does not appear, therefore, to be desirable.

In addition to the avoidance of trade-marks under the recent legislation a number of trade-mark names of medicinal substances are now of doubtful validity owing to the expiry of the patents under which the substances have been prepared. So long as such trade-marks actually remain on the register they must, of course, be recognized as existing, but, as suggested above, it is probable that if challenged they would prove to be invalid. A series of notes on articles coming into this category has commenced to appear in our contemporary the *Chemist and Druggist*. The following have so far been dealt with: Acoine, Airol, Alumnole, Argentamin, Argonin, Aristochin, Aristol, Benzosol or Phthiosot, Chinaphenin, Chloralamide or Chloralformamide, and Creosotal.

THE PROFESSIONAL CLASSES WAR RELIEF COUNCIL.

A MEETING in support of the objects of the Professional Classes War Relief Council was held in the Egyptian Hall of the Mansion House, London, on February 16th, when the Lord Mayor presided over a large and distinguished assembly.

The War Relief Council is formed of representatives of a great number of professional societies and professional benevolent funds. Its objects are to find out the extent of the distress amongst the professional classes arising from the war, to co-operate with existing organizations in the work of relief, and to provide centralized assistance in directions in which it appears more economical so to do. The chief forms of assistance arranged are in matters of education, training, emigration, maternity aid and temporary employment, and in helping the families of professional men who have enlisted. It is recognized that the benevolent funds of professional societies are, and must remain, quite independent.

The Royal Medical Benevolent Fund is represented upon the War Relief Council by its President, Sir John Tweedy, and its Treasurer, Dr. Samuel West, who is also Chairman of the Executive Committee of the Council. Cases from the medical profession that are discovered by the council to be in need of assistance will be referred to the Royal Medical Benevolent Fund, and will, no doubt, receive all the help that is necessary or possible. In the case of members of some professions, however, the burden of relief measures—in the absence of adequate benevolent funds—will fall mainly, if not entirely, upon the central council. It is hoped that, to some extent, the resources of professions unaffected, or but slightly affected by the war, may be placed at the disposal of professions less fortunately situated. Thus, Sir Herbert Tree and Sir George Alexander indicated that the theatrical profession had been able to raise all the money needed so far for its own benevolent purposes, and was fully prepared to use its special facilities for raising money in aid of professional distress generally.

It was not found possible to include in the programme of the Mansion House meeting a statement as to the effects of the war upon the medical profession, but it may be pointed out that these are by no means negligible. As indicated in the report of the annual meeting of the Royal Medical Benevolent Fund, published in the last issue of the JOURNAL, members of the R.A.M.C. have been killed while carrying out their duties at the firing line, and many leave dependants in need of assistance. Other cases of need arising from this source must be expected. General practitioners, though not experiencing any slackening in the demands upon them, are likely to meet with greater difficulty in securing payment of their accounts. Practitioners on the panel find their remittances from the Insurance Committees reduced owing to the withdrawal from benefit of those who have joined the forces, while owing to the higher average incidence of sickness among the population remaining, there is no corresponding diminution in the calls upon the practitioner.

The principal speaker at the meeting was the Archbishop of Canterbury, who dealt sympathetically with the difficulties of the middle class worker as compared with the artisan receiving a similar rate of remuneration. He also indicated the effect upon architects and draughtsmen of the curtailment of building enterprises. Sir John McClure, head master of Mill Hill School, described the aims of the War Relief Council in the direction of helping members of the professional classes to continue the education of their children. He also appealed for contributions to a loan fund, and for offers of hospitality.

A resolution approving the objects of the Council was carried unanimously, and a vote of thanks was accorded to the Lord Mayor on the proposition of Major Leonard Darwin, seconded by Dr. Samuel West. Sir Edward Clarke, K.C., who was prevented by illness from attending, sent a contribution of 100 guineas.

THE late Brigade Surgeon Henry Atkins left estate valued at £29.655.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

DR. TACQUIN'S REPORT.

THE *Field* published last week a special supplement containing a long and striking article by Dr. Arthur Tacquin, Physician-in-Ordinary to the King of the Belgians, and formerly head of the Belgian Red Cross Hospital in the Royal Palace in Brussels. His article contains a circumstantial account of what he saw during a journey through his devastated country. The publication is a courageous act on Dr. Tacquin's part, for he recognizes that what is left to him of home and property will pay the full penalty. Not only does the article tell us what he saw but his photographs show us what he saw. There have been many photographs in many newspapers and periodicals of towns and villages systematically destroyed, but never such an assemblage as this. As page after page is turned, the meaning of the doctrine of *terrorismus* and the miserable pettiness of the spirit of the nation which can applaud the commission of such abominations by its soldiers is brought home to us. "I have seen," Dr. Tacquin writes, "Pompeii and Herculaneum, but though 2.000 years have passed since their destruction, both these towns are in a better state of preservation than, for instance, Dinant a few weeks after the German armies had passed through it." The Germans have forbidden photographs of the results of their savagery to be taken, but Dr. Tacquin managed to avoid the vigilance of the sentinels and took the photographs, with which he appeals not only to the Allies but to the neutral nations.

But, after all, the destruction of buildings, however beautiful and however great their historic interest, is one of the lesser of the evils which Belgium has suffered. Dr. Tacquin tells of a local doctor who, by a lucky chance, escaped with his life, although hit by several bullets. He had undertaken the exhumation of the bodies of hundreds of civilians who had been shot, and who had been buried in a common grave—men, women, and children—along with scourings from the animal slaughter house. The bodies were reburied with respect, and lists of the dead were printed and sent to relatives; but the German authorities feared such official proofs of their brutality, and compelled those who had such lists to give them up.

But mere murder, again, is one of the lesser evils Belgium has had to suffer. "No amount of money can compensate, no pity can console, those miserable women who have not only had to suffer the horrors of violation, but will, in some cases, see their agony prolonged in the reproduction of the detested barbarian; or will, in others, suffer all their lives from the loathsome contagion thus incurred." Again Dr. Tacquin tells how "in a country house near Antwerp the owner had done all he could to serve his hosts with what they wanted. At dinner he was lashed to a chair while his two daughters were stripped and made to serve the dinner naked. When the officers had done with them the wretched girls were thrown to the troops. One committed suicide and the other went mad. Now it is easier, perhaps, to understand why so many husbands and fathers fled to England with their womankind, fled anywhere to escape the brutalities of these apostles of Culture." "Remember," he adds, "all you Englishmen, that if the Germans ever can invade your country, this is what they will do to English women." They still hope, they have told us recently, to dictate peace in London next July.

The editor of the *Field* has written a spirited and eloquent introduction to Dr. Tacquin's article. In it he makes the very true observation that when all allowances are made for the letting loose of the brute in man, "no army in the world can be compelled continuously to carry out orders which it abhors." The supplement, we are told, is published not to stimulate reprisals, but that public opinion in this country and in neutral countries may reach a stern appreciation of the facts, for the facts have been hotly denied in Germany by men who bear names that once were as respected as any in the world. It is essential that such denials should be contradicted and given their true value. The authenticity of every photograph is guaranteed by the editor of the *Field*, and in addition to Dr. Tacquin's article the evidence brought together includes that guaranteed by the responsible Governments

of Belgium, France, and Russia, that afforded by original letters found on the bodies of German dead or prisoners, and that contained in official German publications and original proclamations posted in Belgium, some of which are reproduced by photography, while all are in the office of the *Field*.

THE AMERICAN COMMITTEE.

The American Committee for the Aid of Belgian Physicians has opened a subscription list, and has already dispatched 450 boxes of food at the cost of 990 dols. The secretary, Dr. Howard C. Taylor (New York), and the treasurer, Dr. Frank F. Simpson (Pittsburgh, Pennsylvania), state that all the money collected will be available for the purchase of supplies, as the carrying charges will be provided for by the American Commission for Relief in Belgium. The chairman of the committee, Dr. Victor C. Vaughan, president, and the vice-chairman, Dr. William L. Rodman, president-elect of the American Medical Association, and the committee is completed by many representative men from all parts of the United States, including Dr. John B. Murphy (Chicago), Dr. Charles H. Mayo (Rochester), Dr. Samuel J. Meltzer, president of the Association of American Physicians, Dr. Stuart McGuire, president of the Southern Medical Association, and the editors of some of the leading American journals.

THE CENTRAL BRITISH COMMITTEE.

At a meeting of the Executive Committee held on February 11th at the offices of the British Medical Association, the chairman, Sir Rickman Godlee, reported that as the result of correspondence with the President of the General Medical Council it appeared that in the President's opinion it would not be possible for the Council to remit or reduce the registration fees payable by Belgian graduates admitted to the British *Medical Register*. The Committee therefore decided to advance the amount of the registration fee in cases in which this appeared to be necessary, and when the Belgian graduate had received an offer of employment. It was reported that Mr. J. Y. W. MacAlister, Secretary and Consulting Librarian of the Royal Society of Medicine, had been co-opted, and he was present at this meeting.

The Treasurer, Dr. Des Vœux, took the occasion of the first meeting held since the money which had passed through the Treasurer's hands exceeded £5,000, to make a short financial statement. He said that £5,297 had been received by him and acknowledged in the *Lancet*, the BRITISH MEDICAL JOURNAL, and the pharmaceutical journals. More money than this had been subscribed, as certain local funds remained in the hands of the local treasurers, as did the Scottish and Irish Funds. After mentioning some of the principal subscriptions in detail, he said that so far money had only been received from 1,500 people, allowing for the fact that certain large subscriptions from organizations had been sent to him with epitomized details. A sum of about £470 had been spent already, or was arranged to be immediately spent, upon pecuniary relief in urgent cases, upon purchase of clothes, upon advances for registration fees, and upon boxes of medical material shipped to Brussels through the Commission for Relief in Belgium. He had placed £4,000 on deposit at the bank. The committee decided to carry on its work for the present upon the same lines, on the one hand helping immediately in necessary cases, and on the other husbanding the money as much as possible, after the relief of urgent distress, so that it may be available as the nucleus of a future international subscription for the rehabilitation of the medical profession in Belgium.

The eleemosynary subcommittee reported that it had made grants to certain urgent cases, either for the purchase of necessities like food and clothes, or to facilitate the taking up of paid appointments.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. These will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, in addition to subscriptions amounting to over £5,600 previously acknowledged; this sum does not include money received by the Scottish or Irish Funds.

Thirteenth List.

	£	s.	d.
Dr. Sheila M. Ross...	1	1	0
Mr. G. Grahame, H.M. Consul-General	1	1	0
Dr. Edgar F. Cyriax	3	3	0
Dr. Frank Stevenson	2	2	0
Mr. W. Bray ...	0	5	0
Dr. A. Bowe ...	1	1	0
Brussels Medical Graduates' Association (per Dr. Major Greenwood, Treasurer), further donation	5	6	0
Miss C. M. Lace ...	1	1	0
Jersey Medical Society (per Mr. E. O. B. Voisin, Treasurer) ...	5	5	0
Medical Committee, Royal Free Hospital, Gray's Inn Road (per Hon. Sec.)	3	15	0
Dr. Edward Scott ...	2	2	0
Dr. T. E. Walker ...	1	1	0
Nurses General Hospital, Rangoon ...	100	0	0
Staffs. Branch, South Staffs. Division, B.M.A. (per Dr. H. C. Mactier, Hon. Sec.), 2nd list—			
Dr. J. A. Lycett ...	1	1	0
Dr. Lila Gregg ...	1	1	0
Mr. A. H. W. Hunt	1	1	0
Dr. E. Weatherhead	0	10	0
Dr. W. S. Badger	0	10	6
Messrs. William Ransom and Son, Ltd.	5	5	0
Stourbridge Medical Society (per Dr. G. J. Dudley, Hon. Sec.)	2	2	0
Mr. T. J. Webster ...	2	2	0
Lieut.-Col. R. Davis, I.M.S.	1	0	0
Lieut.-Col. F. Marsh, R.A.M.C.(T.) ...	5	5	0
Mr. A. Ll. Vaughan	2	2	0
Sir Felix Semon, K.C.V.O.... ...	2	2	0
Dr. H. N. Keeling ...	1	0	0
Dr. J. R. Preston ...	1	1	0
Dr. Mabyn Read ...	2	2	0
Mr. V. S. Hodson ...	1	1	0
Oldham Medical Society (per Dr. F. L. Pochin, Hon. Sec.), second list—			
Dr. A. Wharton ...	2	2	0
Dr. Wilson ...	2	2	0
Dr. Clegg... ...	1	11	6
Dr. Low	1	11	6
Dr. Ferguson ...	1	1	0
Dr. Lendrum ...	1	1	0
Dr. Wilkinson (second donation) ...	0	10	6
Birmingham Local Committee (per Dr. Robt. Saundby, Hon. Sec.), seventh donation—			
Mr. J. Furneaux Jordan, from Members' Fund, Birmingham Branch, B.M.A...	10	10	0
Mr. A. Pellew ...	1	1	0
Woolwich Division, B.M.A. (per Dr. B. W. Lacey, Hon. Sec.)—			
Dr. A. S. St. John..	1	1	0
Dr. and Mrs. A. R. Forrest-Hay, proceeds of whist party	9	5	0
Dr. A. Vaughan Bernays ...	2	2	0
Mr. T. H. Smith ...	1	1	0
Dr. A. Douglas Heath	2	2	0
Dr. E. L. Bunting (per Dr. C. Pollard)	1	1	0
Dr. S. W. Haynes..	1	0	0
Middlesex Division, Tottenham Ward, B.M.A. (per Dr. G. R. Plaister, Hon. Sec.)—			
Dr. R. B. Marjoribanks	1	1	0
Dr. C. Gurney Thompson ...	0	10	6
Dr. L. P. Scott ...	0	10	6
Dr. J. L. Sykes ...	0	10	6
Dr. Kingdon ...	0	10	6
Dr. A. V. Craig ...	0	10	6
Dr. I. F. Broughton	0	10	6
Dr. W. H. Plaister	0	10	6
Dr. G. R. Plaister	0	10	6
Dr. Wm. Hern ...	2	2	0
Mr. T. W. Townley	0	10	6
Mr. G. Weston ...	0	10	6
Messrs. M. H. Stiles and Son	0	10	6
Mr. E. J. Millard ...	2	2	0
Mr. E. H. Farr ...	2	2	0
Mr. L. Cooper ...	1	1	0
Mr. H. O. Thomas ...	0	10	6
Norwich and District Pharmacists' Assn. (per Mr. P. Robinson), first list—			
Mr. G. C. Maynard	1	1	0
Mr. H. J. Heyhoe	1	1	0
Mr. J. Staton ...	1	1	0
Mr. P. Robinson ...	1	1	0
Mr. W. H. Hurn ...	1	1	0
Mr. Houlton ...	1	1	0
Mr. T. N. Eastland	1	0	0
Mr. F. G. E. Plumstead	0	10	6
Mr. F. Smith ...	0	10	6
Mr. F. T. Alpe ...	0	5	0
Mr. Robinson (Dereham) ...	0	5	0
Mr. A. E. Beeston	1	1	0
Mr. F. S. Cullen ...	2	2	0
Mr. H. E. DeCarle	1	1	0
Mr. C. H. Hipperson	0	10	6
Mr. W. J. Lacey ...	1	1	0
Mr. W. H. Lenton	1	1	0
Mr. H. G. Maddison	0	5	0
Mr. I. M. Weller...	1	0	0
Messrs. Smith and Sons	1	1	0
Western Pharmacists' Assn. (per Mr. H. R. Proctor) ...	120	0	0
Thames Valley Pharmacists' Assn. (per Mr. A. Higgs) ...	11	11	0
Mr. G. H. Toy (per Mr. F. Smith, Hon. Sec. Birmingham Pharmaceutical Assn.)	0	10	0

SINCE the nature of pellagra and its relation to the *Simulium reptans* and to serious mental changes following the skin eruption were discussed by Dr. Louis Sambon, Dr. Box, and others in the BRITISH MEDICAL JOURNAL (July 5th, 1913), great attention has been paid to this remarkable disorder in other countries besides Italy, with which it was at first associated. The *Boston Medical and Surgical Journal* of January 28th reports that during the month of November, 1914, 603 new cases of pellagra were reported in the State of Mississippi, U.S.A.

British Medical Journal.

SATURDAY, FEBRUARY 20TH, 1915.

INVESTIGATION OF ENTERIC FEVER IN THE ARMY.

THE War Office, after consultation with the Local Government Board, has decided that a special record shall be kept by military Sanitary Officers concerning all cases of enteric fever which may occur amongst soldiers in this country. The objects in view are to ensure that each case is made the subject of inquiry, to provide material for further inquiry where multiple cases occur, to compare the experience of various military units, and to enable a summary to be prepared of the experience of the army as a whole and of different parts of it.

The Local Government Board has in consequence issued a circular, dated February 13th, to medical officers of health in all sanitary districts, pointing out that military medical officers are required to inform the M.O.H. of a sanitary district in which troops are stationed of any cases of enteric fever which may occur, and that it is important that the M.O.H. should co-operate with these officers and with military sanitary officers in tracing the source of infection and removing any conditions favouring spread of the disease.

A special form of record has been drawn up; some of the information required will most conveniently be supplied by the medical officer of health, who will be in a position to add information as to the relation of the case to causes of infection present in his district, or, if the infection has been contracted elsewhere, to communicate on the subject with the M.O.H. of the district concerned. The form will in the first place be filled up, so far as his information goes, by the medical officer in charge of troops and forwarded, through the Deputy Director of Medical Services, to the Command Sanitary Officer, who will add information in his possession and forward it to the M.O.H. of the sanitary district in which the troops are stationed. After completion by the M.O.H. it will be returned to the Command Sanitary Officer, who will forward it through the D.D.M.S. to the Secretary of the War Office; at the same time the M.O.H. will furnish a complete duplicate to the Medical Officer, Local Government Board.

Having urged as strongly as we could over five months ago that steps of this nature should be taken we need only express our satisfaction that they have now been put in force. The information which will be made available in this way ought to be very valuable for administrative purposes, both military and civil, by making it possible to deal with a threatened outbreak of typhoid fever at the earliest possible moment. To this end laboratory facilities for bacteriological and blood examinations ought to be afforded, and this is no doubt the intention, as the form contains spaces for laboratory notes. It would have been interesting had the circular given specific information on this point. The particulars to be supplied include also a statement of the history of the man in respect to antityphoid inoculation. The collation of the forms will also afford material for epidemiological study, as the statistics—though they will not, we hope, include many cases of the disease—will be concerned with a very large number of men over a wide area. Such a statistical inquiry would seem to come within the scope of the work which it was stated last December would be referred to the statistical staff of the Medical Research Committee. The arrangements now made seem to be evidence of the willingness then expressed by the military authorities "to give all facilities, with the view of ensuring that the records shall be made in a uniform manner and collected under the advice of the staff which will have to handle them."

On several occasions last autumn we pointed out the need for active and continuous co-operation between the Medical Department of the Local Government Board and the War Office if the health of the recruits enlisting in the new armies and undergoing training in this country was to be safeguarded. The statistics given on Monday in the House of Commons of cases and deaths from infectious diseases among British troops at home and in France show the need for such co-operation. The total number of cases of typhoid fever among British troops in the United Kingdom down to the end of January was fortunately small, but the case mortality seems to have been high, especially when we have regard to the fact that a large proportion of men in the new armies have undergone antityphoid inoculation, for the case mortality among the inoculated men of the British army in France down to January 20th was 0.8 per cent. The statistics given on Monday show that among the inoculated and uninoculated, taken together, the case mortality down to February 11th was 7.84 per cent. Among the British troops in the United Kingdom down to January 31st the case mortality was 17.94 per cent. This is distinctly a high rate, and when compared with that of the Expeditionary Force in France, where a very thorough system of investigating all cases of suspected typhoid fever and tracing the probable source of infection is in force, raises a suspicion that cases in this country may have gone undiagnosed. If this be so it discloses a dangerous state of things, which it may be hoped the system of record and inquiry now instituted may bring to an end. It is a little disquieting also to find that there have been 215 cases of dysentery among the British troops in the United Kingdom, but as only one death has occurred it would appear that the type has hitherto been mild.

Another matter which must be causing the military authorities great anxiety is the fact that 62 cases of cerebro-spinal meningitis have occurred among the British troops in the United Kingdom. Sir William Osler, in a paper published in our columns on January 30th, pointed out that though the disease has a higher case mortality than any acute infection, except plague and cholera, the total mortality produced by the disease in a community has not hitherto been high, as the incidence has been low. The statistics now published prove that the infection among the troops is following this course; there have only been 62 cases, but there have been 26 deaths, a case mortality of 41.94 per cent., which is a little lower than the highest rate mentioned by Sir William Osler. The infecting agent, the meningococcus, is found in the naso-pharynx of patients, and persons who have been in contact with the sick may harbour the germs in the nose and throat. Such carriers have been found in large numbers among those living in close contact with the sick, and Sir William believes that the intensity of the epidemic bears some proportion to the number of carriers. Though, as a rule,

the germs disappear from the naso-pharynx of healthy contacts in the course of a few weeks, they may be found in a small percentage of healthy persons, even at a time when the disease is not prevailing. We do not doubt that all cases of the disease are being carefully investigated, and that the Local Government Board is giving its assistance to the military authorities in this respect also. We hope, indeed, that the circular now issued may be taken as only the first step in the co-operation of the Board with the War Office.

THE PROHIBITION OF ABSINTHE IN FRANCE.

ON February 12th a law was passed by the French Chamber prohibiting entirely the manufacture and sale by wholesale or retail of absinthe and similar liquors. This measure, although somewhat less drastic than the prohibition of the sale of vodka in Russia, is nevertheless a very far-reaching Act, which would probably have met with much greater opposition but for the war. The manner in which the proposal was received by the Chamber is indicated by the fact that whereas the Government only proposed to prohibit the sale in France, thus allowing the export trade to continue, an amendment was moved to prohibit the manufacture also; this amendment was accepted and the amended proposal carried; a further amendment, also carried, extended the law to Algeria.

As evidence of the magnitude of the trade which is thus abolished, it was mentioned during the discussion that the consumption of absinthe in 1913 was 240,000 hectolitres, which is equivalent to 53 million gallons. Although the step now taken is drastic, it has been led up to by others both in France and other countries. The French Academy of Medicine has expressly condemned the consumption of absinthe and similar liquors. Some time ago a law was passed by which not more than 0.1 per cent. of oil of wormwood was permitted in absinthe produced in France. The manufacture of absinthe has been entirely prohibited in Belgium, and in 1910 a similar prohibition was adopted in Switzerland, which had previously produced considerable quantities. We have no information at present as to the precise scope of the new French prohibition, which is reported in the newspapers as applying to "absinthe et des boissons similaires," but probably this will include all those strong spirituous preparations to which we commonly apply the name "liqueurs." Very varying opinions have been expressed from time to time as to how far the evil effects of excessive consumption of such liqueurs are due to their high alcoholic strength and how far to the other constituents. Absinthe has been one of the most alcoholic, containing from 47 to 72 per cent. per volume of absolute alcohol. The liquor was prepared by macerating in the alcohol the leaves and flowers of wormwood (*Artemisia absinthium*), angelica, anise, cinnamon, cloves, fennel, hyssop, peppermint, and other herbs, then distilling off the alcohol and other volatile constituents, and colouring the distillate by macerating in it leaves of wormwood, balm, and hyssop. A large amount, however, appears to have been prepared by merely dissolving essences or essential oils of wormwood and other herbs in alcohol and colouring by means of chlorophyll or sometimes less innocent colouring substances. It has been stated also that large quantities of "denatured" alcohol, sold free of duty for industrial purposes, have found their way into the manufacture of absinthe, and in the debate in the Chamber it was asserted by a deputy from one of the districts where absinthe is principally produced that this liquid had really acquired its bad reputation through the properties of the various spurious products sold under the same name. Various investigators have been inclined to attribute many of the evil effects produced by absinthe drinking to the anise, which is one of its constituents, or to some of the other herbs, rather than to the wormwood, while others, again, have asserted that practically the whole of the ill effects have been due to the alcohol. There appears to have been some agreement, however, that the epileptiform symptoms which have been observed in absinthe drinkers are to be laid to the account of the wormwood, and some recent investigations have led to the conclusion that absinthiin, a bitter glucoside having the formula $C_{15}H_{20}O_4$, is really the principal toxic constituent to which the chief effects of absinthe must be ascribed.

There will be little or no divergence of opinion—at least among medical authorities—that in thus cutting off at one stroke the supply of absinthe the French Government has rendered a signal service to the nation. The political aspects of the matter do not, of course, concern us here. Strong arguments were urged both for and against the compensation of the many persons engaged in the production of the liquor, the herbs used in producing it, and the various subsidiary industries. M. Ribot, the Finance Minister, without committing the Government in any way to the principle of compensation, promised the Chamber that he would hold a careful inquiry into the various interests concerned and bring forward a definite proposal in regard to the matter by May 1st, and this promise was accepted as satisfactory. It was proposed on behalf of the Socialist deputies that the entire industry of alcoholic liquors should be made a Government monopoly and that all harmful alcoholic preparations should be suppressed, but, as was to be expected, such a sweeping proposal did not commend itself to the majority. The law which was actually passed appears sufficiently heroic for the moment. It cannot be doubted that experience will prove it to be fully justified. Mr. Lloyd George's estimate, in his speech in the House of Commons on Monday, that Russia has enormously increased her reserves by suppressing the sale of all alcoholic liquors, and by that means alone "has increased the productivity of her labour by something between 30 and 50 per cent., just as if she had added millions of labourers to the labour reserves of Russia without even increasing the expense of maintaining them," puts in a striking form the broad result of such legislation as that passed recently by our two allies. In ten years the beneficial effects of this latest French legislation will probably be evident to all the world.

THE INTERNATIONAL OPIUM CONVENTION.

As was stated in the JOURNAL of July 11th, 1914, in reporting the work of the third International Opium Conference at the Hague, it was then and there decided that if by December 31st, 1914, all the signatory Powers to the Convention should not have deposited their ratifications, it should be lawful (*loisible*) for the Powers which had then ratified to put the Convention into force. A special protocol was to be opened at the Hague to permit such Powers to attach their signatures through the usual diplomatic channels.

It is gratifying to learn that already the United States of America, China, and the Netherlands have

signed this special protocol. At the close of the third Conference last July eleven Powers had ratified the Convention, while Great Britain and the Netherlands were about to do so, and Japan and Persia were ready to make deposit. Ten other Powers were only awaiting the sanction to ratification by their legislative bodies. Eighteen other signatory Powers were to be approached by the Netherlands Government "with a view to induce them to declare their readiness shortly to deposit their ratifications in order that the Convention may come into force as soon as possible." Turkey and Servia alone of all the Powers had refused to sign the Convention.

In the valuable report by the British Plenipotentiaries on the work of the third Conference, Sir William Collins and Mr. Max Müller say: "We are under no illusion as to the influence that events which have occurred since the rising of the Conference must have upon all international concert of the nature contemplated by the Opium Convention. Humanitarian aims of the kind which invoked these three Conferences and inspired their constructive work must suffer eclipse or serious retardation during a time of warfare. We nevertheless recall that one of the first objects attained in 1815 at the Congress of Vienna, after the close of the Napoleonic wars, and on the initiative of the British representative, was an international declaration of the abolition of the slave trade. We trust that when, in the course of time, international relations are resumed, the progressive stages in abolishing the abuse of opium and other kindred drugs may be resumed, and that the efforts of the three International Conferences may achieve the beneficent objects which from first to last inspired those who have borne their part in these deliberations."

We gather from the report, to which we shall revert on a future occasion, that it was mainly owing to the obstructive attitude adopted by Germany that a speedier ratification and putting into force of the Convention have not been effected. This attitude appeared to take the Conference of last July by surprise, more especially since the original draft of the Convention was considerably modified to meet the views of the German delegates at the first Conference. It then appeared that in the earlier sessions the German delegates, in concert with the British, had prepared certain articles of the Convention which were adopted by the Conference, but later on, after a visit to Berlin, the same delegates desired very materially to amend these same articles. This course was reluctantly assented to by the Conference. Nevertheless, it appears to be mainly due to Germany's refusal to ratify it in this modified form that the Convention is not now in the stage of being put into force. Such action has, of course, become more comprehensible in the light of more recent events which have thrown a reflected light on Teutonic regard for the meaning and the sanctity of international obligation.

EUGENICS AND WAR.

THE second Galton Lecture, in memory of Sir Francis Galton, who was born on February 16th, 1822, was delivered before the Eugenics Education Society on Tuesday last by Professor J. Arthur Thomson of Aberdeen University. In dealing with his subject, which was "Eugenics and War," he argued, in the first place, that a serious modern war tended to dysgenic selection. The finest men were often set to the most difficult tasks where the mortality was high, and the conspicuously brave were particularly apt to be killed off. With a voluntary system of military service, the call of their country attracted the more chivalrous, the more virile, the more courageous, the more patriotic, and the disproportionately high death-rate among combatants as compared with non-combatants meant, in some measure at least, an impoverishment of the race—a reversed selection of the stock of possible parents. Moreover, the economies and retrenchments after a great war were likely to handicap the more highly individuated members of the race—artists, for example—whose work was unfortunately most readily dispensed with. By economizing on super-necessaries we tended to eliminate super-men. It was not assumed that the war had not its beneficial as well as its deteriorative influences, but the former affected the social heritage rather than the natural inheritance—the ethical atmosphere rather than the germ plasm. Biologically regarded, war meant wastage and a reversal of rational selection, since it pruned off a disproportionately large number of those the nation could least afford to lose. The second point discussed was the Darwinian concept of the struggle for existence. The phrase, as Darwin had said, was to be used "in a large and metaphorical sense." It included all the varied responses and reactions that living creatures made against environing limitations and difficulties. It was often non-competitive, often other-regarding, often an endeavour after well-being. Though one mode was certainly to sharpen teeth and claws and to intensify individual competition, another was to increase parental care, to make some experiment in co-operation. Among the finer forms of life success was often to those types which subordinated self-preservation to the interests of the race. A very large proportion of the time and energy of organisms was given to activities not at all to the advantage of the individual. Man had not yet fully appreciated Nature's strategy. While not denying that the survivors in the struggle were sometimes those individuals who had the sharpest weapons or the strongest armour, Professor Thomson maintained that the fitness which won survival was often a capacity for self-subordination and mutual aid. In the third place, he argued that war, biologically regarded, was a reversion to the most primitive and crude form of the struggle for existence. The implied reversion brought with it terrible risks of slipping down the rungs of the evolution ladder. Professor Thomson then gave some illustrations of the eugenist's position in regard to changes which were being brought about by the war or were likely to be brought about. Increased respect was due to those desirable people who married chivalrously without waiting till the bridegroom had secured twice the income his father had. There was patriotism in dying for our country, perhaps also in marrying for her. Recruits with a good record who had reached maturity should be encouraged to marry when there was a certainty of adequate provision for the wife or possible widow, and for the possible child. It was the eugenist's task to scan carefully all practical proposals hurriedly projected to meet crises of war-strain, such, for instance, as putting children at the disposal of the farmer—a doubly dangerous suggestion. Eugenists must resist in themselves and in organizations the natural tendency to economize in noble luxuries, for this was apt to mean crippling the least readily replaceable members of the community. The war would probably be followed by a freshened enthusiasm for physical fitness, which was all to the good as long as it was clearly recognized that veneering did not make bad wood sound. While compulsory military training was probably better than a large standing army, the temperament of this country was all against coercion, and there was great risk of compulsory military training insidiously Prussianizing us. The price to be paid for this costliest of wars would be long, but while a deadly part of the price was likely to be the shelving of eugenic endeavours, there were many hopeful considerations. The war was likely to demonstrate the value of the plastic, freely-developed

organism. Our thrill of national self-consciousness might nerve us to push on with endeavours towards cleansing and beautifying the stream of human life. There were eugenic prospects in an increased sense of solidarity among, and more frequent coming and going between, the various self-governing dominions of the British Empire. Even if our natural inheritance were in some degree impoverished by the reversed selection of the war, it was likely that our social heritage would be enriched, and it was at least possible that we might enter upon a period of *positive* peace.

THE MEASUREMENT OF THE BIOLOGICAL ACTION OF X RAYS AND GAMMA RAYS.

VARIOUS methods have been employed for measuring the action of *x* rays and gamma rays of radium, some of them depending on photographic and chemical, others on electrical and phosphorescent effects. Dr. B. Szilard, however, urges[1] that ionization is the only satisfactory method of measuring the biological action of such rays, although up to the present time it has not been given its proper place in dosage. While there is great physical analogy between the various radiations, it is by no means certain that their biological properties are the same. The fact that dermatitis caused by *x* rays has been cured by radium suggests that there are differences in the biological effects of the two forms of radiation. Indeed, such differences might be expected from the fact that gamma rays are perhaps thirty times more penetrating than the hardest *x* rays; this quantitative physical difference may readily be translated into a qualitative biological one. The methods of measurement at present in use do not give satisfactory information as to the biological properties of the rays; ionization measures at one and the same time both the quality and quantity of the radiant energy. It has the advantages that *x* rays are measured after they have left the tube, that it is unaffected by physical factors other than the radiation itself, and that the radiation may be measured in absolute electrical units. The principle of the method is to measure numerically the number of ions liberated under the effect of the radiation, the measurements being carried out by the successive charge and discharge of an electric condenser of known capacity. The theoretical unit of quantity which the author proposes is the amount of radio-active energy necessary to set free a single ion in air under normal conditions of temperature and pressure. Individual ions, he points out, have an actual existence, determining, as they do, the chemical reactions of a gas, and probably also its biological phenomena, so that the number of ions may really be taken as a measure of the biological effect. For practical purposes, of course, seeing that the energy necessary to set free a single ion is infinitesimal, some multiple of this unit is required, and accordingly he sets up the mega-mega-ion, being the amount of radiation which will set free a million million ions in air; while as corresponding unit of quality he employs the absolute coefficient of absorption of the rays also in air.

SKIAGRAPHIC RESEARCHES IN TERATOLOGY.

A COMMUNICATION dealing with skiagraphic researches in teratology, by Drs. Harry Rainy and J. W. Ballantyne, was read (by Dr. Rainy) before the Royal Society of Edinburgh on February 15th. A large number of lantern slides and *x*-ray photographs of monstrosities were shown, with the special object of demonstrating the abnormal development of certain bones and groups of bones in the fetus. There were seven series, and these included achondroplasia, anencephaly, aprosopus, iniencephaly, exomphalos, sympodia, and thoracopagous twins. It was pointed out that there were three main subdivisions of antenatal pathology corresponding to the three main periods of antenatal life. There was fetal pathology, characterized by diseases corresponding to fetal life; there was embryonic pathology, more commonly called teratology, characterized by monstrosities, and corresponding to the embryonic period of antenatal life; and there was germinal pathology, with its characteristic changes due to the action of morbid causes on the organism in the germinal period of life. It was during the germinal period that many of the teratological formations which were usually referred to embryonic pathology most probably arose; and if the suggestion was tentatively accepted that "unit characters" are fixed by the fate of their "determinants" in the germinal stage of development (and especially at the moment when the polar bodies are expelled), a scheme of classification of certain well-defined monstrosities could be obtained which, whether it should eventually be found to be true or not, would at least help in arriving at a clearer conception of their production. Thus the examples shown in the form of skiagrams could be grouped into (*a*) cases where a complete system of "determinants" was absent — for example, achondroplasia; (*b*) cases where part of a system of "determinants" was absent — for example, anencephaly and aprosopus; (*c*) cases in which the "determinants," though apparently present, might, in consequence of some inherent defect, lead to anomalous developments — for example, some instances of iniencephaly; and (*d*) cases where there was an excess of "determinants"—for example, polydactyly and dichirus. While the various defects in "determinants" were revealed in the "soma" of the cases which formed the subject of the demonstration, there was, it was thought, no doubt that defect was transmitted, at least in some cases, in the germ plasm also, and so might become hereditary, if the somatic deformity was not so serious as to preclude the fetus from attaining to sexual maturity. There were, however, many forms of monster which did not find a place in such a scheme, because, even where the character and grouping of the "determinants" was normal, the moulding of the embryo was interfered with by pathological occurrences during intrauterine existence, and there was little doubt that the amnion (whose formation in the mammalian embryo was very different from that described in the chick) was frequently responsible for grave disturbances of normal development. Dr. Berry Hart and others took part in the discussion which followed the demonstration.

[1] *Archives d'électricité médicale*, No. 385, 1914.

THE DANGERS OF COCAINE SNUFFS.

A CORRESPONDENT tells us that he has observed a habit growing up among young men in his neighbourhood of taking snuff containing cocaine and menthol. In some cases the results would appear to have been serious, and he mentions two instances of men admitted to asylums, one of whom has died; in others there has been a marked deterioration of character. The evil effects of the habitual use of cocaine are well known, and a few years ago the Paris police had to take very drastic measures to check the sale of cocaine at night cafés. We have not before heard of the habit being contracted from the use of snuff, but this would, of course, be quite possible. Coca, or any preparation or admixture of it containing 1 or more per cent. of coca alkaloids, is included in Part I of the Poisons Schedule. If containing more than 0.1 per cent. and less than 1 per cent. the preparations are placed in the second part. It is unlawful to sell by retail any poison in Part I of the schedule to any person unknown to the seller unless introduced by some person known to the seller, and on every sale of any such article the seller must make an entry, in a book kept for the purpose, of the date of sale, the name and address of the purchaser, the quantity of the article sold and the purpose for which it is stated to be required. This must be signed by the purchaser, and the person, if any, who introduces him. The package must be labelled with the name of the article, the word "poison," and the name and

address of the seller. If the quantity of cocaine brings the preparation into the second part only of the schedule, the seller must distinctly label the package "poison," adding his name and address. The regulations do not apply to cocaine forming part of the ingredients of a medicine dispensed by a registered chemist or druggist, but the ingredients of the medicine, together with the name of the person to whom it is sold or delivered, must be entered in the prescription book, and the name and address of the seller must be attached to the packet. The International Opium Convention deals with the sale of cocaine preparations; Article 14 would make all preparations containing more than 0.1 per cent. of cocaine subject to regulations as regards sale. Owing to the war the Convention has not yet become law in this country. While the risks of contracting the cocaine habit are far greater when the drug is administered hypodermically, there can be no doubt that there is grave risk of the cocaine habit being induced by the use of a snuff containing it.

THE BIRTH-RATE CURVE.

CHILDREN are conceived and born in every month of the year, but birth records show that more conceptions occur in the spring than in the other months. It does not, however, follow that there is in reality a greater tendency of mankind to conception at that season, for marriages are more frequent in these months, and the first child is born in the ninth to the eleventh month after marriage more often than at any other time. Kroon,[1] in a recent analysis of the legitimate birth-rate and marriage records of Amsterdam, Berlin, and other places, has tried to eliminate the influence which the date of marriage has upon the monthly birth-rate. On a statistic of 11,000 first-born children he finds that as many as four-tenths are born in the ninth, tenth, and eleven months after marriage, the actual maximum falling between the 280th and 285th days. The conception curve for these Dutch figures shows a sharp peak in May and June corresponding to the marriage maximum of April and May, a marked fall in July to December, and thereafter a fall to March, with a break at December. The curve for all children, whether firstborn or not, shows a levelling down of the May to June peak and a secondary peak in December, and the curve for all children except the first shows the same features with a still further reduction in the spring peak and accentuation of the December peak, the fall in the summer months being clearly marked in both these curves. The date of birth of the second child is still influenced by the date of marriage, but, if both the first and second children are eliminated, the curve for the remaining children may reasonably be taken as giving a fair presentation of the actual seasonal conception-rate independent of the time of marriage. Taking the Berlin figures from 1879 to 1913, he finds the curve still showing a definite maximum in the spring, a definite fall in the summer months, and a secondary rise in December. For these three phenomena he suggests explanations. The spring rise may be sufficiently accounted for by the influence of reawakening nature on the mind and body without any hypotheses about an ancestral pairing season; but the summer decline and December rise are not so obviously explicable. Classifying the communities supplying the data into groups according to their size, he can find no support for the view that the summer fall is due to increased work in the fields, since, as a fact, the summer fall is even more marked in communities of over 100,000 inhabitants than in those with less than 5,000. He would relate it rather to the actual temperature, and supports this view by the fact that after the hot August of 1911 the birth-rate of the following May was lower than usual in Holland, France, Belgium, and elsewhere. The December rise he attributes to social influences and associates it directly with Christmastide.

[1] *Nederlandsch Tijdschr. voor Geneeskund*, December 19th, 1914, p. 2010.

WAR EMERGENCIES IN THE PROFESSION.

A NOTIFICATION from the Committee of Chairmen of the Standing Committees of the British Medical Association was published on the first page of the SUPPLEMENT last week. It expressed the hope that the Divisions and Branches of the Association would at the earliest possible date give attention to the difficulties caused or likely to arise owing to the shortage of doctors for the treatment of civilians, and, in particular, to consider the advisability of instituting local arrangements for the treatment of patients of doctors absent on military duty, where this has not already been done. In the issue of the JOURNAL for the same date an article was published, on page 299, in which the further claims likely to be made upon the profession for war service were discussed. The Committee of Chairmen met again last Wednesday, and further considered various points arising in connexion with the subject generally. The Committee was aware that at the beginning of the war in many localities it was tentatively decided as a temporary measure that the medical men residing in the localities should do the work of their colleagues absent on military duty without any pecuniary compensation. The Committee felt that some departure from this temporary arrangement might now in many cases be desirable, and expressed its approval of the classification of areas made by the Scottish Medical Emergency Committee and proposals of that Committee with regard to the division of receipts. The Committee was of opinion that the general principle embodied in the Scottish proposals might afford an equitable basis for adjusting the pecuniary relations between those practitioners who remain and those who proceed on military duty. It accordingly recommended them for adoption in the rest of the United Kingdom. We understand that some of the Branches and Divisions have summoned meetings to consider the matter, and that in certain instances alternative schemes, varying in details, have been put forward for consideration. It may be remembered that the Scottish classification of practices is: (1) Large towns where it was thought that an equal division of all remuneration, both from private and insurance practice, would be equitable; (2) towns with a considerable population, but with a large amount of country work, where a division on the basis of three-eighths to the absentee and five-eighths to the man doing all the work and paying all the expenses, would be nearest to equity; and (3) small centres, or single practice areas, where travelling expenses and consumption of time were still more important factors, and where a division on the basis of one-quarter to the absentee and three-quarters to the man doing the work might be deemed proper. Another point considered by the Committee on Wednesday was whether any steps could be taken to facilitate exchanges, direct or indirect, between Territorial medical officers, in accordance with the terms of the War Office circular of December 10th, published in the JOURNAL of January 2nd, page 22. A difficulty in effecting such exchanges has been, we understand, that though the military authorities may be ready to sanction exchanges, they look to the medical officers themselves to suggest a suitable exchange. One way in which it is believed assistance can be given will be to publish in the BRITISH MEDICAL JOURNAL the statements of officers of the Territorial Force desiring to exchange. It will not, perhaps, be easy in all cases for the officer to suggest a direct exchange, but the publication of his wish may not improbably lead eventually to the bringing about of the desired result.

FAECAL CONTAMINATION OF FOOD.

PROFESSOR STILES has prepared an important note, published in the annual report of the Surgeon-General U.S.A. Public Health Service, 1912, of which a short account appears in the *Boston Medical and Surgical Journal* of January 28th. Certain animal parasites—the

Ascaris lumbricoides, *Trichomonas*, *Lamblia*, *Trichuris*, and *Entamoeba coli*—are found in the intestines of man only, and have never been detected in the alimentary tract of any of the lower animals. Nor are these parasites known to have any free living state outside the human intestines. Transmission occurs in either spore or egg form, but in no other way, hence any person who has one of these parasites in the intestinal tract must necessarily have obtained it through faecal contamination. The Division of Zoology of the Public Health Service U.S.A. examined 2,372 persons taken at random in twelve different localities in three States of the Union. They found that 425 out of the 2,372 subjects had one or more of the parasites absolutely confined to man in their faeces, thus proving by zoological methods alone, far easier of comprehension by the public than the complicated demonstrations of bacteriological research, that these 425 at least had unwittingly partaken of food or drink tainted by faecal admixture. It is found difficult to ensure purity of the water supply in backward rural districts even in the most advanced States of the Union.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

THE new section of the *Oxford* or *New English Dictionary*[1] is small in size, but copious in medical contents. It is also the first section to appear under the latest addition to the editorial staff, Mr. C. T. Onions, and let it be said at once that there is no falling off in style or in quality. It may be asked whether a dictionary can be said to possess a style or a special quality; but an answer in the affirmative is forthcoming the moment one compares, say, Dr. Johnson's dictionary with any of its numerous rivals. The lexicographer, it is true, has few chances of exhibiting originality, but he can, granted the ability, place an impress upon the dry details of his glossarial work sufficient to give life and individuality. The personal touch can be easily recognized in the definitions and most easily in the illustrative quotations. Nay, more, in the present *Dictionary* we have sometimes fancied that we could pick out Sir James Murray's special contributions by their fullness of flavour in definition and the quiet vein of humour which seemed often to underlie and even to bind together the various quotations from different centuries. This, however, may have been our fancy; and, as a matter of fact, no fault can be found with any of the other workers' contributions. To come, however, to the medical terms in the present section, it is very remarkable how many *subs* seem to belong to medicine; there are crowds of them. The more technical ones, such as the anatomical names for muscles, ligaments, vessels, and the like, are placed in groups, with the illustrative quotations, generally one for each, massed after them; amongst them are found such terms as *sub-acromial*, *sub-anal*, *sub-aponeurotic*, *sub-astragaloid*, *sub-auricular*, *sub-calcarine*, *sub-capsular*, *sub-cerebellar*, *sub-collateral*, and so on through a long list. These are adjectives, but *sub-* enters into the adverbs derived from them, such as *sub-durally*, *sub-periosteally*, etc., and into such nouns as *subencephalon*, *submentum*, *subcutis*, *subfacies*, and the like. Then, too, *sub-* has not always the same meaning in its combinations: it may signify below in space, as *sub-orbital*, or below in some special quality, as *sub-dolichocephalic*, or of less power or severity, as *subacute*, and there are other distinctions. There are many medical words deemed important enough to form separate rubrics. *Subarachnoid*, for instance, gets a place to itself, and has six illustrative quotations, the earliest carrying the date 1839, and it is followed by *subarachnoidal* and *subarachnoidean* with their illustrations. *Subarrhation* looks like a medical term at first sight; but, no, it means an ancient form of betrothal in which pledges in the form of money, rings, etc., were bestowed by the man upon the woman; not so very ancient after all, is the comment the non-lexicographic and mere man feels inclined to make! The words *subconscious* and *subliminal*, so often used nowadays in psychology, are defined and illustrated, one of the quotations coming from the pages of this JOURNAL; it is interesting to note that the year of the earliest use of the word *subconscious* is 1832, and the author De Quincey. *Subcutaneous* is a much older word, and there is the following somewhat alarming sentence (year 1651) to illustrate it: "A subcutaneous expurgation should be sent out by the highway and sink of all excrements"—a phrase which may be commended for the use of irascible old gentlemen suffering from exacerbations of the gout. It is rather a striking fact that the term *subincision* seems to have been appropriated wholly for the cutting of an opening into the urethra on the under side of the penis as practised by some savage tribes. There is only space left to name some of the remaining medical *subs*: *subject* (meaning liable to a disease), *sublimate* (as in corrosive sublimate, formerly called sublimate corrosive), *sublingual* (*sublingua* was formerly used for "uvula"), *submental* (under the chin), *submucosa* (not yet fully naturalized, but a friendly alien, so to say), *suboccipital*, *suboperculum* (in the neighbourhood of the insula of Reil), *subscapular* (first used apparently in 1831), *subserous*, and *subsultus* (familiar in the phrase *subsultus tendinum*). It is, therefore, a section of the great *Dictionary* rich in medical terms, albeit most of them are anatomical.

[1] *A New English Dictionary on Historical Principles*. Edited by Sir James A. H. Murray. Su—Subterraneous (vol. ix). By C. T. Onions, M.A.Lond., Hon. M.A.Oxon. Oxford: The Clarendon Press. January 1st, 1915. Price 2s. 6d. (6.c.).

PREGNANCY AND TUBERCULOSIS OF THE LUNGS.

VAN TUSSENBROEK, VOS, SCHUT, AND KOUWER have published[1] a summary of the results of an inquiry they conducted into the influence which pregnancy has upon tuberculosis of the lungs. They obtained from 155 Dutch doctors a report of their experience, and on the evidence thus collected they take a less gloomy view of the prognosis than is perhaps usual. Some of the evidence is curious enough; for example, 54 doctors had a uniformly unfavourable experience, and 27 a uniformly favourable one. But excluding such evidence they had 184 cases reported in which pregnancy affected the lung condition for the worse, and 223 in which it had no apparent ill effects; 192 women came through more than one pregnancy, and of these, 56 died eventually of tuberculosis, but some of them so long after the last labour that there seemed little reason to associate the two. The effect on the phthisis was remarkably uncertain. Five cases developed miliary tubercle and died before full time, and 9 died within a fortnight of the birth of the child. But many passed through one or more pregnancies (sometimes with complex and severe labour) without any alteration in the chest, only to break down during a subsequent pregnancy, and perhaps succumb with surprising rapidity. No indication whatever could be found which would foretell the unfavourable course of a case. Neither the state of the disease nor its progressive or stationary character gave any real guide. Even in laryngeal tuberculosis, which is sometimes said to be so uniformly fatal as invariably to indicate the production of abortion, they had 10 cases out of 35 where the mother came successfully to the end of labour, and 7 of the children lived in the 25 fatal cases. They consider on the basis of this evidence that early abortion is scarcely ever justifiable solely because of the presence of tuberculosis. The pregnant woman should be treated exactly as any other sufferer from tuberculosis, and not till the effect of rest, feeding up, etc., has been ascertained would they allow the induction of abortion, even though it may not be possible to induce it at all if too long delayed.

[1] *Nederlandsch Tijdschr. voor Geneeskund*, January 16th, p. 233.

MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

IN recent months the Museum of the Royal College of Surgeons of England has been visited by many companies of men training for service in the Royal Army Medical Corps and for ambulance services of a voluntary nature. The Council of the College have placed all the resources of the Museum freely at the disposal of such visitors. The Council has also given permission to the Fellows of the Royal Anthropological Institute and of the Prehistoric Society of East Anglia to hold an afternoon meeting in the Museum on February 23rd, when many interesting specimens will be shown and papers read. The combined societies will also hold an evening meeting on the same day at the rooms of the Royal Anthropological Institute at 50, Great Russell Street, when Mr. Charles Dawson will give an account of the cultures in the Sussex Weald from Eoanthropic times down to the Neolithic period. Professor Keith will give the first of his six Hunterian lectures on the anatomy and mechanism of the alimentary canal on Monday next, at 5 p.m. It will deal with the innervation of the canal. In subsequent lectures the mechanism of swallowing, and the musculature of the stomach, pylorus, and bowels, will be discussed. In the sixth lecture the mechanism of muscular support of the intestinal tract and the nature of peritoneal adhesions will be considered.

Medical Notes in Parliament.

Statistics of Disease in the Army.—In reply to questions by Mr. Rowlands and Mr. W. Thorne, on February 15th, Mr. Tennant said that he would circulate a table of figures, but could state at once that there had been no cases of cholera or typhus fever either in the Expeditionary Force or among the British troops in the United Kingdom. The following are the statistics circulated in print:

Return showing the Number of Cases and Deaths among the Expeditionary Force and the British Troops in the United Kingdom from certain Diseases from August 1st, 1914, to February 11th, 1915, in respect of the Expeditionary Force, and to January 31st, 1915, in respect of British Troops in the United Kingdom.

	Typhus Fever.	Typhoid Fever.	Cholera.	Small-pox.	Scarlet Fever.	Diphtheria.	Measles.	Dysentery.	Pneumonia.	Cerebro-spinal Meningitis.
Expeditionary Force:										
Cases	0	625*d*	0	*	196	*	175*c*	*	*	*
Deaths	0	49*d*	0	*	4	*	2*c*	*	*	*
British Troops in the United Kingdom:										
Cases	0	262	0	1	1,379	783	1,045	215	1,508	62
Deaths	0	47	0	0	22	6	65	1	301	26

c These figures include Indian troops: Cases 5, deaths 0.
d These figures include Indian troops: Cases 25, deaths 4.
* Returns for these diseases are not at present available.

Antityphoid Inoculation.—Mr. Peto asked the Under Secretary of State for War whether he could now state precisely what course his Department have decided to take with reference to the inoculation against typhoid fever of officers and men of His Majesty's land forces. Mr. Tennant said that he was not in a position to announce any change of policy. But he informed the House that 97 per cent. of the 29th Division had been inoculated.

Paratyphoid in the Army.—Mr. Tennant, in replying to Mr. Bentham, said that in the Expeditionary Force, up to February 11th, there had been 45 cases of paratyphoid and 1 death. No information was available as to the number of cases in the United Kingdom, nor as to the number of cases in the Expeditionary Force in which there had been inoculation.

Wounded Soldiers: Ratio of Recoveries.—In reply to Sir George Scott Robertson, who asked how many out of the 104,000 casualties in the Expeditionary Force had now returned to duty, the Prime Minister said that it would be contrary to public interest to give exact figures, but about 60 per cent. recovered and became fit for service.

Blindness caused by Wounds.—In reply to Lord Charles Beresford, Mr. Tennant said that a soldier rendered blind by wounds in war would be eligible for the highest rate of disability pension. From the reports of voluntary workers among the troops, it appeared that steps were being taken to give individual encouragement and assistance to each blinded soldier to acquire some industrial aptitude which would prevent him from settling into a life of complete dependence on others.

Rum Ration.—Mr. Currie asked the Under Secretary of State for War whether rum was issued as a ration to troops at the front; if so, under what conditions it was issued; whether young men were forced in any circumstances to take rum as a ration; whether he is aware that there was a popular belief to this effect; and, if so, whether he would cause public contradiction of the belief to be made in view of its prejudicial effect upon recruiting. Mr. Tennant referred to the full answer he had given on November 16th. He thought that in view of these and similar questions which have already been answered in the House the true state of the case should be sufficiently clear. Men were not forced to take rum as a ration.

Small-pox Vaccination.—Mr. Thomas asked the Under Secretary for War whether the boycott established by the War Office against conscientious objectors to vaccination would be relaxed so as to enable such persons to join the army unmolested? Mr. Tennant said that it was not considered advisable to alter the present rules governing the vaccination of soldiers joining the army. He did not accept the description of those rules. Mr. Yeo asked the President of the Local Government Board whether he was aware that more than half the children born in England and Wales were now escaping vaccination, and that small-pox had been almost entirely absent since the passing of the Vaccination Act, 1907; and if so, whether he would consider the desirability of arranging that vaccination should now be entirely voluntary? Mr. Herbert Samuel replied that the statements in the first part of the question were substantially correct, except that there was no marked change in the number of deaths from small-pox following upon the passing of the Vaccination Act, 1907. It was not the intention of the Government to introduce legislation on the subject. In reply to Mr. Peto, Mr. Tennant said that vaccination was compulsory in Germany for the entire population. By a law passed in 1874, every child within the second year of life must be vaccinated, and every school child within the twelfth year must be revaccinated. In addition, all recruits were revaccinated on first joining the army. Vaccination had, since 1910, been compulsory in the United States army for all recruits on first enlistment, except for those who were pockmarked and those who had good scar evidence of two successful vaccinations, the last not more than six years old, or of one successful vaccination performed within the three previous years. Inoculation had been compulsory in the United States army since 1910.

Pay of Army Medical Officers.—Mr. Robinson asked the Under Secretary of State for War whether in view of the fact that medical men fresh from the schools received 24s. more than a major's pay—whilst medical officers who had for years been training with the Territorial Force, and who had in many cases left large practices received only the pay of their rank, and neither the allowances granted in the field, the £60 gratuity at the termination of the war, nor prospect of pension, he would cause inquiry to be made with a view to more equitable treatment being given to the more experienced officers. Mr. Baker said that as

he had already explained on February 3rd it might be found necessary to give special rates to officers commissioned on emergency, but there was no intention of making this universal. He added that a major in the R.A.M.C. received 28s. a day in pay and field allowance, while the medical officer specially commissioned received 24s. inclusive of all cash allowances. Mr. Baker, in reply to a further question, said that it was true that a great many medical officers had made very considerable sacrifices, but it was quite impossible to contemplate individual sacrifices. They were being treated like all other Territorial officers.

Medical Students and the Territorial Force.—Mr. Tennant informed Mr. MacCallum Scott on February 15th that arrangements had been made for the return to their professional studies of medical students serving in medical units of the Territorial Force. Students in their final year of study who had only their final examinations to pass might also be released from combatant corps if they applied. Mr. Tennant added that under the circumstances described no student would be liable to have his application refused.

Royal Naval Medical Supplementary Fund.—A bill has been introduced into the House of Commons by Mr. George Lambert, Civil Lord of the Admiralty, to enable an order in Council to be made to put the Royal Naval Medical Supplemental Fund Society on a new basis. It was explained in the BRITISH MEDICAL JOURNAL of January 30th that the fund was established in 1817 for the benefit of orphans of deceased subscribers. Down to 1862 the subscription was compulsory, but since then few have joined, and the benefits are practically confined to orphans of members who entered the service prior to 1861. Their number is now few, and a couple of years ago the Royal Naval Medical Club undertook to administer the fund provided that its funds were kept distinct from those of the club, that the subscription should be reduced to 21s. a year if possible, and that the benefits should be extended to the widows of all subscribers. If the bill passes the fund will start with a balance of over £10,000 in consols.

School Children in Agricultural Areas.—Sir William Byles asked the President of the Board of Education whether he would direct all rural education authorities to provide for the medical inspection of all children leaving school for agricultural employment, and serve on the employer of each child the certificate contemplated by Section 13 of the Education (Administrative Provisions) Act, 1907, and Section 3 of the Employment of Children Act, 1903. Mr. Pease said that provision was already made in the Code for the medical inspection of all children after reaching the age of 12, and no facts had been brought to notice which would justify the imposition on all rural local education authorities of such an addition to the work of the school medical service as was suggested. Mr. W. Thorne asked what happened if a child left school below the age of 11. Was there any medical inspection then? Mr. Pease said not if they leave at 11, but under the Robson Act there should only be a partial exemption at 11. There ought to be two medical inspections before the age of 11. If they leave at 11 they may escape the third or final medical inspection which takes place at the age of 12. In reply to Mr. Peto, Mr. Pease said that it was for the local education authority in the first instance to consider whether in any particular case there was a reasonable excuse for non-attendance at school, and whether proceedings should be instituted to enforce compliance with the by-laws. There was ground to suppose that the duty of enforcing their own by-laws was harshly or inconsiderately discharged by local education authorities, but no case had been made out, or could be made out, for the wholesale exemption of boys over 12 in rural areas. Such a course would, moreover, require legislation which the Government did not propose to introduce. In reply to Mr. Mount, who asked whether a capitation grant could still be paid in respect of a boy not less than 12 years old, withdrawn from school for work on a farm under reasonable restrictions during the war, Mr. Pease said that he thought it would be very undesirable to treat a boy absent from school because he was employed in farm work as if he were present in school. Any such attempt would give rise to difficulties and possible abuses, which would far outweigh any small advantage to the ratepayers. With regard to evening schools for these boys, he expressed the opinion that it would be very undesirable to establish evening schools for boys who have been hard at work during the whole day.

Children's Dietary.—In reply to a question as to the dietary of children under the Greenwich Board of Guardians asked by Mr. Sherwell, Mr. Samuel said that he had ascertained that the supply of eggs and bacon was discontinued for a time owing to the high prices of these articles, but was resumed when the prices dropped to a reasonable figure. When the eggs and bacon were not supplied adequate substitutes were provided. The supply of milk had not been curtailed, except for a short period when the contractor could not deliver the full quantity. During this time the full amount was supplied to the younger children, the shortage being made up by a supply of condensed milk for the elder boys.

Diphtheria.—In reply to Mr. Fell, the President of the Local Government Board said that although in the last quarter of 1914 the number of cases of diphtheria were somewhat in excess of that for 1913, the number of cases notified in England and Wales during the first five weeks of this year was about 1,000 less than the number notified in the corresponding period last year. Returns of notified cases were received weekly from each district, and the Board called for special reports on outbreaks, and, if necessary, directed a medical inspector to make a local investigation. There had been during the past few weeks few considerable outbreaks in any particular localities.

Export of Cinchona from India.—In reply to Sir J. D. Rees, the Under Secretary of State for India said that by a notification issued on August 10th, 1914, the Government of India prohibited the export from India, except by land, of medical and surgical stores and equipment of every description. The reason for the prohibition was to ensure the retention in India of sufficient supplies of this kind for Government requirements. A doubt had arisen as to whether cinchona came within the category of medical stores, and the Government of India had been asked whether its export was prohibited.

Alcohol for Commercial Purposes.—Mr. Fell asked the President of the Board of Trade if it was proposed to make any new regulations to relax the restrictions placed on the manufacture of alcohol for commercial purposes, so that chloroform and ether and such spirits could be manufactured in this country at a reasonable price. Mr. Acland said under the existing regulations chloroform and ether were allowed to be manufactured from duty-free industrial methylated spirits. If any suggestion for the amendment of the regulations were put forward, it would be considered.

Royal Commission on Sewage Disposal.—In reply to Sir James Yoxall, the President of the Local Government Board stated that the final report of the Royal Commission on Sewage Disposal had been signed, and would be issued shortly.

ALTHOUGH much adverse criticism has been excited by his recent writings in medical papers, Dr. Ralph H. Spangler still maintains, according to the *New York Medical Journal*, February 6th, that the venom of *Crotalus* is beneficial in the treatment of epilepsy. He has personally administered the venom in over 300 cases of epilepsy, and has received reports from 131 physicians with similar though less extensive experience. Rattlesnake venom, he says, modifies the severity of the attacks, lengthens the interval between them, improves the general health and metabolism of the patients, and enables the physician to withdraw bromides as well as other sedatives. The patient may still have occasional seizures, but is left with a clear mind and a healthy body.

THE WAR.

SIR JOHN FRENCH'S DISPATCH.

IN Sir John French's dispatch of February 2nd, published on February 16th, and covering the operations of the British troops at the front for rather more than two months, the following paragraphs appear:

SATISFACTORY STATE OF THE ARMY.

(10) Since the date of my last report I have been able to make a close personal inspection of all the units in the command. I was most favourably impressed by all I saw. The troops composing the army in France have been subjected to as severe a trial as it is possible to impose upon any body of men. The desperate fighting described in my last dispatch had hardly been brought to a conclusion when they were called upon to face the rigours and hardships of a winter campaign. Frost and snow have alternated with periods of continuous rain. The men have been called upon to stand for many hours together almost up to their waists in bitterly cold water, only separated by one or two hundred yards from a most vigilant enemy. Although every measure which science and medical knowledge could suggest to mitigate these hardships was employed, the sufferings of the men have been very great. In spite of all this they presented, at the inspections to which I have referred, a most soldier-like, splendid, though somewhat war-worn, appearance. Their spirit remains high and confident; their general health is excellent, and their condition most satisfactory. I regard it as most unfortunate that circumstances have prevented any account of many splendid instances of courage and endurance, in the face of almost unparalleled hardship and fatigue in war, coming regularly to the knowledge of the public.

THE MEDICAL SERVICE.

Since the commencement of hostilities the work of the Royal Army Medical Corps has been carried out with untiring zeal, skill, and devotion. Whether at the front under conditions such as obtained during the fighting on the Aisne, when casualties were heavy and accommodation for their reception had to be improvised, or on the line of communications, where an average of some 11,000 patients have been daily under treatment, the organization of the medical services has always been equal to the demands made upon it. The careful system of sanitation introduced into the army has, with the assistance of other measures, kept the troops free from any epidemic, in support of which it is to be noticed that since the commencement of the war some 500 cases only of enteric have occurred. The organization for the first time in war of motor ambulance convoys is due to the initiative and organizing powers of Surgeon-General T. J. O'Donnell, D.S.O., ably assisted by Major P. Evans, Royal Army Medical Corps. Two of these convoys, composed entirely of Red Cross Society personnel, have done excellent work under the superintendence of regular medical officers. Twelve hospital trains ply between the front and the various bases. I have visited several of the trains when halted in stations, and have found them conducted with great comfort and efficiency. During the more recent phase of the campaign the creation of Rest Dépôts at the front has materially reduced the wastage of men to the line of communications. Since the latter part of October, 1914, the whole of the medical arrangements have been in the hands of Surgeon-General Sir A. T. Sloggett, C.M.G., K.H.S., under whom Surgeon-General T. P. Woodhouse and Surgeon-General T. J. O'Donnell have been responsible for the organization on the line of communications and at the front respectively.

The list of officers whose names are mentioned in continuation of this dispatch, issued in a second Supplement to the *London Gazette*, will be published next week.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

MARLBOROUGH CAMP.

MARLBOROUGH CAMP is the local name for No. 1 Convalescent Dépôt—a place for the reception of men who have recovered from their injuries or illness at one or other of the hospitals at the Boulogne base, and whence after a few days they are discharged either for ordinary or special forms of duty as their condition may dictate. When last this camp was mentioned in these notes, it was, and had been for some weeks, struggling nobly with adversity. The fair, green, sloping field in which its tents had been placed had been converted into a good imitation of bog by the trampling of a thousand feet, and all the winds of heaven seemed allied in an endeavour to tear its many marquees from their lashings; stone for the building of pathways was proving hard to come by, and as soon as the completion of any path had been effected, its submersion was threatened by the almost ceaseless rain. During the intervening weeks the struggle against adversity has been continually making good progress. Not only has the camp stood its ground, but it has materially grown; numbers of galvanized iron and wood huts of varying size now supplement the original grove of marquees, the subsoil has been drained, paths lead in all directions, posts and wires show that a good supply of electricity has been secured, a row of young trees faces the offices and orderly rooms, and geometric figures at various places on the vacant spaces between the lines suggest that when springtime comes the sight of growing flowers will be among the many amenities of Marlborough Camp. Meantime it is already possessed of a football ground, and thereon a pitch for cricket will doubtless be levelled in due course. Some of the huts are arranged as recreation rooms, and provided with bagatelle tables, newspapers, and gramophones; others as dry and wet canteens; and others again as mess rooms for sergeants and other non-commissioned officers. All are well lighted, and provided with stoves. The administrative annexes include a series of store huts, a surgery, a dispensary, and consulting-room, an orderly room and prison, a private office for the commanding officer, another for the quartermaster, a large hut furnished with special apparatus arranged for the rapid drying of men's clothing and kits, and a bath house provided with a series of hot shower baths and an external laundry. There are also two large dining halls. The nominal intention of the camp is to provide for a thousand men, and each dining hall is capable of seating 500 men simultaneously, while the cooking ranges in the adjoining kitchens would seem almost numerous enough to meet the needs of a full division. During the greater part of the time that the building of the huts has been in progress the population of the camp has been kept down as low as possible, but within a few days, I understand, full use is to be made of its accommodation. I am not prepared to say that within that time the whole of its arrangements will be regarded as having been completed, for I have not yet come across any institution under the control of officers of the Royal Army Medical Corps in France whose arrangements fully satisfy the ambitions of its commanding officer. There is always some addition or modification which he regards as desirable, and every improvement effected seems to bring in its train a number of others. And so the work goes on, until one day an institution which has tempted fate too far by ever increasing its efficiency and elaborating its appointments has its career cut short by the receipt of an order to the medical unit that it represents to move to some station—say, a hundred miles away. So, too, may it be with No. 1 Convalescent Dépôt, but meantime it seems fairly certain that for a part of the approaching spring and summer, at any rate, Marlborough Camp will prove a very pleasant passing abode for many hundreds of His Majesty's troops on their discharge from the hospitals and before their return to the fighting line.

ZYMOTIC DISEASE.

Some six or seven weeks ago there seemed reason to fear that the medical position in France was about to be complicated by an epidemic of influenza as extensive as that from which London and some other English towns have been suffering. These anticipations have fortunately not been realized. It is true that since Christmas there has been a good deal of sickness of an influenza character, both among the troops in the fighting line and among the officers and men stationed at the advanced and other bases; but, for the most part, the illnesses have not been severe in themselves, nor have they usually been followed by the prolonged periods of weakness which is so common a sequel of an attack of typical influenza. Indeed, it

would be hazardous to assume that organisms of the *B. influenzae* group have been responsible for a majority of all the many cases of pyrexia accompanied by either bronchial, laryngeal, or gastric trouble, of which one hears, were it not for the fact that in many instances the grouping of the cases has been suggested and that in others the diagnosis has been confirmed by laboratory processes. In regard to epidemic cerebro-spinal meningitis medical officers in every part of the field seem to be keenly on the outlook for instances of this disease, and from time to time suspected cases are notified and isolated for observation. In a few of them a diagnosis of cerebro-spinal fever has eventually been bacteriologically and otherwise established, but in none has the previous history of the men concerned been such as to suggest the existence of an epidemic focus; for the time being, at any rate, they should be written down as instances of the sporadic form of the disease.

As for the commoner zymotic diseases, such as diphtheria, scarlet fever, chicken-pox, measles, and mumps, they all occur from time to time, but only the two latter with sufficient frequency to prove at all troublesome. Such outbreaks have a special interest for the older medical men now at work in France, for they bring home to them better than could any statistics how large a proportion of the population must now reach adult age without acquiring immunity against diseases which at one time were regarded as hardly less inevitable incidents of nursery and school life than teething and catarrhs. When the time arrives for the publication of statistics some interesting figures on this point are likely to be forthcoming. The evidence that they will afford might have been lacking for many years but for the occurrence of this war, which has thrown thousands of young adults into much closer personal contact than do the circumstances of civil life.

As for typhoid fever, the total number of cases under treatment is very small. This statement applies to all patients sent to hospital as cases of typhoid fever, though the observed symptoms are eventually proved to be due to the action of one or other of the organisms belonging to the paratyphoid group. The position, therefore, continues to be highly satisfactory.

FROST-BITE.

The ambulance trains continue to bring down cases of "frost-bite," but the number has diminished considerably. For some time past the term "water-bite" has been quite as commonly used as frost-bite. As was early pointed out in one of these notes, the lesions to which the term "frost-bite" has been applied during the present and recent wars differ very materially from those familiar to medical men who have practised in regions where every winter brings a long period of snow and low temperature. Even in the comparatively rare cases in which the occurrence of gangrene may seem to justify the use of the term "frost-bite," the affected parts tend from the very beginning to be swollen and dark, instead of shrunken and dead white. There is very considerable variety in the appearance of different cases, and these appearances tend to alter with some rapidity; but taking them as a whole, they recall advanced cases of chilblain rather than frost-bite.

Whatever may be the right view of the pathology of these cases, and however closely allied to that of frost-bite it may one day be proved to be, it is indisputable that there is a material difference in their etiology. The subjects of classical frost-bite are almost invariably persons who have been exposed for a time to really intense cold, and the parts most commonly affected are those to which the atmosphere has direct access, such as the tip of the nose, the lobe of the ear, or the hand. In the causation of water-bite, on the other hand, lowness of the air temperature seems to be merely one of several factors. Throughout this winter the meteorological conditions have been exceedingly trying, but this has been due mainly to wind, combined with the high relative humidity of the lower strata of the atmosphere despite the lowness of its temperature; there have, however, been no periods of really intense cold, and the days on which the temperature has fallen sufficiently low to harden the ground have not been those on which the largest number of cases of "frost-bite" have occurred. The condition resembles chilblains, again, in that the cases have been most numerous on days on which the temperature has hovered in the neighbourhood of freezing point, never rising much above it nor falling below it sufficiently far or long to turn trench water and slush into good honest ice. On such days any man whose boots are not perfectly waterproof is likely to have his feet and legs thoroughly chilled; and if at the same time the boots that he is wearing are either initially somewhat tight or become somewhat tight owing to his putting on more than one pair of stockings, or to the swelling of the stockings through absorption of water, he is not unlikely when he comes off guard to find that his feet are "frost" bitten. The probability seems to be increased by putties, which can take up a great deal of water, and then tighten in proportion. The men are now instructed, before moving to the trenches, to rub their boots well inside and out with whale oil, to wash and dry their feet and legs, and to rub whale oil or any other animal grease they may prefer into the skin, paying special attention in this connexion to the skin between the toes. The socks that they then put on must be thoroughly dry; they must also leave the laces of their boots somewhat loose, and see that their putties are nowhere tight. Arrangements must also be made to enable the men to wash their feet in cold water, and dry them so soon as they get back to their billets on their return from the trenches.

THE ETIOLOGY OF "TRENCH FROST-BITE."

REPORT BY THE ACADÉMIE DE MÉDECINE.

AFTER hearing a paper by Dr. Témoin of Bourges, the Académie de Médecine on February 2nd appointed a commission, consisting of Drs. Quénu, Monod, Schwartz, and Pozzi, which, after a brief suspension of the sitting of the Académie, reported to it that cold was only a secondary factor in bringing about the lesions commonly attributed to frost-bite. The report was unanimously adopted and forwarded, together with Dr. Témoin's paper to the Minister of War. Dr. Témoin's doctrine is that the lesions are due to pressure of tight leg-bandages or boots, which impede the circulation first in the more superficial parts, and later in the deeper. The French soldier, he said, wears lace boots, and either gaiters or cloth bandages, which are tightly applied to the leg and calf. In the hope of preventing water entering his boots, he ties the laces and pulls the bandages very tightly. The constriction is increased when the boots and bandages get wet through; in this way the return circulation is diminished, and if the constriction lasts long enough the obstruction to the circulation is increased by the swelling of the feet, so that eventually the general circulation through the limb may be completely arrested. Standing in cold mud or water, even though above the freezing point, contributes to the final result by producing vaso-constriction. Dr. Témoin pointed out that the lesions are not always symmetrical; sometimes one foot alone suffers, because, as he believes, the bandage has been applied more tightly to that limb. Symptoms, he says, seldom become incapacitating before the fourth day in the trenches, although frequently on the third day considerable surface damage may already have been done. He reported an instance in which, of two men who served side by side in the same trench, one had gangrene of both feet, while the other had only trifling lesions. This second man had taken his boots off several times, and had thus avoided complete arrest of the circulation. Dr. Témoin insisted on the importance of recognizing that the condition comes on slowly, and that a man may often be able to walk eight or nine miles after the toes have become actually gangrenous. As a means proper for preventing what has been called in this war "frost-bite," he advised greasing of the feet to prevent maceration, frequent reliefs at intervals of not less than two days, or at most three, and that care should be taken that nothing is done to interfere with the circulation in the leg and foot in men who have to be long in wet trenches. It is better to allow water to penetrate freely into the shoe than to try to keep it out by tight bandaging or tight lacing. He adds that Surgeon-General Barrette had succeeded in entirely preventing so called frost-bite by making the soldiers soak their boots in hot grease and inducing the commanding officers to require the men to undo their boots for a quarter of an hour twice a day.

DISCUSSION AT THE ROYAL SOCIETY OF MEDICINE.

At a meeting of the Clinical Section of the Royal Society of Medicine on February 12th Mr. R. H. Jocelyn Swan read a short paper on so-called frost-bite, based on 100 cases among soldiers returned from the front, 80 of whom had been under his care at the Royal Herbert Hospital, Woolwich. The only causal condition common to all was continuous standing with the feet wet. There were two distinct groups of cases: (1) Those in which there was little destructive change, but marked subjective symptoms were present; (2) those in which there was gangrene of various amounts, from a superficial skin lesion to that in which one or more toes were destroyed. In the first group there were cutaneous anaesthesia and analgesia. Joint sense and vibration sense might be lost. Patchy hyperaesthesia was sometimes present, and there was pain on movement or pressure. The condition was not a neurosis, but the result of nutritional change. With respect to the second group, the gangrene was often greatest in the great toe, and the majority were examples of dry gangrene. For reasons not evident it was more usual for one foot to be affected. The gangrene had no relation to points of pressure. He thought that the condition was attributable to the dependent position of the feet, to wet, and to want of exercise, but not to cold. Canadian officers had told him that the condition was quite unlike that of true frost-bite with which they were familiar. As preventive measures he suggested the wearing of a thin mackintosh covering outside the sock, but inside the puttee, and the free use of vaseline or whale oil to protect against the wet, and that the boots should be large enough to allow of free movement of the toes. The men should be instructed to carry out this movement.

Dr. James Galloway likened this condition to thrombotic phlebo-arteritis obliterans. Dr. E. G. Fearnsides classified the cases under three groups: (1) Those with objective signs, with perhaps some sensory loss, but without subjective symptoms; (2) an intermediate group, with slight alteration of sensation, showing blunting of sensation, but without anaesthesia, and a band of hyperaesthesia at the upper border of the affected area; and (3) those in which sensation was lost over an area of the stocking type, which in ordinary civil practice would be ascribed to neurosis. In the Balkan war it had been agreed that the objective changes were vascular in origin.

Mr. Tennant, in reply to a question in the House of Commons on February 17th, stated that the number of casualties from frost-bite to January 24th last was 9,175.

GERMAN EXPERIENCES OF TETANUS.

IN a communication to the *Muenchener medizinische Wochenschrift* for December 29th, Professor Madelung has reviewed the collective reports from numerous hospitals in and about Strassburg of the incidence of tetanus in this area since the outbreak of hostilities. These reports were made in answer to a set of questions sent to the various hospitals by the Society of Military Surgeons in Strassburg. At a meeting of this society in September such alarming rumours of the frequency of tetanus were current that it was decided to start a systematic investigation not only into the frequency of this disease but also into the results of antitoxin treatment. Requests for information addressed to 80 hospitals were all answered, and the material thus collected concerns 27,677 wounded men treated between August 1st and October 31st. Among these were 174 cases of tetanus, or 0.66 per cent. of the total. This ratio compares unfavourably with that of previous wars, the corresponding figures being 0.15 per cent. for the English army in the Crimean war, 0.2 per cent. in the American Civil War, and 0.35 per cent. in the war of 1870. It is thus evident that though the wild rumours of the prevalence of tetanus in the present war are unconfirmed, the disease is far more frequent than it has been in any other modern war. Professor Madelung interprets this greater frequency as the result of trench fighting, which soils the combatants with infected matter; but he does not find any evidence to support the view that some localities are more dangerous than others. He admits, however, that only in a few cases do the reports indicate the district in which the subjects of tetanus have been wounded. No such thing as an epidemic of tetanus was observed, and his material does not fully confirm the general belief that shrapnel and shell cause tetanus more readily than rifle bullets. Nor does he agree with Busch, whose experience of the war of 1866 led him to regard tetanus as a complication practically confined to wounds of the lower limbs. In the statistics dealt with by Professor Madelung, tetanus was observed in 80 cases of rifle wounds, in 27 cases of shrapnel wounds, and in 53 cases of shell wounds. As, however, "the casualties from infantry fire among the wounded who were treated were much, much greater than the casualties from artillery fire," this comparison does not give a true picture of the relative danger of infantry and artillery fire. Out of 166 cases in which the site of the wound was stated, the lower limbs were wounded in 103 cases, cases in which other parts of the body were also wounded being included in this figure. In 50 cases the arms only were wounded, in 8 cases the trunk, and in 5 cases the head. Not a single case of tetanus followed wounds of the lungs. The fate of the patient was recorded in 166 cases; 115 patients died and 51 recovered. In the military hospitals of Strassburg, between the beginning of the war and October 31st, there were 15,134 wounded, of whom 690 died; 101 of these deaths were to tetanus, which was, therefore, responsible for 14 per cent. of all the deaths. The fact that every third patient recovered from tetanus is gratifying in the face of the experience of the American Civil War, in which the mortality from this disease was 89.3 per cent.

It was not easy to say whether the fall which has occurred in the mortality of the disease was due to antitoxin, for in none of the hospitals of Strassburg were prophylactic injections given to all the wounded. In 37 hospitals in which the incidence of tetanus was 0.77 per cent. not a single prophylactic injection was given, and in 39 other hospitals only certain cases were selected for prophylactic treatment. The principles guiding this selection of cases for injection seem to have varied in different hospitals; in many the injections were given only in cases of wounds contaminated with earth and for one reason or other suspected of infection with the bacillus of tetanus. In one large hospital every patient was inoculated whose wounds had been inflicted within eight days of admission. It seems that the supply of antitoxin was totally inadequate at first, and confusion seems to have prevailed in the dosage and technique of the prophylactic injections. In those hospitals in which prophylactic injections were given in selected cases, 19,432 casualties were treated, and 107 cases of tetanus occurred, representing 0.55 per cent. of the total. In 21 cases tetanus developed in spite of prophylactic injections, but in all these the injections were not given till the wounded had reached hospital, and there was thus in most cases a serious delay. In many other cases, however, the proximity of the hospitals to the fighting line rendered the early injection of antitoxin feasible as a prophylactic measure. Tetanus developed in 3 men injected within a day and in 20 men injected within eight days of the infliction of their wounds. Of the patients who developed tetanus in spite of prophylactic injections, 14 died and 6 recovered, the symptoms in two of these cases being exceeding slight. In every case that did well there was a considerable period, as much as twenty days in one case, between the infliction of the wound and the development of tetanus. As a therapeutic measure after the development of symptoms, antitoxin was injected in all but 15 cases. As a rule, the injection was subcutaneous, intraneural or perineural, intralumbar injections being given only in 5 cases. The usual dose was 100 units, which was repeated frequently, some patients receiving as many as 12, 14, and even 20 injections. Of the 15 patients not treated by antitoxin after the development of symptoms, 3 recovered and 12 died. The disease was very slight in some of these cases, and in others the patients were practically moribund on admission to hospital. Of the 152 patients treated with antitoxin after the development of symptoms, 47 recovered and 105 died. Other methods of treatment were seldom attempted, and only in a few cases were morphine and chloral given, or amputation performed. In the 3 cases in which subcutaneous injections of magnesium sulphate were given recovery occurred. Professor Madelung does not attempt to lay down rules for the treatment of tetanus in the field, and he cautiously avoids drawing any definite conclusion with regard to the value of antitoxin from the somewhat hastily compiled and ill-digested material at his disposal.

WOMEN DOCTORS AND THE WAR.

At a meeting of the Association of Registered Medical Women on February 9th, when Dr. Jane Walker was in the chair, Miss Aldrich Blake, M.S., in opening a discussion on women doctors and the war, described the hospitals staffed by medical women in Paris, Wimereux, and Cherbourg. That in Paris had started work early in September, under the aegis of the Union des Femmes de France, who handed over to the Women's Hospital Corps Claridge's Hotel, in which 100 beds were fitted up. The contingent—organized by Dr. Garrett Anderson and Dr. Flora Murray—dealt chiefly with British wounded. In the middle of October, when the wounded were being sent in large numbers to Boulogne, a branch hospital was fitted up with 70 beds in a large villa at Wimereux; this was approved by the British War Office, which provided rations, medical stores, coals, etc. Two of the junior members of the Women's Hospital Corps also worked in the 13th Stationary (Military) Hospital on the quay, each having 15 beds allotted to her. The women's contingent at Cherbourg had originally worked in Antwerp until the fall of the city. The medical officer in charge was Dr. Florence Stoney, and the corps worked under the French War Office and dealt with French and Belgian wounded. The château in which it was established had 79 beds, but few modern conveniences; 20 able-bodied soldiers were supplied to do the ward work, etc. Many of the wounded were brought from Dunkirk, and only the worst cases were left in Cherbourg, those less severely wounded being conveyed inland. All the wounds were septic on arrival, and from some the pus streamed forth; all wounds were opened up freely and drained. Antiseptic treatment was employed, aseptic methods being out of the question.

Dr. Hazel Cuthbert, who belonged to the Women's Hospital Corps, described her experiences in Paris and Wimereux. The first patients to arrive at the Paris hospital came from the Aisne and were brought in American ambulances; later the corps had two ambulances of its own. With the decline in the number of wounded conveyed to Paris, the whole corps by degrees removed to Wimereux, where they had worked until the present time. In October, when the rush of wounded commenced, the voluntary hospitals had been welcomed, and there was plenty of work for all, but now the military hospitals were able to deal with all the cases and the voluntary hospitals were no longer required. She had found the soldiers always courteous, grateful, and wonderfully philosophical.

Dr. Hilda Clark stated that she had taken out a contingent consisting of 4 doctors, 11 nurses, and over 20 male workers under the auspices of the Society of Friends, with the object of caring for the civil population. They settled in the department of the Marne, their help having been welcomed by the Ministers of War and of the Interior and by the Director of Public Assistance. She had found wonderfully little illness among the civilians. Refugees were returning to the destroyed villages, where dwellings had been erected for them. At the wish of the Prefect of Châlons, a maternity hospital was fitted up, and parturient women were fetched in a motor car from the surrounding districts; about one hundred confinements took place there during December and January and the morbidity was *nil*. Recently an out-patient department had been established, and patients were also visited in their homes. The work was likely to develop during the next months.

Dr. Barrie Lambert described the work of the Almeric Paget Massage Corps and of the massage and electrical hospital in Portland Place, recapitulating the information given in the Journal of January 30th, p. 225.

LIVERPOOL MERCHANTS' MOBILE HOSPITAL.

As already stated, the mobile military hospital provided by the munificence of Liverpool merchants and citizens is intended to be brought as near the front as possible. It consists of a light wooden structure which can be removed and re-erected within twenty-four hours. There will be eight pavilion wards, each to accommodate twenty-six patients, with the usual annexes, such as nurses' duty rooms, stores, and so on. All the buildings will be connected by covered ways. A bath pavilion with fourteen baths is provided, having on one side an undressing-room for soiled clothes, and on the other side a dressing-room, with a clean clothes store attached. This is a most needed provision, as many of the combatants suffer from pediculosis. The buildings are being erected in Sefton Park, and when complete will be thrown open to public inspection; the charge for admission will enable Liverpool citizens to contribute to the expense of this magnificent enterprise. The site occupied by the buildings alone will be about one acre, and four acres will be necessary for its complete accommodation. In short, the difference between a new stationary hospital replete with the latest contrivances for healing the sick and this is simply the latter's mobility, and in this respect the Liverpool Merchants' Hospital is believed to be unique. It has already been stated that Dr. Nathan Raw has been appointed senior physician and Dr. Litler Jones senior surgeon. In addition, the following gentlemen have been selected to serve: Dr. John Hayward, Dr. A. A. Mussen, Dr. H. Bowring, Dr. Wallace Jones, and Mr. Herbert Williams. There are still two vacancies, as the medical staff, when complete, will comprise ten members; in addition, a medical officer will be appointed to the hospital by the War Office.

HOME HOSPITALS AND THE WAR.

Sir Patrick Dun's Hospital, Dublin.

There was a large attendance at Sir Patrick Dun's Hospital on the occasion of the opening of the County Wicklow Ward for wounded soldiers and sailors, by Lady Powerscourt. The members of the County Wicklow Red Cross Society had supplied the necessary funds for the ward. In thanking the Society Sir Charles Ball pointed out that the military hospitals in Ireland were established on the basis of an army of the size which existed before the war, and as there were in Ireland now close on double the number of soldiers that there were before the war, all the resources of these hospitals were taxed to the uttermost in order to relieve ordinary accidents and illnesses that occurred amongst garrisons, especially where there were a number of recruits. The result was that all the military hospitals in Ireland to-day were filled to their utmost capacity, so much so that they had had to borrow accommodation for ordinary cases from some of the other hospitals. That being so, if there was a large influx of wounded from overseas, the military hospitals would find it impossible to do very much to provide accommodation for them. In helping the treatment of the wounded soldiers Red Cross societies had collected large sums of money, and this money—speaking certainly for the County Wicklow Red Cross Society—had been spent in a very good way. By helping the clinical hospitals the best value was got. Had a new hospital been started the expenses of equipment for operations, *x*-ray apparatus, etc., would have run away with a large amount of money, and that expenditure was, of course, unnecessary in the way the County Wicklow Red Cross Society had worked. The best way to spend money was to maintain beds in an existing hospital.

CASUALTIES IN THE MEDICAL SERVICES.

Army.

Died of Wounds.

Assistant Surgeon Sadhu Narain, 2nd Kashmir Rifles.

Wounded.

Surgeon-Major R. M. Cowie, 1st Life Guards.

Sub-assistant Surgeon Muhammad Din, 2nd Kashmir Rifles.

Surgeon-Major Robert Macnamara Cowie is a King's College man, who took the M.R.C.S. and L.R.C.P.Lond. in 1897. He served in the South African war from December, 1899, to March, 1901, and took part in the relief of Ladysmith, and in the actions of the Tugela Heights, Laing's Nek, and Belfast, and holds the Queen's medal with five clasps.

The 2nd Kashmir Rifles is not a British regiment, but a battalion of Imperial service troops—that is, troops maintained by an Indian State, in this instance Kashmir, for service with British troops when required. A number of British officers are attached to these troops, for inspecting purposes, but the battalions are entirely officered by Indians, subjects of the State which maintains them. These troops are not included in the *Army Lists*, so no information about their officers is available. The 2nd Kashmir Rifles are at present serving in East Africa.

NOTES.

MASTIC VARNISH AS A DRESSING.

IN a review of a book on surgery in the field,[1] by Dr. W. von Oettingen, based on his experience in the Russo-Japanese war, mention was made of the praise he gave to a solution of gum mastic in benzine. The solution was painted on the skin round the wound, and it was claimed for it that it killed many of the germs and fixed the remainder, rendering them incapable of growing or infecting the wound. No preliminary washing was required, and the dressing was held in position without the aid of a bandage, so that great economy was effected in the dressings used and the time expended when a large number of wounds had to be attended as quickly as possible. The particular solution he praised was called "mastisol," and it was supposed to contain other ingredients. No other ingredients, however, appear to be necessary. Mr. Gray, surgeon to the Aberdeen Royal Infirmary, uses a solution of mastic 40 per cent. in benzine, and probably many members who attended the annual meeting of the British Medical Association at Aberdeen last summer witnessed its application and could form an opinion of its advantages.

Mr. Martindale has been good enough to look into the matter for us, and has come to the conclusion that there is nothing really to choose between the proprietary article mastisol and a plain solution of mastic 40 per cent. in benzine; the only apparent difference is that the German article seems to be coloured with a little brown dye. Mr. Gray in some cases used a solution with the addition of 1 per cent. picric acid. There is no difficulty about making this addition, but the fluid instead of being clear is a dirty yellow and stains the skin bright yellow.

We understand that this mastic varnish is found very useful, among other purposes, for the treatment of superficial wounds and abrasions. Applied to the wound and then dabbed with a little cotton-wool and allowed to dry, a firm dressing in the nature of a scab forms and no other covering is necessary. It is also used for application to the skin after operations.

INDIAN BRANCH OF THE ST. JOHN AMBULANCE ASSOCIATION.

A report, dated Simla, January 1st, 1915, on the Red Cross work of the Indian Branch of the St. John Ambulance Association, covering the period to December 14th, 1914, shows that much Red Cross work for the sick and wounded has been done in India since the war broke out. Much is due to those who, five years ago, founded, and have since developed, the work of the branch. On August 19th the head-quarters in India issued an appeal for contributions of units, each unit comprising the number of articles required for ten hospital beds, and within seven weeks a sufficient number of "original units" had been contributed and dispatched. Since then a very large number of "replacement units" have been supplied. Large grants have been made to the military hospitals for Indian wounded in India, while £1,000 was dispatched to the Indian head-quarters for the benefit of the Indian wounded in England. The personnel of the branch has been utilized on duty at Bombay docks, and in unloading hospital ships at Bombay, and hospital trains at Lahore and Lucknow; while a motor ambulance has been supplied at Lahore, as well as six rubber-tyred wheeled litters at Lucknow. The largest donors have been the Maharajas of Gwalior (£8,300) and of Indore (£1,300).

MEDICAL OFFICERS WANTED.

2nd Home Counties Field Ambulance R.A.M.C.T.

There are a few vacancies for officers in this unit at present stationed at Slough. Applications should be made to the Officer Commanding, Hillersden, Windsor Park, Slough.

3rd Home Counties Field Ambulance.

Eight or nine medical officers are required for the above unit, which is forming another reserve. Applications should be made to Major S. A. Coad, Officer Commanding, 3rd Home Counties Field Ambulance, Woodlands, Englefield Green, Surrey.

2/2nd North Midland Field Ambulance.

Three medical officers are required for the 2/2nd North Midland Field Ambulance. Applications should be addressed to the Commanding Officer, Warley Mount, Brentwood, Essex.

[1] BRITISH MEDICAL JOURNAL, vol. ii, 1912, p. 976.

England and Wales.

LIVERPOOL MEDICAL INSTITUTION.

Antityphoid Inoculation.

AT the ordinary meeting of the Liverpool Medical Institution on January 28th, Dr. E. E. Glynn, Professor of Pathology at the University, read a paper on antityphoid inoculation. It was followed with great interest by a large audience, which was impressed with the beneficial results accruing from the method. By a unanimous resolution Professor E. E. Glynn was asked to prepare an abstract and forward it to the local press in order that the public should know the views of the profession. A second resolution, proposed by Dr. William Permewan and seconded by Sir James Barr, expressing the strong conviction of the meeting that the time had come to make antityphoid inoculation compulsory in the British army, was unanimously passed; this resolution is to be brought to the notice of the members of Parliament representing the city.

THE MANCHESTER ROYAL INFIRMARY.

At the annual meeting of the trustees of the Manchester Royal Infirmary held on February 12th, Sir William Cobbett, who presided, called special attention to some paragraphs in the report dealing with the war. At the beginning of the war, he said, the infirmary had been asked to state what provision it could make in connexion with the military hospital in Whitworth Street for the accommodation and care of wounded soldiers, and after some consideration the infirmary had offered to provide 208 beds. The offer was accepted, and sometimes the whole of these beds had been occupied, but at present there were 158 soldiers in the institution. A further request had recently been received from the War Office to provide an additional 100 beds, and though there were some great difficulties in the way, it was hoped to surmount them. It would mean an increase in the staff and a considerable extra expenditure. One difficulty was that there was a remarkable shortage of medical men to act at the infirmary owing to the demands made for medical men to serve at the front. It was necessary to emphasize the fact that those medical men who remained at home and helped in the care of the wounded were serving their country just as well as those who went to the front. If doctors who stayed at home in these circumstances could be distinguished by some mark or badge which would show that they were performing semi-military duties, it might help considerably.

The report and the accounts were put to the meeting and passed. It was stated that the total number of patients treated at the infirmary last year was 67,956, of whom 10,862 were in-patients; while the daily average number of beds occupied was 541. Lord Derby was then elected president of the institution, with the following vice-presidents: The Bishop of Manchester, Lord Ellesmere, Lord Egerton of Tatton, and Sir Oswald Mosley. A hearty vote of thanks was passed to the physicians and surgeons of the infirmary, which was acknowledged by Dr. Brockbank, and further votes of thanks were given to the lay staff and to the chairman, Sir William Cobbett.

THE GENERAL HOSPITAL, BIRMINGHAM.

According to the Statistical Report of In-patients for the year ending December 31st, 1913, the total for that year amounted to 5,908, out of which 4,775 were discharged, 513 died, 33 were brought in dead, and 267 were transferred to the Jaffray Branch Hospital, Erdington, for chronic cases, 320 remaining in hospital at the end of the year; 13,403 out-patients were admitted as urgent cases or accidents: a total of 58,815. Thus the total of in-patients and out-patients for the year 1913 amounted to 64,723. The registered number of anaesthetics administered was 4,156, being 553 more than in 1912; local anaesthesia was practised in 249 cases, spinal in 8, and in 3 the anaesthetic was not registered. There were 6 fatalities. The number of cases radiographed was 3,028, added to which there were 842 screen examinations. Radium was used in the *x*-ray department in 66 cases, 346 applications being made. The cases were slight, but the results excellent—more radium is urgently needed; 107 patients were submitted to *x*-ray treatment, the individual applications amounting

to 1,910. Fifteen cases were treated with carbon dioxide snow, 22 applications being made; 112 cases of ringworm were treated, 552 applications of the *x* rays being given. In the Jaffray Branch Hospital 320 patients were under treatment, 46 having been admitted in 1912; 53 remained in the hospital after December 31st, 1913.

Ireland.

LECTURESHIP IN OPHTHALMOLOGY IN DUBLIN.

THE late Robert John Montgomery, M.A., M.B.Dubl., F.R.C.S.Ire., bequeathed to the Board of Trinity College and to the President, Vice-President, and Council of the Royal College of Surgeons in Ireland a sum of money for the establishment of a lectureship in ophthalmology in Dublin. He desired that the lectureship should be known as the Mary Louisa Prentice Montgomery Lectureship in Ophthalmology, and that the appointment to it should rest each alternate five years with the Board of Trinity College and with the President, Vice-President, and Council of the Royal College of Surgeons in Ireland. Joint regulations have been drawn up by those two bodies, and the first election to the position will take place at the beginning of next summer session. The salary amounts to about £160 per annum.

TREATMENT OF TUBERCULOSIS IN THE ROYAL IRISH CONSTABULARY.

At a recent meeting of the county council of the county of Dublin the treatment of members of the Royal Irish Constabulary suffering from tuberculosis was considered. The Inspector-General, in discussing a specific case which had been reported to him, stated that, under a special arrangement with the Royal National Hospital for Consumption, and in consideration of a money contribution from a private fund, members of the Royal Irish Constabulary were admitted to the institution at a charge of 7s. a week. On the whole the arrangement had worked satisfactorily. The chairman thought it was entirely unsatisfactory that when a member of an Imperial Force was unable to discharge the duties attaching to his position he should be obliged to make application for treatment to a body administering local funds in a district in which he had no domicile. It was agreed to lay the facts of the case before the county Dublin members of Parliament.

OFFICERS' SUBSTITUTES IN NORTH DUBLIN UNION.

At a recent meeting of the North Dublin Board of Guardians the question of the payment of substitutes for officers of the union on leave was discussed. It was alleged that there was no other institution in which so much money was spent on officials' substitutes as the North Union. The figures for last year in that respect were as follows: Substitutes for medical officers, £482, of which £296 was recouped by the Government; substitutes for apothecaries, £69, of which the Government gave £42; nurses' substitutes, £420; wardmasters' substitutes, £288; and wardmistresses' substitutes, £124. In all, £1,508 had been paid to substitutes, of which £330 had been recouped to the guardians. It was decided to summon a committee meeting of the whole board to consider this particular form of expenditure and to draw up a report.

ROLL OF HONOUR OF QUEEN'S UNIVERSITY, BELFAST.

A pamphlet bearing this title has been compiled by authority of the Senate, and corrected up to January 28th. It includes the roll of those connected with Queen's University who have either laid down their lives for their country in the war, or who are serving for or in the army, or assisting in other ways in various capacities. The first page is an In Memoriam to five who have fallen—Lieutenant C. R. Crymble, D.Sc., 3rd Battalion Royal Irish Fusiliers (S.R.), Senior Assistant in Chemistry; Lieutenant K. T. Frost, M.A., B.Litt., 3rd Battalion Cheshire Regiment, Lecturer on Archaeology and Ancient History; 2nd Lieutenant Patrick M'Donagh, 3rd Battalion Royal West Kent Regiment; Captain T. M. Phillips, M.B., Royal Army Medical Corps; and Lieutenant V. T. T. Rea, 4th Battalion Royal Irish Rifles. Among those serving at present are the Chancellor himself, the Earl of Shaftesbury, K.P., K.C.V.O., Brigadier-General Commanding 1st South-Western Mounted Brigade, and seventeen members of the university staff, including Lieutenant W. J. Wilson, M.D., R.A.M.C.(T.F.), Specialist Sanitary Officer for Belfast District; Dr. T. Houston, Senior Medical Officer and Bacteriologist in Base Hospital; and, once more, the name of "Crymble"—namely, Mr. P. T. Crymble, F.R.C.S.Eng. Then follows a goodly list of graduates, undergraduates, and members of the Officers' Training Corps, university attendants, staff of the Queen's University Contingent, Officers' Training Corps, and the University Veterans' Corps. The roll of honour concludes with the names of physicians and surgeons of hospitals who have been in attendance on the wounded, and of hospitals which have arranged for their reception and treatment. Under those in attendance we find the names of Sir William Whitla and Professors T. Sinclair and St. Clair Symmers, of the Royal Victoria Hospital, Belfast.

Scotland.

ABERDEEN ROYAL INFIRMARY.

THE directors of Aberdeen Royal Infirmary, in their report for the year ended December 31st, 1914, state that the medical superintendent and practically the whole of the honorary medical and surgical staff were liable for military duty in connexion with the Royal Army Medical Corps, Territorial Force, or the 1st Scottish General Hospital. Immediately on war being declared a number, including the superintendent, and eventually the remainder of the staff, were mobilized, and several left Aberdeen on active service. The members of the staff mobilized but remaining in Aberdeen would not therefore have been available for their infirmary duties, but negotiations with the military authorities, whose consideration the directors gratefully acknowledged, resulted in an arrangement whereby a certain number of the staff devoted part of each day to infirmary work. Arrangements were made for having the work overtaken by the diminishing staff, and for the provision of accommodation requested by the Admiralty for possible naval casualties. The year closed with a deficit of £4,913 4s. 9d., arising mostly from expenditure on laundry improvements and a decrease on the income from legacies, etc.

GLASGOW ROYAL INFIRMARY.

The report for last year of the Glasgow Royal Infirmary states that during the year 327 soldiers were admitted and 286 were treated to a conclusion, of whom 4 died, and 41 were in the institution at the end of the year. Including these soldiers, the total number of admissions was 10,291, of whom 10,243 were treated to a conclusion and 996 died, giving a rate of mortality of 9.7 per cent. The number treated under 15 years of age was 2,069, of whom 233 died, giving a rate mortality of 11.26 per cent. The lowest number in the house at any period was 679, and the greatest number 813. The daily average resident was 678. Compared with the previous year, the number of civilians treated shows an increase of 303, and the number of deaths 61. The total attendances at the dispensary were 57,526, against 48,524; and including special diseases treated, accidents, etc., the general total reached 140,465, compared with 128,637. The resident staff consisted of 310, and there were 193 on the non-resident staff. The average cost of each fully-occupied bed was £82 12s. 2¼d., against £78 19s. 4d. in 1913; on the total receipts and expenditure of the year there was a deficiency of £2,651 5s. 5d. Commenting upon the position the managers in their report say: "If the ordinary revenue is to fall so far short of expenditure as to necessitate the absorption also of extraordinary revenue from legacies, bequests, etc., in order to meet current expenditure, and even then to leave a substantial deficit, the prospect of placing the infirmary at any reasonably early date on a sound financial basis is not encouraging. They therefore appeal for increased support."

The construction of the new infirmary has now been completed, so far as the principal buildings for the treatment of patients are concerned. The managers have under their consideration the erection of premises to provide improved facilities for teaching by the university professors and lecturers and other members of the infirmary

staff. On account, however, of the conditions created by the European war, it has not been deemed expedient to proceed meantime with building.

Canada.

THE HOSPITALS.

A DELEGATION from the Winnipeg General Hospital recently waited on the Health Committee to urge the provision of an asylum for inebriates. The hospital receives such patients although many general hospitals refuse them, but they are frequently a cause of disturbance and annoyance, and, since they for the most part have no settled abode and are usually penniless, the cost of care and maintenance falls on the hospital. It was proposed that the city should open an isolation ward and provide a trained attendant. The matter is receiving consideration and will be reported upon later.

The proposal to build a new general hospital at Medicine Hat has been abandoned for the present. During 1914 1,511 patients were treated in the present hospital; the number of hospital days was 27,470; 227 births and 56 deaths occurred. There was a noticeable decrease in the number of patients suffering from typhoid fever.

The formal opening of the new administrative building and the nurses' home of the Vancouver General Hospital took place on January 1st. The cost of these buildings, with their equipment, was 250,000 dols.

THE WATER SUPPLY OF OTTAWA.

Ottawa is beautifully situated on the river from which it takes its name, called by the pioneers the "Grand River" on account of its immense flow of water. Naturally the simplest way of obtaining a supply of water for drinking and domestic purposes was to take it from the river; but the sewage from the city is discharged into the river, and from time to time has found its way into the mains used to convey the drinking water to the city. The epidemic of typhoid fever in 1913 has not yet been forgotten. It has been contended that the water of the river is not at fault, but that the epidemics which are constantly occurring in the towns situated on its banks are due to negligence. The recent epidemics at Hull, which is directly opposite to Ottawa, and at Aylmer, throw some doubt upon this contention. In any case, Ottawa has now to decide between two proposals—one the Currie-McVeity scheme of filtration of the water from the Ottawa River, the other to obtain the water from Thirty-one Mile Lake. The latter scheme is the more expensive. The Legislature submitted the matter to the ratepayers, who voted in favour of the Currie-McVeity plan. Plans were prepared at a cost of about 30,000 dols., and were submitted to the Provincial Board of Health, which from the first had manifested its disapproval of this scheme and had advocated the Thirty-one Mile Lake proposal. Before a reply was received from the Board a meeting of the City Council was called by Major McVeity on September 14th last, and it was resolved—11 voting for the measure and 9 against it—that work should be commenced at once according to the plans prepared for obtaining the water supply from the Ottawa River, whether the Provincial Board of Health approved or not. The Board did not approve, and the matter was taken before Mr. Justice Middleton, who, on December 28th, 1914, granted a mandamus directing the Provincial Board to consider the plans and specifications prepared. On December 31st the Board unanimously rejected the plans. The provisions of the Ontario Health Act make it necessary that these plans should receive the approval of the Provincial Board of Health before the work can be commenced. The Board, however, had made it clear that it is the Currie-McVeity scheme and not the plans that they disapprove of, and the question is whether the Health Act gives the Board the right to condemn the scheme or whether its jurisdiction applies to the plans only.

FLEET SURGEON PERCIVAL KENT NIX, who was killed in the disaster to H.M.S. *Bulwark*, left unsettled property to the gross value of £10,169, of which the net personalty amounts to £4.935.

Correspondence.

SIGHT TESTS.

SIR,—Please permit me, through the medium of the JOURNAL, to place on record my experience of the Edridge-Green sight tests.

From 1908 till 1913 I held the office of medical Director-General of the Navy. Shortly after I joined at the Admiralty, in the first-named year, cases were brought before me which conclusively proved that the wool test for colour vision was on occasion dangerously defective. Consequently, search for an effective test became immediately imperative. I therefore detailed two naval medical officers of long standing and unrivalled experience in recruiting work to review the various tests for colour vision then in use. They reported in favour of the Edridge-Green lantern, whereupon I wrote to the inventor, Dr. Edridge-Green, who was personally unknown to me, to give us a demonstration at the Admiralty Medical Department in the practical working of his lantern. This he very kindly and modestly did for us in clear and precise detail. Subsequently, and after full and careful consideration of the matter in all its many bearings, the Edridge-Green lantern was adopted as the official Admiralty test for colour vision. It has remained so ever since, greatly to the advantage of the service.

The test has been in general use throughout the Admiralty service, and has thus been applied in many thousands of cases. Up to date I have not heard of a single error having arisen in connexion with it, although it is continuously in the hands of many different examiners and in various places. For various reasons the results have been subjected not infrequently to keen scrutiny, and checked and counter-checked, not only inside the service but unofficially by outside experts. As an example of this I may mention that towards the end of my time at the Admiralty a batch of twelve or fourteen cadets were found to have certain defects—some in form, others in colour vision. On this occasion the authorities, having in view the possibility of the serious consequences involved, decided to have these official results further verified, and so one of the most eminent ophthalmic surgeons in London was called in to make an independent examination. In every one of the cases his separate report confirmed the results of the official examination, and further stated that, in his opinion, the Admiralty vision tests, including, of course, the Edridge-Green lantern, were "efficient and not unduly severe."

With such a volume of evidence behind it, the conclusion appears to me to be irresistible that the Edridge-Green lantern holds the field as an absolutely accurate scientific test for colour vision.

With such a lantern ready to hand, and the experience of the Admiralty available for the asking, it is difficult to understand why the Board of Trade authorities should have undergone so much trouble with their sight tests. It took them a long time to grasp the necessity for a light test, and now I am told a lantern has been introduced which is seriously defective, because it is without means for regulating the luminosity of the lights shown.

Dr. Edridge-Green has deserved well of his country for his great achievement, gained after years of hard labour and obstruction, which would long ago have crushed most men. It is to be hoped that the recognition which is his bare due will after all this long delay be generously accorded him in the near future.—I am, etc.,

JAMES PORTER,
Surgeon-General, R.N.

February 10th.

COLOUR VISION THEORIES.

SIR,—I thank you for referring our correspondence to a scholar of competence in Homeric Greek. As Liddell and Scott have been so long recognized by experts as authorities, I feel that I was justified in relying upon their interpretation of the contested words.

After all, these controversial scholastic points have nothing to do with the establishment of Dr. Edridge-Green's thesis, that primitive man only recognized two colours—red and violet. I only alluded to certain Homeric words, as he stated dogmatically that Homer's vision was dichromic (January 23rd, p. 184). Now the *Iliad* and

Odyssey only assumed their present form some 3,000 years ago, when Homer (?) lived. As regards the point at issue, I lay no stress on the report that Homer was blind, nor, indeed, upon the exact interpretation of certain Homeric words. I do, however, attach importance to the mural paintings of ancient Egypt of date about 4,000 B.C.—that is, about 3,000 years before the *Iliad* and *Odyssey* were written. These show in their gorgeous magnificence that green and yellow were at that time recognized as distinct colours.

In his last letter (February 6th) Dr. Edridge-Green alludes to my reference to the obscurity of his word "red-green." Now if the reader will refer to my letter of January 30th he will see that I gave two instances of obscurity: (1) His explanation of Benham's top; (2) his use of the word "red-green." It is idle for him to tell us that on referring to the quoted explanation we shall find that he has "not used the expression at all." The passage to which I referred occurs in his letter (January 9th, page 92):

> Now the trichromatic theory does not give a satisfactory explanation of why red and green when mixed should make yellow and not red-green, which several other theories do. According to my theory yellow is a colour which in the course of development has replaced the red-green of a previous state, therefore red and green when mixed should make yellow, the colour which has replaced the red-green of a previous state of development. Now if this explanation be the true one, there ought to be cases in which the yellow of the spectrum is seen as red-green, and there are; these are the trichromic cases of colour blindness.

I give the quotation in full, as he asks me for a reference to the passage in which I accused him of failing to distinguish between colour sensations and coloured pigments. The "red-green of a previous state of development" presumably alludes to a neutral zone, like that between red and violet, which he contends were the only colours recognized by primitive man. Red and green pigments, when mixed, give rise to a neutral tint, whereas red and green sensations give rise to yellow.

According to the trichromic theory, the primary colours are red, green, and violet, and white light can be produced by the mixture of the three primary colour sensations, or even only of two colour sensations in certain proportions, but in this last case one at least of the two colour sensations must be other than a primary. For instance, red (λ=6560) is complementary to blue-green (λ=4920), and when these two sensations are mixed the sensation of white results. When, however, red and green (two primary colours) are mixed the resulting sensation, according to the trichromic theory, must necessarily be an intermediate colour, yellow. The trichromatism of normal colour vision, that is, that every known colour, such as brown or olive-green, can be produced by a suitable mixture of the above three colour sensations with the addition of black, is not a theory but a fact, as is well known to every one conversant with the three-colour process. The trichromic theory, however, involves much more than this fact, and it leaves several phenomena unexplained, so I am far from wishing that it should be accepted as demonstrated, but I maintain that it is a convenient supposition upon which certain facts may be provisionally placed together.

I fully admit that Dr. Edridge-Green never mentioned successive contrast: he only mentioned "contrast." Now when the word "contrast" is used alone the meaning of the term successive contrast is usually applied to it. As I said on January 30th, successive contrast phenomena "occur, when, whether by moving the eye or by moving the coloured object, the same part of the retina is subjected to now one and now to another kind of stimulation" as in the Pears' soap advertisements. When dealing with Benham's top, a moving object, the word "contrast" alone would most certainly suggest successive contrast; so, had the phrase "simultaneous contrast" been used, it would have been more lucid.

With reference to Benham's top I personally have never succeeded in obtaining the result given on p. 182 (January 23rd).

> If an observer will look at black letters printed on a white card ground, and then suddenly interpose a blue-green glass, the black letters will for a fraction of a second become a brilliant red.

As we gather that, according to Dr. Edridge-Green, Benham's top must be a simultaneous contrast phenomenon, this also must be a simultaneous contrast phenomenon (although it depends on moving a coloured object). Consequently the blue-green glass must be very pale (see his letter on January 23rd, p. 184). Even if I had succeeded with this experiment, I should still be unconvinced; for there yet remains the difficulty of accounting for the variation of colour according to the speed of rotation of the Benham's top. For instance, with a given illumination, when the speed is great, the tint of a ring will be lavender, but when it slows down it gradually becomes a brilliant deep-red.—I am, etc.,

Newcastle-upon-Tyne, Feb. 9th. A. S. PERCIVAL.

ALCOHOL AND DELIRIUM TREMENS.

SIR,—I have the greatest respect for Sir H. Bryan Donkin's matured opinions. Moreover, I regard myself as under no small personal obligations to him. He examined me for the degree which I hold; and, although this also was in "years long past," I am not forgetful of his exceeding kindness and leniency on that occasion. Nevertheless, I am bound to protest against most of his criticism of my letter of February 6th. Many of his remarks are, to say the least, something less than fair. I am accused of fundamentally unsound argument, of substituting hypotheses for facts, of hedging, and of failing to offer any kind of proof. These charges can only be answered *seriatim*.

1. "It appears that Dr. Hare now admits that delirium tremens is not always the result of cutting off alcohol, and is not always aborted by giving alcohol." Why "now admits"? I have always admitted both facts. Not only so, I have laid much stress on them. There has never been the slightest variation in my position regarding these points.

2. "The hypothesis of 'tolerance of alcohol' and of 'resistance.'" Can it be that Sir H. Bryan Donkin has never recognized the acquired condition of tolerance of alcohol? I should have been loth to make such a suggestion, and most certainly I should never have dared to claim priority in the discovery of the condition. For acquired tolerance of alcohol, far from being a "mere hypothesis," is a clinical fact, nearly as obvious as, and infinitely more common than, acquired tolerance of morphine. Moreover, both these varieties of tolerance, within certain limitations, arise in a similar manner, and are apt to be fraught with similar consequences. They arise through a long course of small but steadily increasing doses of these drugs—doses inadequate to produce at the time more than moderate degrees of euphoria. Eventually, when high tolerance has been established, doses which originally would have produced gross drunkenness or serious coma (as the case may be) can be taken without objective symptoms sufficient to attract notice. Quite commonly alcoholists at this stage can drink and absorb in the twenty-four hours a bottle or more (25 fluid ounces and upwards) without any apparent alteration in their manner or capacity to conduct their business. Furthermore, this tolerance can be more or less completely lost. After a period of total abstinence (of uncertain duration) any sudden reversion to their previous practice will cause marked drunkenness, and cases are known to me of death from acute alcoholic poisoning in these circumstances. As illustrating the loss of acquired tolerance, patients who have become abstainers from a term of residence in the Norwood Sanatorium, and who have subsequently relapsed, not rarely write saying that they are unable to take their long-accustomed amount of spirits without "giving themselves away." This loss of capacity they seem inclined to resent in a few cases. The condition of acquired tolerance, if unrecognized by the majority of the medical profession (as Sir H. Bryan Donkin would seem to infer) is fully realized by many intelligent alcoholists. Though they may not think of it under the technical term here employed, they are well aware of its significance, and promptly lose all confidence in any medical man who proposes suddenly to withdraw all their alcohol.

3. One of the hypotheses I am accused of inventing as an afterthought is that of the resistance of the patient to the essential cause of delirium tremens, namely, the sudden fall in circulating alcohol. It seems to me that "hypothesis" is too dignified a term to use in this connexion. To say that many patients are endowed with so

much resisting power that they escape the frequent effect of the sudden fall in circulating alcohol, is little more than a restatement of a well-known fact—a fact never questioned by me. It seems, however, to emphasize the importance of the ever-varying personal factor. I have watched many patients endowed with high tolerance suddenly cut off from all alcohol. All suffer considerably. Most develop some of the premonitory symptoms of delirium tremens — for example, tremor, restlessness, insomnia. Some, in addition, experience slight hallucinations, and even then recover. These, however, are few. Most who have reached this stage, unless promptly treated, fall into frank delirium tremens.

4. I am stated to have used a "species of hedging." I have never hedged because I have never had occasion to do so. The views I have formed on the subject, whether right or wrong, have never varied since first set down.

5. As to lack of verification or proof, proof in this case can obviously only be clinical. But clinical proof requires much space. Had I attempted to relate large numbers of cases in detail in a letter in your correspondence column, I feel sure that you, Sir, would have returned my communication with a request for its abbreviation. Nevertheless, I have offered proofs. Sir H. Bryan Donkin will find them in my book, *On Alcoholism*, in Chapters V and VI; also in a paper entitled "Statistical Inquiry into the Causation and Nature of Delirium Tremens," published in the *Medical Temperance Review* (November, 1914).

In your issue of February 6th, "A. C. T." refers to the opinion of a medical friend that "the cause of delirium tremens is an excess of alcoholic antibodies in the circulation." In my book (p. 167 et seq.) I have quoted this view as an excellent working hypothesis in that it accurately fits all the clinical facts of the complication, and, moreover, points the way to correct prophylaxis. It was, I believe, first suggested by Professor Jauregg in a paper read at the Eighth International Congress at Vienna in 1901.

But I am informed by a well-known pathologist that the use of the term alcoholic antibodies or antialcohol (Professor Jauregg's term) is in this connexion technically incorrect. Antibodies or antitoxins imply the possibility of direct chemical equilibrium with toxins. There is no evidence for this in the case of alcohol and the hypothetical antialcohol; and, indeed, there is evidence to the contrary. Furthermore, antitoxins, unlike antialcohol, are not endowed with any poisonous action. If, therefore, the term be used it should be in a much wider sense, and as implying only the possibility of a physiological equilibrium with alcohol.—I am, etc.,

Beckenham, Feb. 14th. FRANCIS HARE.

SIR,—I wonder what Sir Bryan Donkin would have done in the following case that came under my care on February 2nd? Whatever his treatment would have been, one thing is certain, namely, that the results could not have been better, and judging from a large previous experience I can only attribute the good result, namely, the aborting of the attack of delirium tremens, to the judicious use of alcohol.

Facts are stubborn things, and the experience of Dr. Frances Hare and myself of the treatment of chronic alcoholics first by the sudden and complete withdrawal method and latterly by the "tapering" method prove to us conclusively:

1. That under the latter method cases of delirium tremens have decreased to vanishing point in our practice.

2. That in cases coming to us on the verge of delirium tremens, that is, with violent tremor, insomnia, and a tendency to, or with actual delusions and hallucinations, following on an immediately previous sudden fall in the alcohol intake, the attack is, if the patient is seen soon enough and is able to retain alcohol, generally aborted by the exhibition of a sufficiency of it (depending on his previous daily ration) followed by a systematic tapering.

3. That the patient, apart altogether from delirium tremens, is saved the nerve shake-up, inevitable to the sudden withdrawal method, and, as a consequence, makes a much more rapid and satisfactory recovery. Surely two things to the good.

4. Against all this no one has yet been able to advance any reason for giving preference to the sudden withdrawal method.

The case in point is shortly as follows:

On February 2nd a man, aged 54, of flabby constitution, was admitted to my sanatorium with a history of very heavy and continuous drinking of many months' duration. Up to January 31st his usual daily consumption had been recently about a pint and a half of spirits (mostly whisky) a day. On February 1st, in preparation for coming here, he tried to cut down his quantity and took only a little over half a pint, on Tuesday on arrival he had had only "one gill and a glass," and was very proud of the fact, which, judging by the state he was in—sweating and tremulous—and the consequent urgent need he must have felt for stimulant he had every right to be. I gave him on arrival at 6 p.m. 3 oz. of whisky, and on going to bed at 7.30 p.m. 3 oz. more, with 2 drachms of paraldehyde and 40 grains of potassium bromide. He went to sleep at once, and was sleeping when I last saw him that night at 11.45.

At 8 a.m. I was called to him, and found him half dressed and in a very excited state—no knowledge of where he was, how he got here, or who I was, and under the delusion that some conspiracy had been hatched against him. The perspiration was pouring off his head and face, and his pulse was full and rapid; tongue and hands tremulous. On being refused permission to leave his room he became violent, and tried to break out through the window. I began treatment by giving him $\frac{1}{40}$ grain of apomorphine for its sedative effect. Under this he quickly became less excited, and we were able to get him back to bed. As he now utterly refused whisky, he was given it in bovril, and in the form of egg-flip, in which he took it readily. In this way he took rather more than 15 oz. up to 10 p.m. Medicinally, during the first day he had $\frac{1}{40}$ grain apomorphine, $\frac{1}{3}$ grain morphine, valerianate, and 20 grains of chloral and 40 grains of potassium bromide every three hours. No aperient was given, as he already had sharp diarrhoea. He remained delirious all day, but towards evening the restlessness and talkativeness subsided, and after a draught of 2 drachms of paraldehyde he fell asleep, and, but for short intervals at 2 a.m. and 7 a.m., when he was given the bromide mixture and 3 oz. of whisky in milk, he slept for eight hours.

When I next saw him, at 9 a.m. on February 4th, he was quite rational, but without any recollection of his journey or his arrival, a want of memory for recent events, which, however, returned fully during the day. There was slight tendency to be "light-headed" just prior to going to sleep the two following nights. With this exception his recovery was uninterrupted.

For five nights he was given a gradually diminishing draught of paraldehyde, and has had seven to eight hours' sleep every night, both when taking and since giving up the draught and whisky. No whisky was given after the seventh day, and the bromide mixture gave way to a tonic on the fifth day.

I am satisfied from past experience that the drugs played a very minor part in aborting this attack, and that but for the reversion to the alcohol it would have developed and run its usual course, and I attribute the commencing attack to the patient's attempt on February 1st and 2nd to wean himself, and feel sure that had he come to me without making any such attempt, no such attack would have shown itself.—I am, etc.,

J. W. ASTLEY COOPER,
Medical Superintendent Ghyllwoods Sanatorium,
February 15th. near Cockermouth.

THE RUM RATION.

SIR,—The prevailing epidemic prevented me from replying at once to Dr. Astley Cooper's kindly but erroneous estimate of my knowledge of the "effects of varying doses of alcohol (and especially rum) on mind and body."

Though he agrees with me that a regular rum ration is a bad thing for the soldier, and I with him that vastly too much alcohol is being drunk at home, Dr. Astley Cooper goes so far as to suggest that my statements as to the effects of $2\frac{1}{2}$ oz. of rum "defeat their own purpose," and that instead of my advice of national total abstinence "being taken because it carries unquestionable weight of reason and proof," it lays me "open to ridicule." Ridicule! From whom?

Since every statement I have made on this subject is based on scientific reasons, on scientific experiments, and on published statistics, the only possible ridicule I can be exposed to is either that from persons who are uninformed or persons who themselves drink spirits, and who, like all victims of a drug habit, are too narcotized to learn the real effects of small doses of alcohol, or to appreciate that it is only by total abstinence that a man can become a true patriot—that is, serve his country with his fullest efficiency, and economize her resources instead of squandering them on a selfish indulgence of an injurious taste.

Take, for instance, the first of Dr. Astley Cooper's doubts—namely, whether it is true that $2\frac{1}{2}$ oz. of rum do any harm to "shooting"—a point by the way on which the lives and success of our troops entirely depend.

If Dr. Cooper will turn to page 107 of a little shilling book by Dr. Mary Sturge and myself, called *Alcohol and the Human Body*, he will find reference to the exhaustive experiments made by the Swedish army authorities, who discovered that *half* our rum ration caused a deterioration of 50 per cent. in accuracy of rifle shooting. In our new edition we are adding not only Admiral Sir John Jellicoe's splendid philippic against rum (delivered in 1911) but also the results obtained by Captain Ogilvy, late Gunnery Instructor to H.M. Navy, who worked out charts and curves revealing such deterioration in big gun shooting caused by rum, that admirals have for some time made it a practice to take their squadrons out of harbour for twenty-four hours at least before any gun-laying trials, so that the best scores shall be got, as they only can be got—namely, by abstainers. But I need not pursue point by point, for the facts I alluded to in my article are all similarly published in the literature of the rum ration.

As regards Dr. Astley Cooper's depressing ideas about the scruples of our medical colleagues in the service as to the kind of certificate they put their names to, I am afraid Dr. Cooper's pessimism partly arises from the fact that he did not fully recognize my point, namely, that by H.M. Regulation 34 the order for the issue of the rum is given not by the medical officer but by his military superior, the officer commanding, upon whom, therefore, the direct responsibility rests.

I agree that it is obvious no medical officer could honestly sign any such statement as that laid down in the Regulation, namely, that a "rum ration is absolutely necessary for safeguarding the health of the troops." As regards a real alternative to the rum ration I must refer Dr. Astley Cooper again to my article where it is fully dealt with.

Dr. Mercier's aspersions on my article are typical of the man who two years ago repaid the hospitality of the (Birmingham) Midland Medical Society with a diatribe in favour of alcohol and drinking in which he supported his untrue thesis, that there is little drinking in this country, by an astoundingly false version of the (published) national statistics of convictions for drunkenness. A fortnight later he was compelled to withdraw every one of his so-called figures, but, of course, in the interval "the lie had time on its own wings to fly," and was well circulated by the liquor trade as a medical authority's support of drinking.

Vulgar abuse I frequently have to endure, but when it is accompanied by such literary misconduct on questions of public health and national safety there is no obligation upon me to notice it as on the present occasion.—I am, etc.,

London, W., Feb 13th. VICTOR HORSLEY.

SIR,—I am glad to read that Dr. Robert Simpson states "so far as I see" the letters in the BRITISH MEDICAL JOURNAL do not refute a single argument in Sir Victor Horsley's article. I am afraid this pious opinion is not shared or endorsed by the majority of the readers of the JOURNAL. I myself think Dr. Charles Mercier's letter did so in a very able and convincing manner.

I do not think for one moment the army medical officers desire to be cleared of any charge by Sir Victor. It is only reasonable to presume that the military authorities consulted the army medical board before agreeing upon the issue of the rum ration, and the board rightly endorsed the proposal.

The rum ration is no substitute for any food, but an "extra." I agree with Sir Victor that a teetotal soldier should be provided with an alternative "extra," but surely not coffee. I find from long experience as a dietarian that coffee is a very harmful beverage to many. In my own case a large cup of coffee will cause a severe headache, dyspepsia, and an irregular action of the heart. I remember Sir Pearce Gould stating once that it had a similar effect upon himself, and he is no friend of alcohol. A good substitute would be half a pint of cocoa added to half a pint of milk made from dry or condensed milk.

Dr. Simpson states what a soldier told him as to the rum ration, but I can quote a case with a direct opposite opinion, of a cousin of mine, who writes: "The rum ration is a great comfort in the trenches; it makes you sleep and dream of home." These opinions have no scientific value. Again, it would seem that Dr. Simpson wishes to draw a red herring across the path of discussion by introducing the Russian spirit vodka, a new spirit distilled from rye with irritating properties, which it is quite unscientific to compare with the properties of pure, well-matured rum upon the system.

The point I would like to lay particular stress upon is that if intelligent men are treated like children it will do serious harm to voluntary recruiting and cause much discontent in the army. Rum rations being an extra, let it be a voluntary one, with an efficient substitute.

The voice of the profession I am certain is in favour of this extra ration of rum as being beneficial, and the small army of teetotalers who think it harmful have a perfect right to their opinion, but cannot be allowed to be dictatorial and make unfair statements and comparisons.—I am, etc.,

London, W., Feb. 13th. THOMAS DUTTON.

THE VACCINATION QUESTION.

SIR,—I have to thank you for the very fair manner in which you summarize my position in your review of my book, in your issue for February 13th. I note with gratification that you consider the work "certainly merits the dispassionate consideration of epidemiologists." You proceed, however, to say that you are unable to endorse my conclusions because I have not proved statistically to your satisfaction that sanitation alone is superior (as a means of protecting a community against small-pox) to sanitation *plus* vaccination.

You admit that the data for such statistical proof are difficult to obtain, but I would go further and say that for a satisfactory comparison such as you suggest they are non-existent, inasmuch as practically no other town besides Leicester has seriously attempted, over a sufficient number of years, to make the experiment of dispensing with infantile vaccination and at the same time of depending upon sanitation. I would submit, therefore, that you are making an unreasonable and impracticable demand.

Moreover, I contend that in a question like that of compulsory infantile vaccination as a State institution the onus of proof rests with the advocates of compulsion, and cannot in fairness be put upon those who merely appeal for reconsideration. Surely it is sufficient if the latter can show that the arguments which have hitherto been relied upon by the advocates of compulsion are, to a large extent, no longer tenable in the light of modern experience.—I am, etc.,

Leicester, Feb. 16th. C. KILLICK MILLARD.

THERAPEUTICS AND ORGANIC EXTRACTS.

SIR,—In the JOURNAL of February 6th there are contributions by a physiologist and two physicians on the therapeutics of organic extracts. Since I learnt by experiment and careful observation that it is our food that causes nearly all the ills to which flesh is heir, I have little patience with any attempt to relieve symptoms, either by drugs or organic extracts without calling attention to the cause and having it removed. Thus, if Dr. Hertz, who suffers from asthma, knew when and what to eat, and generally how to live, he would have no asthma. I am glad to learn that Sir John Byers has treated a severe case of pre-eclamptic toxaemia on the elimination principle, which has been found to reduce the mortality. If my theory is correct—and I feel sure that whoever tests it will find it is true—the elimination principle is that on which the success of treatment in any case will depend. The skin is at fault in asthma, and once it can act naturally the asthma will cease. When physiologists teach us the physiological action of our common foods, there will be no need either for organic extracts or drugs. Our food will be our physic.—I am, etc.,

Hawick, Feb. 13th. JOHN HADDON, M.D.

THE DEARTH OF RESIDENTS FOR HOSPITALS.

SIR,—If the hospitals are really in as great difficulties as they say, may I venture to suggest that it may be necessary for them during this crisis to depart from some of their regular customs? Could they not accept married men as residents, and either provide married quarters or agree to having a "resident" living out but near and on

the telephone. In such a case it might be necessary to raise the salary somewhat to make it a living wage.

If this could be done, then some of us who are unable to return to our hospitals abroad till after the war would be able to help. This may not be possible in all hospitals, but undoubtedly should be in some. If, however, they prefer "to close a large part of the establishment" rather than arrange for a married man or otherwise depart from their habitual groove, th. our services towards alleviating the difficulty must go begging.—I am, etc.,

February 10th. MARRIED.

Medical News.

THE British Medical Benevolent Fund Guild appeals for gifts of second-hand clothing, boots and shoes in good condition, also household linen. The gifts should be sent to the Secretary, British Medical Benevolent Fund Guild, 43, Bolsover Street, W.

AT the recent examination for sanitary inspectors under the Public Health (London) Act, 1891, held by the Sanitary Inspectors Examination Board, nine candidates passed; of these five were ladies, four of whom had been students of the National Health Society, and one of Bedford College; the four successful male candidates had been students at the Royal Sanitary Institute.

THE special organization of the British Fire Prevention Committee to meet the war emergency has completed its first half-year's work. It has issued large numbers of fire warnings, has established an office for dealing with all technical inquiries, and has formed a special fire survey force of 80 honorary fire surveyors with special duties and 300 fire brigade officers and men available at short notice. Several patrols have already been requisitioned from this force, and the fire survey force has dealt with some 200 surveys, some involving inspection of as many as 50 individual buildings.

AT the annual meeting of the Scottish Society for the Prevention of Vivisection, held in Edinburgh on February 15th, Miss L. I. Lumsden, LL.D., who presided, said that the society had had nothing to do with the agitation against inoculation though they might not like the idea, for they believed that sanitary measures and cleanliness ought to be good enough, yet it had been ascertained that no animals were used for the preparation of the fluid or its standardization. A resolution of sympathy with the work of the antivivisection societies was moved by a clergyman and seconded by another, and carried unanimously.

MR. ANDREW MELROSE will publish almost immediately *My Experiences as a German Prisoner*, by Mr. L. J. Austin, Surgical Registrar to the London Hospital, who was a member of the first British unit of the Belgian Red Cross Society. He was arrested as a spy almost immediately after landing in Belgium, and was kept a close prisoner in various German fortresses for four months and a half. *A Surgeon in Belgium* is the title of a book which Mr. Arnold hopes to have ready by the end of the month. The author, Mr. H. S. Souttar, assistant surgeon at the West London Hospital, was one of the surgeons in charge of the British Field Hospital, which began its work at Antwerp last September, and got away in good order before the German occupation of that city.

THE fifth annual meeting of the council of the Association of Medical Women in India was held at Lucknow on December 31st, 1914, January 1st and 2nd, 1915, when five members and three visitors were present. Proposals for the better development of the association throughout India were discussed. It was decided to address the Viceroy, offering the loyal services of the association in the present emergency, and suggesting various ways in which medical women might help to supply the deficiencies due to the transfer to military duty of many civil I.M.S. officers. The training of the indigenous *dhais* (midwives) proved a most interesting subject for discussion; the practical points which emerged were embodied in a note addressed to the Executive Committee of the Victoria Memorial Scholarships Fund, founded for the purpose of training Indian midwives.

DURING the last few months some Territorial battalions have been sent to India, to replace regiments of the regular army withdrawn for service at the front. These battalions are mostly composed of young soldiers, and few of them can have had previous experience of life in India. The advantage of giving to these troops some advice on the preservation of health in the tropics is obvious. Lieutenant-Colonel R. H. Elliot, I.M.S., delivered to a division of the Territorial army a lecture which he has printed in a pamphlet entitled *The Care of Health in India*; in the brief compass of sixteen small pages is packed much useful advice on the subject. Drinking water and other beverages, milk, aërated waters, etc.; food and its preparation, the kitchen, and cooking utensils; and clothing and protection against the sun are each treated in turn. A few words are added on malaria, on snakes, on venereal diseases, and on the treatment of Indians. The advice given is uniformly good and useful. The distribution of copies of the pamphlet to all battalions going to India or Egypt is much to be desired.

THE Life Assurance Medical Officers' Association was founded in 1894 to discuss the medical aspects of life assurance. The great development of the study of prognosis in regard to life, accident, and sickness insurance, and the problems presented to the medical profession by the administration of the Employers' Liability, Workmen's Compensation, and National Insurance Acts, have induced the society gradually to extend its scope, and its name has been changed to the Assurance Medical Society. The *Transactions* for the years 1912 and 1913 have recently been issued, and form an octavo volume of nearly 300 pages. During these years the president was Dr. F. de Havilland Hall, who has recently been succeeded by Dr. R. Hingston Fox. The volume contains the presidential address of Dr. Hall on the statistics of the rated-up lives of the Rock Life Assurance Company, which led to an interesting debate. Among other papers in the volume are those by Dr. A. Caddy, on life insurance in India; by Dr. H. G. Turney, on the habit of smoking in its relation to the insurance examiner; by Dr. James Mackenzie, on prognosis of heart affections from the life assurance aspect; and a general discussion on experiences of cases of substandard lives. The subscription to the society is 1 guinea a year for London members, and 1 guinea every two years for country members. The *Transactions*, to which members are entitled, are published in a volume every two years. The honorary secretaries of the society are Drs. R. A. Young and Otto May, and further particulars may be obtained by applying to the former at 57, Harley Street, London, W.

THE question of "Tall *versus* Short Men for the Army," which has been discussed at some length in the JOURNAL, was considered at a meeting of the Royal Sanitary Institute, in London, on February 9th, when Dr. M. S. Pembrey read a paper upholding the view that, under modern conditions of warfare, short men were by no means at a disadvantage, but in many respects to be preferred as soldiers, to tall men. The essential organs in the head and trunk were often better developed in the short than in the tall man. The smaller man possessed greater agility, and his requirements as to food, clothing and space for accommodation were smaller. Dr. Pembrey urged that the psychological factor, which specially influenced enlistment in the present war, was of the utmost importance in the selection of soldiers, and this had no relation whatever to the question of height. If short men were admitted freely to the army, they must be graded so that tall and short men would not march together. In the discussion, Dr. C. W. Saleeby spoke of the importance of being assured that the shortness of a recruit was not due to constitutional weakness the result, perhaps, of rickets. Dr. Leonard Hill praised the work of the Physiological Committee of the Army Medical Advisory Board, especially in regard to its inquiries into the food values of rations. Surgeon-General Evatt upheld Dr. Pembrey in his insistence on the importance of the psychological factor, and criticized recruiting methods. He regarded the height standard as a relic of the "shock tactics" which the magazine rifle had made a thing of the past. Dr. Nash said that work as a voluntary examiner of recruits had convinced him of the absurdity of many of the standards of enlistment imposed. To exclude the short, sturdy Lancashire miner for lack of inches was ridiculous. Surgeon-General Sir W. Launcelot Gubbins, K.C.B., who presided, supported the view that small men were to be preferred for the army if they were of good general physique.

DR. WURTZ, Director of Vaccination, has announced to the Academy of Medicine that revaccination will probably be made obligatory in all detention camps in France. A year ago he published an article on this subject, in which he drew attention to the risk of epidemics and contagious diseases for non-belligerents, in invaded districts, owing to exhaustion and famine. He recalled the war in 1870, in which small-pox alone claimed 200,000 victims in France, whilst the army lost 23,400 combatants, and Paris itself lost 15,421 inhabitants from the same disease in 1871.

He considers that there are millions of men and women at present in France in a susceptible condition, and that medical practitioners should do everything in their power to persuade their own households and their patients to be revaccinated. He refers to errors of technique, which render the operation less effective and contribute to spread a horror of vaccination. Sometimes the needle is sterilized by being heated to a dull red, and is immediately dipped into the lymph. Sometimes the arm is gashed and blood-stained, or is pricked deeply, with consequent breaking down of the skin. He adds that many medical men do not realize that the process should be one of scarification, not puncture. He considers that three points should be selected, about 3 to 4 cm. apart, and that the scarifications should be only 2 to 3 mm. long, and made by a needle.

THE Brighton and Hove Medical Emergency Committee has issued a scheme for medical attendance by members of the profession on persons wounded consequent on an air or sea bombardment of the towns of Brighton and Hove. The committee, whose memorandum bears the signatures of Mr. J. L. Otter, Mayor of Brighton; Mr. A. R. Sargeant, Mayor of Hove; and Dr. E. Rowland Fothergill, Honorary Secretary, desires that it should be understood that these arrangements are not contemplated owing to any immediate apprehension of such an attack, but merely as a precaution proper under existing circumstances. The scheme will be carried out in co-operation with the local police. Its chief principles are: (1) That, as far as possible, all first-aid treatment be given only at a dressing station; (2) that injured persons be invited to go at once to the nearest dressing station, if able to do so; (3) that in the case of others a message for a doctor and stretcher be sent at once to the nearest dressing station; (4) that all persons who, in the opinion of the doctor in charge of the station, are able to proceed home after first-aid be allowed to do so, and be advised to call in their own doctor later; (5) that those injured persons requiring removal to their own home, or to a nursing home or hospital, by ambulance be collected at the dressing stations; and (6) that the full names, addresses, and ultimate destination of all injured persons be registered at the dressing stations. Several forms are issued with the scheme. One is for a letter of thanks to a doctor who offers his professional services in the event of a raid, with directions as to how he is to act; a brassard, to be put on directly the necessity for his services arises, will be sent to the applicant with the letter. A similar form is to be issued to the doctor, who is to attend at his private address ready for a signal summoning him to a dressing station, and another for the doctor whom the committee has attached to the Ambulance Department, North Road, under the control of Dr. W. H. Brailey. Emergency dressings will also be distributed, each with a form detailing the contents of the parcel, and a request that it be not opened until actually required. Each dressing station will also be supplied with 2 lb. of picric acid lint for burns. The two mayors are, we are informed, engaged this week in a round of visits to the twenty-nine dressing stations now organized, meeting the members of the committee. Out of ninety civilian doctors, seventy-eight have offered their services, as have 300 youths and boys from the various boy organizations in the district, to act as stretcher-bearers, messengers, and cyclists. Nurses from the local hospitals and nursing organizations, stretcher-bearers from the Home Protection Brigade, and special constables are also ready to assist. The doctors and others have already been appointed to their posts. The cost of the scheme will be met through the borough councils of Brighton and Hove.

THE late Mr. Bernard Pitts, F.R.C.S., who died in December last, left estate of the gross value of £16,104, with net personalty £15,638.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE examination for the Diploma of Ophthalmology will commence on Monday, July 19th, and for the Diploma in Public Health on Tuesday, June 1st.

The Board of the Faculty of Medicine gives notice that the certificates in anaesthetics (No. 11), practical pharmacy (No. 12), and practical pharmacology (No. 13), will be accepted on the old forms (see Examination Statutes, p. 232, ed. 1914), at all examinations held before Michaelmas Term, 1916. At the examination in Michaelmas Term, 1916, and afterwards, only the new forms of certificate will be accepted.

UNIVERSITY OF DURHAM.

COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

Presentation to Sir G. Hare Philipson.

PREVIOUS to the commencement of the business at the annual meeting of Council, held on February 9th, an illuminated address, in Latin, was presented to Professor Sir G. H. Philipson, M.D., the President of the College, congratulating him on the completion of his fifty years' service to the College.

The Vice Chairman of the Council, Alderman W. J. Sanderson, J.P., introduced the matter, and called upon Professor David Drummond, M.D., to read and present the address. Sir George Philipson thanked the members of Council and his colleagues for the address, which he would treasure and preserve.

The following is a free translation of the address into English:

> TO SIR GEORGE HARE PHILIPSON, Knight, Master of Arts, Doctor of Medicine, Doctor of Civil Law, Doctor of Laws, Fellow of the Royal College of Physicians, President of the University of Durham College of Medicine, from the Council, the Professors, and Lecturers of the College, Greeting:
>
> In compliance with the wishes of your colleagues, we have the greatest pleasure in conveying to you, Sir, the congratulations of the College on your completion of fifty years of devoted, courteous, and distinguished service as a medical teacher.
>
> Nothing could be more appropriate to the auspicious occasion of your Jubilee as a member of the Staff than to record our sense of gratitude and admiration for your faithful discharge of a notable series of offices. Whether your office has been that of Lecturer on Pathology, or Professor of Medicine, Honorary Secretary of the College, or its President, the same care and courtesy have characterized your performance of duty. It affords us particular gratification to recollect that your experience and urbanity, Mr. President, are still available to guide the deliberations of the College.
>
> WILLIAM JOHN SANDERSON.
> ROBERT HOWDEN.
>
> Newcastle-upon-Tyne,
> June, 1914.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on February 11th, when Sir W. Watson Cheyne, President, was in the chair.

Issue of Diplomas.

Diplomas of membership were granted to 112 candidates found qualified at the recent examinations; and to 6 in public health, conjointly with the Royal College of Physicians.

Dissection.

The President reported that conferences had been held with representatives of the licensed teachers in London, and that the Council had decided to address a letter to the Home Secretary, pointing out the difficulty of obtaining an adequate supply of bodies for dissection and practical instruction in operative surgery.

Court of Examiners.

Mr. John Murray, of the Middlesex Hospital, was elected in the vacancy occasioned by the retirement of Mr. Bilton Pollard. Mr. C. A. Ballance was elected a member of the Board of Examiners in Dental Surgery.

Bradshaw Lecture.

The President reported that he had appointed Sir Anthony A. Bowlby as Bradshaw Lecturer for the ensuing year.

CONJOINT BOARD IN ENGLAND.

AT a meeting of Comitia of the Royal College of Physicians on January 28th and of the Council of the Royal College of Surgeons on February 11th diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon 114 candidates (including three ladies) who had passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board:

C. M. Anthony, Mary E. Ashton, E. Atkinson, G. L. Attwater, J. D. Bangay, P. W Barnden, B. Barnett, K R. Batra, O. A. Beaumont, A. L. Blunt, H. E. A. Boldero, J. W. Bouwer, L. G. Brown, C. M Burrell, H. G. Bywater, R. B. Campion, M. H. Cane, Dorothy Chick, W. K Churchouse, J. W. Clayton, P. C. P. Cloake, W. L Cockroft, S W. Coffin, Dora C. Colebrook, E. J. Cooke, E. C. Cunnington, E. D. D. Davies, A. D. d'Avray, G. S. Deane, C R. Denny, C. W. Dias, H. G. Dresing, A. J. K. Drew, S. E. Elphick, A. Z. Elsayed, J. Fanstone, H H. Fisk, G. M. Foster, L. S. Fry, A. T. Gibb, J. W. Gilbert, E. D Granger, S. W. Green, N. Grellier, H. S. Griffith, D. N. Hardcastle, W. T. Hare, F. C. Harrison, H. G. Hockridge, L. Horsley, I. S. James, W. B. Jepson, C. O. H. Jones, D. N. Kalyanvala, C. G. G. Keane, F. E. R. Laborda, S. A. Liebson, N. H Linzee, P. E. Lones, W. F. MacAlevey, C. G. McClymont, J. McDonnell, E. C. Malden, G. A. Maling, R. C. Matson, E. S. Mawe, S. H. Miles, D. S. E. Milligan, W. H. Milligan, A. D. Morris, H. G. Moser, D. F. A. Neilson, K. M. Nelson, C. C. Okell, J. H. Parry, O. G. Parry-Jones, S. H. Paul, H. L. P. Peregrine, D. D. P. Perera, H. Peters, G. R. Pirie, K. Playfair, G. A. Pratt, O. B. Pratt, H. P. Price, W. Raffle, R. T. Raine, W. L. E. Reynolds, W. K. A. Richards, J. A. Robinson, A. F. Rook, H. A. Rowell, A. P. Saint, N. H. W. Saw, R. Sells, H. R. Sheppard, W. Sowerby, H. D. L. Spence, A E. Staffurth, W. F. Stiell, L. F. Strugnell, C. P. Symonds, G. S. Terry, E W. Todd, M. D. B. Tonks, O. R. Unger, A. R. Upton, C. N. Vaisey, J. S. Wallace, P. P. Warren, R. H. Williams, S. Wilson, F. H. Woods, H. W. S. Wright.

Obituary.

FRANK BROADBENT, L.R.C.P.Edin., M.R.C.S.Eng.,

CHAIRMAN OF THE NOTTINGHAM DIVISION OF THE BRITISH MEDICAL ASSOCIATION.

By the death of Mr. Broadbent at the comparatively early age of 54 the medical profession of the county of Nottingham has lost one of its most highly esteemed members, and the people of Collingham and a widely surrounding district a trusted and sympathetic medical adviser and friend. He was educated at Newark Grammar School, and studied at St. Bartholomew's Hospital, qualifying in 1883. Since then he had practised in the village of Collingham and district, having succeeded his father and grandfather. He held several medical appointments, being medical officer to the Collingham District Newark Union and the Eagle District Lincoln Union, and M.O.H. Northern Division Newark Rural District. At the time of his death he was Chairman of the Nottingham Division of the British Medical Association, in which he took a great interest; his advice was always much valued by his fellow members on account of his clear insight and business capacity. To the BRITISH MEDICAL JOURNAL Mr. Broadbent contributed several interesting articles.



FRANK BROADBENT.
(*Photograph by Allison, Belfast.*)

STANLEY RISELEY, M.D., C.M.Edin.,

CONSULTING OPHTHALMIC SURGEON, SHEFFIELD ROYAL HOSPITAL.

AFTER a long and painful illness, which had obliged him to give up work for the last eighteen months, Stanley Riseley passed away on February 5th at the early age of 47.

He was the eldest son of Henry L. Riseley, an ex-Sheriff of Bristol, and he received his medical education at Edinburgh University. After graduation he held various resident posts at the Halifax Infirmary and later at the Rotherham Hospital. He also spent some time studying ophthalmic work as clinical assistant at Moorfields and in the ophthalmic department of the Middlesex Hospital

In 1898 he settled in Sheffield to specialize in eye diseases, and was appointed the first ophthalmic surgeon to the Sheffield Royal Hospital. He continued to hold this post until last year. During the sixteen years of his connexion with the hospital the ophthalmic department developed in a very remarkable manner, thanks to the skill and energy which he devoted to the work; for in this, as in everything he undertook, he was exceedingly thorough and very much in earnest. He was also deeply interested in the affairs of the hospital, and for many years was secretary of the staff, and a most active and influential member of the board of management. The hospital, in recognition of his work, appointed him consulting ophthalmic surgeon on his retirement from active duty.

Nor did his voluntary work end there. He was Ophthalmic Surgeon to the Rotherham Hospital and to the Chesterfield and North Derbyshire Hospital, and at each of these institutions started special departments, which flourished greatly and are now permanently maintained.

Meanwhile his reputation as an eye specialist began to bring him a rapidly increasing private practice, and his opinion as an expert was much sought in the large amount of litigation connected with injuries to the eyes necessarily occurring amongst so extensive an industrial population. Latterly he was appointed medical referee for ophthalmic cases in the Sheffield and neighbouring districts. In 1912 he held the Presidency of the Sheffield Medico-Chirurgical Society.

In private life he was a particularly attractive man, who always made friends wherever he went. In his earlier days he had been in the front rank of lawn-tennis players, and his name, associated with that of his two younger brothers, is still well known wherever the game is played. There is little doubt that this experience and training in athletics had something to do in developing the frank and straightforward manner which was one of his most striking characteristics. Of fine tall presence, he was a noticeable figure in any gathering. His serious illness, which was quite hopeless from the first, struck him down in the fullness of life and vigour and at the height of success; but, in spite of all this, he submitted with a patience and bravery characteristic of his whole life.

The medical profession and the public of the neighbourhood have lost in him a valued colleague and a kindly friend. He married in 1901 the daughter of the late Dr. Cleaver of Sheffield. His widow and five young children survive him. He was interred at Ecclesall Church, Sheffield, on February 9th, amidst every token of sorrow and respect.

DR. WILLIAM CAPE DOUGHTY, L.R.C.P. and S.Edin., L.F.P.S.Glasg., died on January 28th, after a very acute attack of pneumonia and pleurisy, at his residence, Woodchurch, near Ashford, Kent, at the early age of 32. Dr. Doughty studied medicine in University College, London, and had been in practice at Woodchurch for over seven years. He had lately been carrying out duties under the War Office in connexion with the troops at Appledore and elsewhere.

DR. J. WYBRANTS OLPHERTS, who had been ill for several weeks, died recently at his residence in Downpatrick at the age of 72. He was the last male representative of the Downpatrick branch of an old family of Dutch origin settled in the North since the seventeenth century. He was the son of Mr. John Stanley Olpherts, Downpatrick. He was a student of the Ledwich School of Medicine in Dublin, and took the diplomas of L.R.C.P. and S.Ed. in 1869. In that year he began to practise in Lurgan, but in 1883 removed to Downpatrick. He was the oldest dispensary medical officer in the union. All his colleagues, as well as the board of guardians, admired and respected him. He was a member of the Irish Medical Committee.

WE regret to announce the death of Dr. EUGÈNE SUCHARD, a distinguished French histologist, who for more than twenty years was demonstrator to Professor Ranvier and deputy professor of general anatomy in the Collège de France. He had been a favourite pupil of Verneuil and collaborated with Cornil and Potain. He was an intimate friend of Claude Bernard. He was the author of a treatise on autopsies and was considered one of the best living authorities on the microscopic anatomy of new growths.

DR. JAMES RAMSAY, who graduated in medicine at the University of Edinburgh in 1866, chapter clerk and registrar of York Minster, surgeon lieutenant-colonel (retired) 3rd Battalion West Yorks Regiment (Militia), was buried in York Cemetery on February 5th after a service in York Minster, nearest and dearest to his heart in his later years. The funeral was very largely attended, the body being met at the west entrance of the cathedral by the surpliced choir and the dean, sub-dean, vicars-choral, and other clerical dignitaries. Numerous friends, colleagues, prominent citizens of York, and clergymen representative of his church interests were present, besides figures in khaki who remembered the old days before the South African war, when Dr. Ramsay played his part in the service of his country, and a host of individuals who, in a private capacity had gained by coming in contact from time to time with a man of sterling worth and of infinite kindness. Among the family mourners were Dr. and Mrs. Rabagliati and Drs. Cattley, Turner, Craig, and Stoddart. Dr. Ramsay was at one time honorary medical officer of the York Public Dispensary and medical officer to the Post Office.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

WASTE PAPERS.

MR. R. D. PEDLEY (17 and 18, Railway Approach, London Bridge, S.E.) writes; I have a small but constant stream of old papers and books which I would gladly supply by the sackful if any of your readers could inform me whether any charitable society may benefit by their collection as waste paper.

ANSWERS.

TRANSPLANTATION OF HAIRS.

W. S. B.—A Turkish doctor (Hoddra of Constantinople) published a few years ago a communication on the grafting of individual hairs, but it excited little attention, and the method does not appear to have been attended by satisfactory results.

LETTERS, NOTES, ETC.

PETROL IN WOUND TREATMENT.

DR. C. ARBOUR STEPHENS (Swansea) writes: In connexion with Mr. Waterhouse's article on ether in surgical therapeutics, perhaps you will allow me to draw attention to the great similarity of refined petrol as regards its physical properties to ether. The low boiling-point and low surface tension, as well as the power of dissolving fats, are common to both petrol and ether, but whereas the latter is expensive and scarce, petrol is cheap, plentiful, and readily accessible at all times and in all places. Petrol, like ether, possesses the quality of "cleaning" the micro-organisms themselves, and cleaned organisms are far less harmful than those which are surrounded by their metabolic products. The special exception which the Germans have made to their general embargo on benzine, whereby this product is allowed to be sold for the treatment of wounds, is a matter of great and corroborative interest. For those who still hanker after iodine it may be of interest to know that a solution of iodine in petrol can be made, which possesses the additional quality of cheapness when compared with tincture of iodine, for which alcohol is required, and already several firms have got this product on the market under special trade names.

A SWALLOWED PIN.

DR. H. B. BILLUPS (Sandown, I.W.) writes: The swallowing of a pin, one would think, must be a fairly common accident; yet the ensuing symptoms apparently are not often described. It is hoped, therefore, that the following notes may be of interest. Mrs. B., aged 42, had false teeth and had undergone ventral fixation of the uterus, done many years ago; otherwise, she was a normal woman, though rather thin and delicate.

A pin, yellow in colour, probably of brass, $1\frac{1}{16}$ in. in length, and having a clear glass knob $\frac{3}{16}$ in. in diameter, was used to fix a pudding cloth and then was dropped by mistake into some cabbage. This accident was suspected and the cabbage was cut up fine, but the pin was not found. During the Sunday dinner, at 1.30 p.m., the patient suddenly exclaimed, "I have got it," as she felt a slight pricking in the throat, but it was too late, it had gone down, and about an hour afterwards, for about ten minutes, she felt a slight sensation of pricking in the chest behind the middle of the sternum. All the evening she felt nervous and irritable. She ate nothing more after swallowing the pin, as she had practically finished her dinner, which consisted of roast beef, roast potatoes, suet pudding, and cabbage. She did not sleep very well and had to be up at 5.45 a.m. to get breakfast. On getting out of bed she was seized with terrible pain in the caecal region and was obliged to hold on to the bedpost for support. It was described as severe pain, like a knife sticking into her, and made her feel faint. It only lasted about five seconds and movement seemed to relieve it. About every ten minutes she got spasms of pain, but not so severe. She got the breakfast, but could eat none, as she felt too sick. At 6.40 the pain came on again in the same place and lasted rather longer than the first time. After this she had slight pricking sensations every few minutes. A small motion was passed about 9.30 a.m., slightly relaxed—an unusual thing with her.

I saw her about 11 a.m. As she was not at all positive that she had swallowed the pin, I was somewhat in doubt, but on considering the whole story decided to have a skiagram taken. There was slight tenderness over the caecal region, and a noticeable tendency for the right rectus to harden under gentle palpation. However, during this and subsequent examinations, there was free respiratory movement, with little or very slight discomfort, and there was never any rise of temperature or pulse. In fact, there was never any sign of peritonitis. She walked to the railway station, and went by train to a neighbouring hospital, where she was *x* rayed about 1.15 p.m. She had had several slight pains on the way. The screen showed nothing, but a plate was taken, and on it the pin was distinctly shown, apparently about 2in. to the right of the umbilicus, and rather lower down. I concluded that it was really in the caecal region, in fact, just about where the pain had been felt. The pin was lying parallel with the body axis, with the point towards the patient's head. On Monday evening the patient felt poorly, and I advised her not to take opening medicine, and to loosen all tight clothing so as to give freer play to the bowels. I also advised light food, bread and milk. Next day she had an ordinary, but slightly relaxed, motion at 10 a.m. Tenderness was still present in the right iliac region over a somewhat ill-defined area. On the fourth day she complained of pain about one inch above the umbilicus in the middle line, as well as at the original site. Over both places there was slight tenderness. On the fifth day she had pain in the left iliac region and in the lower part of the spine, as well as above the umbilicus and in the caecal region. On the sixth day, at 8.30 a.m., the passage of a small hard motion was accompanied with a slight pricking, but no severe pain. She could see the glass head of the pin, but not the point. She thought the pin was lengthways, but was not sure whether the head or point passed first. She had slight tenderness on palpation all along the colon after the pin had been passed. Although it was clearly inadvisable to give aperient medicines that would produce violent peristalsis, paraffinum liquidum was given after the first few days.

This case shows that when in doubt a radiogram should be taken, and that a screen examination is not sufficient. The transparent glass head of the pin showed well in the radiogram. The slighter pains were always described as a pricking sensation, and one wonders how far this description was due to suggestion. The pricking behind the sternum an hour after the meal suggested that the pin only left the oesophagus at that time; this was possible, as nothing had been eaten after the pin was swallowed. No trouble seems to have occurred at the pylorus, but after $16\frac{1}{4}$ hours there was pain at the ileo-caecal valve, or caecum. From this point all along the colon there was slight injury and consequent pain, which did not pass off immediately the pin had gone further on.

Probably the reason why the small intestine escaped and the colon was damaged was the limitation of movement caused by the more solid faeces in which the pin was embedded in the colon. Also the sacculations of the large intestine may have caused the head and point of the pin to catch alternately so that possibly the pin moved along like a heavy box being turned over and over; it would have been instructive to have had radiograms taken at frequent intervals so as to follow the gyrations of the pin. It is also of interest to note the severity of the pain without any great damage being done. The length of time taken by the pin to traverse the alimentary canal was five days less five hours, and this was no doubt accounted for by the constipated habit of the patient. The pin showed no sign of corrosion. The escape from serious injury was no doubt partly due to the fact that the pin was swallowed on a full stomach and to its large smooth head.

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An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

A Lecture
ON
THE TREATMENT OF MALIGNANT DISEASE OF THE SKIN.*

By J. H. SEQUEIRA, M.D., F.R.C.P., F.R.C.S.,
PHYSICIAN TO THE SKIN DEPARTMENT AND LECTURER ON DERMATOLOGY AT THE LONDON HOSPITAL; CONSULTING DERMATOLOGIST TO THE RADIUM INSTITUTE.

I PROPOSE first to consider shortly the varieties of cutaneous malignant diseases and to indicate certain special features in each which have a special bearing upon treatment.

CARCINOMA.

As elsewhere, we may divide our cases into those in which the malignant process develops in the epiblastic layers and those which are mesoblastic in origin. Of the former we have four varieties of carcinoma:

1. Squamous or horny-celled carcinoma, so-called "epithelioma."
2. Basal and glandular-celled carcinoma, which include most of the cases known as rodent ulcer.
3. Naevo-carcinoma (cancer developing in naevoid growths, moles, etc.).
4. Paget's disease.

The Squamous-celled Carcinoma.

This is characterized histologically by an excessive growth of horny cells of the epidermis with numerous downgrowths into the true skin and subcutaneous tissue, forming the so-called cell nests or epithelial pearls. An important characteristic of these affections is the early involvement of the lymphatic glands and the formation of metastases in the viscera.

Clinically, the squamous-celled epithelioma may be at the onset a small warty excrescence of simple appearance. It may develop upon a senile keratoma, a common warty lesion occurring in the skin of old people. Similar growths follow prolonged exposure to the sun, wind, and weather, and these conditions have been specially studied by Unna, Dubreuilh, and others. Unna described the condition as seen in sailors as "seaman's skin cancer," and Dubreuilh has classed similar conditions due to actinic light as "solar epitheliomatosis." Irritation by x rays acts in a similar manner. Chronic irritation of the skin by tar, paraffin, creosote, and soot may similarly cause squamous-celled carcinomata. In all these conditions we find pigmentation, small warty excrescences, and these may finally become malignant. Lastly, we may find them upon the cicatrices of lupus vulgaris, lupus erythematosus, syphilis, and, in fact, on many kinds of scar tissue.

The squamous-celled carcinoma is most commonly met with on the face, especially about the orifices, the lips especially, and on the backs of the hands, but it may occur anywhere. The warty growth remains inconspicuous for some time, and causes no pain or discomfort, and usually the patient takes little or no notice of it. Then, as the result of some irritation, or for some unknown cause, it starts growing, and becomes deeply attached, and it may develop into a larger tumour, or a button-like excrescence, and sooner or later break into an ulcer with everted edges. Early in the course of the case, as a rule, the nearest lymphatic glands become hard, tender, and painful. The essential point to remember in treatment is that the squamous celled growths invade the glands early.

Besides the warty growths which we have just considered, there is a form of epithelioma which is nodular. This occurs on the lips and mucous membrane of the mouth, and on the external genitals. The lesion runs a slow course, but ultimately infiltrates. A deeply spreading highly malignant variety especially occurs at the mucocutaneous junctions. The tumour rapidly increases in depth, speedily involves the lymphatic glands, and may cause death by the involving of large blood vessels.

Baso-Cellular and Glandular Type; Rodent Ulcer.

In this important group the neoplasm arises from the deep or basal layer of the epidermis, and from the sebaceous ducts and hair follicles. On the Continent and in America the term "epithelioma" is applied to these conditions, but in this country the name "rodent ulcer" is most commonly used. The tumours consist of processes which invade the true skin and subcutaneous tissue in the form of lobules. The processes and lobules are composed of cells which have either the character of the basal cells of the epidermis or cells which line the pilo-sebaceous ducts. The essential feature of this type of lesion is that the lymphatic glands are rarely, if ever, involved. The primary lesion is usually a firm nodule of a grey or pearly colour; it often resembles a flat wart, and causes no symptoms. It is frequently unnoticed until the top is cut off in shaving or rubbed off with a towel, when there is a little haemorrhage. The nodule increases very slowly, and then the centre ulcerates and a small crust appears. The progress is very slow, although exceptionally there may be rapid extension with the formation of small cysts.

Clinically there are several varieties:

1. The type in which the ulcer cicatrizes spontaneously in the centre and spreads with a pearly, beaded rim.
2. In this type the ulcer never heals, but spreads slowly and superficially, and also deeply.
3. In the type called "terebrant," which may succeed one of the varieties already mentioned, the destruction is extremely rapid and spreads deeply, producing huge cavities with a foul discharge.

Occasionally rodent ulcers are multiple. It is important to remember that the curability of these lesions depends upon the involvement of cartilage and bone, and, provided there are no deep attachments, we can usually promise a cure by the means which are now at our disposal.

Naevo-Carcinoma.

This name is applied to malignant growths developing from naevi. The tumours are usually melanotic, but occasionally are non-pigmented.

Moles, particularly of the pigmented variety, are liable to undergo malignant changes in adult life and in advanced age. Such a tumour may develop with great rapidity, forming a brown or black plaque or warty growth. This may become indurated, and eventually may undergo ulceration. New lesions sometimes appear round the primary tumour, and metastases in the viscera are very common.

Paget's Disease.

The last variety of malignant disease to which I wish to draw your attention is that associated with the name of the late Sir James Paget, and called "Paget's disease." It is important to remember that this condition, which at its onset may resemble a chronic eczema, is a malignant affection *ad initio*. As is well known, it is most common in women over 40 years of age, and develops round the nipple. At first it appears to be an innocent though chronic affection, but very early in most instances there is involvement of the tissues of the breast in the form of duct cancer.

In rare instances Paget's disease occurs in other regions—in the perineum, the external genitals, and at the umbilicus.

TREATMENT.

I have deemed it necessary to insist on the essential differences of these types of malignant disease of the skin, because upon them depend the methods to be adopted in treatment. To obtain success an early diagnosis is imperative, and I would lay it down as a rule that every warty or superficial growth, especially in elderly subjects, should be suspect, and if one has not the opportunity of making a microscopical examination, the condition should be treated as if it were malignant. The measures at our disposal for the treatment of malignant disease of the skin are:

(*a*) Excision; (*b*) radio therapy; (*c*) radium therapy; (*d*) diathermy; (*e*) freezing by carbon dioxide snow.

These measures are undertaken for the removal or destruction of neoplasm and the glands if affected. If we are unable to ensure this, our measures are purely palliative—namely, for the relief of pain and prevention of sepsis.

(*a*) *Excision.*

The surgical treatment of malignant disease of the skin consists in the complete removal of the growth by the knife or cautery. The complete removal is sometimes

* Delivered before the Nottingham Medico-Chirurgical Society, October 7th, 1914.

difficult, and the details of the operation must be left to the surgeon. It is most important to make the incision wide of the growth and to get below it. Excision is the method of choice in squamous-celled cancer, and at the period of the operation or at a subsequent time the enlarged glands should be removed. With a view to preventing recurrence after excision, it is well to give the patient a series of sittings under *x* rays. Recently Mr. Richard Warren and I have collaborated in the treatment of squamous epithelioma on the back of the hand. The growth, which was a large one, was excised, and the raw surface was then treated by radium on a plate in a manner to be described shortly. The surface of the wound was in a healthy aseptic condition, and was then covered by Mr. Warren with a skin g aft. We were somewhat in doubt as to whether the radium reaction might interfere with the graft taken, but the result was most satisfactory, and the hand has remained perfectly sound ever since. A small gland in the axilla was removed at a later date. If it is impossible to bring together the edges of the wound after such an excision, skin grafting, or in some situations a plastic operation, may be used with great advantage.

(b) Radio Therapy.

In 1901 I had the honour of bringing to the notice of the profession the treatment of rodent ulcer by *x* rays. Early in that year I published a series of cases in which I had observed the histological changes produced by the *x* rays in the cells of the growth. I found that the malignant cells had a very low resisting power to the rays, that there were destructive changes, and that at the same time the connective tissue was stimulated to activity. Large cavities filled up rapidly and superficial lesions were cured. The only difficulty lay in the treatment of the infiltrated edge. By the combination of surgical measures with radio therapy this difficulty was overcome, and I have for a number of years advocated preliminary curettage of the edge of the growth, followed by a series of *x*-ray exposures. In some cases it is more convenient to use the knife than the curette. The dose of *x* rays is measured by the Sabouraud pastille, full pastille doses being given at intervals of from ten to fourteen days. Where there is a deep infiltration much larger doses are given, even up to eight pastille doses at one sitting, but when this is done the parts are screened by a layer of aluminium varying from 0.2 to 4 mm. These filters prevent chronic *x*-ray ulcer.

One outstanding feature of the *x*-ray treatment is this, that if a case is going to do well by this method the improvement is shown at once. If the case is resistant to the treatments and they have to be repeated frequently the outlook is unfavourable. The great thing that militates against success is the infiltration of bone and cartilage. When, therefore, rodent ulcer is already adherent to cartilage or bone, the prognosis is usually unsatisfactory, and I advise an early resort to the aid of the surgeon. Some of the most difficult cases we have to deal with are those in which the disease begins at one or other canthus and involves the orbit. Here again the assistance of the surgeon should be sought early and the orbital cavity should be cleared out and if possible grafted.

(c) Radium Therapy.

Small rodent ulcers, and especially those which are freely movable, react remarkably well to radium. This agent has a decided advantage over *x* rays in certain situations, because it can be more readily applied. This holds particularly in the neighbourhood of the eye or the angle of the nose, and in a few other situations. As far back as 1902 I was using radium for rodent ulcer, and I am showing to-day a photograph of a case cured in 1903, the rodent b n on the lower lid. This has remained quite sound ever in e, and the deformity of the lid has been repaired by operation. The introduction of plates upon which the radium salt is spread and covered with varnish has enabled us to treat with greater ease a large number of these superficial malignant growths. The duration of the exposure will depend: (1) On the strength of the radium applicator—for instance, at the London Hospital I have two plates each 1 in. square, upon which are spread 30 mg. of the radium salt. With these applicators I can get an intense reaction with two hours' exposure. Many radium plates are of half this strength, and consequently an exposure double the length is required. (2) Upon the depth of the lesion. Where the infiltration is deep, it is necessary to apply the radium for a much longer time to utilize the gamma rays. To prevent undue damage to the superficial parts by the alpha and lower beta rays we employ a thin filter of lead, which cuts out these less penetrative rays. It may be necessary to apply the radium plate for twenty-four to forty-eight hours. The radium reaction begins in from eight to ten days after exposure. The parts become swollen, red and irritable, and eventually a crust or scale is formed. With a moderate exposure the crust or scab falls off in about three weeks, and the treatment may then be repeated. If a heavy dose has been given without proper screening a radium ulcer develops very similar to the ulcer produced by *x*-ray treatment. It requires fomentation and dressing with a mild antiseptic ointment, but as a rule it heals in time. I have already mentioned the use of radium after operations, and think there is possibly a large field for such a procedure.

(d) Diathermy.

My colleague, Dr. R. S. Woods, has treated two or three cases of malignant disease of the skin that have failed to yield to the measures already described by diathermy. In one case the result in a deeply attached rodent ulcer has been so far satisfactory, but the procedure requires further experience.

(e) Freezing by Carbon Dioxide Snow.

Several authors have claimed that much can be done for superficial malignant lesions of the skin by the freezing with carbon dioxide snow. I have used it occasionally, and in some quite superficial cases have seen good results, but I have frequently been asked to treat by radium cases in which this method has been used without success.

Treatment of Severe Cases.

Lastly, I have to say a few words about the use of the *x* rays and other measures in the more severe cases. Even in some of the worst great benefit may be derived from *x*-ray treatment, as is shown in cases of which I am exhibiting photographs. Care must be taken not to overdo the *x*-ray treatment, because it is quite possible to stimulate an indolent process to one of greater activity by excessive *x*-ray treatment. Scrupulous cleanliness and application of antiseptic lotions, such as hydrogen peroxide, mercury, etc., may be necessary to treat the parts when the ulcer is in this sloughing condition.

Treatment of Paget's Disease.

Paget's disease demands a brief statement. I cannot too strongly emphasize the fact that this disease is malignant, and that even when the lesion appears to be quite superficial there is a great possibility that the adjacent breast tissue is already involved. I have seen a case of Sir Malcolm Morris's in which Paget's disease about the umbilicus was healed by radium. I have three times healed up lesions of this type by *x* rays, but in each of these three cases I regretted the time lost in doing this, for the disease had already involved the glandular structure underlying the healed surface. I therefore advise an early treatment by the removal of the breast and glands, should any be involved.

Other Malignant Diseases.

Of the use of the *x* rays to some of the other malignant and pseudo-malignant conditions I will again say a few words. For mycosis fungoides the *x* rays act like a charm upon the tumours and infiltration met with in this disease, but it is impossible to say that they are curative of the condition. In my experience only one case has so far been apparently cured by the rays.

In the rare condition known as the multiple idiopathic haemorrhagic sarcoma of Kaposi I have seen the complete disappearance of the infiltration and growth under the *x* rays.

Some of the true sarcomata are also benefited, but they are usually so rapidly disseminated that it is impossible to say what more than palliation can be promised.

A Report of the Work

CARRIED OUT AT

THE RADIUM INSTITUTE, LONDON, IN 1914.

BY

A. E. HAYWARD PINCH, F.R.C.S.,

MEDICAL SUPERINTENDENT.

(*Abridged.*)

THIS report deals with the cases which presented themselves at the Radium Institute from January 1st, 1914, to December 31st, 1914, inclusive. The cases treated were in no instance selected. The only cases refused have been those in which the patients were practically moribund, or in which the disease was of a kind for which radium therapy was manifestly unsuitable. No examples of malignant disease—rodent ulcer alone excepted—have been treated other than those in which operation had been declared to be unjustifiable, or in which operation had been absolutely declined by the patient.

The term "apparent cure," used in relation to cases of malignant disease, must be interpreted as representing a condition in which all trace of the original lesion or lesions has disappeared, in which there is no sign of any recurrence, and in which the patient is, so far as can be determined by a thorough and careful examination, free from any indication or symptom of the disease.

Cases have been classed under the heading "improved" only when the result of treatment has been to produce a definite and marked degree of benefit, either in the direction of retardation of the progress of the disease, diminution in the size of a growth, healing of ulceration and arrest of haemorrhage and discharge, or of relief to such subjective symptoms as itching, tenderness, pain, dyspnoea, and dysphagia.

The character of this report is in many respects similar to that of the reports previously published in 1913 and 1914.*

Summary of Cases.

Examined, but not treated	95	...	231
Recently treated, and results not yet noted ...	136		
Received prophylactic irradiation only ...	16	...	16
Apparently cured	50		
Cured	19	...	397
Improved	328		
Not improved	158		
Abandoned treatment	11	...	197
Dead	28		
	841		841

APPARATUS.

Radium may be used in the treatment of disease either in the form of radium salts or radium emanation, the therapeutic effects being identical.

(*a*) *Radium salts* are contained in—

1. Flat varnished applicators, rectangular, square and circular, their superficial area ranging from 0.7 sq. cm. to 28 sq. cm. Consideration must be paid to the concentration of the radium salt per unit area, as well as to the purity of the salt. The unit of concentration adopted consists of a centigram of radium bromide spread over a square centimetre. Applicators containing radium salts to this extent of concentration are said to be "full strength" applicators; similarly, "half" and "quarter" strength applicators contain respectively 0.5 and 0.25 cg. of radium bromide to each sq. cm. Radium bromide has been accepted as the unit of measure for describing the content of radium applicators, but as it is readily soluble it is most unsuitable for fixing to applicators by means of varnish, or for filling tubes. It is therefore always converted into sulphate. The smallest applicator contains 7 mg., the largest 150 mg.

2. Capillary glass tubes, filled with radium sulphate, closely packed so as to prevent any movement of the salt. Their length varies from 2 to 4 cm. and their diameter 0.2 to 0.3 cm. The amount of radium sulphate contained is the equivalent of 25, 30, 50, 60, or 100 mg. of radium bromide.

(*b*) *Radium emanation.* This may be collected in glass tubes or metal containers, and used with appropriate screens, as the radium salts themselves, or dissolved in distilled water or a weak saline solution, and administered by drinking or injection.

Emanation applicators are often of the greatest value in the treatment of malignant growths, as in them it is possible to concentrate the activity per unit area to a very high degree. For example, the 100 mg. tubes of radium sulphate used in the Institute measure 4 cm. in length by 0.2 cm. in diameter. It is quite easy to make an emanation tube of equal activity measuring only 0.6 cm. in length by 0.13 cm. in diameter. Such a tube can be enclosed in an iridium-pointed platinum needle with walls of 0.3 mm. in thickness, thus forming a very small but extremely powerful apparatus for the treatment of nodules in tongue, palate, breast, or other organs. Radium emanation falls to half-strength in 3.85 days, losing 16 per cent. of its initial activity during the first twenty-four hours.

The duration of an exposure rarely exceeds twenty-four hours, and if it be decided to give a treatment for that time with a radium emanation applicator of, say, 100 mg. strength, the apparatus leaves the laboratory with an initial activity of 109 to 110 mg. At the end of twenty-four hours its activity will have fallen to 92 to 93 mg., so that its mean activity throughout that period will have been approximately that of 100 mg.

Screens.

The screens employed as filters for the various rays are:

(*a*) *Aluminium.*—0.01, 0.02, 0.04, 0.08 mm. thick. These are principally used with short exposures in the treatment of capillary naevi, pruritus, neuro-dermatitis, and superficial skin lesions.

(*b*) *Silver.*—0.5 and 1 mm. thick. These are most useful as screens for the glass tubes of radium when introduced into tumours, and also in the treatment of keloid and vicious cicatrices.

(*c*) *Lead.*—0.1, 0.2, 0.4, 0.5, 1, 1.5, and 2 mm. thick. Screens less than 0.5 mm. in thickness are valuable in the treatment of flat superficial epitheliomata, leucoplakia, fibromata, and granulomata.

(*d*) *Platinum.*—0.3 and 0.5 mm. thick, chiefly employed as screens for small powerful emanation tubes.

Radium salts, when in equilibrium with the emanation produced from them, give out three kinds of ray:

The alpha ray is particulate. The particles lose their velocity, and therefore their activity, in a few centimetres of air, and will be completely absorbed by a very thin screen of aluminium (about 0.01 mm.). As the layer of varnish in most applicators is more dense than this amount of aluminium, it follows that the alpha rays are completely stopped by it, but the coats of varnish gradually become permeable, due partly to minute cracks, which spread throughout the layers, and partly to the absorption of emanation by the varnish, so that in course of time an applicator emits alpha rays.

The beta rays, far more penetrating than the alpha rays, consist of negatively charged bodies projected with velocities of the same order as the velocity of light. Their velocity varies considerably, and are distinguished by the terms "soft beta" and "hard beta." A considerable variety of screens is used, according to the nature of the radiation required.

The gamma rays are extremely penetrating, and are somewhat analogous to the very penetrating Roentgen rays. With the screens used at the Institute none of the gamma rays are absorbed.

Secondary Rays.—The use of thick screens of heavy metal is accompanied by the production of secondary rays, capable of causing considerable surface irritation. They may be absorbed by the use of many layers of black paper or thick rubber tubing.

Duration of Applications (Exposures).

Very short exposures of one to ten minutes, according to the age of the patient and the character of the lesion, are principally used in the treatment of superficial skin troubles. The apparatus is applied without any screen beyond that afforded by a covering of thin rubber sheeting.

Short exposures of fifteen minutes to one hour are most frequently resorted to when treating warts, senile keratoma, some forms of naevi, shallow ulcers, lupus erythematosus, etc. The screening in these exposures rarely exceeds 0.02 mm. of aluminium.

Moderately long exposures of one to twelve hours are adopted when it is desired to obtain the destructive action

*BRITISH MEDICAL JOURNAL, 1913, vol. i, p. 149; and 1914, vol. i, p. 1107. Copies of the full text of this report can be obtained by medical men on application to the Medical Superintendent at 16, Riding House Street, London, W.

of the rays, and used in cases of rodent ulcer, rapidly growing epithelioma, lupus vulgaris, etc. Exposures of three hours' duration and upwards are usually spaced over a period of two or three days, and no screening or a screening of 0.1 mm. lead employed.

Prolonged exposures of twenty to one hundred hours are used in the treatment of deep-seated malignant growths, in cancer of the rectum, uterus, breast, etc. Lead screens are always employed, usually of 2 mm. thickness. Exposures are given in periods of six to twelve hours, with an interval of at least twelve hours between successive exposures.

Screens and Appliances.—A varnished applicator is always covered with a thin layer of rubber sheeting to protect it from contact with any excretions or moisture, and avoiding the necessity of repeatedly cleaning the apparatus.

Method of Application.

The lesion is gently cleaned and dried, and all crusts or flakes of secretion removed. The healthy skin and tissues surrounding the lesion protected by a layer of lead-rubber sheeting, an aperture being cut in it the exact size and shape of the lesion. For external lesions the apparatus is best fixed in position with some non-irritant adhesive rubber plaster. To retain tubes in the vagina or uterus a tampon or gauze packing is generally necessary. In the rectum, bladder, oesophagus, nasal and buccal cavities, the apparatus is attached to a handle of pliable silver wire, which can be bent and fastened to the gluteal fold, cheek, or ear by adhesive plaster.

THE REACTION.

All tissues when treated with radium respond in some manner, but the nature and extent of this response vary very greatly, and depend upon:

1. *The apparatus, screening, and dosage employed.*
2. *The nature of the tissue treated.*
3. *The condition of the tissue treated.* If x rays, ionization, CO_2 snow, etc., have been previously used in the attempts to bring about a cure, the reaction in such cases is frequently atypical, and repair is exceedingly slow.
4. *The extent of the area treated.* The reaction from an applicator of half strength applied over an area of 4 sq. cm. is often not more intense in degree than that obtained with an applicator of quarter strength over a surface area of 16 sq. cm.
5. *Personal idiosyncrasy.* This is often productive of puzzling results. Factors to be considered are age, sex, and temperament, susceptibility to actinic rays generally—for example, persons who suffer much from freckling or solar eczema—hyperidrosis, exalted vasomotor sensibility, etc.

Nature of Reaction

The reaction usually appears between the seventh and fifteenth days, and four degrees may be clearly distinguished: (1) Simple erythema. (2) Erythema followed by desquamation. (3) Vesication with superficial ulceration. (4) Deep ulceration, sometimes accompanied by the production of an eschar.

Cases of capillary naevi have been seen in which, instead of the reaction appearing on about the seventh or eighth day, it has been evident three days after the exposure. In others a period of four weeks has elapsed before any effect has been perceptible, though in all of these cases the applicators employed, the screening, and the times of exposure have been identical. A very marked condition of lethargy is frequently noted in patients receiving prolonged exposures with large quantities of heavily screened radium. It generally makes its appearance about the fourth day of the treatment, and passes off within a few days of the cessation of the exposures.

CARCINOMATA.

Squamous Celled (Epitheliomata).

Surgical measures are always to be preferred to radium treatment in those cases where a complete and wide excision of the growth is practicable; but if operation be impossible or the patient refuses to submit to it, radium will often prove of great service, and in some instances, if glabrous surfaces only be affected, will bring about an apparent cure. Heavy dosage must be resorted to, however, and the resultant reaction carefully observed, as an irradiation of insufficient intensity may act as a powerful stimulus to the lesion.

Epitheliomata of the face, trunk, or extremities, if flat and superficial and accompanied by little or no ulceration, give satisfactory results when treated with quarter or half strength apparatus, screened with 0.1 mm. of lead, the exposures varying from six to twelve hours' duration, spread over a period of three or four days. The retrogression of the growth is quickly brought about and little or no scarring results.

Ulcerating epitheliomata, without much subjacent infiltration, require treatment with quarter or half strength apparatus applied unscreened for a total exposure of two to six or eight hours, spread over a period of four or five days, and repeated after an interval of six weeks if necessary. A destructive reaction follows, but the result is usually quite good, and there is but little cicatricial contraction.

Ulcerated epitheliomata with great infiltration require prolonged treatment with heavily screened apparatus emitting only hard beta and gamma—the so-called "ultra-penetrating"—rays. Exposures of thirty to sixty hours given during one week and repeated in five or six weeks' time are best, but if the growth shows signs of rapid extension the borders should be given a vigorous treatment with unscreened apparatus.

Epitheliomata of the buccal, lingual, and pharyngeal mucous membranes usually prove both refractory and disappointing in their response to radium, but a new method of treatment has been devised, which in instances of cancer of the tongue has given somewhat encouraging results; it consists in the burying within the carcinomatous nodule of a very small but intensely powerful radium emanation tube possessing an initial activity equivalent to that of 80 to 100 mg. of radium bromide, enveloped in a screen of 1 mm. of silver or 0.3 mm. of platinum, and giving an exposure of twenty-four hours' duration. A fairly severe reaction follows, and in some cases the nodule ceases to grow and becomes replaced by dense fibrous tissue.

Unfortunately, however, the treatment appears to have but little effect in arresting the dissemination of the disease, which sooner or later affects the neighbouring lymphatic glands or recurs close to the original lesion. The rate of growth of the infected glands can often be retarded by the prolonged and persistent use of the "ultra-penetrating" rays. If the dose given be a large one the glands sometimes break down and discharge a milky-white fluid through a small sinus, and it is remarkable that ulceration of glands thus treated rarely occurs.

Considerable difficulty is experienced in giving satisfactory exposures within the oral cavity, as patients are often unable to tolerate the presence of applicators in their mouth for the necessary length of time, and should the reaction be at all pronounced the congestion of the tissues occasions great discomfort. There is the further danger that a severe reaction may act as a stimulus to the original growth, increase its size, and hasten metastasis.

Some cases of epithelioma of the oesophagus have been under treatment, but unfortunately the majority of these have been in so advanced a stage as to preclude all hope of success. In those instances, however, in which complete occlusion had not occurred—and it was possible to introduce radium actually into the lumen of the growth—distinct, though temporary, benefit has resulted; and that this effect is not merely mechanical, due to the dilatation of the stricture by the apparatus, is evidenced by the fact that the improvement in the power of swallowing has persisted for six or even nine months after the termination of the treatment.

Carcinoma of the Uterus.

Uterine cancer continues to yield most gratifying results, and the effects of radium treatment in operable cases are far in advance of those obtained by any other known medical or surgical methods. The local manifestations of the disease are benefited in the most striking fashion, and the complete disappearance of fungating growth, arrest of haemorrhage and discharge, healing of ulceration and relief from pain are phenomena of frequent occurrence. In favourable cases, moreover, the treatment appears to exert a distinctly retarding influence on the dissemination of deposits, and thus to arrest the progress of the disease.

It is not possible, however, to speak of "cure" even in these latter instances.

The routine treatment consists of thirty hours' exposure—five days, six hours a day—to a 100 mg. tube screened with 2 mm. of lead and 3 mm. of rubber applied per vaginam, supplemented by a plate of 70 to 100 mg. activity screened in similar fashion and applied over the pubes. In this way a powerful and effective cross-fire irradiation of the affected parts is obtained.

Small isolated nodules in the vaginal walls, recurrent after hysterectomy and inoperable, respond very well to treatment with large doses heavily screened, and not infrequently cease to grow, contract, and become replaced by fibrous tissue.

Great care must be exercised in the treatment of recurrences which make their appearance within six months of the performance of a Wertheim's operation. The functions of the trophic nerves of the pelvis seem often to be impaired seriously by the extensive and elaborate dissection which is associated with this method of hysterectomy, and for this reason the amount of radium used should be small, not exceeding 50 mg., the screening not less than 1.5 mg. of lead, and the total exposure not longer than twenty-four hours spread over four or five days. Unless these precautions be observed a severe and extensive destructive reaction may follow the application of radium. In all cases in which radium has been applied within the vagina, the patient should be instructed to douche freely night and morning for at least six weeks after the termination of the treatment, as unless this be done an adhesive vaginitis not infrequently occurs. In some extremely susceptible subjects a transient proctitis has been noted to follow upon intravaginal treatment.

The number of cases of carcinoma of the uterus treated to a conclusion was 27; of these, 1 was apparently cured, 17 improved, 7 not improved, and 2 died. Detailed reports are given of 4 cases. In one of these, inoperable when first seen by a surgeon, the patient, aged 34, two years after beginning radium treatment, was very greatly improved, fibrosis having apparently arrested the disease. In 2 cases of recurrence after abdominal hysterectomy very good results were obtained.

Carcinoma of Bladder.

Six cases of this disease have been treated, and in two instances the results have been most gratifying. The haematuria, cystitis, and all subjective symptoms have disappeared, and cystoscopic examination has shown that the size of the growth has been greatly lessened, and any ulcerated surface has become covered with healthy epithelium.

The treatment has consisted of the introduction of a 50 mg. tube of radium bromide in a "window" screen of 1 mm. of silver and 1 mm. of lead inserted per urethram, and maintained by means of a pliable silver wire in such a position that the window side of the apparatus is in actual contact with the growth. If the lesion be on the base of the bladder, a second tube screened with 2 mm. of lead is placed in the vagina in female, or in the rectum in male patients; but if on the interior bladder wall, a flat applicator, similarly screened, is fixed over the pubic region. The usual length of exposure is ten hours intravesically in five daily applications of two hours each, and thirty hours with the vaginal, rectal, or pubic applicators, spaced over the same days.

Carcinoma of the Breast.

The number of patients with this disease applying for treatment far exceeds that of any other malignant condition. The policy of declining to treat operable cases is still rigidly adhered to—unless the patients have absolutely refused to submit to operation, and radium is used as a last resource.

The progress of inoperable, slow-growing cases of the atrophic type is usually much retarded by the use of radium, especially when the metastases are confined to the skin, axillary, and supraclavicular lymphatics and do not affect the lungs or abdominal viscera.

Very small isolated cutaneous nodules on the chest wall, if few in number, may be effectively treated by unscreened exposures of one or one and a half hour's duration with a half-strength radium plate. If very numerous and closely set, prolonged exposures of thirty to forty hours' duration to heavily screened rays are preferable, and this method of treatment should also be resorted to for the primary growth, infected glands, or ulcerated surfaces if such exist.

Superficial ulcerations unaccompanied by much subjacent induration are peculiarly susceptible to the action of radium, and complete healing of these lesions is frequently observed. Isolated recurrent nodules—inoperable by reason of their attachment to the sternum, clavicle, ribs, or rib cartilages—are best treated by burying a small powerful emanation tube, screened with 1 mm. of silver in them, for a period of twenty-four hours.

Little or no effect appears to be exerted in the prevention of metastatic deposits, though the treatment does not, at any rate, hasten their dissemination. Some cases in which pleurisy or ascites, dependent upon carcinomatous invasion of the pleura or peritoneum, has been present have shown remarkable improvement, and the application of powerful apparatus screened with 2 mm. of lead over the affected pleura or peritoneum, after a preliminary paracentesis, has effectually prevented the further formation of effusion.

A few patients have been under treatment at intervals of three of four months since the opening of the Institute in August, 1911, and it has been observed that a stage in their treatment is reached sooner or later at which the response to radium fails, and the benefit derived becomes negligible.

In rapidly growing carcinoma of the medullary type radium can do very little except relieve pain, even though enormous doses be employed.

The number of cases of cancer of the breast was 67; of these 1 was apparently cured, 40 were improved, 17 not improved, 1 abandoned treatment, and 8 died. Nine cases are related at length. In one of these the right breast had been removed and the axilla cleared on March 31st, 1911. In July, 1913, she began to suffer from pain in the upper part of the abdomen, and the surgeon she consulted diagnosed inoperable recurrence in the omentum. Ascites subsequently developed and required paracentesis. When seen on February 16th, 1914, ill-defined nodules could be felt immediately under the abdominal wall in the epigastric and left hypochondriac regions. She was treated from February 23rd to 27th inclusive, having six hours' exposure each day with flat applicators containing 350 mg. of radium, screened with 2 mm. lead over the epigastric and left hypochondriac regions. The pain diminished, and when seen on May 4th the ascitic fluid accumulated more slowly. The treatment was repeated, and on July 27th great improvement was apparent. The treatment was then repeated on five days. On October 16th, when last examined, the improvement was maintained, abdominal pain had ceased, she had gained altogether 21 lb. since May, and had a good colour.

In another case of local recurrence an emanation tube with initial activity 45 mg. screened with 1 mm. silver was buried in the nodule for twenty-four hours. When seen on April 6th no trace of the nodule remained, and the patient subsequently kept perfectly well.

Another case, in which two and a half years after Halsted's operation there was thickening of the anterior wall of the axilla and induration in the left supraclavicular fossa, was treated with 250 mg. radium, screened with 2 mm. lead, and disposed so as to secure cross irradiation from February 16th to 20th inclusive, six hours on each day; on April 2nd her surgeon stated that the induration had disappeared, and she has since been perfectly well. In another case, two years after excision a large, hard tumour occupied the left mammary region and presented an ulcerating area, the patient improved rapidly under radium treatment, and the ulcer healed. After five treatments during a year scarcely any induration could be felt, and a sixth was given. Since then there has been no further evidence of the disease, and the patient is in good health.

Carcinoma of Rectum.

The adoption of radium therapy in inoperable cases of this disease is usually justified by the results obtained, though the amount of benefit is rarely so marked or so great as in carcinoma of the uterus.

The disease displays much variation in its response to radium, and numerous factors have to be considered in prognosis. Speaking generally, the soft annular and vascular type of growth is much more favourably affected than the flat, hard, non-annular plaque with much subjacent induration. In the treatment of this latter class of growth the action of the gamma rays (which it is impossible to prevent) on the healthy rectal mucous membrane opposite the plaque produces a proctitis which, though generally transient, sometimes proves both persistent and severe, and adds greatly to the patient's discomfort. In the treatment of the former type, if the radium tube be of proper dimensions and introduced accurately within the lumen of the growth, little or no healthy mucous

membrane is affected by the gamma rays, and no proctitis occurs.

Growths situate in the upper half of the rectum appear to be more amenable to treatment than those in the lower, though this may be due to the fact that tenesmus is always more constant and severe when the growth is near the sphincters.

The performance of colostomy before radium treatment is often advisable, as the constant passage of faeces over a surface that is reacting to radium frequently causes much pain. Idiosyncrasy is sometimes responsible for curious results. Some patients are extremely susceptible to the action of radium, and proctitis appears quickly, is very severe, and persists for a long time. With others the reaction takes six or eight weeks to develop, proceeds exceedingly slowly, and does not disappear for two or three months.

The routine method of treatment consists of a thirty hours' exposure—six hours on each of five consecutive days—with a tube containing 100 mg. of radium screened with 2 mm. of lead and 3 mm. of rubber, and applied in actual contact with the growth. This is frequently supplemented by a flat plate containing 80 mg. of radium screened in the same way, and applied over the sacrum at the level of the tumour.

In two or three instances growths treated in this manner which were considered inoperable before radium was resorted to have been so much diminished that their removal has been successfully accomplished. In some other cases where the disease is of the annular type, the carcinomatous material shrinks, and is replaced by fibrous tissue forming a stricture which may need frequent and regular dilatation.

The treatment of 29 cases of carcinoma of the rectum was completed during the year; of these, 22 were improved and 7 not improved. Two cases are reported at length, in both of which the improvement brought about rendered it possible to perform an operation.

Carcinoma of Prostate.

The number of cases of this condition which have been treated up to the present is not very large, but benefit has been noted in all of them. Haematuria, when existent, has been either diminished or abolished, pain has been greatly lessened, and the size of the growth decreased. Various methods of treatment have had to be adopted according to the nature of the case. When catheterization can be well tolerated, a 50 mg. tube of radium in a "window" screen of 1 mm. of silver and 1 mm. of lead is introduced per urethram, and maintained in actual contact with the growth for a period of two hours a day on five successive days, and its action is supplemented by another tube of 100 mg. in a screen of 2 mm. of lead, introduced into the rectum for six hours a day on five successive days.

When catheterization is not practicable or advisable, the action of the rectal tube is reinforced by a powerful flat applicator screened with 2 mm. of lead, and placed either on the perineum or over the pubes.

Two cases of carcinoma of the prostate were treated during the year, with improvement in both. In one case, reported at length, three treatments were given at intervals of three months. When first seen in April a large, very hard, firmly fixed mass was projecting into the rectum. In October the mass was reduced to one third of its former size, and was much softer. At the end of the year he had regained his normal weight.

RODENT ULCER.

Of all forms of malignant disease this is the one which is most amenable to radium treatment.

For the purpose of prognosis it appears justifiable to divide rodent ulcers into two definite clinical types:

1. The hypertrophic nodular type, with slight superficial ulceration of a scaly character. This class responds extremely well to radium, and yields most satisfactory results.
2. The excavating type, with undermined and overhanging edges and a gelatinous base. This not infrequently proves very intractable and repair is most difficult to effect.

Increasing experience in the treatment of this condition has strongly confirmed the opinion expressed in a previous report, that the best results were obtained by exposures of one and a half to three hours' duration to full strength applicators unscreened. Although the reaction following upon this procedure is in some cases severe, and accompanied by a transient oedema of the surrounding tissues, the scars are invariably smooth, supple and inconspicuous, and the tendency to recurrence is exceedingly slight.

When the size or position of the ulcer precludes the adoption of this method of treatment, prolonged exposures of six, twelve, eighteen or more hours, with half-strength applicators screened with $\frac{1}{10}$ mm. of lead, often prove most effective, and repair is obtained without any very marked local reaction.

Some cases of rodent ulcer which are of very long standing and have been subjected to many and various treatments, show greatly thickened and heaped-up edges, with much circumjacent induration extending for a considerable distance into the tissues. These edges often respond in a most satisfactory fashion to treatment with emanation tubes of 20 to 30 mg. activity in small screens of 0.3 mm. platinum, the tubes being buried in the thickened tissue and exposures of from twelve to eighteen hours being given.

When a mucous membrane is affected rodent ulcer proves much more refractory, though exception should perhaps be made in regard to the palpebral mucosa, as small rodent ulcers in this situation often respond well to exposures of strong unscreened apparatus of fifteen to twenty minutes' duration given consecutively for three days.

If the rodent ulcer has attacked bone or cartilage, great care must be exercised not to give too heavy an exposure, or a very acute, painful and prolonged inflammation may be produced.

Many of those ulcers which have received treatment extending over a period of many years with *x* rays, zinc ionization, CO_2, etc., respond badly to radium treatment, and it is unwise to attempt to make any pronouncement as to the probable result. Quite frequently the previously treated tissues break down to an extent which far exceeds the existing ulceration, and repair is very slow and imperfect. Several of the cases of rodent ulcer which applied for treatment at the Radium Institute during the past year were of this character, and the already existing destruction of tissue was so great that no hope of satisfactory repair could be entertained.

The number of cases of rodent ulcer treated to a conclusion was 65; of these, 41 were apparently cured, 22 improved, and 2 not improved. Four cases are reported at length—one of the nose, one of the scalp, one of the cheek, and one of the temple; in all the treatment was highly successful.

SARCOMATA.

Speaking in general terms these growths, if taken in their early stages and before dissemination has occurred, do very well under radium treatment. The burying within the growth of tubes of radium salts or radium emanation should be resorted to whenever practicable, and the action of these tubes may be much helped by the external application of radium plates heavily screened.

The screening of the tubes should not exceed 1 mm. of silver, as the employment of thick lead or platinum screens is often followed by necrotic changes in the cells in their immediate neighbourhood, and a sinus forms and remains open for a very long time.

It is essential to give as vigorous a treatment as possible, as the great vascularity of these growths, and their rapid and wide dissemination by the blood stream, are factors which militate very strongly against the chances of success. The best results are obtained in sarcomata of the tonsil and post-nasal space, and the effect in many such cases is amazing, the growths completely disappearing within six weeks of the treatment.

Lympho-sarcomata (2 cases) also give excellent results.

Of 22 cases of sarcoma treated to a conclusion, 3 (1 spindle celled and 2 round celled) were apparently cured, 10 were improved, 3 not improved, 2 abandoned treatment, and 4 died. Five cases are reported at length; in one of these, mediastinal tumour, after some temporary improvement, the patient died suddenly of heart failure.

LYMPHADENOMA.

The most striking feature in the treatment of this disease with radium is the extreme rapidity with which the size of the affected glands is diminished, the effect being often clearly perceptible to the patients themselves within a week of the first exposure.

To obtain this result, the employment of numerous large and powerful applicators, heavily screened, is necessary, and this heavy dosage is almost always followed by severe systemic disturbance, with high temperature and general malaise. After the reaction has subsided, considerable improvement is generally apparent, though in the majority of cases recrudescence occurs. The time at which this takes place, however, varies within very wide limits, and instances have been noted in which the disease has remained quiescent for more than a year.

The best results are obtained when the condition is confined to the lymphatic glands—the spleen not being affected.

The 4 cases of lymphadenoma were all improved; 2 are reported at length.

ADENOMA OF THYROID.

A few cases of this condition have been treated during the past twelve months, the patients being unwilling to submit to operation. In all some benefit resulted, and in two the improvement was very marked, the swelling shrinking to less than half-size.

The treatment has been the same in all instances, powerful flat applicators screened with 2 mm. or 1.5 mm. of lead being applied to the surface of the growth in such a manner as to procure an effective "cross-fire" irradiation. A series of exposures on five successive days, amounting in all to thirty hours, has been given, repeated, if necessary, at intervals of six weeks or two months.

Four cases were treated; all improved; one is reported in detail.

FIBROID DISEASE OF THE UTERUS

Radium exerts a most beneficial action upon the distressing symptoms of menorrhagia and metrorrhagia, which are the almost invariable concomitants of this condition, and occasionally produces considerable diminution in the size of the uterus. As the cervical canal is rarely sufficiently patulous to admit a screened radium tube without previous dilatation, and patients are often averse from this, the treatment may be carried out by the introduction of a tube containing 100 mg. of radium, screened with 2 mm. of lead, into the posterior fornix, and the application of a plate of from 80 to 100 mg. similarly screened over the fundus uteri.

The total exposure should be between thirty and sixty hours, spread over from five to ten days, and the series should be repeated after six or eight weeks The first effect noted is the checking of the metrorrhagia, and this is followed by a progressive decrease of the menorrhagia until the flow becomes normal, or sometimes ceases altogether. If any leucorrhoea exist, this, too, is much diminished in amount, and not infrequently completely disappears.

Four cases were treated to a conclusion; all improved; two are reported in detail.

NAEVI.

Flat Superficial Naevi, Capillary Naevi, "Port Wine Stains."

Before expressing an opinion as to the possibility of radium treatment effecting an improvement in any particular instance, it is advisable to subject the lesion to diascopy. If blanching is readily effected by gentle pressure, the result of the treatment will probably be satisfactory; but if it be found impossible to produce blanching except by great pressure, it is unlikely that radium can do much for the condition. The factor of personal idiosyncrasy is always a prominent one, and it is exceedingly difficult to lay down any rules as to the strength and duration of exposures.

Infinite patience is necessary in the treatment of superficial naevi, and the utmost caution must be observed. The effect of each exposure should be most carefully studied, as too frequent treatments or excessive dosage may result in the production of troublesome telangiectases. It is best to use quarter or half strength applicators screened with $\frac{1}{10}$ mm. of aluminium, and to start with short exposures of from fifteen to twenty minutes' duration, gradually increasing the length of the same until a satisfactory reaction has been obtained. So soon as the lesion has assumed a salmon-pink colour, the screening should be altered to $\frac{1}{10}$ or $\frac{2}{10}$ mm. of lead, and the length of exposure increased to one, one and a half, or two hours.

The best results can be looked for when the naevus is quite superficial, and shows no tendency to infiltration. If much infiltration exist, the treatment will have to be much more vigorous, and a destructive reaction of slight degree produced. A smooth, supple, and white scar will be left.

The number of cases treated to a conclusion was 15; of these 1 was cured and 11 improved. Reports of 3 are given.

Cavernous Naevi.

These do excellently under radium, especially when of such shape that "cross-fire" radiation is possible. Half-strength applicators screened with $\frac{1}{10}$ mm. of lead should be employed, and the exposure should be from one to three hours' duration, spread over three successive days. Little or no surface reaction is produced by this method of treatment, and the naevus shrinks gradually and steadily. If, on palpation, the presence of a pulsating vessel is appreciable, the case is not likely to prove completely successful unless the vessel first be ligated.

The number of cases was 14, of which 1 was cured and 10 improved; 2 are reported at length.

WARTS AND PAPILLOMATA.

Warts and papillomata yield readily to exposures, with half-strength apparatus unscreened, of from thirty minutes to two hours' duration, according to the size and thickness of the lesion. The reaction is but slight, and the resultant scar scarcely noticeable.

TUBERCULOSIS.

Tuberculosis of Glands.—In cases in which surgical measures have been declined for cosmetic reasons radium often proves of considerable value, either when used alone or as an adjunct to vaccine treatment. Heavily screened exposures of twenty or more hours' duration should be resorted to and an effort made to secure "cross-fire" irradiation where practicable. If the glands be caseating, radium treatment is of very little use.

Lupus Vulgaris.—As a routine treatment for this disease Finsen light is greatly to be preferred to radium, but where it fails to effect a cure or improvement radium sometimes proves of great use. Unscreened exposures of one or two hours' duration must be given and a destructive reaction produced. The resultant scar is usually firm, smooth, supple, and inconspicuous.

SPRING CATARRH.

In this condition the employment of radium is strongly to be advocated, as it will sometimes cure the most intractable cases. Personal idiosyncrasy is, however, a very important consideration, and it is essential to proceed with great caution, giving short unscreened exposures at intervals of a fortnight, and carefully noting the reaction. If the dosage be accurately adjusted, the granulations on the orbital conjunctiva gradually disappear, there is no marked inflammation and no resultant scarring of the mucous membrane. A special form of applicator should be used which can readily be introduced into the conjunctival fornices. It should be of full strength, and the first exposure should not exceed fifteen minutes' duration. No screening is employed. If the effect be not satisfactory, the length of the exposure may be increased to twenty, twenty five, or thirty minutes until the desired result is obtained.

Two cases were treated during the year; one improved, the other did not.

SKIN DISEASES.

Keloid.—This condition continues to give most excellent results when treated with radium; and a great improvement, if not complete cure, can be safely predicted when the condition is of recent origin and occurs in young subjects. In tender and painful keloids the anaesthetic effect of radium is generally very marked, and appears early in the treatment. Half-strength applicators screened with 1 mm. of silver are almost always employed, and an exposure of from eighteen to thirty hours spread over from three to five days, according to the size and thickness of the lesion, is given. This brings about a gradual absorption of the keloid unaccompanied by any surface irritation. If, however, time be of importance, or the keloid prove refractory, screening of $\frac{1}{2}$ mm. of silver or $\frac{1}{10}$ mm. of lead may be employed, though the reaction is likely to be definite and accompanied by vesication.

Lupus Erythematosus.—In early cases of this disease which have not been subjected to much other treatment, one or two exposures not exceeding an hour in duration with a half-strength apparatus unscreened or screened with $\frac{1}{10}$ mm. of aluminium may suffice to bring about the disappearance of the lesion. Care should be taken to ensure that the applicator employed is sufficiently large to reach well beyond the borders of the patch treated.

Lichenification of Skin.—Patches of lichenification almost invariably yield to one treatment of ten minutes' duration with a half-strength applicator unscreened, or screened with $\frac{1}{100}$ mm. of aluminium. The attendant intolerable itching is often markedly alleviated within sixty hours of the exposure. Some very obstinate cases, which had hitherto defied all the usual methods of treatment, have responded most favourably to this procedure, the lesions have disappeared, and have not recurred.

Pruritus.—The analgesic effect of radium is often of the greatest use in this disease, and short unscreened exposures frequently produce a degree of relief which is unattainable by any other measures This is especially noticeable if the pruritus occur in association with a definite lesion such as leucoplakia or hyperkeratosis. No definite rules can be laid down for treatment, as the local conditions vary so greatly, but the screening and exposures must be adjusted in relation to the character of the lesion. If the dosage be carefully considered, and the treatment repeated at fortnightly intervals until the skin is restored to its normal condition, complete and permanent cure may result. If, however, the condition be a neurosis, the prognosis is not so hopeful, and the benefit derived, if any, is not likely to be of very long duration.

Angio-Neurotic Oedema.

Three patients suffering from this condition have received treatment during the past year. In one instance a cure has apparently been effected; in the other two considerable benefit has been obtained.

Three cases were treated; one was cured; the two others improved, but are still under treatment. All three are reported in detail.

Arthritis Deformans.

The daily administration of 250 c.cm. of radium emanation solution of a strength of not less than 1 millicurie per litre to patients suffering from this obstinate, painful, and crippling disease is sometimes attended by very remarkable results. It is difficult to predict with certainty the degree of improvement likely to occur in any particular instance, but the cases which appear to derive most be efit are those in which the disease is of relatively short duration, and the changes are periarticular in type and multiarticular in distribution. The age of the patient also exerts some influence, those under 40 responding more quickly to the action of the emanation. Cases with a definite gouty history sometimes experience an acute exacerbation of all their symptoms within the first week or ten days of their treatment, but this disturbance is quite transient, and is usually followed by a distinct change for the better.

Little or no improvement can be looked for in instances where cartilaginous or osseous changes are predominant, and the radium emanation solution is powerless to bring about the absorption of osteophytic growths or the loosening of bony ankylosis.

When limitation of movement is due to periarticular fibrous thickening, considerable increase of mobility often follows on the taking of the radium water and enables patients to perform actions, such as feeding themselves, brushing their hair, shaving, etc., which they may have been powerless to do for some months or even years.

Other favourable effects of the treatment are that the muscular and articular pains are lessened or disappear, the grating of the joints on movement is not so marked, the muscles regain much of their lost tone, and the patient's general health is much improved. This is especially noticeable when the patients are suffering from anaemia, the haemoglobin index being rapidly increased. The treatment must, however, be persisted in for quite a long time, and at least six weeks are likely to elapse before any change is noted.

With the majority of patients the emanation solution produces a definite diuresis, and with a few it acts as a slight laxative, though free purgation has never been observed.

Much research work has yet to be undertaken to enable an accurate opinion to be formed of the manner in which radium emanation solution produces these results, as its action appears to be a multiple and highly complex one, but the reinforcing of the body ferments, the increase of tissue oxidation, and the dissolving of uric acid are probably factors which contribute to its success.

Under this head 168 cases are shown; of these, 91 were improved, leaving 77 not improved. Ten cases are reported in detail; of these, one is described as fibrous ankylosis of the elbow in a woman aged 50, and another as chronic rheumatism in a woman aged 42.

Prophylactic Irradiation.

Since the opening of the Radium Institute in August, 1911, numerous patients who have undergone operation for malignant disease have received post-operative prophylactic irradiation. It would be exceedingly difficult, if not impossible, to make any statement as to the precise value of radium treatment in preventing or minimizing the danger of recurrence, but as the majority of these patients had suffered from extensive, severe, and rapidly progressive malignant disease, and the operators had expressed grave doubts as to the probability of their remaining free from the disease for more than a few months, the relatively slight proportion of recurrences so far recorded (19 per cent.) does much to justify the routine adoption of post-operative irradiation. It should prove of especial service in those cases of malignant growth in which it has been found impossible to operate well beyond the appreciable area of the disease.

I desire to express my very great indebtedness to my senior assistant, Dr. J. E. A. Lynham, for the most valuable help which he has afforded in the compilation of this report. He has been solely responsible for the planning and carrying out of the treatment of many of the cases herein recorded.

The Chemico-Physical Laboratory.

Mr. W. L. S. Alton, F.I.C., Director, reports that the work of the laboratory during the past year shows in all its branches a marked increase over preceding years. The staff of the laboratory have been almost entirely occupied in making emanation and radium applicators, and in estimating the activity of various specimens of radium submitted to them for testing. Very little new work has been attempted, as the director of the laboratory has been absent since the commencement of the war on military duty, and the remaining staff have been fully occupied in coping with the ordinary work.

Emanation Applicators.—The records show that flat applicators have not been much in demand, and the tendency has been to use smaller and smaller emanation tubes for treatment of cases. The total number of applicators of all kinds made during the period was 547, as compared with 241 in 1913 and 44 in 1912.

The combined activity of this large number of applicators was equal to that of over 42 grams of radium bromide, giving an average strength for each of about 80 mg. of radium bromide. A considerable quantity of the above emanation was sent to medical men and hospitals for the treatment of necessitous patients.

Radio-active Water.—More than 6,630 litres of this water has been sent out to patients during the year. This compares very favourably with previous years, 3,600 litres being dispatched in 1913, and 400 litres in 1912. The output has been restricted to 100 bottles a day and the activity correspondingly increased to between 1.5 and 2 millicuries per litre. Water of this strength appears to have a more beneficial effect on the patient than that with activity of 1 millicurie; 600 milligrams of radium bromide have been set aside to evolve emanation exclusively for the purpose of making this water.

Radium Applicators and Measurements.—The stock of radium applicators for use in the Institute has been increased during the year by nine pieces of apparatus of various strengths and sizes. Some plates which had been in use a long time were remade. Also the preparation of forty-eight applicators was undertaken for other institutes and medical men, bringing the grand total to fifty-seven. Last year fifty-five were prepared. Measurements of radio-activity were made on thirty-three specimens of radium salts and minerals as compared with fifteen last year.

Report
ON
THE RADIUM TREATMENT AT THE ROYAL INFIRMARY, EDINBURGH, DURING THE YEAR 1914.

BY DAWSON TURNER, M.D., F.R.C.P.EDIN., F.R.S.E.,
EXTRA MEDICAL ELECTRICIAN TO THE INFIRMARY.

SIXTY-THREE patients attended for radium treatment during the past year; of these, 36 were in-patients, 27 were out-patients; 34 of the patients suffered from, in all but 1 case, inoperable malignant disease, 23 of these from carcinoma, and 11 from sarcoma. There were 12 cases of rodent ulcer, 6 of exophthalmic goitre, 2 of otosclerosis, 1 of middle-ear deafness, 1 of Paget's disease, 1 recurrent wen, 1 simple tumour, 1 naevus, 1 leucoplakia, 1 warty tumour, 1 hypertrophied tonsils.

Though a cure was not effected in any of the malignant cases, nor, considering their advanced nature, was it to be expected, yet in practically all of those who were treated more or less benefit was produced by the relief of pain, the cessation of discharges, the healing of ulcerated surfaces, the removal of local growths and the prolongation of life. In some of the cases radium was used as a prophylactic after the surgical removal of a growth, and sufficient time has not yet elapsed to ascertain its effect. Remarkable results were produced in some of the malignant cases; thus an epitheliomatous growth was entirely removed, first from the posterior wall and then from the anterior wall of the vagina, so that not a trace of it remained; there has, however, been a recurrence which is being treated. In a rapidly growing periosteal sarcoma of the lower end of the femur in a boy of 13 the application of radium caused the growth to shrink and to become dense, hard, and fibrous, so that whereas, to use the words of the surgeon, Mr. Hodsdon, it bled like an aneurysm on the first introduction of radium; two months later, on a second introduction, it scarcely bled at all, and it was so hard and dense that it was only with difficulty that the radium could be inserted. This was an illustration of the well-known effect of radium in converting a sarcomatous growth into a fibrous one.

Malignant disease of the buccal cavity, the pharynx, larynx, and posterior nares appears to be less amenable to radium, but this may be partly due to the difficulty of administering a sufficient dose in such positions.

The beneficial effect of radium in rodent ulcer is now well recognized. Of the 12 cases treated during the year, 9 were easily cured; the remaining 3 have not yet been long enough under treatment for the effect to be produced. In each case the cosmetic result leaves no room for improvement. In small superficial rodent ulcers a single application may be sufficient; but it is important, in order to prevent a recurrence, that the deeper parts, as well as the superficial, should be adequately treated. Several of the cases had previously received, without sufficient benefit, applications of carbonic snow or large doses of the *x* rays. Though this may render them, as the Radium Institute reports indicate, more refractory to radium, yet none have failed to yield to it.

In the 6 cases of exophthalmic goitre treated during the year, radium was of undoubted benefit, in 1 case apparently bringing about a definite cure. Its action consists in producing a sclerosis of the thyroid gland, following upon an obliterative endarteritis. As the treatment of this condition by radium was novel, great care was exercised in the earlier cases by giving small doses and keeping careful observation of the patients. Larger doses, which more rapidly produce a beneficial effect, are now administered. A diminution in the exophthalmos and tachycardia are amongst the first results to be observed.

Summary of Cases (excluding Rodent Ulcer).

1. *Sarcoma* under the left eye. An advanced case, with abscesses and an opening into the antrum of Highmore. A dose of 2,280 mg.h. was given with temporary benefit.

2. *Recurrent epithelioma* following lupus in a male, aged 41, recommended by Mr. Wallace. A growth affecting the region beneath the right ear was removed by Mr. Wallace, healed well, except a small patch, which healed after a dose of 240 mg.h. of radium. Five months later a recurrence occurred below, into which three tubes of radium were inserted, and removed after a dose of 5,040 mg.h. Six weeks later Mr. Wade reported a great improvement, the growth having practically disappeared. A few weeks later a recurrence occurred above, and radium treatment was given up.

3. *Sarcoma* of the scapula in a female, aged 29, recommended by Mr. Miles. Radium used prophylactically after surgical removal of the scapula, and inserted anteriorly. A dose of 360 mg.h. only was given, owing to the proximity of the subclavian vessels. Three weeks later a rapidly growing recurrence higher up, not where the radium had rested. Two tubes were inserted into the recurrence, and a dose of 2.520 mg.h. given. A peculiar feature of this case was that the temperature of the patient always fell, and remained down during the radium applications. The radium relieved the patient's pain, which had been constant, but the patient rapidly sank.

4. *Recurrent scirrhus* in a female, aged 37, recommended by Mr. Miles. Breast removed in August, 1912. Some time afterwards a swelling began over the sternum. On admission on February 3rd, 1914, there was a large swelling over the sternum, measuring 3 by 2½ in., and projecting about 1½ in. A tube was introduced into the growth and radium applied externally in different positions, shielded by 1 mm. of silver. The dose amounted to 5.270 mg.h. Six months later the growth had disappeared. Photographs had been taken before and after treatment. Two months later two recurrences, one to the right, one above. A dose of 5,700 mg.h. was given, with the result that the swellings were markedly reduced. This patient has ceased to attend.

5. *Recurrent carcinoma* of the rectum in a female, aged 27. An aluminium tube containing radium was placed in a rubber tube and attached to a twisted silver wire. This was introduced so as to lie against the ulceration, and a dose of 1,030 mg.h. administered. Mr. Hodsdon considered that this treatment was beneficial, the induration became less, and pain was diminished. The patient went home, and has not since attended for more treatment.

6. *Epithelioma* of the lower jaw. It was large and unsuitable for radium treatment.

7. *Epithelioma* of the lower lip in a male, aged 55, recommended by Mr. Cathcart. The diseased area was about the size of a filbert nut; there was a crack in it above, but the mucous membrane was not invaded. A dose of 400 mg.h. was administered. Dismissed three weeks later greatly improved. Told to return in three weeks, but did not do so for many months, when the condition was so much worse that an operation had to be performed. The case was one which would probably have entirely yielded to radium had the treatment been persisted in.

8. *Secondary metastatic sarcoma* in a female, aged 27, recommended by Professor Alexis Thomson. Eight days after the growth had been removed from the back of the neck a tube of radium was introduced into the wound, and a dose of 960 mg.h. administered. A year later her family doctor, Dr. Gemmell, wrote to say that he had examined her and could find no hardness or swelling near the cicatrix, and that she had made a marvellous recovery after we had expected her cure impossible.

9. *Epithelioma* of the vaginal walls in a patient of 40, recommended by Dr. Barbour. Duration some months; pain and watery discharge. There is a raised warty growth over upper two-thirds of posterior vaginal wall, also in anterior fornix. Microscopic examination shows it to consist of a squamous celled epithelioma. Operation unadvisable owing to risk of a rectal fistula. 15 mg. of radium protected by 1 mm. of silver were fastened into a speculum and introduced so as to be in contact with the warty growth. A dose of 384 mg.h. was given. Six weeks later the patch was smaller and there was less discharge; 25 mg. of radium in an aluminium tube were attached to a pad protected on the upper surface by lead foil and placed in contact with the growth. A dose of 1,050 mg.h. was given. Some local peritonitis and lung trouble followed. In four months' time when the patient returned no trace of the disease could be found on the posterior vaginal wall, but there was a decided plaque-like growth on the anterior wall. Twenty mg. of radium protected by silver, 1.3 mm. thick, were placed against the growth and left in, except for douching, for seven days, dose 3,200 mg.h. Six weeks later the growth had disappeared except for a trace in the anterior fornix. Two months later she returned with a hard lump on the anterior wall. The growth was rapidly increasing. By the application of 30 mg. of radium in aluminium, a dose of 5,060 mg.h. was given. A month later she returned complaining of pelvic pain, rectal discomfort

and discharge. On examination under chloroform, the posterior vaginal wall, where the original growth had been, was found to be thickened, indurated, and grey coloured. The anterior wall presented the same appearance. Immediately below the cervix was a growth of the size of a gooseberry. The pathologist reported that this showed very extensive necrosis, so that it was impossible to recognize what the original tissue was. The patient is being kept under observation.

10. *Recurrent sarcoma* of the right orbit, growing rapidly and very vascular. A case of Dr. Sim's. A dose of 1,920 mg.h. was given, but the patient died a few days later with head symptoms.

11. A *scirrhus* of the left breast in a patient of 75, recommended by Mr. Caird. There was a hard tumour with an ulcerating crack and the glands were involved. To relieve pain a dose of 120 mg.h. in aluminium was given to the crack. The pain was relieved, and there was great local improvement. The patient ceased to attend.

12. *Fibro-sarcoma* of the right side of the neck in a man of 34, a patient of Mr. Struthers. Duration six years. Aching pain. Neck circumference, 17½ in. 20 mg. in aluminium inserted through an incision, and a dose of 5,400 mg.h. given. Six weeks later, growth no smaller, but more movable; pain removed. A large fresh deep incision showed a softened area where the tube had lain. Microscopically there were areas of necrosis round the positions in which the radium had been. By means of another tube a dose of 3,840 mg.h. was given. Considerable reaction with a discharging sinus followed. Four months later the growth was found to be much smaller and more moveable. The patient has ceased to attend.

13. *Myeloid sarcoma* of enormous size of the side of the face and back of the head in a man of 54, recommended by Mr. Dowden. As a palliative a dose of 3,360 mg.h. was given.

14. *Recurrent carcinoma recti* in a female of 54, recommended by Mr. Hodsdon. Previous operation a year ago; colotomy performed, rectum removed. Now a fistula into the vagina, constriction, tenderness, and pain. 20 mg. in aluminium introduced, and a dose of 3,840 mg.h. given. Considerable amelioration followed with relief of pain.

15. *Recurrent scirrhus* in a woman of 47, a patient of Mr. Caird. As the disease was very extensive the patient was recommended for *x*-ray treatment.

16. *Recurrent carcinoma* of bowel round a colostomy opening in a female of 41, recommended by Mr. Cathcart. Diabetic. A tube was inserted into the growth, but ulcerated out in three days. The patient died complaining of head symptoms.

17. *Sarcoma* of tonsils in a man of 50, recommended by Dr. Logan Turner. Four months' duration. Cannot open mouth much or swallow solids. An ulcerating mass chiefly on right side. 20 mg. in an aluminium capsule at the end of a rod were held for some eight hours a day by the patient close to, but not actually touching, the ulcer. After a dose of 1,310 mg.h. the patient ceased to attend. No beneficial effect, except that the ulcer appeared to get cleaner, was observed.

18. *Carcinoma* of cervix and vagina, advanced ulcerating, in a patient of 49, recommended by Mr. Brewis. 20 mg. in aluminium and rubber were placed in contact with the growth, and a dose of 3,500 mg.h. given. This removed the agonizing pain from which the patient suffered, but she died within a week of the radium treatment.

19. *Carcinoma* of the floor of the mouth in a man of 70, a patient of Mr. Miles. Inoperable and unsuitable for radium treatment.

20. *Recurrent sarcoma* of the femur in a female of 23, recommended by Professor Alexis Thomson. After amputation above the knee joint two tubes of radium were inserted and a prophylactic dose of 3,360 mg.h. was given. Eight months later her doctor reported that she was going on very well indeed.

21. *Recurrent scirrhus* in a female of 70, recommended by Dr. Scott Carmichael. The first operation nineteen months earlier; steady pain since. Second operation June 26th, 1914, when a lump was removed and a tube of radium inserted as a prophylactic. Dose 1,440 mg.h., aluminium screen. On being asked to report herself in January, 1915, the patient wrote to say that she was too ill to attend.

22. *Malignant enlargement* of the cervical glands on both sides in a male. Considered unsuitable for radium treatment.

23. *Epithelioma* of the upper lip, invading the mucous membrane, in a male of 58, recommended by Dr. Porter. Taken to see Mr. Cathcart, who recommended operation.

24. *Epithelioma* of the left tonsil of eight months' duration in a male, aged 41, recommended by Mr. Cathcart. Cervical glands enlarged. Twenty milligrams of radium in a capsule were held by the patient against the affected area daily, screened by aluminium, until a dose of 1,065 mg.h. had been given. Considerable sloughing followed, but no improvement of any consequence. The patient was referred back to Mr. Cathcart.

25. *Recurrent epithelioma* of the upper jaw in a patient, aged 46, recommended by Mr. Hodsdon. Two years ago first operation. Now a hard mass growing in a cavity above his dental plate. By means of some radium attached to the end of a wire which the patient held against the growth, a dose of 600 mg.h. was administered. Screen aluminium. The patient ceased to attend.

26. *Paraffin epithelioma* of the right hand in a man of 57, recommended by Dr. Steven. Advanced case. The patient was recommended to Mr. Wade for advice. An operation was advised.

27. *Recurrent periosteal sarcoma* of the left knee. Male, aged 23, recommended by Professor Alexis Thomson. Previous operation four years earlier. Now there is a swelling the size of a small egg, which Professor Thomson excised, and at the same time inserted 20 mg. of radium in aluminium. A dose of 2,880 mg.h. was administered. Six months later his doctor wrote to say that there was no recurrence, and that the leg was regaining strength.

28. *Periosteal sarcoma* of the lower end of the femur in a boy, aged 13. The parents refused operation. Duration five months, immobility, pain, and swelling. Greatest circumference of knee 13 in. On September 22nd, 1914, Mr. Hodsdon made an incision, and inserted 30 mg., contained in two aluminium tubes, into the swelling. Blood gushed from the growth as though it were an aneurysm. Radium, shielded by silver 1 mm. in thickness, was also applied externally. The position of the internal tubes and of the external capsules was shifted from time to time. A total dose of 8,760 mg.h. was given. The boy was sent home. In two months' time, when he returned, it was observed that the swelling had diminished in size, the pain had disappeared, the part was less tender, and he could move it more freely. It had been growing rapidly. By a fresh incision, a tube was pushed down deeply, so as to be in contact with the bone. The part incised scarcely bled at all, and the tissues had become hard and fibrous, making it difficult to introduce the tube. A dose of 3,840 mg.h. was administered. The knee now became more swollen and tender, and the temperature rose. It was evident that the contact of the radium tube with the diseased bone was setting up a severe reaction. The boy shortly afterwards returned home. Six months later his doctor wrote to say that the right lung was affected and that the patient was sinking. The knee remained *in statu quo*, but was discharging pus from the cavity in which the tube had lain. The radium appeared to have arrested the local growth, but had not prevented a metastasis.

29. *Epithelioma* following lupus erythematosus and excessive *x*-ray treatment affecting the chin in a woman of 67, recommended by Dr. Gardiner. Case unsuitable for radium treatment.

30. *Epithelioma* of the vulva in a patient aged 61, recommended by Dr. Barbour. Case unsuitable for radium treatment except after an operation.

31. *Recurrent metastatic sarcoma* of right side of chest in a male of 35, recommended by Sir Robert Philip. Case unsuitable for radium treatment.

32. *Exophthalmic goitre* in a female of 28, recommended by Professor Gulland. Swelling of neck began in August, 1913, but the patient had been getting weaker before then. On admission, tachycardia (140), marked exophthalmos, tremulous, sweating, glycosuria In March, 1914, the patient was given, by external application through silver 1 mm. thick, a dose of 360 mg.h. to the thyroid. On April 24th, 1914, the patient returned much better. Gave her a dose of 400 mg.h. On September 14th the pulse was 80, exophthalmos less, better in every way. Gave her a dose of 540 mg.h. On October 17th, 1914, gave her a dose of 400 mg.h. On December 23rd, 1914, the patient returned practically restored to health; pulse 70, no exophthalmos, thyroid cannot be palpated. Professor Gulland writes in reference to this and another case: "This case had a considerable number of applications at long intervals, and has immensely benefited thereby. She has, in fact, within a year returned to normal—an unusually good result. The second case has had only one application, and naturally did not do so well, though she also greatly improved."

33. *Exophthalmic goitre* in a girl of 27, recommended by Dr. Boyd. Duration three years. Breathlessness, nervousness, tremor of hands, pulse 120, thyroid enlarged, exophthalmos slight. This patient was given a total dose of 1,750 mg.h., administered as in the last case. On January 15th, 1915, Dr. Boyd wrote: "The patient seems

to have benefited very much from radium, and I think a second dose would be very desirable."

34. *Exophthalmic goitre* in a woman of 32, recommended by Professor Gulland. A mild case of three months' duration. Slight exophthalmos, weakness, nervousness, palpitation, oedema, thyroid slightly enlarged. Medicinal treatment so far unavailing. A dose of 600 mg.h. administered externally as in the last case. This is the second patient referred to in Professor Gulland's letter, in which he described her as being greatly improved. The other three cases of exophthalmic goitre were only given treatment at the end of October, and they have not yet returned to report themselves.

Otosclerosis.—Two cases of otosclerosis and one of middle-ear deafness were treated with radium during the year. They are as follows:

35. A female, aged 52, recommended by Dr. J. S. Fraser. Deaf for twenty-five years, and regarded as hopeless. Dr. Fraser writes: "The raised voice before treatment could only be heard at 6 in. in both ears. After six applications of radium (dose 106 mg.h.) there was no improvement, and the patient stated that the noises had been worse. The raised voice was only heard at 4 in. in the ear which had been treated. This was a case of advanced otosclerosis."

36. Early otosclerosis in a female, aged 22, recommended by Dr. J. S. Fraser, who writes regarding her as follows: "She had been slightly deaf since childhood. Before radium treatment the low voice was heard at 1 ft. in the right ear. Radium treatment was commenced in February, 1914. I saw the patient again in May, after she had had a dose of 125 mg.h. of radium, and was suffering from a considerable amount of dermatitis of the external meatus on the right side, probably due to the radium. I saw her for the last time on November 6th, 1914, and found that the right meatus had quite healed. The hearing was about the same as before—namely, low voice at 1 ft."

37. Case of middle-ear deafness in a female of 45, recommended by Dr. J. S. Fraser, who writes as follows: "Patient had been deaf for ten months and complained of noises in the ears. Before radium treatment the raised voice was heard at 1 ft. by the left ear. After a dose of 55 mg.h. she stated that the noises were not so bad as before. The voice was heard at about 18 in. by the left ear. I do not think that the difference between 1 ft. (before treatment) and 18 in. (after treatment) is of any importance, as a small difference in hearing like this might easily be due to the room being more quiet or to the voice used being rather louder. In conclusion, I am afraid we must report that these cases of chronic progressive middle-ear deafness have not benefited from radium treatment, but this is only to be expected."

38. *Naevus* of the scalp in an infant 1 year old, recommended by Mr. Cotterill. Had been treated by injections of carbolic acid and glycerine. There was a scab in the centre and a raised red ring around. A dose of 115 mg.h. was sufficient to cure this condition.

39. *Paget's disease* in a female aged 72, recommended by Mr. Miles. To right of nipple is a well defined crescentic area, red, slightly elevated, and hard. Glands not palpable. Nipple normal. A dose of 1,200 mg.h. was administered, guarded by silver and cork, so as to spread the effect. The patient has not reappeared for treatment.

40. *Warty tumour* in a girl aged 18, recommended by Dr. Ogilvie. Duration about two years. Has had nitric acid and other applications without benefit. On the left cheek is a wart the size of a threepenny piece considerably elevated above the surface. Radium treatment begun on March 24th, 1914, and a dose of 58 mg.h. administered. On June 2nd, 1914, the wart was found to have disappeared and the skin to be practically normal.

41. Leucoplakia. As this case was only admitted for treatment in December, 1914, it is too early to make any report.

DR. IRVIN S. KOLL, Instructor in Genito-Urinary Diseases, University of Illinois Medical College, has published in the *Journal of the American Medical Association* (January 23rd, 1915) a memoir on the experimental effect of the colon bacillus on the kidney. One hundred experiments were made to show the comparative action between the colon bacillus, the typhoid bacillus, and the staphylococcus under different conditions, these bacterial invasions being compared with the effect of a soluble toxin made from each. The bouillons were injected into the ureter just below the pelvis, into its sheath extraperitoneally at about its middle third, or under the renal capsule. Among the conclusions at which Dr. Koll arrived, the clearest appeared to be the fact that a non-traumatized kidney will, in the absence of ureteral obstruction, overcome spontaneously the invasion of these virulent microorganisms. The pathological changes are due to a direct toxic action, and the soluble toxins of the organisms are carried to the opposite kidney, where a similar picture is seen.

THE PHTHISICAL SOLDIER AT THE FRONT.

BY

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IT is an interesting fact that in the present war—the largest and bloodiest which has ever been waged—there are men playing their part nobly and well who are or have been the subjects of a disease which at all times claims the greatest number of victims. At a recent meeting of the Sanatorium Subcommittee of the Newcastle Insurance Committee, among the names read out as those of persons requiring domiciliary treatment, I was struck by that of a soldier who had just returned from Mons and the Aisne. As the man was an old patient of mine, having five years ago occupied a bed in my infirmary ward under the care of Dr. A. E. Parkin, then my assistant physician, I have thought that the circumstances under which this soldier took part in the campaign might be not without interest to some of your readers.

M. C., aged 26, married, a labourer, formerly a coal miner, was a private in the Royal Army Medical Corps in 1906. Five years ago he had pleurisy with effusion, and, as already stated, was treated in the Royal Victoria Infirmary of this city. Subsequently, as there were evidences of pulmonary tuberculosis, he spent six months in the Barrasford Sanatorium as a patient, and later was employed for twelve months in looking after the horses, in leading coals, chopping firewood, and in doing the many small out-of-door jobs which are required at such an institution. His health at this date improved considerably. He returned to Newcastle and became employed as a plater's helper in one of the shipyards on Tyneside. The work of a plater's helper is hard; it proved at any rate too hard for him, for he suddenly broke down in health, and in February, 1913, he consulted Dr. Mitchell, of Walker. Since then he has been sometimes under Dr. Mitchell's care, sometimes under that of Dr. Dickinson, of the Tuberculosis Dispensary, Newcastle-upon-Tyne, to both of whom I am indebted for the opportunity of renewing acquaintance with an old patient.

On August 5th, 1914, M. C. was examined in Aldershot by a medical officer and passed as fit for active service with the R.A.M.C. He was attached to the Connaught Rangers, and on August 13th he was sent to the front. His work, which was hard, was in connexion with transport. He was in the retreat from Mons, and on two occasions was close up to the firing line. When the British retreat was converted into an advance he went on to the Aisne. This was no light task. The army was eleven days on the march, on three of which he carried on his back a haversack weighing 7 lb. Along with the other soldiers he walked some days twenty miles. This he did well, with the ordinary two hours allowed for rest at middle day. Food was not always just to hand when it was required, but when it came up there was plenty of it and it was always good. Previous to going to the war he had had haemoptysis, but at the front he had good health nearly all the time. He felt perfectly fit and the outdoor life suited him. The prolonged strain, loss of sleep, and exposure to wet and cold ultimately, however, told upon him. He caught what appeared to be a severe cold, but as there were signs of extensive pulmonary catarrh he was invalided home.

He is a man of average development and of smart soldierly appearance. The upper half of the left side of the chest is dull on percussion; here numerous moist small crackling râles can be heard with signs of excavation. The right lung remains almost normal. There is no displacement of the heart generally nor of the apex beat, but the second sound over the pulmonary artery is loudly accentuated.

The case is probably one of many. The presence of tuberculous soldiers at the front is not limited to the British lines. At a meeting of the Société Médicale des Hôpitaux de Paris,[1] M. E. Rist drew attention to the case of a tuberculous French soldier who had been the subject of profuse and recurrent haemoptysis, of elevated temperature, progressive emaciation, and who during the course of a whole year had undergone artificial pneumothorax treatment at the hands of Dr. L. Bernard, receiving every fifteen days an insufflation of nitrogen. This man was able not only to undergo the fatiguing operations associated with mobilization, but also successfully to finish a number of forced marches, and to take part in at least one battle; all this ultimately rather taxed his strength, yet when he returned to the hospital M. Rist found the artificial pneumothorax still well maintained. It had a positive pressure of 3 cm. of water. This pressure was probably partly the result of a slight increase of pleural effusion. Half a litre of serous fluid was withdrawn and a reinsufflation of nitrogen made. M. Rist states that the patient remains in robust health, he has no fever, no

cough and no expectoration. An effective pneumothorax has enabled this soldier, who a few years ago was attacked with tuberculosis, to take part in a campaign for a month under extremely trying circumstances, and it still finds him in excellent health after such experience.

At the front tuberculous soldiers are not found in the line of the Allies alone. They are just as numerous, if not more so, among the Germans. In the *Times* of February 13th "Eye-Witness," who is at present with General Head Quarters, in describing operations at La Bassee, says:

It has already been mentioned that some of the prisoners captured by us lately have been of comparatively poor physique. In this connexion it is interesting to note that during the last few days a dead German was found having two medical certificates in his pocket stating that he was suffering from consumption. They are both signed by a doctor and are accompanied by an application from the father that his son should not be sent on active service as he was suffering from lung trouble.

No doubt the conditions under which the present war is being carried on are more hygienic than in previous campaigns, but the physical hardships and the mental strain are greater. There is little leisure, little chance of physical repose unless when the men are in the trenches, and even then not always.

The interesting point is that men who are the subjects of tuberculosis have been able to undergo all the hardships of war, and that in the case of the French and British soldiers whose cases I have detailed they have passed through battle unscathed. A circumstance such as this, by robbing tuberculosis of some of its terrors, ought to carry hope into the breast of many a tuberculous subject and let him feel that his day of usefulness has not yet come to a close, but that he is capable of undertaking out-of-door employment even of a harder nature than as a profession we have hitherto been disposed to allow. This ability to endure says much for the present treatment of pulmonary tuberculosis by sanatorium and the open-air method, and is also strong evidence in support of the treatment of suitable cases by the production of artificial pneumothorax.

REFERENCE.

[1] *Presse Médicale*, November 19th, 1914.

THE TREATMENT OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

BY GEORGE C. LOW, M.A., M.D.,
LECTURER, LONDON SCHOOL OF TROPICAL MEDICINE.

IN view of the cases of cerebro-spinal fever occurring in the army and the sporadic cases which are cropping up in different parts of England, I think it may not be out of place to draw attention to the very good results obtained by Drs. Shircore and Ross in the treatment of this disease by soamin in British East Africa. As this paper, which was published in the *Transactions of the Society of Tropical Medicine and Hygiene* (vol. vii, No. 2, December, 1913, p. 83), may not be readily available by all who may be called upon to treat cases of this malady, I will quote fully from it here.

So far as I can discover in looking up the literature of the treatment of epidemic cerebro-spinal meningitis, the first person to use soamin was Dr. T. Arnold Johnston, senior house-physician, Leicester Infirmary. In the BRITISH MEDICAL JOURNAL (January 22nd, 1910, p. 193) he reported having injected soamin intravenously in 2 cases of cerebro-spinal fever, one of which was very severe, and both of which recovered. He was led to adopt this line of treatment because of the favourable results reported by officers of the R.A.M.C. in syphilis when this drug was used, and also by others in trypanosomiasis (sleeping sickness). At the end of his paper the author says:

That the recoveries were entirely due to the remedy cannot be proved from such a limited number of cases. The disease certainly was influenced by the injections, and the result compares favourably with the reported cases of serum treatment in cases of equal severity, as described in the papers of Robb, Currie, and Macgregor. As a treatment it is not expensive and the technique is simple.

Epidemics of cerebro-spinal fever are not uncommon in tropical Africa; they have been reported in West Africa (Gold Coast), Egypt, the Anglo-Egyptian Sudan, and in British East Africa. A well-marked epidemic occurring in the last-named colony in 1913, Shircore and Ross were enabled to study the disease carefully and also to try on a large scale the effects of different lines of treatment. Three methods were adopted: (1) Soamin, (2) serum, (3) lumbar puncture. Here again the authors were led to try soamin because of its value in trypanosomiasis, and also because at first no serum was available.

Out of a total number of admissions to hospital of 143, 127 were treated with the drug (though this is not stated, I believe it was injected intramuscularly), 37 of these being malignant cases, or cases on the third, fourth, or fifth day of the disease. Those dying within 60 hours, that is, a little over two days after admission, are excluded; they never regained consciousness, and though in some a marked reaction to the soamin took place, death always occurred. Such cases the authors believe are beyond any known line of treatment. Excluding the above, then, the remaining cases numbered 90, and of these 56 were discharged cured, while 34 died; this gives a percentage of 62.22 of recoveries. Clinically improvement in the symptoms was seen after the injections, and researches on the cerebro-spinal fluid showed that the meningococci were reduced or even, in some instances, disappeared.

As regards the use of serum, this was found to be disappointing, and after the value of soamin was demonstrated it was given up. When one of the authors unfortunately contracted the disease himself the question of administering serum was not even considered by his colleagues; the soamin treatment was adopted and he recovered.

Lumbar puncture was found useful in relieving headache and restlessness, and the authors thought it might help the action of the soamin.

These results have been confirmed by Dr. Gilks, who also treated some cases of the disease in the same epidemic.[1] Eight cases amongst Europeans were treated, with only one death. Treatment was in every case by intramuscular injection of soamin, which was usually administered in 5-grain doses on each of the first two days after commencement, followed by 3 grains on the fourth day; while, if irregular temperature persisted, occasional further doses were given. No bad effects occurred from the use of the drug. Though the diagnosis of all this series of cases reported by Gilks was not confirmed bacteriologically, yet there is no doubt from the clinical signs that they were examples of the disease.

An analysis of this work would seem, then, to show that soamin has a distinctly beneficial effect upon epidemic cerebro-spinal meningitis, and, such being the case, an extended trial of it in cases now occurring might, it is to be hoped, give results of considerable value.

As soamin is a purer preparation than atoxyl its use is to be advocated.

In the small doses given over the short period indicated by Dr. Gilks, and in those now often employed in human cases of trypanosomiasis, there is apparently no danger, optic neuritis and lesions of this nature only occurring when large doses of the drug are given over prolonged periods.

As regards the method of administration, intramuscular injections seem to act quite well, but perhaps intravenous injection may ultimately prove to be better. A trial on large numbers of cases would be required to decide this point.

REFERENCE.

[1] *East Africa Protectorate, Annual Medical Report* for the year ending December 31st, 1913, p. 90

DR. SCUDDER, of Boston, Mass., writes in the *Boston Medical and Surgical Journal* (February 4th) on the significance of *x*-ray examination following operation for congenital pyloric tumour. Posterior gastro-enterostomy does not ensure the disappearance of the tumour, and in three authentic cases the tumour discovered at the operation was detected within nine months after a plastic operation. He collected twenty-six cases in which *x*-ray examinations were made during the after-treatment. The tumour did not vanish, or at least the pylorus remained obstructed, while the stoma was the only exit for the bismuth meal from the stomach. He thinks that the tumour itself and the changes in the mucosa explain the obstruction in all cases, and that the hypothesis of pyloric spasm must be set aside.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

CYSTIC HYGROMA.

I WAS called on January 3rd to Mrs. F., 38 years of age, who was in the second stage of labour with the eleventh child. There was no abnormal family history. As there was no progress, I applied forceps under chloroform. No difficulty was experienced with the birth, which was a first vertex presentation with the back behind, nor any tearing of the perineum; and although some slight obstruction was caused by the mass following the head, a little pressure on the abdomen helped to complete the delivery of the head and swelling.

The appearance of the infant, a male, was striking. The whole of the lower portion of the left side of its face and neck was occupied by a very large fleshy mass extending well down over the shoulder and chest. The skin over the hygroma was very lax, whilst the tumour itself was thick-walled and cystic, being composed of a large agglomeration of degenerated lymphatic vessels; it was heavy and capable of being lifted over the chest, when it impeded the respirations very considerably. The child's left eye was normal, although closed by the swelling; the lower jaw was distinct when examined through the mouth, and both nostrils were expanded and thickened. The hygroma extended from the upper zygoma as far as the left ear, pushing the lobe up, then reaching down in an irregularly globular fashion till it became indefinite at its base in the neck.



There was some trouble in nourishing the child, which was spoon-fed, on account of obstruction to swallowing, and considerable difficulty was noticed in breathing through pressure on the trachea, which gradually became more pronounced until death took place on the third day.

The hygroma measured 4¼ in. from the sulcus below the chin to the most dependent portion and 13½ in. in circumference at the level of the clavicle, and although so large and unwieldy, there were no signs of commencing ulceration on the under surface of the swelling.

I have searched through the literature on the subject and cannot find any record of a hygroma of this size. It is interesting to note that it caused so little difficulty in the delivery, seeing that a small obstruction in the pelvis so often gives rise to great difficulty in labour; the accompanying photograph, taken twenty-four hours after birth, shows the size and characteristics of this remarkably large tumour developed *in utero*.

Bournemouth. A. E. ELLIS, L.R.C.P.I., L.R.C.S.I.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, February 11th, 1915.

Sir WILLIAM CROOKES, O.M., President, in the Chair.

Excitatory Processes in the Ventricles.

A PAPER by Drs. T. LEWIS and M. A. ROTHSCHILD, on the excitatory process in the ventricles of the dog's heart, was communicated by Professor E. H. STARLING, F.R.S. It was found that the excitation wave appeared at the pericardial surface of the dog's heart at times which showed no great variation relative to each other; but the distribution of the time values over the surface with such variations as they showed was very fairly constant from heart to heart. The earliest surface points to show activity were (1) that portion of the free wall of the right ventricle which bordered the lower half of the anterior interventricular groove, and (2) the vortex of the left ventricle. The time at which the excitation wave appeared at the surface was controlled by the length of the Purkinje tract to the endocardium beneath the region tested, and by the thickness of the ventricular muscle in the same region. The excitation wave spread along the branches of the *a–v* bundle and was distributed through the network of Purkinje; the rate of travel in this tissue was approximately 5,000 mm. a second; it penetrated the muscle wall in its whole thickness and at right angles to the plane of the wall; the rate of travel in ventricular muscle was approximately 500 mm. per second. The excitation wave was not propagated by simple spread from base to apex or apex to base through bands of muscle fibres, as had commonly been held hitherto. The capacity of striated cardiac tissue to conduct appeared to be related to the size of the cells composing it and to its load of contained glycogen. The auriculo-ventricular bundle and its branches constituted a system of fibres specially endowed in regard to their arrangement and physiological properties to give quick distribution of the excitation wave throughout all parts of the ventricle.

Growth of Mammalian Tissue in vitro.

A paper by A. J. WALTON, on the variation in the growth of mammalian tissue *in vitro* according to the age of the animal, was communicated by Professor W. BULLOCH, F.R.S. Previous work, it was stated, had shown that plasma of animals varied considerably in its value as a medium for the cultivation of tissue. Experiments were carried out with a view of determining whether these differences were due to the age of the animal from which the plasma was obtained. The tissues and plasma of rabbits were alone used, and the majority of animals were of a known age. Tissues of young and old animals were used and were grown in pure plasma from the same animals. In the majority of cases cross experiments were performed, each tissue being grown in both old and young plasma. The results were thereby more readily controlled. The results of these experiments were further controlled by young stock tissues of the tenth generation in young and old plasma. In all cases it was found that the young tissues grew better than the old, but the plasma of the young animal was not nearly so satisfactory a medium as that of the old. Hence the best results were obtained when young tissues were grown in the plasma of old animals and the worst results when old tissues were grown in young plasma. There was some reason to believe that the unsuitability of the plasma of young animals as a medium was due to the presence of an increased amount of some inhibiting substance.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

AT the usual quarterly meeting of this association on February 18th, under the presidency of Dr. DAVID G. THOMSON, Dr. ROY M. STEWART (Prestwich Asylum) read a paper, illustrated by photomicrographs, on *Meningo-vascular syphilis*. It was devoted to the consideration of a single case, the morbid anatomy of which afforded a striking example of the effects of the syphilitic virus on the supporting, enclosing, and vascular structure of the central nervous system; also to setting forth the retro-olivary syndrome dependent upon thrombosis of the posterior inferior cerebellar artery, which the patient exhibited. As a brain might show both interstitial and parenchymatous change, difficulties of diagnosis might arise, as there was no sign or symptom in dementia paralytica which could not be present in subacute meningo-vascular syphilis, and, except for the Wassermann reaction, one could not be certain whether a lesion was entirely parenchymatous.

The patient was an unmarried woman, aged 47, who was in the asylum seventeen months. She was anaemic and in poor physical condition. Near the right knee were scars of syphilitic character. The pupil reaction and reflexes were normal, but soon after admission there was ptosis on the left side. Mentally she was deluded and excited, believing that people were following her about to injure her. Speech was incoherent. During the succeeding months there was progressive mental

deterioration; she became restless, destructive, faulty in her habits, and was disorientated. Eleven months after admission she had a slight seizure affecting the left side of the face and right upper extremity, and subsequently a number of such; she also complained of failure of vision in the left eye. Speech was slurring, and she had facial tremor. Three months before death she became bedridden, and showed profound disturbance of memory. Two days before death she had a convulsion and symptoms of acute bulbar paralysis. She remained to the last conscious of her mental and physical disabilities. The whole picture was one of diffuse cerebral syphilis.

At the necropsy the brain showed slight general atrophy. The pia arachnoid was slightly thickened and milky along the frontal sulci, which were widened. There were gross macroscopic lesions and recent softenings on both hemispheres. On making a horizontal section in Marie's plane several remarkable cavitations were seen in the white matter ½ cm. to 4 cm. in depth. The cerebral vessels were tortuous and very atheromatous. In the spinal cord there was a disappearance of many nerve fibres from all parts of the section. The lateral columns suffered especially, and there was a great increase in glial fibres. The myeline sheaths showed every gradation of change, from slight loss of myeline to complete disintegration. The pia mater investing the cord had undergone very great thickening, and showed an intense cellular infiltration. Perivascular change was observed around all the large vessels, there was slight intimal proliferation in the arteries, and many of the veins showed engorgement and hyaline thrombosis. The nerve cells showed atrophic pigmentary degeneration.

Dr. Stewart then gave a demonstration of the microscopical findings in the case, and remarked that, in regard to the optic nerves, a very large number of funiculi—especially those at the periphery—exhibited sclerosis. Their nerve fibres had largely disappeared and no longer stained by Weigert's method. Large branching strands of neuroglia fibres could be seen passing among the nerve bundles. The symptom-complex to which he wished to direct attention was as follows: Sudden onset, without loss of consciousness; giddiness; hemiataxia, with tendency to fall to the affected side; difficulty in deglutition, phonation, and appreciation of pain, heat, and cold over part or the whole of the trigeminal area on the side of the lesion and a corresponding loss of pain and temperature-sense on the opposite side of the body from the face downwards; motor power, touch, tactile discrimination, deep pressure, and muscular sense were intact; paralysis of ocular sympathetic on the side of the lesion. It was clearly a case of crossed dissociated anaesthesia.

Rebiews.

AMBIDEXTERITY.

THE claims of ambidexterity have been pressed on many grounds, and the latest advocate is Dr. MACNAUGHTON-JONES, in a volume entitled *Ambidexterity and Mental Culture*.[1] In these days it is only due to the author to make it clear that the book was written before the word *Kultur* had come to stink in the nostrils of the greater part of the world.

The first claimants that ambidexterity was advantageous put forward the plea that it was a safeguard against the disabilities arising out of cerebral haemorrhage. A kind of insurance against aphasia. Insurance has value according to the risk run and the security of indemnity. But no one will maintain the risk of aphasia is imminent, at any rate in youth, and he would be a bold man who asserted that the equal practice of both hands in all tasks will do away with the mysterious lopsided action of our brains. We do not know for certain what is the determining influence of the almost universal right-handedness, and it is merely begging the question to assert that this general habit determines left-brainedness. Hands may affect brains, but more probably brains direct hands.

In this little book the case is put on other lines. Dr. Macnaughton-Jones collected and collated a mass of evidence which proved to him "that the cultivation of ambidextrous exercises, both in art and writing, has a decided influence on the mind of the growing child, and that such psychophysical effect has a direct bearing on the child's character." No one will gainsay the statement that handicraft is a valuable part of any educational system; care, precision, and attention are inculcated in a manner that few tasks can better. But the assertion of an improved moral character made by some of the advocates of the cult of ambidexterity is another matter altogether. A quotation given and apparently endorsed by the author is enough to show the error of the claim: "When ambidexterity becomes the common property of all civilized states new paths leading to a new really important era will be opened up to us all, with a peaceful battle of intellects in perhaps undreamt-of varieties, and higher planes of thought"—M. Fraenkel, M.D.Berlin. It is not necessary to cite the case of a nation to show that even a marvellous power of technical application does not conduce to "peaceful battles" and "higher planes of thought"; it is enough to recollect that that master craftsman Benvenuto Cellini, whose skill and perfection of taste have perhaps never been excelled, was neither a man of peace nor an inhabitant of higher planes of thought.

The fact is the inferiority of the left hand implied in the arguments of the advocates of ambidexterity is an error. The left hand does its share of work well and truly. There are hosts of tasks skilled and automatic in which the left hand takes a full and often master share. The claim that there is anything wondrous in simultaneous right and left hand drawing or in mirror writing is mistaken; any one who can draw with the right hand can with ease do a double drawing, marking one side of a symmetrical figure with the one hand and the other side with the other hand. The action is purely synchronous, like that of the breast stroke in swimming. Equally easy is mirror writing, and he who has never tried it can become proficient in one evening's practice provided he will do it rapidly and almost without thought. General manual dexterity is much more the controlling factor in the capacity for these freak tasks than any special education of the left hand.

Lastly, there is some rhyme and reason for most of Nature's ways, and our so-called right-handedness is one of these ways, and we may do better to increase Nature's specialization than to waste our efforts on a diffusion of our available energy; indeed, there are anthropologists whose studies of the evolution of man have brought them to the conclusion that his early ancestor took the first upward step when his right hand began to be specialized.

[1] *Ambidexterity and Mental Culture.* By H. Macnaughton-Jones, M.D., M.Ch., Q.U.I., M.A.O.R.U.I. (Hon. Cau.), F.R.C.S.I. and Edin. London: W. Heinemann. 1914. (Fcap. 8vo, pp. 102; 17 illustrations. 2s. 6d. net.)

TOMES'S "DENTAL ANATOMY."

THE seventh edition of TOMES'S *Manual of Dental Anatomy*[2] has been considerably enlarged and rearranged by MARETT TIMS and HOPEWELL-SMITH. The rearrangement consists in a division into two parts, of which Part I is the joint work of the two editors, and deals with facts which are of more immediate value to the dental or medical student; while Part II is the work of Marett Tims, and contains "that which is of greater importance to the student of comparative anatomy." In fact, Part I deals with histology and development, Part II with anatomy, and we hope that the suggestion that Part II is of lesser import to the dental student may not result in neglect of a study which might later become a subject of lifelong scientific interest; indeed, there seems no reason why a study of osteo-dentine in fishes should be deemed more valuable to the dental student than a comparative study of the dentitions of man and the higher apes.

Additional matter, the results of much recent research, has been incorporated, but the task of selection has been difficult owing to the rapidly increasing mass of new material, and the author himself contributes an excellent summary and criticism of our knowledge of the teeth of primitive man. The chapter on the evolution of the forms of teeth, though it leaves the reader much in the frame of mind to which the arguments of doctor and saint reduced Omar Khayyam, yet opens the door to an endless field of fascinating research. We object, however, to the statement in the closing sentence that calcification of the pulp by osteo-dentine in man is "almost pathological." It would have been better to have said it is almost normal. The chapters on the milk dentition and on the homologies of teeth open up further problems of great interest in

[2] *Manual of Dental Anatomy, Human and Comparative.* By C. S. Tomes, LL.D., F.R.S., F.R.C.S. Edited by H. W. Marett Tims, M.A.Cantab., M.D., M.Ch.Edin., F.L.S., F.Z.S., and A. Hopewell-Smith, L.R.C.P., M.R.C.S., L.D.S.Eng. Seventh edition. London: J. and A. Churchill. 1914. (Med. 8vo, pp. 622; 300 figures. 15s. net.)

comparative odontology. They are excellent, and one almost asks for more. In the chapter on milk dentition, Fig. 173, reproduced as "polyphyodontism in a child," may, perhaps, be susceptible of explanation as "epignathism."

The book is well written, excellently illustrated, and deals freely with its subjects. Perhaps the normal variations of human teeth will be found worthy of attention in a later edition. We must take exception to the use of such words as "Zahnleiste," "Zahnwall," "Anlage." These are merely literal German translations of their English equivalents, and smack of a straining after effect rather than an effort at clarity.

Mr. Charles Tomes may be congratulated on having given the editing of the seventh edition of his *Manual of Dental Anatomy* into such able hands, and the editors may be content that they have justified his trust.

NOTES ON BOOKS.

IN his *Guide to Gothic Architecture*[3] Mr. T. F. BUMPUS has added to the handbooks which he has written for amateurs of church architecture a historical study which will confirm him in their good opinion. To designate the several periods of English architecture, he uses the terms Norman, Transitional, Early English, Decorated, and Perpendicular, and in the introduction appears to promise to deal with all, but he stops short at the end of the fourth period. The book is large enough, but in spite of the immense mass of details embodied it is, owing mainly to the historical method, very readable. It is concerned only incidentally and for purposes of comparison with the Gothic of France, Italy, Spain, and Germany, and this is, perhaps, the reason why what might seem a disproportionate number of the numerous illustrations, chiefly from photographs, are those of foreign churches. It is difficult to understand the admiration the author seems to feel for some of the German churches illustrated; beside French and English they appear heavy and clumsy, and are not even of much interest in the history of architecture, for the style led nowhere. The only real school of Gothic architecture, other than that of Northern France, is that of England. He insists that it was not a mere imitation or extension of the French school, and that in certain respects, in which it gave expression to national characteristics, it was superior. The book, as has been said, is one for the lover of English church architecture, and an excellent feature is that at the end of his discussion of each period the author has inserted a long list of churches in all parts of the country in which it may be studied.

[3] *A Guide to Gothic Architecture.* By T. F. Bumpus. London: T. Werner Laurie, Ltd. 1914. (Demy 8vo, pp. 370; 143 illustrations. 10s. 6d. net.)

SMALL HOSPITALS FOR SOLDIERS.

[FROM A CORRESPONDENT.]

THE enlistment of the support and services of the lay public and the consequent establishment of a large number of small hospitals adapted for the treatment of convalescent or semiconvalescent soldier patients may fairly be attributed to pioneer work done by the British Red Cross Society and the St. John Ambulance Association in time of peace. These societies, which for convenience may be spoken of collectively as the Red Cross Societies, have acted as intermediaries between the public and the War Office, and have to a very large extent supplemented the efforts and arrangements of the latter.

The establishment of a large number of small hospitals, supported in one form or other by private generosity, has been most useful in enabling the larger hospitals to deal with greater numbers than would otherwise have been possible, by allowing cases needing some further treatment, but not requiring all the resources of a great general hospital, to be drafted out, and thus freeing beds for the more serious cases. If, then, these remarks savour of criticism, they are made in full recognition of good work done and in the desire to make it still better.

It is, perhaps, not too much to say that before the outbreak of the war Red Cross work was not taken very seriously, so far at least as its application to our own country went, and an organization sufficient for its purposes as then understood was suddenly called upon to do work of a more practical and immensely more extensive character. In the changed circumstances the societies have done well, but they have suffered because their scope of action has not been well defined, and, consequently, from some lack of authority.

It is obvious that the War Office through its medical department is and must be the supreme authority, but if the Red Cross societies are to be regarded as the recognized intermediary between the higher authority and the public, it would be advantageous to delegate definitely certain functions to the societies. To some extent this appears to have been done, though it is more than doubtful whether the existing regulations are always carried out in practice.

It is understood that there is a rule that soldiers shall not be sent to any smaller auxiliary or section hospital until it has obtained War Office recognition; and, further, that the War Office will not recognize any more private hospitals except through the medium of the Red Cross societies. If this plan were fully carried out it would give to the societies the requisite control, but in the past quite a number of such hospitals have been recognized independently of the societies, and some of these, not having made any call upon Red Cross funds, absolutely disclaim any connexion with the Red Cross, although making use of the Voluntary Aid Detachments to assist in their nursing. As it is impossible for the Royal Army Medical Corps, with their multifarious other duties, to exercise much supervision over numerous small hospitals scattered all over a county, it comes about that these hospitals may be practically uncontrolled.

The suggestions offered are briefly these: First, that every county should appoint a medical Red Cross inspector, whose duty it should be to inspect and report upon every private or Red Cross hospital before it obtains recognition either from the Red Cross or from the War Office—hitherto Red Cross supervision has been largely in lay hands; and, secondly, that after this preliminary inspection the medical inspector should occasionally visit the hospitals in order to see that the standard upon which recognition was obtained has been maintained. Experience has shown that this is desirable, and it is a function that could well be discharged by the societies, which would be responsible to the War Office for the subsequent working of the hospitals. The Red Cross inspector should co-operate with the local medical officers of health, who at present often seem to have little say in the matter, for their approval does not seem always to be sought. If there be no objection to such a course, those hospitals which at present have nothing to do with the Red Cross might well be notified that they are now subject to the inspection suggested.

It is desirable in the selection of medical inspectors that medical men should be chosen who possess a knowledge of hospital affairs and who are not in active practice; in most counties this should not be difficult. The objections to their being in practice are twofold: The first is that though one man can efficiently deal with a large area the consumption of time is very considerable, and the other that an active practitioner may be placed in a position of embarrassment should there be anything of which he disapproves if the leading spirits are his most important patients.

Another function which could be very usefully discharged by Red Cross medical inspectors would be in advising Voluntary Aid Detachments in the first instance as to the suitability of the plans they contemplate. Much time, money, and work has been expended in the equipment of premises which cannot be really well adapted for hospital purposes. Such are, for example, public or semi-public rooms which have no accommodation beyond the one large room, and no sanitary conveniences worth speaking of. Whether the War Office would be content to accept the reports of such medical inspectors or would prefer, as at present, when there is no systematic Red Cross medical inspection except in a few areas, to make an independent inspection, is a matter of detail. It is not suggested for a moment that any powers should be conferred upon the Red Cross societies which could in any way encroach upon or interfere with the higher authorities, but merely to point out that a division of labour is possible, and would work towards greater efficiency. In some countries we believe that this is already done; on the

declaration of war the Red Cross hospitals pass at once under the control of the military authorities, but this control is exercised through Red Cross officials.

MILITARY HYGIENE AND THE EFFICIENCY OF THE SOLDIER.

MAJOR P. S. LELEAN, R.A.M.C., began the course of lectures on "Military Hygiene" arranged by the University of London, with the concurrence and assistance of the Army Council, at the Royal Army Medical College, Millbank, on February 22nd.

In his first lecture Major Lelean considered the subject of physical fitness for war, but first remarked that though the examination of recruits and the preliminary weeding out of the unfit did not come within the scope of the lecture, in this matter the medical officer was the custodian of economic interests, for every recruit cost the Government about £100 in the first three months of training.

Training.

In considering the line which training should follow, he said that, taking infantrymen as a type, and remembering that the first essential was that the soldier should be able to take himself and his equipment into the firing line, it must be noted that any excessive bulk of muscle beyond the amount necessary was a detriment; the man became muscle bound. The army wanted men strong enough and no stronger. To be effective in the firing line a man needed proficiency in the use of weapons and agility in all military muscular exercises. In contrasting the bodily condition of the untrained recruit with that of a man who had been through a course of drill and physical exercise, he said that carefully graduated exercises were necessary and that five hours' training a day was sufficient for the recruit until he had got into very hard condition. The best value was got out of muscular exercises if they were made as interesting as possible; when they took the form of games the psychological factor helped in producing physical results. If the training was successful, the recruit felt, looked, ate, and slept well. After an initial fall, his weight increased and the chest capacity developed. The back muscles must be symmetrically trained, not with a view to great strength, but in order to obtain equal development on the right and left sides. Danger signs during training were enlargement of the heart, either by dilatation or hypertrophy, and a weak, irregular, or dicrotic pulse. If the pulse failed to return to the normal within an hour after exercise, it showed that this was too severe for the stage the recruit had reached.

Food.

It was doubtful whether in the South African war the food value of the ration was sufficient; it represented 3,900 calories, thus comparing unfavourably with the 4,300 calories allowed for a convict on hard labour. In that war there was an enormous number of cases of debility and neurasthenia, and since then the well-known experimental marches had shown that the food allowance was insufficient. The food ration now stood at 4,855 calories, and only the Russian allowance was higher, being 4,891 calories. The official French scale was 3,064 calories, and the German 2,801, but there was little doubt that the German allowance had been increased since the outbreak of war. The ration of the British soldier was now sufficient for his needs. The reserve ration of 2,809 calories was a subsistence diet for a man at rest, but gave no margin for hard labour. Protein was now supplied in the form of frozen meat; this was a great advantage because better quality was secured than if half-starved animals were killed on the field. The cubes of meat extract were extremely valuable because they made soup rapidly, and the full value of the flavour that increased digestive capacity 20 per cent. was obtained. The caloric value of fat made it of great use; sugar should be given in the form of jam rather than chocolate, for the latter created thirst and was difficult of digestion. Jam, however, had no antiscorbutic effect, and the necessity of giving vitamines, particularly in the form of lime juice, was great where troops had no opportunity of getting fresh vegetables. Troops coming freshly to the front and being put on bully beef for the first time suffered from sore gums, and this had been mistaken for a scorbutic condition. The regular food ration could be usefully varied by giving the Maconochie ration once a week; for this purpose it was worth the 30 per cent. extra weight involved in its transport.

The Rum Ration.

The rum ration raised the whole alcoholic problem, on which it was necessary to keep an open mind—a quality not always shown by those interested in promoting temperance. As a food equivalent alcohol certainly had a value; if less than 2½ oz. were given a day that quantity could be fully oxidized without being excreted in the urine as such; 210 calories could be derived from 2½ oz. of alcohol, an amount representing a considerable fraction of the total value of the ration. Alcohol could be given immediately on occasions when perhaps fires could not be lit for cooking for fear of drawing the enemy's fire. Alcohol was a valuable gastric adjuvant; its mental influence was very stimulating, and talk about the little tot of rum awaiting them had a marked effect in bringing the men to camp in quick time. The ration gave a sense of warmth, caused the men to digest food well, and had a slightly soporific effect. If a man went to bed immediately it was difficult to see that alcohol could do him any harm.

On the other hand, alcohol undoubtedly had a depressing effect upon the physiological resistance. When given to Barbary sheep it increased their susceptibility to inoculated anthrax. It was objected that the caloric value of alcohol was better supplied by soup or cocoa. If these were readily available he would far rather the men had them, but otherwise was strongly in favour of their having alcohol. The objections that alcohol caused loss of heat and lowered resistance were met if it were only given just before sleep. Other objections to alcohol were that it produced quarrelsomeness and affected those on outpost duty. Great stress was rightly laid on its moral influence, especially in the case of dipsomaniacs. The medical officer who urged that alcohol should be given took a very considerable responsibility in these cases. A difficulty was that drinkers bought the allowance of abstainers, and this led to indiscipline; purchase of rations in this way should be made a serious offence.

Tobacco.

There would be hardly any ill effects from tobacco as long as the smoker received his ration and did not get an enormous number of cigarettes.

Clothing: "Frost-bite."

As to clothing, Major Lelean said it was a fallacy to suppose a red shirt was useful in warding off the ill effects of actinic rays. A layer of blood less in thickness than that represented by the blood in the human veins was sufficient to shade off the actinic rays. When a man was in an upright posture and the rays of the sun fell obliquely, the spinal cord was sufficiently protected; but it was desirable to have an aluminium flap at the back of the helmet. When soldiers had to fight up to their knees in water it was necessary to devise special methods of protection. Quite recently 2,000 men were lost to the firing line in one week from "frost-bite," and it was calculated that half would never return to it. Up to January 24th, 9,175 casualties occurred from this cause. He showed various experiments showing the value of the application of fats which did not melt at the body temperature; but said that in his view the problem had been solved by Professor Delépine, who had devised a special silk stocking, made of ordinary China silk, rendered impervious by soaking in linseed oil, the fabric being afterwards rubbed with talc to prevent adhesiveness. This was worn over one sock, another being placed over the silk stocking before the boot was put on. The material did not get into ridges, and the stocking reached above the knee. The material was quite cheap, and he thought that next year no casualties need occur from "frost-bite."

THE late Mr. Thomas Bryant, F.R.C.S., left estate valued at £652.

British Medical Journal.

SATURDAY, FEBRUARY 27TH, 1915.

RADIUM THERAPY.

THE reports published elsewhere in this issue from the Radium Institute in London and from the Radium Department of the Edinburgh Royal Infirmary will be read with interest and curiosity. It has not been possible to reproduce the whole of Mr. Pinch's voluminous report, but all his conclusions or summaries are given. The full text of the report, containing clinical notes of many interesting and instructive cases, will, we are informed, be sent to any medical man who applies for it to him at 16, Riding House Street, London, W. Treatment is given there free to patients who cannot afford to pay, and on payment to those who can; two clinics are held daily, one in the morning for the latter, and the other in the evening for the former. We are informed that the number of treatments given during the year was 6,453, and that of these 2,481 were paid for, and 3,972 were given free to necessitous patients. No case is seen without a doctor's recommendation, and no case of malignant disease except rodent ulcer is treated unless the condition has been pronounced inoperable or the patient has definitely refused operation. The exception is due to the fact, which seems now well established, that rodent ulcer is in a large proportion of cases curable by radium without operation. Of the 65 cases treated to a conclusion at the Institute in London last year, 41 were returned as apparently cured, 22 as improved, and only 2 as not improved. It should be noted that only one case which applied for treatment was not treated, although in some the destruction of tissue was so great that no hope of satisfactory repair could be entertained; this, it appears, was particularly true of old-standing cases, which had been treated for many years by x rays, zinc ionization, or carbonic acid snow. Dr. Dawson Turner reports that of the 9 cases treated to a conclusion at the Edinburgh Royal Infirmary all were cured. Three others which applied have not, he says, been long enough under treatment for this effect to be produced.

There is some difficulty in finding the proper nomenclature for describing the results in cases in which they are conspicuously good. Mr. Pinch does not apply the term "cured" to any case which can be classed as one of malignant disease. He is, however, able to say that 9 cases other than those of rodent ulcer were "apparently cured," and that 130 were improved. The improvement in some cases was, we are informed, so marked that they might with honesty be called cured. This is undoubtedly a most remarkable result when it is remembered that for most of the cases which apply for treatment radium is a last hope, and that a large proportion appear quite desperate.

As was no doubt to be expected, the number of cases of carcinoma of the breast was larger than that of any other single malignant condition. Nearly all the cases were examples of recurrence after operation, for the policy of declining to treat operable cases is rigidly adhered to—unless the patients have absolutely refused to submit to operation. The number of instances in which such refusal has been persisted in seems to have been small. The number of cases of carcinoma of the breast treated to a conclusion during 1914 was 67; of these, 8 died, 1 abandoned treatment, and 17 were not improved by it; of the 41 remaining 40 were returned as improved and 1 as apparently cured. Taking the three reports which have been issued since the Institute was opened in August, 1911, it appears that altogether 224 cases of carcinoma of the breast have been treated, that 32 of these died during the period to which the several reports referred, that 27 abandoned treatment, that 47 were not improved, and that 114 were improved, and 4 apparently cured. The reports being founded on observations made during a particular year do not contain much evidence as to the length of time for which the improvement or apparent cure endures, and it would be interesting if on some future occasion those in charge of radium departments found it possible to follow up the cases and report upon their condition some years after the treatment was concluded. Mr. Pinch tells us, indeed, that a few patients have been under treatment at intervals of three or four months since the opening of the London Institute, and states that a stage in the treatment of such cases is reached sooner or later when the response to radium fails and the benefit derived from it becomes negligible, but this, of course, is a rather different point.

Taking again the three reports, it appears that 104 cases of carcinoma of the uterus have been treated; of these, 9 died, 11 abandoned treatment, and 17 were not improved, leaving 63 improved and 4 apparently cured. Again, taking carcinoma of the rectum, it is found that 111 cases have been treated, of whom 10 died, 17 abandoned treated, and 29 were not improved, leaving 54 improved and 1 apparently cured.

Both Mr. Pinch and Dr. Dawson Turner record some cases of more or less uncommon diseases which have been under treatment. Thus Dr. Dawson Turner records two cases of exophthalmic goitre benefited by treatment, and Mr. Pinch has had four cases of adenoma of the thyroid which were improved, as well as one of disseminated sclerosis, which also was improved. The use of radium emanation dissolved in water in the treatment of arthritis deformans has been continued by the London Institute with results which are regarded as encouraging, inasmuch as out of 168 cases treated during 1914 there was improvement in 91.

The general observations upon the method of application of radium and its emanation with which Mr. Pinch opens his report contain many observations which will, we have no doubt, be of great practical value to those who have the control of the administration of radium for therapeutic purposes, but to the majority of the profession his summaries of the results obtained in various conditions will be of most interest. We hope that he may find leisure when preparing his next report to deal in general terms with the whole series of cases which have passed through the Institute since it was opened.

THE THERAPEUTIC VALUE OF ATMOSPHERIC AIR.

THE Smithsonian Institution in Washington has for its object "the increase and diffusion of knowledge among men." In pursuance thereof it offered a valuable prize in the year 1908 for the best treatise on the relation of atmospheric air to tuberculosis, and the essay submitted by Dr. Guy Hinsdale, of

Hot Springs, Virginia, being adjudged to be one of the best, has now been revised by the writer and published by the institution.

Although written but six years ago, a great deal of revision has been necessary. Many fresh observations have been made, both in America and in England, upon the actual chemical action of atmospheric gases upon the human body under normal and abnormal conditions. The beneficial effects of open-air life in retarding the progress of tuberculosis are now manifest to every one, but the actual chemical effects of foul air upon the human organism are by no means easily understood, and experimenters have as yet furnished us with no common basis of agreement. The prevalent idea that the maintenance of a constant proportion between the amount of oxygen and carbon dioxide is an all-important factor has been disposed of by the interesting experiments of Leonard Hill and others, who have shown that air in a confined space overcharged with carbon dioxide is by no means irrespirable so long as it is kept in movement.

It has been shown that the feeling so often experienced in confined spaces is more dependent upon the stagnation and heat of the air than upon its chemical composition. Thus ventilation, in the sense of continuous change of air, is an all-important factor, even though the air itself does not fulfil the recognized chemical requirements. A recent American writer, after full consideration of the subject, maintains that we have at the present time no adequate scientific explanation of the health-stimulating properties of fresh air. Much has been said in times past as to the therapeutic value of forest air, and as regards its freedom from bacteria there is general agreement. The supposed virtues of the exhalations from the trees do not rest upon any scientific basis, but they are deeply rooted in popular estimation, and doubtless serve to stimulate faith in the treatment carried out in the forest sanatoriums. Another time-honoured belief is that ozone has a healing or stimulating influence. Machines for the artificial production of it are widely advertised, but the results of experiments have shown that ozone possesses no bactericidal action, except in such strength as to be injurious to the tissues of the bacterial host. The ozonized air, diluted within the limits of safety, is harmless to the patient and the micro-organism in equal degree. The relief given by the inhalation of oxygen in certain cases of pulmonary or cardiac dyspnoea is manifest. The exact chemical changes by which such relief is afforded have been the subject of numerous but inconclusive experiments. No positive statements, therefore, are warranted to explain either the successes or the failures experienced in practice.

The air of the ocean, free as it is from micro-organisms, is no longer regarded with favour as a therapeutic agent, except when utilized from the shore. Its effect upon tuberculous disease in children is remarkable and has been abundantly proved, but it has not been explained. Not less remarkable is the influence of pure air and bright sunshine in mountainous countries. No greater contrast could be imagined than that between the child-patient of to-day, basking naked on his bed in the sunshine of Leysin, with snow-clad hills on every side, and the little strumous sufferer of a generation ago, pining and wasting away in his blankets in an overheated sick-room.

Structural facilities for the unrestricted employment of open air have been numberless. The balcony, the tent, the "shack," and the shelter, have been utilized all the world over. One principle guides them all: to provide free access of pure air to the lungs with adequate protection to the rest of the body in all climates where special protection is needed.

An exhaustive account of such appliances, well illustrated by photography, is appended to Dr. Hinsdale's essay,[1] and the essay itself well deserves the "diffusion among men" that the Smithsonian Institution have provided for it.

CO-OPERATION OF CIVIL AND MILITARY HEALTH AUTHORITIES.

AT a meeting of the Society of Medical Officers of Health on February 12th, at which the President, Dr. Herbert Jones, was in the chair, Professor Sims Woodhead introduced a discussion on the way in which civil health officers could best give assistance to the military authorities in time of mobilization or war. He pointed out that for the smooth working together of the civil and military authorities it was essential that there should be a free interchange of ideas, which could only be effected where there was a readiness to help; avoidance of bones of contention, which could only be done by a willingness to delimit spheres of observation as far as possible, and by accepting, without cavil or mistrust, slight invasions of those spheres; by subjection of official interests to the general convenience; and by mutual trust and forbearance. It was only on such occasions as the present war that it was realized how far-reaching and accurate was the knowledge gained by a medical officer of health. He alone could put the military authorities in possession of information as to whether a proposed camp site was dustless in summer or dry or damp in winter. He knew what places should be avoided, and had a knowledge of the character of the population of the localities in which undesirables of both sexes were concentrated; of the type and efficiency of the sewage and drainage of a particular area, the character of the soil, and the facilities for obtaining water supplies and the disposal of camp refuse. The military sanitary authorities could know little of the prevalence of epidemics in a district, and were entirely dependent on the M.O.H. for information vital to the success of their efforts to keep the troops healthy. Although the police controlled billeting arrangements, the information on which they acted was very largely supplied by the M.O.H., who in the course of his work must have acquired a wide knowledge concerning available accommodation, and of the ventilation, heating, lighting, and drainage of most of the public buildings. Speaking of cerebro-spinal meningitis, he said that he was strongly of opinion that it was a disease associated essentially with overcrowding and bad ventilation, and that the latter was the determining factor; also that it was no longer a gaol fever in civilized countries, and that it was a disease of the barracks rather than of the open camp, although when the weather was bad and tents good the conditions for its development even under canvas might not be wanting. He urged that those in charge of the exercising and training of young recruits should be warned that exhaustion due to overwork or lack of sleep was one of the most potent predisposing causes of the disease. Dr. Tew said that he had been able to lessen overcrowding in certain billets within his district, and found no difficulty in working with the military authorities. In dealing with verminous men it was important that a portable disinfector should be available and cheap bathing facilities provided. Dr. Veitch Clark said that in Croydon a large amount of disinfection had been carried out for the troops free of charge, and that some of the public baths were set aside for soldiers and sailors. In order to lessen the chance of contracting an infectious

[1] *Atmospheric Air in Relation to Tuberculosis.* By G. Hinsdale, A.M., M.D. Smithsonian Miscellaneous Collections. Vol. lxiii. No. 1. Washington: Smithsonian Institution. 1914. (Roy. 8vo, pp. 135; 93 plates.)

disease the military authorities had consented to make certain streets out of bounds. Dr. Bygott agreed that vermin among soldiers was very difficult to deal with, and thought it was most desirable that the military authorities should confer with the medical officer of health rather than with the local authority. Dr. R. A. Lyster feared that there would be a wave of cerebro-spinal fever throughout the country. He was not convinced that the disease was altogether connected with bad ventilation and overcrowding. He believed it was a carrier disease, beginning as a throat affection, and very like diphtheria in its mode of spreading. Dr. Macfadden said that on the initiative of the Local Government Board most excellent work was being done by medical officers of health in connexion with the food supplies of the troops. He agreed that men should not begin their day's work without food. Dr. Barlow was afraid that the military authorities did not always confer with the local medical officer of health, and regretted that when they did the advice given was not always followed.

CEREBRO-SPINAL FEVER.

In view of the fact that cases of cerebro-spinal fever have recently occurred in various parts of the country, the Local Government Board in England has issued a revised memorandum, drawn up by the medical officer, on the administrative and other measures which should be taken to prevent the spread of the disease. Special attention is drawn to the importance of arrangements by the sanitary authority for assisting medical practitioners to obtain an immediate diagnosis in suspected cases of the disease, for isolating patients suffering from it, for disinfection, and for the supervision of contacts. In view of the difficulty of diagnosis of early cases, the Board is prepared to undertake the examination in its pathological laboratory of cerebro-spinal fluid; the specimens should be sent as quickly as possible, and the hour at which it was collected should be stated. It should be accompanied by a short statement of the circumstances of the case, and should be addressed to the Medical Officer, Local Government Board, Whitehall. This arrangement, however, only applies to cases or suspected cases of the disease, and not to contacts, a qualification which will evoke some surprise. Sir William Osler, in his paper published in the JOURNAL of January 30th, p. 189, said that in a large proportion of cases the germ was transmitted by a healthy carrier. The Board, indeed, recognizes the importance of the examination of contacts, for it advises the local authority to make arrangements with a competent bacteriologist locally for the examination of swabbings taken from persons who have been in intimate contact with a patient suffering from cerebro-spinal fever. The disease is compulsorily notifiable throughout England and Wales. The notification should state the age and sex of the patient and the date of onset. The medical officer of health will then forward to the medical officer to the Local Government Board information in accordance with a schedule which is attached to the memorandum.

MEDICO-LEGAL ASPECTS OF THE "BRITISH PHARMACOPOEIA."

A PAPER, "Some medico-legal aspects of the *British Pharmacopoeia*," was read by Mr. H. Wippell Gadd at a meeting of the Medico-Legal Society on February 16th. One of the principal points discussed was that involved in the legal position of a pharmacist required to dispense a prescription on or shortly after January 1st containing ingredients the composition of which had been altered in the new *Pharmacopoeia*. Mr. Gadd pointed out that while technically a pharmacist must dispense the medicines of the current *Pharmacopoeia*, he would undoubtedly lay himself open to a charge of negligence if he did not exercise due care and skill in deciding whether the preparations of the old or the new *Pharmacopoeia* were required. The importance of the question depends, of course, on the great alteration in strength of certain potent remedies, notably tincture of strophanthus and tincture of nux vomica. The new *Pharmacopoeia* has now been legally in force for about seven weeks, and no cases of poisoning through the alterations in strength have been heard of, and it may be assumed that every one concerned has now become sufficiently familiar with the alterations to make danger unlikely. Another point touched on by Mr. Gadd was that by the alterations in strength in tincture of nux vomica and tincture of opium these preparations moved automatically from one part of the Poison Schedule to the other; the former being reduced in strength will no longer require the signing of the Poison Book when purchased, but must, of course, still be labelled with its name, the word "Poison," and the name and address of the seller. Tincture of opium, on the other hand, being increased in strength from 0.75 to 1.0 per cent. of morphine, now comes into Part I of the Schedule, and the signing of the Poison Book will be necessary for every sale. The importance of this is largely dependent on the fact that the synonym "Laudanum" is officially adopted, and therefore all sales of laudanum will have to be registered in future if the pharmacopoeial article be supplied, and if it be not the retailer must take special precautions to avoid committing an offence under the Food and Drugs Act. Mr. Gadd also took occasion to criticize the method of production of the *Pharmacopoeia*, and sketched out an alternative plan for its production by a British Imperial Pharmacopoeia Commission, the composition of which he described; he did not assert, however, that the *Pharmacopoeia* was in itself any the worse for its present method of production, or dissent from the general view that it adequately represents present-day knowledge.

WINES AND WINES.

THE proprietors of Winox seem recently to have been at great pains to attract the attention of the medical profession to their product. It is not, they say, "a patent medicine of secret composition. The full analysis is printed on the label of every bottle." The observant may, indeed, have seen reason to suspect that, since the term "secret remedies" found its way into the title of two books published by the British Medical Association, dealing with certain preparations,[1] it doth "something smack, something grow to," like Launcelot Gobbo's father, who was yet, as he said himself, an honest exceeding poor man and well to live. "The alcohol in Winox," it is stated, "is equivalent to that in well-matured port wine"; the extract of beef and malt used "contains 35 lbs. of lean English meat and 11 lbs. of malt in each gallon of extract," not, of course, in each gallon of the finished article, which, it is stated in the printed analysis, contains 187.8 per mille of alcohol (by volume). Stress is laid on the statement that the meat is "British and is artificially digested. . . . *Foreign* beef extract is often adulteration (*sic*) with mutton, rabbit, etc., etc." The proprietors are so impressed with the value of medical testimony to their product that in a circular recently issued to medical men they generously offer three guineas for a report on the results in three or more cases. Though we have ourselves the greatest respect for medical opinion, we are constrained to suppose the offer of three guineas generous because the report of the Select Committee on Patent and Proprietary Medicines and Medical Preparations contains the following passage: "It is stated that doctors' testimonials are secured by the offer of a free 2s. 6d. bottle for any poor person to whom the doctor may like to

[1] *Secret Remedies: What they Cost and What they Contain*; and *More Secret Remedies: What they Cost and What they Contain*. London British Medical Association, 429, Strand, W.C. (Price 1s. each; postage, 3d. each.)

send it, on his returning a signed coupon." We are quite prepared to be convinced that one vinous preparation is as greatly superior to another as such a preparation can be, and that the members of the Select Committee, had they had the opportunity of considering the methods and merits of Winox, would have been able to distinguish that case. The proprietors, indeed, themselves state that they "hold no brief for tonic wines in general; few contain *genuine* beef extract." Still, broadly considered, there is a certain similarity between its composition and that of other meat wines. Some, if advised for their health sake to take meat and malt and a wine containing alcohol equivalent to that in port wine, might prefer, after the manner of Dr. Cheyne, a steak, and a pint of beer, with port to follow. His, it is true, was something of a Gargantuan feast for modern tastes, but even to-day men do eat and drink such things, and it is a little difficult to think of the scientific theory which will explain why a preparation containing alcohol equivalent to that in well-matured port wine, with extract of meat and malt mixed with it, should possess virtues which the several ingredients served separately and only mixed in the stomach do not possess. Apparently, however, the extragastric mixture must, in the opinion of some medical men, be of superior efficacy to the intragastric. We have, in fact, in common with many members of the profession, recently been permitted the privilege of seeing copies of testimonials to the merits of the preparation. The proprietors frankly say, in their letter making the offer of three guineas, that they do not "require or expect that all these trials will be entirely favourable—'Winox' is no 'panacea'—but from the reports we send you we feel confident that a very large majority of such trials must be satisfactory, and on these grounds will pay for all without distinction." We are inclined to doubt whether, if it is medical opinion that the proprietors wish to influence, testimonials of the kind are worth the money, for they seem to have in common one feature which will make the judicious hesitate. The syllogism seems to be: A., being sick, took X.: A. got well. ∴ A. got well because he took X. This is an example of what a logician, we believe, would call the material fallacy—"*non causa pro causâ*." The sick man might have got well without taking X.; he might even have got well more quickly. The premisses do not warrant the conclusion that he would, but equally do not warrant the conclusion that he would not. It might, for instance, be argued that a man with gout who gave up vintage port, took to port from the wood, as some do, and lost his gout, might have got well even more quickly if he had taken to plain water. It seems, therefore, that the commendations in the testimonials are purely empirical. But empiricism, though sometimes inevitable, is not intellectually satisfying, and we are anxious to hear of some scientific theory which can be suggested to account for the conclusion. We venture to think that the medical men who have become so convinced of the therapeutic value of meat wines and meat-malt wines owe it to the profession—in fact, owe it to themselves—to give publicity to some scientific explanation of the faith that is in them. The evidence given on behalf of the British Medical Association before the Select Committee was to the effect that though the profession had been "culpably lax" some years ago about the giving of testimonials, it "has been educated up to a better standard." We hope so.

SHELLFISH.

The Local Government Board in England has issued under the Public Health (Regulations as to Food) Act, 1907, an Order, dated February 16th, requiring sanitary authorities to make regulations prohibiting the sale of shellfish likely to cause danger to public health. The Royal Commission on Sewage Disposal in its fourth report stated that a considerable number of cases of enteric fever and other illness were caused by the consumption of shellfish which had been exposed to sewage contamination. As opportunity has not yet been found for altering the law in the way recommended, the Order now issued has been made with a view to providing an alternative procedure under powers which the Board already possess. The regulations have been drawn up after consultation with the Fishmongers' Company. The Order gives power to the sanitary authority of a district in which shellfish layings are situated to close any layings in regard to which there is evidence that shellfish from such layings have actually caused infection or other danger, or are likely to be a source of danger to public health. The M.O.H. of such a district is instructed to examine the conditions of the layings and to report to the local authority any case in which they are so situated as to be liable to dangerous contamination, with a view to steps being taken under the regulations to prevent shellfish being distributed for sale for human consumption from such layings unless relaid in fresh water for a period sufficient to free them from contamination; the period suggested is not less than a fortnight. In accordance with the recommendation of the Royal Commission, the Board advises that any action taken with a view to the closing of a laying should be based rather on epidemiological and topographical considerations than on the results of bacteriological examination. The Order requires a sanitary authority of a district in which layings are situated to take action on receipt of a representation from another local authority in whose district the shellfish are consumed. If the local authority where the layings are fail to act, the local authority complaining will have an appeal to the Local Government Board; so also any person interested may appeal to the Board, and in either case the Board may require the local authority of the district in which the laying is situated to make such order in the matter as the Local Government Board may think fit. The Order comes into effect on March 1st next.

THE NIGHTINGALE STATUE.

On Wednesday, when sunshine, snow, and sleet alternated, as is so frequent in an English winter, London was cheered by the unveiling, very early in the morning, of the statue of Florence Nightingale. The Crimean Memorial has been moved back, up Waterloo Place, to the extent of 40 ft.; the statue of Florence Nightingale stands lower down, a little to the west of the memorial, while on the same level to the east is the statue of Sidney Herbert—Lord Herbert of Lea—which has been removed from its former site in the inner court of the new War Office. The three memorials form a good group, and it is only right that posterity should do justice to Sidney Herbert, who, as War Minister during the Crimean campaign, authorized Miss Nightingale's mission to Scutari. Mr. Arthur Walker's statue of Miss Nightingale bearing a lamp, which is of the antique type usual in statuary, does justice to that noble lady's memory. She stands quite upright, dressed after the fashion of 1854, unidealized, with the head very slightly bent and the chin turned a little to the right, as though looking on a line of beds in a ward. The right arm is bent, the lamp being held forwards; the left arm hangs by her side. There was no ceremony: a workman simply took down the covering which concealed the statue. Hundreds of persons on their way to business walked down Waterloo Place in the morning and mounted the pavement on which the monument and statues stand to inspect the group, and we need hardly add that it was to the Nightingale statue that every passer-by mainly directed his glances. As there is a lamp on the pavement in front of the group and a triple lamp on each side of the Crimean memorial, the whole will look very striking at night when the star of peace returns and the streets of London recover their brightness. It was meet that the

Nightingale statue should be set up when a great war is raging. It makes us feel how much our gallant men now, as well as in her time, owe to her; nor let us forget the War Minister, Sidney Herbert. Lastly, let us bear in mind the share which Sir William Russell, the war correspondent, played in the reform of army surgery and the dispatch of the lady, honoured in Waterloo Place, to the seat of war. As the *Times* points out, this is the first public statue erected in London to any woman not of royal birth.

TERRITORIAL EXCHANGES.

IN order to facilitate exchanges between medical officers of the Territorial Force, it is proposed to publish in the BRITISH MEDICAL JOURNAL notifications which may be received from such officers, stating their wish to effect an exchange. In our Service column (p. 402) suggestions are made with regard to the information which should be supplied, and in the same place the letter of the War Office to General Officers Commanding in Chief of Commands at Home, by which the system of exchange is at present governed, is reproduced. A letter has been addressed by the Medical Secretary, acting under the instructions of the special committee of the Association on war emergencies, to the Director-General, Army Medical Services, stating that these notifications will be published, but at the same time urging upon the War Office that much more could be done if it would establish a central department which should keep lists of officers desiring to exchange and those willing to be moved. It is believed that if such a department were established it would be in possession of all necessary information, and would find it relatively easy to make the necessary adjustments. These adjustments will not always be of a simple nature, inasmuch as in many instances, no doubt, an indirect exchange, involving the movement of several officers, might be necessary. In view of the great difficulties under which the medical profession is labouring, it is hoped the War Office will undertake this work, for the present at any rate. The question of exchanges is one of serious consequence to some of the Territorial medical officers who are kept away from their practices and to the members of the public they are accustomed to attend. It is believed that if the necessary machinery were available at the War Office, exchanges might be made which would enable the work of the army to be carried on as well as at present, while the civil population would be benefited by allowing Territorial medical officers to return to towns in which they have habitually practised.

SCIENCE AND ASSERTION.

THE Medical Committee of the British Science Guild has issued a resolution dealing with the question of inoculation for typhoid, and making special reference to the advertisements of the British Union for the Abolition of Vivisection upon which we have recently commented. The resolution takes particular exception to the statement that inoculation has been "proved to be an utterly useless and dangerous practice." It points out that the evidence in favour of inoculation is contained in a large mass of scientific literature written by many expert observers, and based upon hundreds of thousands of observations on men and animals. On the other hand, the Committee states that it knows of no scientific treatise of any value to the contrary, and does not believe that such a treatise has ever been attempted. It goes on to make certain observations which are of general application. "No scientific theorem," it says, "is accepted nowadays by scientific men without the consideration of a vast amount of evidence, generally accepted in innumerable scientific publications, the presentment of which even in abstract would fill whole numbers of any daily or weekly periodical. On the other hand, any ignorant or unreasonable person can express in a single sentence his disbelief of this evidence, and thus attempt to dissuade the public from availing themselves of the advantages which science has conferred. Those who are seeking to benefit humanity by medical research are therefore always placed at a disadvantage in public discussions of this kind because they cannot give a full statement of their arguments, except in a lengthy scientific form, whereas anti-scientists can always pretend in a few words that such evidence has been refuted." Returning to the specific subject, the resolution endorses the view of the medical military authorities who have expressed their extreme satisfaction with the results of antityphoid inoculation amongst our troops in the present campaign.

PHYSICAL EDUCATION AND INFANTS' WELFARE.

THE ninth annual report of the National League for Physical Education and Improvement states that its work in the year ended October 31st, 1914, underwent a phenomenal growth and development, largely attributable to the war. The outstanding feature of the year was the recognition by the Government of the valuable work done at the Infant Welfare and Maternity Centres. The association had secured to local societies the long needed financial assistance which had been the result of the recognition, and could not fail to have a great effect in raising the standard and extending the work accomplished by them. The grants in aid of the work were now based on approved expenditure, instead of on class attendances to the exclusion of Infant Consultations and Home Visiting, as was formerly the case when few societies applied for grants under these conditions. During the year 42 additional societies had been admitted to membership by the Executive Committee, raising the total number of affiliated societies to 131, and it is stated in a footnote that 13 more had joined after the close of the official year. The Mothercraft Competitions had increased, and the judges found marked improvement on the part of the individual competitors in their knowledge of mothercraft. The St. Pancras School for Mothers carried off the silver challenge shield for the year, the Fulham School for Mothers being second. The Right Hon. A. H. D. Acland drew public attention at the outbreak of the war to the necessity of saving infant lives, and succeeded in organizing a propaganda fund to enable the association to provide capable organizers of New Infant Welfare and Maternity Centres. The third annual meeting of the General Council, held in July at Liverpool, at the close of the first day's session of the National Conference on Infant Mortality, was very well attended, and several important resolutions were passed. Over two hundred voluntary workers were enlisted by the association as a result of appeals in the press, and of help rendered by the Women's Emergency Corps and the National Union of Women's Suffrage Societies. The list of publications issued by the league is long, the majority being specially designed for the use of infant welfare and maternity centres. Loose leaves, health mottoes, and a new health poster dealing with infant feeding are among the latest additions to the stock already in circulation. The general report of the National League insists that at no time since the existence of the league and its allies has there been more need for active propaganda work than during the present epoch of stress, and the draining of the manhood of the empire. The publication last year of the comprehensive report on School Clinics at Home and Abroad was, it is stated, instrumental in promoting the establishment of a largely increased number of these institutions during the past year. The chairman of the Executive Council of the League is Bishop Boyd Carpenter, and among the vice-chairmen is Sir Lauder Brunton, who must be proud of the success of an organization which owes its existence in very large measure to his initiative.

AGE AND EFFICIENCY IN WAR.

NAPOLEON said that a man ages quickly on battlefields. Speaking of one of his generals, he said at Austerlitz that Ordener was worn out, adding, "One has a short time for war. I am good for another six years, and then I shall have to stop." "Strangely enough," says Lord Rosebery in *The Last Phase*, "his judgement was exactly verified. Six years and a month from Austerlitz (which was fought on December 2nd, 1805) would have brought him to 1812, to the Russian campaign, which if he had observed his own rule, he would have avoided." When his "star" was eclipsed for ever at Waterloo he was but 46 years of age, but he had been a broken man in body, and to an increasing extent in mental power, long before. Wellington fought his last battle at 46, Ney at 45, Nelson at 47; Alexander the Great was only 33 when death ended his career of conquest; Hannibal was in his forty-sixth year when he was finally defeated at Zama by Scipio. These ages are in striking contrast with those of the leaders in the present war. Sir John French and General Joffre are both over 60; Generals Pau and Galliéni are veterans of the war of 1870; General von Kluck is nearly 70, and Marshal von Hindenburg is 67. Yet it can scarcely be said that war is a less strenuous business than it was in the old days when armies in the field went systematically into winter quarters and hibernated, as it were, till the spring. It is recorded that an old Austrian general was greatly shocked when Napoleon made his armies fight regardless of the seasons; he complained of the innovation made by a young man who disregarded the recognized rules of warfare. One great cause of exhaustion on the battlefield in former days was doubtless the number of hours generals had to be in the saddle. The motor car has eliminated this potent factor of fatigue. Moreover the organization of telephone services in the field and along lines of communication, the use of wireless telegraphy, and the localizing agency of air craft, all tend to reduce the amount of bodily exertion required of a general. He can command his forces from an armchair with greater accuracy of direction than was possible when he had to keep tensely on the watch, "feeling" for the movements of the enemy. Wellington used to say that one great element in successful generalship was the power of guessing rightly what was "on the other side of the hill." Now that everything can be seen there is no need to guess, and thus another cause of mental strain has been done away with. On the other hand, the knowledge that one's positions and movements are equally visible to the enemy makes the game of war perhaps more difficult than it was before contending armies groped for each other in the dark till they came into actual touch. But if it still lays a heavy tax on the mental energies of a commander, it is certainly less wearing to his bodily frame. The course of history would have been different if Napoleon had had a motor car, with the adjuncts of the telephone and the telegraph.

THE SPECULUM MATRICIS.

THE September number of the *Journal of Obstetrics and Gynaecology of the British Empire* contains an article by Mr. Alban Doran on the *Speculum Matricis*, based on a sample of that instrument, dating from the sixteenth century, in the loan collection of obstetrical and gynaecological instruments in the Museum of the College of Surgeons. A photograph of the instrument is given beside another photograph of its prototype, the Pompeian speculum, with photogravures of the woodcuts representing the speculum matricis in Gersdorff's *Feldtbuch der Wundartzney* (1526), and Rueff's *De Conceptu et Generatione Hominis* (1554), and of the title pages of those interesting old treatises and of *The Expert Midwife* (1637), "translated [from Rueff] into English for the generall good and benefit of this nation." Mr. Doran traces the gradual development of the speculum matricis, which was a vaginal speculum, not a uterine dilator as erroneously believed by many modern obstetricians. From it arose Coutouly's uterostomatome, itself the parent of Greenhalgh's long-discarded metrotome, while another of its offsprings is the well known Weiss's three-bladed dilator, the parent of cognate instruments still in use. One hundred years ago, as Dr. David Davis testified in his plates, a vaginal speculum worked by Weiss's mechanism, and clearly a development of the speculum matricis, was in general use in England.

Medical Notes in Parliament.

Pay and Allowances of Army Medical Officers.—Mr. Robinson asked whether, in view of the fact that medical men fresh from the schools received 24s. a day—more than a major's pay—whilst medical officers who had for years been training with the Territorial Force and who had in many cases left large practices received only the pay of their rank and neither the allowances granted in the field, the £50 gratuity at termination of the war, nor prospect of pension, inquiry would be made with a view to more equitable treatment being given to the more experienced officers. Mr. Baker replied that, as he had already explained in answer to Mr. Walter Guinness (JOURNAL, February 13th, p. 307), it might be found necessary to give special rates to officers commissioned on emergency, but there was no intention of making this universal. A major in the Royal Army Medical Corps received 28s. a day in pay and field allowance, while the medical officer specially commissioned received 24s., inclusive of all cash allowances. Mr. Bridgeman asked whether the large amount of money these medical officers were losing in their practices was recognized, and whether the feeling of injustice which was caused would be seriously considered. Mr. Baker said: The hon. member is right in saying that a great many medical officers have made very considerable sacrifices; but I am afraid it is quite impossible to contemplate individual sacrifices. Mr. Bridgeman: Is there any reason why those who did their duty before the war began and were ready at once should make sacrifices rather than those who joined after the war began? Mr. Baker: They are being treated like all other Territorial officers.

Territorial Force: Officers' Outfits.—Sir Francis Lowe asked why an officer of the Territorial Army, who joined before the outbreak of war and had since volunteered for service abroad, did not receive the same allowance for for service uniform and kit as those who had joined since the war broke out. The Financial Secretary to the War Office said that officers in the Territorial Force having received such outfit grants as they were entitled to on entry, were expected to maintain in a serviceable condition the necessary uniform and kit for foreign service.

Royal Navy: Temporary Surgeons.—Lord C. Beresford asked whether young medical officers were entered into the navy as temporary surgeons over the heads of surgeons of the Royal Naval Volunteer Reserve, and, on appointment, ranked as senior to those officers; whether very many of these temporary surgeons had lately been students under the surgeons of the Royal Naval Volunteer Reserve, many of the latter officers being consulting surgeons with responsible hospital appointments in civil life; and whether the Admiralty would take steps to have this disability removed. Dr. Macnamara said that the facts were as stated. They were now receiving the consideration of the Board.

Sickness among Troops.—Lord C. Beresford asked whether rheumatism, ague, and weak heart from the effects of rheumatic fever brought about by service at the front were included as casualties. Mr. Tennant said that

the figures recently given by the Prime Minister were confined to battle casualties and did not include cases of sickness. The latter were, however, reported and notified to the relatives in precisely the same manner as other casualties. A further question as to whether they would get the same class of pension as other casualties was deferred. Sir Alexander Henderson asked the number of cases of pneumonia among the men training in the military camps in England and Wales during the months of August, September, and October, the number of deaths, and the number who had been discharged as physically unfit for further military service owing to having suffered from this disease. Mr. Tennant said that the number of cases of pneumonia occurring in camps in England and Wales during August, September, and October was 494, the number of deaths 68, and the number discharged from the service 10.

Antityphoid Inoculation.—In reply to questions by Mr. Chancellor, Mr. Tennant said that the names and particulars as regards inoculation of men in the British army who had died from enteric fever were furnished to the War Office, and he would consider the possibility of furnishing returns from time to time. He was not able to say whether inoculation against typhoid was compulsory in the German, Austrian, French, Belgian, Russian, and Servian armies, and no official returns of cases or deaths had been received by the War Office. Compulsory inoculation in the American army began, he believed, in March, 1911. Mr. Chancellor also asked whether statistics could be given from 1898 to date of the total number of inoculated and the number of cases of and deaths from typhoid fever in the American army. Mr. Tennant answered that the information was not readily available, and would take some time to compile. In reply to Mr. Peto, the Under Secretary of State for War said that he was not in a position to state the decision of the Department with reference to the inoculation against typhoid fever of officers and men of the land forces. Mr. Chancellor asked for particulars as to the companies of the army in France in which typhoid fever had occurred, the number of such cases, and the position at the front occupied by the companies at the time. Mr. Tennant said that to obtain the information it would be necessary to call for special reports from the medical officers in France, and appealed to Mr. Chancellor not to press that such a demand be made upon them at the present time.

Prisoners of War.—Lord Robert Cecil asked whether any agreement with the German Government had been reached for the release on both sides of all doctors who are prisoners of war. Mr. Primrose, the Under Secretary of State for Foreign Affairs, said an arrangement had been made with the German Government for the mutual release of civilian doctors, and negotiations were in progress for the mutual release of medical officers of the military and naval forces. In a note to the United States Ambassador of December 21st last, His Majesty's Government offered to release the German medical personnel on condition of reciprocity, and he hoped that an agreement on this subject would shortly be reached. Lord Robert Cecil asked whether it was proposed to lay upon the table any papers dealing with negotiations as to the release or conditions of internment of prisoners of war. Mr. Primrose said: With respect to soldiers, prisoners of war, no negotiations have taken place for their release, other than for the exchange of those incapacitated for further military service, and of officers of the medical services. The Foreign Office is endeavouring to arrange an exchange of invalid civilians. A White Paper on the conditions of the internment camps in Germany will be published in due course from the information in possession of His Majesty's Government.

Vaccination: Conscientious Objectors.—In reply to Mr. Snowden, Mr. McKenna said that in ordinary circumstances it rested with the father, as having the legal custody of the child and therefore responsible for its vaccination, to make the statutory declaration as to conscientious objection, but if, in the father's absence on military service, the mother had the control of the child, and became responsible for its vaccination, it would be open to her under the Acts to make the statutory declaration.

Relief of Distress in the Professional Classes.—In reply to questions on this subject the President of the Local Government Board said that provision was being made by various voluntary organizations with which the Professional Classes Subcommittee of the Government Committee for the Prevention and Relief of Distress were in frequent communication. All grants for the relief of civil as distinct from the military and naval distress were made through that committee.

Telephone Service (Staff Sickness).—In answer to Mr. W. Thorne, Mr. Hobhouse said that if any medical attention was required by a telephonist who was indisposed, either on arrival or subsequently, such attention was given by a medical officer of the department. No official complaint, either as to delay or other arrangements, could be traced. There had been a considerable amount of minor sickness lately, and a consequent congestion of patients and some regrettable delay, though no one had been asked to postpone a consultation. It did not appear to be necessary to keep a medical officer in continual daily attendance, as there was always a trained nurse at the General Post Office South, and few of the cases were serious. A report on the whole question of medical arrangements at those centres where there was a large attendance of staff had been called for.

Street Accidents in London.—In reply to questions by Mr. Kellaway, the Home Secretary stated that the number of street traffic fatalities in the Metropolitan Police district and the City of London during January, 1913, was forty-three, and in January, 1914, thirty. In the last four months of 1913, fifty-seven persons were killed by motor omnibuses and twenty-five by electric tramcars; in the last four months of 1914, seventy-nine persons were killed by omnibuses and seventeen by tramcars. Statistics as to the number of vehicles using the streets during each period were not available.

University Education in London.—In reply to Mr. Rowlands, the President of the Board of Education said that, largely in consequence of the war, the proceedings of the Departmental Committee on University Education in London were in abeyance, and he was not in a position to make any statement with regard to the acquisition of a site for the head quarters of the university.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CANADA.

A CANADIAN committee has been appointed to work in co-operation with the British in its effort to relieve the sufferings of Belgian physicians and pharmacists. Among its members are the deans of the medical colleges, the presidents of the medical councils of the various provinces, and the editors of the medical and pharmaceutical jonrnals. The Committee has issued a circular requesting that local committees be appointed to collect subscriptions, and already over 560.00 dols. has been received by the treasurer. At a meeting held at the Toronto Academy of Medicine on January 8th, an executive committee was formed, with Dr. Herbert A. Bruce as chairman, Dr. D. D. J. Gibb Wishart as treasurer, and Dr. Walter McKeown as secretary. The committee includes other well-known names, among them that of the Honourable R. A. Pyne, Minister of Education for the province of Ontario; Dr. R. E. McKechnie, President of the Canadian Medical Association; Dr. James McArthur, President of the Ontario College of Physicians and Surgeons; Dr. H. B. Anderson, President of the Toronto Academy of Medicine; and Colonel G. Sterling Ryerson, President of the Canadian Red Cross Society.

NEWCASTLE.

A crowded meeting of medical men of the Newcastle and Durham districts, held at the Medical College, New-

castle, on February 17th, was addressed by Dr. C. Jacobs, Professor of Obstetrics in the University of Brussels.

Professor Rutherford Morison, who presided, stated that all the doctors and pharmacists of the North had been invited to the meeting, the object of which was to discover means of helping the Belgian doctors and pharmacists. These could only be helped pecuniarily now. The object of the Belgian Doctors' and Pharmacists' Relief Fund was to help towards their reinstatement, and it would not be long before they would get their country back.

Professor C. Jacobs said that the homes, villages, and towns of Belgium were destroyed, but though the Belgians were wounded they were unconquerable. Notwithstanding its "Kultur" Germany had been deceived, had made a mistake in invading Belgium. Whatever might be the outcome of this titanic struggle, Germany would be marked eternally as criminal. Germany had been deceived by the grandeur and glitter of her military staff. In Belgium now there were no Flemish, no Walloons, no Liberals, no Conservatives, and no Socialists. They were all one in the struggle for national liberty. Germany, in striking her cowardly blow, had coveted control of Belgian riches and treasures, and had feared Belgian competition with German trade and industry. His glorious land was as ruined as Pompeii; but the Belgians would sow new harvests, and through insistent endeavour build up a greater fortune in the future. They could never rest until their country was free and avenged. They knew these things would come, their national flag would fly again, and their gallant King Albert reign. Belgium would never die, never would Belgians lose the spirit to do to the last their duty as they had ever done it. As the spokesman of his Belgian colleagues, he appealed to the doctors and pharmacists to come to the aid of Belgian doctors and pharmacists on an impulse of international fraternity. Those who had remained in the captured towns had done so out of a sense of duty. They had suffered indescribably. Some had been taken as hostages, twenty-seven had been shot. Widows and orphans had been left deprived of everything. He called upon the medical profession of the whole world, except Germany, to rally to Belgium's help. He had been under German control for three months. Before the Germans took from him his motor car he had himself been able to see many atrocities. What the Belgians had told of the atrocities, he assured his audience, was not a hundredth part of what the Germans had done in Belgium.

A resolution of sympathy with Belgium and of thanks to Professor Jacobs, moved by Sir Thomas Oliver and seconded by Mr. G. G. Turner, was carried by acclamation.

A resolution, moved by Dr. Durant and seconded by Dr. James W. Smith, forming a committee to raise funds, was carried.

Professor Rutherford Morison was elected chairman, and Dr. James Don, 1, Grove Street, Newcastle-on-Tyne, and Mr. A. S. Percival, 17, Claremont Place, Newcastle-on-Tyne, the honorary secretaries. They are already able to acknowledge the following subscriptions:

	£	s.	d.		£	s.	d.
Dr. Amy Robinson ...	2	2	0	Dr. H. E. Armstrong	3	3	0
Dr. S. Fielden ...	1	1	0	Dr. J. R. Fothergill..	2	2	0
Dr. J. R. Foster ...	1	1	0	Dr. A. C. Park ...	1	1	0
Dr. T. L. Bunting ...	5	5	0	Dr. H. Widdas ...	2	0	0
Dr. H. Gibbon ...	1	1	0	Dr. W. Fairclough ...	0	10	6
Dr. W. C. Beatley ...	3	3	0	Dr. J. Shirlaw ...	3	3	0
Dr. J. G. Macaskie ...	1	1	0	Dr. J. Whyte ...	1	1	0
Dr. Thos. Aitchison	1	1	0	Dr. J. L. Speirs ...	1	1	0
Dr. A. S. Percival ...	5	5	0	Dr. H. L. Rutter ...	5	0	0
Dr. James Don ...	5	5	0	Dr. J. Taylor ...	1	1	0
Dr. H. C. Pearson ...	2	2	0	Dr. H. M. Gurney ...	1	1	0
Dr. A. C. Burnell ...	5	0	0	Dr. J. Gemmell ...	1	1	0
Dr. W. Forrest ...	1	1	0	Dr. G. Yeoman ...	2	2	0
Dr. G. W. Weir ...	1	1	0	Dr. A. N. Ross ...	2	2	0
Mr. Douglas ...	1	0	0	Mr. G. G. Turner ...	10	10	0
Professor Morison ...	10	0	0	Prof. R. P. R. Lyle...	10	10	0
Dr. G. H. Anderson...	2	2	0				

MANCHESTER AND DISTRICT.

An important meeting was held in the medical school at Manchester on February 18th, when Professor Jacobs delivered a stirring address to an interested meeting. Professor Archibald Donald presided. Professor Jacobs, in the course of his address, said that Belgium was once more the battlefield of Europe. The Belgians had to mourn the loss of countless dead, but they kept in their hearts an undying faith in the triumph of the Belgian cause. Belgian doctors and pharmacists had not been spared in the general suffering, and he appealed to the medical and pharmaceutical world to come to their aid. Duty had bound doctors and pharmacists to their posts in the entirely ruined localities. Some were carrying on their profession as best they could in the ruined remains of houses, and others had improvised other makeshift shelter. Some had had to work as navvies in order to have a few pence in their pockets; others had not seen bread for a fortnight, but had lived exclusively on potatoes. Others had a meagre bunch of straw laid on the bare ground as a bedstead, and he had seen medical men dressed in torn garments and their children in rags. One had to live on wayside herbs for three days and three nights, and his wife shared his fate. A professor of a university, bereft of everything, was in dire want of a bed, and another of equal academic standard was wandering haggard over the countryside, searching in vain for a beloved family. There had been, he said, 4,800 doctors in Belgium, and at least 1,000 of them were now absolutely poverty-stricken, and from 2,000 to 3,500 suffering cruelly through the war. Of the 1,800 pharmacists, at least 300 were unable to earn their living, and all, with very few exceptions, were deprived of the most necessary trading stock. The practitioners had given a lesson to the world of unfaltering energy, but now their breaking courage would have to be kept up. In this emergency he called on the medical profession of England to rally to their help.

The following subscriptions were received at the meeting:

First List.

	£	s.	d.
Rochdale Recruiting Doctors (per Dr. Kilroe, Dr. Kerr, Dr. Slack, Dr. Mitchell, and Dr. Wilton Mills)— ...	40	0	0
Anonymous ...	10	10	0
Sir William Milligan (second donation)...	5	5	0
Dr. Alfred Brown (second donation)	5	5	0
Mr. Burgess (second donation) ...	5	5	0
Dr. Donald... ...	5	5	0
Mr. Lindley Sewell...	5	5	0
Dr. J. Gray Clegg ...	5	5	0
Mr. Telford ...	5	5	0
Mr. P. R. Wrigley ...	5	5	0
Mr. Thorburn ...	5	5	0
Mr. J. P. Buckley ...	5	5	0
Dr. Reynolds ...	5	5	0
Dr. R. B. Wild ...	5	5	0
Dr. F. Rawlings ...	5	5	0
Dr. T. Arthur Helme	5	5	0
Dr. H. Clifford ...	5	5	0
Dr. W. K. Walls ...	5	5	0
Dr. W. Wardman ...	5	5	0
Dr. Cunliffe ...	5	5	0
Dr. Brockbank ...	5	5	0
A Friend	5	0	0
Dr. P. O. Watkin Browne	5	0	0
Dr. W. B. Anderton	5	0	0
Dr. C. W. Brown ...	3	3	0
Dr. Powell White ...	3	3	0
Dr. Judson Bury ...	3	3	0
Dr. B. Crawshaw ...	3	3	0
L.——	3	3	0
Dr. W. Percy Stocks	2	2	0
Dr. E. Bosdin Leech	2	2	0
Dr. Arnold Jones ...	2	2	0
Dr. Edwin Jackson	2	2	0
Dr. W. E. Fothergill	2	2	0
Mr. Wilson Hey ...	2	2	0
Dr. J. Milne ...	2	2	0
Dr. G. E. Loveday ...	2	2	0
Dr. W. Sankey ...	2	2	0
Dr. Lewis Crowe ...	2	2	0
Dr. E. Higson ...	2	2	0
Dr. W. Fletcher Shaw	2	2	0
Dr. J. Cryer ...	2	2	0
Dr. L. E. Scanlon ...	2	2	0
Dr. F. J. Wheeldon	2	2	0
Dr. Catherine Chisholm	2	2	0
Dr. Edmund Johnstone	1	1	0
Dr. J. Craig ...	1	1	0
Dr. R. H. Williams...	1	1	0
Dr. A. B. Fulton ...	1	1	0
Dr. A. G. Andrews ...	1	1	0
Dr. R. G. McGowan	1	1	0
Dr. John Watson ...	1	1	0
Dr. M. J. Chevers ...	1	1	0
Dr. A. M. Mitchell ...	1	1	0
Dr. W. MacGill ...	1	1	0
Dr. J. Healey ...	1	1	0
Dr. A. B. Bake ...	1	1	0
Dr. A. H. Buck ...	1	1	0
Dr. C. Wisken ...	1	1	0
Dr. J. Prince Stallard	1	1	0
Dr. J. W. Stenhouse	1	1	0
Dr. J. Craig ...	1	1	0
Dr. H. O. Harthan ...	1	1	0
Dr. J. H. Ashworth	1	1	0
Dr. L. Thorp ...	1	1	0
Dr. T. N. Orchard ...	1	1	0
Dr. H. H. Rayner ...	1	1	0
Dr. Jos. W. Roberts...	1	1	0
Dr. J. O. Barclay ...	1	1	0
Dr. James Laing ...	1	1	0
Dr. W. Steele Smith	1	1	0
Dr. J. R. Carver ...	1	1	0
Dr. W. F. Dearden...	1	1	0
Dr. G. K. Pitcairn ...	1	1	0
Dr. Florence Robinson	1	1	0
Dr. E. W. Floyd ...	1	0	0
Dr. J. W. Renshaw...	1	0	0
Dr. Miss E. Owen ...	1	0	0
Dr. B. Scott ...	0	10	6
Dr. Danziger ...	0	10	6
Dr. C. M. Stallard ...	0	10	6

THE CENTRAL BRITISH COMMITTEE.

The Treasurer of the Belgian Doctors' and Pharmacists' Relief Fund is able to announce that during the week ending Tuesday last the total subscriptions received, for the first time, exceeded £1,000. This is in large measure due to the receipt of an anonymous donation of £300 from Dunedin, of £250 collected in Sheffield, and of a second

donation, amounting to rather more than £200, from the Ontario Medical Association.

The donation, received through the Nursing Superintendent, of £100 from the nurses of the General Hospital, Rangoon, announced last week, consisted of part of the proceeds of a very successful War Relief Fund entertainment given by the nurses. The total raised was £120, and £20 was allotted to the fund for North Sea seamen and aviators, but the nurses desired that the larger part should be given to the Belgian Doctors' and Pharmacists' Relief Fund as an expression of their sympathy with a brother profession.

Subscriptions should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. They will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, when the sum actually received by the Treasurer amounted to £6,900. In this certain local funds and the Scottish and Irish Funds are not included.

Fourteenth List.

	£	s.	d.
"M. R."	2	2	0
Lieut.-Col. H. G. L. Wortabet, I.M.S....	3	3	0
Mr. A. R. Short ...	2	2	0
Mr. Arthur Edmunds	10	10	0
Mr. G. R. Turner ...	5	5	0
British Milk Products Co.	33	12	3
Dr. Rosa Bale ...	1	1	0
Dr. A. Veitch ...	1	1	0
Dr. H. E. Belcher ...	3	3	0
Greenwich and Deptford Division, B.M.A. (per Dr. C. G. Wallis, Hon. Sec.), first list—			
Dr. A. Lawrie ...	2	2	0
Dr. J. A. Mortimore	1	0	0
Dr. Thos. Berry ...	1	1	0
Dr. Beatrice F. Lovibond ...	2	2	0
Dr. A. J. Russell ...	0	10	0
Dr. H. A. Vernon ..	1	1	0
Dr. J. P. Parvis ...	2	2	0
Dr. W. H. Payne...	1	1	0
Dr. D. Clay ...	0	7	6
Dr. A. Kirby ...	1	1	0
Dr. H. S. Knight...	1	1	0
Dr. J. Matheson ...	1	1	0
Dr. M. McTaun ...	1	1	0
Dr. J. S. Davies ...	0	2	6
Dr. C. G. Wallis ...	1	1	0
Dr. R. L. Wilcox...	0	10	0
Dr. J. R. Frost ...	0	10	6
Dr. F. M. Turner...	1	1	0
Dr. C. H. Hartt ...	1	0	0
Dr. C. G. Gooding	1	1	0
Dr. A. E. Crabbe...	0	10	6
Dr. A. Purvis ...	1	1	0
Dr. S. W. Thompson	1	1	0
Dr. A. T. Drake ...	1	1	0
Dr. C. Parke ...	1	1	0
Dr. V. Gideon ...	2	2	0
Dr. M. E. Tressider	1	1	0
Dr. J. Mackern ...	2	2	0
Dr. D. F. Burney...	1	1	0
Dr. C. H. Fernie ...	1	11	6
Dr. J. B. Saundry..	0	10	0
Dr. F. E. Wilson...	1	1	0
Dr. A. Fothergill...	1	1	0
Dr. W. D. Wiggins	1	1	0
Dr. G. B. Goodall..	0	5	0
Dr. R. S. Barker ...	0	10	6
Dr. W. H. Reed ...	1	1	0
Dr. S. D. Bhabha..	1	1	0
Dr. R. E. Scholefield	1	1	0
Dr. G. Nelson ...	1	1	0
Dr. W. Scott ...	1	1	0
Dr. W. S. Carpenter	0	10	6
Dr. R. J. Black ...	1	1	0
Dr. E. Spencer Evans	1	0	0
Lieut. P. E. Adams, R.A.M.C.... ...	2	2	0
Ontario Medical Association (per Dr. J. Gibb Wishart), second donation	205	11	11
Mid-Staffs. Division, B.M.A. (per Dr. T. D. Stuart Shaw, Hon. Sec.)—			
Dr. T. M. Rowland	0	10	0
Dr. T. N. Cookson	0	10	0
Dr. L. Gray ...	0	10	0
Dr. W. M. Clendinnen	1	1	0
Dr. A. E. Hodder	0	10	0
Dr. H. M. Morgan	1	0	0
Dr. J. K. Butter ...	0	10	0
Dr. C. J. Armson...	0	10	0
Dr. F. Armson ...	0	10	0
Dr. Bull	0	10	0
Dr. W. H. Horton	1	1	0
Dr. Stirling Christie	2	2	0
Dr. L. S. Tomkys	1	1	0
Drs. W. G. Lowe and Bradbury ...	1	1	0
Dr. R. Freer ...	1	1	0
Dr. J. Priestley ...	2	0	0
Dr. R. Holton ...	1	1	0
Dr. Thos. Dixon ...	1	1	0
Dr. Bradford ...	0	10	6
Dr. Wm. Reid ...	1	1	0
Dr. H. W. Gosse ...	1	1	0
Dr. J. C. Mackenzie	1	1	0
Dr. A. H. Shaw ...	1	1	0
Drs. Salt and Lowe	1	1	0
Dr. T. D. Stuart Shaw	1	1	0
South-Eastern Counties (Scotland) Division, Edinburgh Branch, B.M.A. (per Dr. M. J. Oliver, Hon. Sec.)—			
Collected by Dr. J. J. McMillan—			
Dr. J. C. Johnstone... ...	0	10	0
Dr. Critchlow ...	1	1	0
Dr. McMillan ...	1	1	0
Collected by Dr. A. J. Campbell—			
Dr. McWatt ...	1	1	0
Dr. McVie ...	1	0	0
Dr. J. McWhir ...	0	5	0
Collected by Dr. P. J. Henderson—			
Dr. Doig ...	2	2	0
Dr. Henderson ...	2	2	0
Dr. Muir ...	2	2	0
Dr. Somerville ..	2	2	0
Dr. Menzies ...	1	1	0
Dr. Stevenson ...	1	1	0
Dr. Tyrrell ...	1	1	0
Dr. Wilson ...	1	1	0
Collected by Dr. Davidson—			
Dr. Fleming ...	1	1	0
Dr. Lauder ...	1	1	0
Dr. Davidson ...	1	6	6
Mr. and Mrs. R. V. Mather ...	1	0	0
Mrs. Scott ...	1	0	0
Miss Mielrie ...	0	10	0
Mr. W. M. Alexander ...	0	10	0
Mr. John Maxwell	0	10	0
Mr. A. Gilchrist	0	10	0
Dr. Jeffrey ...	0	10	6
Dr. Hamilton-Hume ...	0	10	6
Rev. J. Cowan ...	0	5	0
Mrs. Charters ...	0	5	0
Mr. J. B. Nichol	0	5	0
Mrs. McArthur...	0	5	0
Dr. G. Henderson	0	18	6
Collected by Dr. Young—			
Dr. Marr ...	1	1	0
Dr. Rogerson ...	0	5	0
Dr. Young ...	1	1	6
Contributions sent to Hon. Sec.—			
Dr. P. C. McClagan	1	1	0
Dr. Oliver ...	0	10	6
Dr. Bernard B. Gough	1	1	0
Dr. John Matthews	5	5	0
Mr. F. A. Juler ...	2	2	0
Dr. Agnes Henderson	5	5	0
City Division, B.M.A. (per Dr. C. F. Hadfield, Hon. Treas.), further list—			
Dr. E. L. Taylor ...	1	1	0
Dr. T. M. Martin...	1	1	0
South Staffs. Division, B.M.A. (per Dr. H. C. Mactier, Hon. Sec.), third list—			
Dr. A. H. Carter ...	1	1	0
Mr. J. A. Wolverson	0	10	6
"M.D., M.R.C.P. Lond."	1	1	0
Dr. W. G. Savage ...	1	1	0
Dr. H. Comer Renshaw	5	5	0
Dr. E. A. Edelsten ...	1	1	0
"U.C.A.L.", per Mr. Harold Miller ...	82	0	0
Mr. W. A. H. Naylor	1	1	0
Mr. J. C. Wiggin ...	1	1	0
Mr. J. A. Cope ...	0	10	6
Mr. J. T. Mountain...	0	10	6
Mr. and Mrs. Herbert Antcliffe, result of whist drive ...	5	0	0
Mr. J. L. Murgatroyd	0	5	0
Mr. W. White ...	0	5	0
Mr. J. O. Thomas ...	0	5	0
Hampshire Pharmacists' Association, collected by (per Mr. F. E. Bilson)—			
Hampshire Association	2	2	0
Mr. A McConachie	0	5	0
Mr. W. Andrews ...	0	1	6
Mr. F. A. Monk ...	0	10	6
Mr. W. E. Kirkman	0	5	0
Mr. S. G. Bartlett	0	5	0
Mr. C. H. Barker...	1	1	0
Mr. C. Polgreen ...	0	5	0
Mr. W. I. Gradidge	0	5	0
Mr. F. Oram ...	0	5	0
Mr. Harry Wilson	0	10	6
Mr. A. H. Owen ...	0	5	0
Mr. B. C. Jukes ...	0	5	0
Mr. G. H. Gare ...	1	1	0
Mr. W. J. Dodridge	0	5	0
Mr. F. Wainwright	0	5	0
Mr. A. E. Chaston	0	10	0
Birmingham Local Committee (per Dr. R. Saundby, Hon. Sec.), eighth donation—			
Dr. and Mrs. Cyril R. Lunn (proceeds from an "At Home" organized by Mrs. Lunn)	12	12	0
Dr. Cordley Bradford	1	1	0
Dr. Douglas W. Eshelby ...	1	1	0
Dr. J. A. Brown ...	1	1	0
Dr. Beatson Hird	1	1	0
Dr. H. R. Forrest-Hay (additional)	0	10	0
Sheffield and District (per Dr. A. E. Naish, Hon. Treas. Sheffield Fund for Belgian Doctors and Pharmacists) ...	250	0	0
Dr. A. Graham Bryce	1	1	0
Dr. C. C. Harris ...	0	10	0
Dr. H. Faithful Smith	2	2	0
Norwich Division, B.M.A. (per Dr. G. P. C. Claridge, Hon. Sec.)—			
Dr. Barton ...	1	1	0
Mr. A. J. Blaxland	1	1	0
Dr. Burton-Fanning	2	2	0
Dr. Chalmers ...	5	5	0
Dr. Claridge ...	1	1	0
Mr. A. Crook ...	2	2	0
Dr. Darrell ...	5	0	0
Dr. Greene ...	3	3	0
Mr. H. C. Nance ...	2	2	0
Dr. Starling ...	2	2	0
Dr. H. E. Taylor...	1	1	0
Tower Hamlets Division, B.M.A. (per Dr. W. H. F. Oxley, Hon. Sec.), second list)—			
Dr. G. P. Tooker...	1	1	0
Dr. W. G. Gillespie	1	1	0
Dr. M. Bernstein...	1	11	6
Dr. W. M. Feldman	0	10	6
Dr. G. Michael ...	1	1	0
Dr. E. B. Hastings	1	1	0
Anonymous from Dunedin (per Bank of New Zealand) ...	300	0	0

The following donations, sent in by Dr. Saundby on behalf of the Birmingham Local Committee, were printed in last week's list (p 342) as having been received from the Woolwich Division, B.M.A.: Dr. and Mrs. A. R. Forrest-Hay (proceeds of whist party), £9 5s.; Dr. A. Douglas Heath, £2 2s.; Dr. A. Vaughan Bernays, £2 2s.; Mr. T. H. Smith, £1 1s.; Dr. E. L. Bunting (per Dr. C. Pollard), £1 1s.; Dr. S. W. Haynes, £1.

INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments, contributed by the following donors since the publication of the last list:

Dr. A Hill Joseph, Bexhill-on-Sea.
Dr. W. T. Handley, London.
Dr. Mary C. Bell, London.
Dr. G. H. Colt, Aberdeen.
Dr. Leishman, Slough.
Dr. Purslow, Birmingham.

IT is announced that Dr. Philip Beck, head of the Austrian Army Medical Staff, recently died of typhus fever (*Flecktyphus*).

SO far, sixteen volumes of the *Transactions* of the International Medical Congress, London, 1913—namely, Sections III (i and ii), IV (i and ii), V (i), VI (i and ii), VII (i and ii), VIIa (ii), XI (i and ii), XIII (i and ii), XXIII and the general volume have been presented to the Library of the British Medical Association, and the Librarian will be glad to receive any additional volumes to complete the series.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[From a Special Correspondent in Northern France.]

FIELD AMBULANCE WORK.

IN a recent note on the field ambulances at the front it was suggested that nothing that had so far occurred seemed to render it desirable that officers in command of recently completed field ambulance units at home should depart from the system of training they had themselves employed on previous occasions, or which they had seen practised in camps of exercise. The reason for this is that if the men are thoroughly conversant with field ambulance work as described in the textbooks they will be equal to any and every duty that may be thrown upon them when they arrive at the front. It is true that they may have no occasion to practise in the field a good deal of what they have learnt, and that a simpler form of training would suffice if there were any certainty that throughout the war field ambulance work will continue to be conducted on its present lines. There is, however, no such certainty, and, though endeavours will doubtless always be made to establish tent sections in farmhouses or other buildings, it is quite likely that when the Germans have been pushed back into more devastated parts of Belgium, or into their own country, the knowledge possessed by well trained ambulance men on the subject of camp pitching, of the arrangement of ordinary and advanced dressing stations and rest posts, and of work on the march, will all have to be utilized.

There would seem to be nothing really novel in the work of field ambulances even as conducted at the front at the present time, and any one who studies the training manuals for himself and reads to some extent, perhaps, between the lines, can see that this is in fact true. Equipment schedules have, of course, had to be modified to meet the fact that seven motor ambulances have been substituted for an equivalent number of horse-drawn vehicles in each unit, and that the remaining three horse ambulances are each drawn by four horses. In addition, a motor-repair lorry now forms part of the equipment, and a commissioned motor transport officer has, I understand, been added to the personnel. The standing rules in regard to column marching may have to be modified, since motor vehicles cannot conveniently travel for any considerable number of hours at the regulation marching pace.

During active operations field ambulances are now treated as brigade units—that is to say, they receive their orders from the brigade commanders; they revert, however, to the position of divisional units when stationary. As was indicated in the previous note, there would seem to be considerable differences in the way in which commanding officers of field ambulance are employing their men. Some are devoting their whole energies to bearer work; others are utilizing their tent sections as clearing hospitals or using the personnel of such sections to strengthen that of some clearing hospital which is working close at hand. Others, again, are absorbing the energies of the men of their tent sections in forming rest stations and providing hot baths and dry clothes for the fighting troops on their return to billets after a turn of duty in the trenches. But there are, of course, many which are doing their work on very much the ordinary lines laid down for ambulance units attached to divisions which for the moment are on the defence. In such case, if already provided with automobile ambulances, they keep them with the tent section until after nightfall, and then send them forward to bring in the cases collected by the bearer section. Their horse ambulances, on the other hand, they keep with the bearer sections near the firing line if any shelter can be found for them, thus enabling them to start work the moment the onset of darkness makes this possible. The number of medical officers that take up permanent quarters with the bearer party near the firing line would seem to be usually four. Rations for the whole party are taken out to them each night by the motor ambulances. So long as the men forming the bearer parties remain in their dug-outs, or in whatever other shelter they have found for themselves, they are protected from rifle but not from artillery fire. The tent sections are kept too far away to be in danger from rifle fire, but are never out of heavy artillery range, and on more than one occasion have suffered from bomb-dropping aviators. During the earlier stages of the war there were heavy losses among the field ambulance units, but the bearer parties are now, I understand, positively forbidden to leave their shelters except after dark, and the general risk is thus considerably diminished.

Two officers of experience in field ambulance work in the present war have expressed to me the view that if any commanding officer of a unit still at home encounters serious difficulties in rendering the whole of his men efficient in all their possible duties in the time available he may be well advised perhaps to throw chief stress on stretcher drill and sanitation. Not only, they point out, is stretcher drill excellent for disciplinary purposes, but it is essential that the men should be so thoroughly conversant with it in all its details that they go through it almost automatically. In the field they have to work in silence and without orders. Stretcher drill is not a mere exercise, but teaches the best way of handling wounded men. As for sanitation, it is held to be desirable to pay special attention to this, partly because the men are commonly slow in absorbing its principles, and partly because good sanitation is on the whole more difficult to secure when tent sections are, as now, installed in standing buildings than it is when they do their work in a camp of their own.

MOTOR AMBULANCE CONVOYS.

The motor ambulance convoys, to which Sir John French made special reference in his recent dispatch, represent a new link in the long chain of medical units for the British army that lead from the firing line to the home hospitals. They are designed to obviate any difficulty in securing prompt and rapid removal of the sick and wounded from the field ambulances to the clearing hospitals. It was found necessary at first to rely in the main on a sufficient number of empty general supply and ammunition wagons being available to take back a load of sick and wounded when they had delivered their ordinary loads to the troops, and also on the general officer in command of the lines of communication being able to collect locally a certain number of suitable vehicles, and place them at the disposal of the clearing hospitals for the purpose. The officer in charge of the clearing hospital serving any division had at his disposal a certain personnel, but it used often to be difficult to carry out the work as satisfactorily as was desired. Now the whole of this duty is removed from his shoulders and placed in charge of an officer who has no other duties to perform, and a supply of vehicles designed for this work alone. Each convoy consists of fifty motor ambulances, together with a repair van, two or three supply lorries, a couple of motor cycles, and an automobile for the officer commanding.

The personnel consists, I understand, of a major R.A.M.C. in command, three junior R.A.M.C. officers, three motor transport officers, a motor transport driver for each vehicle with a corresponding number of orderlies, mechanics for repair work, two motor cycle dispatch riders, and a quartermaster with his ordinary staff. This, I believe, is the official constitution of a convoy unit. I have not yet had an opportunity of ascertaining all details concerning them, though I have often seen them at work, and they may not in all cases yet be complete. Each convoy is responsible for evacuating the sick and wounded of two divisions and transferring them to the connected clearing hospitals, and thence, as occasion requires, to the ambulance trains. The commanding officer establishes his head quarters in some position which he regards as likely to enable him to carry out his work easily, and keeps in touch by means of the telephone and his cyclists with his field ambulance and clearing hospital respectively. The convoys are usually divided into sections, but they do their work in combination or separately as the needs of the day may dictate.

TYPHOID FEVER.

On a recent visit to No. 14 Stationary Hospital, to which the great majority of all suspected cases of enteric fever amongst the British troops in France have hitherto been sent, I gathered that of all the cases eventually proved to

be "typhoid," between 50 per cent. and 60 per cent. have hitherto been found to be due to the *B. typhosus*, while the active organism in the rest has been more commonly paratyphoid B than paratyphoid A. As was indicated in a previous note regarding this hospital, it may almost be regarded as treating questions of diagnosis from two standpoints apparently distinct but in reality closely connected—the clinical and therapeutic, and the scientific and statistical. In all cases the diagnosis is primarily clinical; that is to say, no case originally sent into hospital as probably one of typhoid is ever labelled under any other title until it has been distinctly proved that it does not belong to some one or other form of enteric fever. So, too, in respect of treatment; every case admitted as one of typhoid and presenting any clinical phenomena reconcilable with a diagnosis of that disease, is submitted to the general treatment appropriate thereto, even though doubt may seem to be thrown on the nature of the case by any initial laboratory test which may be applied. A laboratory diagnosis is never allowed to supersede a clinical diagnosis in such way as to modify the treatment unless and until the laboratory evidence is absolutely overwhelming.

On the other hand, the authorities of the hospital never rest content with a clinical diagnosis. However typical the various symptoms may appear to be, and however clear a picture of typhoid, when taken together, they may seem to present, that term is not finally applied to it in the hospital records until its character has been precisely proved by laboratory methods; corresponding care is taken in dealing with cases which, from a clinical point of view, may hardly seem to justify a diagnosis of typhoid at all. Consequently, every case in which an initial diagnosis of typhoid is eventually proved to be justified ends by figuring in the hospital records under one of three headings—typhoid, paratyphoid B, paratyphoid A.

Of the reasons for dealing with diagnosis in this deliberate fashion, the first which comes to mind is the importance of not allowing any case of typhoid fever to escape recognition. This in existing circumstances might occur in default of extreme care. A large proportion of the troops at the front have undergone protective inoculation, and though knowledge of its effect on the clinical course of the disease, should it occur, is not complete, all clinicians out here agree, I think, that in an inoculated subject the marked clinical feature usually presented by a case of typhoid fever may be blurred. Another reason that suggests itself is that it is hardly legitimate nowadays to rest content with a mere diagnosis of "typhoid fever." It is most desirable that the clinical features peculiar to each of the three varieties already mentioned should, if possible, be ascertained. The general impression seems to be that in cases due to any one of the paratyphoid organisms the prognosis is better than in those due to *B. typhosus*. It may also, of course, be of direct importance in any individual case to be certain that the organism concerned is the *B. typhosus* should symptoms occur which in themselves would seem to call for the therapeutic use of Wright's antityphoid vaccine.

Laboratory Diagnosis.

To deal with the diagnosis of cases on the lines indicated involves a great deal of labour, but in the early future it seems likely that the desirability of its being undertaken will not be confined to military practice. In France a crusade in favour of the civil population seeking protective inoculation (by Vincent's vaccine) has already, I understand, met with some success; and in any case there will presently be scattered among the general population in Great Britain thousands of men who have undergone inoculation in the army. Besides this the work so far done at Wimereux tends to suggest that in the past an enormous number of cases diagnosed in private practice as typhoid fever must really have been paratyphoid. Should this presumption be sustained the profession at large will naturally wish to assist in establishing clinical and other criteria which will enable the more precise diagnosis to be made in future. Consequently it is worth while to consider briefly the steps that will have to be taken in municipal laboratories and elsewhere. They will depend greatly on the stage of the disease in any given case, but in all circumstances the task of the bacteriologist will be to provide an answer to the following question: Is there any conclusive bacteriological evidence that a particular patient is infected by any member of the typhoid fever group of bacilli, and, if so, by which of them? If he is asked to set to work on a really early case, cultures of the patient's blood may perhaps tell him everything he requires to know. Whatever the active organism concerned, "typhoid fever" would seem to be initially a blood infection, and in 70 per cent. or more of all cases general bacillaemia may be shown to exist until the portal circulation succeeds in segregating the organisms. The first step, therefore, may well be to make an attempt to get a bile salt broth culture from the patient's blood, and if it fails, to repeat it once or twice with fresh specimens drawn at different periods of the day. Should no growth be obtained under these conditions, the suggestion will be that the case is either one of typhoid which has progressed beyond the first week, or that it is not a case of any blood infection. If, on the other hand, growth results, and is found to consist of motile organisms, the inference will be that the case, if not one of typhoid, is at any rate one of bacillaemia of intestinal origin.

The next step may suitably be a subcultivation of the growth in some lactose-containing medium (say bile-salt lactose neutral-red agar). This will be fatal to all probable organisms other than typhoid, paratyphoid, and the *B. enteritidis* (Gaertner), since the rest will betray themselves by fermenting the lactose and turning it red. With the field thus reduced, it is comparatively easy to decide in favour of *B. typhosus* if this in fact be present, since its various sugar and other cultural reactions are definite. On the other hand, to distinguish the paratyphoid bacilli from one another, or from *B. enteritidis*, is a task of considerable difficulty, and in the end cultural methods must be supplemented by testing the agglutinating effect of standard typhoid, paratyphoid, and Gaertner antiserums on the bacilli in the cultures. Probably, indeed, the bacteriologist will think it worth while to apply these tests even before running his cultures through the sugar reactions, in order to be able to make a prompt interim report on the case.

Should a case not come into the bacteriologist's hands until the second week, blood culture methods are unlikely to give the desired information, but at that stage an ordinary Widal test may enable him, if the patient is not an inoculated subject, to decide forthwith that the case is one of typhoid. The test may also suggest an answer to the question whether the active organism be typhoid or paratyphoid, though no definite conclusion can be reached until the effect of the patient's serum on known cultures of the two paratyphoids has been ascertained. It seems, however, that a Widal reaction cannot invariably be obtained in typhoid fever of any type, and that even when it has been present at one stage it may disappear. Hence, even if a case comes into his hands at a stage when Widal reactions ought to suffice, the bacteriologist may have to go on to the laborious process of testing the faeces before he is able to answer even the first part of his question. He may also have to carry through the process not once, but several times, since there appear to be cases of true typhoid fever in which the presence in the stools of *B. typhosus* is intermittent. It is, however, the cases of possible typhoid in inoculated subjects that are most likely to cause the bacteriologist most labour. If they come early under notice and blood cultures can be obtained, well and good; but if, as is usual, no opportunity for their bacteriological examination occurs until the first week is over, it will almost certainly be necessary to proceed to testing the faeces, because in an inoculated person a positiv Widal reaction is invariably present. If, however, the strength of the reaction is found to increase rapidly in a person presenting symptoms of typhoid fever, the fact would be suggestive.

At Wimereux the scheme of investigation pursued is of a very elaborate character, for it is, no doubt, considered desirable to place any general conclusion that may eventually be drawn from the work that is being done there beyond the reach of technical criticism. Consequently the bacteriological investigation of any individual case does not cease when the clinical requirements are satisfied. The blood. the stools, the urine are all in turn examined by a variety of methods. In regard to blood examination, the routine methods at present in use seem to be to keep the blood specimens in ox bile for

twenty-four hours, and then cultivate on Conradi medium. Any resulting colonies are then tested against standard antiserums of the typhoid group, and also for their power of agglutinin absorption by the Castellani method. At the same time the usual series of subcultures are started, the work being carried through the whole of the sugar mediums, etc. Complement fixation is also used.

Clinical Diagnosis.

The officers of the Wimereux hospital are not at present prepared to formulate any opinion as to how the various forms of "typhoid" may be distinguished clinically for diagnostic purposes, but I gather that they share very fully the impression that paratyphoid fevers are much milder than true typhoid, and that if the latter ever occurs at all in an inoculated person (that is, one who has been twice inoculated within the previous two years) its course is favourably modified to a remarkable degree. It may be added that in the wards of this hospital the relative absence is striking of those facial and other phenomena which sometimes lead an old clinician to say "typhoid" to himself before he has even closely approached the patient. When it is learnt that a large proportion of all such cases are not true typhoid, the difference in the general appearance may seem to be explained, but one is disposed, nevertheless, to attribute some part of it to the nursing and dieting of the patients. They are sponged four times daily, not merely in cases with high temperature, but whenever the general condition of the patient suggests a considerable degree of toxaemia. In respect of dieting, the majority of the patients, in addition to receiving daily 3 pints of milk (containing added cream), are likewise given milk chocolate rubbed up into a paste. They are also given as much water as they can be got to drink.

When the time comes to form conclusions it will not be necessary to depend upon impressions, since a very complete record of every case is being maintained. There is a separate book for each class of case—typhoid, paratyphoid, typhoid in inoculated subjects, and typhoid cases on special treatment. Information on precisely the same points is supplied in every record. Furthermore, the facts of each case are set forth in such fashion that they are very easy to study and to compare, and each record ends with a statement as to the general character of the case, and an expression of opinion as to the effect of any special line of treatment pursued. Both the latter seem to be very carefully worded, and they represent, I learnt, the views not of one individual but of all those who were connected with the treatment of the case. In fact, should the work of this hospital be carried on on the present lines much longer, these records promise to be one of the most valuable contributions to the study of "typhoid fever" that have ever been compiled.

Vaccine Treatment.

The antityphoid vaccine of Wright is not being employed as a routine measure, but, nevertheless, has been used in quite a large number of cases. Apparently the only conclusion in respect of it that has yet been reached at this hospital is that its value should be gauged less by its effect on the temperature and pulse-rate than by its influence on the general evidence of toxaemia. I saw one case in which this vaccine seemed certainly to have proved of value in dealing with a local trouble. It was one of typhoid periostitis, which rapidly cleared up after an injection of a dose of vaccine into the swelling.

It may be hoped, perhaps, that presently the authorities of this hospital may find themselves in a position to test also a vaccine treatment which has been cautiously tried elsewhere on the suggestion of Mr. Sydney Rowland of the Lister Institute. I heard of it during a visit to his mobile laboratory, which was the subject of a recent note.

It differs from those of Wright and Vincent in that it is an autogenous vaccine uninfluenced either by heat or bactericides. It is prepared by withdrawing some blood from a vein under all due precautions against contamination, and cultivating it in sterilized broth for eighteen hours at ordinary body temperature. The bacillary contents of the broth are then calculated, and a dose of between one and three millions is injected into the patient's subcutaneous tissue. The expected result of this is an immediate rise of the temperature to the extent of several degrees Fahrenheit, followed by a fall below the original point and then by a steady ladder fall for several days. When this decline ceases the injection is repeated. The whole procedure is at present in a tentative stage, but the charts of two cases that I saw suggested that the treatment may prove to be of value. The theories underlying it are, in the first place, the consideration that experience as well as theory go to show that an autogenous vaccine is more likely to lead to production of effective antibodies than a heterogenous vaccine. Secondly, there is the view that the symptoms associated with typhoid fever only appear when the working capacity of the natural factories of typhoid antibodies or antitoxins—namely, the lymphoid tissue of the spleen, the liver, and the intestinal mucous membrane—is beginning to be overtaxed. Consequently good may be expected from starting a number of extra factories, and this may be done by enlisting the co-operation of the cells of the subcutaneous tissue by bringing bacilli into immediate contact with them. In any case, the treatment can do no harm, for three million bacilli as compared with the number already present in the patient's system are as a mere drop in the ocean.

Voluntary Hospitals.

The authorities of the Allied Forces Base Hospital, which was one of the first of the hospitals established at the Boulogne base, closed this institution rather over a month ago, and the Women's Hospital Corps has now followed suit in respect of its work at Wimereux. Most of the hospitals at Boulogne have been having a comparatively slack time for some weeks past, and I believe the military authorities consider that occasions on which hospitals worked on a purely voluntary basis will be able to do thoroughly efficient work in connexion with British troops in France will probably not recur. The personnel of the first-named hospital, which rendered most useful service under Lieutenant-Colonel Miles, has, I understand, been broken up, but this is not the case in respect of the Women's Hospital Corps. Most of its personnel has returned to England, but it remains an intact unit, and I am told that it may begin work again as a definite part of the army medical organization as soon as premises in or near London can be found and equipped for it by the War Office. The unit began its career in Paris in the middle of September, and an account of the excellent work it was then doing both for British and French wounded at the Claridge Hotel, under Drs. Garrett Anderson and Flora Murray, was given in these notes in the later part of October. This hospital remained working for the French until about Christmas, I believe, but meantime a branch was established at Wimereux, when the British forces took up their present position and the main stream of wounded was diverted from Paris. Before the Wimereux hospital was quite ready for occupation some heavy engagements threw a considerable strain on the military hospitals then established in Boulogne, and this led to the services of two members of the unit being offered to No. 13 Stationary Hospital, the now well-known Gare Maritime Hospital. They were accepted, and the two women doctors detailed for this duty Dr. Blandy and Dr. Jobson—have worked at this hospital ever since. This fact, coupled with the further fact that they have been invited to remain in France in their present position until the new hospital is ready to start, would seem to be as good testimony to the general excellence of the unit as any that could be desired.

Infectious Diseases among the French Civil Population.

A very large convent at Malissines, near St. Omer, has recently been transformed into an infectious diseases hospital for the benefit of the inhabitants of the towns and villages within the British zone of active operations. It is capable, I hear, of accommodating as many as 1,000 patients, and is under the administration of officers of the Royal Army Medical Corps, who have as their professional assistants some medical men belonging to the British Red Cross Society. The general staff includes a certain number of non-commissioned officers and men of the Royal Army Medical Corps and a large detachment of British Red Cross nurses. The expense of maintenance falls, I believe, on the British authorities.

SIR JOHN FRENCH'S DISPATCH.

A DISPATCH from Sir John French, dated January 14th, published as a second Supplement to the *London Gazette* of February 16th, is a continuation of his dispatch of November 20th, 1914, and brings to notice a long list of names of those whom he recommends for gallant and distinguished service in the field. Among the names mentioned are the following:

General Head Quarters Staff, etc.

Brunskill, Major J. H., M.B.
Dalton, Lieutenant-Colonel C. (died of wounds received in action).
Ensor, Major H., D.S.O., M.B.
Ferguson, Lieutenant-Colonel N. C., C.M.G., M.B.
Geddes, Colonel R. J., D.S.O., M.B.
Holt, Brevet-Colonel M. P. C., D.S.O.
Hughes, Major G. W. G.
Irvine, Major F. S., M.B.
Martin, Major J. F., M.B.
Meek, Colonel J., M.D.
Moores, Lieutenant-Colonel S. G.
Morgan, Major C. K., M.B.
Moss, Captain E. L.
O'Keefe, Colonel M. W., M.D.
Porter, Surgeon-General (temporary) R., M.B.
Sawyer, Colonel R. H. S., M.B., F.R.C.S.I.
Sloggett, Surgeon-General Sir A. T., Kt., C.B., C.M.G., K.H.S.
Swan, Colonel W. T., M.B.
Treherne, Colonel F. H., F.R.C.S.Edin.

Medical Services.

Barbour, Major J. H., M.B.
Bateman, Major H. R.
Beatty, Major M. C., M.B.
Bewley, Lieutenant-Colonel A. W.
Black, Major R. B., M.B., Reserve of Officers.
Bowlby, Colonel (temporary), Sir A. A., Kt., C.M.G., F.R.C.S.
Bradford, Colonel (temporary) Sir J. R., K.C.M.G., F.R.S., M.D.
Brazier-Creagh, Lieutenant-Colonel G. W., C.M.G.
Burtchaell, Lieutenant-Colonel (temporary Colonel) C. H., M.B.
Campbell, Captain J. H., M.B.
Chalk, Quartermaster and Honorary Major A. J.
Dennis, Major B. R., M.B.
Dwyer, Captain P., M.B.
Ellis, Major W. F.
Evans, Major C. R.
Evans, Major P., M.B.
Fell, Major M. H. G.
Glasse, Lieutenant (temporary) J. M., M.B.
Goodbody, Major C. M. (I.M.S.).
Hardy, Lieutenant-Colonel F. W., M.B.
Harrison, Major L. W., M.B.
Huntingford, Quartermaster and Honorary Lieutenant A.
Jones, Colonel F. W. C., M.B.
Kiddle, Major F., M.B.
Lawson, Lieutenant-Colonel C. B., M.B.
Leake, Major J. W.
Leishman, Brevet Colonel Sir W. B., Kt., F.R.S., M.B., F.R.C.P., K.H.P.
Luther, Lieutenant-Colonel A. J.
Macdonald, Lieutenant-Colonel S., M.B.
McMunn, Major J. R.
Macpherson, Surgeon-General W. G., C.M.G., M.B., K.H.P.
Makins, Colonel (temporary) G. H., C.B., F.R.C.S.
Middleton-West, Captain S. H., F.R.C.S. (I.M.S.).
Nash, Lieutenant-Colonel L. T. M.
Needham, Major R. A., M.B. (I.M.S.).
Norrington, Major H. L. W.
O'Donnell, Colonel (temporary Surgeon-General) T. J., D.S.O.
O'Grady, Major S. De C., M.B.
Osborne, Quartermaster and Honorary Lieutenant J. W.
Pile, G. H., Esq. (British Red Cross Society) (recommended by G.O.C. II Corps).
Power, Major W. M.
Prescott, Major J. J. W., D.S.O.
Purser, Major L. M., M.B.
Rahilly, Captain J. M. B., M.B.
Ryles, Captain C., M.B.
Scott, Lieutenant-Colonel B. H.
Shanahan, Lieutenant-Colonel D. D.
Starr, Lieutenant-Colonel W. H.
Stephens, Major F. A.
Tabuteau, Captain G. G.
Thomson, Major C. G.
Tyndale, Major W. F., C.M.G., M.D.
Unwin, Major T. B., M.B.
Wall, Major F. (I.M.S.).
Watkins, Quartermaster and Honorary Captain J., Reserve of Officers.
Watts, Major B.
Baker, Sgt.-Maj. A.; Banks, Sgt.-Maj. J.; Barnes, Pte. C. A.; Barnes, S. Sgt. E. G. W.; Bell, S. Sgt. A.; Bennett, Sgt. Maj. A.; Burnham, Dvr. F., A.S.C. (attached); Currie, Staff Sgt. A. W.; Davidson, Cpl. B.; Davis, Sgt.-Maj. F.; Day, Cpl. A.; Dell, Qrmr.-Sgt. A. A.; Earp, Sgt.-Maj. J. J.; Edwards, Staff Sgt. J. R.; Gerrie, Sgt. W. A.; Gosling, Qrmr.-Sgt. E. J.; Greenhalgh, Cpl. W.; Hughes, Sgt, H. C.; Hurran, Sgt.-Maj. G. F.; Kemp, Sgt. E., A.S.C. (attached); le Poidevin, Qrmr.-Sgt. P.; Leppington, Staff Sgt. W. C.; McEnnery, Pte. T.; Muirhead, Qrmr.-Sgt. W. A.; Munden, Sgt. J. W. F.; Newton, Qrmr.-Sgt. J. E.; Perritt, Qrmr.-Sgt. W. E.; Reeve, Sgt.-Maj. H. J.; Robinson, Pte. F.; Snow, Sgt.-Maj. P.; Spiers, Sgt. W. J.; Springett, Qrmr.-Sgt. A.; Tunnicliffe, Cpl. T. A.; Vogel, Pte. W. H.; Yates, Staff Sgt., A.S.C. (attached).

Royal Army Medical Corps.

Balfour, Lieutenant T. H., M.B.
Bazett, Lieutenant H. C., M.B., F.R.C.S., Special Reserve.
Bliss, Major E. W.
Bowle, Captain S. C.
Browne, Captain T. W.
Buckley, Quartermaster and Honorary Lieutenant E. J.
Bullock, Lieutenant (temporary) A. E.
Carrington, Lieutenant (temporary) A. E., M.B.
Carruthers, Captain V. T., M.B., F.R.C.S.
Carter, Captain H. St. M., M.D.
Charles, Lieutenant J. P., M.B.
Clements, Major R. W., M.B.
Copeland, Lieutenant-Colonel R. J., M.B.
Cowtan, Lieutenant F. G.
Crawford, Major V. J.
Crawford, Lieutenant-Colonel G. S., M.D.
Davidson, Lieutenant F. C., M.B.
Dunne, Captain J. S., D.S.O., F.R.C.S.I.
FitzGerald, Major FitzG. G.
Forde, Lieutenant-Colonel B., M.B.
Fox, Major A. C.
Fraser, Captain A. D., M.B.
Freeman, Lieutenant F. P., Special Reserve.
Glanvill, Captain E. M., M.B. (killed in action).
Greenlees, Lieutenant (temporary), J. R. C., M.B.
Greenwood, Major A. R.
Griffin, Lieutenant (temporary) E. H., M.D.
Grogan, Captain J. B.
Gwynne, Lieutenant J. FitzG., M.B.
Hare, Lieutenant J., M.B.
Helm, Lieutenant C.
Honeybourne, Captain V. C.
Hooper, Major A. W., D.S.O.
Hudleston, Major W. E.
Ingram, Lieutenant (temporary), W. W., M.B.
Jackson, Lieutenant (temporary) J. L., M.B.
James, Lieutenant (temporary) P. W., M.B.
Kelly, Captain C., M.D.
Lang, Lieutenant E. C., M.B.
Lloyd Jones, Captain P. A., M.B.
Loughnan, Captain W. F. M.
Lyon, Lieutenant D. M., M.B., Special Reserve.
McCullagh, Lieutenant W. McK. H., M.B., Special Reserve.
MacDougall, Major A. J., M.B.
McLoughlin, Lieutenant-Colonel G. S., D.S.O., M.B.
McQueen, Captain C.
Martin, Lieutenant (temporary) A., M.D., F.R.C.S.
Martin-Leake, Lieutenant (temporary) A., V.C.
Mathews, Lieutenant (temporary) J. B.
Maurice, Major G. T. K.
Meaden, Captain A. A.
Milne, Lieutenant (temporary) F. W.
Milne-Thomson, Lieutenant-Colonel A. (T.F.).
Nickerson, Major H. W. S., V.C., M.B.
O'Keefe, Captain J. J., M.B.
Ormsby, Major G. J. A., M.D.
Percival, Lieutenant E., M.B.
Phelan, Captain E. C., M.B.
Philippo, Lieutenant R. B.
Phillips, Captain T. McC. (died of wounds).
Pickard, Lieutenant-Colonel R., M.D. (T.F.).
Pirrie, Lieutenant I. M., M.B., Special Reserve.
Pirrie, Lieutenant R. E., M.B. (killed in action). (? Porter).
Potts, Captain E. T., M.D.
Price, Lieutenant R. B., M.B.
Profeit, Major C. W., M.B.
Purdon, Captain W. B., M.B.
Rattray, Major M. MacG., M.B.
Richards, Major F. G.
Richardson, Lieutenant M., M.B. (died of wounds).
Roberts, Captain F. E.
Robertson, Captain H. G., M.B.
Rutherford, Major N. J. C., M.B.
Sampson, Captain P., D.S.O.
Scott, Captain T. H., M.B.
Silver, Major J. P., M.B.
Slayter, Major E. W., M.B.
Soltau, Lieutenant-Colonel A. B., M.D. (T.F.)
Steward, Captain S. J., D.S.O., M.D., Special Reserve.
Stewart, Lieutenant (temporary) J. S., M.B.
Taylor, Lieutenant (temporary) R. B.
Thurston, Major H. S.
Tyrrell, Lieutenant W., M.B., Special Reserve.
Waddy, Lieutenant (temporary) J. R.

Walker, Major F. S., F.R.C.S.I.
Walshe, Captain S. J. A. H., M.B., Special Reserve.
Watson, Lieutenant-Colonel A. A., Special Reserve (Lieutenant-Colonel, R.A.M.C., T.F.).
Whitehead, Lieutenant N. T., M.B.
Williamson, Lieutenant (temporary) J. S.
Wilson, Captain H. T.
Winder, Major J. H. R., M.D.
Wright, Captain W. G.

Anderson, Sgt.-Maj. H. J.; Arnold, Pte. C.; Barlow, Staff Sgt. E.; Barlow, Cpl. C. W.; Bethell, Pte. B.; Biggs, Pte. A.; Brogden, Pte. E. G.; Buckner, Staff Sgt. A.; Bunker, Cpl. A.; Canty, Staff Sgt. A. J.; Carter, Sgt. T. B.; Clements, Pte.; Dawson, Qrmr.-Sgt. H.; Dodsworth, Pte. H.; Edwards, Pte. W.; Elliott, Qrmr.-Sgt R. D.; Fleming, Sgt.-Maj. R. J.; Flynn, Cpl. J.; Forman, Pte. R.; Harper, Staff Sgt. A. I.; Harris, Pte. C. A. G.; Higgins, Pte. H.; Hill, Pte. T. G.; Hort, Sgt. A. T.; Hubbard, Sgt.-Maj. L.; Hughes, Cpl. W.; Humphreys, Pte. W.; Hurley, Bugler F. W. T.; Jones, Pte. E.; Jones, Qrmr.-Sgt. J. H.; Jordan, Pte. E.; Lawson, Sgt. W.; Lord, Pte. E.; Moffatt, Sgt. T. J.; Morrison, Qrmr.-Sgt. F. C.; Page, Pte. T.; Parr, Staff Sgt. W. H.; Partridge, Pte. E. C.; Pepper, Sgt. C. T.; Pursey, Staff Sgt. G. P.; Robinson, Sgt. A. R.; Sams, Pte. A. W.; Sheehan, Pte. J.; Simmons, Pte. J. F.; Storey, Sgt.-Maj. W. H.; Stubbs, Staff Sgt. G.; Unwin, Pte. L. P.; White, Sgt. E. H.; Wild, Pte. P.; Wilson, Staff Sgt. W. A.; Woodward, Sgt. F.

INDIAN ARMY.

Medical Services.

Moorhead, Lieutenant-Colonel A. H., M.B., I.M.S.
Sloan, Major J. M., D.S.O., M.B.
Harvey, Captain A. W. M., M.B., I.M.S.
Jones, Captain J. B., M.B.
Braganza, 3rd Class Assistant Surgeon F., B.A.
1st Class Sub-Assistant Surgeon Muhammad Umar, 937
1st Class Sub-Assistant Surgeon Wahidyar Khan, 852.

Sharland, Sergeant J., 2nd East Surrey Regiment (attached 130th I.F.A.). Havildar Bihari, No. 8 Company, A.B. Corps. Naik Achroo, 8th Battalion, Field Ambulance. L/Naik Surjoo. Fenner, Private, 3rd K.R.R. (attached 19th Brigade, F.A.). Ingrey, Driver A.S.C. (attached 111th Indian Field Ambulance). Stretcher-Bearer Jaganaut, 111th I.F.A. Bearer Ram Sabatu.

QUEEN ALEXANDRA'S IMPERIAL MILITARY NURSING SERVICE AND ITS MILITARY AND CIVIL RESERVES.

Blakely, Matron M. M., and Clements, Sister M., Q.A.I.M.N.S.; Coulters, Sister S., Civil Hosp. Res. (Manchester R. Infirmary); Dods, Matron J. E., Q.A.I.M.N.S.; Filkin, Sister F. E., Q.A.I.M.N.S. Res.; Hodgins, Matron F. M., Q.A.I.M.N.S.; Kiddle, Sister V. N., Civil Hosp. Res. (Guy's Hosp.); Knowles, Sister G., Lyde, Sister E. M., Mark, Matron M., Minns, Sister E. J., Osborne, Matron R., Phillips, Sister A. M., Reid, Matron H. W., and Richards, Matron G. M., Q.A.I.M.N.S.; Smith, Matron A. B., R.R.C., Q.A.I.M.N.S.; Smith, Sister G. M., Q.A.I.M.N.S.; Steen, Matron L. E. C., Q.A.I.M.N.S.; Stewart-Richardson, Sister M. R., Q.A.I.M.N.S. Res.; Suart, Sister H., Q.A.I.M.N.S.; Tunley, Sister M. M., Q.A.I.M.N.S.; Tulley, Sister E., Civil Hosp. Res. (R. Infirmary, Edinburgh); Walker, Sister A. L., Q.A.I.M.N.S.; Wilson, Matron M., R.R.C., Q.A.I.M.N.S.

HONOURS.

THE King has been pleased to approve of the undermentioned rewards for services rendered in connexion with operations in the field.

STAFF.

To be Surgeon-Generals.

Colonel (temporary Surgeon-General) R. Porter, M.B.
Colonel (temporary Surgeon-General) T. J. O'Donnell, D.S.O.

To be Brevet Lieutenant-Colonel.

Major H. Ensor, D.S.O., M.B.

To be Knight Commander of the Order of the Bath.

Surgeon-General Sir A. T. Sloggett, C.B., C.M.G., K.H.S.

To be Companions of the Order of the Bath.

Surgeon-General T. P. Woodhouse.
Colonel M. W. O'Keefe, M.D.
Colonel E. H. L. Lynden-Bell, M.B.
Colonel S. Hickson, M.B., K.H.S.

To be Companions of the Order of St. Michael and St. George.

Colonel R. H. S. Sawyer, M.B., F.R.C.S.I.
Colonel F. H. Treherne, F.R.C.S.
Lieutenant-Colonel G. Cree, R.A.M.C.

ROYAL ARMY MEDICAL CORPS AND MEDICAL SERVICES.

To be Brevet Colonels.

Lieutenant-Colonel A. J. Luther.
Lieutenant-Colonel C. B. Lawson, M.B.

To be Brevet Lieutenant-Colonels.

Major A. W. Hooper, D.S.O.
Major E. W. Bliss.
Major M. H. G. Fell.

To be Knights Commanders of the Order of St. Michael and St. George.

Lieutenant-Colonel (temporary Colonel) G. H. Makins, C.B., F.R.C.S. (T.F.).
Lieutenant-Colonel (temporary Colonel) Sir A. A. Bowlby, C.M.G., F.R.C.S. (T.F.).

To be Companions of the Order of the Bath.

Surgeon-General W. G. Macpherson, C.M.G., K.H.P., M.B.
Colonel F. W. C. Jones, M.B.
Brevet Colonel Sir W. B. Leishman, K.H.P., F.R.S., M.B., F.R.C.P.
Colonel (temporary) Sir J. R. Bradford, K.C.M.G., F.R.S., M.D. (T.F.).

To be Companions of the Order of St. Michael and St. George.

Lieutenant-Colonel G. H. Barefoot.
Lieutenant-Colonel (temporary Colonel) C. H. Burtchaell, M.B.
Lieutenant-Colonel L. T. M. Nash.
Lieutenant-Colonel B. Forde, M.B.
Lieutenant-Colonel G. S. McLoughlin, D.S.O., M.B.
Major G. T. K. Maurice.
Major E. T. F. Birrell, M.B.

To be Companions of the Distinguished Service Order.

Major H. R. Bateman.
Major C. R. Evans.
Major C. M. Goodbody.
Major L. W. Harrison, M.B.
Major H. L. W. Norrington.
Major F. A. Stephens.
Major F. A. Symons, M.B.
Major V. J. Crawford.
Major A. C. Fox.
Major G. J. A. Ormsby, M.D.
Major N. J. C. Rutherford, M.B.
Captain A. G. Wilson, M.B., F.R.C.S.
Captain S. J. A. H. Walshe, M.B.
Captain E. T. Potts, M.D.

To be Honorary Captain.

Quartermaster and Honorary Lieutenant E. J. Buckley.

INDIAN ARMY.: MEDICAL SERVICES.

To be Brevet Colonel.

Lieutenant-Colonel A. H. Moorhead, M.B., I.M.S.

To be Brevet Lieutenant-Colonel.

Major J. M. Sloan, D.S.O., M.B.

THE MILITARY CROSS.

The list announces that the Military Cross has been conferred upon a number of officers. The decoration was founded by a Royal Warrant, dated January 1st, 1915, and is awarded for distinguished and meritorious services in time of war to officers of certain ranks in the army. It is opened to commissioned officers with the rank of captain, or lower, and to warrant officers in the army, Indian, or colonial military forces. The award is made on the recommendation of the Secretary of State for War, who keeps the register of recipients. An honorary award may also be made to foreign officers of equivalent rank who have been associated in military operations with the British army, or Indian or colonial military forces. The decoration consists of a cross of silver, having on each arm the imperial crown and bearing in the centre the letters G.R.I. It is to be worn on the left breast, pendent from a white ribbon with a purple stripe. In the New Year's Honours List the cross was conferred on five officers R.A.M.C., one officer I.M.S., and six sergeant-majors R.A.M.C. It is now awarded to twelve officers R.A.M.C., one assistant surgeon I.M.S., and six of the sergeant-majors R.A.M.C., as follows:

Captain E. L. Moss, R.A.M.C. (Staff).
Captain Wm. F. M. Loughnan, R.A.M.C. (for gallantry on many occasions in Flanders in assisting to rescue the wounded whilst exposed to heavy fire).
Captain C. Kelly, M.D.
Captain E. C. Phelan, M.B.
Captain W. B. Purdon, M.B.
Captain T. H. Scott, M.B.
Temporary Lieutenant J. R. Waddy.
Lieutenant W. Tyrrell, M.B.
Lieutenant W. McK. H. McCullagh, M.B.
Temporary Lieutenant W. W. Ingram, M.B.
Lieutenant J. FitzG. Gwynne, M.B.
Lieutenant F. C. Davidson, M.B.
Temporary Lieutenant E. W. Carrington, M.B.

Lieutenant T. H. Balfour, M.B.
3rd Class Assistant Surgeon F. B. A. Braganza, I.M.S.
Sergeant-Major W. H. Storey.
Sergeant-Major R. J. Fleming.
Sergeant-Major A. Baker.
Sergeant-Major A. Bennett.
Sergeant-Major J. J. Earp.
Sergeant-Major H. J. Reeve.

CLASP TO VICTORIA CROSS.

Lieutenant Arthur Martin-Leake, R.A.M.C., who was awarded the Victoria Cross on May 13th, 1902, is granted a clasp for most conspicuous bravery and devotion to duty throughout the campaign, especially during the period October 29th to November 8th, 1914, near Zonnebeke, in rescuing, whilst exposed to constant fire, a large number of the wounded who were lying close to the enemy's trenches. Lieutenant Martin-Leake received the Victoria Cross when Surgeon-Captain in the South African Constabulary. The official record of the conduct which earned him the distinction on that occasion is as follows:

For great devotion to duty and self-sacrifice at Vlakfontein, February 8th, 1902, when he went out into the firing line to dress a wounded man under very heavy fire from about forty Boers only 100 yards off. When he had done all he could for him, he went over to a badly wounded officer, and while trying to place him in a more comfortable position he was shot three times. He only gave up when thoroughly exhausted, and then he refused water until other wounded men had been served.

Lieutenant Martin-Leake was a student at University College, London, and took the diplomas of M.R.C.S., L.R.C.P. in 1898, and that of F.R.C.S.Eng. in 1903. He was assistant demonstrator of anatomy at University College and house-physician to the hospital. He was recently chief medical officer of the Bengal-Nagpur Railway and resided in Calcutta. He was a member of a British Red Cross unit which served in the Balkan war in 1912.

FLOWERS OF SULPHUR AND LICE.

ONE of the cheapest insecticides which seems very effective against lice is powdered sulphur. Early in the year Mr. C. P. Lounsbury, the well known Government entomologist in South Africa, wrote that they were supplying the troops there with sulphur bags, which were supposed to keep the lice away. The sulphur is put in small bags of thin calico, and several of these are secured on the underclothing, next to the skin. The bags are about 2 in. square, and I am told that it is customary to have one worn on the trunk of the body and one against each of the nether limbs. Whether this is effective will probably be known soon, but that flowers of sulphur does play an effective part in keeping down these troubles is shown by a letter of Dr. Harding H. Tomkins:

Over thirty years ago, when house-surgeon at the Children's Infirmary, Liverpool, I used this with absolute success in all cases of plaster-of-Paris jackets who formerly had been much distressed by vermin getting under the jacket. The sulphur was rubbed well into the underclothes.

But still more interesting evidence is given by Mr. Bishop Harman:

When I was serving in the South African war, and attached to No. 2 General Hospital at Pretoria, I was detailed to take medical charge of the camp of released prisoners that was established a few miles out of the town on the Delagoa Bay railway line. I moved into the camp the night they came in. Next day an inspection was held. I do not think I ever saw such a sorry sight. The men were in the most nondescript garments, and they were flabby from the effects of the food the Boers had given them—mealy pap, for the most part. They had had no washing facilities, and they were dirty in the extreme. Amongst them were a number of men of the D.C.O. Yeomanry, many of them Cambridge men, and when these came to me for special examination, unwarily I invited them into my tent to strip, and their clothes were laid on the only available support—my bed. The next day or two was spent in cleaning up the men and refitting them. By the end of the week I noticed in the evening an unpleasant itch about the lower part of the trunk—a subacute sort of itch; it did not seem like a flea, and I could find nothing. But after a most diligent search with all the candles I could borrow, I found, to my horror, a louse. It was a genuine body-louse. Then I remembered my folly in inviting strangers into my tent. Water was scarce, the morning tub was only the splash from a can. Laundry was impossible. But after some trouble I managed to get a can of hot water and get some sort of a hot wash. My man did the best he could with my shirt and pants. What to do with the bedding—dark brown blankets—I did not know, except to expose them to the hot sunshine. I rode into the town, but insect powder could not be got. It came into my mind that I had read or heard that people who took sulphur tablets smelled of H_2S, so on the chance that an outside application might be of some service, I got a supply of flowers of sulphur. This I liberally sprinked all over my clothes, bedding, and rubbed into the seams of my tunic and riding breeches. The itching was stopped in a day, and it never came again. But I soon noticed another circumstance; all the bright brass buttons of my tunic, although freshly polished by my man every morning, were tarnished before evening, even in the clean, dry atmosphere of the dry veld. Also my silver watch-case went black. There was no doubt that the sulphur was acted upon by the secretions of the skin, and H_2S was produced, and this I had no doubt killed off any lice that could not be got at by washing. Subsequently, I always used it when I was in likely places. And some places were very likely! In Cape Town I had to inspect all the soldiers' lodgings in view of the spread of the plague. And, again, I had charge of a Boer prison ship, and never once did I catch so much as a hopper. The prison ship was literally alive with cockroaches of all sizes; our cabins swarmed with them, but they avoided my clothes and kit like a plague, and there was never a nibble-mark to be found. I gave the hint to many men, and they confirmed my experience. I have since met other men who hit on the same device with equal success. In this war I have told the tip to many friends and some relatives who have gone out, and so far they have been free from the plague. You will note that I used all the other measures I could, but my bedding and uniform were not washed, and the lice must have come through the bedding; there was no other possible means I could trace. Yet the flowers of sulphur killed off all that might be therein.

Christ's College, Cambridge. A. E. SHIPLEY.

CASUALTIES IN THE MEDICAL SERVICES.

Killed.

In France:
Lieutenant (temporary) D. Campbell, R.A.M.C.

At Singapore:
Lieutenant A. F. Legge, Singapore Volunteer Medical Company.
Dr. P. N. Gerrard, Malay States Volunteer Rifles.
Dr. E. D. Whittle, Colonial Medical Service.

NOTES.

SICK AND WOUNDED SOLDIERS IN DUBLIN.

ON February 17th 478 wounded soldiers arrived in Dublin from the base hospital at Havre. Of this number about 100 were sent by train to Belfast, the remainder were accommodated in the various Dublin hospitals. The Dublin Castle Red Cross Hospital received 100, and the following from twenty to forty each: Jervis Street, Richmond, Mater Misericordiae, Steevens's, Mercer's, Adelaide, Meath, St. Vincent's, Sir Patrick Dun's, Royal City of Dublin, National Children's, Harcourt Street, and the St. John's Auxiliary Hospital, 19, Mountjoy Square.

Major Loder, assisted by several officers and men of the R.A.M.C., took charge of the ambulance arrangements, and Dr. Lumsden, Assistant Commissioner of the St. John Ambulance Brigade, aided by Dr. Webb, Lady Superintendent, and eighty ambulance men, assisted in the removal of the stretcher cases from the ship, and looked after their unloading at the various hospitals to which they were allotted.

The great majority of the soldiers were suffering from so-called "frost-bite." The condition appears to be a neuritis brought about by prolonged standing in flooded trenches. The number of actual bullet or shell wounds is considerably smaller than in the case of the first consignment of wounded sent to Dublin.

EMERGENCY CASES HOSPITAL FOR FRANCE.

The Committee of the Emergency Cases Hospital for France, of which Sir Lauder Brunton, Sir W. Arbuthnot Lane, Mr. Mayo Robson, and Mr. Stephen Paget, are members, hope that the hospital may be sent out early in March. The arrangements have been approved by the Anglo French Hospitals Committee, and the French military authorities have promised to provide a suitable building or buildings for sixty patients. The hospital will be placed some fifteen miles behind the firing line, and is designed specially to treat urgent surgical cases among the French wounded between the firing line and the base hospitals. Promises have been received of five or six motor cars and ambulances. The equipment will include provision for a complete theatre; *x*-ray apparatus, with dynamo, which will also be used for electric lighting; beds and bedding for sixty patients; ward equipment;

stores of dressings, anaesthetics, and drugs, and household stores. Appeal is made for further donations, which should be sent to the Honorary Secretary, Mr. James Baird, 50A, Curzon Street, W., and also for gifts of clothing, bed linen, dressings, and drugs, which should be marked "Urgency Cases Hospital," and addressed to 10, Stratford Place, W. The staff is as follows:

Consulting Surgeon.—Major A. W. Mayo Robson, C.V.O., D.Sc., F.R.C.S. (who has been permitted by the War Office to go out with the hospital for the first month of its work).
Surgeons.—J. A. Cairns Forsyth, M.Sc., M.B., F.R.C.S.; K. E. Leveson Gower Gunn, M.D., F.R.C.S.I.
Assistant Surgeons.—A. S. Robinson, M.A., M.B., B.C.; W. H. Ogilvie, M.B., B.Ch., M.R.C.S.
Anaesthetist.—R. W. W. Vaughan, M.B., B.S., M.R.C.S.
Radiographer and Electrician.—Mr. J. G. Everitt.
Secretary.—Mr. Harry Eyres (late Consul-General at Constantinople).

NURSING AND DOMESTIC STAFF.

Matron.—Miss Curtis (late Superintendent, Hammersmith District Nursing Association).
Nurses.—17.
Quartermaster and 14 orderlies.
Superintendent of Laundry and 1 assistant.
Cook and 3 assistants.

ANTITYPHOID INOCULATION.

Lieutenant J. R. GARROD, M.D., R.A.M.C.(T.) (Medical Officer in Charge, 1st Huntingdonshire Cyclist Battalion), writes: It may be of interest to know the effect of an undue prolongation of the period between the first and second inoculations.

Owing to the nature of the work being done by this battalion, it was in a few cases impossible to administer the second dose within the prescribed period, and I was unable to obtain any information as to what the effect might be expected to be. I thought that possibly the smaller dose might be insufficient to protect against the double quantity, but such has not been the case.

In several cases a month elapsed, and in one case nearly three months; in none was the reaction severe, and in the latter there was practically none, either local or general.

SURGICAL APPLIANCES FOR SOLDIERS.

It is notified by the War Office that disabled soldiers who are certified as requiring the assistance of artificial limbs, etc., and surgical appliances should make application in writing to the Secretary to the Commissioners of the Royal Hospital, Chelsea, who are authorized to supply them at the expense of public funds.

MEDICAL OFFICERS WANTED.

2/1st South Wales Mounted Field Ambulance.

There is a vacancy for an officer in this unit at Hereford. Applications should be sent to Major Herbert Jones, R.A.M.C.(T.), The Barracks, Hereford.

1st London Casualty Clearing Station.

Five medical officers are required in this unit, for the period of the war only, to bring it up to war establishment. Applications should be addressed to Lieutenant-Colonel Alex. Barclay Lyon, Commanding 1st London Casualty Clearing Station, Duke of Yorks Head Quarters, Chelsea, S.W.

DR. M. ARMAND RUFFER and Mr. J. Graham Willmore have described in a recent number of the *Journal of Pathology and Bacteriology* a right os innominatum discovered in the catacombs of Kom el Shougafa in Alexandria, where the skeletons date from the days when Rome ruled Egypt, most probably from the middle of the third century of the Christian era or earlier. Unfortunately the grave had been opened for some time and was very damp, so that the bones had a tendency to break to pieces, and therefore required special treatment before they could be measured and examined. The pelvic bone which they figure and describe showed changes due to the development of a tumour in the cancellous tissue, chiefly in the body of the ischium and ilium, encroaching on the acetabulum and distorting the obturator foramen. The superficial part of the bone was intact, though it would soon have been invaded had the subject lived. It was most probably an osteo-sarcoma of which the bony substance had withstood the effects of time, the soft parts having disappeared. The authors failed to detect any evidence that the tumour was associated with tubercle, syphilis, actinomycosis, or any other infective agent.

England and Wales.

THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

A MEETING to promote the extension of the London (Royal Free Hospital) School of Medicine for Women was held at Sunderland House, Curzon Street, London, on February 18th, by invitation of the Duchess of Marlborough. Among those present, in addition to many ladies, were Sir Alfred Pearce Gould, Acting Vice-Chancellor of the University of London, and Sir George Newman, Principal Medical Officer of the Board of Education. Sir William Osler, Regius Professor of Medicine in the University of Oxford, Sir Thomas Barlow, President of the Royal College of Physicians, and Professor Howard Marsh wrote regretting inability to attend. Lord Haldane also wrote promising a contribution of £100 towards the fund.

The Duchess of Marlborough who presided, alluded to the decrease in the number of entries of male students at medical schools, and discussed the opportunities now opening before qualified women practitioners. The number of qualified women practitioners had increased from two forty years ago to about 1,000 at the present time, and about 600 of these were former students of the London School of Medicine for Women. It was the only centre for the education of medical women in London, and the annual entry had doubled in the last six years. Additional accommodation was urgently needed, and £5,000 of the £25,000 required had already been raised. The council was anxious also to secure wider opportunities for clinical experience for practitioners qualifying at the school. It was not enough to open resident posts at hospitals to them; it was essential that staff appointments should be open to men and women alike. At present from 80 to 90 full-time appointments were held by women engaged in the inspection and treatment of school children, and Sir George Newman had stated that twice that number were needed. The Local Government Board was gradually taking up the work of maternity centres, and the many parental responsibilities assumed by the Government all tended to the employment of medical women in work both congenial and suitable. The great cities also were beginning to appoint medical women in connexion with branches of public health administration, and many State departments now employed women practitioners It was a tribute to the work of women and their powers of organization that the War Office should offer them a hospital of 500 beds to be entirely staffed by women doctors. In medical missions and in private practice there were great opportunities for women, who could be trusted to show those qualities of conscientiousness and self-sacrifice of which the medical profession had always been a shining example.

Sir Alfred Keogh said that the medical education of women had proved eminently successful. Some years ago he had inspected for the Board of Education practically every medical school in the country. There was no doubt that the state of medical education in this country was not all that it ought to be, for he had seen well-equipped medical schools with few students and ill-equipped schools full of students, and medical schools in which one department had outrun all the others, so that the general level of efficiency was low. But the London School of Medicine for Women was one in which the enthusiasm of the teachers was not for their particular department but for the school as a whole, and no one department outran another. With regard to administrative work in medicine, there was nothing more certain—and he said it after a long experience—than that if men or women joined the medical profession without a thoroughly sound literary and scientific education, they would never play any part in medical administration in Government departments. When he inspected this school, he was struck by the fact that its authorities had grasped the importance of this matter. The standard of education in the school was undoubtedly high. He went on to bear testimony to the work of women practitioners in the war. He had received opinions—quite unsolicited except in one instance—from medical authorities in France bearing testimony to the splendid services rendered by medical women. At Paris and Boulogne their work was beyond all

praise, and an example of the way such work should be done. He had asked two members of the staff of the women's hospital at Boulogne to return from France, and to do bigger work than they were able to do there. He proposed to ask them to undertake a hospital of 500 or 1,000 beds.

Mrs. Scharlieb, M.D., mentioned the need for more medical women to work in hospital appointments, in private practice, and more especially in treating diseases which were greatly modified when they occurred in women and children. In her experience women practitioners were especially needed on the female side of lunatic asylums, as well as in many public health services. The missionary societies were urgently in need of the help of women doctors in China and Japan, and in all Mohammedan countries. Women would be useful not only as the servants but as the advisers of Governments, on Royal Commissions. The recent Tuberculosis Commission had gained much from the presence upon it of Dr. Jane Walker.

Dr. Florence Willey said it would be impossible to fill the gaps in the ranks of the medical profession that would arise in the immediate future unless women were trained in considerable numbers. Women practitioners had done good work in the war areas in France, Servia, and elsewhere, and had shown themselves capable of holding with success appointments in hospitals that had been given them owing to the shortage of men since the war. Some thought that there would not be any serious shortage when practitioners returned on the declaration of peace, but it must be remembered that social reforms and preventive medicine would be more urgent than ever. Antenatal hygiene would call for the services of many practitioners; instead of losing one-fourth of the population from antenatal deaths and infant mortality, the nation would seek to save the coming generation. Women who could not themselves go through the training required to qualify them as medical practitioners should help forward the cause of humanity by providing facilities for others.

Dr. Winifred Cullis gave a brief account of the development of medical education amongst women, and Mr. F. D. Acland, M.P., mentioned that the School of Medicine for Women had recently been found by the Board of Education to be in such a high state of efficiency that it was probable that the next Government grants would be assessed on a higher basis.

Those present were asked to state on cards the sums they would be prepared to give towards the Building Fund, and the promises so far received represent a sum of over £1,100.

The meeting concluded with an expression of thanks to the Duchess of Marlborough.

Ireland.

CEREBRO-SPINAL MENINGITIS.

FOUR cases of cerebro-spinal meningitis have occurred in the district of the Curragh Camp at French Furze and two have died. One, a girl aged 11, died within twenty-four hours of contracting the disease. Drs. Brown and Esmonde, medical inspectors of the Local Government Board, accompanied by Drs. Rowan and Coady, have visited the district, where everything possible is being done to prevent an outbreak. Locally the outbreak is attributed to arrivals from France and Germany. The clothes of the persons affected were conveyed to Naas to be disinfected at the Union.

LONGFORD COUNTY INFIRMARY.

At a special meeting of the joint committee of management of the Longford County Infirmary, on February 16th, a letter was read from the Local Government Board offering to hold an inquiry regarding the dismissal of Dr. Mayne, surgeon to the infirmary, on the ground of his refusal to permit Sir Thomas Myles to operate upon a soldier in the institution, and requesting the committee to give an undertaking to defray the cost of such inquiry. On the motion of the chairman, the committee decided that Dr. Mayne having been dismissed by the committee, the Local Government Board should say whether that decision was to have effect. It further resolved that no undertaking should be given with regard to the costs of any inquiry. The chairman said that, though opposed to the dismissal and to an inquiry, he now considered that if an inquiry was held it would be the better course. The facts of the case were published in the BRITISH MEDICAL JOURNAL of January 23rd, p. 182, and the resolutions adopted by the Irish Medical Association in the issue of February 13th, p. 315.

CHILDREN'S HOSPITAL, TEMPLE STREET, DUBLIN.

The report read at the meeting of the Children's Hospital, Temple Street, Dublin, recalled the fact that the hospital was opened in 1872, and stated that during that year 1,872 patients, including interns and externs, were treated. In 1878 the total number treated was 3,000. The numbers increased to 4,000 in 1888, and twenty years later the number was 11,000. In 1914 the large number of 21,000 children were treated in the extern department; 1,231 cases were treated in the wards of the hospital, and a large number of them were sent to complete their cure to the hospital's convalescent home, Cappagh, Finglas. A new out-patient's department was opened on the same day.

INCREASE IN LUNACY.

Owing to a continuous increase in the number of female patients in the Enniscorthy District Lunatic Asylum, the Board of Management has under consideration the question of either extending the building or converting a convenient house into suitable quarters to accommodate about fifty, and an architect has been asked to report on the matter.

Scotland.

INFLUENZA IN EDINBURGH.

INFLUENZA has been prevalent in Edinburgh during the past few weeks, and the type met with has been characterized by high temperature, sore throat, and, as a sequel, extreme weakness. One of the results of the epidemic has been the temporary closing of the Craigleith Military Hospital to visitors. A good many of the soldiers suffering from influenza were taken to Craigleith when the disease broke out, and the restriction put upon visitors is partly in order to prevent the infection being carried from one ward to another, and partly to save the visitors themselves from risk.

THE WAR AND INSANITY.

The report of Dr. George M. Robertson, physician-superintendent, presented to the annual meeting of the Royal Edinburgh Asylum for the Insane on February 22nd, stated that the exciting causes of a mental or moral nature were assigned by relatives of the patients last year for the onset of insanity in an unusual proportion of cases. Among over 1,000 patients admitted during the five years 1909–13, such causes were assigned in 11 per cent. During last year the rate rose suddenly to 18.7 per cent. In men it rose from 10 per cent. to 12.5 per cent., and in women from 12 per cent. to 24 per cent. In the case of 15 patients admitted during the later part of the year the relatives traced the immediate cause of the attack to the war, either directly or indirectly. Owing, however, to the kinds of mental disturbances, and to the fact that a considerable proportion of the patients had suffered from previous attacks, Dr. Robertson doubted the importance given to the war as an exciting cause by the relatives. Taking the population as a whole, he thought that the war, as far as it had operated, had acted as a mental tonic.

EDINBURGH MEDICAL MISSIONARY SOCIETY AND THE NAZARETH HOSPITAL.

The anxiety regarding two nurses belonging to the medical staff of the Edinburgh Medical Missionary Society's Hospital at Nazareth has been lessened by the receipt of a letter from the Foreign Office in London stating that the United States Embassy in London had received a telegram from the United States Embassy in Constantinople to the effect that Nurses Johncock and Croft were content to remain in Nazareth. These are the nurses to whom reference was made at the annual meeting of the society (JOURNAL, February 6th, p. 269), and for whose safe conduct the good services of the United States Government

and the American Ambassador in Constantinople had been secured. The ladies have evidently now had an offer of the safe conduct, and have pluckily decided to remain in Nazareth and do what they can to alleviate the sufferings of the invalid Turkish soldiers in the hospital.

Correspondence.

CARBOLIC ACID IN THE IMMEDIATE TREATMENT OF WOUNDS.

SIR,—In the very interesting account of the medical arrangements of the British Expeditionary Force, by "a special correspondent in Northern France," in the BRITISH MEDICAL JOURNAL, February 13th, reference is made to the use of liquid carbolic acid in the treatment of wounds in the present war. The writer states: "The medical authorities in France determined to have carbolic acid tried upon lines calculated to test thoroughly the statements made in respect of it." He then goes on to describe how "one of the consulting surgeons was asked to select fifty cases on their arrival at the clearing hospitals, and to cause their wounds to be submitted, under his own supervision, to a careful process of disinfection in the fashion prescribed by the advocates of carbolic acid treatment." I submit that this statement at once vitiates the whole of the alleged "test." The whole point about the use of pure carbolic acid is that it is intended as a prophylactic against sepsis and tetanus, and it should, therefore, be applied immediately after infliction of the wound, and in my recent letters on this subject in the BRITISH MEDICAL JOURNAL, I specially emphasized the importance of supplying each man at the front with a means of immediately disinfecting his own or his neighbour's wound with this most reliable antiseptic. To allow many hours to elapse until the wounded man reaches the clearing hospital, and even then to make him wait his turn for the application to be made "under the eye of the consulting surgeon," is to lose the golden opportunity for prophylaxis. I understand that in the course of two hours, under existing conditions, many of the wounds have already become septic. Prevention is then out of the question. As well might we talk about preventing a war when war is ablaze.

I fully admit that in the exigencies of war it may not always be possible to carry out prophylaxis, but at any rate I think our men should be provided with the means and the knowledge of applying such measures whenever possible. At present we do not know the exact time after the infliction of a wound during which prophylaxis is possible; probably under existing conditions it is less than half an hour. But once infection has obtained a footing and penetrated into the deeper tissues and lymphatics, obviously merely smearing the surface with phenol (or any other antiseptic) will not undo the mischief done. Most of the advocates of pure carbolic have strongly deprecated its use once the wound has become septic. I do not at present purpose discussing the treatment of septic wounds. But presumably every one will agree in regard to sepsis that "prevention is better than cure," the practical question being, Is prevention possible and what are the best means at present available? Personally, I still believe pure carbolic acid to be the most reliable antiseptic we have for this purpose, but it is essential it should be applied immediately—that is, *before* any germ growth or absorption. So far, despite your correspondent's remarks, phenol has evidently not been given a proper trial as a preventive of sepsis and tetanus, although it is nearly three months since I first suggested a handy form of carbolic swab for inclusion in the first field dressing; indeed, my offer to send a supply of these swabs for trial by the men at the front is still unaccepted. It is only by supplying each individual soldier on the battlefield with such a means of disinfecting his own or his neighbour's wound immediately after infliction and impressing upon him the urgent importance of such measures and the need for thoroughness in their application (just as he should be taught the necessity of promptly arresting haemorrhage and the best methods of doing so) that any likelihood of success in the prophylaxis of wound infection will be attained.—I am, etc.,

P. R. COOPER, M.D., B.Sc.Lond., F.R.C.S.Eng.

Bowdon, Feb. 13th.

ETHER AS A DISINFECTANT.

SIR,—During the past two years I have been using ether as an antiseptic in the North Lonsdale Hospital in cases of compound fractures and dislocations. The wounds were thoroughly swabbed out with ether, and afterwards with tincture of iodine, or 3 per cent. iodine in chloroform. Probably, as Mr. Waterhouse states in his article (February 6th), the use of iodine solution was superfluous. On several occasions, even when the wounds were obviously contaminated, it was found that it was safe to close up the wound, with the result that the cases were practically converted into simple ones, and progressed accordingly.

For this method to be successful I think it is essential that no watery solutions should be used beforehand.—I am, etc.,

Barrow, Feb. 13th. JOHN LIVINGSTON, F.R.C.S.Edin.

SIR,—Apropos of Mr. Waterhouse's paper on ether as a disinfectant and prophylactic application, it may be of interest to recall the experiments I and Mr. Pakes, the then bacteriologist at Guy's Hospital, made on the contents of the ether bags of Clover's apparatus. There had been a death or two from ether pneumonia or bronchitis, and the usual remarks had been made to the effect that the pneumonia was the result of infection from the apparatus used. I got Mr. Pakes to make cultivations from the bag. In no case was any living organism found. On testing the face-pieces we discovered that, starting with a clean face-piece, the mere blowing through this by a healthy man caused it to be soiled by a multitude of various organisms. But an important point of great practical use was discovered in the course of our experiments. If the face-piece was well washed under a good stream of water at 120° F. for sixty seconds, the face-piece invariably remained sterile. This washing was always done by me under a tap supplied by the boilers of the hospital, and care was taken that every crevice of the face-piece was well flushed.—I am, etc.,

London, W., Feb. 6th. F. WILLIAM COCK, M.D., F.S.A.

ALCOHOL AND DELIRIUM TREMENS.

SIR,—Before replying to Dr. Hare's criticisms in his letter to the JOURNAL of February 20th I would express to him my sincere wish that I had deserved the compliments he pays me, and had taken some part, however small, in assisting to his graduation the able author of the admirable work, *The Food Factor in Disease*. But I have never been an examiner at the university whose degree he holds.

I fully acknowledge the apparent but unintentional unfairness of my use of the words, "Dr. Hare *now admits*," and I greatly regret that, owing to my imperfect recollection of the previous correspondence, I did not write instead the words, "now explicitly states." In my letter which appeared in the JOURNAL of February 6th I mistook a passage seemingly quoted from Dr. Hare (in a letter signed "The Reviewer," which followed Dr. Hare's in the issue of January 30th) for a statement made by Dr. Hare himself. This passage, I find on reference, was an unequivocal statement that delirium tremens was always caused by cutting off alcohol; could always be aborted by giving it at an early stage; and that an attack could infallibly be produced in any one accustomed for long to large doses, by cutting off or materially diminishing the customary supply. I was thus led by mistaking the reference into suggesting that Dr. Hare had modified his position. Finding now that Dr. Hare never made any such statement himself, or any words with similar implication, I trust he will accept the substitution indicated above for the peccant words which should not have been written.

With respect to Dr. Hare's comments on my criticisms of his argument that *the necessary cause of delirium tremens is a large and sudden fall in the amount of circulating alcohol in one who has established a high degree of tolerance*, I think he has failed to see my point. I will, therefore, put it afresh, and perhaps more explicitly, as follows: Dr. Hare observes that a large number of patients who have been drinking heavily for long without necessarily getting grossly drunk or otherwise showing marked incapacities, are attacked with delirium tremens after a rapid or sudden stoppage of alcohol. He then conceives the hypothesis, or assumes, (*a*) that the rapid fall of

circulating alcohol which follows on such stoppage is a necessary factor in the production of the delirium; (*b*) that delirium cannot take place without such a fall; (*c*) that when delirium occurs without any overt stoppage, it may be due to failure of absorption, such as would take place in some cases when vomiting sets in, or to some other causes of failure of absorption; and (*d*) that when a hard and persistent drinker has his alcohol cut off without the sequel of delirium, his immunity from such sequel is due to some power of "resistance" to the ill effects of cutting off with which he is endowed.

Now, quite apart from the very debatable question as to whether or not a rapid or sudden deprivation of circulating alcohol does actually precede all cases of delirium, or, indeed, even if this question be answered (only *argumenti gratiâ*) in the affirmative, it is clear that the above series of assumptions does not approach to any proof of Dr. Hare's contention. The reasoning involves the *post hoc propter hoc* fallacy; and ignores the consideration of any other hypotheses which could be formed.

In view of the vast individual differences in constitution that obtain in alcoholic patients, and the varying amounts of alcohol and of food taken by them (whether they develop delirium or not), the question of the actual causation of delirium tremens is a very complex one, and is certainly not solved by the method of argument followed by Dr. Hare.

I have, of course, no disagreement whatever with what he says in the paragraph marked (2) in his letter regarding "tolerance" of alcohol in the untechnical sense; it amounts to stating what is obvious—that some people, either idiosyncratically or by practice, can drink more, and more persistently than others, without showing any gross signs of the effects of alcohol.

The point of sobriety in drinking is an individual matter. But when Dr. Hare uses the concepts of "tolerance" and "resistance," and of the effect of the fall in amount of circulatory alcohol in connexion with the part played by them in the production or the non-occurrence of delirium tremens, I cannot help seeing a tendency to suppose facts in support of an unverified hypothesis, or to stretch such an hypothesis to cover facts which would not otherwise fall within it. This I have called a species of "hedging," by which I do not mean that Dr. Hare has altered his opinions, but that the method he employs tends to weaken his defence of them, instead of strengthening it.

My only object in writing about this somewhat important practical question of the cause and treatment of delirium tremens was to controvert the view that, on the one hand, it is always or generally necessary or advisable to give alcohol at all; or, on the other hand, always or generally dangerous or unwise to diminish rapidly or cut off suddenly the alcoholic supply in cases of drinkers threatened with delirium. Until the thesis which I have ventured to criticize be proved I must continue to deprecate any general rehabilitation of the practice of giving "hairs of the dog that bit them" to diseased drinkers; believing that, at least in a majority of cases, there is a better and more "allopathic" way.—I am, etc.

London, W., Feb. 23rd. H. BRYAN DONKIN.

SIR,—I have read with much interest the discussion on the question of the stoppage of alcohol in delirium tremens, and should like to express a few of the conclusions I have drawn during an experience of twenty-five years.

I heartily agree with Dr. Hare's opinion that it is unwise suddenly to stop the supply of alcohol in many cases, and that delirium tremens is sometimes caused by this sudden stoppage I am quite convinced.

For twenty years I have followed the practice of allowing a sufficient quantity of alcohol during the first three or four days of treatment to prevent any great disturbance of the system. I was led to do so largely from observing the results following a complete withdrawal of alcohol in all cases as practised in a large general hospital in my neighbourhood; an unusually large proportion of the alcoholic patients developed delirium tremens, and there was an unusually high percentage of deaths.

I cannot, however, go as far as Dr. Hare, as I understand his view, that this sudden stoppage is the only cause of delirium tremens; I am convinced that a much broader view of the question is necessary.

I quite agree with Dr. Reid that preliminary purgation may be an essential factor in the prevention of delirium tremens. The reason of this is, of course, obvious if one remembers that cerebral congestion and auto-toxaemia are undoubtedly at least partial causes of the delirium. I have often found two grains of calomel at bedtime and a saline purgative in the morning sufficient to prevent a threatening attack.

I am surprised to find Dr. Hare advocating the withholding of atropine until all danger of delirium tremens is past, and stating that that is the present practice at the Norwood Sanatorium. If it is his experience that the administration of atropine previous to this period has not been satisfactory, may it not be due either to a confusion of the delirium produced by atropine and delirium tremens (a difficult matter to decide), or a failure to regulate the dose to meet the case? My reason for suggesting this is, that during the lengthy period of my treatment of patients at the Norwood Sanatorium and elsewhere, my experience was that carefully proportioned doses of atropine and strychnine were invaluable in the prevention of untoward symptoms. I still continue to find confirmation of this fact in the treatment of my patients in connexion with the London Sanatorium.

Dr. Hare mentions a reduction in the percentage of delirium tremens cases, from 6 per cent. to 0.5 per cent. It would be interesting to know if this diminution followed the period of the withholding of atropine, and if so, this might point to the conclusion that atropine delirium was a factor in the statistics.—I am, etc.,

London, W., Feb. 18th. C. A. MCBRIDE.

SIR,—I should like to cite one case in point, occurring in my own practice. A business gentleman, of very active habits, was, to my knowledge, in the habit of consuming very large quantities of whisky—certainly well over a bottle a day. He was a very robust man, apparently in the best of health, and never showed any sign of intoxication. Nearly all the consumption of alcohol took place outside his own house. For some slight ailment his wife persuaded him to remain at home. On the third day I was called, and found him in a highly nervous condition. Sleepless, excitable, voluble, and suffering from slight hallucinations, I found he had not had any alcohol for over two days. I at once gave him a stiff glass of whisky, and repeated the dose in about an hour. He improved rapidly. I gave him a draught (bromide, chloral, and cannabis indica), and left instructions that he was to have an ounce of whisky in milk every three hours, while awake. He had a good sleep, and continued very well for nearly three days, when his wife, thinking that this was an unwarrantable supply of alcohol for any man, insisted on having another opinion. The consultant had strong antialcoholic views. He advised its complete withdrawal and the substitution of suitable drugs. His view was accepted and I retired from the case. The patient developed violent delirium tremens, complicated with pneumonia, and was dead within a week.

Different people may draw different conclusions from this case. My own opinion, based upon actual experience in many cases, is that, had the original treatment been persisted in, followed by the appropriate tapering and tonics, in all human probability the man would have been well and attending to his business on the day which, in fact, proved to be that of his funeral.—I am, etc.,

Raasay, Inverness-shire, Feb. 22nd. WM. C. BURNS.

THE RUM RATION.

SIR,—In Sir Victor Horsley's reliance on "scientific reasons, on scientific experiments, and on published statistics," he forgets that if we start with a bias we may deduce much larger conclusions than the scientific basis warrants.

Those who know most about sailors in port would not, I think, agree with Sir Victor Horsley that it is only a 2½-oz. rum ration which the admiral has to get out of their bodies before he begins his gun-laying trials. The comparative unfitness of men for twenty four hours after shore leave, bank holiday excursions, Saturday night carousals, or a forty-mile forced march, prove nothing scientifically as to the value of a daily half-pint of beer or a small rum ration or moderate physical exercise.

The question of giving a small dose of rum to men who are exposed to extreme wet and cold in the trenches is not to be answered by the accuracy of rifle shooting tests under entirely different conditions. If a man is shivering with cold his shooting will be so bad that any stimulant which causes skin warmth will improve his shooting, in spite of all charts and curves that are drawn up to the contrary under different conditions.

One of the great dangers of an extreme chill is to stop skin action, and to throw such a burden upon the other great excretory organs that serious organic mischief results. A dose of rum (in hot milk by preference) tends to set up skin action, and therefore under suitable conditions may rightly be recommended by the army medical authorities.—I am, etc.,

The Temple, London, Feb. 22nd. JOSIAH OLDFIELD.

SIR,—There is joy in heaven over Sir Victor Horsley. In your issue of January 30th he made a number of surprising assertions without giving any evidence in support of them, and one of them was, on the face of it, grossly inaccurate. I, having been acquainted with Sir Victor Horsley's methods before—Shakespearian scholars will recognize the phrase—asked him for evidence of the others. He calls this request vulgar abuse, and excuses himself from giving the evidence on the ground that two years ago I made a slip in some figures. It seems a queer reason for refusing to give evidence of his own assertions. It is true that I did make a slip—I never had a head for figures. I did make a slip, but as soon as my mistake was pointed out I acknowledged it and withdrew it. When Sir Victor Horsley drew attention to my mistake, I did not call his doing so vulgar abuse. He now calls this mistake a lie, and I suppose he does not call this vulgar abuse. But Sir Victor Horsley's judgement on what is and what is not vulgar abuse is not to be trusted.

Sir Victor Horsley says there is no obligation on him to notice my request for evidence of his assertions. Then why does he notice it by calling it vulgar abuse? I suppose we have most of us made up our minds about the value of his unsupported assertions, and, for my part, I pay regard, not to what he may say, but to what he can prove; and his inability to prove his assertions on this occasion does not induce me to modify my attitude.

The only "aspersions" I made upon his article were that it was grossly inaccurate and verbally violent. He does not dispute these aspersions, so we must take it that he admits them to be just.

On the other hand, I was careful to give him credit where credit was due, and to welcome the change, from his treatment of the prison doctors to his solicitude for the good name and reputation of his profession; and this is why I say there is joy in heaven over him, for are we not told that there is joy in heaven over one sinner that repenteth? I venture to surmise that the joy is none the less that Sir Victor Horsley is not there to share in it. He would be storming at the archangels and teaching them their business, as he has stormed at the Lord Chief Justice, the Home Secretary, the prison doctors, and the heads of the army, and has taught them all their business. Alas! that he should have fallen on such evil times, when wisdom cries in the streets, or at any rate, bellows in the journals, and no man regards it!—I am, etc.,

Parkstone, Dorset, Feb. 20th. CHAS. A. MERCIER.

COLOUR-VISION THEORIES.

SIR,—I have to thank Sir James Porter very heartily for his kind remarks.

In reply to Dr. Percival, I must confess that it is very difficult to make points clear when the facts are quite different from the statements usually accepted. There are certain men who can do this: Sir Lauder Brunton, who first communicated my theory to the Royal Society, is one, and I feel sure he could make it intelligible to nearly every reader of the BRITISH MEDICAL JOURNAL.

When I referred to the mixture of red and green making yellow, I alluded to the sensations produced by pure spectral colours. Perhaps it would be as well to compare theory and actual fact and show how minutely they correspond.

Theory.—The sense of light was developed first, and then the sense of colour, colours of the largest and smallest wave-lengths being differentiated first—that is, the red and the violet. This red and violet, as evolution proceeded, gradually encroached on the white region in the centre of the spectrum until they met and a new colour—green—was differentiated. As evolution proceeded a new colour—yellow—replaced the red-green of the previous trichromic stage.

Fact.—There are innumerable varieties of dichromic vision, ranging from those who can only differentiate the two ends of the spectrum to those who have a very small neutral division and are much less colour-blind. We also have a number of persons, amongst whom are some of the most eminent scientific men and best observers in this country, who declare that there are only three colours in the spectrum—red, green, and violet—and that the yellow and orange regions would be better described as red-green and the blue region as green-violet. I interpret the term red green in the same way as the normal use the term yellow-green—that is, that the yellow region appears to have a red and a green element in it. This is borne out on actual experiment. If a red light be shown first and then a yellow one, the yellow is designated green. If a green light be shown first and then a yellow, this is designated red. In the same way, a yellow light between two red lights is called green, if between two green lights red. It will be noticed that this is similar to the normal with a yellow-green light. If seen by the normal between two red lights it is called green, if between two green, yellow. This class is deficient in hue perception as compared with the normal, and in conditions of difficulty becomes dichromic and makes dichromic mistakes—that is, confuses red and green.

The various colours of the Benham top are caused by the factors I have given, and the mixture of the various sensations according to the position of the lines, the illumination and the rate of rotation.—I am, etc.,

London, Feb. 19th. F. W. EDRIDGE-GREEN.

SIR,—In his interesting letter in your issue of February 20th, Mr. Percival writes: "According to the trichromic theory, the primary colours are red, green, and violet, and white light can be produced by the mixture of the three primary colour sensations," etc.

But *is* this the ordinary trichromic theory of vision? I once made an earnest and perhaps unsuccessful attempt to understand the theory as expounded by v. Helmholtz and v. Kries, and it seemed to amount to the following: If it be admitted that the effect of any colour stimulus upon the retino-cerebral mechanism can be reproduced by a mixture of not more than three chromatic stimuli, then it is reasonable to suppose that, on the sensory side, colour vision depends upon the coexistence of three independent "elements" or unit excitatory processes. The point is that the theory is an attempt to express physiological processes in terms of experimental facts, that is, the equivalents of stimuli, and has nothing to do with the psychological analysis of sensations.

Further, the theory is a generalization of the experimental facts. We cannot reproduce all the spectral colours from a mixture of red, green, and violet lights, since mixtures of green and violet appear less saturated than spectral green-blue, and to maintain the trichromatic equivalence of stimuli we have to proceed thus: Homogeneous green-blue mixed in certain proportions with red matches a certain mixture of green and violet, or, x parts of green-blue mixed with y parts of red match a parts of green mixed with b parts of violet. Hence we can write: x parts of green-blue match a parts of green *plus* b parts of violet *minus* y parts of red, which gives us the unmixable colour in terms of the three chosen colours in a formal way, but not in one capable of objective interpretation. As enunciated by v. Helmholtz, in the general form that colour vision is a function of three independent excitatory processes, the theory is difficult and perhaps impossible to disprove; but, so stated, it is not easy to apply to the immediate data. At the same time, the well-known experiments of G. J. Burch* afford some experimental justification of the hypothesis.—I am, etc.,

Loughton, Feb 20th. M. GREENWOOD, jun.

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* *Phil. Trans.*, B, cxci. *Proc. Roy. Soc.*, lxvi. *Ibid.*, B, 1905, p. 214.

THE SUPPLY OF LOCUMTENENTS.

SIR,—A letter on the above subject—I believe the second from the same person—appeared in your issue of February 13th. Your correspondent seems to think that some men demand larger fees than are necessary. I always thought that fees depended on the nature of the practice and the work done—for instance, the fees in a colliery practice would be about double those in private or good country practices.

When I did work as a locumtenent I found agents' posts most disappointing; gave up all dealings with agents and either advertised or answered advertisements, and I found the latter plan worked admirably. I got in touch with the doctors requiring locumtenents, and some idea of the practice and the fee was fixed accordingly without paying any agents' fees.—I am, etc.,

February 21st. MEMBER, B.M.A.

WASTE AND OVER-EATING.

SIR,—I am somewhat surprised that "the leading article" under the above heading, which appeared in the JOURNAL of January 30th, has so far been allowed to go unchallenged, seeing that some of the statements in it are altogether erroneous. Let me refer to some of them *seriatim*.

1. "The cheapest American cheese is as nutritive as Stilton or Roquefort." It is impossible to acquiesce to such a statement seeing that many of the American cheeses on our market are made from milk which has been deprived of a certain amount of its cream, whereas the recognized Stilton cheese is made from entire fresh milk to which extra cream has been added. Moreover, some of the cheapest American cheeses sold in this country are probably the so-called "filled" cheeses—cheeses made from skim milk which has been replenished by foreign fats.

2. "The herring is as nourishing as the salmon." Now, the herring contains a large amount of fat and is consequently rather difficult of digestion, but quite apart from this the protein of the salmon is more nutritious than that of the herring.

3. "The flank or shin of beef" it may be allowed if properly cooked is quite as nutritious as "the sirloin."

4. "Margarine" is as nourishing as "butter." The promulgation of such a fallacy is likely to be fraught with evil consequences. Time was when margarine was a more wholesome commodity than it is to-day, made up as it now in so many cases is of many very different kinds of vegetable fats; but the nutritive value of a fat depends upon the case with which it can be utilized by the organism, and it is common knowledge that the fat of milk is more easily digested, and is altogether less likely to irritate the stomach, than palm oil, pea-nut oil, or cotton-seed oil, no matter how these may be purified.—I am, etc.,

London, W., Feb. 13th. JAMES OLIVER, M.D., F.R.S.Edin.

BARLEY STRAW AND LICE.

SIR,—There is a widely-spread and deeply-credited rumour that horses and men who are bedded down on barley straw suffer much more from lice than those that are bedded on wheat straw. I have not, however, been able to obtain any direct evidence of this and should be grateful if any of your readers could give me some.

Barley straw is, of course, soft, and under pressure soon flattens out and disintegrates. Wheat straw is firmer and retains its pipe-like structure under pressure. Barley straw is also in dry weather apt to provide more dust. Used for litter, barley straw is soon pressed into a compact mass, whereas wheat straw remains more open and porous.

I do not know whether the natural prejudice against barley straw is responsible for the story about lice. It is quite unlikely that the same circumstances would affect in the same way insects so different as the *Pediculus* and the *Haematopinus* and *Trichodectes*.—I am, etc.,

Cambridge, Feb 23rd. A. E. SHIPLEY.

THE late Mr. Charles Barrett Lockwood left unsettled estate of the gross value of £11,586, with net personalty £8,065.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following degrees have been conferred:

D.M.—H. P. Newsholme.
B.M., B.CH.—E. W. Carrington (in absence).

Mr. Alexander Hill Griffith, M.D.Aberd., has been nominated to act as an examiner for the 1915 and 1916 examinations for the Diploma in Ophthalmology.

UNIVERSITY OF CAMBRIDGE.

ON the recommendation of the State Medicine Syndicate, the examination for the Diploma in Psychological Medicine will not be held in the present academical year.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

MEETINGS of the Senate were held on January 21st and 27th.

Resignation of Principal.

The Senate congratulated Sir Henry Miers on his appointment as Vice-Chancellor of the University of Manchester, and expressed its high appreciation of the services he had rendered as Principal to the University.

Recognition of Teachers.

The following were recognized as teachers of the University in the institutions and subjects indicated:

Middlesex Hospital Medical School.—Dr. Carl H. Browning (Pathology).

London School of Medicine for Women.—Dr. Arthur C. D. Firth and Mr. Percy W. Saunders (Medicine).

St. Mary's Hospital Medical School.—Dr. John Freeman (Bacteriology).

Professors and Readers.

The following titles were conferred on teachers of the University on the recommendation of the relevant boards of advisors:

To be Professors in the Subjects indicated.—Mr. John E. S. Frazer (St. Mary's Hospital Medical School), Anatomy; Dr. Thomas M. Lowry (Guy's Hospital Medical School), Chemistry; Dr. William J. R. Simpson (King's College), Hygiene and Public Health.

To be Readers in the Subjects indicated.—Dr. John S. Edkins (Bedford College), Physiology; Mr. Major Greenwood (Lister Institute), Medical Statistics; Mr. Richard G. Hebb (Westminster Hospital Medical School), Morbid Anatomy; Dr. Robert T. Leiper (London School of Tropical Medicine), Helminthology; Dr. Henry R. Le Sueur (St. Thomas's Hospital Medical School), Chemistry; Dr. Frank S. Locke (King's College), Physiology; Dr. Herbert E. Roaf (St. Mary's Hospital Medical School), Physiology; Dr. Otto Rosenheim (King's College), Biochemistry; Mr. John S. Smith (Lister Institute), Bacteriology; Dr. Hubert M. Turnbull (London Hospital Medical College), Morbid Anatomy.

Report of Professor of Protozoology.

The report of the Professor of Protozoology for the year ended June 30th, 1914, was received. The report, which had been forwarded to the Colonial Office, gave details in regard to the Professor's own research work now in progress, and contained also a section with respect to teaching. Professor Minchin, after enumerating various courses of lectures delivered, stated that, in addition to supplying to the Departmental Committee on Sleeping Sickness a detailed statement embodying his views on certain points, he had personally attended the Committee and given evidence. The report also contained a list of persons who had worked in the laboratory during the year, and a list of publications relating to investigations carried on wholly or in part in the department.

M.D. Examination on State Medicine.

The regulations relating to the M.D. Examination, Branch V, State Medicine, were amended to read as follows:

A practical examination extending over not less than two and a half days: of this one and a half days at least will be devoted to practical examination in the laboratory, of which not less than three hours will be given to (*a*) bacteriology, and not less than six hours to (*b*) chemistry; and one day at least will be devoted to practical examination in and reporting on subjects which fall within the special outdoor duties of a medical officer of health.

University of Liverpool.

It was reported that Sir James Barr, M.D., had been reappointed the Chancellor's representative on the Court of Governors of the University of Liverpool for a further term of three years.

Gilchrist Studentship for Women.

The Senate will proceed shortly to the appointment to the Gilchrist Studentship for Women, of the value of £100, tenable for one year by a graduate of the university prepared to take a course of study in an approved institution in preparation for some profession. Applications to be made by February 28th to the Principal, from whom particulars can be obtained.

Studentship in Physiology.

A university studentship in physiology, value £50 for one year, will be awarded to a student qualified to undertake research in physiology, and will be tenable in a physiological laboratory of the university or a school of the university. Full particulars can be obtained on application to the Principal.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*†J. E. Cheesman, *†A. E. Gravelle, *†I. F. Mackenzie, *†A. G. Williams, *†A. H. Willson.

MEDICINE.—*†M. M. Burt, *†J. R. Crolius, *†C. S. Dodson, *†A. Glen, *†I. F. Mackenzie, *†E. M. Townsend, *†A. G. Williams.

FORENSIC MEDICINE.—M. M. Burt, F. W. Chamberlain, J. R. Crolius, H. A. de Morgan, L. A. J. Graham, I. F. Mackenzie, D. C. Ogilvie, A. L. Robinson, A. G. Williams, A. H. Willson.

MIDWIFERY.—R. H. Chadwick, J. R. Crolius, J. D. Ferguson, L. A. J. Graham, L. Kahan, I. F. Mackenzie, W. H. Rhys Jones, A. G. Williams, G. C. Wright.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. M. M. Burt, A. E. Gravelle, I. F. Mackenzie, E. M. Townsend, and A. H. Willson.

Medico-Legal.

IMPROPER USE OF THE RED CROSS.

IN the JOURNAL of January 23rd it was reported that John Piercy Trevor Key, carrying on business described by him as a medical practice at 7, West Register Street, Edinburgh, in connexion with which he used the name "Dr. Temple," was prosecuted in the Edinburgh Summary Court for violation of the Medical Acts, and was fined the maximum penalty of £20. In the Edinburgh Burgh Court on February 15th the same person was, according to a report in the *Scotsman* of February 16th, charged with having used for the purpose of his business, without the authority of the Army Council, the heraldic emblem of the Red Cross on a white ground by causing an employee to put up bills appertaining to his business, in contravention of the Geneva Convention Act, 1911. The accused pleaded guilty. The prosecution was instituted by direction of the Procurator-Fiscal, for whom it was pointed out that Section I of the Convention provided that it was unlawful for any person to use for the purposes of his trade or business, or for any other purpose, the Red Cross on a white ground without the authority of the Army Council. The magistrate said that the maximum penalty was £10, but he was prepared to modify the penalty to £2.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association is anxious to assist as far as may be possible in facilitating exchanges between medical officers of the Territorial Force, in accordance with the terms of the letter addressed to General Officers Commanding-in-Chief Command of all Commands at Home by the Assistant Secretary to the War Office on December 10th as follows:

To the General Officer Commanding-in-Chief Command.
All Commands at Home.

War Office, London, S.W.,
10th December, 1914.

Royal Army Medical Corps.

Sir,—I am commanded by the Army Council to acquaint you that in order to mitigate as far as possible the inconvenience to the civil population and to Territorial Force Medical Officers owing to enforced changes of station, the following measures will be adopted; the object in view being that these officers may be able, as many medical officers attached to general hospitals are at present able, to give part of their time to civil practice in their own districts:

1. When a mobilized Territorial unit is moved from its own locality in Great Britain, the medical officers may be allowed:

(*a*) To effect exchanges, direct or indirect, with Territorial medical officers in the new locality when possible.

(*b*) If the above is not feasible, the places of medical officers not desiring to accompany their units may be taken by junior medical officers willing to take temporary commissions and serve with such units; the original medical officers being demobilized until the return of the units to their own localities, or until their services can be otherwise utilized there.

2. When a mobilized Territorial unit volunteers for imperial service abroad the medical officer will be given the option of accompanying it or of serving with the reserve unit raised for home defence in its stead, vacancies in both units being filled up by junior medical officers with temporary commissions.

To facilitate such exchanges a list is kept at the War Office of junior practitioners willing to accept general service either at home, in the field, or abroad, from which substitutes can be detailed as occasion arises.

The medical officers themselves might be of assistance in procuring substitutes to take their places, possibly from their own neighbourhoods, whose names would be placed on the list.—I am, Sir, your obedient servant,

B. B. CUBITT.

In view of the intimation contained in the final paragraph of the letter, requests for exchange will be published in the BRITISH MEDICAL JOURNAL as received. It is suggested that information on the following heads is among that which should be furnished in every instance:

1. Rank and name .....
2. Regiment *or* medical unit .....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally .....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Signature .....

Present address and date .....

Obituary.

EDWARD C. SEATON, M.D., F.R.C.P.,

CONSULTING MEDICAL OFFICER OF HEALTH, SURREY COUNTY COUNCIL.

WE regret to announce the death of Dr. Edward C. Seaton, who was for many years one of the foremost representatives of sanitary science in this country. He was one of the many victims of the prevailing epidemic and died of influenza and bronchitis after a short illness at his residence in Chelsea on February 20th.

Edward Cox Seaton was the son of Edward Cator Seaton, Medical Officer to the Privy Council and to the Local Government Board, to whom the passage of the Acts making vaccination compulsory was largely due. He was born in London in 1847 and educated at Tonbridge School. He afterwards studied medicine at St. Thomas's Hospital; he took the degree of M.B. with honours at the University of London in 1870, and that of M.D. in 1871. He was elected a Fellow of the Royal College of Physicians in 1886. He was M.O.H. Nottingham and physician to the Notts General Hospital from 1872 to 1884, when he became M.O.H. and public analyst for Chelsea. In 1891 he was appointed the first medical officer of health to the administrative county of Surrey, and in 1910 he became consulting medical officer to the county. From 1886 to 1908 he was lecturer on public health at St. Thomas's Hospital, and was at different times examiner in State medicine in the Universities of London, Oxford, and Cambridge, and at the Royal Colleges of Physicians and Surgeons of London. He was an intimate associate of Simon, and assisted him in reproducing his official publications for the Royal Sanitary Institute in 1887. He was the author of the article on vaccination in *Quain's Dictionary of Medicine*. He delivered the address in public medicine at the annual meeting of the British Medical Association in 1891, taking as his subject the evolution of sanitary administration in England, a further sketch of which he contributed to the Queen Victoria Commemoration Number of the BRITISH MEDICAL JOURNAL (June 19th, 1897). He read a communication on diphtheria before the International Congress of Medicine at Budapest in 1894, and delivered the Milroy Lectures at the Royal College of Physicians in 1896. His Chadwick Lectures at the University of London on *Infectious Diseases and their Preventive Treatment*, published in 1910, may be taken as containing a summary of his matured views on subjects to the study of which he had given his professional life.

He took an active part in promoting legislation for the compulsory notification of infectious diseases, and was the author of numerous reports and papers on the subject, and on isolation hospitals, clinical instruction at small-pox and

fever hospitals, and the control of small-pox and typhoid fever in relation to public water supplies. He was a special commissioner for the Government inquiries on the housing of the working classes in 1890.

This record, though by no means exhaustive, will serve to give an idea of the amount and variety of Dr. Seaton's work. He was a man of great independence of mind; but, although his views on certain points were not always in harmony with official theories, his wide knowledge, large experience, and sound judgement gave great weight to his opinion. His services to the cause of public health were of the highest order, and his name was held in deserved honour by his profession. His work was not, however, adequately recognized by some of the public bodies in whose service he spent himself, and the close of his life was somewhat darkened by a shadow of disappointment.

Always ready to withstand Bumble to the face in defence of what he thought right, Dr. Seaton was personally a man of amiable character and most courteous manner. He was very much in earnest about the things in which he was interested, but his habitual gravity was tempered by a dry humour which made his conversation very entertaining.

Dr. Seaton was a Fellow of the Royal Sanitary Institute and a member of the Society of Public Analysts. For more than forty years he was a member of the British Medical Association.

He was twice married, his second wife, who survives him, being the daughter of the late Mr. John Marshall, sometime President of the Royal College of Surgeons and of the General Medical Council. He leaves one daughter.

PROFESSOR WESLEY MILLS,

EMERITUS PROFESSOR OF PHYSIOLOGY, MCGILL UNIVERSITY, MONTREAL.

PROFESSOR WESLEY MILLS, the well-known Canadian teacher and writer, died suddenly in London, on February 13th, of angina pectoris. Dr. Mills was born and educated in Canada. He took the degree of B.A. at the University of Toronto, and that of M.D. in McGill University in 1878. He was for several years demonstrator of physiology with Professor Osler, and studied at University College with Sir John Burdon-Sanderson and Sir E. A. Schäfer. In 1884 he became lecturer in physiology, and in 1886 professor of the subject at McGill. He organized the teaching of physiology on modern lines, and was the first Canadian teacher of the subject to have a thoroughly up-to-date, well equipped laboratory. Among his early contributions to physiology were the studies of cardiac innervation. He was one of the first to follow the fruitful lead of Gaskell. He became much interested in comparative physiology, and the results of a long series of studies are embodied in a work on *The Nature and Development of Animal Intelligence.* In 1889 appeared his *Textbook of Animal Physiology*, which was modified in the new edition in 1890 to the *Textbook of Comparative Physiology.*

He was passionately devoted to music, and in his younger days was himself no mean performer on the violin. In 1906 appeared his *Voice Production in Singing and Speaking*, a work which brought him much reputation outside of medical circles.

After a serious illness in 1910 he retired, and lived in London, devoting himself with energy and enthusiasm to the study of music.

P. J. MACNAMARA, M.D., F.R.C.S.I.,

KILMALLOCK, CO. LIMERICK.

WE regret to announce the death of Dr. Patrick J. MacNamara of Kilmallock, which took place recently. Dr. MacNamara was a native of the county Limerick. He was educated chiefly in Dublin and Cork. In 1872 he received the M.D. degree from the old Queen's University; in the same year took the diploma of L.R.C.S.I., and fifteen years later he obtained the Fellowship of the College. In his early career, before finally settling down in Kilmallock, he practised in Galbally and Bruff, co. Limerick. It is not often that a country doctor holds a position such as that held for many years by Dr. MacNamara. He was medical officer for the Kilmallock Workhouse, the medical attendant of most of the people in the neighbourhood, and the trusted consultant of his medical brethren not only in the county of Limerick, but in the adjoining counties. His general capacities in medicine, surgery, and obstetrics rendered him the outstanding figure in the district. His influence, however, was not confined to one part of Ireland. As chairman of the Irish Medical Committee since 1913, he perhaps did more than any other individual to help to preserve the unity of the profession in Ireland in their efforts to obtain fair treatment at the hands of the Government. Dr. MacNamara was a great-hearted, honourable man, and as such will always be remembered in Ireland. Dr. MacNamara may be said to have died at the post of duty, as he contracted pneumonia from one of his patients. It makes the sorrow of Dr. MacNamara's death the more painful when it has to be recorded that his wife, Mrs. MacNamara, contracted pneumonia, and only survived him a few days. The local public bodies have passed votes of condolence with Dr. MacNamara's family. Dr. R. J. Rowlette, F.R.C.P.I.(Dublin), attended the funeral on behalf of the Irish Medical Committee.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. P. Fitzsimons Eve, formerly president of the Nashville Academy of Medicine, and one of the most prominent surgeons in the Southern States of America, aged 58; Dr. A. F. Africanus King, professor of obstetrics and diseases of women and children in George Washington University, Washington, from 1871 to 1913, aged 73; Dr. Suné y Molist, of Barcelona, one of the editors of the *Gaceta Medica Catalana*, and a member of the Real Academia de Medicina of Madrid; and Dr. Karel Pawlik, professor emeritus of obstetrics and gynaecology in the Bohemian University of Prague, aged 65.

Medical News.

SIR RICHARD DOUGLAS POWELL, Bt., K.C.V.O., will deliver an Emeritus Lecture, entitled "A case of congenital heart disease," on Friday, March 5th, at 3 p.m., in the new theatre of the Medical School of the Middlesex Hospital.

THE Commanding Officer of the University of London Officers' Training Corps (Lieutenant-Colonel D. S. Capper) desires to announce that a limited number of young men who are not students of the university will be enrolled for a course of continuous training with a view to qualifying for commissions. Candidates (who must be between the ages of 18 and 28 and suitable in every respect for commissions in the army) should attend in person to see the adjutant of the contingent at the head quarters, University of London, South Kensington. The next course of continuous training will commence on March 15th, 1915.

IT has been decided by the Representative Board of the British Dental Association to hold only a business annual meeting in London this year, on July 24th. An invitation had been accepted from the Wessex Branch to meet at Bournemouth, under the Presidency of Mr. A. E. Ball, but owing to the exceptional conditions and the fact that Mr. Ball is serving as Captain in the 11th Battalion Hampshire Regiment, this meeting has been abandoned. The Board, having to choose a new President-elect, has unanimously appointed Mr. W. H. Dolamore, M.R.C.S., L.R.C.P., L.D.S. (Dean of the Royal Dental Hospital), who has already rendered the British Dental Association notable service during seven years in succession as Honorary Treasurer and Honorary Secretary.

THE King on February 17th inspected the motor ambulances presented to the War Office by the Scottish Branch of the British Red Cross Society. In addition to some fifty motor ambulances, there was the necessary complement of repair vans, store wagons, and motor cars for officers. Scotland has already subscribed over £140,000 in aid of succouring the wounded, of which some £80,000 has been expended in motor ambulances. Many of the vehicles bore the names of the cities or districts by which they were presented. On the same day Queen Alexandra inspected at Marlborough House the six motor ambulances and motor lorry which the Salvation Army has presented to the nation. Her Majesty gave permission for the group of cars to be called "The Queen Alexandra Unit."

THE trustees of the British Museum have published a special guide-book, prepared by Professor Smith Woodward, dealing with the Piltdown remains. It is a model popular scientific treatise. Clearly and simply written, and

avoiding controversy, it tells the tale of man's descent as revealed by the fossil remains in the museum cases. An introduction, with explanatory geological tables, sketching the probable lines of man's evolution and finishing with a note on *Pithecanthropus erectus*, is followed by a fully illustrated description of the Piltdown remains and the points of comparison with the chimpanzee, Heidelberg man, and modern man, and by shorter notes on Heidelberg man, Neanderthal man, and modern man. In this last note Galley Hill man is mentioned as of doubtful antiquity, being perhaps a burial. Professor Smith Woodward concludes that the further back human remains are traced in geological time, the more marks they retain of an ape-like ancestry. With the help of this guide-book a most interesting hour may be spent among the fossil remains of man at the South Kensingtom Museum.

THE Medical Report of the Tainan Hospital English Presbyterian Mission, Formosa, 1914, by Dr. James L. Maxwell, is the third of the series, and contains information as to the prevalence of typhoid fever. The case is mentioned of a hospital assistant who died six days after an operation for perforating ulcer. Typhoid seems prevalent among children, though rare amongst the adult Chinese population, as compared with its prevalence among foreigners in China. The author suggests that as Chinese children very frequently suffer from feverish attacks, some of these may be due to mild typhoid fever, which confers immunity. There is no direct evidence that typhus fever exists in epidemic form among the Chinese in Formosa, but Dr. Maxwell reports two cases which he believes were instances of atypical sporadic typhus. Continued experience has confirmed his opinion that emetine administered hypodermically is of great value in amoebic dysentery, though it is of no use in the bacillary type, for the cure of which Rogers's albargin treatment has proved of only slight benefit in the Tainan Hospital. There is no lack of surgical cases. Dr. Gushue-Taylor operates by the suprapubic method in cases of calculus; in 8 out of his 10 cases the wound healed by first intention. Dr. Maxwell gives a graphic description of a midwifery case, up country, a transverse presentation where decapitation had to be practised; the patient, though very unfavourably situated according to European ideas, recovered. The number of in-patients in the year was 2,062 males, 790 females; of out-patients, 4,408 males, and 4,626 females; 748 operations were performed under anaesthesia.

FOR some time after the outbreak of the war there was a good deal of apathy in this country where the possibility of such a conflict had been doubted, when not actually derided, except by a few far-seeing men. Even now the vital issue is not fully recognized by some who trust to our traditional luck in pulling through difficult situations. A Central Committee for National Patriotic Organizations was formed some time ago to aid in instructing public opinion throughout the country as to the causes and objects of the war so as to stimulate and keep alive the determination to carry on the conflict until the conditions of an honourable and lasting peace had been achieved. In the furtherance of these ends many widely different leagues, societies, and other bodies have shown, and are still showing, great activity. But from the very number of these agencies there is danger that confusion and overlapping may arise and cause a waste of effort. The Central Committee was therefore formed, to co-ordinate the work, to arrange for the supply of competent organizers and speakers at local meetings, and to collect lists and specimens of all literature issued by societies or individuals, and aid in its distribution. The Committee proposes to undertake the distribution of a large amount of literature concerning the war, translated into various languages, to neutral countries. With this object it is in direct touch with the great bulk of the universities and learned societies, and with leaders in letters, science, commerce, and the professions in neutral countries; and also with all the English-speaking universities, including those of the United States. Among the bodies co-operating with the Central Committee are the Universities of Oxford, Cambridge, Aberdeen, Birmingham, Bristol, Dublin, Glasgow, Liverpool, London, Manchester, and Sheffield. Funds are, of course, necessary for the prosecution of the work, and an appeal for contributions, signed by Mr. Asquith, the Honorary President; Lord Rosebery and Mr. Arthur Balfour, Vice-Presidents; Mr. H. C. Cust, Chairman; Mr. G. W. Prothero, Vice-Chairman; Lord Ridley and Mr. Waldorf Astor, Honorary Treasurers, have been issued. Further information may be obtained from the Secretary, Sir William Grey Wilson, K.C.M.G., Canadian Pacific Buildings, 62, Charing Cross, W.C.

Letters, Notes, and Answers.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitology, Westrand, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London*.

TELEPHONE (National):—
2631, Gerrard. EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

UMBILICAL CORD ROUND THE NECK.

DR. REGINALD COCK (London, N.E.) writes that he recently attended a primipara, aged 30, in whom the first stage of labour was very much delayed, although the pains were strong and there was no obvious cause of obstruction. At the patient's own request forceps were used, and after some considerable difficulty and time the head was brought down, when it was found that the cord was twisted four times round the neck. I should, he adds, be interested to hear of other similar cases: whether the condition can be diagnosed at all or only suspected, and also what is the correct treatment of such cases.

SURVIVAL AFTER FRACTURE OF UPPER DORSAL SPINE.

DR. H. W. SHETTLE (Senior Surgeon, Royal South Hants Hospital, Southampton) asks what is the longest time a patient has lived after fracture of spine in the upper dorsal region, with complete paralysis below the seat of injury? I have attended a man for five years and two months for the above accident. He has recently died. No catheter was ever passed; the urine was allowed to drain away; cystitis was easily kept under by medicine.

LETTERS, NOTES, ETC.

"SPINOUS" IN MURRAY'S DICTIONARY.

IN Sir James Murray's *English Dictionary* ("Speech-Spring," October, 1914), under the heading "Spinous," the sixth subheading reads thus: "6. *Anat.*, of or belonging to the spine, 1826, S. Cooper. First Lines. Surg. 216. A rupture of the spinous or some other artery of the dura mater." On referring to *The First Lines of the Practice of Surgery*, by Samuel Cooper, Surgeon to the Forces, etc., 1826, the passage above quoted is to be found at p. 294: "External violence, applied to the head, frequently occasions a rupture of the spinous or some other artery of the dura mater, and a large quantity of blood is effused on the surface of this membrane." It is clear that S. Cooper meant the middle meningeal artery which passes through the foramen spinosum of the sphenoid bone, and has nothing to do with the spine. This error has been pointed out to us by a distinguished anatomist.

SIR WILLIAM BEATTY, NELSON'S SURGEON.

DR. CLIPPINGDALE (London, W.) writes: The name of Vice-Admiral Sir David Beatty, which has been on all lips, will recall to the memory of medical men the great naval surgeon who ministered to the last needs of Nelson on board the *Victory*. It will be remembered that Sir William Beatty, having extracted the fatal bullet, was unable to counteract the shock, or control the haemorrhage which probable took place into the thorax. Animated by a desire to read what inscription might be upon the great surgeon's tomb, I have paid a visit to Kensal Green Cemetery where Sir William lies buried. My pilgrimage, however, was doomed to disappointment and to pain. I found that his body was interred with eight others in a common grave. Thus was buried Sir William Beatty, M.D., F.R.S., Physician to the Fleet and to Greenwich Hospital; concerning whom the *Gentleman's Magazine* at the time of his death (March, 1842) wrote: "He had served his country faithfully and in all climes. It may be fairly said that his whole professional life was in accord with the sentiment expressed in Nelson's last and ever memorable message to the Fleet." Sir William Beatty, who died a bachelor and intestate, left property to the value of £3,000.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Remarks
ON
THE APPLICATION OF STRONG ANTISEPTICS TO INFECTED AND NON-INFECTED WOUNDS.

By C. J. BOND, F.R.C.S.,

HONORARY CONSULTING SURGEON AND VICE-CHAIRMAN OF THE LEICESTER ROYAL INFIRMARY; MEMBER OF THE NATIONAL MEDICAL RESEARCH COMMITTEE.

THE good results which have followed the thorough application at the earliest possible moment of some efficient germicide to wounds which, from their nature and surroundings, are almost certainly infected, has already tended to allay the feeling of hesitancy with which at the beginning of the war surgeons adopted an antiseptic as opposed to an aseptic line of treatment.

Inasmuch, however, as some apprehension may still exist as to the degree of injury which such applications inflict on the cells and tissues of the body, I feel prompted to record some observations which I have recently carried out, primarily with the object of satisfying myself as to the capacity of tissues to heal in the presence of strong antiseptics, and I venture to hope the facts so recorded may be useful at the present time.

In order to state with confidence and accuracy the effect of the application of strong germicides like carbolic acid or iodine to wounds in general, it is necessary to simplify the problem and first ascertain the effects of such reagents on wounds in which the possibility of the presence of disease organisms has been excluded.

I have therefore recently taken advantage of the opportunity afforded by a series of operations for hernia, varicose veins, etc., on recruits rejected for physical disability to treat in a few cases the extensive incisions made for the removal of varicose veins in the leg and thigh in the following way:

The usual preparatory treatment as used in the aseptic method is first carried out.

In one leg the wound left by the long incision on the inner side of the calf, which may measure 6 or 8 in. in length and (after the necessary dissection) 3 or 4 in. in width, was well rubbed over with pure carbolic acid until the tissues assumed the dirty white appearance characteristic of the reagent.

In the other leg of the same patient the corresponding incision was treated with tincture of iodine (*B.P.* strength).

In other patients, out of a number of incisions on the same limb, one was treated with pure carbolic, one with tincture of iodine, one with mercury perchloride lotion (1 in 1,000), and one with carbolic acid lotion (1 in 20), and the other incisions with no antiseptics at all.

The edges of the wounds were coapted in all cases by Michel's metal clips, and all were dressed alike with plain white sterilized gauze, wool, and bandage.

The only difference that could be ascertained in the patients' own sensations after recovery from the anaesthetic was that incisions treated with carbolic acid smarted rather less than incisions treated with iodine.

There was little or no difference, as far as painful sensations were concerned, between wounds treated with and those treated without antiseptics, such slight irregular differences as were present might well be accounted for by entanglement of delicate nerve endings in the ligatures.

In regard to the more important point of the influence of such antiseptics on the healing of the wound, I can only say that it is usually impossible to tell from the appearance of the line of the incision or the condition of the parts round, after the removal of the dressing on the second day, or at a later period, which of the wounds had been treated by one method and which by the other. All healed by primary union without undue local reaction or any elevation of temperature in the ordinary way.

I fully realize that, put in this simple way, this statement is likely to be misinterpreted. In the first place, I am alive to the fact that in applying a reagent like pure carbolic to a recent wound in which no organisms are present or are likely to gain access, we are by chemical means killing and injuring a number of fixed and wandering cells over and above those which have been necessarily killed or injured by mechanical means, by the knife, forceps, or ligature. The fact, however, thus ascertained, that the free application of strong antiseptics like pure carbolic acid at the time of operation to extensive wounds, free from disease germs, does not materially affect the healing of such wounds is important.

There is, no doubt, a considerable margin in all healthy tissues of capacity of repair in response to injury, and such tissues are probably able to deal with far larger numbers of dead cells than are killed by the chemical reagent used, but in the carrying out of this work the defensive cells must not be hampered by the presence in the wound of disease germ or their toxins.

This safety margin of reparative power is, of course, well shown in the ease with which destroyed cells are removed and injuries recovered from in wounds in which there is no solution of skin continuity and to which no germs gain access.

I lay stress on the thorough application of the antiseptic on one occasion only because there are reasons for thinking that one application of a strong antiseptic like pure carbolic acid does less permanent injury to the tissues than the repeated application of weaker solution; furthermore, the strong reagent has a far greater chance than the weaker solution of killing the invading organisms if used at a sufficiently early period.

The real question is:

To what extent does the presence of pathogenic organisms and their toxins in a wound hamper the defensive cells in their efforts to remove the cell débris caused by chemical or mechanical injury? This will depend upon—it is, indeed, an index of—the virulence of the organisms concerned. It varies with different species of organisms, and with different strains of the same species.

We have already ascertained that the initial application of a strong antiseptic, like pure carbolic acid, does not materially prejudice the healing of a wound in which the injury to the tissues by mechanical means has been moderate, and from which organisms have been excluded. Can we apply this conclusion to wounds in which the damage to the tissues is much greater, and into which pathogenic organisms have been introduced either at the time of injury or shortly afterwards? In other words, we want to know whether the application of a strong antiseptic to an infected wound materially adds to the difficulties of the defensive cells in their struggle with the disease organisms on the one hand, and in their effort to remove cell débris and regenerate new cells on the other. The problem is one of balance of advantage. If the antiseptic destroys or inhibits the growth of the invading organisms, it certainly promotes healing, even if it kills a few more tissue cells. If, however, it damages a considerable number of defensive cells and fails to destroy or inhibit the growth of the disease organisms, it will do more harm than good.

The result in any given case will depend to a considerable extent on the variety and numbers of the invading organisms, also to some extent on the amount of injury to the tissues, but it will depend less on the kind of antiseptic employed than on the time which has elapsed between the infection of the wound and the application of the antiseptic, or, in other words, the extent to which the disease organisms have established themselves in the wound and invaded the tissues.

Several distinguished surgeons have lately drawn attention to the rapid improvement which often takes place in the patient's condition and in a wound after the removal of bits of infected clothing or other foreign bodies, or detached bone fragments. No doubt such treatment acts by establishing free drainage and by removing the nidus for the growth of organisms; but it also relieves the defensive cells from the strain of dealing with these foreign bodies and so leaves them free to repel the organisms and their toxins.

If, then, extensive destruction of body cells is quite consistent with the rapid healing of a wound in which microorganisms are absent, and if, as we have seen, the single application of a powerful antiseptic to a recently made aseptic wound does not materially affect the healing process; and if further, as we know from abundant experience, the

application of a sufficiently strong antiseptic does, under favourable conditions as to time and the nature of the wound, materially aid in destroying the infection and preventing its spread, then it seems clear that such an application should be made in all suitable cases.

The point is, What is the best form of antiseptic to use and what is the best way of using it?

One fact which emerged from these observations is that all the antiseptics—carbolic, iodine, and mercury—when used in freshly-made aseptic wounds, seem about on a par as regards their influence on the healing of the wound.

If the conditions were the same in a wound as in a culture tube, the best form of antiseptic would have been decided in the laboratory long ago. The free use of almost any antiseptic in sufficient concentration will (apart from the question of spores) destroy or inhibit the growth of most organisms when these are present only on the surfaces, internal and external, of the wound. Hence the divergent views as to the germicidal power of different antiseptics, a divergence of opinion which indicates that in surgery as in medicine the complete control of and the curative remedy for infection in all its phases has not yet been arrived at.

We do not fully know the length of time after infection within which the application of an antiseptic to a wound holds out any prospect of doing good. Hence it is probably wise to make one efficient application of a sufficiently strong antiseptic even in doubtful cases.

If, in addition to the removal, at the proper time, of foreign bodies, bone fragments, etc., and the establishment of free drainage, one such thorough application fails to check the spread of the infection, then it is not very likely that the repeated use of weaker solutions will have a better result. Experience shows that this is true in a general sense and under these conditions reliance must be placed on stimulating the defensive mechanism of the body by vaccines and in other ways.

It is, however, not my present object to discuss infection and different methods of wound treatment generally; I desire rather to show from direct observation that the application of even a powerful antiseptic does not prejudicially affect the healing process under certain conditions, and by showing this to remove any lingering reluctance to employ suitable reagents in the treatment of infected wounds, and in this way to promote the antiseptic as opposed to the aseptic method in wounds received in war.

Hitherto I have confined my observations to wounds of the limbs and body tissues generally; I have not included wounds of the large serous cavities and their contained viscera. Although the details of application require considerable modification, I think the general principle—namely, that the efficient application on one occasion of a powerful antiseptic is better than the repeated application of weaker solutions—still holds good. One, perhaps the chief, factor influencing the result is that the destruction, by chemical or mechanical means over any considerable area, of the endothelial cells which line these serous cavities increases the risk of the transmigration of pathogenic organisms through the walls of the hollow viscera, and it also predisposes to the subsequent formation of adhesions between opposing surfaces. But bearing this fully in mind, I think that the dread of carbolic acid within the abdominal cavity under all circumstances is a somewhat unreasonable dread. From what I have seen of the application of pure carbolic acid to the stumps of amputated appendices and in some cases to adjacent areas of the caecum or small intestine, and on a still more extensive scale to the stumps of infected Fallopian tubes and abscess cavities in the female pelvis, I feel sure that the localized and careful application of even such a powerful antiseptic as pure carbolic acid at the time of operation has done good in many cases.

The governing factor is, of course, not so much the antiseptic as the mode of infection. If the infecting organisms are passing through the wall of the bowel, as in a case of general peritonitis with obstruction, then the application of any antiseptic to the peritoneal coat of the gut will only do harm. If, on the other hand, the infecting material is being introduced into the peritoneal cavity from outside, as it is in wounds of the abdomen, and as it is also in a localized perforation of a hollow viscus with escape of its contents, then after ensuring that the two urgent requirements—namely, the removal of the extravasated material and the prevention of further leakage—are both fully carried out we must look round for further means by which to aid the organism to repel the invasion. If it is probable that in some limited area the local application of a strong antiseptic will do more good by destroying germs than it will do harm by killing a certain number of tissue cells, then it is wise to use it.

In conclusion, I hope it will not be supposed that, in recording these simple observations on the effect of antiseptics in aseptic wounds, I am advocating the routine use of these reagents in wounds made by operation under strict aseptic conditions; such a suggestion is quite foreign to my intention. What I do wish to suggest is that if it can be shown, as it certainly can be, that the proper application of strong antiseptics does not materially affect the healing of certain aseptic wounds, this fact should encourage us in the fuller use of efficient germicides in infected wounds at the earliest opportunity and under suitable conditions.

[This article was written before the publication of Sir W. Watson Cheyne's Hunterian Oration on "The Treatment of Wounds in War." We may reasonably hope that the very important researches carried out by Sir Watson Cheyne and his colleagues on the power of diffusion and bactericidal capacity of various germicides will bring the problem of the efficient disinfection of wounds received in war a step nearer solution. With increasing knowledge of the germicidal capacity of different antiseptics there still remains the need for further investigation concerning the action of these reagents on the body cells and tissues. It is this side of the problem that I have ventured to discuss in my remarks.]

Further Report

ON

THE TREATMENT OF PERNICIOUS ANAEMIA BY SALVARSAN AND NEO-SALVARSAN.

BY

BYROM BRAMWELL, M.D., F.R.C.P.E., LL.D., F.R.S.E.,

CONSULTING PHYSICIAN TO EDINBURGH ROYAL INFIRMARY; PHYSICIAN TO CHALMERS' HOSPITAL, EDINBURGH, ETC.

In March, 1911, I published in this JOURNAL (p. 547) two cases of pernicious anaemia in which great improvement resulted from the intramuscular injection of salvarsan, and on June 22nd, 1912, and May 24th, 1913, I published in this JOURNAL additional papers showing the future progress of these cases and giving particulars of 10 additional cases in which the same method of treatment was employed.

I now propose to record the progress of the cases previously reported and the results in 9 additional cases treated in the same way. These 21 cases include every case of pernicious anaemia I have personally treated by salvarsan or neo-salvarsan, with the exception of 3 cases which have quite recently come under observation and in which sufficient time has not yet elapsed to show the effects of treatment.

One case, which was at first diagnosed as a case of pernicious anaemia and was treated by salvarsan, but which proved to be a case of malignant disease of the stomach and spleen, and 3 cases of pernicious anaemia seen once in consultation in which salvarsan was advised, but in which I do not know if the treatment was employed or not, are not included.

Since I introduced the arsenical treatment of pernicious anaemia in 1875 I have had a large experience of the disease. I have notes, more or less complete, of 141 cases. Excluding 7 cases in which arsenic was not given, the 21 cases treated with salvarsan or neo-salvarsan recorded in this paper, and the 3 cases treated by neo-salvarsan which have quite recently come under observation, there remain 110 cases treated with arsenic by the mouth in the form of Fowler's solution. Of these 141 cases, 70 were hospital and 71 were private patients.

The impression which has been made on my mind by

the comparative results obtained in the treatment of pernicious anaemia by arsenic by the mouth, given in the form of Fowler's solution, on the one hand, and by salvarsan or neo-salvarsan, given intramuscularly, on the other, is decidedly in favour of the latter plan of treatment.

Immediate Result.

A. *Arsenic by the Mouth.*—Of the 110 cases (hospital and private) treated by arsenic given by the mouth in the form of Fowler's solution, in 36 cases (32.7 per cent.) there was no improvement; in 22 cases (20 per cent.) there was slight improvement; in 40 cases (34.5 per cent.) there was marked improvement; and in 14 cases (12.7 per cent.) there was complete (? temporary) recovery.

B. *Salvarsan and Neo-salvarsan.*—Of the 21 cases treated by salvarsan or neo-salvarsan, and recorded in this paper, in 6 (28.5 per cent.) there was no improvement; in 3 (14.2 per cent.) there was slight improvement; in 5 (23.8 per cent.) there was marked improvement; and in 7 (33.3 per cent.) there was complete (? temporary) recovery.

Ultimate Result.

A. *Arsenic by the Mouth.*—Of the 110 cases (hospital and private) treated by arsenic given by the mouth in the form of Fowler's solution, in 12 cases (10.9 per cent.) the ultimate result is not known; in 4 cases (3.6 per cent.) the patients remain fairly well; in 2 cases (1.8 per cent.) the patients remain quite well; in 92 cases (83.6 per cent.) the patients have died. Of the 92 fatal cases in this series, 85 died from pernicious anaemia and 7 from other causes (4 from pneumonia, 1 from heart disease, 1 from cerebral haemorrhage, and 1 from haemorrhage from the bowel).

B. *Salvarsan and Neo-salvarsan.*—Of the 21 cases treated by salvarsan or neo-salvarsan and recorded in this paper, in 1 case (4.7 per cent.) the patient remains fairly well; in 5 cases (23.8 per cent.) quite well; in 15 cases (71.4 per cent.) the patients have died. Of the 15 fatal cases in this series, 13 died from pernicious anaemia (in one of these death was due to bronchopneumonia, which developed ten days after the first and only injection of neo-salvarsan), and 2 from other causes (one from acute croupous pneumonia and one from tuberculous disease of the pleura, peritoneum, and intestine). In the case in which death was due to bronchopneumonia the bronchopneumonia occurred a week after the administration of the salvarsan; whether the treatment had anything to do with the production of the bronchopneumonia it is, of course, impossible to say. In Case XII the pernicious anaemia was complicated with acute combined sclerosis; in Case XXI with a very bad heart; in Case XX the uterus was removed, during the course of the treatment, for profuse recurring menorrhagia (due to a fibroid condition of the uterus).

Duration.

The average duration in months after the treatment was commenced in the two series of cases was as follows:

A. Of the 110 cases treated by arsenic given by the mouth in the form of Fowler's solution, the result is not known in 12 cases; in the remaining 98 cases (6 still alive and 92 dead) the average duration since the treatment was commenced is 14.3 months.

B. Of the 21 cases treated by salvarsan or neo-salvarsan (6 alive and 15 dead), the average duration since the treatment was commenced is 12.5 months.

The comparison between the ultimate result in the two series of cases is not a fair one, for the length of time which has elapsed since the salvarsan treatment was commenced is very much shorter than that since the arsenical treatment by the mouth was commenced in the great majority of cases. Some, perhaps all, of the cases which are still living, and which have been treated by salvarsan and neo-salvarsan, will probably relapse and die. The percentage mortality in the two series of cases is therefore, in the meantime, unreliable.

The same statement applies to the average duration in months after the commencement of the treatment in the two series of cases. In 5 of the cases treated by arsenic by the mouth the duration was 165 months, 110 months, 90 months, 72 months, and 63 months respectively. The long duration in these cases materially affects the general average. Until the cases which still survive (6 cases in the series treated by arsenic in the form of Fowler's solution given by the mouth, and 6 cases in the series treated by salvarsan or neo-salvarsan given intramuscularly) die, it is impossible to give an accurate comparison of the total duration after treatment in the two series of cases.

Further, unless large numbers are compared, the comparison is apt to be fallacious, for the severity of the cases included in one series may be greater than the severity of the cases included in the other.

The comparative results in the two series of cases—110 cases treated by arsenic by the mouth, and 21 cases treated by salvarsan or neo-salvarsan (intramuscularly)—are shown in the following tables:

Immediate Result.

	No Improvement.	Slight Improvement.	Marked Improvement.	Complete (? temporary) Recovery.
A. 110 cases treated by Fowler's solution	36, or 32.7%	22, or 20%	40, or 34.5%	14, or 12.7%
B. 21 cases treated by salvarsan or neo-salvarsan	6, or 28.5%	3, or 14.2%	5, or 23.8%	7, or 33.3%

Ultimate Result up to Date.

	Not Known.	Fairly Well.	Quite Well.	Death.	
				P.A.	Other Causes.
A. 110 cases treated by Fowler's Solution	12, or 10.9%	4, or 3.6%	2, or 1.8%	85, or 77.2%	7, or 6.3%
B. 21 cases treated by salvarsan or neo-salvarsan	—	1, or 4.7%	5, or 23.8%	13, or 61.9%	2, or 9.5%

In giving salvarsan or neo-salvarsan in cases of pernicious anaemia I have always employed the intramuscular method of administration. First, because in pernicious anaemia we want, I think, a remedy which will produce a sustained and continued rather than an immediate and temporary effect. It seems probable that pernicious anaemia is due to a toxin, perhaps absorbed in repeated doses from the stomach or intestine; but, if this is so, we are quite ignorant of the nature of that toxin. Secondly, because in severe and advanced cases of pernicious anaemia (in which the patient's hold on life is often very precarious and a very little thing will turn the scale) the intramuscular has seemed, perhaps erroneously, to me to be a less hazardous procedure than the intravenous method of administration.

In my earlier cases I employed salvarsan, and in the later cases neo-salvarsan. The local effects produced by neo-salvarsan are undoubtedly much less severe—much less local pain, inflammation, hardness, and swelling—than those produced by salvarsan. The constitutional effects were slight and not more marked in the cases in which salvarsan was employed.

The injections of salvarsan and neo-salvarsan were in some cases followed by a slight rise of temperature and pulse, and in some cases by vomiting. The rise in temperature was usually from one to two degrees Fahrenheit. In the cases treated by salvarsan the rise in temperature was usually most marked on the third or fourth day after the injection, and coincided with the greatest intensity of the inflammatory hardness and swelling in the buttock. The vomiting was chiefly seen in the cases in which neo-salvarsan was given—it was, perhaps, due to the novocain, heroin, or morphine which was administered before the neo-salvarsan was injected. The local inflammation produced by salvarsan was usually relieved by an ice-bag applied locally. A dose of novocain, heroin, or morphine was usually given before each injection of neo-salvarsan, and was repeated, if necessary, two hours after the injection, and again if the pain was not relieved.

I doubt whether neo-salvarsan is so effective in the treatment of pernicious anaemia as salvarsan. The beneficial results were, on the whole, I think, more marked in the cases treated by salvarsan than in the cases treated by neo-salvarsan.

In one case (Case X) the patient refused to remain in

hospital after the first injection. I have, however, included this case in the series in order to give my complete experience of the method of treatment without in any way appearing to produce a too favourable result.

In some of the 21 cases treated by salvarsan or neo-salvarsan which died from the disease, the immediate beneficial results of the treatment were very striking (Cases IV, VIII, and XVIII). In some of the cases (notably Cases VI, XVI, and XVII), in which the improvement at first was only slight, very marked improvement ultimately occurred. I am disposed to think that in these cases the slow and gradual absorption of the remedy was probably the cause of the improvement which ultimately resulted. In all of the 21 cases treated by salvarsan or neo-salvarsan, with the exception of Cases II and X, arsenic, given by the mouth in the form of Fowler's solution, had previously been employed.

In none of the cases was there any reason to suspect previous syphilis. In those cases in which the Wassermann test was employed the result was always negative.

One advantage, and it is a great advantage, which salvarsan and neo-salvarsan possess over the long-continued administration of arsenic by the mouth, in the treatment of pernicious anaemia, is that, in my experience, salvarsan and neo-salvarsan do not produce peripheral neuritis, whereas large doses of arsenic given by the mouth in cases of pernicious anaemia often do produce, in addition to other toxic symptoms, dryness of the throat, irritation of the conjunctivae, pigmentation of the skin, keratitis, diarrhoea, vomiting, etc., and very severe and intractable peripheral neuritis.

Since I advised the administration of salvarsan in the treatment of pernicious anaemia I have received a number of communications from different physicians who have employed the remedy. In some cases striking beneficial results have been obtained, in others there has been no improvement. In some of the cases in which the remedy has been employed by other physicians and reported a failure, it was tried as a last resource after all other means had failed, some of the patients being in a moribund condition. One cannot, of course, draw true conclusions as to the value of the treatment from the results in such cases. In order to judge fairly and accurately of its value, a series of consecutive and unselected cases, slight as well as severe, in which no other treatment has been employed, should be taken, and the results compared with a series of similar cases treated by other methods. It is, however, a slow and difficult process to secure a sufficient number of "virgin" cases of pernicious anaemia for this purpose.

In the BRITISH MEDICAL JOURNAL of December 20th, 1913, p. 1605, the following statements with regard to the results obtained by Friedländer, Leede, and Boggs are recorded:

Comparatively few cases of pernicious anaemia in which injections of salvarsan have been tried have been reported since Dr. Byrom Bramwell communicated the results of this treatment in the BRITISH MEDICAL JOURNAL (1912, vol. i, p. 1413). Friedländer published the account of a case which, though uninfluenced by Fowler's solution, rapidly recovered after two injections of salvarsan, followed by sodium cacodylate. Leede had previously recorded 5 cases with no beneficial effect. Four of these were practically moribund before recourse was had to salvarsan. Recently Boggs (*Johns Hopkins Hospital Bulletin*, October, 1913) recounted the effect of salvarsan in 4 cases under his own care, and in 7 others treated by colleagues. Of the latter, 2 were apparently moribund, and no good effect was observed, whilst 5 showed distinct improvement after an initial drop in the blood count following injection. The interesting observation is made that previous treatment with Fowler's solution did not add to the risk of salvarsan administration. Of Boggs's own 4 cases all showed a favourable response to the drug, both in the relief of symptoms and in the regeneration of the blood. In none of the cases was there any suspicion of syphilis, and the serum and cerebro-spinal fluid were negative to the Wassermann test. Two of these cases, as the result of a single injection, became greatly improved, and the red corpuscular count increased by 2,000,000. The subsequent history is not recorded. A third case showed a very striking result. This was a patient in his fifth relapse, which remained quite refractory to Fowler's solution, and practically refractory to sodium cacodylate injections extending over four months. Salvarsan was then given intravenously in doses of 0.3 gram every four weeks, with the result that there was a steady rise in the number of red cells from an initial 500,000 to 5,000,000 at the end of sixteen weeks. The percentage of haemoglobin also rose from 23 to 90. Save for mild degenerative changes in the spinal cord the patient was quite well. During treatment he had an attack of tertian malaria, accompanied by a fall in the red cell count, but this rose again after quinine and the next dose of salvarsan. For six months afterwards he was kept under observation whilst employed as liftman in the hospital, but was afterwards lost sight of. In the fourth case, in which nervous symptoms preceded the onset of blood changes, the red cell count rose from 1,100,000 to 3,400,000 in twenty days after the first injection, eventually attaining a level of 4,000,000 (with 85 per cent. haemoglobin), but this was not maintained. The blood regeneration failed and there was a speedy relapse, followed again by a rise to the normal after two more injections, but at no time were the qualitative changes absent from the blood picture. Relapses and recoveries went on for over a year, when the patient died of intercurrent bronchopneumonia. *Post-mortem* examination revealed the typical changes of pernicious anaemia, with funicular degeneration in the cord. In all the 11 cases it was found that the salvarsan provoked a rather sharp febrile reaction, lasting for six to twelve hours after each injection, in marked contrast to the effect produced in syphilitics. All the necessary precautions in technique for the avoidance of such reactions were taken.

In the *Albany Medical Annals*, vol. xxxv, No. 12, December, 1914, the results obtained by Barker and Thayer are noted:

The cases of Barker and Thayer were treated only in part with salvarsan. One, considered moribund on admission, received three-tenths gram and died forty-eight hours later from pre-existing myocardial degeneration, without any reaction or material change in the blood count. Another died eighteen days after admission, receiving one dose of two-tenths gram eleven days before death. There was no considerable reaction and no drop in the blood count of more than 200,000 cells. The other five cases all showed considerable improvement with initial drop in the red cell count, never more than 200,000. These cases also received sodium cacodylate or Fowler's solution, so the report is of value merely in showing that salvarsan may be given to such patients without risk.

The details of my 21 cases are given in the following notes.

CASE I.

Male (J. S.), aged 49, admitted to Edinburgh Royal Infirmary on October 12th, 1910. The red corpuscles numbered 1,035,000 per cubic millimetre, the haemoglobin was 30 per cent., and the colour index 1.5. He had four injections of salvarsan (December 21st, 0.2 gram; January 5th, 1911, 0.3 gram; January 20th, 0.3 gram; February 9th, 0.3 gram). He was discharged from the infirmary on February 22nd, 1911, looking and feeling perfectly well; the red corpuscles were then 3,580,000 per cubic millimetre, the haemoglobin equalled 78 per cent., and the colour index was 1.1.

He continued well and at work until August 31st, 1914, when he was admitted to Chalmers' Hospital with a slight relapse. The red corpuscles numbered 2,500,000 per cubic millimetre, the haemoglobin was 54 per cent., and the colour index 1.08. After 0.6 gram neo-salvarsan was injected intramuscularly on September 13th, he rapidly improved. He was discharged from hospital on September 28th. On January 2nd, 1915, the red corpuscles numbered 3,790,000 per cubic millimetre, the haemoglobin was 62 per cent., and the colour index 0.84.

Duration up to date since the salvarsan treatment was commenced, forty-eight months.

Remarks.—Notwithstanding the slight relapse in August, 1914, this has been a most successful result.

CASE II.

Female (Mrs. E. P.), aged 40, admitted to Edinburgh Royal Infirmary on November 15th, 1910. The disease was of four months' duration. The red corpuscles numbered 990,000 per cubic millimetre, the haemoglobin was 30 per cent., and the colour index 1.36. She had four injections of salvarsan (December 24th, 1910, 0.3 gram; January 7th, 1911, 0.3 gram; January 24th, 0.3 gram; February 9th, 0.3 gram). She made an uninterrupted recovery, and was discharged from hospital on March 16th, 1911, looking and feeling well; the red corpuscles then numbered 4,420,000 per cubic millimetre, the haemoglobin was 94 per cent., and the colour index 1.1.

On March 7th, 1913, the red corpuscles numbered 6,210,000 per cubic millimetre, the haemoglobin was 120 per cent., and the colour index 0.97. On December 25th, 1914, the patient was quite well.

Duration up to date since the salvarsan treatment was commenced, forty-eight months.

Remarks.—The result in this case has been very successful. It and Case XVII are remarkable, since in both of them the red blood corpuscles have gone above the normal.

CASE III.

Female (Mrs. H. P.), aged 41, admitted to Edinburgh Royal Infirmary on March 28th, 1911. Duration three months. The red corpuscles numbered 695,000 per cubic millimetre, the haemoglobin was 16 per cent., and the colour index 1.06. She had two injections of salvarsan (April 6th, 0.3 gram; April 21st, 0.3 gram). On May 5th she was obliged to go home; the red corpuscles then numbered 1,495,000 per cubic millimetre, the haemoglobin was 34 per cent., and the colour index 1.03.

Notwithstanding adverse circumstances she made a splendid recovery, apparently entirely due to the salvarsan treatment.

On December 28th, 1914, she looked and felt remarkably well.

The red corpuscles numbered 4,100,000 per cubic millimetre, the haemoglobin was 80 per cent., and the colour index 0.99.

Duration up to date since the salvarsan treatment was commenced, forty months.

Remarks.—The success of the treatment in this case was remarkable. When the patient was discharged from hospital she was very ill—profoundly anaemic, feet swollen, etc.—and she had to struggle on under great disadvantages.

CASE IV.

Female (Mrs. M. A. P.), aged 56, admitted to Edinburgh Royal Infirmary on March 30th, 1911, apparently in a dying condition. The disease was of four years' duration. The red corpuscles numbered 580,000 per cubic millimetre, the haemoglobin was 17 per cent., and the colour index 1.47. She had two injections of salvarsan (April 6th, 0.3 gram; May 4th, 0.3 gram). Remarkable improvement followed the treatment. The red corpuscles went up to 1,020,000 per cubic millimetre, the haemoglobin was 28 per cent., and the colour index 1.18. She discharged herself on July 25th, continued to improve for six weeks, then relapsed, and died on September 5th, 1911.

Duration after the salvarsan treatment was commenced, five months.

Remarks.—The improvement in this case, though merely temporary, was very remarkable. The case was a long-standing one (four years' duration); two relapses had previously occurred. When the salvarsan treatment was commenced she seemed to be in a dying condition.

CASE V.

Male (W. S.), aged 50, admitted to Edinburgh Royal Infirmary on May 12th, 1911. The disease was of seven months' duration. He died on June 24th, 1911.

Duration of the case after the salvarsan treatment was commenced, six weeks.

Remarks.—In this case the treatment produced no benefit.

CASE VI.

Male (P. S.), aged 31, admitted to Edinburgh Royal Infirmary on May 17th, 1911. The disease was of fourteen months' duration. He had three injections of salvarsan (May 29th, 0.3 gram; June 12th, 0.3 gram; July 12th, 0.3 gram). He did not improve while in hospital, and went home, apparently in a dying condition, the red corpuscles numbering 600,000 per cubic millimetre, the haemoglobin 19 per cent., and the colour index 1.6.

After going home, he remained semicomatose for ten days, then improved, and ultimately got quite well. On November 11th, 1911, he looked and felt well; the red corpuscles numbered 3,100,000 per cubic millimetre, the haemoglobin was 66 per cent., and the colour index 1.1. He had no treatment for the anaemia after leaving the hospital. He remained in good health, without any return of the anaemia, until February, 1912, when he died from acute croupous pneumonia.

Duration after the commencement of the salvarsan treatment, nine months.

CASE VII.

Male (T. S.), aged 55, admitted to Edinburgh Royal Infirmary on October 24th, 1911. The disease was of fifteen months' duration. He had one injection of salvarsan (October 27th, 0.3 gram); rapid improvement followed; he then developed bronchopneumonia, and died on November 6th, 1911.

Duration after the salvarsan treatment was commenced, two weeks.

CASE VIII.

Male (J. C.), aged 72, admitted to Chalmers' Hospital on August 29th, 1912. The disease was of eight months' duration. The red corpuscles numbered 1,055,000 per cubic millimetre, the haemoglobin was 26 per cent., and the colour index 1.3. He had three injections of salvarsan (August 31st, 0.3 gram; September 14th, 0.3 gram; September 28th, 0.6 gram). He improved to a remarkable degree, and was discharged on November 27th, 1912. The red corpuscles then numbered 3,450,000 per cubic millimetre, the haemoglobin was 75 per cent., and the colour index 1.

On March 3rd, 1913, he was readmitted to Chalmers' Hospital suffering from a severe relapse. The red corpuscles numbered 1,010,000 per cubic millimetre, the haemoglobin was 36 per cent., and the colour index 1.7. As the result of one injection of neo-salvarsan (March 10th, 0.6 gram) he again improved rapidly. On May 17th, 1913, the red corpuscles numbered 2,680,000 per cubic millimetre, the haemoglobin was 55 per cent., and the colour index 1.03. He was discharged on May 22nd, remained well till the beginning of October, 1913, then suddenly relapsed and died on October 14th, 1913.

Duration after the salvarsan treatment was commenced, thirteen months.

Remarks.—The improvement in this case was very striking.

CASE IX.

Male (T. B.), aged 25, admitted to Chalmers' Hospital on October 3rd, 1912. The disease was of five years' duration. He had two injections of salvarsan (October 6th, 0.3 gram; October 13th, 0.3 gram). There was no improvement. He died on October 14th, 1912.

Duration after the salvarsan treatment was commenced, one week.

Remarks.—In this case the treatment produced no benefit. It was a very severe case. It is interesting because of the early age at which the disease commenced—20 years. The diagnosis was verified by *post-mortem* examination.

CASE X.

Male (A. D.), aged 61, admitted to Chalmers' Hospital on November 2nd, 1912. The disease was of two months' duration. He had one injection of salvarsan (November 4th, 0.3 gram); refused to stay in hospital, discharged himself, and died on April 17th, 1913.

Duration after the salvarsan treatment was commenced, five and a half months.

CASE XI.

Male (J. T.), aged 50, admitted to Chalmers' Hospital on December 9th, 1912. The disease was of eight months' duration. The red corpuscles numbered 1,045,000 per cubic millimetre, the haemoglobin was 24 per cent., and the colour index 1.14. He had two injections (December 13th, 0.3 gram salvarsan; January 9th, 1913, 0.5 gram neo-salvarsan). He rapidly improved and was discharged on February 22nd, 1913.

On April 8th, 1913, he looked and felt quite well; the red corpuscles numbered 3,850,000 per cubic millimetre, the haemoglobin was 78 per cent., and the colour index 1.01. He continued well until September, 1913, when he had two attacks of diarrhoea. On January 25th, 1914, the red corpuscles numbered 3,360,000 per cubic millimetre, the haemoglobin was 60 per cent., and the colour index 0.89.

On May 15th, 1914, he was readmitted to Chalmers' Hospital, suffering from acute pleurisy with effusion. He died on June 29th, 1914.

Post-mortem examination showed tubercle of the pleura, peritoneum, and intestine. The liver showed slight Prussian-blue reaction; the bone marrow of the femur and ribs was soft and of a deep red colour.

Duration after the salvarsan treatment was commenced, eighteen and a half months.

Remarks.—This was one of the most successful cases I have had. The anaemic symptoms seemed to have entirely disappeared as the result of the salvarsan treatment. Death was due to tubercle of the pleura, peritoneum, and intestine, and not to pernicious anaemia.

CASE XII.

Male (W. H. L. H.), aged 42, married, admitted to Chalmers' Hospital on December 16th, 1912, suffering from subacute combined paralysis and pernicious anaemia. The disease was of three and a half years' duration. He had two injections of neo-salvarsan (December 23rd, 1912, 0.4 gram; January 24th, 1913, 0.6 gram). There was a slight improvement in the condition of the blood, but no improvement in the nervous symptoms. He died on March 22nd.

Post-mortem examination showed all the typical appearances of pernicious anaemia and subacute combined degeneration of the spinal cord.

Duration after the salvarsan treatment was commenced, three months.

CASE XIII.

Male (J. R.), aged 58, admitted to Chalmers' Hospital on January 11th, 1913. The disease was of one year's duration. The red corpuscles numbered 1,690,000 per cubic millimetre, the haemoglobin was 48 per cent., and the colour index 1.4. He had three injections of neo-salvarsan (January 14th, 0.6 gram; February 14th, 0.6 gram; March 14th, 0.6 gram). He was discharged from hospital on March 28th, feeling well; his colour was better, he had gained 1½ lb. in weight; the red corpuscles numbered 2,560,000 per cubic millimetre, the haemoglobin was 56 per cent., and the colour index 1.1.

At the beginning of June, 1913, he got a chill, developed congestion of the lungs, and died on June 17th.

Duration after the salvarsan treatment was commenced, five months.

Remarks.—The improvement in this case was only slight.

CASE XIV.

Male (A. G.), aged 41, admitted to Chalmers' Hospital on March 29th, 1913. The disease was of two years' duration. On March 30th, 0.6 gram of neo-salvarsan was given intramuscularly. There was no improvement. He died suddenly on April 16th, 1913.

Duration after the salvarsan treatment was commenced, two weeks.

Remarks.—In this case there was no improvement.

CASE XV.

Male (W. A.), aged 49, admitted to Chalmers' Hospital on May 21st, 1913. The disease was of three years' duration; had improved and relapsed twice; previously treated by arsenic and iron for two and a half months. On May 22nd the red corpuscles numbered 3,030,000 per cubic millimetre, the haemoglobin was 60 per cent., and the colour index 1. He had one injection of neo-salvarsan (June 13th, 0.6 gram). He was discharged on July 1st, 1913, considerably improved; the red corpuscles numbered 4,380,000 per cubic millimetre, the haemoglobin was 75 per cent., and the colour index 0.8.

He continued much *in statu quo* for some time after his discharge, then relapsed, and died on December 6th, 1913.

Duration after the salvarsan treatment was commenced, five and three-quarter months.

Remarks.—The improvement produced by the treatment in this case was only slight; he only had one injection of salvarsan.

CASE XVI.

Male (E. D.), aged 55, admitted to Chalmers' Hospital on June 12th, 1913. The disease was of a year and a half's duration; previous treatment arsenic by the mouth. On admission,

the red corpuscles numbered 2,070,000 per cubic millimetre, the haemoglobin was 45 per cent., and the colour index 1.1. He had four injections of neo-salvarsan (June 14th, 0.4 gram; July 2nd, 0.6 gram; July 16th, 0.6 gram; August 1st, 0.6 gram). Marked improvement in the general condition resulted, but the blood showed little change. On August 4th, 1913, the red corpuscles numbered 2,300,000 per cubic millimetre, the haemoglobin was 40 per cent., and the colour index 0.9. On August 12th, 1913, he was discharged from hospital feeling greatly improved.

After getting home he continued to improve. On February 19th, 1914, his wife wrote me: "The change for the better in my husband is most remarkable; he has been back to business since Christmas, and in his spare time plays golf. All my friends say he looks better than he has done for years." On December 30th, 1914, he was well.

Duration up to date since the salvarsan treatment was commenced, nineteen months.

Remarks.—The improvement, which at first was very slow, has been very striking.

CASE XVII.

Male (T. H.), aged 39, admitted to Chalmers' Hospital on July 27th, 1913. The disease was of one year's duration; previous treatment, arsenic by the mouth. Colour very yellow; feet and legs oedematous. On the day after admission the temperature rose to 102.6°; pulse 103. He vomited several times, was delirious, and apparently in a dying condition; the red corpuscles numbered 1,380,000 per cubic millimetre, the haemoglobin was 30 per cent., and the colour index 1.11. He had four injections of neo-salvarsan (August 7th, 0.4 gram; August 15th, 0.6 gram; August 25th, 0.6 gram; September 23rd, 0.6 gram). He slowly but steadily improved. He was discharged from hospital feeling very well on November 7th, 1913; the red corpuscles numbered 2,015,000 per cubic millimetre; the haemoglobin was 40 per cent., and the colour index 1.

On March 20th, 1914, the patient wrote me: "I now write to tell you of my wonderful improvement. I have got much stouter. I am enjoying very good health; I can walk three or four miles at a time. I am doing a lot of domestic work. Everybody about here is surprised at my improvement."

When seen at Chalmers' Hospital on April 11th, 1914, his weight was 12 st. ½ lb. (he had gained 3 st. since his discharge from hospital); the red corpuscles numbered 5,480,000 per cubic millimetre, the haemoglobin was 80 per cent., and the colour index 0.7. On December 27th, 1914, he was quite well.

Duration up to date since the salvarsan treatment was commenced, fifteen months.

Remarks.—This was one of the most successful cases which I have had. For several days after the patient's admission to hospital he seemed to be in a dying condition. On October 5th, 1913, 10 grains of boric acid, three times a day, were prescribed, with 4 minims of Fowler's solution. He continued to take this medicine for some time after his discharge from hospital.

CASE XVIII.

Female (Mrs. A.), aged 34, admitted to Chalmers' Hospital on October 13th, 1913. The disease was of eighteen months' duration; previous treatment, arsenic by the mouth. The red corpuscles numbered 1,270,000 per cubic millimetre, the haemoglobin was 40 per cent., and the colour index 1.4. She had two injections of neo-salvarsan (October 16th, 0.4 gram; November 4th, 0.6 gram). Great improvement resulted. She was discharged on December 20th, 1913; the red blood corpuscles numbered 3,360,000 per cubic millimetre, the haemoglobin was 65 per cent., and the colour index 0.87.

On March 15th, 1914, her doctor wrote me that she was not so well; after this, she rapidly relapsed, and died at the beginning of April, 1914.

Duration after the salvarsan treatment was commenced, five months.

Remarks.—In this case the immediate result of the treatment was great improvement, but a relapse and death speedily followed.

CASE XIX.

Male (A. C.), aged 44, admitted to Chalmers' Hospital on October 17th, 1913. The disease was of eleven months' duration, previously treated with arsenic by the mouth.

In November, 1912, he complained of stomach symptoms, for which the abdomen was opened on November 15th by Mr. Stiles; the appendix was found to contain two or three concretions, and was removed. The patient rapidly became weaker and more anaemic after the operation, though there was no loss of blood. On November 23rd I diagnosed pernicious anaemia; the red corpuscles numbered 1,450,000 per cubic millimetre, the haemoglobin was 55 per cent., and the colour index 1.8. He was treated with arsenic by the mouth. On January 3rd, 1913, when he was discharged, the red corpuscles numbered 3,390,000 per cubic millimetre, the haemoglobin was 80 per cent., and the colour index 1.1.

He continued fairly well until September, 1913, when the symptoms of pernicious anaemia returned. On October 17th, 1913, the red corpuscles numbered 1,600,000 per cubic millimetre, the haemoglobin was 50 per cent., and the colour index 1.5. He had three injections of neo-salvarsan (October 20th, 0.4 gram; November 1st, 0.6 gram; December 7th, 0.6 gram). He was discharged from hospital on December 17th, 1913, feeling very well. On February 23rd, 1914, he looked and felt extremely well; the red corpuscles numbered 4,600,000 per cubic millimetre, the haemoglobin was 90 per cent., and the colour index 0.97.

On January 9th, 1915, the red corpuscles numbered 4.320,000 per cubic millimetre, the haemoglobin was 85 per cent., and the colour index 0.99.

Duration up to date since the salvarsan treatment was commenced, fourteen months.

Remarks.—In this case great improvement resulted.

CASE XX.

Female (Mrs. W.), aged 43, treated in a nursing home. First seen May 17th, 1913. The disease was of two years' duration, but had been worse for three and a half months; previous treatment, arsenic by the mouth. On April 29th, 1913, the red corpuscles numbered 1,575,000 per cubic millimetre, the haemoglobin was 44 per cent., and the colour index 1.3. She had had arsenic continuously for a few weeks before coming under my observation. On May 22nd, 1913, the red corpuscles numbered 1,970,000 per cubic millimetre, the haemoglobin was 40 per cent., and the colour index 0.93. She suffered from very profuse menorrhagia. From May 28th to June 2nd and from June 25th to July 5th two "periods" occurred; both were very severe, particularly the latter. On July 14th the red corpuscles numbered 1,370,000 per cubic millimetre, the haemoglobin was 36 per cent., and the colour index 1.3.

Hysterectomy.—After anxious consultation with two leading gynaecologists and Dr. Lovell Gulland (who agreed with me that the case was a typical case of pernicious anaemia complicated with menorrhagia), it was decided to remove the uterus at the commencement of the next "period." The operation was most successfully performed on July 29th; the uterus was enlarged and fibroid; there was no loss of blood. For forty-eight hours after the operation the patient was extremely ill; she then recovered slowly.

She had four injections of neo-salvarsan (June 7th, 0.4 gram; July 8th, 0.6 gram; August 13th, 0.6 gram; September 1st, 0.6 gram). Remarkable improvement occurred as the result of the first three injections; no improvement followed the fourth injection. On August 29th the red corpuscles numbered 2,020,000 per cubic millimetre, the haemoglobin was 45 per cent., and the colour index 1.0. On October 12th, 1913, the red corpuscles numbered 1,620,000 per cubic millimetre, the haemoglobin was 43 per cent., and the colour index 1.3. The patient went home on October 13th.

After returning home she suffered severely from inflamed piles, relapsed, and died on November 30th, 1913.

Duration after the salvarsan treatment was commenced, five and three-quarters months.

Remarks.—In this case striking improvement resulted from the first three injections of salvarsan; the fourth injection seemed to do harm rather than good.

CASE XXI.

Male (W. R.), aged 62, admitted to a nursing home on December 25th, 1913, suffering from well marked pernicious anaemia and degeneration of the cardiac muscle. The anaemia was of one year's duration, during which time he had lost 3 st. in weight. The red corpuscles numbered 2,180,000 per cubic millimetre, the haemoglobin was 45 per cent., and the colour index 1.04. The heart was in a very unsatisfactory condition—very quick and irregular action with triple rhythm. He had one injection of neo-salvarsan (0.4 gram). He remained in the home for three weeks and did not improve. The condition of the heart was so unsatisfactory that it was decided not to repeat the injection. Mental symptoms developed. He returned home on January 17th, 1914. His mental condition gradually became worse and his heart more and more unsatisfactory; he died on January 26th.

Duration after the salvarsan treatment was commenced, one month.

Remarks.—In this case no improvement resulted from the treatment.

N.B.—Cases I, II, III, IV, V, VI, VII, VIII, IX, XI, XII, and XIII were more fully reported in the BRITISH MEDICAL JOURNAL, May 24th, 1913, p. 1093.

BENZOL THERAPY IN LEUKAEMIA AND LYMPHO-SARCOMA.*

BY T. GILLMAN MOORHEAD, M.D., F.R.C.P.I.,
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DURING the last year I have had an opportunity of testing the reputed action of benzol as a useful therapeutic agent in leukaemia. I have now treated altogether four cases with this drug—one of myelogenous leukaemia, one of lymphatic leukaemia, one of lympho-sarcoma, and one of what was regarded as osteo-sarcoma.

The introduction of the drug and its mode of action have been very fully discussed in recent papers, many of which contain a full bibliography up to the date of publication. In consequence, I only propose to refer to those facts which it is essential to bear in mind in order that the reasons for employing the drug at all may be understood, and I will omit practically all reference to the literature of the subject.

In 1910 Selling reported in the Johns Hopkins

* A paper read before the Royal Academy of Medicine in Ireland.

Hospital *Bulletin* three cases of purpura haemorrhagica that had occurred amongst workers in a factory where benzol was largely used. Careful investigation of these showed that the clinical symptoms of benzol poisoning consisted of giddiness, headache, vomiting and diarrhoea, and purpuric eruptions. The blood picture showed a striking diminution in the number of the white cells, the polymorphonuclear cells being diminished out of proportion to the lymphocytes, and moderate red cell anaemia. Two of the cases proved fatal, and the most significant pathological lesion found was a striking diminution in the number of the white cells in the bone marrow. Experimental work, consisting of the subcutaneous injection of benzol into rabbits, showed that moderate doses produced in these animals a leucopenia and changes in the marrow similar to that described in the patients referred to, but did not injuriously affect the red cells. If the drug was pushed, ultimately red cell anaemia was produced.

Reasoning on the above stated facts, von Koranyi concluded that moderate doses of benzol might prove of use in cases of leukaemia. He put the matter to the test, and in June, 1912, was able to report a case of spleno-medullary leukaemia in which as a result of benzol therapy the white cells had been reduced within three months from 173,000 per c.mm. to 8,000 per c.mm. with concomitant general improvement.

The conclusions derivable from von Koranyi's cases and those of others may be summarized as follows:

1. Benzol first tends to increase the number of white blood cells, but shortly leads to an improvement of the leukaemic condition. The decrease in white cells is at first slow and later more rapid, and may proceed in an irregular manner. Once the decline in number of white cells has started, it tends to continue for some time, even if the benzol is stopped.

2. As the white cells diminish in number, the differential count both in spleno-medullary and in lymphatic leukaemia approaches more nearly to the normal, but as a rule some myelocytes persist in the spleno-medullary disease, and in the lymphatic form the lymphocytes continue to be excessive in proportion to the other white cells. In short, even when the total number of white cells is reduced to normal, the differential count shows the presence of some leukaemic characteristics.

3. The average dose of benzol that may be administered with safety is from 3 to 5 grams daily. It is best given in gelatine capsules, combined with an equal quantity of olive oil, which seems to lessen the tendency of the benzol to produce heartburn and gastric irritation.

4. The effect of benzol on the spleen in spleno-medullary leukaemia is variable. In some cases the spleen diminished almost to normal; in others, even when the blood picture is reduced almost to normal, the spleen remains large.

5. The ultimate result in apparently cured cases of leukaemia is still to be waited for. There is as yet no proof that the cure produced is of a permanent nature. One case of von Koranyi's was reported as quite well ten months after the cessation of the treatment.

The following is the record of the cases that have been under my care:

CASE I.—*Spleno-medullary Leukaemia.*

The patient, a married woman, aged 35, was sent to the Rotunda Hospital for treatment, on account of the existence of a large abdominal tumour, and through the kindness of the Master of the Rotunda she was transferred to my care on April 30th, 1914. She then complained of pain in the side, palpitation, fatigue, and inability to stoop owing to the pressure of the tumour in her abdomen. She stated that she had had no previous illnesses. She was the mother of five children, and had had two miscarriages, the last eleven months previously.

In December, 1912, she first felt a lump in her left side. She was then pregnant, and after the birth of her child in February, 1913, she noticed that the lump was getting bigger. It did not, however, trouble her much till early in 1914, when, owing to difficulty in stooping and breathlessness, she consulted a doctor, and was sent to Dublin for treatment.

On admission it was found that the spleen was enormously enlarged, practically filling the entire abdomen; some crepitations were audible at the base of the left lung; there was a heavy deposit of albumin in the urine, but no casts; the temperature was slightly raised; the patient's weight was 8st. 4lb. With the exception of the blood condition, which will now be dealt with in more detail, nothing else of importance was noted. A Wassermann test was negative.

The blood examination showed at once that the patient was suffering from spleno-medullary leukaemia. The red cells numbered 4,400,000 per c.mm. The haemoglobin was 40 per cent. and the white cells were 133,000 per c.mm. A differential count of white cells was difficult owing to the enormous variety of cells present, but, as far as could be determined, the myelocytes numbered about 56 per cent. of the total white cells, a majority of these being of the myeloblast type. The actual count made at the time of admission gave the following figures:

	Per Cent.
Lymphocytes (large and small) ...	4.4
Neutrophiles	32.0
Eosinophiles	3.3
Basophile myelocytes	10.4
Eosinophile myelocytes	1.8
Myeloblasts	45.7
Nucleated red cells	2.4
	100.0

On May 1st the benzol treatment was started, 30 minims being given daily in capsules with an equal quantity of olive oil. On May 8th the dose was increased to 60 minims daily, and on May 22nd to 90 minims daily.

On July 3rd the benzol treatment was stopped. On July 6th *x*-ray exposures of the spleen were started; these were given every second day until the end of the month—twelve treatments in all. They were then discontinued owing to our *x*-rayist being summoned to rejoin the army.

The progress of the case is best seen by reference to the following tables:

Date.	White Blood Cells.	Hb.	Red Blood Cells.	
May 1	133,000	40 %	2,400,000	Benzol 30 m.
,, 4	136,000	—	—	,, ,,
,, 5	135,000	—	—	,, ,,
,, 8	132,500	—	—	Benzol 60 m.
,, 11	76,000	50 %	2,350,000	,, ,,
,, 18	69,400	55 %	—	,, ,,
,, 22	65,000	—	—	Benzol 90 m.
June 2	26,500	—	2,650,000	,, ,,
,, 11	24,000	60 %	—	,, ,,
,, 16	26,000	—	2,950,000	,, ,,
,, 23	18,500	65 %	—	,, ,,
,, 27	9,375	—	—	,, ,,
July 3	8,260	65 %	3,800,000	,, ,,
,, 11	7,500	68 %	—	*X*-ray.
,, 16	8,300	—	—	,,
,, 22	8,000	—	—	,,
,, 25	9,500	—	—	,,
Aug. 1	7,600	—	—	
,, 13	7,100	75 %	4,175,000	

	May 1.	May 11.	May 29.	June 11.	July 3.	July 11.	Aug. 13.
Lymphocytes (large and small)	4.4	2.0	4.0	8.0	7.0	24.0	19.0
Neutrophiles	32.0	69.0	70.0	76.0	87.0	72.0	80.0
Eosinophiles	3.3	2.0	3.0	2.0	2.0	0.0	1.0
Basophile myelocytes ...	10.4	1.0	4.0	1.0	0.0	2.0	0.0
Eosinophile myelocytes ...	1.8	2.0	2.0	0.0	0.0	0.0	0.0
Myeloblasts	45.7	24.0	17.0	13.0	4.0	2.0	0.0
Nucleated red cells... ...	2.0	0.0	0.0	0.0	0.0	0.0	0.0

From May 11th onwards many of the cells classed as myeloblasts showed some neutrophile granulations.

From the tables it will be seen: (1) That there was a slight increase of white cells immediately after starting the benzol, and that the later decrease of cells occurred in an irregular way. Within three days the drop from 132,500 to 76,000 took place; and, again, a sudden drop from 18,500 to 9,375 took place within four days; (2) coincident with the drop in white cells a slow but steady increase in haemoglobin and in red cells took place; (3) the change in the differential count was very striking. At the last examination made, and in several previous ones, not included in the table, no myelocytes of any form could be detected, and the blood picture was practically normal.

During the period that benzol was being taken the albuminuria cleared up completely. The urine during this time became quite dark when allowed to stand for twenty-four hours, due, presumably, to hydroquinone. On July 3rd, when the benzol treatment was stopped, although the blood was practically normal, the spleen was still considerably enlarged, extending almost half-way to the umbilicus. X-ray treatment was therefore started, and brought about rapid reduction. At the time of leaving hospital—August 14th—the spleen could be felt about a fingerbreadth only below the ribs. The patient then felt and looked perfectly well, but I, of course, await a report of her further progress. During her stay in hospital she had gained 5 lb. in weight.

CASE II.—*Nodular Lymphatic Leukaemia.*

This patient was of interest from several points of view. He was a labourer, aged 56, admitted complaining of weakness and of lumps in his groins.

When 36 years of age he had had rheumatic fever. During the second week of this attack the ankles became swollen, and later the legs, thighs, and abdomen. This necessitated his staying in bed for two months, and when he got up he noticed that the veins on the front of the abdomen were swollen. This venous swelling increased gradually and persisted up to the time of admission. His present illness started six months before he came to hospital. He began to suffer from pains in his legs and giddiness, and found lumps appearing in his groins, his armpits, and elsewhere.

On admission a large swelling was noticed under each eyebrow, there were enlarged glands on each side of the neck, in both axillae, and in the groins. In addition the glands in the popliteal space, and those at the elbow were enlarged, and numerous subcutaneous nodules were present, scattered here and there over the body. The mammary glands were very firm, hard, and swollen. The case, in fact, in these particulars is seen to belong to the group known as nodular leukaemia, the facial and mammary swellings being specially characteristic of this type.

The veins of the abdominal wall were enormously distended and tortuous, due presumably to thrombosis of the inferior vena cava, dating from the rheumatic attack of twenty years previously. There was a slight trace of albumin in the urine. The thorax appeared normal to both radiographic and other examination, as did the abdomen. With the exception of the blood, no other abnormality was detected anywhere in the body, and a Wassermann test proved negative.

The first blood examination made on April 26th gave the following counts: Red cells, 2,475,000 per c.mm.; white cells, 222,500 per c.mm.; haemoglobin, 58 per cent. Differential count: Lymphocytes, 97 per cent.; neutrophiles, 3 per cent.

On this date, April 26th, benzol was administered in 60 minim doses daily; this was increased to 90 minims on May 9th, and on May 21st was discontinued.

The progress of the case as far as the blood was concerned can be seen best in the following tables:

Date.	White Blood Cells.	Red Blood Cells.	Hb.	
April 26	222,500	2,475,000	58 %	Benzol 60 m.
May 2	277 500	—	—	,, ,,
,, 6	261,000	—	—	,, ,,
,, 9	237,500	—	—	Benzol 90 m.
,, 12	198,000	—	—	,, ,,
,, 16	57,000	2,500,000	62 %	,, ,,
,, 22	37,700	—	—	Benzol stopped.
,, 26	28,300	—	—	
,, 29	26,000	—	—	
June 5	18,300	2,800,000	65 %	Liq. arsen. m iij t.i.d.
,, 11	10,000	—	—	,, ,,
,, 20	5,000	—	—	,, ,,
,, 26	6,100	—	—	Liq. arsen. stopped.
July 2	6,423	—	—	
,, 7	7,000	3,500,000	60 %	
,, 13	6,800	3,500,000	—	
,, 21	9,500	3,400,000	—	
Aug. 6	8,100	3,250,000	—	
,, 13	7,200	2,725,000	62.5 %	
,, 21	12,500	2,600,000	—	

	Apr. 26	May 6	May 29	June 26	July 20	Aug. 13
Lymphocytes (large and small)	97	98	83	95	78	65
Neutrophiles	3	1	17	5	22	34
Eosinophiles	0	1	0	0	0	1
Hyaline cells	0	0	0	0	0	0

From these it will be observed (1) that there was an increase in white cells almost immediately on starting the benzol, and that, as in the previous case, the subsequent decrease occurred irregularly—for example, the fall from 189,000 to 57,000 occurred within four days; (2) the decrease in white cells continued progressively after the benzol was stopped; (3) only very slight, if any, increase of red cells and of haemoglobin took place during the benzol course; (4) even when the white cells had been reduced to the normal number, the proportion of lymphocytes remained very much in excess of the normal. The increase of neutrophiles to 34 per cent., as shown in the last count, was probably due to septic infection. It may be added that at first most of the lymphocytes were of the large variety, that soon after the benzol was started numerous degenerated cells, which could not be counted, were found in the films, and that later on the predominant lymphocytes were of the small variety.

Further points of importance in the case are as follows: Shortly after the benzol was started it was noticed that the lumps in different parts of the body were much lessened in size, and by the end of May the glands in the neck and axillae were completely gone. The subcutaneous nodules, with the exception of those under the eyebrows, also disappeared completely, and the facial ones became very much smaller. The groin glands became reduced to about one third of their original size, but never completely disappeared. The discontinuance of the benzol on May 21st was due to the onset of an attack of right sided abdominal pain, the diagnosis of which was uncertain, but which was believed to be either appendicular or due to gall stones. There was in addition much gastric disturbance, with thirst, so that it was thought possible that the benzol might be to blame. Subsequent examination, however, seems to show that the diagnosis of gall stones was correct. On recovery from this attack the patient felt much better. On admission he was with difficulty persuaded to leave his bed; he now got up, spent most of the day in the open air, ate well, and was anxious to go home. His urine still contained a trace of albumin, and during the period of benzol therapy, got quite dark on standing.

While in this condition, in the beginning of July, he got a gumboil, and all his teeth rapidly became septic and loose. I urged him to have them removed, but he refused, and it was only after ten days' pain that he consented. From this time on he went downhill. His temperature remained persistently about 100° F.; he developed a cough, with foul, purulent expectoration, and signs of a low septic pneumonia; and finally died on August 22nd. It is possible that the great diminution in number of his neutrophile cells rendered him an easy prey to septic infection.

Necropsy.

Only a partial *post-mortem* examination could be performed. The heart was flabby, and microscopically showed marked fragmentation; the lungs, especially the upper lobe of the left lung, showed much septic involvement, with gangrenous patches here and there; and several bronchial glands were enlarged to almost the size of a bean. In the abdomen the abnormalities noted were as follows: Both kidneys were in an advanced cystic condition, and presented numerous uric acid crystals scattered throughout their substance; microscopically there was advanced chronic interstitial nephritis. The spleen was rather enlarged and soft, and was found on section to be packed with lymphocytes; the liver appeared normal macroscopically; the gall bladder contained one large gall stone, and there were very extensive adhesions between the colon and the gall bladder; microscopically islets of lymphoid tissue were found throughout the liver in the fibrous tissue of the portal system. The lymph nodes of the colon were rather prominent, but otherwise the intestinal tract was normal; numerous lymph glands, whitish in colour, and of about the size of a bean, were found in the gastro-hepatic omentum and along the vertebral column. The inferior vena cava was with difficulty discovered; it was completely obliterated as far up as the renal veins, and was represented by a cord of fibrous tissue; the iliac veins were also obliterated, and were calcified.

The most interesting fact about this case appears to me to be that although a very striking improvement was effected at the beginning of the case no real disappearance

of the leukaemic symptoms was ever brought about. At the *post-mortem* examination excess of lymphocytes was found in several organs, and the blood throughout retained its leukaemic aspect as far as the differential count was concerned. At the same time the patient undoubtedly improved enormously coincident with the fall in total number of his white cells, and it was not till the septic infection alluded to had set in that his progress towards apparent recovery was interrupted.

CASE III.—*Lympho-sarcoma.*

P. G., aged 65, a farmer, was admitted on May 11th, complaining of lumps in his neck and of difficulty in breathing and swallowing. He stated that he had always been a healthy man until about seven months previously. He then noticed a swelling on the right side of his neck, and shortly afterwards found that his breathing at night was troublesome so that he had to sit up in a chair. He also began to be troubled with a cough, without expectoration, and by hoarseness, and before admission to hospital coughed incessantly day and night. Early in April he found difficulty in swallowing, and could only get down fluids.

On admission enlarged glands were found on both sides of his neck. On the right side these were very big, and practically filled up the entire space between the clavicle and the lower jaw; on the left side they were smaller. The veins on both sides were distended. In the thorax there was an area of dullness over the manubrium sterni, and extending slightly out on each side beyond the sternal margin. This dull area merged below with the cardiac dullness. The breathing was slightly stridulous, and on auscultation seemed very harsh all over the upper part of the thorax. An *x*-ray examination showed that the superior mediastinum was opaque to the rays, presumably due to the presence of a growth, and also showed an area of opacity extending on each side of the heart. In the abdomen nothing abnormal was found except slight splenic enlargement. The glands in the groins and axillae were palpable, and perhaps very slightly enlarged. Laryngeal examination by Dr. Graham showed slight paralysis of the right vocal cord.

The blood examination was as follows: Red cells, 3,210,000; white cells, 11,660; haemoglobin, 65 per cent. Differential count: Neutrophiles, 61 per cent.; lymphocytes, 31 per cent.; hyaline cells, 7 per cent.; eosinophiles, 1 per cent. Wassermann test negative.

The diagnosis made in this case was lympho-sarcoma. Not anticipating a favourable result, I did not have one of the neck glands removed for section. In consequence the diagnosis must remain open to doubt; but the picture of an intrathoracic growth, with enlarged glands in the neck and slight splenic enlargement, appears to me practically unmistakable, and in my own mind I have no doubt that the diagnosis was correct. Some may, perhaps, think that the case was one of Hodgkin's disease.

On May 13th benzol was started, and 60 minims were given daily up to June 2nd. The dose was then increased to 90 minims daily, and this was continued until July 3rd, when the drug was discontinued. An *x*-ray exposure was given every third day from May 13th to July 13th.

During the first three weeks in hospital the patient complained much of his breathing and of his cough, and felt a sensation of choking immediately on lying down. It was necessary to give morphine each night to give him relief. After the lapse of three weeks the glands in the neck were much smaller than on admission, and after a month they had completely disappeared. The dullness over the upper part of the thorax began to diminish, and a series of *x*-ray photographs seemed to indicate a gradual clearing of the intrathoracic opacity.

Symptoms also improved and by the middle of June the patient was quite free of cough, of hoarseness, and of difficulty of breathing.

On June 20th Dr. Graham again examined his larynx, and could then find nothing abnormal. On July 3rd a purpuric eruption suddenly appeared all over the body, with here and there urticarial wheals. This was regarded as a sign that the benzol had been pushed far enough; it was therefore discontinued and the skin eruption rapidly cleared up. The patient left hospital on July 16th feeling and looking perfectly well.

A comparison of radiograms taken on May 13th and on July 15th, and now exhibited, I think, leaves no doubt that the thoracic opacity had largely cleared up. Some opacity undoubtedly remains in the latter *x* ray, but this could only be expected, as some fibrous change would probably accompany the disappearance of a lympho-sarcomatous growth.

During the course of the benzol treatment the white cells sank from 11,660 on admission to 4,000 per c.mm., but increased later to 6,000 per c.mm.; no change took place in the differential count, the red cells increased from 3,210,000 to 4,300,000, and the haemoglobin from 65 per cent. to 75 per cent.

In recording this case as a cured case of lympho-sarcoma the following queries arise, namely: (1) Was the diagnosis correct? This question has already been dealt with. (2) Is the cure permanent? The answer to this lies, of course, in the future. The patient promised to communicate with me at once if any symptoms returned, and so far I have not heard from him. (3) Was the benzol or the *x*-ray treatment the factor in bringing about the improvement? This question, of course, cannot be answered. My own previous experience of *x*-ray treatment in both Hodgkin's disease and lympho-sarcoma is uniformly unfavourable.

I am therefore inclined to think that the benzol was the more important factor. The case seemed so serious on admission that I did not feel justified in employing benzol alone, as I felt that in so formidable a disease everything that could possibly be of value should be at once put in action.

CASE IV.—*Osteo-sarcoma.*

Encouraged by the result obtained in Case III, a course of benzol was given to a man sent me by Mr. Moore, with the statement that he was suffering from an inoperable osteo-sarcoma of the pelvis. The growth had spread into the groins and was rapidly advancing. The benzol was pushed over a period of four weeks, but no improvement was noted, and in consequence no further details of the case need be recorded.

In conclusion, I have contented myself with reporting these results without speculating on the way in which they are brought about. It appears to me probable, however, that the etiology of the disease may before long be solved through the therapeutic channel now opened out.

TRENCH "FROST-BITE."

SOME OBSERVATIONS ON CASES ADMITTED TO THE DUCHESS OF WESTMINSTER'S WAR HOSPITAL,

BY

C. GORDON WATSON, F.R.C.S.,
MAJOR R.A.M.C., COMMANDANT,

AND

CHARLES S. MYERS, M.D.,
CAPTAIN R.A.M.C., REGISTRAR.

EARLY in December last a number of men suffering from "frost-bitten" feet were admitted into the Duchess of Westminster's Hospital at Le Touquet, usually after a few days in a clearing hospital, and other cases have been admitted since. The following observations, taken from an analysis of these cases, seem to us worthy of record.

History of Onset.

Such a case as this may be regarded as typical:

CASE I.

Sergeant W. N. marched eight miles to the trenches, which he entered with wet feet. The trenches were very muddy; rain fell at first, frost occurred on the second, and snow fell on the third day. He woke on the third morning in the trenches to find his feet "stone cold" and numb. His feet continued numb although he walked about. He felt pain in them for the first time two days later, on marching to his billet six miles away, which he reached with great difficulty. There he took off his boots, changed his socks, and rubbed his feet, but did not wash them. He slept that night without pain, but the next morning his feet were so swollen that he could not get his boots on. He "reported sick." The feet began to be again painful after he had been in hospital for two days.

"Exposure to cold and wet" would be a more suitable name to apply to these cases than "frost-bite," for in some instances the feet were affected in the absence of actual frost. There were a few instances, too, in which the feet only began to show signs of being affected some days after the patient had left the trenches.

In the slighter cases, especially when the patient left the trenches after only two or three days' exposure, no swelling of the feet occurred, but only numbness followed by pain. In one of the severer cases, on the other hand, the swelling was said to have burst the bootlaces. In several instances the patient managed to remain on duty by wearing larger-sized boots.

The pain before admission was variously described as "burning," "throbbing," "like pins and needles," "like electricity." In two cases it was attributed to the "boots getting tight" and compared to "a tight string running up between the laces and across the ankle." Generally, the pains increased as the swelling diminished, when the shooting pains, described below, usually began. In a few cases, however, the pains in the toes were preceded by "cramps" in the legs and pains in the knees.

At this stage, when the boots were removed before or at the onset of swelling, the feet were found to be not only cold but often discoloured—that is, "dark blue," "black."

Sometimes the swelling and pain were not preceded by any noticeable numbness. When present the numbness was usually confined to the feet, but occasionally extended up the legs.

The percentage frequencies of the occurrence of numbness, swelling, and pain were 34, 68, 82 respectively. In by far the majority of cases this was also the time-order of their appearance.

Some of the patients had been instructed by their officers to warm their numbed feet at the fire or to wash them with warm water; others had been warned to avoid warmth, or had been told to rub their feet with oil or grease. Such initial treatment did not seem appreciably to affect the subsequent severity or course of the symptoms.

Condition on Admission.

Many of the patients were suffering from the effects of general fatigue and insomnia.

At the time of their admission the swelling in their feet of which the patients had complained had in most cases disappeared. But this was not always so; and in one case not only were both feet swollen and tender on admission, but the swelling extended up to the middle of the calf. The feet were at this period generally normal as regards temperature; they were often flushed, especially at the toes and still more often sweating freely.

In a few cases, especially where the feet were still cold, discoloration was still present, the toes most frequently being cyanosed. In one case both feet showed a purple mottling, which extended up to the knees. In a small number of cases (4 per cent.) haemorrhage had occurred, usually beneath the nail of the hallux. In a few instances the toes presented a polished appearance. Desquamation was common.

In the great majority (89 per cent.) of cases the skin surface was unbroken; these constitute what we shall term the "first degree" group. In the remainder (11 per cent.) blisters had appeared on the skin, which had usually (in 82 per cent. of these cases) broken before admission, and in some instances had given rise to a definite ulcer. The cases (9 per cent. of the whole) in which the surface of the epidermis was thus interrupted we shall term the "second degree" group. Still rarer (2 per cent.) is the "third degree" group, in which the deeper dermal tissues were involved; these cases showed all the appearance of dry gangrene. In one of them the necrosed part of the hallux was bounded by a swollen red area and by a bleb containing pus, from which *Staphylococcus albus* was cultivated. (For a more detailed description of these severer cases see Cases x to xv at the end.)

Mobility.—Often the toes, and sometimes the ankles, were stiff, and their mobility was much diminished or absent. The toes were occasionally in a condition of hyperextension. Even in the slighter cases movements of the foot could often only be carried out with pain and difficulty. Walking had become so painful that in many cases this had been the cause of the patient "reporting sick."

Reflexes.—The knee-jerk, when examined, was found to be normal, save in one case, in which the legs were held very stiffly in the position of talipes equino-varus; in this instance an unusually brisk reflex was observed.

Sensibility.—In the majority of the cases there was either definite anaesthesia (65 per cent.), or numbness accompanied (15 per cent.) or unaccompanied (11 per cent.) by some diminution in sensibility. Thus only in 9 per cent. was there an absence of numbness or lessened sensibility. Hyperaesthesia was recorded in 15 per cent. of all the cases, very rarely without anaesthesia elsewhere. In one case the hyperaesthesia disappeared with increasing pressure of the fingers on the foot.

The plantar surface of the hallux was the seat of the most extensive and severe disturbance of sensibility. Less commonly its dorsal surface was also involved, and still less commonly the plantar and dorsal surfaces of the other toes. In a few cases the whole foot was anaesthetic, and in two cases the anaesthesia extended up the leg.

There seemed to be no constant relation between the disturbances of sensibility and the other symptoms observed. In one case both feet showed areas of hyperaesthesia, but the right foot was hotter, and showed a severer anaesthesia. In another case both feet were equally anaesthetic, but the right foot sweated more and was more painful than the left. In two cases the warmer foot alone showed hyperaesthesia. In one case only the toes were swollen, numb, and cold, but were not definitely anaesthetic. In two of the three cases of the "third degree" no anaesthesia was found outside the gangrenous patch; in a case of the "first degree" it was most marked over the areas of discoloration.

Sensibility ("epicritic") to light touch (cotton-wool), and the discrimination of double touches (compass points) and of differences of temperature (warm and cool tubes), appeared to be lost or diminished together. Sensibility ("protopathic") to painful (needle prick) stimuli—no investigations were systematically carried out with very hot and cold stimuli—was usually the last to be lost, and the first to return during recovery. On its return pain was found to be badly localized, having a radiating character; by one patient a prick was described at this stage as "ticklish," by another as "scratchy," "shooting," "as if you were rubbing it with your nail." Frequently before a prick could be recognized as such, it produced in the patient the illusion that he was being touched by the finger or a pencil.

The area of anaesthesia was rarely (the exceptions, 6 per cent., being all, save one, slight cases) confined to one foot, though one foot often suffered more than the other. Thus in one case the condition was as follows:

Right Hallux.	*Left Hallux.*
Prick at first lost, later described as "ticklish."	Prick at first lost, later present as pain.
Light touch at first lost, later present save at tip and over plantar surface of terminal phalanx.	Light touch at first lost, later regained entirely.
Right Foot.	*Left Foot.*
Discrimination of temperature differences absent.	Discrimination of temperature differences later present.
Spatial threshold (compass test) more than 30 mm. over middle toe.	Spatial threshold (compass test) 15 mm. over middle toe.

As a rule sensibility returned first over the proximal and later over the distal phalanges of the toes.

Several patients complained of alternating temperature (subjective) of their feet—for example, "they feel hot and cold alternately," "they feel cold by day and hot at night," "they shoot in the day, but are cold at night."

As a rule, the pain was greatest or occurred only at night; very often it prevented the patient from sleeping. In the severer cases the early throbbing or burning pain gave place to pains of a shooting character, and no longer remained localized, as before and as in the slighter cases, in the hallux or toes or balls of the feet; it now "ran up the legs" to the knees or even (in 2 per cent. of the cases) to the hips. One patient referred the pain produced by squeezing the toes of his foot to his knee.

Body Temperature.—Only in the severer cases—especially in those in which the foot was blistered, flushed, or sweating, and the mobility of the toes was lost or much diminished — the temperature rose slightly (to about 99° F.) at night.

Treatment and Progress.

Most of the patients remained in this hospital only for a week or ten days, before being sent to England or the base; consequently little can be said under this head. The pain and insomnia were generally relieved by acetylsalicylic acid. Cases of the "first degree" were treated by gentle massage, or by belladonna or camphor liniment, or (to relieve the hyperaesthesia) by 1 in 40 carbolic acid compresses. Some underwent no local treatment. In cases of the "second degree" fomentations were applied, followed later by gauze dressing. Picric acid in solution was employed in two cases of the "third degree."

It is hence impossible to compare the efficiency of these different modes of treatment. All that can be said is that every case—even the gangrenous cases—made remarkably good progress. The patients left this hospital, walking better than when they entered it; though a few were still unable to walk on their discharge. In several cases a return of the swelling of the feet was noticeable when first the patients began to walk, and at this stage there was a general complaint of pain, mainly, or only, when they began to put their weight on their feet. The pain was usually over the balls of the toes; such patients

consequently hobbled on their heels. Sometimes the pain in walking was felt in the ankles and legs.

Only the very slight cases recovered sensibility here completely. Even in cases of only moderate severity progress was in this respect surprisingly slow, considerable areas of anaesthesia remaining after a fortnight's rest. A characteristic feature of the anaesthesia was its variation from day to day, sometimes diminishing, sometimes increasing in extent and severity.

Unusual Cases.

The following instances of complications and of deviations from the normal course hitherto described may conceivably help to elucidate the nature of the affection.

Attention has already been drawn to one case which showed a purple mottling of the feet extending to the knees. Another case presented the following history and condition:

CASE II.

Captain R. C. C. On December 5th (six days before admission here), after several cold, wet days in the trenches, he found his legs numb, cold, and useless. Presently they became painful up to the hips, especially at the knees. There was some stiffness across the loins and tingling in the feet. On admission both legs were stiff and tender, especially in the region of the knees and above them. Over the inner aspects of both knees, but rather below the level of the joint, were large areas of yellow bruising, not traceable to any definite injury, unless to kneeling in cold water for three hours during a four hours' spell. The soles of his feet felt "like lumps of raw beef." There was much tenderness along their outer margins, and also over the dorsum of both feet. The left foot was the more tender. Drawing a sock over the left toes evoked a yell of discomfort. Light touch could be felt on the plantar surfaces of the feet; but he imagined a plantar prick, distal to the centres of the metatarsals, to be the touch of a finger. On both halluces a prick was recognized over the dorsal surface of the distal phalanx, but over that of the proximal phalanx it was called a scratch. On the dorsal surface of the terminal phalanges of the second and third left toes a prick was not felt at all, in the case of the fourth left toe it was called a touch, and on the fifth left toe "certainly not a prick."

In the following cases, also, other regions were affected in addition to the feet:

CASE III.

Private S. M. On November 20th (fourteen days before admission here), after having been three days in the trenches, the patient felt his feet to be "dead." On walking back to rest, his ankles ached and his right knee also. His ankles swelled, but were not red. The next day his toes became slightly discoloured, but after two days the discoloration disappeared.

CASE IV.

Private H. B. On November 24th (ten days before admission here), he noticed on coming out of the trenches that his toes were discoloured. For a week previously he had had aching pains in both knees and ankles. On November 27th he had pain in and swelling of the right elbow. On admission he complained of pain over the tubercle of the right tibia and internal condyle of the right femur, and a slight swelling, without redness, was here noticeable. Over the olecranon of the right elbow there was slight pain, but no swelling. On both feet (which were of normal appearance and temperature) anaesthesia was present over the first three toes and the ball of the hallux, and hyperaesthesia over the fourth and fifth toes and instep.

CASE V.

Private F. W. was admitted to clearing hospital on November 30th, and to this hospital on December 4th. On December 7th, in addition to extensive anaesthesia of both feet, the two terminal phalanges of the middle, ring, and little fingers were found to be "numbed."

CASE VI.

Private J. E., on November 25th (nine days before admission here), while in the trenches found his feet were swollen. He remained three more days in the trenches and when he came out he was unable to walk. He first noticed that his fingers were tingling on his journey in the train to this hospital. On admission he complained of his fingers "feeling twice as large as usual"; no anaesthesia, swelling or other abnormal appearance could be detected.

The difficulty of movement of the toes and occasionally at the ankle-joints in many cases has been already mentioned. In the following two patients, admitted at the same time, difficulty of movement without "frost-bite" was also present.

CASE VII.

Private E. W., fourteen days after admission here began to have pains in his ankles, later in his knees and back. On admission his heart and temperature were found normal. The movements of the legs were carried out with great caution and with great rigidity. He complained two days later of shooting pains in the legs.

CASE VIII.

Private A. G., nine days before admission here began to complain of cramping pains in the back and legs. On admission his heart and temperature were found normal. There was much stiffness of the back and lower limbs, the pains being vague, widely spread, and apparently muscular.

The cultivation of *Staphylococcus albus* from a bleb at the margin of the area of necrosis in a case of the "third degree" has been already mentioned. Beside this case may be placed the following:

CASE IX.

Private J. N. In the trenches between November 12th and 19th, 22nd and 25th, and November 28th to December 1st. Boots not removed between November 22nd and December 1st. Feet continually wet. No swelling of the feet. Since November 26th numbness and coldness of both feet. On November 29th, when "stamping" feet in order to get warm, his legs gave way at the knees, and he fell to the ground. On December 1st he walked to hospital, a distance of 1,000 yards, in one hour and three-quarters. He had never warmed his feet. On admission here, December 4th, his feet were found to be cool and of normal colour. He complained of a "numbish ache" over the metatarso-phalangeal joints of both feet. Voluntary movement of the toes was much diminished. Sensibility to light touch was lost on the dorsal and plantar surfaces of both halluces and on the two next toes of the left foot. Sensibility to prick was lost on both surfaces of the left hallux. The loss extended in each case to the metatarso-phalangeal joint. The remaining toes showed diminished sensibility to light touch and prick. He complained of giddiness and falling when getting on his legs during the first three days after admission. Heart and temperature normal; some flatulence.

December 13th. Patient much improved; now getting up. This morning he noticed a sore on the right shin. At its centre was found a pustule, ¼ in. in diameter, surrounded by a dusky blue and a wider oedematous area. It resembled so closely the pustule of anthrax that a bacteriological examination was immediately made. There was no glandular tenderness, and there were no constitutional symptoms. The patient had not received a kick, nor had he been exposed to any obvious source of contagion. The inflammation disappeared in the course of a few days. A film of the exudate from the pustule showed no pus cells, no organisms, only a few large mononuclear leucocytes and epithelial cells. A culture of the exudate on agar-agar grew a white staphylococcus.

Pathology.

Frost-bite attacks especially those parts of the body which are most exposed to the air; it occurs in extremely cold, "arctic," weather. But in the cases here considered the patients had not been exposed to cold of very great severity; and the regions chiefly affected are those which had been most exposed, not to cold only, but to continual wet and cold.

As in ordinary frost-bite, so in these cases the lesion is no doubt primarily vascular, but it is less severe, more "chronic," in character. Accordingly, actual gangrene is extremely rare, but the nervous, and perhaps the circulatory, disturbances are of longer duration.

It may be supposed that when an area of the body is exposed for some days to wet and cold the numbness which is felt is due to constriction of the arterioles of the region. At this stage a complete and rapid recovery ensues when the part is removed from its previous environment, especially if it be subjected to gentle massage.

Further exposure to wet and cold must upset the normal equilibrium between the capillary walls and the blood. Extravasation and mottling or discoloration, with some oedema of the skin, will occur, and at this stage a definite neuritis begins, owing to malnutrition and the action of toxic substances.

Thereupon the patient usually manages to improve his environment. He takes off his boots and perhaps rubs his feet. Owing to the removal of the pressure of his boots, or owing to the restoration of the blood circulation, lymph pours out into the surrounding tissues and the feet swell.

In the severer cases, when the swelling, if occurring, has subsided, the feet often remain flushed and secrete sweat abundantly, the result, probably, of disturbance in the function of the nerves supplying the blood vessels and sweat glands. At this stage there is well-marked anaesthesia or hyperaesthesia and some loss of movement.

Bearing in mind that none of the three cases of the "third degree" showed hyperaesthesia, and that in only one of them did the anaesthesia spread beyond the area of gangrene, we suggest that in continued bloodlessness of a part of the foot the neuritis is much less pronounced than in a temporary interference which later passes away and allows of a freer diffusion of toxic products into the tissues.

Certain cases already described establish a close relation, if not a transition, between the neuritis thus arising and that due to so-called "rheumatism." In this connexion the possible invasion of ultramicroscopic organisms may be worth consideration. A susceptibility certainly appears to be shown to the attacks of micro-organisms, in particular to *Staphylococcus albus*.

On the other hand, in some cases the disturbances of sensibility were complicated by the general mental condition of the patient. Nevertheless, that they are to be regarded as primarily the result of a local "organic" neuritis rather than of a central "functional" dissociation, we have not the slightest doubt.

Of the 152 men admitted, belonging to twenty-two different regiments, more than a third (37.5 per cent.) came from two regiments, both of which had just returned from India. Of the remainder more than a third (41 per cent.) came from three other regiments, of which two are known to have been sent to the seat of war from Egypt and Malta. It is therefore probable that want of recent adaptation to cold and wet may be a predisposing influence.

That the hallux should be the part of the foot which suffers most severely recalls its proneness to attacks of gout. Perhaps the blood circulation is more liable to obstruction in the hallux than in the other toes.

The notes of the cases have been taken by Captains S. R. Scott, F.R.C.S., W. P. S. Branson, F.R.C.P., Harold Pritchard, M.R.C.P., C. S. Myers, M.D., T. M. Body, M.R.C.S., Lieutenant J. S. Burn, B.C., Messrs. L. T. Giles, F.R.C.S., J. P. Hedley, F.R.C.S., H. R. Robinson, and H. S. Crichton Starkey, M.B. The Registrar's work was facilitated through an initial analysis by the last named. The photograph of the last case was taken by Lieutenant Dudley Stone, M.R.C.S., radiographer to the hospital.

Severe Cases.

The following are the notes of the severe cases to which reference is made earlier:

CASE X.—*Necrosis of Skin.*

Private R. F., admitted November 16th, 1914, had sustained a perforating bullet wound of lung and haemothorax. He was severely ill with the condition of lung and pleura. About three days after admission, when his feet "began to get warm," he noticed "pins and needles" and pains in both feet, worse in the right. It was then noticed that there was an area of skin on the sole of the right foot which appeared to be bruised and which was anaesthetic. The skin on this area gradually necrosed, and eventually sloughed off. Treated by fomentations. There was no anaesthesia in the toes.

The history of his frost-bite was as follows. While in the trench he was able to walk up and down, and so his feet never got numb. After being hit he lay in the trench twelve hours, until bearers came and took him to the dressing station. Exposed in the open trench that night to hail and cold, he felt his feet becoming numb, and finally he lost all feeling in them. At the dressing station his stretcher happened to be in front of the fire, and consequently his boots and stockings steamed (he could not feel the heat of the fire). When his boots were seen to be steaming they were taken off, and a hot-water bottle was placed on his feet, but he could not feel it. He left the dressing station in the evening for the train journey to this hospital. He says that he could not feel his feet properly until fourteen days after admission.

CASE XI.—*Necrosis of Skin.*

Private R. C. was admitted on December 3rd, 1914. About ten days earlier he noticed that both his feet felt very hot. He left the trenches that night, and took off his boots when he got to his billet. Next morning he noticed that both his feet were much swollen, and he had much trouble in getting his boots on, and only succeeded by slitting them down either side of the tongue. He then did another three days' duty in the trenches, and again returned to his billet for a night's rest. He went back for another four days in the trenches, but suffered severe pain in his feet. On his return from the trenches he did not take his boots off, as he had to appear in a review before the King. That night he was on sentry duty for three hours, and on the next day he did a day's digging. He was then told to march two miles to draw rations, which he was unable to do; he reported himself sick. He found a large swelling under the big toe of his right foot. At the hospital, while the surgeon was examining the ball of this big toe, the swelling burst, and the skin was then cut away. The patient thinks the skin cut away was "white with some blue about it."

On admission the right foot was anaesthetic from the tips of the toes to about midway between toes and heel. The toes of the left foot were numb, but not completely anaesthetic. There was hyperaesthesia on pressing the toes in both feet. On the plantar aspect of the right foot there was a patch of gangrene involving the entire thickness of the skin. The margin was red and inflamed.

One week later the gangrenous area was sharply defined and the island of skin black and dry; sensation over the remainder of the foot had returned. Hyperaesthesia on pressure was still present, the left foot was practically normal. The right foot was painted with a solution of picric acid and spirit and covered with sterile gauze. It healed well.

CASE XII.—*Ulceration.*

Private A. D., when admitted on December 3rd, 1914, had an ulcer on the great toe of the right foot. The toe was completely anaesthetic, but the remainder of the foot normal. Prior to the appearance of the ulcer the toe had been greatly swollen for several days while in the trenches.



Case XV.—Gangrene of feet following exposure (German soldier).

CASE XIII.—*Local Asphyxia of Skin.*

Private C. A. S., two days prior to admission on December 11th, 1914, took off his boots and was unable to get them on again owing to swelling of the feet. On admission both feet were red and swollen up to the ankles, the right being worse than the left. Over the head of the fifth metatarsal of the right foot there was a patch of dark blue skin, and below the external malleolus there was a patch of bright red skin. Both feet were extremely sensitive and hyperaesthetic.

CASE XIV.—*Necrosis of Skin.*

Private W. B. was admitted on December 3rd, 1914. Five days previously he noticed that his right foot felt cold and sore. There was not much pain in it nor did it swell much. On admission the skin over the terminal phalanx of the right hallux was found to be gangrenous; a clear line of demarcation surrounded the gangrenous area. The skin over the dorsal surface of the first phalanx of the hallux was red and swollen. At the root of the nail was a small collection of pus from which *Staphylococcus albus* was cultivated. The swelling and redness gradually disappeared after treatment by fomentations.

The patient never experienced any pain or hyperaesthesia. There was an area of tactile anaesthesia, which involved the right hallux; there was no anaesthesia elsewhere, and no hyperaesthesia.

CASE XV.—*Gangrene of Feet following Exposure in a German Soldier.*

Private A. D. (German prisoner of war) was admitted on November 17th, 1914.

This case, although not arising through exposure in the trenches, is here added as an extreme example of frost-bite.

On November 3rd he was hit in the buttock and in the middle toe of the left foot, probably by German fire during an attack on British trenches. He fell and remained in a wood for four or five days with very little food and exposed to much rain and cold (not frost). He cut off his boots on the second day, as he found that his feet were swollen and that he had no feeling in them. Unable to walk, he gave himself up to British troops, whose attention he managed to attract. On admission both feet were swollen, bluish-black, oedematous, cold, and insensitive. There were many large blisters on them containing serous fluid. The oedema extended to the junction of the upper and middle third of each leg; temperature 102.4°, pulse 100. His general condition, usually frail, was now very weak.

November 28th. A line of demarcation had formed on each foot at the level of the ankle joint. The feet were very foul-smelling. Both feet were amputated at the junction of the upper and middle thirds of the tibiae; anterior and posterior

flaps were made and the wounds closed by suture, except a small part posteriorly.

The note on December 10th was that he had made uninterrupted progress and that the wounds were clean and healthy, healing by first intention.

On December 31st the wounds were completely healed.

EXTRACTION OF A SHRAPNEL BULLET FROM THE KNEE-JOINT THROUGH A VERTICAL INCISION.

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THE object of this short paper is to draw attention to the great advantages obtained by a long vertical incision in opening the knee-joint for the purpose of exploring it or for treating certain injuries of the joint. Other surgeons have written on this subject—for example, Ollier, R. Jones and Alwyn Smith[1] and Corner.[2]

One great advantage of this incision is that a full view of the joint is obtained, including the suprapatellar pouch, the crucial ligaments, both condyles, both semilunar cartilages, and the upper surface of the tibia, after dividing the ligamentum mucosum near its attachment to the intercondyloid notch, and removing the infrapatellar fat. Then also the movements of the semilunar cartilages can be watched during rotation outwards and inwards of the leg and the method by which these cartilages may be caught between the bones whilst the leg is rotated out or in and torn by a sudden contraction of the strong extensor muscles of the thigh, which are inserted into the capsule of the joint, demonstrated, as was first pointed out in my paper on "Torn Semilunar Cartilages" in this JOURNAL of January 17th, 1914.

Other advantages of this incision are that none of the important structures which bind the bones together are divided



Fig. 1.—Shrapnel bullet in left knee-joint; lateral view.
A, Cartilages grazed by bullet.

transversely, therefore the divided parts tend to come together naturally, and after healing is complete the joint is in no way weakened.

A sergeant of the 2nd Manchesters was wounded on October 13th last outside Bethune and was admitted a few days later into the Royal Infirmary, Sunderland. A shrapnel bullet had penetrated the left knee-joint, the point of entry being one inch to the inner side and slightly above the knee-cap. The joint was swollen for some



Fig. 2.—Shrapnel bullet in left knee-joint; front view.

weeks, and movements of extension and flexion were both painful and limited, even after the swelling had subsided and the small wound had healed. Stereoscopic radiograms made by Dr. Squance and Dr. Hamilton Ross showed the bullet to be lying free in the joint in front of the anterior crucial ligament.

Operation.

On December 9th, assisted by Dr. Squance, I operated upon the joint. The patient was placed in the Trendelenburg position, and a vertical incision made through the skin, extending from 3 inches above the patella to the tubercle of the tibia, and the muscle, the periosteum of the patella, and its tendon were divided in the mid-line, whilst the joint was flexed. The loose fatty layer of connective tissue lying between the extensor muscle and the synovial pouch was divided and the latter also opened vertically. The cancellous tissue of the knee-cap was easily and rapidly sawn through with a small saw and the halves of the bone pulled apart by two hooks and the joint exposed. The synovial pouch above the knee-cap was practically obliterated by recent adhesions. The bullet was at once seen to be lying in the base of the ligamentum mucosum.

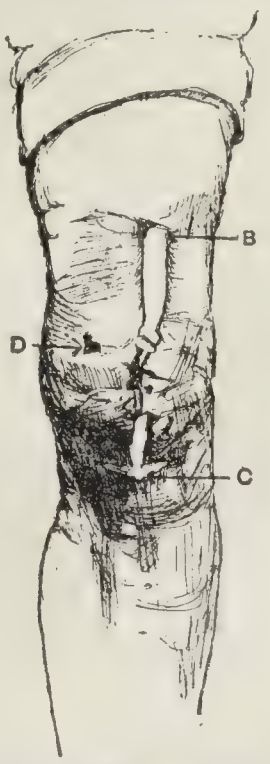


Fig. 3.—Left knee ten days after operation; front view. Line of incision covered by a strip of lead foil. B, Upper end of incision; C, lower end of incision; D, wound of entrance.

It was freed by a couple of snips with the scissors and removed with the greatest ease. The track of the bullet was easily made out, as it had grazed and torn off a little of the cartilage covering the upper and inner half of the patella, whence it had ricochetted downwards, grazing and scooping out another bit of cartilage covering the internal condyle. These detached pieces of cartilage were seen to be adherent to the inner surface of the capsule of the joint and were no longer loose bodies—a process which has been noted before.

The synovial membrane, the muscle, the periosteum and the tendon were sutured with iodized catgut. No wire or sutures were put through the patella. The skin incision was closed by metal clips. No drain was inserted and no splint used, the knee being laid over a pillow. The operation was completed in twenty minutes.

The wound healed *per primam*. The patient was out of bed in ten days, when photographs were taken and movements of the joint allowed.

[Pen and ink sketches have been made from the skiagrams supplied by Mr. Robinson to illustrate his paper. This course has been taken owing to the difficulty of making satisfactory reproductions for printing of skiagrams, save in exceptional cases. The Editor accepts responsibility for the artist's pen and ink sketches being faithful reproductions of the appearances in the skiagrams.]

REFERENCES.
[1] *The British Journal of Surgery*, vol. i, p. 70. [2] Ibid., vol. ii, p. 191.

REMOVAL OF EYES IN THE PRESENCE OF ORBITAL CELLULITIS.

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IT is well known that to remove an eye in which there is panophthalmitis and an open wound in the globe is a risky procedure, and liable to be followed by septic meningitis if carried out in the ordinary way with division of the optic nerve.

To avoid this serious complication some surgeons merely eviscerate the globe and leave the sclerotic to shrink up, a process which, as a rule, takes about a fortnight or even longer. Others first eviscerate the eye, then, after carefully washing the sclera and conjunctiva, to remove, as far as possible, all septic matter, proceed to remove the sclerotic. In this way the process of healing is greatly shortened, and much less risk of infection of the sheath is run.

In dealing with eyes which have been penetrated or ruptured by bullets or large foreign bodies, there is usually orbital cellulitis more or less severe as a complication. In these cases it would seem that still greater risk of infection of the sheath of the optic nerve might exist, which in turn could easily be followed by meningitis, if the remains of the eye be removed in the ordinary way with division of the optic nerve, and consequent opening of its sheath.

In order to prevent infection of the nerve sheath the following plan appears to be a good one:

1. The contents of the globe are thoroughly eviscerated, all traces of retina and choroid being scraped away to avoid any chance of sympathetic ophthalmia.
2. The muscles are divided.
3. The sclerotic is pulled forward and divided far back, leaving only a frill round the intact optic nerve.

The actual procedure may be varied according to the following circumstances:

(*a*) When the opening in the globe is small, or has firmly healed, the conjunctiva and muscles are divided first, as this is, of course, much more simply done while there is some tension in the globe. The cornea is then cut away and the contents of the eye carefully scraped out, either with a large sharp spoon or a scoop made for the purpose, and the process completed by scrubbing out the sclera with a swab held in a pair of forceps. The sclerotic is drawn well forward by two or three pairs of pressure forceps, and cut far back, leaving a frill round the nerve as described above.

(*b*) If the globe has an open rent or wound the contents should be scraped out first and the shell of sclerotic and conjunctiva thoroughly washed. The sclerotic is now packed firmly with a strip of gauze to facilitate the division of the muscles, which is next performed. The gauze is now removed, the sclera drawn well forward and divided as before.

(*c*) Where the globe is split open in all directions, as is often the case when a bullet has passed through it, packing is impossible. In this case, after scooping and wiping out the contents of the eye, the separate portions of the sclera can be picked up and made taut with pressure forceps and the muscles dissected off as far back as possible. After drawing the bunch of forceps forwards the sclerotic is now cut through, as described above.

The three points to be kept in mind are:

1. To remove all trace of retina or choroid;
2. To take away the bulk of the sclerotic, but
3. To leave a frill of sclerotic round the intact optic nerve.

In this way all risk of infection of the nerve sheath and the meninges as the result of the operation is avoided; there is very little bleeding, the shock due to cutting the optic nerve does not occur, drainage for the cellulitis is afforded, and the healing process is not prolonged by leaving in the bulk of the sclerotic.

The same procedure would, I think, be the safest method of removing eyes with panophthalmitis.

The above simple method may have occurred to and been practised by many, but, so far as I know, is not in general use. The results are good, and those to whom I have mentioned this slight deviation from the usual procedure have thought it sufficiently valuable to justify the publication of a short note in the hope that it may prevent an uncommon but disastrous complication at a time when so many eyes have to be removed in the presence of orbital cellulitis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SALICYLIC ACID IN WOUNDS INFECTED WITH VIRULENT ANAËROBIC ORGANISM.

IN the number of the JOURNAL of February 20th Dr. Albert Wilson shows how valuable salicylic acid is both for the treatment of wounds and as an intestinal antiseptic, and he gives a number of experiments carried out *in vitro* to demonstrate this. A committee was formed by the Medical Director-General of the Navy, consisting of Sir Watson Cheyne, Mr. Arthur Edmunds, and myself, to study the best method for treating wounds received in action. At the Royal Naval College, Greenwich, we have been testing various disinfectants on animals, and the results with a powder of equal parts of salicylic acid and boracic acid have been so remarkably good that a preliminary record is here given for information of all those who may have to treat the highly infected wounds so frequently found in the present war.

The material inoculated was a very infected sample of earth containing *B. aërogenes capsulatus* and *B. tetani*, kindly given to me by Dr. L. S. Dudgeon of St. Thomas's Hospital, and guinea-pigs were the animals experimented on. A small wound was made, and the lethal dose of the earth was rubbed in or buried in the subcutaneous tissue. The number of animals used was 24; the 3 controls died in forty-eight hours or less from acute haemorrhagic oedema; 7 were treated with 30 per cent. carbolic acid paste, 1 only survived—this one was treated five minutes after infection, and antitetanus serum was also given; 3 were treated with 30 per cent. cresol, 1 recovered—it was treated fifteen minutes after infection, and antitetanus serum was given; 1 was treated in five minutes with double cyanide paste—it died in forty-eight hours; 5 were treated with salicylic acid powder in five, fifteen, or thirty minutes, with or without antitetanus serum—all recovered; 5 were treated with salicylic acid powder, *plus* other disinfectants in five, fifteen, or thirty minutes—all recovered.

Thus, of the 24 animals experimented on all those treated with salicylic acid powder recovered, whether this was associated with other disinfectants or not. The 3 controls, and all but 2 of the remainder, died in from

thirty-six hours to six days from either acute haemorrhagic oedema or tetanus; the two that survived had been treated also with antitetanus serum. Similar satisfactory results were obtained when the infection consisted of *B. pyocyaneus* and *S. pyogenes*. A more detailed description of the experiments will be given in the next number of the *Journal of the Royal Naval Medical Service*, to be published in April.

P. W. BASSETT-SMITH, C.B.,
Fleet Surgeon, R.N.

A BULLET-FINDING PROBE.

THE value of a means by which it is possible to indicate the exact position of a metallic foreign body at the very beginning of the operation for its removal—whether with or without the previous use of an *x*-ray apparatus—can hardly be overrated. Sir James Mackenzie Davidson pointed this out in his very able article on the principles and practice of the localization of foreign bodies by *x* rays,[1] and his words deserve very careful perusal by all those who are called upon to operate. Unfortunately, at the present moment their number is very large, and I therefore trust that the instrument I describe here will be as welcome as it will be timely.

The principle underlying its construction is very simple:

If I take a little pocket flash light, such as is sold now everywhere for about a shilling, and "press the button," the lamp ignites by closing the circuit of the little three-cell battery. As soon as I release the button, the light goes out—I interrupt the circuit. If I introduce into the circuit a length of wire bent in the middle in a V shape, and cut it at the apex of the V, thus interrupting the circuit at that point, the lamp will reignite when I close the circuit again by connecting the two free ends of the V by a wire or any other piece of metal.

I now place the two half-lengths of wire (of the V) side by side (not in contact, but insulated electrically) making them into a double probe, the free end of which I bring into the wound until it touches the bullet; as soon as this occurs the metallic contact closes the circuit, and the lamp ignites.

Instead of using a V-shaped double probe I prefer a probe consisting of a cannula with an insulated wire as its core.

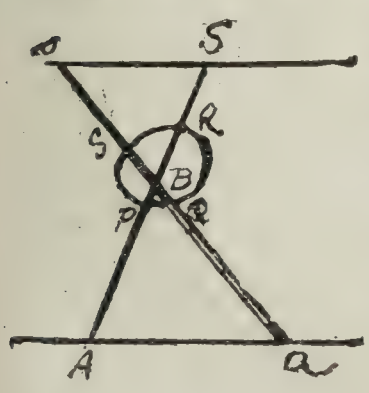
As soon as the instrument is ready for sale, I shall publish an illustration of its final appearance, with the necessary diagrams.

KARL GROSSMANN, M.D., F.R.C.S.E.,
Consulting Ophthalmic Surgeon, Liverpool Stanley Hospital.

X-RAY LOCALIZATION.

As straight lines are more easy often to find than angles, I send a formula for *x*-ray localization.

When the line of movement of the anticathode ray centre is parallel to the screen, and when A *a* is parallel to S *s*,



Since B A *a* and B S *s* are similar triangles,

$$\text{then } \frac{AB}{A\,a} = \frac{BS}{S\,s} \quad \therefore \frac{BS}{AB} = \frac{S\,s}{A\,a}$$

$$\therefore \frac{BS + AB}{AB} = \frac{S\,s + A\,a}{A\,a}$$

$$\text{That is, } \frac{AS}{AB} = \frac{S\,s + A\,a}{A\,a}$$

$$\therefore AB = \frac{AS \times A\,a}{S\,s + A\,a}$$

$$\therefore PB = AB - AP = \frac{AS \times A\,a}{S\,s + A\,a} - AP.$$

To find P B, which is the depth of foreign body from circumference (point P), (1) multiply (A S) the distance of anticathode from screen shadow point by (A *a*), the distance of movement of tube parallel to screen, and (2) divide by (S *s* + A *a*), the sum of the distances of movement of both centres and shadow. Then (3) subtract (A P), the distance of the anticathode ray centre from the skin point. The result is the distance of foreign body (B) from skin point (P). So also

$$QB = \frac{a\,s \times A\,a}{S\,s + A\,a} - a\,Q.$$

JOHN W. DUNCAN, M.A., M.B., Ch.B.
Hockley, Birmingham.

[1] BRITISH MEDICAL JOURNAL, January 2nd, 1915, p. 4, col. 2, line 42.

THE DIAGNOSIS OF CEREBRO-SPINAL FEVER.

BY the courtesy of Dr. Forbes I have been able to see something of 11 cases of this disease, of which 3 or 4 had been seen by me prior to entering the sanatorium. Such a number is far too small for conclusions of any value, but I should be glad to make a few remarks on some points of value in the differential diagnosis from influenza, a matter at this moment of considerable importance.

The first point is a negative one—namely, that the absence of marked head retraction must certainly not be taken as evidence that the graver disease is absent; it has not been a very marked feature in any case at the time I saw them, and has been entirely absent in one or two of the worst.

Secondly, the fact that *a* rash—not any specific rash—is present is important. As is well known, the rash varies greatly in character, and in six cases with rash four quite different types have been present—namely, petechial, roseolar of the typhoid type, erythematous in small patches of various size, and in one fulminant case which I did not see, haemorrhagic patches.

Thirdly, affections of the cranial nerves have not been conspicuous, though defects of ocular movement have been noted in three or four cases.

Deafness has certainly been present, but was difficult to determine, owing to the mental condition, which has been one either of drowsiness or of confusion and mild delirium; from both of these the patient, in the early stage, can be roused by questions, and will answer rationally. It is to be noted that the mental condition bears no obvious relation to the fever, which may be moderate.

Vomiting is an important feature if present, but was certainly absent entirely in two or three cases, and only occurred once in others.

Rigidity of the limbs, with or without opisthotonos, is characteristic, but by no means always well marked; like head retraction, it has been absent in some cases.

Kernig's sign was present in all the cases I examined, and is of value as against influenza. *Tache cérébrale* has been present in all the cases I have examined, and in adults is of some value.

In conclusion, I would urge that from the clinical standpoint, putting aside lumbar puncture, which is not always feasible at the moment or desirable, the diagnosis should not be influenced by the absence of any one or two supposedly essential symptoms; all are uncertain. But the combination of either rash or vomiting, or squint or rigidity of limbs, and opisthotonos, with a clinical picture otherwise resembling influenza, is very strongly suggestive of the graver disease.

Brighton. E. HOBHOUSE, M.D.

A NOTE ON DR. PARNELL'S GLUCOSE TEST.

IN the BRITISH MEDICAL JOURNAL of July 4th, 1914, there appeared a communication from Dr. Parnell entitled, "A Clinical Test for the Estimation of the Percentage of Glucose." I was greatly interested by it, and as soon as the glasses were available I got them from Messrs Down Bros. I made a considerable number of estimations, and found them to agree closely with those arrived at volumetrically by Fehling's solution.

During November and December, 1914, I was staying at Duff House, Banff, and availed myself of the opportunity kindly given me by Dr. Spriggs to work with the analytical chemist there—Mr. Leigh. I made the estimations by Parnell's colour test, which is done by boiling equal parts of liquor potassae and urine in a test tube and comparing the colour produced with the coloured glasses devised by Dr. Parnell.

The method of analysis used by Mr. Leigh is gravimetric. The cuprous oxide in this method is oxidized to, and weighed as, cupric oxide in a Gooch crucible. This method is considered very accurate.

The examination of fifty estimations show that the result of the two methods approximate very closely. In Mr. Leigh's opinion the approximation is closer than

would be the case were the volumetric method and the gravimetric method compared, unless the volumetric was done by a specially skilled chemist. The mean error over the whole series is only 0.19 per cent.

Results identical	11
Difference 0.1 per cent., or less	8
Difference between 0.1 and 0.2 per cent. ...	4
,, ,, 0.2 and 0.3 ,, ...	5
,, ,, 0.3 and 0.4 ,, ...	4
,, ,, 0.4 and 0.5 ,, ...	9
,, ,, 0.5 and 1 ,, ...	5
Difference 1 per cent.	4
Over 1 per cent.	0

I consider Dr. Parnell's method can be strongly recommended as a quick and sufficiently accurate method of testing the quantity of sugar in urine.

A. MOUILLOT, M.D.,
Ex-President, Balneological and Climatological Section of the Royal Society of Medicine.
Harrogate.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, February 25th, 1915.

Sir WILLIAM CROOKES, O.M., President, in the Chair.

Metabolism of Muscle.

Mr. J. BARCROFT, F.R.S. (Lecturer on Physiology, Cambridge), and TOYOJIRO KATO communicated a paper on the effect of functional activity upon the metabolism, blood flow, and exudation in skeletal muscle and the submaxillary gland. It was found that (1) the oxygen used not only increased during their activity, but outlasted it by some hours. The curve of oxidation usually showed two maxima, the first during the period of activity, the second much later. (2) Water left the blood vessels in much greater quantities during and after activity of the organs than before; a similar second maximum was sometimes seen in the case of the exudation. (3) In the case of muscle not all the exudation left the muscles as lymph. Of the right and left gastrocnemius muscles, the one which had been stimulated was heavier several hours after the stimulation, and of lower specific gravity than the unstimulated. (4) The dilatation of the vessels of the organ outlasted the functional activity for two hours or more in the case of muscle which had been stimulated rhythmically for fifteen minutes. (5) The tenseness of the muscle caused by its distension with water seemed to be the physical basis of stiffness.

Miss D. JORDAN LLOYD reported the results of experiments on the osmotic balance of skeletal muscle. In order to free the phenomena as far as possible from complications due to the formation of diffusion columns, a very small flat muscle—the sterno-cutaneous of the frog—was used. In solutions of non-electrolytes of from zero to about 0.25 mol. concentration, and in solutions of electrolytes of from zero to about 0.14 mol., this muscle at first increased in weight and then decreased, finally falling considerably below its initial weight. The amount of increase and of decrease and the time relations were determined by the previous history of the muscle, the chemical constitution of the solute, and the concentration of the solution. The communication dealt with the first of these variables. Previous treatment with oxygen by suspending the muscle in the gas saturated with aqueous vapour reduced and finally obliterated the initial rise in weight. After exposure for six hours to oxygen a muscle slowly lost weight even in distilled water. After exposure to hydrogen for three hours the muscle in distilled water increased 85 per cent. in weight. Sixteen hours' exposure to air still left a slight initial rise. The muscles in moist oxygen either gained slightly in weight or lost weight. In moist air the muscle lost weight. In moist hydrogen there was a slight gain in weight. These results showed that an oxygen-saturated muscle had an osmotic equivalent less than that of distilled water. The initial absorption of fluid might be regarded as due to unavoidable stimulation of the muscle during its removal from the animal. Removal occupied five minutes. During it some absorption would probably occur. The difficulty of freeing distilled water from toxic substances was overcome by exposing the muscle only to water vapour of a known pressure. A muscle saturated with oxygen lost weight in water vapour saturated with respect to a plane surface of distilled water. The vapour pressure of the muscle was, therefore, greater than that of water. The vapour pressure of a muscle not saturated with oxygen—that is to say, in air—was at first less than that of distilled water. A remarkable feature of this muscle was the wide change in water content needed to make a small change in vapour pressure. A muscle behaved quite differently in the vapour of 0.13 mol. Ringer from what it does in the vapour of 0.125 mol. Ringer.

Messrs. M. BACK, K. M. COGAN, and A. E. TOWERS, in a paper communicated by Mr. J. BARCROFT, reported that if one gastrocnemius muscle of a frog be stimulated for fifteen minutes with forty induction shocks per minute it became heavier than the other. The difference in weight might amount to upwards of 20 per cent. of the weight of the muscle; the specific gravity fell correspondingly. This phenomenon might be noticed from fifteen minutes after the stimulation ceased to six hours. After sixteen hours the oedema had passed off. The frog must have a good circulation, hence the swelling was best observed in frogs killed by destruction of the parts of the brain above the medulla oblongata, thus leaving the respiratory and vasomotor centres intact.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Radium in Cancer.

AT a meeting on February 5th, 1915, Dr. WALTER SMITH in the chair, Dr. T. P. C. KIRKPATRICK showed a boy suffering from a condition described as *Lupus pernio*. The patient was affected for three years with sore hands, sore ears, and at one time had a similar affection of his face. The President, Dr. LINDSAY, said that the name "lupus" should only be used when the condition was tuberculous. Sir J. W. MOORE read a short note on *Radium therapy in uterine cancer*. A married woman, aged 65, suffered from various symptoms attributable to the alimentary tract, but as well from pain, discharge, and haemorrhage connected with the womb. Uterine cancer was recognized and pronounced inoperable by Dr. F. W. Kidd. In conjunction with Dr. W. C. Stevenson, Sir John Moore had the tumour treated with radium emanations. The details of the treatment were as follows: From October 23rd to December 29th, 1914, the patient was under treatment by an average of 20 millicuries for thirteen and a half days. During all this time she had six old capillaries in a little metal case inserted into the cervical canal. They contained an average of 4.17 millicuries. She received altogether 6,602 milligram-hours of radiation. Six needles were inserted eleven times, twenty-four each into the anterior and posterior lip of the cervix and fornix and eighteen into the vaginal wall. The posterior fornix and lip of cervix, treated for four days twenty-one hours, received 1,872 milligram-hours—average, 16 millicuries. The anterior fornix and lip of cervix, treated for six days twelve hours, received 2,162 milligram-hours—average, 13.8 millicuries. The vagina, treated for four days four hours, received 1,218 milligram-hours—average, 8.1 millicuries. The cervical canal and uterus, treated for thirteen days six hours, received 1,350 milligram-hours — average, 4.1 millicuries per hour. The patient left hospital considering herself cured. There was marked shrinking in the growth, with cessation of haemorrhage and foul discharge, and the general condition was excellent. Dr. W. C. STEVENSON discussed the question whether it was the gamma or beta rays which produced the effect in cancer. Abbé had proved that the gamma rays had very little effect, and that the beta rays had great effect in retarding cell growth. Dr. SOLOMONS was sorry that Dr. Kidd, who had expressed th opinion that the case was inoperable, was not present, as it would have been of interest to know his idea as to what was an inoperable case. Dr. O'BRIEN said the whole virtue of radium depended on the action of radium emanation on the cancer cells and also on the stimulation of the connective tissue cells. He thought that Barlow, summing up his last paper, said that no matter what might be the future of radium every operable case of cancer should be operated upon. He recalled a case of his which was treated

in 1906 for epithelioma of the right cheek, which was looked upon as cured, and remained well for six years, and at the end of that time the patient returned with large infiltrating glands absolutely inoperable from the surgical standpoint. Dr. CROFTON, Dr. HARVEY, Dr. SPENCER SHEILL, and Dr. T. G. MOORHEAD also spoke. The PRESIDENT said that the most fundamental thing as to the possible line of radio-activity was that it was a branch of photo-therapy, and might be brought into line with Finsen light. It was a photo-electrical treatment influenced largely by the wave-length of the light, and possibly acting on the tissue. It was possible in all those radio-active elements there might be a stimulant action, and he suggested the possibility of too feeble application of radium stimulating cancerous growths. Sir JOHN W. MOORE replied. Dr. F. C. PURSER read notes on a case of *Chronic septicaemia*. A widow, aged about 60 years, was seen first on February 24th, and admitted having been ill for a month previously. She complained of pains in the left shoulder and forearm and right leg. She had also a systolic (? haemic) murmur. Her general condition was one of great weakness and flabbiness. The temperature ran between 100° and 101° F.; pulse 90 to 100. Dr. Purser enumerated the various clinico-pathological examinations which had been undertaken during the sixteen following weeks. They were thorough and repeated, but neither they nor clinical investigation ever revealed a local condition of disease nor any circulating toxin. Yet for four weeks, beginning about the middle of May, inevitable death from weakness seemed the only outcome of the disease—its incidence seemed only a question of time. The temperature was more hectic now, rising to 101.5° or 102° F. The patient finally accepted an inoculation of 5 million streptococci. There was an immediate drop in temperature to 99° F. It continued till three days later, when a similar dose was given with less result; but the patient had picked up a little strength. Six days later 5 million streptococci were again given, with the most alarming result. The temperature rose to 104.5° F., the patient was collapsed and pulseless, and fainted more than once. This occurred thirty-six hours after inoculation. In two days the fever subsided. The patient began a long and almost uninterrupted convalescence. The temperature seldom again rose above 99.5° F., and finally settled on October 9th. The patient is now well, except for occasional "muscular rheumatism." Dr. Purser ventured no comments.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

AT a meeting on February 23rd, the President, DR. SAMUEL WEST, in the chair, Dr. FREDERICK TAYLOR read a short paper on a case of *Multiple pulsating tumours secondary to hypernephroma*. The patient was a man, aged 59, whose first symptom was haematuria. When admitted to hospital there were swellings of the right buttock and in the region of the right elbow. The right shoulder was tender, and subsequently a swelling developed there also. The swellings pulsated, and systolic murmurs could be heard over them. These tumours gradually increased in size, and the patient became progressively weaker and paler. Blood was passed at intervals in the urine, and occasionally clots were passed, the patient suffering from strangury. Later, a new swelling became visible at the posterior end of the iliac crest on the left side. A *post-mortem* examination revealed growths at the sites of the swellings which had occasioned fractures of the bones. On section they were lobular in structure, dark and mottled from haemorrhage. There were numerous nodules in the lungs. In the upper third of the left kidney was an encapsuled spherical tumour, and the rest of the kidney contained smaller growths. The suprarenal capsule was the site of a small separate growth. Histologically the growths in the kidney showed the appearance of hypernephromata arising from suprarenal cell rests. Presumably the pulsation in the visible growths was due to their great vascularity. Dr. F. PARKES WEBER read papers on (1) a case of *Bilateral hypernephroma, with secondary thrombosis of the inferior vena cava and terminal uraemia*, in a man aged 49. The hypernephromata infiltrated both suprarenal glands and kidneys, and there were secondary nodules in the liver and lungs. Venous thrombosis involved both renal veins and both hepatic veins and the whole length of the vena cava, the clot extending continuously from the iliac veins below to the heart above, its upper end projecting into the right auricle. The blood clot close to the heart was infiltrated by the malignant tumour. (2) *Latent Addison's disease* revealed by necropsy following death from pneumonia in a man aged 35. Symptoms of pneumonia at the base of the right lung, and crepitation without dulness at the base of the left, were accompanied by signs of great debility, and followed by empyema on the right side. After death the heart was found to weigh 25 oz., and was much hypertrophied. This was explained by chronic interstitial nephritis. Both suprarenal glands were occupied by necrotic caseous material which included the whole of the medullary substance, and was covered by only thin layers of living cortex. Dr. Weber remarked that the old chronic nephritis with cardiac hypertrophy evidently counteracted the tendency towards very low blood pressure, which in this case was equal to from 155–170 mm. Hg. On the other hand, the patient's state of debility was characteristic, as well as the imperfect general reaction of his organism to infectious disease.

SECTION OF OTOLOGY.

AT a meeting of the Section on Friday, February 19th, under the presidency of Dr. ALBERT GRAY, a discussion was held on *Tuberculosis of the auditory apparatus*. Dr. WYATT WINGRAVE said that considerable information could be obtained from an examination of discharges and curettage. In cases of acute aural tuberculosis there was a reasonable chance of finding tubercle bacilli, but the search in chronic cases was successful in only 16 per cent. It was necessary to take care not to mistake for the tubercle bacillus an acid-fast bacillus which looked like it. In doubtful cases the von Pirquet or other test should be employed. Primary cases of tuberculosis of the meatus were probably due to digital infection. Dr. FRASER (Edinburgh) showed some instructive specimens of tuberculosis in various parts of the ear. Mr. ARTHUR CHEATLE showed a series of specimens illustrating the continuity of tuberculous disease of bones and membranes, including the promontory, the ossicles, and the labyrinth. In the case of a child, aged 7 weeks, in whom an extensive operation was necessary, the bovine bacillus was found. He believed this to be the case in all instances in children, and that the Eustachian tube was the means of entrance, the vehicle being cow's milk. Mr. C. E. WEST said that, of the last three cases he had had in children, two had bovine and one human tubercle. He thought the different course was a matter of resistance. He had never seen a chronically open tuberculous ear in an adult recover; and the mixed character of the secondary infection, partially with saprophytes, made the problem of the disinfection of the ear almost insuperable. His chief hope for the future rested upon bacteriological investigation and the increasing of immunity reaction. Mr. E. D. DAVIS and Mr. STUART-LOW discussed cases and technique, and Dr. LOGAN TURNER (Edinburgh) sent an analysis of the cases seen by him at the Royal Infirmary during eight years. There were 1,797 cases of middle-ear suppuration, only 2 per cent. of which were tuberculous. The vast majority were under 5 years of age. During the same period there were only nine adult cases of tuberculosis of the ear; 84 per cent. of the patients had discharge, and of the infant cases as to which the method of feeding was stated, 88 per cent. were bottle-fed—only four of the infants were breast-fed. Facial paralysis was present in 45 per cent. of the cases. Sir STCLAIR THOMSON said that tuberculosis of the ear was very rare among patients in sanatoriums; only 2 among 700 with pulmonary tuberculosis, though 178 of the 700 had tuberculous disease of the larynx. Dr. URBAN PRITCHARD spoke of the need of improving the general health of the patient before operating. Dr. DUNDAS GRANT considered that tuberculosis of the larynx was quite ten times more frequent than of the middle ear. In children with mastoid tuberculosis he thought the means of infection was the blood, though the Eustachian tube of a patient suffering from wasting disease had increased patency. Dr. JOBSON HORNE said it was impossible to lay down hard and fast rules as to when operations should be done; the surgeon must be guided by the condition of the patient. Primary (proven)

tuberculosis of the ear in children generally occurred before the second year. Mr. RICHARD LAKE said that out of 600 cases of laryngeal tuberculosis, there was not one case of that disease in the ear.

Reviews.

INDUSTRIAL TRAINING.

MR. DEARLE'S book on *Industrial Training*[1] has arisen out of an inquiry undertaken by him while holding a Shaw Research Studentship in the London School of Economics and Political Science. In the earlier chapters the general scope of the inquiry is defined and the conditions peculiar to London—which, as the subtitle of the book indicates, was the industrial centre particularly considered—are specified.

We are then given an account of the different methods by which the various skilled industries are recruited. The time-honoured process of apprenticeship in its strictest sense prevails only in a few industries, much the most important being the printing trade. There are, however, others in which regular service, often without formal agreements, is customary, and implied contracts to give a boy an opportunity of learning seem to be on the whole properly observed. The next method examined is that of learning by migration: a youth having acquired a certain degree of general skill, or perhaps mastered some particular process, seeks service with another firm as an "improver." In certain parts of the cabinet trade this method is usual. Lastly, we have the device of "following up" in those occupations which require the association of a helper or assistant with the skilled artisan; this, for instance, is the case in plumbing. Allied to the two latter classes is the "picking up" of semi-skilled trades. The author discusses the values of these different methods, and shows that each has its separate sphere and its advantages and disadvantages.

In the next section the ways in which the start in a trade is obtained are examined, and Mr. Dearle points out how seriously the problem is complicated by the fact that the importance of a boy as a wage earner in many cases compels or encourages his parents to place him in a situation which yields an immediate high return, though at the cost of poor prospects in the future. The following chapter deals with the conditions of engagement and employment, and includes a thoughtful discussion of the influence of machine production upon the standard of labour. The author, we think, satisfactorily establishes the conclusion that the common belief that the introduction of machinery lowers the general level of intelligence required on the part of employees is erroneous. In some instances machines have limited the skill required, but in others they have merely altered its character or changed the mode of acquiring it. A frequent tendency is to produce a concentration of skill. The work done covers a narrower range but reaches a higher level.

The author's discussion of the relation between the trade or technical school and the workshop is of much interest, and many of his observations upon the strength and weakness of school training might be read with profit by those interested in the problems of professional education in general. The views of teaching staffs on the one hand and of employers or foremen upon the other are naturally to some extent divergent. As Mr. Dearle says: "The truth probably lies between the two—namely, that the workshop still remains the centre and basis of trade teaching, but that the school is an auxiliary to it of great and always increasing importance." In the following chapters the existing provisions for trade and technical education in London, the general problems of industrial recruiting, and the special problems of juvenile labour are examined; while, lastly, the relation between industrial training (or lack of industrial training) and unemployment, existing agencies for coping with the evils, current proposals, and the author's own suggestions are described.

Without attempting to discuss these matters in detail, it may be sufficient to say that Mr. Dearle traces many, if not most, of the existing evils to a prevailing lack of system, but is by no means enamoured of certain drastic proposals which have found favour in some quarters. Thus he writes of the recommendations made by the minority of the Poor Law Commission with respect to industrial training:

> The scheme as outlined is a bold and comprehensive one, and is attractive because of its very simplicity. But it would also lead to very considerable difficulties. Indeed, setting aside those elements in it (*e.g.*, raising the school age to 15) upon which nearly all the other schemes outlined in this chapter are agreed, and considering only suggestions like the system of industrial half time that are peculiar to the Minority Report, there seems no doubt that legitimate objections are very great, and in my view the advantages that certainly attach to it can be obtained equally well along other lines to which these objections do not apply.

At the present time we are perhaps more concerned with temporary expedients framed to fulfil the requirements of an emergency, but, when the storm has blown itself out, it is certain that our national industries will be in a different position from that which they occupied only a few months ago. Mr. Dearle's book is therefore opportune, and we recommend it to the notice of our readers as a thoughtful and instructive contribution to the literature of economics.

[1] *Industrial Training: With Special Reference to the Conditions Prevailing in London.* By N. B. Dearle, M.A. London: P. S. King and Son. 1914. (Demy 8vo, pp. 556. 10s. 6d. net.)

ANATOMY.

Quain's Anatomy, which is now in its eleventh edition, is so well known that it might fairly be regarded as a national institution. It is the chief reference book on anatomy in the English language, and is for Britain what Poirier's and Bardeleben's books on anatomy are for France and Germany. Vol. ii, Part II,[2] of the present edition deals with splanchnology, and has given the editor, Professor JOHNSON SYMINGTON, the opportunity of incorporating in it the results of both his own work on the alimentary canal and that of his pupils, the late Professor J. S. Dickey and Mr. P. T. Crymble, on the lungs and the peritoneum respectively, nor has he been backward in availing himself of this opportunity. The volume in consequence shows an unusually large number of changes in both the text and illustrations for a book in so late an edition. The editor has undoubtedly left a very decided impress upon it, adding more original and new matter than we have been accustomed to expect from previous issues. So much is this the case that the volume partakes in parts more of the nature of articles in a journal than of a systematic textbook, a statement which applies equally to both the text and the illustrations. We venture to think, however, that with so many more or less stereotyped textbooks in circulation, such a departure on the part of the editor, than whom there is no higher authority on structural and topographical anatomy, is fully justified, and we congratulate him equally on the boldness of the innovation as well as on the maintenance of the high general reputation of the work. We miss the bibliographies at the end of the various sections, but these can now be obtained elsewhere, and their loss is largely compensated for by the number of useful references distributed through the text.

In the spring of last year the first volume of the sixth edition of Cunningham's well-known *Manual of Practical Anatomy*[3] was issued, and a review of this volume appeared in our issue of April 4th. The edition is now completed by the publication of the second volume. It deals with the dissection of the thorax and head and neck, and, as in the first volume, a number of valuable radiographs have been included. The text has been carefully revised, and many new illustrations added. In the section describing the brain many alterations appear. Indeed, it has been practically rewritten, and is illustrated by many new figures. As a result we can confidently state that this second volume reaches the high standard which we have come to expect in the various works on anatomy issuing from the University of Edinburgh under Professor

[2] *Quain's Elements of Anatomy.* By Sir E. A. Schäfer, LL D., D.Sc., M.D., F.R.S., J. Symington, M.D., F.R.S., T. H. Bryce, M.A., M.D. Eleventh edition, in four volumes. Vol. ii, Part II: *Splanchnology.* Edited by J. Symington. London: Longmans, Green and Co. 1914. (Roy. 8vo, pp. 402; 349 figures. 10s. 6d.)

[3] *Cunningham's Manual of Practical Anatomy.* Revised and edited by Professor A. Robinson. Sixth edition. Vol. ii: Thorax, Head and Neck. Edinburgh, Glasgow, and London: H. Frowde, and Hodder and Stoughton. 1914. (Cr. 8vo, pp. 666; 11 plates, 267 figures. 10s. 6d. net.)

ROBINSON'S direction. It is a pleasure to find that throughout he keeps clearly in view the practical application of anatomy to medicine and surgery. Especially would we draw attention to the fine series of radiographs of the region of the chest, which will form an excellent introduction to the later study of the radiography of this region in disease. We can only repeat what we have stated before, that Cunningham's *Manual* holds an unrivalled position in this country, and its popularity under its present editor is certain to be extended by this new issue.

The Anatomy of the Human Skeleton,[4] by Mr. J. E. FRAZER, is a book framed on different lines to those usually selected. The difference is clearly expressed by the author himself in the preface when he states that his intention "has been to induce the student to think of the bones as they exist in the body rather than as they lie on the table"; in other words, the bones are not considered as separate objects, but as more or less central parts of an anatomical region. To accomplish his purpose, Mr. Frazer is under the necessity of publishing a large number of illustrations, and it is these, perhaps more than the accompanying text, which constitute the important section of the book. The illustrations, which are all original, are printed on no fewer than 219 separate plates, and, as some contain as many as seven distinct figures, some idea can be formed of the very liberal manner in which the book has been illustrated. Moreover, many of the figures are printed in no less than five different colours. We may say at once that we consider the underlying principle of the book is sound and commendable and that the author has succeeded admirably in his aim. It is, however, not to be wondered at if a few errors and omissions have been made in the first edition of a book which covers so extensive a field, and particularly when the author has strayed so far from the beaten track of anatomical writers. In the hope that such defects may be remedied in future issues we venture to draw attention to some which appear to us worthy of note. In Fig. 19 the very distinct groove on the anterior surface of the body of the axis is for the longus colli muscle and not for the rectus capitis anticus major muscle. In Fig. 20 the rectus capitis lateralis is mentioned when rectus capitis posticus minor is clearly meant. In Fig. 35 the iliolumbar artery is placed presumably between the two roots of the lumbosacral cord instead of between that cord and the obturator nerve. In Fig. 110 the iliolumbar ligament appears behind the quadratus lumborum muscle. It is only fair, however, to mention that the author's conception of this ligament, as given in the description of Fig. 35, is not that usually accepted. As to sins of omission, we think that in such a textbook as this the round tubercle on the lateral mass of the atlas for the attachment of the transverse ligament, the very well marked surfaces on the neural arches of the vertebrae for the attachment of the ligamenta subflava, the equally well marked and more or less continuous areas on the lower end of the fibula for the attachment of the three fasciculi of the external lateral ligament of the ankle joint, should all have been shown. Further, we are disappointed that Mr. Frazer has not done as much in the way of showing the course of the posterior primary divisions of the spinal nerves as he has in the case of the anterior primary divisions. Some of the illustrations, again, are not above criticism, whether from the point of view of clearness or of artistic merit. Such figures as, for instance, Figs. 126, 127, 180, and 205 are scarcely, in their present form, worthy of reproduction. We notice, too, in the final portion of the work, the part dealing with the head and neck, an apparent falling away from the standard set and the method adopted in the earlier part and a return to the more stereotyped manner of treatment to which we are accustomed in other textbooks. Might we also suggest that it would be a graceful act to restore the manubriogladiolar angle to its rightful owner? The physician whose name is associated with it is P. C. A. Louis, a name which has been quite unnecessarily Teutonized by certain English authors into Ludwig. In closing this notice we would like to express to the author what we venture to think will be a general feeling among anatomists—our sense of gratitude for both the originality and boldness of many of his diagrams.

[4] *The Anatomy of the Human Skeleton.* By J. E. Frazer, F.R.C.S. Eng. London: J. and A. Churchi l. 1914. (Double pott 4to, pp. 282; 218 figures. 21s. net.)

As Dr. FRIEDENTHAL[5] remarks, it is not a little strange that so important a subject as growth should have been neglected so long and so completely by physiologists. The explanation no doubt is, that until we know more about the relatively simpler problems of biochemistry it would have been premature to attempt the solution of the more complicated. The time, however, seems to have arrived when preliminary inquiries, at any rate into the meaning and nature of growth, may justifiably be made, and the volume under review contains definite and original contributions to the study of the subject, and also furnishes a very full summary of the work which has already been done, while at the same time it suggests a number of lines along which further inquiry may profitably be made. The question of growth, both inorganic and organic, is dealt with in its widest possible bearings, for the author has reached the conclusion that the process of growth is single, and that between the growth of a crystal and the growth of living tissue no hard and fast line can be drawn. He has naturally, perhaps, most to say about organic growth, which he defines as "any approximation to the terminal form of the organism," and which, though usually associated with an increase in size or weight, is not necessarily so. He has much to say on the chemistry of foodstuffs, and points out in a suggestive diagram that the elements used in the building up of living tissues (carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulphur) lie all close together at the beginning or centre of the periodic system. From a somewhat forced though interesting analogy between the periodic and solar systems, he appears to argue that similarly only on planets near the centre of this latter system is life likely to be found. The main concern of the book is, however, with the more practical question of mammalian growth, and particularly with the growth of man. Here the author pleads for dating the beginning of life—as, for example, in the construction of growth curves—from the date of impregnation, and not from the date of birth. One of the most important features of the book, certainly one which will lead to its being frequently consulted, is the series of these curves supplemented by tables from which can be readily gathered a very clear idea of how complicated is the problem. They demonstrate also how variable is the rate of growth at different ages. The tables deal with animals and man, with the European, Asiatic and African, with the fetus *in utero* and the pregnant woman. In a system of ingenious diagrams the body is divided into a series of segments, and the variation in the amount and site of growth in different races and at different periods of life is shown at a glance. He shows that there is a large number of exceptions to Flourens's so-called law that the length of the natural life of an animal is something like five times that of the growth period. He has much useful information also to give on such interesting and ill understood matters as the influence of environment, internal secretion, nerve irritation, and vascular reflex, on growth, and on all of them he has collected a large number of highly suggestive views. The illustrations, though few, are good and adequate.

[5] *Allgemeine und spezielle Physiologie des Menschenwachstums.* Von Privatdozent Dr. H. Friedenthal. Berlin: J. Springer. 1914. (Sup. roy. 8vo, pp. 170; 3 plates, 33 figures. Mk. 8.)

MEDICAL ELECTRICITY.

IF medical electricity is continually making fresh advances and the refinements of yesterday are becoming the routine of to-day, there is, as a rule, little to suggest any striking development in the handbooks which issue at intervals from the press. Most of them follow the same general pattern, and the little that is new is woven sparingly and unobtrusively into the literary web. From this point of view, Dr. ALFRED C. NORMAN'S manual on *Practical Medical Electricity*[6] is no exception, but it has certain finer distinctions which make it well worth adding to its forerunners on the shelf. The author has a refreshing habit of being explicit in his definitions; he makes plain, not only the "how" of electrical practice, but also the "wherefore." Every book on the subject tells

[6] *Practical Medical Electricity: A Handbook for House-Surgeons and Practitioners.* By Alfred C. Norman, M.D.Edin. London: The Scientific Press, Limited. 1914. (Crown 8vo, pp. 234; 50 figures. 5s. net.)

us that an *x*-ray tube undergoes variations in resistance as its vacuum increases, but not every book attempts to explain exactly why; and, again, few writers on electricity furnish a clear mental picture of what are meant by positive and negative charges and the difference between them. Exactly one half of the book is occupied with a careful and detailed exposition of radiographic technique. Had publication been deferred for a few months, no doubt a chapter on the precise localization of foreign bodies by means of *x* rays would have been included. As it is, save in connexion with ophthalmic surgery, this subject is left untouched; the discussion of stereoscopy is brief. An interesting section is devoted to high-frequency currents, although we fancy that any remaining sceptics will find a passing satisfaction in the author's statement that, in neurotic cases, the disadvantage of diathermy is that "the simple exterior of the outfit is not as imposing as that of the old high-frequency apparatus." The Philistine may be inclined to suggest that both modalities are alike imposing (*vide* Murray). This extremely practical handbook can be cordially recommended to medical men who have forgotten what they learnt in their physics classes, and, being accustomed to think in terms of anatomy and physiology, find some difficulty in adjusting their minds to those troublesome units, the volt, ampère, and ohm.

NOTES ON BOOKS.

IN 1909 we had the pleasure of criticizing the last edition of *Aids to Forensic Medicine*,[7] which was issued under the authorship of Dr. MURRELL. A new edition has been prepared by Dr. W. G. AITCHISON ROBERTSON. The book has lost nothing by the process of revision at the hands of a Scottish lecturer but rather gained. When one looks through "Taylor" or "Dixon Mann" one is simply amazed to note the accuracy and completeness with which everything that is really essential for a student has been compressed into 149 small pages of fairly attractive print easily perused. The book has evidently proved useful, and we heartily wish it still further success in the object with which it was written—namely, to give students the principles upon which is built the whole structure of forensic medicine. We hope, however, that in the next edition Dr. Robertson will add a few paragraphs on compensation cases.

If it may be taken as the sign of a good book that it is never really out of date, but can be read with pleasure and profit long after the generation for whom it was written has passed away, then Miss FLORENCE NIGHTINGALE'S *Notes on Nursing*[8] deserves a place amongst those which age cannot wither nor custom stale. A good deal of water has flowed under London Bridge since the days when Mrs. Gamp reigned supreme in the sick-room and, largely owing to Miss Nightingale's own work as a reformer, some of her admonitions sound somewhat otiose to modern ears; but the greater part of her book is as fresh as though it had been written yesterday. She made it clear from the outset that she never intended it to be a complete guide to nursing. That, as she rightly says, can only be learnt in the wards of a hospital; but the care of the sick falls to the lot of most women at some period of their lives, and it is for the guidance and instruction of these nurses *malgré elles* that Miss Nightingale has endeavoured to uproot the old superstitions and substitute for them the laws of health and common sense. It is therefore for the home rather than for the hospital that the *Notes* are intended, though the trained nurse herself may find food for thought in more than one page.

The third edition of *Clinical Diagnosis: A Manual of Laboratory Methods*,[9] by Dr. JAMES CAMPBELL TODD, has recently been published. In a notice of the second edition published about two years ago the opinion was expressed that it could be thoroughly recommended as a laboratory manual. The third edition includes much extra matter taking up 116 more pages, and 35 new illustrations, mostly photomicrographs. We agree with the author when he states that, inadequate as is the photomicrograph in some fields, its superiority to drawings in clinical microscopy can hardly be questioned. The section on cerebro-spinal fluid has been rewritten, and a new chapter added on serodiagnostic methods, including Abderhalden's test for pregnancy, the complement fixation test for syphilis, gonorrhoea, tuberculosis, and cancer, and the cobra-venom test for syphilis. Much of the new material, the author observes, is the outgrowth of questions which have arisen in class and laboratory.

[7] *Aids to Forensic Medicine and Toxicology.* By W. Murrell, M.D., F.R.C.P. Revised by W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E. Eighth edition. London: Baillière, Tindall, and Cox. 1914. (Fcap. 8vo, pp. 163. 2s. 6d. net, cloth; 2s. net, paper.)

[8] *Notes on Nursing.* By Florence Nightingale. New edition. London: Harrison and Sons. 1914. (Cr. 8vo, pp. 160. 1s. 6d. net.)

[9] *Clinical Diagnosis: A Manual of Laboratory Methods.* By James Campbell Todd, Ph.B., M.D. Third edition. Philadelphia and London: W. B. Saunders Company. 1914. (Cr. 8vo, pp. 585 13 plates; 176 figures. 12s. net.)

MEDICINAL AND DIETETIC PREPARATIONS.

Toxol.

WE have examined a sample of a disinfectant prepared by Boots Drug Co., Ltd. (Nottingham), which they have put on the market under the name Toxol. This is of the well known type of disinfectants containing cresol and soap, but is somewhat stronger than most such articles. It is intended to take the place of lysol, which has hitherto been very largely used. Our analysis showed the sample to contain 54.9 per cent. of phenolic bodies, principally cresols, and 23 per cent. of a potassium soap. Toxol is a clear liquid which mixes freely with water and from its composition must be assumed to possess high disinfecting power; it will doubtless prove a thoroughly useful article.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee twenty-four cases were considered and grants amounting to £290 voted to twenty-two of the applicants. The following is a summary of the cases relieved:

Widow, aged 68, of M.R.C.S.Eng. who practised in London, and died in 1892. Has managed to live with the help of friends and the rent of a house, but has had to mortgage it from time to time, with the result that the net income from it is very small indeed. Health very bad, and is crippled with torn muscles and quite helpless. Voted £10.

Widow, aged 41, of M.B.Aberd. who practised at Easter Maubeen and died in 1914 of phthisis. Had been ill some time, and was unable to provide for his wife and four children ages 1 year to 6½ years. Only income interest on £900. Voted £10 in two instalments.

Daughter, aged 76, of M.R.C.S.Eng. who died in 1874; practised at Plymouth. No income, but lives with widowed sister, whose very moderate income has depreciated by more than one half on account of the war. Voted £5 and recommended to apply for the old age pension.

Daughter, aged 24, of M.D.Edin. who practised at Stanley, N.B. Mother was for many years a grantee of the Fund. Family of six children ages 24 to 17. Help wanted for the completion of the education of the two youngest children. Voted £10 in two instalments.

Wife of M.R.C.S.Eng., aged 36. Husband is insane, but provided for by his brother. Three children, the two eldest, aged 14 and 12, also being educated at the brother's expense. The applicant is in an advanced stage of phthisis, and the youngest child, aged 9 years, is with her. They live with two aged aunts who are very badly off. Voted £18 in two instalments—£12 at once and £6 in six months.

Daughters, aged 79 and 82 years, of M.R.C.S.Eng. who practised in London. Used to earn a little by teaching music and with the few investments they had could manage, but, owing to age and ill health, have had to gradually realize their investments and now are left penniless. Voted £12 in twelve instalments each, and recommended for annuities.

Widow, aged 64, of M.D.St.And. who practised at Camberwell and was for some years an annuitant of the Fund. Left totally unprovided for at her husband's death this year. Three children, but none able to help. Voted £18 in twelve instalments.

M.R.C.S.Eng., aged 79 years, who practised in Camborne and other places, was hard hit by the Insurance Act, and in consequence of the war so many people have left the village that his small practice has practically gone and has only earned about £11 during the last six months. Voted £18 in twelve instalments.

Daughter, aged 58, of M.R.C.S.Eng. who practised at Box, Wilts; lives with a very delicate sister, who is also a grantee of the Fund. Has £12 a year from another charity and sometimes earns about £1 per month by acting as a companion. Previous relief, partly in conjunction with her sister, seven times, £114. Voted £18 in twelve instalments.

Widow, aged 65, of L.S.A.Lond. who practised at London and died in 1906. Has had a severe nervous breakdown and unable to do any work. Previously was able to earn a little by nursing and needlework. Previous relief four times, £34. Voted £12 in twelve instalments.

Widow, aged 60, of M.D.Irel. who practised for thirty-two years at Mitcham and died January, 1914. He was badly injured in the South African war and lost two sons in the war. Only son, married, who partly supported the applicant, has taken a commission in the army, and is now at the front, and

his pay is only sufficient to keep his wife. Applicant has tried to obtain mental nursing, but has not been successful. Hopes to obtain an annuity of £30 soon. Previous relief, once, £18. Voted £18 in three instalments, and a special grant of £10 from the War Emergency Fund.

Daughter, aged 66, of M.R.C.S.Eng. who practised at Torrington. She is unable to obtain suitable employment owing to age. No income beyond an occasional gift from friends. Relieved twice, £14. Voted £12 in twelve instalments.

Daughter, aged 48, of M.R.C.S.Eng. who practised in London. Only income £19 per annum, but has lived for many years with a friend, who helped her, but is now dead. Health not good and unable to work. Previous help, £13. Voted £15 in twelve instalments.

M.D., C.M.Edin., aged 54, who practised at Wellington. Unmarried. Met with an accident in 1912, and is suffering from brain and eyesight trouble. Memory entirely gone. Lives with widowed sister, whose means are very limited. Previous relief, twice, £30. Voted £18 in twelve instalments.

Daughter, aged 65, of M.R.C.S.Eng. who practised at Plymstock. She has lost by the death of a friend £30 per annum. Only income now £11 12s. per annum. Rent paid by friends. Too old to work. Previous relief, twice, £24. Voted £12 in twelve instalments.

Widow, aged 66, of M.D.Lond. who practised at Oxton and died in 1897. Lost all capital in a boarding-house, which proved a failure. Has endeavoured to make a living as cook, but health too bad to continue. One daughter, unable to help. Relieved four times, £48. Voted £12 in twelve instalments.

Widow, aged 65, of M.R.C.S.Eng. who died in 1903. Has one son and one daughter, who can only allow applicant 6s. per month. Daughter gives her her dinner daily. Too old to obtain work. Relieved eleven times, £130. Voted £12 in twelve instalments.

Widow, aged 39, of M.D.Glasg. who practised in London and died in 1910. Was left quite unprovided for at husband's death. Eyesight defective. In the summer has acted as lavatory attendant at a seaside resort, but cannot find work in the winter. Relieved once, £10, in 1910. Voted £10 in two instalments and referred to the Guild.

Daughter, aged 38, of M.R.C.S.Eng. who practised at Scarborough. Earns a little by making and selling marmalade and keeping poultry, but is so very uncertain. Relieved ten times, £97. Voted £10 in two instalments.

Daughter, aged 64, of M.R.C.S.Eng. who practised at London. Has an annuity from another charity and a friend allows her £13 per annum; total income, £38. Too old to work. Relieved twice, £24. Voted £6 in twelve instalments.

Daughter, aged 53, of F.R.C.S. who practised at Bedford. She acts as a domestic servant for a small salary for the sake of the home; no other source of income. Previous relief nine times, £64. Voted £12 in four instalments.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

The Royal Medical Benevolent Fund Guild appeals for gifts of secondhand clothing, boots, and shoes in good condition, also household linen. The gifts should be sent to the Secretary, Royal Medical Benevolent Fund Guild, 43, Bolsover Street, W.

BOARD OF EDUCATION.

SIXTH ANNUAL REPORT OF THE MEDICAL OFFICER.

THE report of the chief medical officer of the Board of Education[1] for the year ending 1913 is a bulky volume of 365 pages. The general idea will no doubt be in the mind that the reading of a Blue Book of this sort would be a very dull affair, more especially when the minds of all are filled with the great tragedy of these days. Yet it is not so; the book is full of interest, even of topical interest, for the war has made its mark on this report as on every other department of our national life.

At the outset Sir George Newman makes the point that no apology is needed for a report which deals with what is now being done in this country for the promotion of the health of the children. "In no direction are the ravages of war more serious or more difficult to replace than in the loss of human lives. Whatever degree of success may attend the nation in the present European war the cost of life must inevitably be heavy. Consequently, the question of the preservation of the rising generation and care of its physical fitness and equipment is of more than ordinary importance." The care of the children is the task of the school medical service. The work is for the most part preventive, and this aspect of it is becoming increasingly impressed on the authorities that have to deal with the children. "As the facts disclosed by medical inspection have become more widely known and appreciated, local education authorities have come more fully to recognize that expenditure on the discovery of the considerable degree of preventable ill health which exists is largely wasted unless effectual steps are taken for the prevention and cure of the conditions revealed." And in this year's report the matter under review is mainly the development of the work of following up and treating defects discovered.

If any commentary were needed on such statements as these it can be found in the last page of the book. Appendix K presents a table showing the number of recruits inspected, the number rejected on inspection, and the defects by reason of which the rejections were made. The table is compiled from the Army Medical Reports for the years 1907 to 1912, and it shows a mass of defects, much of which might have been prevented had the subjects of the defects been taken in hand in their early days. When the returns of the recruiting for Kitchener's Army are available it will be of the utmost interest to compare them with such a table as this mentioned. No such a widespread medical inspection of the young manhood of this country has ever been made as is now taking place for the new recruiting. Unpreparedness in the matter of human equipment is a lack that cannot be made up for by any sort of spasmodic effort; it must be the work of steady and continuous effort. In this effort the school medical service plays a most honourable part, both in discovery, treatment, and perhaps most of all in educating the nation and the mothers and fathers thereof to the necessity, and from their point of view the desirability, of securing the health of their children.

The report is made up of sixteen sections dealing with a great variety of subjects, from administration to infant care and mothercraft. Some of these sections are really valuable monographs. Such a one is Section V, "Stammering"; it covers ten pages of the most illuminative observations made by medical officers in various parts of the country. Two of the most important of these sections are those dealing with "Education and Infant Welfare" and that paragraph in the section on "Administration," which suggests collaboration in the work of research by the school medical officers of the country. The one deals with a development of education as far removed as can be from the old crudely utilitarian "three R idea" of our forebears as well can be; and yet it is more truly utilitarian than theirs; whilst the other, by reason of the stimulus to good work that keen observation and systematic research work provides, is certain to have far-reaching consequences.

Legislation.

During the year important enactments and administrative orders had been made: (1) The Elementary Education (Defective and Epileptic Children) Act, 1914, placed on Local Education Authorities the duty of providing instruction for educable mentally defective children. (2) The Education (Provision of Meals) Act, 1914, removed the limit previously placed on the expenditure of Local Education Authorities on providing food for children attending public elementary schools, and gave power also to feed children during holidays and at other times when the schools are not open. (3) Regulations made under the Mental Deficiency Act of 1913. (4) A series of regulations concerning grants in aid of expenditure in providing meals for school children, to special schools for blind, deaf, defective, and epileptic children, to schools for mothers, and for day nurseries.

Number of School Children.

The school population of England and Wales is nearly five and a half millions, and of these it is calculated 1,800,000 have been medically examined during the year. The greater number of these examinations are made at the commencement and end of the school period, but some 500,000 are special examinations made on the report of some difficulty in work or observation of ill health. To do this work there are 1,191 medical officers, besides some 193 officers engaged in special work connected with the service. The school nursing service comprises 1,184 nurses, and to these women falls the important work of following

[1] To be purchased through any bookseller or direct from Eyre and Spottiswoode (London), Wyman and Sons (London and Cardiff), H.M. Stationery Office (Edinburgh), E. Ponsonby, Ltd. (Dublin). [Cd. 7730.] Price 1s. 8d.

up defective children so as to ensure that treatment indicated on inspection is carried out. The number of the nursing staff cannot be considered excessive, particularly when it is found that of the total 385, or one third, only give part of their time to the service of the school children. Note is made of the improved status of an official of whose work dilatory parents know most—the school attendance officer. When this officer is one of "parts" much good to the health of the child can come from his labours. He first hears of infectious diseases, cases of defective children, blind, deaf, paralysed, or neglected; and, since he is the one living official contact between the schools and the homes of the children, the value of enlisting his sympathies and intelligence in the aid of the medical work of the schools is inestimable. In some districts it is found that there is a tendency to unite the duties of school attendance officer and school nurse. The plan is good, but the report states that it is not intended to put the attendance officer under the control of the medical officer; this, however, would seem to be the rational plan. Health, food, clothes are the three governing factors of school attendance, and of these the medical department is a better judge than the education office of the authority. No doubt this commencing association of the duties of school nurse and attendance officer is a sign of a rational course of development of which we shall hear more later.

Special Inquiries.

Pages 10, 11, and 12 of the report give a list of some seventy papers reporting original researches by school medical officers during the year. That is no mean record of keenness and activity. School medical inspection may become the dullest of routine work; the succession of children with more or less the same excellences or defects; the filling of innumerable spaces in model medical inspection forms; and the never-ending initialling of following-up cards, are enough to promote quietism in the most active of spirits. Escape from such lassitude lies in riding a research hobby; one point of interest will illuminate the whole field of work, and opens avenues of light in unexpected directions. Sir George Newman writes:

In order to facilitate and co-ordinate inquiries, it is proposed from time to time to suggest special subjects for investigation, so that the united labours of the School Medical Service may be focussed on problems requiring elucidation. In this way it is hoped to secure sufficient data to make such inquiries substantial and reliable. In the event of such investigations being undertaken, and the findings recorded in the School Medical Officers' Reports, it is intended to devote a definite portion of this report to the subject which has been the matter of inquiry. For 1915 the subject proposed is that of Adenoids. Inquiry should, as far as possible, include (*a*) incidence, local and general; (*b*) possible local predisposing causes and conditions; (*c*) previous history; (*d*) signs and symptoms; (*e*) associated physical defects (diminished height and weight, dental, nasal, and aural conditions, malnutrition, mouth-breathing, bronchial catarrh, infectious diseases, rheumatism, etc.); (*f*) educational retardation; (*g*) treatment, methods of selection, operative, non-operative, subsequent and after-care; and (*h*) results, physical and mental. Questions of etiology would of course naturally arise. . . . It is unnecessary to add that other subjects of investigation should be pursued as hitherto. A large variety of subjects await research, and it is not intended by suggesting one field to circumscribe or delimit others equally important.

A Government department that takes such a view of its duties and privileges in co-ordinating the work of others has some life in it, and we may be sure that out of the labours of the many some good things will appear.

Medical Inspection and Grants.

The new regulations have made it now possible for the Board to make grants towards the cost of medical inspection. In assessing the amount of grant payable to local authorities, regard is to be had to the completeness and efficiency of the provision made in each area, as shown by arrangements "to secure that no appreciable number of children escape medical inspection, the character of the inspection, the completeness of the records of the results of the examinations, the arrangements made for following up and treatment, the co-ordination of the work of school medical officer service with that of the public health service, the adequacy of the salaries paid by the authorities to the members of their school medical staff, and the provision of effective clerical assistance and suitable office accommodation." That gives a pretty liberal field for judgement.

Applications for grants have been made by 317 local educational authorities on account of a total expenditure by them of £285,993, and on this account they have received grants to the value of £125,830, or 44 per cent. of their expenditure. The report adds that the stimulus of this Exchequer grant has already been felt in the speeding up of the whole activities of the service.

(To be continued.)

MILITARY HYGIENE AND THE EFFICIENCY OF THE SOLDIER.

Antityphoid Inoculation.

In the second of the course of lectures on Military Hygiene at the Royal Army Medical College, Millbank, arranged by the University of London with the concurrence and assistance of the Army Council, Major P. S. Lelean, R.A.M.C., dealt with the subject of prophylaxis, especially in relation to anti-enteric inoculation.

The Theory of Immunity.

Major Lelean said that anti-enteric inoculation afforded an important means of protecting the lives of men in camp and field. It was a method so much more applicable to bodies of men than to individuals that it had not come under the notice of the civil practitioner to an extent which had led him to master its details as the military medical officer had. It was a matter of keen regret that the method had not been made compulsory, and now that there had entered into the arena a host of "anti-everything" busybodies, with their usual armoury of misrepresentation, and a mischievous energy supported by funds which might have been devoted to a better cause, it was necessary that medical officers should be fully informed regarding the *rationale* and results of this method of prophylaxis. Immunity was a relative insusceptibility to disease, it was never absolute, and varied in relation to the numbers, route and virulence of the invading organisms; thus, cholera was harmless in the blood, and acutely virulent in the intestines; but tetanus was harmless in the intestines and virulent in the blood. It varied also in relation to the physiological resistance of the individual. Immunity might be either natural or acquired. Instances of natural immunity were the insusceptibility of Barbary sheep to anthrax, and the difference between the house and the field mouse, one of which regarded with indifference the injection of streptococci and the other developed acute septicaemia. An illustration of physiological resistance was afforded by a case in which the attendant on a cholera patient who was being treated in a tent threw out a bucket of infective material. A considerable part went into the water supply. Twenty-three men drank the water, but though the infection must have been massive, only eight developed cholera.

Acquired Immunity.

Acquired immunity might be natural or artificially acquired. Natural immunity was never absolute; as protective inoculation failed in a certain number of instances to protect the individual, it was sometimes argued that therefore it was of no value. That argument was as fallacious as to insist that because a few persons suffered from two attacks of enteric, no relative immunity was conferred by one attack. Artificial immunity might be either active or passive; the passive was produced by the injection of protective substances ready made. Thus, diphtheria deaths were reduced by antitoxin from 50 to 5 per cent. Active artificial immunity aimed at copying Nature's method by which the individual, under stimulus, was compelled to create his own protective substances, which remained as a permanent army of defence in his tissues.

The *rationale* of anti-enteric inoculation could best be understood by being visualized, and Major Lelean demonstrated a method of visualization which could be grasped by an intelligent soldier who needed to be convinced of the value of inoculation. On a length of board representing a section of the tissues the lecturer added, in order and in their due relation to one another, pieces representing:

1. The *phagocyte*, the devourer or scavenger in the tissues; able to take into its body and digest the dead bodies of invading organisms. Under certain conditions of mild stimulus the phagocytes could be directed to the neighbourhood of the invaders and stimulated to devour more and more of them.

Too much stimulus, on the other hand, would drive away the phacocytes from the point where they were needed.

2. The *antigen*, the producer of the antibodies. This might be any foreign body of an organic nature. Micro-organisms had the power of absorbing or uniting with other bodies (Ehrlich's side-chain theory). From the actual numbers of organisms necessary to produce death in an animal of given weight in a given time with certainty the minimum lethal dose ("m.l.d.") had been carefully worked out.

3. The *toxin* formed by the invading organism was the means by which it defended itself by driving off the phagocytes or opposing cells.

4. The *complement* was normally present in every human serum and was essential to the defensive mechanism.

5. The *defensive cells* were mostly in the lymph and bone marrow; they produced the antitoxins and amboceptors. The antitoxins, being in greater amount than the toxins, put them out of action and prevented them from attacking the body cells.

6. The *amboceptor;* equivalents—antibody, immune body, fixateur, sensibilitrice. As a result of the interaction of amboceptor and complement and invading organism the invaders were destroyed.

Major Lelean said that this complicated story could best be made plain to the soldier by means of military similes in which the foreign organism became the invader, the guns of the defence the antitoxins, the amboceptors the bayonets, and so on. The battlefield was the abscess cavity, and the corpses were the pus. Finally, the invaders were all borne off by the military police (the phagocytes), and the attack was at an end. The result of the conflict was that the defending country was so thoroughly armed and mobilized that at the next invasion it put the invaders out of action at once.

Application of the Principles of Immunity.

Animals were insusceptible to enteric fever in the ordinary way, so that no means existed for getting the antibodies, it being out of the question to obtain them from human beings. Therefore, attention had to be concentrated on getting some form of active immunity. The next difficulty was that the toxins were inseparable from the bodies of the enteric organisms; in many diseases toxins could be obtained in filtrates free from organisms, but in the case of enteric fever this was impossible, the toxins being bound up with the bodies of the enteric organisms. The only way was to throw a mass of the organisms into the circulation. It was the R.A.M.C., under Professor Sir Almroth Wright, whose members first inoculated themselves, not knowing what the consequences might be, and sat down to watch the results. They were inoculated with a dose three times larger than that now used. It was an enormous satisfaction, after this courageous experiment, to find that promising results as indicated by the laboratory work could be obtained. In 1896 the method was applied in a small epidemic, but it was not until the South African war that Professor Wright was given the opportunity of testing the method on a large scale. Owing to difficulties of record the matter was still regarded as "not proven" at the end of the war, and a committee was appointed. In 1905 the committee recommended that inoculation should be resumed as a voluntary measure.

The Technique of Inoculation.

It was surprising that a non-virulent culture should give such satisfactory results. It was a broth culture, grown for twenty-four hours at blood heat, and gave a growth of enteric of about 3,000 million in 1 c.cm. The dose given now was 500 million for the first dose and 1,000 million for the second. Vaccination was generally regarded as referring to a living injection; as this was dead, it was perhaps best called an anti-enteric emulsion. The soldier who heard that he was to be inoculated with 1,000 million organisms might imagine that the weight would be about 2 lb.; as a matter of fact, 1,000 million bacteria weighed 0.113 mg. After describing various methods of standardizing the emulsion, Major Lelean said the plan now adopted was that of dilution and direct count by means of dark ground illumination.

Precautions to Ensure Sterility.

The following points were noted under the head of laboratory precautions to ensure sterility:

1. The culture was of very low virulence.
2. The strictest precautions were taken to prevent contamination of cultures.
3. The vaccine was killed by heating for seventy minutes at 53° C. and subsequently adding 0.4 per cent. of lysol.
4. The emulsion was plated on agar to ascertain whether any growth occurred in both aërobic and anaërobic culture.
5. A series of animals were injected from each brew of vaccine. The dose was thirty times that which, weight for weight, would be given to a human being. The animals were watched for ten days. If the vaccine contained any tetanus spores the animal would die and the whole of the vaccine would be rejected.

These were the possible safeguards, for it was impossible to sterilize absolutely by heating only, because if these bodies were heated to a high degree for any length of time they lost their power. This was one of the causes of the fluid made originally being relatively ineffective as compared with that now used. The efficiency of the emulsion was much higher if allowed to cool before the addition of the lysol.

Method of Injection.

The bottle must be shaken so that the organisms were uniformly distributed; the end should be broken off in the flame, and if the bottle was held upside down the syringe could be filled with ease. Before use, the syringe could be sterilized with boiling oil and cooled. It was not necessary to sterilize the body of the syringe for each patient; it was enough to pass the needle through a flame or through boiling oil. In this way large numbers could be dealt with rapidly. The area to be punctured should be wiped with tincture of iodine. In his opinion the best site for inoculation was not the deltoid region, but, in a male, the infraclavicular. The men should be told not to take exercise or alcohol for twelve hours after inoculation; they often did both, and blamed the medical officer if they got a sore arm. It was as well to give forty-eight hours off duty, though this was not really necessary. Calcium chloride gr. xxx or calcium lactate gr. xv increased the coagulability of the blood and reduced the local reaction. About 1 per 1,000 were incapacitated for five days, about 3 per 1,000 for three days, and the remainder were practically well in forty-eight hours. There was slight fever (101° F.), swelling and reaction, and a little malaise.

Value of the Second Dose.

Major Lelean exhibited a chart to show how greatly the degree of immunity of the subject was increased by the second dose, especially if this were given at the correct interval after the first one. The period of effective protection was two years.

Statistical Results of Inoculation.

The remote results of inoculation could only be estimated by incidence of enteric, as shown by statistics. Perfectly clear evidence was difficult to obtain because results were complicated by other factors, and most of the available statistics were vitiated by the fact that some men were only partially protected owing to having had only one dose or to the length of time since inoculation. The mass of statistics was now so great that only a few could be cited. A Meerut regiment contained 200 inoculated men and 300 uninoculated; 60 cases of enteric occurred in one outbreak. Amongst those fully protected there were no cases; amongst those who had one dose there were 2 cases, and amongst the wholly unprotected there were 58 cases, 10 of whom died and 2 were invalided home. Figures for twenty-four regiments for twenty months in all parts of the world showed that for every one man who got enteric fever among inoculated men, 5.64 were affected among the uninoculated. For every man who died amongst the inoculated, 10.70 died amongst the uninoculated. The figures were even more striking if the fully inoculated were taken as opposed to the group containing partial inoculations; then the odds were 10.50 to 1 that the uninoculated would fall with fever and 26.60 to 1 that the uninoculated would die. In the British army in India the incidence of enteric had been reduced, as inoculation had been pressed, from 1,146 cases with 213 deaths in 1905 to 118 cases with 26 deaths in 1912. These extremely satisfactory results were achieved in seven years. The American army had given a powerful lead in making inoculation compulsory. In 1898, amongst uninoculated men, 1,729 cases and 248 deaths occurred in ten months out of a total of 20,000 men. In 1911, out of a similar number, all inoculated, there occurred in four

months 1 case and no death. The divisions were in camp in both cases. That this was not due to lack of sources of infection in the second case was shown by the fact that amongst civilian employees of the camp, who were uninoculated, there occurred in the same period 47 cases of enteric and 17 deaths. What other conclusion could be drawn except that inoculation was the cause of this marvellous decrease? Voluntary inoculation was satisfactory so far as it went; in the United States army it reduced the incidence from 5.5 to 2.3 per 1,000, but compulsory inoculation reduced it to 0.02 per 1,000, and not a single death occurred amongst inoculated men in four years from 1909 to 1913.

Marching Conditions.

In his third lecture Major Lelean dealt with the physical, physiological, and practical conditions of the march, citing by way of introduction a number of important campaigns which were decided by the superior marching powers of one of the opposing armies. The part of the medical officer was to prevent loss of men when marching, and it could only be done by attention to detail and infinite care.

A man carrying 50 lb. for fifteen miles on fairly undulating roads in eight hours performed, extra to his normal expenditure of energy, 350 foot tons of work, representing 1,350 total calories. The heat value of the diet of a man at rest was 3,300 calories; internal energy used only 6 per cent. of this, and work done 14 per cent., and 80 per cent. was dissipated by the skin. Man, like all other internal combustion engines, required to be warmed up before he worked to the best advantage, and his temperature on the march should rise to 100.5° F., though 102° was pathological, a fact illustrative of the delicacy of the human mechanism, which could do so much work and dispose of so much heat on a margin of 1.5° F. Indications of the onset of a pathological condition were that the man swayed, his muscles were becoming tremulous, and he was losing co-ordination—he was marching with flushed face and open mouth; this meant that he was not getting rid of sufficient heat; he breathed with gasping respirations; his overloaded blood was getting rid of an excess of CO_2 through the lungs. The normal man at rest required to dispose of 1,000 calories in eight hours to retain his equilibrium. To dispose by sweat of the excess of 1,350 calories produced by marching under the conditions mentioned would involve the vaporization of about two quarts of moisture. A man on the march needed to dispose of one quart of sweat for every six or seven miles traversed; this was an important point, because it enabled the amount of water that the soldier required to be worked out scientifically. The importance of the sweat glands in disposing of heat was indicated in a case on record of a man with a congenital absence of sweat glands who was unable to do any work unless his shirt was kept wet by water thrown over it.

It was best that a man should have plenty of sweet tea or coffee before starting on a march; he should march six and a half miles before having any recourse to his water bottle, and go fifteen miles in all before he would need to refill his water bottle. This requirement could be supplied from the water carts, thus making the soldier entirely independent of local water supplies. When emptied the water carts should be filled at once, so that the chlorine would have time to react upon the water. The men should fill their bottles overnight with hot tea; this sterilized the bottles, and when cold tea was a better thirst quencher than water. The cavalry had a supply of tablets, by means of which each man could sterilize the water in his water bottle.

Major Lelean mentioned that the mechanical advantage of marching in rhythm neutralized the disadvantages which tall and short men would otherwise suffer in maintaining a uniform length stride. Any factors which tended to stimulate subconscious effort tended to reduce mental strain and nerve exhaustion; hence music was valuable. Digestion was interfered with by heavy muscular demands; therefore it was desirable to take only a light meal before marching. Digestion was also interfered with by exhaustion. A short interval should occur between the end of the march and the serving of the evening meal. An early start was always advisable; night marching should be discountenanced whenever possible, for what was gained in distance was more than lost by lack of sleep. A speed of two and a half miles an hour, including halts, was the maximum for efficient continuous marching; for large bodies of men to do more was to lose in fighting efficiency in disproportion to the ground covered. The pace should be slow at first until the men had warmed up; it was best to alternate spells of marching at attention, marching easy, and marching with singing.

Where possible open order should be adopted, two of the files of a column of four should march on either side of the road, the wheeled transport going down the middle. The degree of saturation of the air after a long column had passed by would hardly be realized by those who had had no experience—those at the end marched in a water bath of reek and sweat. The condition of the clothing had an important bearing. Opening the tunic and shirt to leave the chest bare reduced the temperature one degree, thus giving two-thirds of the range of advantageous variation. Under old conditions, when men marched with tunics tightly buttoned it was no uncommon thing for a pint of sweat to be held up in a man's shirt, that had to be evaporated after the march with a loss of 300 calories of heat, thus producing subsequent depression and discomfort. The halts should be five minutes in each hour, and thirty minutes when rather more than half the distance had been covered. The first halt should be given early. At halts the men should shed their equipment and lie down; this was easy with the new web equipment, which could be removed or restored in a single movement. It was a great advantage if on long marches the men could be induced to massage one another's leg muscles.

The sanitary control of marches was very important. The route of to-day would probably be a line of communication to-morrow, and there should be no fouling of the roadsides. Men should be required to bury their excreta. The control of the medical officer was urgently called for, because in this matter regimental discipline was apt to be somewhat lax. A weekly halt of one day in seven had not only biblical support, but was extremely practical. It broke the monotony of the daily routine, and the men could wash their clothes and have their feet attended to.

Major Lelean deprecated resort to alcohol or tobacco when on the march. He emphasized the importance of meals being served within a reasonable time after the day's work was over; a delay was most wearing upon the temper and *moral*, whereas the knowledge that they would not be kept waiting had an excellent effect in getting the men along. It was only recently that camp kettles had been included in the first line of transport; this reform had been most beneficial. Among modern appliances was the portable field kitchen, a two-horsed vehicle consisting of a body and a detachable limber. In the body was a fire-box, and over this were metal boilers, while on either side of it were ovens. After the fire had been burning for some time it was damped down, before the march began, so that no smoke was produced to attract the enemy's attention. The meat and vegetable receptacles were placed in non-heat-conducting jackets, and thus cooked slowly as the vehicle proceeded on its journey. The limber of the vehicle, which could be readily detached, contained vessels and utensils for distributing the food, which could thus be taken to all parts of the camp; the body was left behind, and prepared for cooking further supplies of food. Major Lelean feared that many of the new units would not get them, and would have to fall back on camp kettles for cooking purposes.

It was estimated that in all campaigns 25 per cent. of the men suffered more or less from disability of the feet in the first ten days. The effects upon the marching power were much more than the unsympathetic suspected. The temperature of a man with a blister would rise one degree, or two-thirds of his range of safety. He would use 20 per cent. more energy, and produce 20 per cent. more heat. The only preventives of trouble were good boots and socks.

The points of a good boot were that it should be square-toed, with the inner edge of the sole in a line parallel throughout with the inner edge of the heel, thus giving vertical room for the great toe to flex and extend, and affording ample room for the foot laterally. The boot should not be vertically straight at the back of the heel, but should be curved so as to grip the heel and prevent

chafing by up and down movements; the heel should be brought well forward, and the sole across the line of the tread should not be rigid but flexible. The uppers should be lissome. The boots should be large enough to allow of two pairs of socks to be worn; they could be rendered flexible by being filled with castor oil or cod-liver oil for a time and then emptied. The remains of the oil could be entirely removed by filling the boots with bran. The flexibility of the boots could be maintained by the use of dubbin. Each man should have an extra pair, or two pairs, of socks in his haversack, and should change into this pair at the end of the day's march. The pairs worn during the day should be washed, so that they would be ready to change into at the end of the following day's work. Hard socks, or socks badly darned or in holes, caused 70 per cent. of the total disabilities from sore feet; boots were not nearly so often to blame as socks. On arrival in camp the soldier should clean and dubbin his boots, and dry them if possible; he should wash his feet, and if tender they might be hardened by alum or methylated spirit; a 1 per cent. solution of formalin might be used if there were any abrasions. He should then put on his clean pair of socks and camp shoes, washing out the dirty pairs until they were absolutely soft and all dirt removed. The time-honoured custom of soaping the inside of the sock was effective. A satisfactory dusting powder consisted of talc, with 10 per cent. of boric acid and 3 per cent. of salicylic acid. If, in spite of all precautions a blister formed, it should be pricked, emptied, and painted with tincture of iodine. A small square of adhesive rubber plaster should then be applied, a small hole being cut in the centre of the plaster to allow fluid to escape. Corns should be treated by the regimental chiropodist at the weekly halt.

A *Bureau suisse de renseignements pour l'achat et la vente de marchandises*, also called the *Schweizerisches Nachweisbureau für Bezug und Absatz von Waren*, under the control of the Federal Swiss Government, has been established, with the head office in 10, Börsenstrasse, Zurich. This bureau negotiates for the purchase or sale of raw materials and manufactured goods found or made in Switzerland or imported from abroad. It keeps registers of Swiss industries, and will hold communication with representatives of the Helvetian Republic abroad and with foreign houses of business and private individuals in regard to, among other matters, the purchase and sale in Switzerland of surgical and scientific instruments, dressing materials, drugs, and the specialities and management of health resorts in that country. For full information application should be made to "Le Secrétaire Général" at the above address.

THE report of the Committee of the Section on Ophthalmology of the American Medical Association (Chicago, 1914) on Standards and Methods of Examining Colour Vision contains a good deal of useful information, particularly in the section on the methods in use in foreign countries, though an error is made in stating that the British Admiralty uses the Holmgren test in addition to Edridge-Green's lantern and spectrometer. The British Admiralty uses Edridge-Green's methods (lantern, spectrometer, and classification test) and, we understand, no others. The account of the methods used in the United States and Canada shows that the inefficiency of the Holmgren test is not fully recognized there. It is obvious that the majority of those who have replied to the Committee must have used a lantern which was almost useless, because over 50 per cent. of dangerous cases rejected even by a lantern which is very far from efficient can pass the wool test even in its most improved form. The value of an efficient lantern test does not seem to have been appreciated by the Committee, though it recommends that a lantern test should be used in all cases in order to detect (1) those with a shortening of the red end of the spectrum, and (2) those with a central scotoma for red and green. The Committee has not recognized that many dichromics who confuse full red and green with Edridge-Green's lantern will pass the wool test without the least difficulty. A still larger number of trichromics pass the wool test, though they are easily detected with an efficient lantern. The report does not deal adequately with theory, and it would have been better to state first the actual facts of colour blindness, and then to have discussed the theories by which it is sought to explain them.

TENURE OF MEDICAL OFFICERS OF HEALTH.

SIR PHILIP MAGNUS, M.P. for the University of London, who, at the request of the British Medical Association, has taken a leading part in urging the President of the Local Government Board to take steps at the earliest possible date to remove the present disabilities of medical officers of health as regards security of tenure and other matters, has recently received the following letter from the President of the Local Government Board.

Although the decision of the President of the Board leaves several questions unsettled, and in particular that of superannuation, it will be accepted as satisfactory as far as it goes, and the profession generally, and the public health service in particular, will feel that the debt of gratitude owing to Sir Philip Magnus has been deepened by his recent action in co-operation with Dr. Addison, M.P., which has led the President of the Board to come to the important decision embodied in this letter.

Local Government Board, Whitehall, S.W.
February 26th, 1915.

Dear Sir Philip Magnus,

I have given very careful consideration to the question of the tenure of office of medical officers of health and sanitary inspectors, which the deputation which you introduced some months ago brought before my colleagues and myself at the House of Commons.

Without fresh legislation I could only deal with the case of officers whose appointments are subject to regulations made by the Local Government Board. These regulations at present allow a local authority the option of making appointments terminable by three months' notice, or making permanent appointments. I am willing to alter these regulations so that, in the case of future appointments of whole-time officers, the officer shall continue to hold office until he is removed by the local authority with the Board's consent, or is removed by the Board.

I am advised that no Order could be issued which would, of itself, transform present temporary appointments into permanent appointments, but I should be quite prepared to suggest to local authorities that all officers holding temporary whole-time appointments should be reappointed under the new terms.

The question of part-time appointments seems to me to be in a different category, and I am inclined to think that it is desirable that some inquiry should be undertaken into the general question of these appointments before any change is made in regard to the tenure of office of part-time officers.

But such an investigation must, I fear, be postponed until more normal times.—Yours sincerely,

HERBERT SAMUEL.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

THE Treasurer reported to a meeting of the Central British Committee, held at the offices of the British Medical Association on February 25th, that he had placed the major part of the fund on deposit with the bank, and in view of the satisfactory terms obtained it was resolved to suggest to treasurers of local funds that they should pay the amounts in their hands into the central fund.

In response to its expressed desire to work in complete co-operation with the Central British Committee, the Scottish Committee was invited to appoint representatives to it.

Dr. Meredith Townsend, Master of the Apothecaries Society, with the chairman of the committee, Sir Rickman Godlee, undertook to select cases of operating instruments for use in certain hospitals in Belgium behind the fighting line, Mr. Samuel Osborn, F.R.C.S., having expressed his willingness to take charge of the gifts.

Applications by refugees for help in money since the previous meeting of the committee had not, it was

reported, been very numerous. Some registration fees had been paid for Belgian medical men who had obtained work, and it was stated that it was only the want of acquaintance with the English language that prevented many other Belgian doctors from receiving appointments.

It was reported that the working of the clothes bureau at 3, Hyde Park Street, London, W., where Dr. Clément Philippe has kindly provided the necessary accommodation, proceeds successfully. Money was granted by the committee for the further purchase of clothes, especially of undergarments and boots.

Subscriptions should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. They will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last. In this list certain local funds and the Scottish and Irish Funds are not included.

Fifteenth List.

	£	s.	d.
A Group of Practitioners at Newcastle-on-Tyne (per Dr. A. S. Percival)	14	12	0
Cie Fermière de Vichy (per Dr. Clément Philippe)	20	0	0
Mr. Harold Upcott...	2	0	0
Miss J. A. Vaughan	0	10	6
South-West Wales Division B.A.M. (per Dr. D. R. Price)	4	15	0
Mr. J. E. Coudrey ...	2	2	0
Cardiff Division B.M.A. (per Dr. A. L. Thornley, Hon. Sec.)—			
Dr. F. W. S. Davies	1	1	0
Dr. Ewen J. Maclean ...	1	1	0
Dr. H. C. Bevan ...	0	10	6
Drs. D. A. Roberts and R. T. E. Davies	1	1	0
Dr. George Neale	1	1	0
Dr. J. C. Gilchrist	2	2	0
Dr. D.A. Fitzgerald	0	10	6
Dr. Alfred Howell	1	1	0
Dr. F. S. Living ...	1	1	0
Dr. J. F. Cownie...	1	1	0
Dr. A. L. Thornley	1	1	0
Dr. Hosford ...	1	0	0
Major I. O. Pinto, I.M.S.	1	1	0
Mr. J. W. Willis ...	1	1	0
Dr. R. T. Smith ...	1	1	0
Dr. E. C. Montgomery	1	1	0
Bristol Division, B.M.A.—			
Dr. Watson Williams	5	5	0
Dr. J. A. Askins ...	2	2	0
Anonymous and small sums ...	8	1	6
Proceeds of lecture by Mr. Hey Groves	10	0	0
Dr. Newman Neild	2	2	0
Mr. Joseph E. Adams	2	2	0
Shropshire Branch, B.M.A. (per A. G. Mackenzie, Hon. Sec.)—			
Dr. A. F. Whitwell	1	1	0
Kesteven Division, B.M.A. (per Dr. C. H. D. Robbs, Hon. Sec.)—			
Dr. J. A. Macdonald	2	2	0
Dr. H. H. Ballachey	1	1	0
Drs. Benson and Stanton	1	1	0
Dr. J. Galletly ...	1	1	0
Dr. Marshall Haver	1	1	0
Dr. Jessie Hunter..	1	1	0
Dr. A. H. Lowe ...	1	1	0
Dr. K. Pretty ...	1	1	0
Dr. C. H. D. Robbs	1	1	0
Dr. G. A. C. Shipman	1	1	0
Dr. G. W. Shipman	1	1	0
Exeter Division, B.M.A. (per Mr. A. C. Roper)—			
Dr. G. T. Clapp ...	1	1	0
Dr. S. E. Atkins ...	0	10	0
Dr. J. A. Frost ...	1	1	0
Dr. H. D. Depree	1	1	0
Mr. H. P. Tayler ...	1	1	0
Dr. P. Baillie ...	0	10	6
Dr. E. R. Tweed ...	1	1	0
Drs. T. W. Sandoe and L. G. Davies	1	1	0
Mr. Arthur Hudson	0	10	0
Mr. T. O. de Denne	0	10	6
Dr. S. Rees Philipps	1	1	0
Dr. F. W. M. Palmer	1	1	0
Dr. W. H. Peile ...	0	10	6
Dr. Mortimer Reynolds	0	10	6
Mr. T. W. Smith ...	1	1	0
Dr. Lestock Thornton	1	1	0
Dr. Close	0	10	0
Mr. F. F. Laidlaw	1	1	0
Mr. G. G. Gidley ...	0	10	6
Dr. C. N. Lovely ...	0	10	6
Dr. L. J. G. Carré ...	0	10	6
Mr. W. G. Gray ...	0	10	6
Dr. Arthur Robin	2	2	0
Dr. Robert Peart ...	5	0	0
Dr. W. F. Nelis ...	2	2	0
Dr. R. Green ...	1	1	0
Sir Victor Horsley ...	15	0	0
Lancashire and Cheshire Branch, B.M.A. (per Mr. Thomas O'Neill, Hon. Sec.)—			
Dr. W. Calder ...	1	1	0
Prof. MacEwan, M.D.	2	2	0
North of England Local Belgian Fund (per Dr. James Don, Hon. Sec.)—			
Dr. Amy Robinson	2	2	0
Dr. W. C. Beatley	3	3	0
Dr. H. Gibbon ...	1	1	0
Dr. T. L. Bunting	5	5	0
Dr. J. R. Foster ...	1	1	0
Dr. S. Fielden ...	1	1	0
Dr. J. G. Macaskie	1	1	0
Dr. T. Aitchison ...	1	1	0
Dr. W. Fairclough	0	10	6
Dr. Shirlaw ...	3	3	0
Dr. J. Whyte ...	1	1	0
Dr. A. C. Burnell...	5	0	0
Dr. H. C. Pearson	2	2	0
Dr. H. L. Rutter ...	5	0	0
Dr. J. L. Speirs ...	1	1	0
Dr. J. Taylor ...	1	1	0
Dr. W. S. Campbell	1	1	0
Dr. H. M. Gurney	1	1	0
Dr. J. Gemmell ...	1	1	0
Dr. G. Yeoman ...	2	2	0
Dr. A. N. Ross ...	2	2	0
Dr. G. P. Harlan ...	2	2	0
Dr. J. H. R. Garson	2	2	0
Dr. Forrest ...	1	1	0
Dr. G. W. Weir ...	1	1	0
Mr. H. A. Douglas	1	0	0
Prof. Ranken Lyle	10	10	0
Sir Thomas Oliver	5	5	0
Dr. J. Middlemass	5	5	0
Mr. A. S. Percival	5	5	0
Dr. James Don ...	5	5	0
Mr. Lister Gibbons	1	1	0
Norwich Division, B.M.A. (per Dr. G. P. C. Claridge, Hon. Sec.)—			
Mr. C. C. Claremont	1	1	0
Mr. D. D. Day ...	3	3	0
Dr. Hatch ...	1	0	0
Dr. Leith ...	5	5	0
Dr. Robert Miller ...	5	5	0
Dr. James E. Beggs	1	1	0
Birmingham Local Committee (per R. Saundby, Hon. Sec.)—			
Dr. Wm. Welsh (proceeds of whist party)	12	12	0
Dr. E. H. Addenbrooke	1	0	0
Dr. Neville Crowe	0	10	6
London Pharmaceutical Association (per Mr. Uglow Woolcock)—			
Mr. P. Stiles ...	0	10	0
Mr. R. Anderson (proceeds of sale of German shells)	1	8	6
Mr. C. W. J. Watkins	0	10	6
Mr. A. Chapman (second donation)	0	10	0
North-Eastern London Pharmaceutical Association, collected by (per Mr. W. N. Scott)—			
Mr. C. E. Fox ...	2	2	0
Mr. A. Reid ...	1	1	0
Mr. J. D. Hodgson	1	1	0
Mr. T. Edwards ...	1	1	0
Mr. W. N. Scott ...	1	1	0
Mr. J. A. Thompson	1	1	0
Mr. E. Ward ...	1	1	0
Mr. H. Walker ...	1	0	0
Mr. S. Briggs ...	0	10	6
Miss Doris Hodgson	0	10	6
Mr. F. G. Ling ...	0	10	6
Mr. G. J. M. Lusher-Pentney ...	0	10	6
Mr. W. Wells ...	0	10	6
Mr. F. Peacock ...	0	10	6
Messrs. Brodribb, Ltd.	0	10	0
A Chemist's Widow	0	10	0
Mr. G. B. Barnard	0	5	0
Mr. G. S. Pasco ...	0	10	6
Mr. W. Broad ...	0	5	0
Mr. J. B. Clark ...	0	5	0
Mr. F. B. Elwell...	0	5	0
Mr. A. Foyer ...	0	5	0
Mr. W. Hill ...	0	5	0
Mr. H. Taylor ...	0	5	0
Messrs. Rutters, Ltd.	0	5	0
Birmingham Pharmaceutical Association, collected by (per Mr. F. Smith), further contributions—			
Mr. T. Chase ...	2	2	0
Sports Section ...	1	5	0
Mr. D. Davies ...	0	5	0
Norwich Pharmacists' Association, collected by (per Mr. W. J. Lacey), further contributions—			
Messrs. Nuttall and Mason	2	2	0
Mr. H. Bridges ...	0	10	0
Mr. S. L. Gooch ...	1	0	0
Messrs. Fuller and Co.	1	1	0
Mr. J. F. Collin ...	1	1	0
Mr. J. Cossey ...	1	1	0
Mr. J. H. Denny ...	0	10	6
Mr. W. P. Hoare ...	1	1	0
Mr. D. Davison ...	0	10	6
Mr. D. Dulley ...	0	10	6
Mr. R. M. Ling ...	1	1	0
Nottingham and Notts. Pharmaceutical Association, collected at a lecture (per Mr. H. P. Middleton)	3	10	0
Mr. R. S. Dampney..	1	1	0
Mr. C. H. Clarke ...	0	10	6

MANCHESTER AND DISTRICT.

The total sum received to date is £336 15s. 6d., of which £32 8s. have been contributed by the general public. The committee hope that those medical men who wish to subscribe will send in their contributions at their earliest convenience.

Second List.

	£	s.	d.
Dr. James Barr ...	5	5	0
Dr. James Melvin ...	5	0	0
Mr. F. A. Southam...	3	3	0
Mr. A. Boutflower ...	2	2	0
Dr. J. Scott Taggart	2	2	0
Dr. A. J. Rodocanachi	2	2	0
Dr. A. E. Cotterill, R.A.M.C. ...	2	2	0
Dr. A. Lomas ...	2	2	0
Professor Elliot Smith	2	2	0
Dr. George Johnstone	2	2	0
Dr. A. L. Cobban ...	2	2	0
Mr. James A. Harris	2	2	0
Dr. W. D. Macdonald	2	0	0
Dr. Edmund Lee ...	1	1	0
Mr. C. J. Dabbs ...	1	1	0
Mr. Herbert Harris	1	1	0
Mr. T. L. Jackson ...	1	1	0
Mr. G. Burrows Brown	1	1	0
Mr. R. W. Morrow ...	1	1	0
Mr. James A. W. Watts	1	1	0
Mr. Frank Holmes...	1	1	0
Mr. R. J. Warrington	1	1	0
Mr. W. F. Boycott ...	1	1	0
Mr. George Moreland	1	1	0
Mr. Samuel T. Lord.	1	1	0
Mr. J. F. Harvey ...	1	1	0
Mr. R. S. Hardman...	1	1	0
Mr. W. H. Henshaw.	1	1	0
Mr. R. Heathcote ...	1	1	0
Mr. E. Evanson Jones	1	1	0
Mr. J. Williams Jones	1	1	0
Dr. Compston ...	0	10	6
Dr. S. Wilson ...	0	10	0
Dr. J. Pringle ...	0	10	0
Mr. Geo. Geddes ...	0	10	0

From the General Public.

	£	s.	d.
Miss Marian E. O. Wood	10	0	0
Mr. W. H. Vaughan..	5	5	0
Mrs. Falconer ...	5	0	0
Mrs. Allen	3	3	0
Mr. Max Meyer ...	2	2	0
Miss Annie Fryer ...	2	2	0
Mr. Denham S. Boyd	1	5	0
Mr. R. H. Day ...	1	1	0
Miss Emily Owen ...	1	0	0
Miss S. Barton ...	1	0	0
Miss Barlow ...	0	10	0

THE Friday evening discourse at the Royal Institution on March 12th will be given by Sir Rickman Godlee, who has taken for his subject "Back to Lister."

British Medical Journal.

SATURDAY, MARCH 6TH, 1915.

MEDICAL CERTIFICATION UNDER THE INSURANCE ACT IN IRELAND.

THE present arrangements for medical certification for sickness benefits under the Insurance Act as applied in Ireland in non-panel areas continue to receive the condemnation and opposition of the insured and of the medical profession, as both parties are adversely affected. To understand the present position in Ireland it is necessary to consider the early history and the origin of the present dispute between the Irish Insurance Commissioners and the medical profession. When the Insurance Bill was about to become law, the Irish parliamentary party decided, in opposition to the demands of the Irish doctors, to delete medical benefits from the Act in its application to Ireland. The object seemed to be a desire to popularize the Act in Ireland by lessening the contributions of employer and employee. To make such a proposal practicable it was necessary to fall back on the Medical Charities Act for the medical treatment of the great majority of the insured in Ireland. With the deletion of medical benefits from the Act as it applied to Ireland the only matter that remained of interest to the profession in Ireland was the medical certification for sickness benefits for the insured. This question was considered at a representative meeting of the profession in Dublin, which was attended by delegates from all Ireland; there was complete unanimity in deciding as a cardinal principle that the medical attendant on the insured person should certify for sickness benefit. It was also agreed that a minimum capitation fee of 2s. 6d., as offered by the Irish parliamentary party, would be accepted with some differentiation as regards the rates for rural and urban areas. It is estimated that there are approximately 730,000 insured persons in Ireland, so that at a capitation fee of 2s. 6d. the total sum for medical certification would amount to about £91,000. When the representatives of the Irish medical profession met the Irish Insurance Commissioners to arrange for a system of medical certification for sickness benefits for the insured it was found that the Treasury would only grant £50,000 for this purpose—a little more than half what was promised by the Irish parliamentary party. The representatives of the profession at once decided that the sum was inadequate and informed the Commissioners to this effect, but they agreed with the Commissioners that a panel system, with some local modifications and adequate remuneration, would be accepted by the profession as a satisfactory means of assigning to each doctor for medical certification the actual and potential insured patients he would be liable to treat under any of the existing medical systems in Ireland. Owing to the deletion of medical benefits from the Insurance Act in Ireland there is not, except in rare instances, free choice of doctor under the different medical systems through which the insured and their dependants in Ireland receive their treatment.

In these circumstances the term "panel" has not the same significance in Ireland as in England In Ireland the panel only exists in connexion with the Insurance Act as a means of determining for certification and its remuneration the number of actual and potential insured patients to whom a doctor, according to the medical system under which he practises, is liable to afford medical treatment in any one year. Owing to the inadequacy of the grant offered by the Treasury, the doctors in twenty-two counties in Ireland refused to go on the panel for medical certification. In the remaining eight counties, including some large industrial centres, the doctors, while protesting against the inadequacy of the remuneration, went on the panel, believing that within a few months medical benefits would be extended to their localities. In the twenty-two counties where the Irish Commissioners failed to form panels of doctors to certify for the patients to whom they afforded medical attendance, the Commissioners appointed as many local doctors as were willing to accept service under the name of medical advisers; they were to certify for insured patients attended by other doctors. The duties of medical advisers were so objectionable, from a professional point of view, that for whole counties only two to four doctors could be found to accept such positions. The Irish Commissioners knew that it was impossible to attempt to carry out medical certification with so few. They then adopted a most extraordinary procedure. They made arrangements by which "respectable" lay persons were to certify for sickness benefits under the Insurance Act as administered in Ireland. The Chancellor of the Exchequer, when he realized the very unsatisfactory state of medical certification under the Insurance Act in Ireland, stated in the House of Commons in August, 1913, that he had satisfied himself that his original grant of £50,000 was inadequate, and that he was prepared to ask the Government to increase his original grant subject to the limit of 2s. 6d. per insured person not being exceeded. The promise of the Chancellor meant increasing the grant from £50,000 to £91 000, which would have satisfied the doctors so far as it was a question of money.

After the Chancellor's announcement a speedy settlement was expected, but instead a Departmental Committee of Inquiry was instituted to ascertain—not only in Ireland, but also in Great Britain—why sickness in some insurance areas had exceeded the actuarial calculations. This inquiry in Ireland was secret, and the profession had no representation on the Committee which conducted it. It became known, however, during the progress of the inquiry, that, apparently with the object of making a case for whole-time medical certifiers, many groundless charges were made under the protection of secrecy against the integrity of those doctors who went on the panel for certification. No opportunity was at any time afforded the Irish doctors to confront their accusers. The report of this secret inquiry was never made public. The Irish Medical Committee asked the Irish Commissioners to supply it with a copy of the report, so that it might take steps to meet the charges made against the panel doctors. The Commissioners refused this request, but it is believed that the report involved a serious indictment of the profession. The remedy for this alleged state of affairs, which has been recommended by some few Irish officials of approved societies and supported by the Irish Commissioners, is a whole or part time system of medical certifiers who will owe their appointments to the influence of the officialdom of the approved societies, and therefore will not be in a position of independence, enabling them to see that the insured shall receive that to which they are entitled.

Four-fifths of the insured in Ireland have as their medical attendants Poor Law medical officers who are paid a fixed yearly salary, so that it cannot be alleged that these doctors would have any personal motives, such as retaining or increasing their professional connexion, in giving certificates for sickness benefits too freely. However, the Irish Commissioners refuse to appoint them to certify for the insured patients to whom they afford medical attendance except in the case of those Poor Law medical officers who undertake as medical advisers to certify, in addition to their own patients, those attended by other Poor Law medical officers in three or four neighbouring districts.

The administration of the Insurance Act in Ireland commands the confidence of none of the parties most intimately concerned. Reports of public bodies frequently appear in the Irish press protesting against the treatment of the insured and the arrangements made by the Commissioners for supplying them with medical certificates. Neither the diagnosis nor the treatment of tuberculosis in Ireland, notwithstanding the large sums of money set aside for the purpose, has been seriously undertaken, and this state of affairs is for the most part due to the action of the Irish Commissioners in making arrangements that their medical advisers alone—who are about one hundred at their full strength for all Ireland—report all cases that they meet in their haphazard way of certifying for sickness benefits. This arrangement excludes some twelve hundred medical attendants on tuberculosis cases in Ireland, with the result that only a very small proportion of cases, particularly in the early stages, are recommended for special treatment.

ANTISEPTICS IN WAR.

THE clinical observations on the application of strong antiseptics to infected and non-infected wounds which Mr. C. J. Bond of Leicester records at page 405, and the results of the laboratory researches of the Royal Naval Committee, to which Fleet Surgeon Bassett-Smith refers in a brief note elsewhere in our columns this week, are complementary the one to the other. The problem which Sir Watson Cheyne, Fleet Surgeon Bassett-Smith, and Mr. Arthur Edmunds set out to solve was whether it was possible to introduce into a wound soon after its infliction an antiseptic which would remain there, diffuse in the blood and tissues, and inhibit the growth of the bacteria till such time as the wound could be thoroughly disinfected. Mr. Bond's observations were directed to ascertaining the capacity of tissues to heal in the presence of strong antiseptics.

The experiments of the Naval Committee[1] were designed to test the effect of certain antiseptics on various pathogenic micro-organisms implanted on nutrient agar or blood clot. The most interesting results were obtained with iodine, alcohol, carbolic acid, cresol (or, more properly, tricresol, since cresol consists of three isomeric bodies), and with various preparations, including the liquor cresol saponatus of the new *British Pharmacopoeia*, in which the cresols or allied substances are the active agents.

The experiments were conducted by a novel method, which seems capable of adaptation to many bacteriological purposes. They were begun with blood clot, but agar nutrient medium, which gave similar results, was found more convenient for demonstration. By means of an ingenious cell devised by Mr. Edmunds, discs of nutrient agar of uniform thickness—usually one quarter of an inch—were obtained. The antiseptic to be tested was, as a rule, made into a paste with lanoline (six parts) and white wax (one part); a known weight of the paste, containing a certain percentage of the antiseptic to be tested, was spread on a microscopic cover-glass, three-quarters or one inch in diameter; this was adjusted at the bottom of a Petri dish, and the slab of agar, a good deal larger than the cover-glass, placed over it; the upper surface of the agar was then brushed with an emulsion of the bacterium used. Where fluids were to be tested, they were put, in definite quantities, into a small paraffin cell containing pieces of filter paper. The organisms employed were the ordinary pus organisms, *Staphylococcus pyogenes aureus*; but in order to study the effect on spores *Micrococcus prodigiosus* and *Bacillus subtilis* were also used. In addition, animal experiments were made with some highly infected earth supplied by Dr. Dudgeon of St. Thomas's Hospital, which produced spreading gangrene and tetanus. Fleet Surgeon Bassett-Smith now gives the results of some experiments on guinea-pigs with salicylic acid, to the value of which as an antiseptic for wounds Dr. Albert Wilson drew attention in our columns a fortnight ago. They appear to show that salicylic acid has a very clear effect in enabling the animal to resist infection by certain anaërobic organisms, including that of tetanus.

The Petri dish was placed in an incubator at body temperature, and in control experiments, in which no antiseptic was used, the disc of agar became uniformly covered with colonies of the bacterium; where an efficient antiseptic was used there was a clear space in the centre of the disc with colonies at the margin. The rapidity with which these organisms grow is shown by the fact that less than five hours after the preparation of the plate colonies could be perceived with the naked eye; with a 2-in. lens they could be recognized three hours after inoculation, but when an efficient antiseptic had been used only at the periphery. This indicates that at some time within three hours, and probably within a period a good deal shorter, the antiseptic had penetrated to a greater distance than a quarter of an inch through the agar. The existence and extent of the clear space is therefore an index of the diffusibility and activity of an antiseptic. Further, it appeared that the antiseptic did not cease to penetrate at the end of two or three hours, but went on getting through to a greater and greater distance, and as it came through, it arrested the growth of colonies which had already become visible. This was true, especially of cresol and carbolic acid. It appears to indicate that a certain amount was stored in the paste and only parted with very slowly, whereas in the case of other antiseptics, they passed through quickly and exercised their full effect at once. Cultivations made from the centre of the disc—that is, over the cover-glass area—afforded evidence that during the first three hours the bacteria were not killed even at the centre, so that the absence of growth up to that time was purely an inhibitory effect. After six to ten hours the central area was usually sterile, but in some cases in which this did not happen sterility was nevertheless brought about after a longer interval. As cresol and carbolic acid, with which the experiments last mentioned were made, are both volatile, observations were made to ascertain whether a time would come when the medium could again be inoculated with success. The clear space in discs which had been

[1] A preliminary report of these experiments was given by Sir Watson Cheyne in his Hunterian Lecture, published in the *Lancet* of February 27th; a full account of the experiments, which are still in progress, will be published in the next issue of the *Journal of the Royal Naval Medical Service* (April, 1915).

used for the experiments with carbolic acid, cresol, and formalin was inoculated after twenty-one days with fresh bacteria; no growth occurred, showing the persistence of the disinfectant in the agar.

The explanation of the diffusion is, Sir Watson Cheyne considers, partly to be found in osmotic pressure and partly in the volatility of the antiseptic. Diffusibility is influenced also by combination of the antiseptic with substances in the surrounding medium. This is thought to explain the fact that iodine tested by this method was found to have no antiseptic action at a distance. It is an active antiseptic when free in the presence of naked bacteria, but has a marked tendency to combine with a great variety of substances which diminish or destroy its antiseptic qualities. Iodine in the form of a 6 per cent. paste did not check the growth of organisms in blood clot at all, but carbolic and cresol pastes had the same effect as on agar. Tricresol or carbolic pastes 20 per cent. do not cause any redness or irritation of the healthy skin, while they are effective in delaying the development of infection for from four to five days, provided they are put early into the wound—that is, within, say, fifteen minutes of its infliction; when the wound is cleared out at the end of the period healing rapidly occurs.

The observations recorded by Mr. Bond were purely clinical, but they throw much light on the general problem. The antiseptics he used were pure carbolic acid, carbolic acid 1 in 20, tincture of iodine, and mercury perchloride 1 in 1,000. It has been generally assumed and asserted by aseptic surgeons that the use of any antiseptic must retard the healing of an uninfected wound. This, Mr. Bond tells us, is not borne out by his observations; it was, he says, usually impossible to tell from the appearance of the line of incision after an operation for varicose veins, or from the conditions of the parts around, when the dressings were removed on the second day or at a later period, whether the wounds had been treated with one or another antiseptic or aseptically. This, as he says, is an important practical observation, important in itself, and still more so from the conclusions which it justifies. If such extensive destruction of body cells as the use of pure carbolic acid, for instance, must cause is quite consistent with the rapid healing of a wound from which micro-organisms are absent, if the single application of a powerful antiseptic to a recently made aseptic wound does not materially affect the healing process, and if the application of a sufficiently strong antiseptic does, under favourable conditions as to time and the nature of the wound, materially aid in destroying an infection, then it seems clear that such an application should be made to infected wounds in all suitable cases. Mr. Bond considers that only one thorough application of a strong antiseptic should be made, accompanied, of course, by the removal of foreign bodies on the establishment of free drainage, because, should one such application fail to check the spread of the infection, it is not likely that the repeated use of weaker solutions will have a better result.

The length of time after infection within which the application of an antiseptic to a wound holds out any prospect of doing good is, Mr. Bond says, not known, and the main practical result of the laboratory observations of Sir Watson Cheyne and his colleagues is to provide a method of introducing into the wound at a very early date an antiseptic preparation which will at least have the effect of inhibiting the growth of any pathogenic organisms which may be present. At the same time, there is ground to hope that more than a temporary arrest of sepsis may be achieved by this plan; that, in fact, in some cases complete disinfection of a wound may be attained, rendering further measures unnecessary. The practical value of the method and its applicability to conditions in the field might, Sir Watson Cheyne suggested, be quickly worked out if a small section of the front, with its own lines of communications and its base hospital, were set aside for the thorough study of the problem by a small committee instructed to follow up the cases and investigate the subject generally.

INTERNATIONAL AMENITIES IN THE MEDICAL PROFESSION.

WE have received from a distinguished Scandinavian colleague a friendly but candid criticism of certain matters in which he expresses the opinion that the reception accorded to foreign medical visitors in this country compares unfavourably with that they habitually receive from the medical profession in Austria and Germany, especially in the latter country. To see ourselves as others see us is salutary discipline, which in this case is tempered by the friendly note running through our correspondent's analysis of the Anglo-Saxon temperament. Our correspondent has enjoyed the hospitality of both Germany and England, and with reference to our own country he repeatedly emphasizes his appreciation of the courtesy shown to him by leading members of the profession, who, in spite of engrossing duties, took infinite pains to introduce the stranger within the gates to the details of medical work in England. But it is a common complaint in Scandinavia that, as a rule, too little is done for the medical visitor in England. No doubt, there are some post-graduate courses open to the visitor who is prepared to pay a fee, but this fee is considered large, and medical hospitality and teaching in the leading English medical institutions are not lavished on the stranger with anything like the generosity with which Germany and Austria greet colleagues from abroad. In these countries, according to our correspondent, every Scandinavian doctor is received with open arms, and no less during this war than during peace. The practice of the large hospitals is placed at their disposal without fee, and many private and public post-graduate courses in Berlin, Düsseldorf, Hamburg, Vienna, etc., are at the service of Scandinavian doctors for a small fee or on very reasonable conditions of payment. Some Scandinavians have even been permitted to act as private assistants to German professors, and have thus got an insight into the working of private and public institutions without having to pass the ordinary examinations. Our correspondent tells us that the common refrain in his country is, "It is so difficult to get into English institutions except to the tune of pay, pay, pay!" And yet all the medical institutions in Norway, Sweden, Denmark, and Finland would gladly welcome every English medical visitor and would introduce him to everything of interest without money and without price. The Germanic countries are also indefatigable in flooding the Scandinavian countries with their medical literature, for which there is an enormous sale. Even the most costly works are sent for review to the Scandinavian medical journals, and their libraries of recent medical literature are mainly stocked from this source. England and France, on the other hand, send scarcely a book for review to the Scandinavian countries, which cannot therefore be blamed for relying almost exclusively on German works. Probably in Scandinavia for every score or so of English medical works hundreds of German works are sold. The loss to the English publishers may not be great, but were they to realize what good linguists and scientists the professional men of the Scandinavian countries are, they would, doubtless, make an effort to put English medical works

on a better footing there. Our correspondent adds that if the English and French realized that their opportunity had come, they would do all in their power to carry the gospel of English and French medical science into the Scandinavian countries. The monopoly which Germany and Austria have hitherto enjoyed in this respect has been due as much to the indifference of the Allies as to the enterprise of the Germans.

FINANCES OF UNIVERSITIES.

WE understand that an inquiry form has been circulated from the Board of Education to the Universities and Colleges entitled to receive grants from the Board asking as to the way in which their funds have been affected by the war, particularly with regard to losses of fees due to enlistment of students. We welcome this indication that the Board is alive to the serious position in which many universities and colleges will find themselves, not so much perhaps by the diminution in entry as by the loss of fees from senior students who are serving with the colours in various capacities. It would certainly be shortsighted of us, as a nation, if we were to allow the universities and higher teaching institutions to be seriously handicapped during the time of the war and to be obliged, in consequence, to cut down their departments or possibly to dispense with important teachers. We have no information as to how the Board of Education contemplates dealing with this difficulty, but we hope that the inquiries which are being made indicate the possibility, at all events, of giving such help as will enable these institutions to tide over the time of stress. In this connexion reference may be made to the Universities and Colleges (Emergency Powers) Bill introduced by the Attorney-General on February 23rd. He mentioned that at Oxford, for example, some 2,000 undergraduates who would ordinarily have been in residence have joined the forces, and that of these no fewer than 500 are scholars or exhibitioners; the bill enables the universities, without seeking any assistance from public funds, to adjust their finances to meet the present emergency, especially in respect of scholars and exhibitioners. It enables them to give necessary aid to those who have enlisted and to suspend, for the emergency period, the conditions of university residence, etc., which attach to the scholarship. It enables the universities also to overcome the temporary difficulties by borrowing, and to suspend, with the leave of the Board of Agriculture, the sinking fund repayments. The bill is permissive in its character, and may be made use of during the emergency period, which is defined as until the close of the calendar year in which the war may terminate, or, if the war terminates in the latter part of a year, until the end of the next following calendar year.

A CHANCE FOR MEDICAL WOMEN.

IN the *Cambridge Review* for February 24th Professor Howard Marsh discusses the shortage of doctors already caused by the war, and likely to become more acute as the sending of larger forces to the front makes the need for a proportionate supply of doctors more and more pressing. Already our civil hospitals find it difficult to get men to fill residential posts, and the number of doctors who have volunteered for military service has seriously diminished the supply of those available for private practice. Fortunately, till the recent outbreak of influenza, the ordinary sickness rate was diminished; it might well be a subject of speculation to consider how far this may have been due to the mental tension of the war diverting the attention of people from their real or fancied ailments. But the sick, like the poor, we have always with us, and the question of medical attendance will become more and more urgent. Here, Professor Marsh considers, is a chance for the medical woman. She has, in the face of many difficulties, won her footing in the profession and justified her existence. Professor Howard Marsh says: "I have had good opportunities of seeing women doctors at work in many different positions. It is beyond doubt that, allowing for a percentage of failures, such as is certainly not absent on the men's side, women doctors have achieved a very notable success, and very little has been seen of those defects and handicaps which, in the opinion of many, made failure a foregone conclusion." It may confidently be predicted that whatever prejudice may still linger in the public mind against medical women will fade away when their fitness for the work they have undertaken becomes known. There is a vast sphere for their activity among women and children, and outside this there are diseases of the chest, heart, eye, ear, teeth, and throat with which a well-trained woman can deal as well as a man. Professor Howard Marsh cites the administration of anaesthetics as a test case. In the New Hospital for Women in the last seven years 3,577 operations were performed. There were only two deaths under an anaesthetic, and the anaesthetics all through were invariably given by women. He thinks this a noteworthy proof of their skill and carefulness. There are doubtless certain restricted fields of special practice which women will naturally avoid, but the vast territory of general practice will be open to them. Professor Howard Marsh says those in authority are insisting that there should be no underselling of their male colleagues on the part of the women doctors, and he adds that it is fully understood that when men return from military service women who have been acting as substitutes for them in their absence shall loyally restore their places to them. The interesting point is to see how women doctors will use the opportunity now that they have a large field open to them. There is one difficulty in the way: there are too few labourers for the work. An endeavour is being made to overcome this difficulty by the enlargement of the London School of Medicine, Royal Free Hospital, as reported in the JOURNAL of February 20th, p. 354. We hope the money required for this purpose will be forthcoming without delay.

THE CAMPAIGN AGAINST SECRET REMEDIES IN FINLAND.

FINLAND is regarded by many as a somewhat Arcadian land, and its inhabitants have been so systematically exploited by the unscrupulous quack that it is strange they have to such a large extent retained their unsophisticated attitude towards him. The abuse of the public's credulity has been carried so far that a determined effort has now been started to educate the quack's customers, to expose his methods, and to create a vigorous national movement against his trade. The society which has undertaken this task includes many medical men, the majority of whom hold important Government appointments, but there is a satisfactory sprinkling of doctors of philosophy, physiology, chemistry, and agriculture, as well as journalists and veterinary surgeons. We have recently received one of the society's publications, which is the second of a series of pamphlets intended for distribution among the Swedish-speaking section of the Finnish public. The ground covered by this pamphlet is largely the same as that which the British Medical Association has dealt with in *Secret Remedies* and *More Secret Remedies*.[1] Many of the preparations are indeed old and familiar, and their sponsors are cosmopolitan. As in other countries, the quack in Finland baits his trap with offers of gratis treatment, with pictures and testimonials to prove its success, and even with photographs of these benefactors of mankind. The pamphlet also contains discussions of electro-homoeopathy, electro-medical apparatus, and drugs supposed to cure alcoholism and drug habits. The preparations dealt with in the pamphlet include antinephrite, from Berlin, and antipon, which,

[1] London: British Medical Association. 1s. each, post free 1s. 3d.

nas, or had, a British domicile. There are also many drugs with what, to the Finnish consumer, must be more homely titles, and Makela and Malakios's rheumatic ointment are probably the products of Finnish brains. Further down in the list we find pills which, according to the analysis, are a variant of Blaud's pills. Discussing the educative measures required for the suppression of secret remedies, the pamphlet suggests that good could be done by students and teachers, who in the past have done much to educate the public about tuberculosis and alcohol. Little co-operation, it is thought, can be hoped from the lay press, since the large income from advertisements of secret remedies is not likely to be given up under moral pressure alone. Greater hopes are entertained of the result of legislative measures. These are already stringent with regard to the sale of drugs by chemists, and it is a pernicious system which insists on a high standard of education for the vendor of ordinary drugs, who in Finland is under public control and is bound to sell his wares at a fixed rate, whereas the purveyor of secret remedies may be entirely uneducated, and is absolutely his own master, and in the position to charge whatever he likes for his concoctions. The most important legislative reform would be, it is thought, to subject the vendor of secret remedies to the same strict supervision as that under which the qualified chemist is already placed. This supervision would naturally include the fixing of reasonable charges. In the meantime the society has already affected the profits of nostrum vendors by placing its services, free of charge, at the disposal of any inquirer whose interest has been aroused in some secret remedy or other.

THE SUPPLY OF MEDICAL MEN IN GERMANY.

It appears that, in spite of, or perhaps because of, the war, Germany is more likely to suffer from a superfluity of medical men than a deficit. By the end of the third month of the war 2,250 medical students had become qualified to practise, and of these 1,500 were attached to the army or navy, and about 750 were given appointments in hospitals and clubs. Thus, in a period of only three months the number of medical practitioners was augmented by nearly 7 per cent. It is not, therefore, surprising to be told that every appointment is filled, and that no demands have yet been made on the older classes of the reserve among medical men. It is admitted in Munich that this prodigal creation of medical men in the first months of the war may be a source of embarrassment to the whole medical profession after peace is declared, for the profession was certainly overstocked at the outbreak of the war. But it is held that this consideration must be secondary to the needs of the present crisis. Accounts from Berlin suggest that much dissatisfaction existed, and was even expressed with regard to the system, or want of system, shown by the authorities in the choice of volunteer surgeons. Hundreds of medical men were kept in suspense for a long time as to the result of their applications, and the chief qualification required by the authorities seemed to be youth, the recently qualified medical student being often preferred to the middle-aged surgeon of ripe experience. It is said also that no organized scheme exists for the welfare of the volunteer surgeons disabled or killed at their duties, or for their dependants.

THE VISION OF THE SAVAGE.

In recent correspondence on the matter of colour vision the argument of some of the writers has turned on the question of the vision of primitive races. In a little book[1] that has already been reviewed in our columns there is a very convenient summary of the literature of the recent observations made on the visual acuity and colour vision of savage races. From the pages of that book the following notes are abstracted. Humboldt[2] recorded observations of the remarkable visual acuity of South American Indians, but added an argument to prove that the sight of man thousands of years ago was very similar to that of ours to-day. He showed from the writings of the ancients that the Pleiades appeared to them as to us, since it is only the six brightest of them which were and are visible to the naked eye, although by very bright moonlight one smaller star was also visible then as now to-day. Sir Francis Galton[3] wrote: "Notwithstanding many travellers' tales I have thus far been unsuccessful in obtaining satisfactory evidence of any general large superiority of the senses of savages over those of civilized men." Brudenell Carter[4] gave expression to an opposite opinion in a paper read before the Society of Arts; but his view was controverted by Lord Rayleigh[5] on the ground that the eyes as optical instruments were incapable of these alleged surpassing capabilities, but that the superiority of the savage is a "question of attention and practice in the *interpretation* of minute indications." The first reliable tests to be made on any considerable scale were those published in the reports of the Torres Straits expedition organized by Professor Haddon of Cambridge. Three expert experimental physiologists and psychologists took this particular work in hand. Dr. Rivers[6] states that "the general conclusion which may be drawn is that the visual acuity of the savage and half-civilized people, though superior to that of the normal European, is not so in any marked degree . . . they do not exhibit that degree of superiority over the European in visual acuity proper which the accounts of travellers might have led one to expect." The matter of colour vision is much more complicated. Both colour appreciation and colour names have to be taken into account. On the relation of these two points there is a difference of opinion. Dr. C. S. Myers[7] writes: "A colour name occurs when it is needful. Where it is needless it will not be formed be the sensibility to that colour ever so great." A later experimenter, Miss Winifred Tucker,[8] says: "Vagueness about colour names often went with defective discrimination, yet there was no strict relation between the two." Rivers also noted that the Torres Straits folk tended to lump together all wools that had the same name. In these islanders "the ordinary form of colour blindness in which red and green are confused does not occur, or is extremely rare," but there was a certain degree of insensitiveness to blue (and probably green) as compared with Europeans. Rivers was undecided whether this defect arose from defective nomenclature, or from the nature of the pigment in the region of central vision. The same worker found similar results both as regards visual acuity and colour vision in Egypt. "Here as elsewhere defective nomenclature for blue appears to be associated with a certain degree of insensitiveness to this colour." Amongst the Todas of India he found more definite colour blindness of the red-green type. Amongst males 12.8 per cent. were subject to this defect, although amongst the women the percentage of defectives was only 1.1.

[1] *Studies in Questions Relating to Eye Training.* Phillips (see JOURNAL, February 20th, p. 336).

PROVISION FOR LATER LIFE.

Professional men absorbed in daily work do not always find time or opportunity to study finance and so protect the result of their labour. It is also difficult to forecast future requirements accurately; so that it is important when making provision for old age or death that any scheme adopted should be as elastic in nature as possible. The ideal is to combine a sinking fund or pension assurance with protection against premature death. Such a

[2] Humboldt, *Cosmos* (Bohn's edition), 1851, iii, pp. 60–61.
[3] Galton, *Inquiries into Human Faculty*, Everyman's Library.
[4] *Journal of Society of Arts*, 1885, p. 239.
[5] *Nature*, 1885, xxxv, p. 286.
[6] Reports of the Cambridge Anthropological Expedition in Torres Straits, 1901, II, 1, p. 42.
[7] *British Journal of Psychology*, 1906–8, ii, p. 361.
[8] Ibid., 1911, iv, p. 36.

contract appears to safeguard the more important contingencies an average man may expect, and secures in addition a welcome rebate of income tax, the importance of which in these days cannot be overlooked. If the case of a man, age 30 next birthday, be taken, the payment of an annual sum of £46 13s. 4d., on which an allowance of income tax may be claimed, secures at the age of 65 a guaranteed sum of £2,000. This can be invested to produce under existing conditions certainly a full £80 a year, the capital remaining intact, to be disposed of as he may desire; or if there are no dependants the capital could be used to purchase an annuity of £209 3s. 4d., or if his wife be alive, an annuity of £139 3s. 4d., payable so long as either shall live, assuming that the wife is not more than five years his junior. If the assured did not reach the age of 65, his executors would receive £2,000 in cash, which, if invested, would produce for his widow £80 per annum, the capital remaining intact for disposal under his will, or the money would provide for his widow a pension of £124 6s. 8d. if aged 50, or £157 3s. 4d. if aged 60. Those who require a safe and simple method of investing surplus income with a view to providing for old age or premature death are invited to apply for particulars to the Medical Insurance Agency, 429, Strand, London, W.C.

CAT-LIKE PUPILS IN MAN.

A SLIT-LIKE pupil is a rare anomaly in man, but a few cases have been reported. Illustrations of this feline type of pupil have recently been published by Greeff.[1] In 1899 a case was reported by Fehr. The pupil of the right eye was a horizontal slit; the left pupil was also cat-like, but the slit vertical. In 1902 Burstenbinder described a similar case, which he observed in Hamburg. Here again the right pupil was a horizontal, the left a vertical slit. In both these cases no other abnormalities accompanied the feline pupils. Greeff records three more cases of this nature. In the first the right pupil was a vertical groove, which extended right across the iris. The pupil of the left eye was similar but the slit did not at either extremity reach the periphery of the iris. The other two patients showed similar anomalies in the form of the pupil. These pupils all tended to become round in the dark. Fehr pointed out that the pupils he described showed the same structural conditions as a cat's pupil. Instead of forming a ring round the pupil the muscles of the iris radiated from the pupil to the iris periphery. It has been suggested that these apparently feline pupils are caused by a double coloboma, but the presence of a well-defined sphincter negatives this explanation. Some have thought that the cat family have stenopaeic pupils because they are astigmatic; examinations with the keratometer, however, have shown that the eyes of cats are not astigmatic.

WE desire to express on behalf of the members of the British Medical Association deep sympathy with Sir James Barr of Liverpool on the loss of his only son, Lieutenant S. Tudor Barr, 3rd (King's Own) Hussars, who was killed on February 23rd.

A DISCUSSION on cerebro-spinal meningitis will be opened at a general meeting of the Wiltshire Branch of the British Medical Association at Salisbury on Thursday next, March 11th, by Sir William Osler. The meeting will be held in the municipal offices, and Dr. J. Tubb-Thomas will take the chair at 2.30 p.m. Medical men not members of the Association, as well as medical men residing in Hampshire, Dorsetshire, and Somerset, and military medical officers stationed in the four counties, are invited to attend.

[1] *Archives of Ophthalmology*, 1914.

Medical Notes in Parliament.

Prevention of Insanity.—Mr. W. Thorne asked the President of the Local Government Board if the report on the prevention of insanity had been published in accordance with the promise made to a deputation on July 16th, 1914; whether over 300 members of the House of Commons and about 236 of the medical profession signed a petition against the principles contained in Part V of the London County Council (General Powers) Bill; and if the Government intended taking any action in the matter. The President of the Local Government Board said that the outbreak of war prevented any action being taken at the time. He had lately given fresh consideration to the question, but had come to the conclusion that an expert inquiry must precede any definite action. He proposed to appoint a committee for this purpose when circumstances permitted.

Vaccination Officers.—Mr. Peto asked the President of the Local Government Board whether, seeing that on July 15th last he received a deputation from the National Vaccination Officers' Association with reference to these officers' loss of income in consequence of the Vaccination Act and Order, 1907; that he then admitted that a strong case had been made out for his consideration as to what further action the Local Government Board could take with regard to these officers' loss; that on July 27th last he wrote to the secretary of the association saying that the matter was engaging his close attention; and that on August 20th last he wrote him a further letter saying that he regretted that at the then present juncture it was not possible to take any immediate action relative to the remuneration of vaccination officers, he would state, in view of a still further loss in income suffered by these officers and the financial position of so many in consequence of such loss and the increased cost of living, what action, if any, he was now prepared to take. Mr. Herbert Lewis replied that the President was in communication with certain Poor Law associations on the subject, and when their replies had been received would not fail to give the matter his attention.

Swine Fever.—In reply to Mr. Charles Bathurst, Sir Harry Verney said that the Board of Agriculture had asked the Royal Society to conduct an inquiry with regard to the prevalence of swine fever in conjunction with the Development Commissioners. The society had appointed the following committee:

His Grace the Duke of Devonshire, G.C.V.O., P.C.
Sir Clifford Allbutt, K.C.B., F.R.S.
Sir John Rose Bradford, K.C.M.G., F.R.S.
Dr. W. Bulloch, F.R.S.
Dr. A. E. Garrod, F.R.S.
Mr. W. B. Hardy, F.R.S.
Dr. F. G. Hopkins, F.R.S.
Colonel Sir William Leishman, F.R.S.
Dr. C. J. Martin, F.R.S.
Sir William Osler, Bt., M.D., F.R.S.
Sir William Power, K.C.B., F.R.S.
Dr. A. E. Shipley, F.R.S.
Professor Lorrain Smith, F.R.S.
Professor E. H. Starling, F.R.S., Chairman.

The Board would do anything in its power to promote the necessary researches.

Zymotic Diseases in the Army.—In reply to Sir Edward Coates, the Under Secretary of State for War (Mr. Tennant) said that a system of intercommunication exists between the civil medical officers of health and the military sanitary officers. All infectious cases were treated in the local civil isolation hospitals, except in a few cases where local civil accommodation was not available. Such cases were treated in special military isolation hospitals. Arrangements had also been made for the erection of pavilions in the grounds of civil isolation hospitals where existing accommodation was insufficient.

Cerebro-spinal Fever.—In reply to Mr. Joynson-Hicks, Dr. Macnamara said that nine of the medical officers attached to the Royal Naval Division at the Crystal Palace had been drafted with their battalions—two had been sent in lieu, thus leaving seven medical officers for about 5,000

men. It was not contemplated that any more should be drafted at present. The bacteriologist specially appointed to inquire into the outbreak of cerebro-spinal meningitis was the Professor of Clinical Pathology at the Naval Medical School at Greenwich. One patient suffering from the disease from the Royal Naval Division at the Crystal Palace had died at his own home. Up to March 1st there had been 18 cases in all, with 13 deaths. About 5,000 men were still at the Crystal Palace. In reply to Mr. Barnes, who asked how many of the 62 cases of, and 26 deaths from, cerebro-spinal meningitis amongst the British troops in the United Kingdom from August 1st, 1914, to January 31st, 1915, had been inoculated with antityphoid vaccine, and the length of time that elapsed from the last inoculation to the development of spotted fever, the Under Secretary of State for War said that to obtain the information would entail a very considerable amount of work to the hospital staffs, who were already working at high pressure. He hoped the question would not be pressed. Mr. Tennant, in reply to a question by Mr. Alden, said that spotted fever had broken out in some parts of Essex. Special orders had been issued with regard to billeting, and due precautions were being taken against overcrowding. The local sanitary authorities were consulted in all cases.

Antityphoid Inoculation.—In reply to Mr. Chancellor, Mr. Tennant said that the average death-rate from typhoid fever per 1,000 strength among the British troops in India for the years mentioned were as follows:

1895	...	...	5.61	1899	...	...	5.14
1896	...	...	6.31	1900	...	...	4.77
1897	...	...	8.62	1903	...	...	4.19
1898	...	...	10.04				

The earliest known inoculation against typhoid fever in the British army in India was in 1898. This was an initial attempt which was discontinued after the South African war, and it was reintroduced in 1905. Of the 262 cases and forty-seven deaths from typhoid among British troops in the United Kingdom from August 1st, 1914, to January 31st, 1915, twenty-five were inoculated and 237 uninoculated. Of the forty-seven deaths two were inoculated and forty-five uninoculated. Military sanitary officers were instructed, in recording cases of typhoid fever in the army, whether at home or abroad, to report not only on the one factor, inoculation, but on all important factors, particularly the condition as to purity or pollution of food and water consumed by the patient before the attack, and the state of sanitation. Mr. George Greenwood asked the Under Secretary for War whether he was aware that the forty-seven deaths from typhoid fever in 262 cases amongst the British troops in the United Kingdom from August 1st, 1914, to January 31st, 1915, represented a case fatality rate of 17.9 per cent., whereas the forty-nine deaths in 625 cases amongst the Expeditionary Force from August 1st, 1914, to February 11th, 1915, only represented a case fatality rate of 7.8 per cent.; and whether he could explain why the case fatality rate at home was more than double that at the seat of war. Mr. Tennant: I regret I am unable to explain this apparent anomaly. In reply to Mr. Bentham, Mr. Tennant said that instructions had been given for records of the condition as regards inoculation of every soldier to be kept; but the compilation of these statistics would entail a considerable amount of labour, and he did not feel justified in placing an additional strain upon the medical officers of the department. In reply to Mr. Rowlands, he said that cholera vaccine treatment was regularly carried out in India in face of epidemics, and in the event of such an outbreak the War Office had ample supplies of the vaccine ready for immediate use. Nothing was known of any method of inoculation against typhus.

Racecourse Hospitals.—Mr. Tennant stated, in reply to Sir Edward Coates, that the arrangement which had been come to with regard to the continuance of the Epsom and Ewell war hospital at the Epsom grand stand was considered quite satisfactory. All persons concerned showed a desire to come to a reasonable accommodation. Mr. Tennant stated, in reply to Mr. Ponsonby, that he had no knowledge of a proposal to remove the Red Cross Hospital established in the grand stand at Ascot in order that it might not interfere with the arrangements for the Ascot race meeting.

Consultant Physicians and Surgeons with the Forces.—Mr. Tennant said, in reply to Mr. Lynch, that the following was a list of the British consultant physicians and surgeons employed with the British Expeditionary Force in France and Belgium:

Sir G. H. Makins, K.C.B., F.R.C.S.
Sir A. A. Bowlby, Kt., C.M.G., F.R.C.S.
Sir W. P. Herringham, Kt., M.D.
Sir A. E. Wright, Kt., M.D., F.R.C.S.I., F.R.S.
Mr. F. F. Burghard, M.D., F.R.C.S.
Sir J. R. Bradford, K.C.M.G., M.D., F.R.S.
Mr. W. T. Lister, M.B., F.R.C.S.
Sir B. E. Dawson, K.C.V.O., M.D.
Sir B. G. A. Moynihan, Kt., M.B., F.R.C.S.
Mr. H. M. W. Gray, M.B., F.R.C.S.

With the exception of Sir A. E. Wright and Mr. Lister, all were officers of the Territorial Force and were commissioned before the war. They now held the temporary rank of colonel in the Army Medical Service and received the pay of that rank. They were all appointed consultants on account of the present war, and their services in that capacity had been most valuable.

Invalid Military Prisoners in Germany.—In reply to Mr. Yerburgh, Sir E. Grey said the German Government refused to include Admiral Chilcott and Colonel Stratton among those who were released as being over the age of 55, on the ground that they were retired officers, and possibly capable of performing some military duties. On December 10th His Majesty's Government proposed that these two retired officers should be included among those to be released as certified incapacitated for military service. The German Government refused this suggestion, and stated that the release of these officers should form the subject of special negotiation. His Majesty's Government informed the United States Ambassador on January 20th that any reasonable proposal on this matter would be entertained. His Majesty's Government at the same time pointed out that they could not offer prisoners of the same category in exchange, as such individuals had not been detained in this country, but that they were prepared to exchange for these officers two German subjects equally valueless from a military point of view. No reply had been received to this communication, but the matter would continue to receive the attention of His Majesty's Government.

Royal Navy: Temporary Surgeons.—In reply to a further question by Lord Charles Beresford on this subject (JOURNAL, February 27th, p. 386), Dr. Macnamara said that complicated questions of relative rank were involved, and at present no way out of the difficulty was seen. He added that he would be glad to confer with Lord Charles Beresford upon the matter.

German Prisoners of War.—Mr. McKenna stated, in reply to Mr. Sutton, that German prisoners had been offered facilities for vaccination and for inoculation against typhoid fever on reception into places of internment, but had not been compelled to undergo either. Prisoner No. 777, now at Knockaloe Camp, was inoculated at Grimley Camp, and was suffering from septic sores. He had not been, and was not now, dangerously ill. A statement that he was dangerously ill and should be transferred to hospital was said to have been made by a fellow prisoner, who was reported by the medical officer of the camp not to be a doctor of medicine nor to have had any medical training.

Pay of Medical Officers.—Sir John Lonsdale asked why officers of the Royal Army Medical Corps drew their pay one month in arrear, whereas other officers in the Army drew their pay one month in advance, by regulation; and if the practice throughout the army would be made uniform in this respect. Mr. Baker replied that officers of the Royal Army Medical Corps were not peculiar in this respect. They were paid in arrear in common with all Staff and Departmental officers. Only regimental officers drew in advance. This was in accordance with a long-standing custom which it was not proposed to disturb.

Sickness at Osborne College.—Dr. Macnamara stated, in reply to Lord Charles Beresford, that the number of cases on the sick list at Osborne on February 27th was 136—namely, influenza, 106; measles, 12; conjunctivitis, 10; pneumonia, 5; mumps, 2; tonsillitis, 1. Steps had been taken, pending the rearrangement of the college, to transfer the cadets of one extra term to Dartmouth, where extra accommodation was available and more was about to be constructed. Lord C. Beresford inquired if Osborne could not be evacuated. The cadets had been ill ever since they had been in the place. It was hastily done up, and there was a great deal of consternation among the parents. Dr. Macnamara replied that Osborne had been under consideration for some considerable time past. For the moment five terms were being kept there instead of six, which would assist in some degree.

THE WAR.

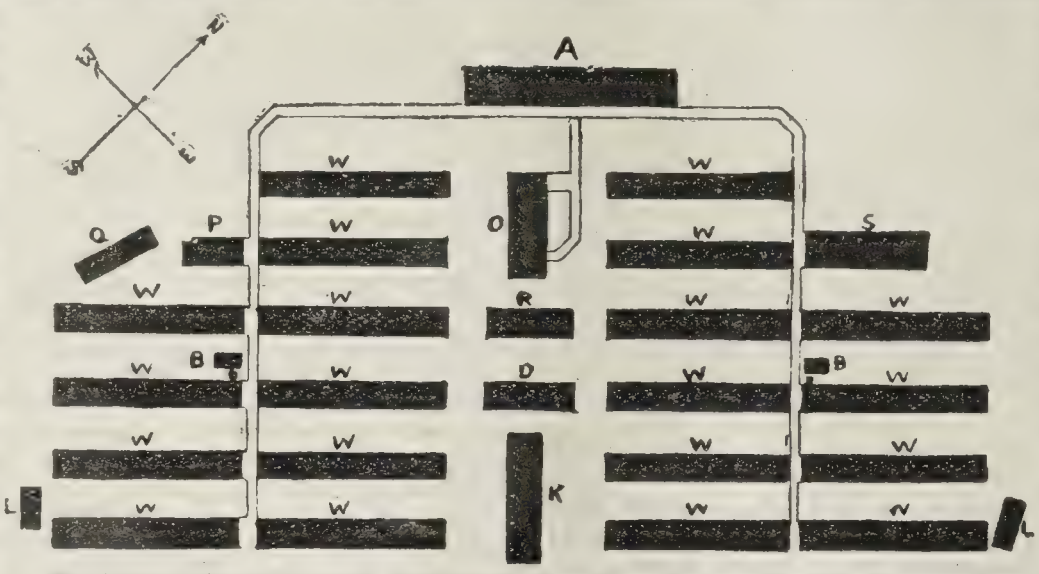
THE LADY HARDINGE HOSPITAL FOR INDIAN SOLDIERS.

BROCKENHURST.

THE Lady Hardinge Hospital for Indian Soldiers, established in Brockenhurst Park by the Indian Soldiers' Fund, is now, so far as its general structure and equipment goes, complete. The work of erection was commenced in the middle of November, and the first patients were received on January 20th.

We have this week had an opportunity of visiting the hospital, which is a one-story building of corrugated iron, lined with three-ply wood-sheeting with an air space of four inches between the two. It has been put up on a site in an angle of the park, with public roads on two sides; it is about half a mile from Brockenhurst station on the London and South-Western Railway, and thus about fourteen miles from Southampton. The soil is a deep gravel, and though the grass surface has been much deteriorated by the work during the recent wet weather, the site is itself dry and there is a fall in the ground to the north and south. The site has been lent by Mrs. Morant of Brockenhurst Park.

The general plan of the hospital is a corridor, forming three sides of a square, with wards opening off it on both sides. Each of the twenty long wards contains 24 beds, and has one private ward for native officers. There are thus altogether 500 beds. Each ward is also provided with its own kitchen, bath room, boot room, latrine, sister's room, and sister's lavatory. The long wards measure 90 by 20 ft., but the area covered by each ward-block with its annexes is 140 by 20 ft. The corridors are wide, and are furnished with a large number of broad settees with bright coloured cushions, there are pictures on the walls and plenty of window space, so that these corridors seem to be largely used by convalescent patients for rest and recreation. Ample exits have been provided, and fire doors erected at suitable places.



Block plan of hospital proper, showing the twenty wards, operating block, recreation and dining rooms, and kitchen. A, Administrative block; S, supply; B, boiler houses; Q, disinfecting block; P, pack store; L, latrines; O, operating block; R, recreation room; D, dining room; K, kitchen; W, wards.

The centre of the site is not occupied by wards, and has been utilized for the erection of certain essential buildings. The administrative building on the northern side of the main transverse corridor contains an entrance hall and also the admission room and bath rooms for the use of patients when first received. The administration block also contains a board room, the orderly officer's room, the offices of the commandant, the registrar, and of the clerks, a dispensary, and a well-appointed clinical laboratory.

The first building in the central space is the operating block, which contains an operating theatre with an anaesthetic room, sterilizing room, and preparation room. The theatre is finished in 3-ply, varnished, which gives the walls a light oatmeal colour. There is also a dressing theatre for septic cases and an *x*-ray room, thoroughly equipped with modern apparatus.

Beyond the operating theatre are detached buildings. The first is a large recreation room, comfortably furnished to meet the habits of those who are to use it, and presenting a very cheerful appearance, which seemed to be fully appreciated by the inmates, who when our visit was paid were playing chess and other games. Next beyond the recreation room is a dining room. This is not furnished with chairs and tables, but has two dais raised about a foot above the ground, an arrangement which is preferred by the inmates. Beyond this is a kitchen consisting of two parts, the one for Mohammedans and the other for Hindus. The walls are lined with asbestos sheets. At our visit men were seen busily engaged in making chupatties, thin limp biscuits of whole-meal flour, and preparing curry.

The whole of the hospital buildings are lighted throughout by electricity, which is made on the spot, the motor power being afforded by an oil engine, and are heated by steam radiators supplied by three boiler houses at convenient places. Water is laid on from the supply of the Southampton Water Company. A water carriage system of sewage has been adopted, and two septic tanks with coke breeze filters are nearly complete.

There are also, in detached buildings, a large store for linen and hospital clothing, a hospital supply store, and a supply dépôt for food. A disinfecting room for clothes is provided, with a pack store, where the men's kits, after disinfection, are retained until they leave the hospital. A mortuary has been erected on a detached site.

The nursing staff consists of a matron (Miss McCall Anderson), two assistant matrons, and sixteen nurses, who all speak Hindustani, and act as sisters. By day each sister is in charge of two wards, opening opposite each other on to the main corridor. When the establishment of the hospital was first under discussion, some question was raised as to the advisability of having women nurses at all; but we understand that the experience already gained shows that those who recommended their appointment were well advised. The nurses' quarters are on the southern side of the site, and comprise a set of bedrooms, recreation room, and dining room. There is also a block for the maid-servants who wait upon the nurses.

The general nursing is done by sixty orderlies of the St. John Ambulance Brigade. There is a native staff under non-commissioned officers comprising about sixty men who act as cooks, water carriers, and sweepers. The officers' quarters are in buildings of the same construction as the general hospital, facing on to what will be a lawn in front of the administration block; beyond these are the quarters for the orderlies and menial staff, and near the entrance from the main road is a garage for motor ambulances.

In the field on the other side of the road is an isolation block containing two wards of eight beds each. Near by are quarters for the guard, furnished by the National Reserve, and separate cook houses.

The chairman of the committee by which the hospital has been erected is Sir John Hewett, G.C.S.I., and among the members who have been active in its establishment are Sir Richard Havelock Charles, G.C.V.O., and Colonel Sir Trevredyn Wynne, K.C.S.I. On February 27th a visit was paid to the hospital by a committee of ladies who have interested themselves in collecting the funds necessary and in brightening the hospital by gifts of pictures, cushions, and so on.

The erection of the hospital has been carried out under the constant superintendence of Lieutenant-Colonel F. F. Perry, Commandant, and Lieutenant-Colonel C. H. L. Meyer, second in command. The whole of the medical staff has been furnished by the Indian Medical Service, and all, with two exceptions, are on the retired list. The staff is constituted as follows:

Lieutenant-Colonel F. F. Perry, C.I.E., F.R.C.S., I.M.S.
Lieutenant-Colonel C. H. L. Meyer, M.D., I.M.S.
Lieutenant-Colonel W. H. Burke, M.B., I.M.S.
Lieutenant-Colonel M. A. T. Collie, M.B., I.M.S.
Lieutenant-Colonel J. B. Gibbons, I.M.S.
Lieutenant-Colonel H. Herbert, F.R.C.S., I.M.S.
Lieutenant-Colonel J. B. Jameson, M.B., I.M.S.
Lieutenant-Colonel H. B. Melville, M.B., I.M.S.
Major E. O. Thurston, M.B., F.R.C.S., I.M.S.
Lieutenant H. C. G. Semon, M.D., M.R.C.P., M.R.C.S., I.M.S. (temporary commission).

HOME HOSPITALS AND THE WAR.

MANCHESTER.

2nd Western General Hospital.

IT is believed that the 2nd Western General Hospital has admitted more sick and wounded men of the Expeditionary Force than any other hospital in the country; the total up to March 1st was 10,537. The men have been conveyed to Manchester from Southampton in seventy-three ambulance trains since September 19th. This is an average of over 575 per week. The admissions of soldiers of the home troops in the neighbourhood of Manchester have raised the total to 11,387.

At the commencement of the war the general impression of Manchester citizens was that it seemed absurd to establish a military hospital in the city with 520 beds, so far away from the fighting line, and very few could have foreseen, or even believed, that Manchester would have become a chief centre of life and energy in the care of our sick and wounded soldiers, or that the original 520 beds established in buildings erected for other purposes than hospitals would have expanded within four months to a Central Hospital of 843 beds, and auxiliary, civil, and private hospitals, 120 in number, providing 3,683 beds, and making a grand total of 4,526 beds available for the Embarkation Officer at Southampton to evacuate the hospital ships into. Manchester has indeed risen to the occasion in this matter, as it has proved successful in raising new battalions and recruits.

The labour entailed in organizing and conducting such a work has been carried out in a true Lancashire spirit which has enabled all hands to work together, with regularity and precision, with energy and enthusiasm. The original trained nucleus of 3 officers and 43 rank and file was increased on enlistment by 66 men and on recent expansion by 68 more. Many of these had seen previous service in the Regular and Territorial R.A.M.C., and others were expert clerks in civil life, for the clerical work requires a staff of 15 men working many hours a day—often far into the night. The correspondence amounts to some hundreds of letters a day.

The arrival of a hospital train is a frequent event, and each train brings 100 to 250 soldiers in a little over seven hours' running from Southampton. Each train is made up of wards fitted up with 20 cots in each coach in two tiers running the length of the train on either side, and coaches with compartments at either end for sitting-up cases. The train is in charge of an officer of the R.A.M.C., with two nursing sisters and ten non-commissioned officers and men, who attend to dressings and emergencies *en route*. A small operating theatre is provided, and close to it a dispensary and an office where the list of men carried is made out, as well as a kitchen where meals are cooked for the journey, and a saloon for the staff to live in.

The greatest pressure was experienced at the hospital on October 31st and November 1st, when a sudden expansion of the hospital was called for at a time when all but 150 beds were occupied. In the middle of the night a telephone call from Southampton asked for 800 beds, and these were promised if twenty-four hours were allowed to arrange for them. In less than three hours 628 beds were promised in civil and private hospitals, and the remainder were provided a few hours later by taking over a new school building, with the help of the contractors who had equipped the hospital at the commencement. Six trains arrived during two successive nights, and by evacuating all day from the main hospitals no fewer than 823 sick and wounded were admitted, in twenty-six hours, to the 2nd Western General Hospital, and there were 90 empty beds to spare.

This could not have been accomplished without the assistance of the British Red Cross Society and their splendidly organized fleet of motor transports, consisting of 36 ambulances and 170 motor cars, in addition to ten ambulances generously offered and efficiently handled by the Manchester police, who have turned out at all hours for a train call.

It would be difficult to find a more suitable detraining station than Mayfield (adjoining London Road Station), which the London and North Western Railway Company reserve for this service. It cannot be overlooked, and has a long platform with a wide roadway the whole length of it. Eighteen ambulances and 30 cars in single file can be accommodated, so that the whole train may be evacuated at once. The station is under the charge of the registrar of the hospital, who is assisted by a staff of four officers and twenty-four men, and frequent practice has enabled the men to work quietly and rhythmically in taking out the wounded so that the time occupied has been reduced to a minimum, the average for a train containing 150 men, including 50 cot cases, being eighteen to twenty minutes from start to finish.

The nature of the cases has altered somewhat. At first all but 5 per cent. were wounded, many severely, but, since the wintry weather began, about 33 per cent. of sick have been included in each convoy. Several hundred cases of frost-bitten feet have been received, as many as 300 arriving in three train loads. Very few deaths have occurred. The total is 45, of which 11 have been from tetanus. Only 8 cases of enteric fever have been received, of which 2 have died; all the cases had not been inoculated. Again, of these 7 were Belgian soldiers who had not received the injection of antitetanic serum that British soldiers receive immediately after being wounded. Among the 10,537 patients there were 1,272 Belgian officers and men, and 33 German wounded prisoners.

The operations performed in the hospital total 739, and over 1,000 patients have been examined by means of *x* rays.

The hospital has received very many gifts from all classes and societies, and its smooth working is in a large measure due to the unfailing readiness of every member of the community to do all in his power to help the brave fellows back to health.

The commandant of the hospital is Lieutenant-Colonel J. W. Smith, M.B., F.R.C.S., and the registrar and secretary Major F. H. Westmacott, F.R.C.S., both members of the surgical staff of the Manchester Royal Infirmary.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

TITLES.

EVER since the days of Jane Austen the routine adjectival companion of "brevity" has been "soldierly," and it must be admitted that the collocation is not inapt. Dispatches may, perhaps, tend to be more lengthy than of yore, but the wording of military orders lacks nothing of its pristine crispness, and the tendency to denote offices merely by their initials shows no diminution. It might, in fact, be deemed to have increased but for the consideration that a latter-day army is a much more complex piece of machinery than that of even ten years ago, and that the number of posts and offices which require a descriptive title has correspondingly grown. In any case the number of different sets of initials whose meaning the newly-enlisted soldier must learn and remember if he is to turn his possession of eyes and ears and his time in the army to the best advantage, is decidedly large. Even the professional soldier and "the dug-out"—the retired officer who is "back to the army again"—seem to find themselves rather puzzled at times, for new sets of initials jump into use, sometimes owing to the creation of new posts, sometimes because the official description of long-standing offices has been modified.

War Office Staff.

However, the only sets with which it is essential that the newly joined soldier-doctor should be conversant are those relating to his own department; and since some of them are of comparatively recent adoption it is worth while, perhaps, to give a list of them. The first four apply to officers who are for the most part employed at the War Office. They are D.G., A.M.S.; D.D.G., A.M.S.; A.D.G., A.M.S.; and D.A.D.G., A.M.S. These are all principal officials of the Army Medical Department at the War Office, namely, the Director-General, Army Medical Service, the Deputy Director-General, the Assistant Director-General, and the Deputy Assistants, of whom there are usually three. The holder of the first of these posts is of necessity an officer of general's rank, while the holder of the second, if not of like rank, is invariably a full colonel—that is to say, both

are men who have attained a grade which automatically carries them outside the ranks of the Royal Army Medical Corps. The occupants of the other posts still belong to the Royal Army Medical Corps. The usual army rank of the Assistant Director, Army Medical Service, is that of lieutenant-colonel, while the Deputy Assistants are commonly majors of fourteen or fifteen years' service. Practically, like their seniors, they stand outside the Royal Army Medical Corps, but not for the same reason; on appointment to the War Office they are gazetted as supernumeraries and are absorbed into the ranks of the corps when their term of office is at an end.

Army in France.

Of the sets of initials in daily use in connexion with the medical affairs of the army in France there are about half a dozen, the principal of them being D.G., A.M.S. Oversea Forces; D.M.S.; A.D.M.S.; D.A.D.M.S.; C.O.; M.O.; E.M.O. The first of these represents an office which has come into existence since the war began, and of the rest several indicate titles which are either not to be found in the manuals at all or relate to offices not quite identical with those therein described. Furthermore, none of them is specific—that is to say, they all require an additional letter, or a word spelt full length, to indicate precisely the officers to whom they relate. This statement requires a little explanation, perhaps, and it is worth while to give it, since it well illustrates the adaptability and elasticity of the whole existing system of army medical administration.

D.M.S.

For a good many years past there has been held ready to start abroad at short notice, a body known as the Expeditionary Force, and the scheme for the administration of the medical affairs of this army placed them in the hands of an officer entitled Director of Medical Services (D.M.S.), who was to be provided with a staff of deputies and assistants under the title of Administrative Medical Officers (A.M.O.), and who was to play the part already filled in many wars by an officer known as the Principal Medical Officer (P.M.O.) of the Army in the Field. The Expeditionary Force, however, was a body of only 150,000 men, and soon after the present war began it became clear that Great Britain would eventually have to be represented on the Continent by an army many times that size; and it was, of course, foreseen that such an enlargement of the number of the fighting troops would necessitate a corresponding increase in the medical personnel. Furthermore, the medical advisers of the Secretary of State for War seem to have thought it well that the skeleton of the enlarged medical service should be established forthwith, and that in doing this the underlying principles should be to spread the direct control of affairs over a larger number of senior officers than had been thought necessary in any previous war, and at the same time to weld into the general arrangements the work that was being done by the British Red Cross Society and other voluntary organizations.

Consequently it was decided in the first place to duplicate the office of director-general, utilizing the services of one of the occupants of this office abroad, and to make arrangements for multiplying as many times as might prove necessary the office of director of medical services. It was also decided that the titular occupant of the existing office of director-general should himself undertake the immediate supervision of the working of the arrangements for the benefit of the army in the field, in the making of which he had played so large a part, and that a former director-general should be invited to look after affairs at home.

The putting into force of this plan in regard to the office of director-general also made possible another advantageous evolution. This was to allow the officer who, under the title of director of medical services, had previously had upon his shoulders the responsibility for the working of the medical arrangements in every part of the general field of operations abroad, to devote his attention solely to a task of daily increasing importance—namely, the control of the medical units working within the area technically known as the lines of communication. A further development was to create the post of director of medical services (army), this title being assigned to the officer who had previously looked after the medical units working in the area of actual fighting operations, as the deputy of the principal medical officer in the field, and to complete the building of the skeleton by making arrangements for the appointment of a separate director of medical services for each of the six armies which about this time it was announced it was intended to create. The consequence of all these changes from the point of view of an ordinary officer is that it has become necessary to distinguish between two officers holding the rank of director-general and several holding that of director of medical services.

A.D.M.S.

The title A.D.M.S., or Assistant Director of Medical Services, was introduced a year or two ago by a general order. It is borne by the officers mentioned in the text-books as Administrative Medical Officer, or A.M.O., and also by some other officers who do not seem to be specifically mentioned in any manual. With one or two exceptions, all the officers holding posts thus named are of the rank of full colonel. Each is responsible to the D.M.S. of the area in which he is serving, and is in charge of the supervision of the working of all the medical arrangements connected with the command to which he is attached. Such an officer is to be found at every base, and also on the staff of the General in Command of every infantry and cavalry division. The number of officers subject to his control naturally varies. In the case of an A.D.M.S. of a division it is all the officers belonging to the field ambulances of that division, the medical officers of the regiments and other fighting units forming it, and in some cases those of the connected casualty clearing stations. In the case of the A.D.M.S. of any base it is the officers forming the staff of all the hospitals located therein, as also those of any other medical unit which forms a definite part of the medical arrangements of the area concerned.

D.A.D.M.S.

The title Deputy Assistant Director of Medical Services (D.A.D.M.S.) is often borne by officers who are not quite in the position that their title might seem to suggest. They may act not as the deputies of those holding office as A.D.M.S., but may hold quasi-independent commands of certain special subdepartments of the general medical service. Instances in point are the ambulance train services, the sanitary work of different bases, and the ambulance convoy services. The title borne by them is of quite recent adoption, and its institution would seem to be due to a desire to complete the task of bringing the grade terminology of the whole army medical department into line with that of other non-combatant branches of the army.

Other Titles.

A somewhat similar idea may be assumed to have led to the introduction into the Royal Army Medical Corps two or three years ago of the first of the other three terms that remain to be considered. Unlike many of the non-combatant branches of the army, not only has the Royal Army Medical Corps a regimental as well as a departmental existence, but those of its officers who administer executive units such as hospitals are often in command of large bodies of men drawn from all sections of the army. It is natural, therefore, that the title C.O. or Commanding Officer, a term at one time used almost solely by the officers in permanent command of regiments, should have been made to take the place of terms such as P.M.O. and S.M.O. in speaking of the chief medical officer of any hospital or corresponding unit. These titles were relics of the days—not after all very far distant—when medical officers had none but professional authority in the hospitals in which they worked, and, among other disadvantages, suffered from the fact that they were quite unfamiliar to the soldier in his ordinary life, and thus failed to impress upon him the fact that though an invalid and relieved from duty, he was still under military discipline. However, the genesis of this change is merely of historical interest; what is of importance to remember is that the officers at the head of all executive units such as general and stationary hospitals, and casualty clearing stations, field ambulances, hospital ships, and ambulance trains, are now entitled C.O. or Commanding Officer. It is further to be noted that this is not the same term as O.C., or officer in command; both are official designations,

but the former applies to an officer in permanent command, the latter to any officer who is in temporary charge of a unit during his senior's absence.

As for the title "M.O." or "Medical Officer," this has always been to some extent merely a generic term, and is now much less frequently encountered than formerly. Officially, its employment as a distinctive or specific designation would appear to be confined to officers who do not fill administrative posts and are not in command of units. In time of peace about the only officers who, in the British army, come within this definition are those placed in charge of small bodies of men temporarily detached from the force to which they belong for some special duty. It is otherwise when the army is mobilized for active service in the field. On such occasions every battalion has a medical officer, who occupies for the time being the same position as did his regimental predecessor of thirty years ago. In territorial battalions one or more medical officers are part of the permanent personnel.

The last set of initials which will be mentioned, E.M.O., signify Embarkation Medical Officer. This title is borne by the officer charged with the duty of supervising the unloading of ambulance trains, and deciding to what hospitals the patients shall be sent, as also with the duty of looking after the unloading of ambulance wagons when they bring patients from the hospitals for embarkation on the hospital ships. He usually has as assistants several junior officers; but he and his staff are not officially regarded, I believe, as constituting an independent unit.

MASTIC VARNISH AS A DRESSING.

WHEN dealing with this matter on February 20th (p. 355) we were unable to find space for some notes on the history of the matter which Colonel C. Birt, A.M.S., forwarded from India a short time ago.

Dressings, as usually applied, often become displaced while the soldier is journeying from the battlefield to the base hospital, and sepsis ensues. If, therefore, we can anchor securely the aseptic covering of his wound, and at the same time raise his immunity against coccic invasions by means of Sir Almroth Wright's antisepsis vaccine we shall greatly enhance the chances of his rapid recovery and lessen the perils of prolonged deep-seated suppuration. In 1895 Heusner[1] used resin varnish for securing dressings. At the battles of Mukden in February and March, 1905, v. Oettingen[2] fixed the dressings in a thousand cases with mastic. He prepared a solution of 20 grams of mastic in 50 grams of chloroform and added 20 drops of linseed oil. Without any preliminary shaving or washing of the skin, he painted this varnish on the area around the wound and allowed it to dry for half a minute. The bacteria were thus fixed. The sterile dressing was opened, and the interior applied to the wound, the outer surface of the dressing only being touched, and the gauze was pressed firmly on the mastic layer upon the skin. The dressing consisted of four layers of square pieces of gauze or cotton twill, in the centre of which was a small pad containing absorbent cotton-wool. The outer gauze was folded over this pad, so that the four corners of the square met in the centre. His results were good.

It has been noted that the chloroform in v. Oettingen's solution sometimes causes blisters; benzene, therefore, has been substituted as a solvent. Mazel[3] reported favourably on the applications of mastic varnish in surgery, and stated that bandages fixed with mastic could take the place of strapping in extension of limbs, etc. Börner[4] ascertained that mastic solution inhibits bacterial growth on the skin, no matter how dirty and contaminated it might be; he prepared the field of operation by painting the skin with mastic varnish and applying a layer of sterile gauze or paper. Wagner[5] also had striking results with the varnish alone. The film remained on the skin for seven or eight days, and caused no congestion; it gave an ideal operation area. Hofmeister[6] employed the benzene solution of mastic in the treatment of about 4,000 accidental and operation wounds. Suppuration occurred in 2 per cent. only. He pointed out that no painful cleansing of accidental wounds is necessary, and that the immobility of the dressings is a great safeguard against sepsis. Thomschke[7] tested v. Oettingen's solution in a large number of accidental and surgical wounds and was convinced of its great practical value. A small quantity of the varnish, not enough to soak through the gauze, should be used. Spindler[8] observed primary union of all clean-cut and operation wounds which had been dressed with mastic varnish. Only 6 per cent. of 2,000 accidental wounds suppurated. Neugebeuer[9] painted burns with mastic varnish before applying cotton-wool. Voos[10] reported favourable results with the benzene solution of mastic in the treatment of wounds which were grossly contaminated with foreign matter, which he removed by dry swabbing only. Haist[11] painted the skin with tincture of iodine before applying mastic. Pucher[12] found that the iodine and mastic method was of great service in the treatment of gunshot injuries in the Balkan war, and Clairmont[13] testified to the same effect. The general opinion of the meeting of the officers of the Austrian Red Cross Society[14] who had taken part in the Balkan wars, was that the application of an aseptic dressing fixed by mastic varnish after painting the surrounding skin with a 5 per cent. alcoholic solution of iodine was the best treatment of injuries inflicted in battle.

Stierlin[15] and Vischer used the benzene mastic varnish at the hospitals in Belgrade and Uskub and at the dressing stations in the field during the Balkan war. The sterile gauze was covered by a 5 in. square of unsterilized cotton twill fixed with the mastic fluid. The wounds healed without complications. None of the dressings became displaced during the long and arduous journeys from the scene of action to the base.

Borchardt[16] used 40 grams of mastic dissolved in 60 grams of pure benzene, and added 20 drops of castor oil, in many thousands of cases with excellent results. A camel-hair pencil infected with staphylococci was not sterile until after one hour's stay in the solution. Streptococci were killed in thirty minutes, but twelve hours elapsed before *B. proteus* and *B. anthracis* were destroyed. The varnish must therefore be applied with a sterile pledget of wool or gauze, renewed for each case. Water was not used in washing wounds; sometimes he employed benzene instead. He did not apply the mastic fluid to the wounded surface, but to the surrounding skin only. He tried the addition of 3 to 6 per cent. iodine to the mastic solution, but did not recommend it.

Nordmann,[17] for instance, advocated a preparation containing 20 grams of mastic, 50 grams of benzene, 20 drops of linseed oil, 10 grams of resin, and 7 grams of Venice turpentine on the ground that solutions of mastic alone in alcohol, chloroform, or benzene gave a film which was not sufficiently adhesive. Twenty grams of mastic and 20 grams of resin dissolved in 60 c.cm. of alcohol produced a varnish which possessed the properties required.

Mastic varnish should be supplied in collapsible metal tubes for use in the field. As soon as darkness comes on after an action, when it becomes possible to collect the injured, the number of whom will tax the time, resources, and energies of the medical personnel to the utmost, the most speedy and effective method of treating wounds will be by removing gross impurities with forceps and dry swabs, painting the surrounding skin with 5 per cent. tincture of iodine, afterwards applying the mastic solution with a small swab, and laying the sterile gauze dressing over the area. An inoculation of antisepsis vaccine should be administered.

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GERMAN EXPERIENCES.

THE DANGERS OF TINCTURE OF IODINE AS A FIRST-AID DRESSING.

PROFESSOR W. HERZOG (*Muench. med. Woch.*, December 1st, 1914) regards the indiscriminate use of tincture of iodine in the field with grave suspicion. He recognizes that it is of great value as a disinfectant of the skin in an emergency, but his experience during the present war has convinced him that it may be exceedingly harmful. In a great number of cases the wounded were admitted to hospital suffering from severe dermatitis in the neighbourhood of the wound, vesicles and, in one case, superficial gangrene having been provoked. On one occasion an officer was admitted to hospital five hours after he had been wounded by a bullet. which had ploughed up the skin for a distance

of about 12 cm., parallel with, and to the left of, the sagittal suture. The margins of this wound, which had been treated with tincture of iodine, were swollen and inflamed, and the wound itself was discoloured, burnt, and torn. It was impossible to suture the wound in this condition, although, had this been feasible, the patient might have returned to the fighting line in a few days. As it was, although he was the only officer of his company left, he had to be invalided home.

Professor Herzog is against the use of a stronger solution than 5 per cent. The official strength of the German tincture of iodine is 10 per cent., but in practice it is often much stronger. It is often used in an open vessel, which allows evaporation of the alcohol, leaving the iodine in a dangerous strength. Again, when the solution is mopped up on a pad of wool before being applied to the skin, the alcohol is further evaporated or absorbed by the cotton-wool, while the iodine remains on the surface of the pad practically undiluted. It is most dangerous, according to Professor Herzog, to attempt to introduce tincture of iodine into a recent wound.

We may recall that the strong tincture of iodine of the *British Pharmacopoeia* 1914, which was "liquor iodi fortis" in the last edition, and "linimentum iodi" in that of 1885, is about 10 per cent. strength. In the *B.P.* 1914 the ordinary tincture is called weak tincture of iodine (tinctura iodi mitis). This is no doubt the preparation dispensed when tincture without an adjective is ordered. The weak tincture of iodine of the *B.P.* 1914 contains 2.5 per cent. of iodine in 100 fluid parts, which is between $2\frac{1}{2}$ and 3 per cent. by weight. Both the *B.P.* tinctures contain potassium iodide as well as iodine, whereas the tincture of the German pharmacopoeia is merely a 10 per cent. solution of iodine in alcohol without potassium iodide.

The Health of the Bavarian Army.

Professor Klaussner, in a series of letters to the *Muenchener medizinische Wochenschrift*, gives, under date December 1st and 8th, 1914, an account of the health of the 1st Bavarian Army Corps. The numerous casualties from sunstroke observed during the first weeks of the war were succeeded by a variety of epidemics when the cold weather set in. Among these was an epidemic of enteritis which sent fifty men to hospital every day, and attacked as many more to a slighter degree. Surgeons, nurses, and orderlies all suffered, but though in some cases the symptoms were those of dysentery and the bacillus of dysentery was occasionally found, no case ended fatally. Severe and chronic cases were passed on to the base hospital. The origin of this epidemic was not discovered. Typhoid fever was sporadic only; every case was isolated, and the attendants detailed to nurse them were all inoculated against typhoid fever. In three weeks there were 21 cases of tetanus in the hospital to which Professor Klaussner was attached. In all but three the wounds were due to artillery fire. The period of incubation varied from five to sixteen days, and no relation could be found between the brevity of the incubation period and the virulence of the disease, as observed by many other surgeons. Of late it had been the rule to give prophylactic injections of antitoxin in every case in which wounds were large and dirty. The dose used was 60 units, subcutaneously.

The Diagnosis of Typhoid Fever among the Inoculated.

Kellermann (*Muench. med. Woch.*, December 29th, 1914) has drawn attention to errors of diagnosis likely to occur when soldiers, previously inoculated, are invalided with slight fever and malaise. In the isolation department in a hospital in Kissingen several severe cases of typhoid fever were treated with many other cases in which, though the Widal reaction was very positive, the fever was slight and the symptoms vague and variable. In this class of case the typhoid bacillus could not be detected in the stools, the temperature rapidly became normal, and the general condition improved so quickly that the diagnosis of typhoid fever seemed unlikely. The author suspected that the slight fever and other symptoms in these cases had nothing to do with typhoid fever, and that the agglutination of the blood was simply the result of inoculation. Three soldiers, who were inoculated on November 9th, each with 0.5 c.cm. of vaccine, and on November 17th and 25th, each with 1 c.cm. of vaccine, were subsequently admitted to hospital with bullet wounds but no fever. None of them had ever been seriously ill or had contracted typhoid fever, but all gave a positive Widal reaction, even in a dilution of 1 in 200.

AN AUSTRIAN SURGEON'S EXPERIENCES.

An Austrian surgeon, P. Erlacher, attached to an infantry Landwehr regiment operating against the Russians, has given an account of his experiences in the *Muenchener medizinische Wochenschrift* for December 29th, 1914. His regiment seems to have been continuously retreating for a long time, and many of the wounded had, therefore, to be abandoned. The surgeons had to confine their efforts to elementary first-aid dressings, and for lack of time it was impossible to attend properly to severe fractures. Later, when the Austrians had dug themselves in south of Przemysl, casualties were less frequent, and the wounded received more individual attention. Owing to faulty organization the ablest orthopaedic surgeons were sent to the firing line, where only the most elementary surgery could be practised, while junior surgeons and their assistants were kept back at the base hospitals, where there was ample time and opportunity for highly skilled work. The nature of the wounds inflicted by rifle fire changed considerably for the worse towards the end of the year, when the range became shorter, and the Russians adopted a heavier bullet. Their original S-bullet was pointed, 28 mm. long, and weighed 10 grams. The later O-bullet has a blunter end, resembling the Austrian bullet in this respect. It is 30 mm. long, and weighs 14 grams. Serious outbreaks of dysentery and cholera caused severe losses, but the epidemics were checked when the consumption of unboiled cheese, butter and vegetables was prohibited, and only boiled water was used for drinking and washing. Inoculation against cholera was also adopted. As the winter advanced the soldiers suffered much from an oedema, practically confined to the lower limbs and unaccompanied by any signs of general disease. Sometimes the hands also were affected. The oedema caused neither pain nor itching, but it limited the movements of the limbs, and in this way was rapidly exhausting. It disappeared after several days of rest, and was not followed by any ill effects. As the overlying skin was perfectly normal, neither red nor shining, this condition was quite distinct from frost-bite, and was probably due to faulty circulation, caused by exposure of the most dependent parts to cold.

CASUALTIES IN THE MEDICAL SERVICES.

Royal Navy.

Killed.

On February 25th was announced the loss of H.M.S. *Clan Macnaughton*, Captain R. Jeffreys, an armed liner, which had disappeared with all hands in the North Sea on or about February 3rd, it is supposed owing to stress of weather. She carried two medical officers, Staff Surgeon W. G. Moore Anderson, R.N., and Surgeon-Probationer R. O'C. Redmond, R.N.V.R.

Staff Surgeon Walter Graham Moore Anderson was the son of Sir Robert Anderson. He was educated at Trinity College, Dublin, where he took the degrees of M.A., B.Ch., and B.A.O. in 1903. He entered the navy as surgeon in 1903, became staff surgeon on November 23rd, 1911, and joined his ship in December, 1914.

Surgeon Raymond O'C. Redmond must have qualified recently, as his name is not given either in the *Medical Directory* for 1915, nor in the *Navy List* for January, 1915.

Army.

Died.

Miss Emily Helena Cole, of Queen Alexandra's Imperial Military Nursing Service, died at Boulogne on February 21st. She was the daughter of the late C. G. Cole, of Cape Town, and entered the service as a staff nurse on January 15th, 1912.

Wounded.

Lieutenant Lewis Courtauld, R.A.M.C.(T.F.), who has been wounded, was educated at Cambridge and at Middlesex Hospital, and took the L.S.A. in 1903, the M.R.C.S. and L.R.C.P.Lond. in 1905, and also the M.A., M.B., B.C., and D.P.H. at Cambridge in 1905. He acted for some time as assistant in the Bacteriological Department at Middlesex Hospital, but soon gave up the medical profession, and was called to the Bar. He was elected on March 6th, 1913, member of the London County Council, as a Municipal Reformer, for North Lambeth. He joined the 2nd London (City of London) Field Ambulance as lieutenant on August 26th, 1914.

Lieutenant S. L. Linzell, R.A.M.C.

Lieutenant (temporary) E. H. Moore, R.A.M.C.

Colonial Medical Service.

The following are brief particulars with regard to the medical officers of the Colonial Medical Service whose deaths were announced last week:

Dr. Legge, Dr. Gerrard, and Dr. Whittle were killed in the rioting which followed the mutiny of the 5th Bengal Infantry at Singapore, reported on the morning of February 24th.

Dr. Angus Forsyth Legge was educated at Aberdeen University, where he took the M.B. and Ch.B. in 1912, and had only recently gone to Singapore.

Dr. Percy Netterville Gerrard was educated at Trinity College, Dublin, where he took the B.A., B.Ch., M.B., and B.A.O. in 1895, and the M.D. in 1898. After serving as surgeon and medical resident of the Royal City of Dublin Hospital, he joined the Colonial Medical Service in the Federated Malay States. There he had served successively as medical officer of Kuala Kangsar, in Perak, as health officer of Selangor, and as medical officer of Klang, Selangor. He also took the diplomas of the London School of Tropical Medicine and that of Cambridge in the same subject in 1904.

Dr. Edward Denis Whittle was the elder son of the late Dr. Whittle, of Brighton; he was educated at University College, London, and took the diplomas of M.R.C.S. and L.R.C.P. in 1906. After acting as house-surgeon and casualty medical officer at University College Hospital, and house-surgeon at the Whitehaven and West Cumberland Infirmary, he joined the Colonial Medical Service in the Straits Settlements. He was surgeon of the Singapore Hospital.

NOTES.

HONOUR FOR A PROBATIONARY SURGEON, R.N.

VICE-ADMIRAL SIR DAVID BEATTY, in his dispatch on the action in the North Sea on January 24th, mentions the name of Surgeon Probationer James A. Stirling, R.N.V.R., serving with the *Meteor*. The King has awarded the Distinguished Service Cross to Mr. Stirling.

MAINTENANCE OF WOUNDED IN VOLUNTARY HOSPITALS.

It was mentioned six weeks ago that the Council of the British Hospitals Association proposed to enter into communication with the War Office with regard to the cost of the maintenance of wounded soldiers received into voluntary hospitals. The reply that has been received is, we are informed, to the following effect:

That the general principle adopted as to payment for hospital accommodation for wounded soldiers is that the hospital concerned should take up the question with the general officers of the command or district in which the hospital is situated with a view to fixing a reasonable rate of payment, having regard to the circumstances of each case. It will be obvious that considerable variation in the rates paid is inevitable in the circumstances, but the Army Council are of opinion that the system adopted is that best suited to meet the needs of the situation, and has, so far as they know, worked satisfactorily hitherto.

In these circumstances the Council of the British Hospitals Association recommend voluntary hospitals which have not already made arrangement for payment, but desire payment to be made for these patients, to apply to the local military authorities as suggested by the War Office.

MEDICAL OFFICERS WANTED.

1st North Middlesex Field Ambulance.

Officers are urgently required for the First and Second Reserve units of the 1st North Midland Field Ambulance for foreign or home service. Apply to Major H. G. W. Dawson, Officer Commanding 2/1st North Midland Field Ambulance, Luton, or Officer Commanding Dépôt 1st North Midland Field Ambulance, Derby.

2nd Line Welsh Border Mounted Brigade Field Ambulance.

There are vacancies for two medical officers in the 2nd Line Welsh Border Mounted Brigade Field Ambulance. Pay and allowances as in the Regular Army, also grant for outfit and camp kit. Further particulars on application to Major D. C. Leyland Orton, Officer Commanding 2nd Line Welsh Border Mounted Brigade Field Ambulance, Thomas Street, Chester.

1st and 2nd Welsh Border Mounted Brigade Field Ambulances.

There are several vacancies for suitable qualified medical officers in the above units. Applications should be addressed to the Officer Commanding W.B.M.B., 2nd Ambulance, 30, Station Road, Beccles, East Suffolk.

England and Wales.

YORKSHIRE MOTOR AMBULANCES.

IT was stated in the BRITISH MEDICAL JOURNAL of October 31st, 1914 (p. 772), that an appeal had been made to the medical profession of Yorkshire to contribute £1,000, primarily for the supply of motor ambulances where they might be needed at the front, but also for other Red Cross and ambulance work in aid of the wounded. A meeting of subscribers was held at York on February 25th, when Mr. W. H. Jalland, F.R.C.S., was in the chair. In the report presented by the joint treasurers (Dr. William Eardley, of Goole, and Dr. H. J. Campbell, of Bradford) it was stated that the suggestion to provide a motor ambulance was first made by Dr. H. P. Wiltshire of Hemsworth. It was decided not to limit the fund to the West Riding or to doctors on the panel, and Dr. William Eardley, as Secretary of the Local Medical and Panel Committee, and of the Wakefield Division of the British Medical Association, addressed to the medical profession of the whole county of Yorkshire an appeal, signed by Dr. Adolf Bronner, President of the Yorkshire Branch of the British Medical Association; Dr. George J. B. Candler-Hope, Chairman of the Local Medical and Panel Committee of the North Riding of Yorkshire; Dr. Henry D. Johns, Chairman of the Local Medical and Panel Committee of the East Riding; Dr. Robert May, Chairman of the Local Medical and Panel Committee of the West Riding; Mr. Walter Thompson, Surgeon to the Leeds General Infirmary; Dr. H. P. Wiltshire, M.O.H. Hemsworth; and Dr. Eardley. The doctors of Yorkshire, numbering over 2,200, were invited to subscribe the amount required, the resulting fund to be devoted to the Joint War Committee of the British Red Cross Society and the St. John Ambulance Association. Later, it was decided to combine with the Yorkshire Branch, which was proposing to raise a similar fund; the two schemes were amalgamated, and it was arranged that Dr. Campbell, Honorary Secretary of the Yorkshire Branch, and Dr. Eardley, should act as joint secretaries to the fund. The total amount received has been £783 4s. 6d.; of this amount, £247 1s. 6d. was sent to Dr. Campbell and £536 3s. to Dr. Eardley. To the total is to be added bank interest to date. The expenses were £33 14s. It was decided to close the fund, and to hand the amount collected to the Joint War Committee of the British Red Cross Society and the St. John Ambulance Association. We congratulate Dr. Campbell and Dr. Eardley on the result of their labours on behalf of the men who are so valiantly fighting for their country.

LONDON COUNTY COUNCIL.

Medical Treatment of School Children.

The Education Committee of the London County Council has approved the renewal, for the year beginning April 1st, 1915, of the arrangements made with the governing bodies of various hospitals and the committees of local treatment centres and nursing associations for the medical and dental

treatment of elementary school children, subject to variations in points of detail in some of the agreements. Last year provision was made for the treatment of 106,676 cases at 46 centres; this year 125,486 cases are to be treated at 53 centres. The Children's Care Subcommittee reported that during the past year the attendance of children at the various centres had been good. From time to time additional sessions had been authorized to overcome temporary congestion. This plan had been found preferable to increasing the permanent provision for treatment, and it would be followed in the future. No considerable alteration was proposed in the provision for the treatment of eye, ear, nose and throat ailments, and ringworm, but 6 additional dental centres were proposed, making the number 35, giving accommodation for treatment at the rate of 63,140 cases a year, as compared with a rate of 48,180 a year in the last twelve months. The total cost of the proposals was estimated at £37,500, apart from administrative charges.

Lunacy Returns.

A summary of the annual returns of lunacy presented to the London County Council on March 2nd showed that the number of persons for whom the Council is responsible to find accommodation had increased by 368, 40 per cent. in excess of the increase shown on January 1st, 1914 (262), but considerably less than the average annual increase (458) for the last twenty-five years. The increase in the total number of lunatics in the county was also greater than last year, being 379 against 308, but here again this year's figure was considerably below the average (514). A satisfactory feature of the returns was the further reduction in the number of criminal cases in the county asylums. The Council had made representations to the Home Office as to the undesirability of this class of patient being sent to county asylums, and recently further accommodation for criminal lunatics had been provided by the State. The total number of patients (pauper, criminal and private) in the asylums during the year was 20,589, and the number boarded out was 1,108. The number of patients privately maintained had been reduced, apparently owing to the high cost of living and losses caused by the war.

A Clearing Hospital for War Refugees in London.

The Metropolitan Asylums Board, at the request of the Local Government Board, has established in some buildings in Sheffield Street, near Kingsway, W.C., formerly used for Poor Law purposes, a dispensary and small clearing hospital for war refugees residing in or near London. The building was already fitted up for institutional purposes with kitchen, laundry, disinfector, food-lift, and ample lavatory accommodation; all that it required was a thorough cleansing, repainting, and some minor adaptations. The dispensary, consulting and waiting rooms, and registration office are on the first floor. Above are rooms suitable for small wards; these have been fitted up to provide 21 beds, with possibilities of extension to 24, and, in addition, six cubicles are available for observation or isolation wards. A large apartment, subdivided by screens, provides sitting-room and mess-room accommodation for the nursing staff. On an upper floor still further accommodation, suitable for hospital wards, is available if required. The hospital is intended to be used as a clearing house for receiving cases and passing them on to appropriate institutions. Patients it is desirable to keep under observation for a time, or for whom no suitable accommodation can be found elsewhere, will be retained. For the treatment of diseases of the eye and skin the services of the specialists attached to the Metropolitan Asylums Board are at the disposal of the medical officer in charge. Although the institution has been open for less than a month, and steps to make it generally known amongst refugees have only just been taken, a considerable number of cases have already been dealt with, and a few are retained at the time of writing. The medical officer in charge is Dr. D. F. Riddell, who has the assistance of Dr. G. De Laey, a Belgian medical practitioner.

Metropolitan Public Gardens Association.

The thirty-second annual report of the Metropolitan Public Gardens Association, for the year 1914, has just been issued. The association, formed in 1882, endeavours to maintain or provide resting places for the old and playgrounds for the young in the midst of poor and densely populated localities. Among its most evident good deeds commemorated in this report is the rescue of the once pretty gardens in St. Peter's Square, Hammersmith, from destruction. Those of us who for years have gone on foot to view the University Boat Race have had occasion, when passing from Hammersmith Road to Chiswick Mall, to lament the existence of an untidy wilderness, now to be restored to its pristine glory. On the other hand, amidst the failures to secure space and preserve vegetation, so candidly admitted in the report, old students of King's College Hospital will regret the fall of the two fine plane trees under which Lister, Fergusson, John Wood, and so many other celebrities have passed. No longer can the trees be seen from Portugal Street or from the College of Surgeons, which overlooks that thoroughfare, for the efforts made by the association to save them proved of no avail. The planting of trees in Tottenham Marshes and the pruning of trees in the streets of Deptford—work of a kind already supervised for some years by the association in Kensington—and the carrying out of similar undertakings in other parts of London, are among the works to its credit in 1914. The receipts have amounted to £1,849 0s. 9d., against £2,058 17s. 1d. in 1913—a decrease due more or less directly to the war. The expenditure has been £1,759 6s. 8d., against £2,917 0s. 9d. in 1913. The Chairman, the Earl of Meath, and the Vice-Chairman, Sir E. R. Fremantle, trust that members will do their utmost to continue their assistance to the association at this critical juncture. The secretary is Mr. Basil Holmes, 83, Lancaster Gate, W.

Scotland.

The Carnegie Trust for the Universities of Scotland.

The thirteenth annual report of the Executive Committee of the Carnegie Trust for the Universities of Scotland, which was considered at the meeting of the trustees in London on February 24th, does not contain, so far as its special medical details are concerned, any novel announcements or new departures. Reference is made to the effect of the war upon the research work of the Trust. Dr. James J. Dobie, who reported on the physical and chemical work of beneficiaries under the research scheme, mentioned the fact that the difficulty of obtaining chemicals formerly supplied by German firms was interfering seriously with the progress of research, and it might be necessary on this account to allow some modification of the programmes approved for the present year; but on the other hand there was likely to be a great increase in the prosecution of certain new industries in this country, and this would provide a stimulus to research. Professor James Ritchie, who dealt with the biological and medical sciences under the research scheme, gave it as his opinion that the Committee had every reason to be satisfied with the year's work as a whole, though the absence of many of the beneficiaries on active service had limited the amount of new work done and had also thrown an increased burden on the workers left at home. The range of subjects investigated in the laboratory of the Royal College of Physicians in Edinburgh had been wide, but special attention had been paid to tuberculosis, including the serum reactions in natural and experimental infections, the strains of bacilli occurring in children dying from various tuberculous affections, the prevalence of tuberculous milk in Edinburgh, and the biology of the tubercle bacillus. Nine of the workers and one laboratory attendant were on active service in connexion with the war.

Medical Charities in Edinburgh and Leith.

At this time of the year a great many of the medical charities in Edinburgh have their annual meetings. Last week, on February 25th, the report of the Edinburgh Dispensary for Skin Diseases, an institution with whose foundation the late Dr. Stewart Stirling had much to do, was presented. Mr. James B. Sutherland, the chairman of the institution, presided, and it was shown that during

1914 the number of patients who had been treated in the Dispensary at 35, Lauriston Place, was 738; the total number of attendances was 3,022, giving an average daily attendance of nearly 20 patients, the dispensary being open thrice a week. More than sixty different types of skin disease had been dealt with. On February 24th the annual meeting of the New Town Dispensary, familiar to so many old Edinburgh graduates as the N.T.D., was held, when Mr. George Brown, chairman of the board of managers, presided. During the past year the total number of cases treated in connexion with the dispensary had been 4,294 (3,350 at the dispensary and 944 at home). These figures, whilst they were much smaller than before the introduction of the Insurance Act, nevertheless marked an increase of 110 upon the previous year. Dr. James Ritchie, on February 26th, presided over the annual meeting of the Edinburgh Jewish Medical Mission, held in the Café, Princes Street. The report stated that approximately 2,000 Hebrews had passed through the mission during the past year and that 706 of these had been medically attended. The annual meeting of the Edinburgh Hospital and Dispensary for Women and Children and the Hospice was also held on February 26th, when it was reported that the hospital had been founded thirty-five years ago, that all the 44 beds had been in use during the past twelve months, and that 455 patients had been admitted. At the Hospice 246 maternity cases had been attended, as compared with 202 in 1913.

The annual meeting of subscribers to Leith Hospital was held on February 26th, when the report for 1914 was submitted. It showed that the number of cases treated in the wards and at the out-patient department had been 12,066; of these, 1,469 were in the wards, an increase of 21 as compared with the previous year. The number of operations performed was 622, or 44 fewer than in 1913. The deaths numbered 120, giving a case mortality of 8.16, as compared with 8.01 in the previous year, and with 9.4 in 1912. The average stay in hospital was 22.07 days. Mr. Edmund Berry, who presided over the meeting, pointed out that the ordinary income (that from annual contributions) was not much more than half the ordinary expenditure, and that there had been a great falling off in the extraordinary income during the past few years.

Ireland.

THE DUBLIN CASTLE RED CROSS HOSPITAL.

THE students of the Schools of Surgery of the Royal College of Surgeons in Ireland who are not among the large number, past and present, serving with the navy or army, are anxious to help by equipping a ward in the Dublin Castle Red Cross Hospital, to be called the Royal College of Surgeons Ward. A committee has been formed, and will be glad to receive and acknowledge subscriptions from old students and their friends. Cheques should be made payable to the Honorary Treasurers R.C.S.I. Hospital Fund, and addressed to the Honorary Treasurers, Hospital Fund, Royal College of Surgeons, Stephen's Green, Dublin.

Correspondence.

THE PHTHISICAL SOLDIER AT THE FRONT.

SIR,—Sir Thomas Oliver's contribution in your issue of February 27th, "The Phthisical Soldier at the Front," calls back to my mind some experiences on this subject from the wars of 1866 and 1870. In my connexion with the German Embassy at that time, I had the opportunity of examining the majority of men who left England for these wars.

In the war of 1866 between Prussia and Austria, three men who were in the first or second stages of pulmonary tuberculosis returned to England after the war in an improved state of health, as well local as general.

The number of men with pulmonary tuberculosis who left for the Franco-German war of 1870 was greater. I have a distinct recollection of eight. Six of them, in the first or second stage, were in fair general health. Of these six, one remained in good health from July till December. 1870, when he fell in action; five were in almost uninterrupted good condition during the whole campaign, in spite of occasional great exposure and hardship, and returned to England in improved health. The other two of the eight cases were not in a satisfactory state of health; they were weak, excitable, dyspeptic and ill-nourished, and went to the war against my advice. One of the two died during the campaign from dysentery, the other from what was called "catarrhal pneumonia."

I was much interested in the question whether the presence of pulmonary tuberculosis in an otherwise fairly healthy man should be a bar to military service, and I was myself in favour of the service if the person himself wished to serve. I had come to this view from my experience of the curative influence of continued work in the open air, even under indifferent circumstances. There were especially two cases which had greatly impressed themselves on me. The one was a young man who worked in a bakehouse and came every two or three months to the German Hospital with bronchitis, and became worse in the local pulmonary signs. I advised him, as a last resource, to leave the bakehouse and wheel the bread car through the streets in all weathers; his health improved rapidly, and he gradually entirely recovered. The other man was a clockmaker from the Black Forest who was employed in the workshop, and frequently came for weeks to the German Hospital with bronchial attacks, and had deposits in both apices. At last I told him to leave the workshop and to carry about the clocks for sale from house to house. This occupation led to perfect recovery.

In this, as in other morbid states, it is not prudent to lay down fixed rules for all cases, but to take into consideration in each case all the conditions and circumstances, general as well as local.—I am, etc.,

Bournemouth, Feb. 28th. HERMANN WEBER.

PEDICULOSIS CORPORIS: PETROLEUM AS AN HABITUAL LAXATIVE.

A Warning.

SIR,—I was much interested in Dr. Shipley's article on flowers of sulphur and lice, in the BRITISH MEDICAL JOURNAL of February 27th, because in Gibson's *Textbook of Medicine*, vol. ii, p. 493, 1901, I wrote: "The treatment for *Pediculi vestimentorum* consists in thorough change of clothes, washing with carbolic soap, and wearing next the skin—day and night—a bag containing fragments of sulphur, which, at the temperature of the body, undergo slow oxidation, and prevent the insects again obtaining a lodgement." All these measures may not be at the disposal of soldiers at the front, but wearing bits of sulphur in a muslin bag is easily carried out, and acts efficiently as a preventive as well as a curative.

Purified petroleum, or refined liquid paraffin, has come to be a popular remedy for constipation, and is extensively prescribed and taken. Its action as a laxative is not merely that of a lubricant oil, though it passes unchanged through the bowels. Were it so, then cod-liver oil would act as an aperient, while, on the contrary, it but seldom increases the diarrhoea in phthisis. Petroleum, therefore, must operate as castor oil and croton oil do, by irritating the lining of the intestines, causing an augmented flow of mucus, and at the same time increasing peristalsis. We know that workers in paraffin are liable to a special form of cancer of the skin. I would therefore warn against the persistent or habitual use of petroleum as a laxative, especially if, as Sir William Whitla states in the tenth edition of his *Pharmacy*, published this year, doses as large as 2 oz. are taken. Time enough has not elapsed to decide this question of danger, but I would sound a note of warning.—I am, etc.,

Edinburgh, Feb. 27th. W. ALLAN JAMIESON.

ANTITYPHOID INOCULATION.

A Further Plea for Enteric Inoculation with Mixed Vaccines.

SIR,—In your issue of February 6th (page 264) a table is given showing the incidence and mortality from typhoid fever in the Expeditionary Force since the commencement of operations. It would be interesting to know whether in the official returns the term "typhoid" covers also paratyphoid A and paratyphoid B. If so, some of the so-called typhoid cases which have occurred in inoculated persons

may have been in reality cases of paratyphoid A or B; nor should it be forgotten that cases of mixed infection—typhoid and paratyphoid—do occur. It cannot be expected, of course, that typhoid inoculation will protect also against paratyphoid A and paratyphoid B. I would take this opportunity again to make a plea for the use of a mixed typhoid + paratyphoid A + paratyphoid B vaccine, instead of the simple typhoid vaccine. This mixed vaccine has been used by me in Ceylon since 1905 with good results; it is harmless, it does not give a more severe reaction than the simple typhoid vaccine, and the blood of the inoculated persons develop protective substances for the three germs in practically the same amount as in control individuals inoculated with simple "one disease" vaccines. The particulars concerning the technique of preparation of the mixed vaccine may be found in previous communications of mine, some of which appeared in the BRITISH MEDICAL JOURNAL, December, 1913, and November 7th, 1914 (page 814).—I am, etc.,

Naples, Feb. 20th. ALDO CASTELLANI.

SANITATION IN INDIA.

SIR,—In a resolution dated May 23rd, 1912, the Government of India laid down that certain additional appointments of deputy sanitary commissioners and first class health officers were to be created. It was required (1) that candidates should possess registrable medical qualifications and British diplomas in public health, (2) that no officer is appointed who is not an accepted candidate for the Sanitary Department. Indians were held eligible. In regard to first class health officers, it was stated: "The necessity for a British diploma will, however, be only temporary, as the Government of India trust that it may be possible to remove the second restriction so soon as arrangements can be made in India, which will enable Indians to be trained in this country (India) to become health officers of the first class." No similar relaxation is provided for in respect to deputy sanitary commissioners. Although much water has flowed beneath the Sara Bridge since May, 1912, the "arrangements" for supersession of British diplomas are not yet in working order. Consequently, several intending Indian candidates have undergone the labour and expense of obtaining in Great Britain the necessary qualifications.

An intelligent Indian who had studied for the D.P.H. at King's College recently presented himself before a Sanitary Commissioner in India as a candidate for the Sanitary Department. In reference to his qualifications, he was informed by this official that he has "no faith in the D.P.H. diploma—that it is all cramming," and that if he desired to enter the Sanitary Department he must be prepared to work his way up "from the very bottom rung of the ladder." In describing the hopelessness of his position to Professor Hewlett, this candidate adds, as to the prospects of his late co-students at King's College, "Not one of our set has succeeded in obtaining any suitable job."

We have no wish to suggest that because a man has gone to the expense and trouble of securing special qualifications he must necessarily receive an appointment, or that, for reasons unknown to us, a particular man may not be an undesirable candidate, but it does seem to us uncalled for that the rejected and dejected individual should be informed that the British diploma he has gained, at infinite pains, is of no practical value! This verdict is as paradoxical as it is, in this instance, unjust; as, whilst first class officers are invited to look forward, in the resolution of the Government of India, to being provided with local qualifications in Public Health *when* arrangements are complete, officers of superior status in the Sanitary Department (Deputy Sanitary Commissioners) are not to be so exempt—which seems an extraordinary requirement if the British diploma be of so little value.

The effect of a statement of this description from an official responsible for making nomination for sanitary appointments upon Indian minds, cannot be otherwise than to cause the abandonment of seeking sanitary teaching in this country. In our opinion, this cannot be to the advantage of "sanitation in India." Whilst applied hygiene in the tropics has much of the nature of a speciality, it can but treat of modifications of those principles of hygiene of universal application with which education for Public Health diplomas concerns itself. Thus, though doubtless India has numerous suitable officers to teach hygiene for many years to come, in the presence of incomplete sanitary organization and but few sanitary works, "cramming" as to applied hygiene of which British educational methods is held to be guilty, must become literally the method pursued in that country; for the simple reason that, under existing conditions, whilst it is always possible to demonstrate to a class how matters should not be, it is rarely possible to show, by practical illustration, how they should be. As Indian candidates have from infancy had intimate knowledge of Indian conditions, they can, when in Europe, safely dispense with illustrations of the former in favour of practical illustrations of the latter. It is, therefore, in our opinion, distinctly desirable that the Indian candidate for important sanitary appointments should regard training in Great Britain as the foundation of his career. That in India thereafter he might be subjected with advantage to post-graduate lectures on certain subjects is self-evident.

So far as results are concerned, it would appear that the Government of India, having issued its resolution of nearly three years back, has rested content. Granted that this inaction is due to the fact that interference with local governments was not desired, these might at least have been invited to draw up rules for general information, within their own areas, as to how and when the selection of candidates would be made. In the absence of such specific statement in each province, Indians have been induced to risk time and money by proceeding to this country, and are liable to be told on their return that the "scrap of paper" they bear back with them is worthless. This is the case also with candidates for second-class health officerships, whose "main qualifications" were defined, in the resolution quoted above, "as a good general education supplemented by a course of training in public health approved by the local government." In the light of this resolution, several Indians came to this country for training without guidance as to subjects requisite or the class of institution they should apply to, and now we find that certain local governments desire that second-class health officers shall, in the first place, acquire a medical education. Obviously it has not sufficed for the Government of India to have passed a resolution three years ago; the progress of the policy then pronounced demanded subsequent careful fostering or modification.—We are, etc.,

R. TANNER HEWLETT, M.D., D.P.H.,
Professor of Bacteriology in the University of London.
W. G. KING, M.B., C.M., D.P.H.,
Lecturer, Applied Hygiene in the Tropics, King's College, University of London.
W. J. SIMPSON, M.D., D.P.H.,
Professor of Hygiene in the University of London.

February 25th.

ALCOHOL AND DELIRIUM TREMENS.

SIR,—I tender my sincere thanks to Sir H. Bryan Donkin for his explicit, ample, and generous letter of explanation in your issue of February 27th. At the same time, I must ask your permission to reply to several points in his argument.

Sir Bryan would seem to regard natural and acquired tolerance as much the same thing. There can be little doubt they are entirely different. Natural tolerance is a mere personal idiosyncrasy; it is a physiological condition, and has no clinical significance in this connexion. Indeed, its introduction into the argument only tends to confuse issues. Acquired tolerance, on the contrary, is altogether pathological, and its clinical significance is so great that it can safely be regarded as the key to the whole problem of the causation of delirium tremens. One who has acquired high tolerance can, without showing any sign of intoxication, ingest and absorb quantities of alcohol which very greatly exceed his original capacity—26 to 40 fluid ounces of whisky or other spirit in the twenty-four hours are by no means rare. But this acquired capacity involves a more or less commensurate incapacity—namely, the incapacity to maintain an ordinary level of health and power to conduct business, in the absence of alcohol. Herein acquired tolerance contrasts sharply with natural tolerance, which involves no such incapacity. Those who have acquired tolerance are obviously "normal" (their normal) only when a consider-

able amount of alcohol is circulating in their brain and nervous system; they are entirely dependent on this artificial condition, which constantly tends to pass off and constantly demands renewal; and any circumstance interfering therewith is liable to precipitate a "nervous breakdown." These are not assumptions of mine—neither the acquired capacity nor the acquired incapacity—they are clinical facts, fully realized by nearly all who suffer from high tolerance and easily verifiable by any medical man who has the opportunity of seeing such cases. Of course, the physician seeking such verification will not be assisted in his quest if he starts with what seems a rather common preconviction—namely, that no alcoholist ever speaks the truth. But here I can reassure him: alcoholists do quite frequently speak the exact truth.

Now whether the above-mentioned "nervous breakdown" stops short at minor symptoms such as nervousness, restlessness, and more or less insomnia, or whether it proceeds through the stage of slight and fleeting hallucinations, to the climax of frank delirium tremens, will depend upon various circumstances, for example, the degree of tolerance (and consequent intolerance) established, the amount of the fall in circulating alcohol, the suddenness and duration of the fall, and (perhaps above all) on the personality of the individual. It is customary to speak of this last factor as the resisting power or resistance of the patient; but that can hardly be said to be a new assumption on my part. It seems little more than a restatement of an admitted fact. And certainly, the fact that all those who suffer from high tolerance do not fall into delirium tremens when alcohol is suddenly withheld, is no argument against the view that delirium tremens when it does arise is invariably preceded by a sudden and considerable fall in the amount of circulating alcohol.

A quite pertinent analogy occurs to me. A number of men invalided from the front have completely lost all their nerve; some have become frankly insane (in all probability temporarily). Now, it would hardly occur to any one to question the responsibility in these cases of the noise and strain of active service, because the vast majority of our men at the front retain undamaged nervous systems; and I think most of us would be satisfied to explain this immunity of the majority by referring to their natural power of resistance.

As I read Sir Bryan Donkin's letter, he is of opinion that my line of reasoning is illegitimate. I have hitherto failed to appreciate his objections. May I as briefly indicate the line of argument which, in my own case, has led to firm conviction?

As data, I have clear histories of 83 typical attacks of delirium tremens. In all these 83 cases the patients were chronic alcoholists—that is to say, they consumed large amounts of spirits every day without any break. Many never became intoxicated; those who did became only slightly intoxicated, except on quite rare occasions. All had progressively increased the daily amount of spirit taken. In short, all had drunk in the manner most likely to establish high tolerance.

In 82 of the 83 cases there could be safely inferred a sudden and considerable fall in circulating alcohol. In 23 there had been sudden and complete withdrawal of alcohol, usually by the medical man in attendance. In 36 there had been so large a reduction that it amounted to nearly the same thing. Whereas the patient had been taking 25 to 40 fluid ounces, he was suddenly reduced to 6 or 8 ounces, very rarely as much as 10 or 12. In the remaining 23 there had been no deliberate stoppage, but there had been violent and uncontrollable vomiting, practically everything taken, even spirits, returning immediately. I maintain that in these 23 cases there is little risk in inferring a sudden and considerable fall in circulating alcohol. In all the 82 cases following the sudden fall in circulating alcohol, there was a definite incubation period which, with one exception, lasted two or three, or three or four days; and this was true, no matter how the fall occurred, whether from withdrawal, retrenchment, or persistent vomiting.

I fail to see how we can avoid the inference that delirium tremens depends primarily upon high tolerance of alcohol (acquired), and secondarily, upon a sudden fall in the amount of circulating alcohol.

The treatment deducible from this conclusion is, of course, careful tapering in all cases of high tolerance; and this practice is successful in almost completely banishing the complication.

In answer to Dr. C. A. McBride, I quite agree that it is by no means easy always to distinguish atropine delirium from delirium tremens. But the difficulty does not affect the figures quoted; two cases of slight delirium, which might have been due to atropine, and which occurred at the end of 1905, have been excluded.

Dr. William C. Burns's case can, in my view, only be interpreted as he interprets it—namely, as an avoidable death caused by the sudden withdrawal of alcohol in a patient who had established high tolerance. I may add that it by no means stands alone.—I am, etc.,

Beckenham, Feb. 28th. FRANCIS HARE.

THE RUM RATION.

SIR,—Dr. Thomas Dutton, in the JOURNAL of February 20th, says that he is certain that "the voice of the profession is in favour of this extra rum ration as being beneficial." Although I am not one of the small army of teetotalers to whom he refers, I very much doubt whether he is correct in his assumption.

I know that we doctors hold different views as to the action of alcohol on the central nervous system, on the heart muscle, and on its value as a food, but I certainly thought we were unanimously of the opinion that alcohol in small quantities caused a fall of body temperature, due to loss of heat from dilatation of the skin vessels. I have always understood that in our Polar expeditions our explorers when exposed to very great cold carefully avoided alcohol while the exposure lasted. As a mountaineer of many years' experience, I have always been taught, and have taught others, that if overtaken by bad weather and compelled to sleep out, one should avoid alcohol absolutely, except under certain conditions of extreme urgency. It would not be difficult to quote instances which have come under one's own immediate knowledge to prove the value of this advice. The rum is served to the men while they are actually in the trenches. So far as I can gather from questioning the men, it is given out between 9 and 10 p.m. at night, or in the early morning between 3 and 4 o'clock; but the important point is: the men have to stay in the trenches for many hours after they have taken their rum. I have the slightest doubt that in many cases it makes them feel more comfortable for the time being, but does it enable the men to better withstand the injurious effects of the cold and exposure while they are in the trenches? This is the question of vital importance, and no other. I think not, and have already stated my reasons for the opinion I hold.

When one comes to talk the matter over with the soldiers, one finds there is really no such thing as a rum ration. A ration implies a fixed quantity, but this is precisely what the soldier does not get. One soldier told me that in his trench a bottle of rum was passed down the line; the first men in the line got a good deal more than their 2½ oz., the last men a good deal less. Over and over again I was told by young soldiers that they did not care for rum, and passed their share on to their comrades, who often received double and treble their proper share. In the JOURNAL for February 27th Dr. Oldfield tells us that a dose of rum tends to set up skin action, and therefore, under suitable conditions, may rightly be recommended by the army medical authorities. This argument would be more convincing if he had defined his suitable conditions. Would he wish to stimulate skin action in the case of a man who had to expose himself to the weather—and often very bad weather, too—for many hours after the skin action had passed off? Major P. S. Lelean, in a lecture on military hygiene in the same JOURNAL, is far more cautious. He says that if a man went to bed immediately after his ration it is difficult to see that the alcohol could do him any harm. I myself can conceive that in some cases, when the soldier has returned from the trenches and is under proper cover and kept warm, a ration of rum might help to induce sleep, and so do good.

If rum does not really help the soldier to resist and sustain the injurious effects of cold and exposure, there are many strong reasons for urging the authorities to discontinue the practice. Perhaps one of the strongest is this: At the present time we find placarded up in many parts of the country extracts from the speeches of our great generals, urging our soldiers to avoid alcohol in their endeavours to make themselves thoroughly efficient; and yet if they take to heart this advice, the first thing they

learn when they find themselves in the firing line is that alcohol is daily offered them. What are they to believe? —I am, etc.,

Oxford, March 2nd. W. COLLIER.

SIR,—I hold no brief for alcohol, and I have no desire to be drawn into a discussion on the ethics of its administration, but it appears to me that there is some misconception of fact in regard to the issue of the rum ration to the troops.

I have spent six months as an officer in the R.A.M.C. in France, and have gained a good deal of first-hand experience in various parts of the country.

First, in answer to Dr. Mercier's suggestive question, rum is not a food ration, and was never intended to be; the English army is supplied at the present time as it has never been supplied before, and it is true to say that it is now the best fed army in the world. Bacon is issued for breakfast, and there is ample meat for two full meals a day; the bread is good, and the jam is varied and often excellent in quality. There is plenty of tea, sugar, and cheese in the ration, sufficient potatoes, and occasionally vegetables, while in the cold weather 2 oz. of butter is issued a week. In short, more food is given out than is eaten, and certainly no more is needed.

In the second place, rum is an extra ration, and it is by no means given so frequently as suggested. I personally have only had it issued to me on two occasions. It is only given out in cold weather, and is almost exclusively given to the troops actually in the trenches. This answers the point raised by Dr. Astley Cooper, in which he suggests that the rum ration only becomes harmful when added to the amount consumed outside. It is safe to say that the rum ration is in no circumstances issued to men who have had opportunities of getting alcohol in the towns.

Hot coffee is suggested as a substitute for rum in the trenches. Delightful in theory, but hardly practical! Where no fires at all are allowed; where everything is water-logged; where fighting takes place at intervals all night, and no one can approach, how is hot coffee to be obtained? There is plenty of tea in the rations, but no fuel and no fire to boil it with. Who wants iced coffee or cold tea under such conditions? Along the lines of communication and at the base coffee is to be had for the asking almost anywhere, but here no rum is issued or required. In the firing line there is no substitute for alcohol. It may be given or withheld, but there is nothing else.

Dr. Simpson is evidently under the impression, as a result of casual conversations with soldier friends, that rations are issued in a haphazard sort of way, but this is by no means so. The officer in command of each unit is required to make a daily return of his total numbers, and the exact number of rations are issued. Only in exceptional circumstances are more than a day's rations at a time given out.

There are three courses open to a man for the disposal of his alcohol ration. He will either (*a*) drink it, or (*b*) sell it, or (*c*) store it. A teetotaler will generally sell it, and there is no hardship to him in this; while Dr. Simpson's friend with the "water-bottle nearly full" of rum evidently had adopted the latter course. He was probably a Scotsman.

Lastly, it is stated that alcohol makes a man colder afterwards, although it warms at the time. I would ask your correspondent whether, if he had to stand for four days and nights without relief in trenches with water up to his knees and sometimes to his waist, his principles would prevent him from receiving a stimulant which would warm him and cheer him twice a day, or would they not? Is it better to be warm inside occasionally or never to be warm at all?

In conclusion, I know from experience the great appreciation in which the officers and men in the firing line hold this extra ration, and it would be ungenerous to deprive the many for the stern principles of the few. I would recall the words of the Earl of Albemarle on Waterloo: "Just before it began the regiment filed past a big tubful of gin, and each officer and man had a potful of liquor given to him. Heavy rain had soaked the troops to the skin, and no fermented liquor I have ever drunk was so delicious as that tin pot full of schnapps." But they won Waterloo!—I am, etc.,

Birmingham, Feb. 23rd. E. MUSGRAVE WOODMAN.

SIR,—If the issues involved were not so serious the letter of Dr. Thomas Dutton in the BRITISH MEDICAL JOURNAL of February 20th would be absolutely ludicrous. Dr. Dutton's chief complaint against me is that I have only expressed what he is pleased to call a "pious opinion" upon this subject, whereas had I done otherwise I venture to suggest that he would have been amongst the first to challenge my right to speak for other people.

I am perfectly satisfied that the personal opinion which I hold is one that is held by numbers of others who have taken the trouble to inform themselves as to the injurious properties of alcohol in minute doses. Dr. Dutton's argument falls to the ground in that very graphic illustration which he uses against me, in which he tells the story of his cousin who admits to having been narcotized to sleep in the trenches by his ration of rum—a very unenviable condition to be in, to say the least of it, in the event of one of those sudden onslaughts of the enemy of which we so often read. Dr. Dutton refuses to place vodka and rum in the same category, because, as he explains, one possesses "irritating properties, while the other is matured," but he utterly ignores the fact that they possess the one property in common of producing intoxication, and I venture to suggest that it was this that the Russian Government had its eye upon when it issued its proclamation of prohibition; and rum with its 40 to 50 per cent. of alcohol is not one whit behind vodka in its ability to produce intoxication; the crucial point of the whole question is, that this ration possesses the power of narcotizing the finer sensibilities of the men to whom it is given, and that they are thereby rendered less efficient for the important duties which they have to perform. A few weeks ago two bluejackets strolled into a hall in London in which some boy scouts were being drilled, and offered to teach the boys signalling, a proposition gladly agreed to by the officer in charge; when this was over they gave some exhibitions of speed signalling the one to the other. When they had finished, they told the officer that what they had done was only at half speed because they had had a grog before coming in; when asked if that made any difference their reply was, yes, 50 per cent. difference. Now these men were not teetotalers, and therefore were free from bias, but their testimony coincided exactly with the results obtained years before by Aschaffenburg and Kraepelin relative to the effects of small doses of alcohol on the performance of delicate and complex operations.

I would only say in conclusion, that in the whole of this controversy the protagonists of the rum ration have utterly failed to bring forward a single argument based upon scientific research to prove that rum can produce any other result than that of giving a deceptive feeling of warmth, and of drugging the men who take it to sleep, while on the other hand abundance of evidence has been and can be produced, backed up by scientific investigation, proving that functional activity is seriously inhibited by doses of alcohol much smaller than that given to our soldiers in the trenches in this ration. It seems a great pity, therefore, that the War Office should go to the trouble and expense of sending out hundreds of thousands of gallons of this worse than useless substance for consumption by our army in the field.—I am, etc.,

Plymouth, Feb. 25th. ROBERT SIMPSON.

SIR,—The lectures on military hygiene now being given by Major Lelean under the direction of the Army Council and the University are interesting because they are officially representative of the views of the Army Council, which latter body, as I showed a fortnight ago, includes no medical officer.

As the views of the Council on the furnishing of the rum ration to the soldier are diametrically opposed to those of Lord Kitchener, it is extremely important that their errors should be fully discussed. The need for this discussion is the more urgent since the Army Council has just refused to receive a deputation of the National Temperance Federation, which desired to lay before the Army Council the overwhelming scientific and military evidence against the issue of the rum ration.

It is regrettable that Major Lelean began his consideration of the rum ration with the ungenerous and unjust assertion that some who are "interested in promoting temperance" do not "keep an open mind on the alcohol problem." The contrary is the case, for the man whose

cerebration is habitually influenced by taking alcohol is, in direct proportion to his dose, so much the less the possessor of "an open mind," and so much the less able to see the bearing of the action of alcohol on the body.

This common limitation of vision is in fact very obvious in the first point raised by Major Lelean in favour of the rum ration—namely, that alcohol "has a value as a food equivalent," because some of what is taken is oxidized in the tissues. The logical error into which Major Lelean has fallen is the mistake made by some writers that because a substance is oxidized in the body it may therefore be called a "food." Few statements are more unjustifiable. By precisely the same reasoning, if alcohol is a food equivalent because some of it is oxidized in the body, then morphine is equally a food!

The gist of this mistake—and it is a most serious one for our army and the health and efficiency of the nation—is, of course, that alcohol produces toxic effects on the tissues which entirely out-balance any results due to its oxidization. It is obviously wrong to speak of poisonous drugs such as morphine or alcohol as "foods" or "food equivalents." Such terms can only be truthfully applied to substances which, when absorbed into the blood, will nourish, repair waste, and furnish force and heat to the body, without causing injury to any of its parts or loss of functional activity.

Alcohol is not such a substance.

The calories referred to by Major Lelean as obtainable in the laboratory are of no value to the soldier whose functions are all impaired by the toxic action of the rum.

Other serious errors appear in the condensed report of the lecture. Alcohol is not, as therein stated, "a gastric adjuvant," for, like most narcotic drugs, it retards digestion and slows the movements of the stomach.

Again, the rum ration is not issued just before the men go to bed, as suggested by the lecture. Even if it were, that would not diminish its harmfulness as a chilling agent and in checking oxidation, which, as Dr. Lees pointed out seventy years ago (confirmed by all military observers since), leads to a diminution in the power of restoration from fatigue, which is so all-important to the soldier. Indeed, the fact of sleep makes matters even worse, for during sleep the normal oxidation is lowered already.

Errors of omission are often as serious as those of commission, and it is certainly not reasonable nor scientific to discuss in such a lecture the "frost-bite" of the present war while leaving out the well-recognized predisposing and causative action of rum in helping to produce the 10,000 and more cases of this most painful condition, whose occurrence has so seriously affected our strength at the front.

Indeed, Major Lelean seems to speak of the fatally delusive sense of warmth caused by the rum ration as if it were some sort of advantage to the soldier, and not the fraudulent deception it really is.

One point, at any rate, is made quite clear by the lecture—namely, that the rum is issued, not as a medicament, but as an intoxicant. Of course, this has been admitted for some time; but, equally of course, it is in flat contradiction of the Regulations.

The whole question needs the most earnest attention of those who are called on to lecture on such subjects. Fortunately, to judge by recent Ministerial pronouncements, the Cabinet is coming round to the anti-rum views of Lord Kitchener, Admiral Sir J. Jellicoe, Lord Wolseley, Lord Roberts, and all the professors of military hygiene at the Military Medical College.—I am, etc.,

London, W., March 2nd. VICTOR HORSLEY.

WINES AND WINES.

Sir,—You ask for an explanation why these meat wines should be better than their separate ingredients. The answer seems obvious. If you give an edentate dyspeptic beef steak and port wine it will make him worse, whereas with a digested extract in wine you may not.

Further, if you give him a cup of peptonized bovril and a glass of wine he may drink the wine and leave the bovril. If a man has a slice of bread-and-butter it would be futile to expect him to lick off the butter and then eat the bread by merely telling him it would be just as nourishing.

It may be as well to add that I have written no testimonial to Wineox, that I never prescribe meat wines; but in those cases where patients insist on prescribing them for themselves I have occasionally met with apparently good results.—I am, etc.,

Gloucester, March 1st. E. S. ELLIS.

TREATMENT OF RUPTURE OF THE INTESTINE.

SIR,—I have read with much interest the report of a case of rupture of intestine by Dr. H. J. Hott in the JOURNAL of February 13th, p. 289.

My object in writing is to comment on Mr. D'Arcy Power's remark on his treatment of the intestinal obstruction which resulted from a local adhesive peritonitis. "It became a question," he says, "whether the bowel should be resected or short-circuited. I chose the latter . . ."

I have had at least three cases of obstruction of this character following operations for appendicitis associated either with pus or with gangrene of the appendix, and another case in which several coils of small bowel became adherent to the pelvic scar after removal of a suppurating fibroid.

In all of these cases I merely separated the adhesions as gently as possible, and did no operation on the affected bowel, and they every one got well without any suggestion of further obstruction.

Of course, *a priori*, there seems to be no reason why the separated loop should not contract adhesions again directly, but experience has shown that this is highly unlikely.

In one of the appendix cases I removed the uterus for fibroid a fortnight ago, two years after the former operations, and on opening the abdomen found no trace of the old adhesions.

As in the Bromley case, the condition of the patient is usually grave when the second operation is undertaken, and the happy results in my cases of simple separation of adhesions make me think that it is not necessary to prolong the operation by doing either a resection or a short-circuiting.—I am, etc.,

Bradford, Feb. 13th. JAMES PHILLIPS.

THE PANCREATIC TREATMENT OF RELAPSE MALARIA.

SIR,—A correspondent this morning suggests that "We are not to expect anything from the War Office as regards the utility of enzymes in malaria." Thereby hangs a tale. More than seven years ago I stated, in the pages of the *Medical Record*, among other things, that the organism of malaria "can no more live in the presence of these higher ferments than the cancer cell can." Two years ago I published experimental evidences for the truth of this statement in a paper "On the Occurrence of Dextro-rotatory Albumins in Organic Nature" (*Medical Record*, March 29th, 1913). I might have spared myself the trouble. Although the scientific proofs of the existence of dextro-rotatory albumins in organic nature were demonstrated down to the ground, such albumins have no recognized existence in medicine, and all my attempts to show the medical people the true nature of what, when produced by micro-organisms, is termed "disease" were in vain. One medical man, Major F. W. Lamballe, who had happened to get interested in my embryological work some years ago, when stationed as far away as China, alone took up the matter. At the close of 1913 he published, in the *Journal of the Royal Army Medical Corps* and in the *Medical Record*, an account of the treatment by ferments of a dozen of the very worst cases of relapse malaria he had encountered in Burma. Not one of them had a further relapse, the number of injections given varying from one to at most three, according to the severity of the case. Since that time, although the deaths from malaria in India are placed at over one million annually, to my knowledge only a single British physician (in Edinburgh) has "tried" this treatment. I am assured that he cured his patient, a planter from the tropics, with two injections. Hearing some little time ago that there was a good deal of relapse malaria among the Indian troops in France, and probably among the British troops from India also, on February 3rd I wrote to the War Office, drawing attention to Major Lamballe's paper, and pointing to the immense importance of this treatment from the point of view of military efficiency. The official reply came on "Form 1," dated February 8th, and it stated in printed language that the matter "shall receive

attention." The reply being on "Form 1" was sufficient to indicate that the matter had been shelved. Like Bret Harte, in "That Heathen Chinee," I wish but to state the facts and to have them recorded.

This treatment of malaria, and of many other things, is founded on the soundest science, and an unchallengeable scientific reason can be assigned for every step involved in it, which, by the way, is more than can be said of almost any other treatment in medicine. The treatment was not "made in Germany," which I quite admit is a very grave defect in the eyes of the medical profession. Had it been made there, patented, and issued under some fancy name or number, it might have passed muster, and have found extensive use among the troops now in France.

Ten years ago I used to say that I had no desire to teach embryology to any pathologist, and now I have come to feel the futility of trying to teach embryology or elementary biology to the medical profession in general. Quite apart from the loss of efficiency among the Indian troops, there is the further danger of introducing malignant malaria into Western Europe. In summer mosquitos (*Anopheles*), which only require an infected patient in order to communicate malaria, occur even in some parts of Edinburgh, and doubtless they are abundant in many portions of France. But this is another story, which at the moment is not of practical importance. The question at the moment is whether a certain regiment shall have its strength diminished by as much as 25 per cent. in order to bolster up an antiquated regulation treatment by means of quinine, which is non-curative, or whether we shall show the Germans that in some matters scientific we are far in front of them—whether relapse cases of malaria shall be given a treatment which is scientific, quick in action, cheap, and highly efficacious.—I am, etc.,

Edinburgh, Feb. 15th. J. BEARD.

EARLY DIAGNOSIS OF CEREBRO-SPINAL FEVER.

SIR,—May I suggest that an examination of the blood is of importance, as the disease is, in my opinion, essentially a coccaemia, and, in addition to the presence of the diplococcus in the blood, a marked polynuclear leucocytosis is present.

This view is based upon the examination of 80 cases, with 30 controls, made in 1899.

In the recent lecture by Sir William Osler (JOURNAL, January 30th) mention is made of the presence of the germ in the blood.—I am, etc.,

Colwall, Feb. 28th. MARY F. WILLIAMS.

STATUES TO WOMEN IN LONDON.

SIR,—Our BRITISH MEDICAL JOURNAL makes history, so may I correct a little error in the last issue where it is stated that the statue to Florence Nightingale is the first one erected in London to a woman (except to royalty)? Mrs. Siddons has that honour, her statue on Paddington Green, opposite the Children's Hospital, having been erected more than ten years ago.—I am, etc.,

London, W., Feb. 27th. HERBERT E. FRIEND.

Obituary.

SAMUEL HERBERT HABERSHON, M.A., M.D.CANTAB., F.R.C.P.,

SENIOR PHYSICIAN, BROMPTON CONSUMPTION HOSPITAL.

WE regret to record the death of Dr. S. H. Habershon, M.D., F.R.C.P., Senior Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. Dr. Habershon, who was a distinguished student of St. Bartholomew's Hospital, graduated M.A.Camb. in 1883, M.B. 1885, and M.D. 1887. He was elected F.R.C.P. in 1891.

He followed in the steps of his father, Dr. S. O. Habershon, Physician to Guy's Hospital, by paying very considerable attention to the study of digestive disorders, and had built up for himself an important practice, and it is a matter of great regret to his friends that his career of usefulness had been cut short at the comparatively early age of 57. There can be little doubt that his health, which had failed considerably during the last few years, had suffered from the zeal with which he discharged his duties as chairman of the Medical Committee of the Brompton Hospital, duties which synchronized with the advent of the new Act dealing with the treatment of tuberculosis amongst the insured and uninsured. He proved himself a most capable chairman and accepted duties which exacted more time than he ought to have spared.

Despite ill health, duty was his first consideration, and the interest of the Brompton Hospital always secured first place. Dr. Habershon was a first-rate clinician, and his work in the out-patient room and in the wards of the hospital was a model which had been followed by more than one of his colleagues. Indeed, it is a matter of regret that he did not write on the subject of chest disease, for he had much experience, and his studies were both full and illuminating. He was a fluent speaker and combined a facile use of language with a persuasiveness which always commanded attention. It should be known to those for whom his pen had its terrors that his somewhat irritable and perhaps punctilious criticism was a development of recent years only, when he had become the victim of more than one malady. To a less determined character any one of these would have proved a complete deterrent to useful work; with Dr. Habershon each added malady was but a further incentive to stick to his work and duty. Despite the warnings of his friends, an attack of severe bronchitis and asthma at the end of last year had hardly been recovered from when he determined to resume duty, and he died from a recurrence which found him in harness.

Probably he was never seen more at his best than when, after a return from his beloved holidays in Wales, he would recount the pleasures of his researches on Bardsey Island; he was a close student of natural history and had accumulated considerable knowledge of cephalopods.

Amongst his most distinguished patients was the late W. E. Gladstone, and a very considerable intimacy sprung up between the patient and his doctor, and the closing period of the great statesman's life was rendered more bearable by the ministrations of his faithful physician.

It may be truly said that Dr. Habershon, besides suffering in the last weeks of life from his determination to die at his post, had a great longing to stay in London, so as to be near his wife and their sons, all three of the latter of whom held commissions in the army. No more striking picture can be imagined than the "laying at rest" of this gentle physician to the salute of his three stalwart soldier sons.

DONALD C. A. McALLUM, M.B., C.M.EDIN,

INSTRUCTOR IN ANAESTHESIA, ROYAL INFIRMARY, EDINBURGH.

ON February 26th Dr. D. C. A. McAllum passed away at the comparatively early age of 51. He was born in India in 1864, and was the eldest son of Dr. D. C. A. McAllum of the Indian Army. He received his education in the Royal High School of Edinburgh, and proceeded to the university of that city for his training in medicine. After his graduation as M.B., C.M in 1886, he spent some time in study at Vienna and London, and engaged in medical practice for three years in Ardrossan. He then came to Edinburgh as a specialist in anaesthetics, and resided first in Alva Street, and later in Greenhill Gardens. He soon acquired a large practice in his speciality, and contributed articles on chloroform and abstracts dealing with anaesthetics and anaesthesia to the *Scottish Medical and Surgical Journal*. His practical skill and theoretical knowledge of this branch of medicine led soon to his appointment to the post of anaesthetist to the Royal Hospital for Sick Children, to the corresponding post in the Chalmers Hospital, and to that of instructor in anaesthesia in the Royal Infirmary. For some time Dr. McAllum had been suffering from digestive disturbance, but his death in a nursing home on February 26th came as a shock to his many friends in the profession and among the public of Edinburgh. He was greatly respected by his professional brethren, and was held in high esteem by his patients. He was always ready to administer chloroform, and it may be said that, without being in the least degree blind to the risks of that anaesthetic, he was sympathetic to its employment, and took good care that in his hands it was given never recklessly, but constantly with sane and sufficient precautions. At the time of his death Dr. McAllum was engaged upon an article on chloroform as an anaesthetic for the new edition of the *Encyclopaedia Medica*.

CHARLES HARPER, L.R.C.P.EDIN., M.R.C.S.ENG., BATHEASTON.

MR. CHARLES HARPER died at his residence, Batheaston, on Tuesday, February 16th, at the ripe age of 87. He was the son of Mr. George Harper of Plymouth, and came of a well-known Devonshire family. He entered the London Hospital in 1846, and was house-surgeon there from 1849 to 1850. He took the diploma of M.R.C.S.Eng. in 1849 and that of L.R.C.P.Edin. in 1859. Mr. Harper left the London Hospital to enter the navy, and on December 8th, 1850, was appointed surgeon to H.M.S. *Phaeton*. In May, 1853, he joined H.M.S. *Hogue*, and in January, 1855, he became surgeon to H.M.S. *Exmouth*, the flagship of Admiral Sir Michael Seymour. He served through the Baltic campaign, received the medal, and was mentioned in dispatches. He was present at the siege and taking of Fort Bomarsund, at the bombardment of Sveaborg, and took part in the expedition up the river Narva on the gunboat *Snap*. Mr. Harper was involved in an explosion which took place on the *Exmouth* during the examination of a Russian submarine machine. He was knocked down by the force of the discharge, but happily escaped injury, except that his face was scorched and his whiskers and eyebrows badly singed. Admiral Seymour, with several of the officers, were engaged in the inspection of the apparatus when it exploded. The seaman who held it miraculously escaped unhurt, but for a time it was feared that the Admiral would lose his sight through the catastrophe. Besides the Admiral, two officers, a cadet and eight seamen were injured, and it appeared that the Admiral was trying the spring of the machine when it burst. Mr. Harper possessed an exact counterpart of the machine, which he obtained during the war, and which is complete, even to the cap. The *Illustrated London News* of July 21st, 1855, contains an engraving of the explosion, in which Mr. Harper is depicted. In February, 1856, Mr. Harper was appointed to the Royal Naval Hospital, Stonehouse, after a narrow escape from drowning by the capsizing of a boat in Plymouth Sound. In 1857 he settled in Batheaston, where he took over the practice of Mr. Edwards. He became prominent in association with the once famous Hampton Rocks murder, when the inquest was adjourned in order that Mr. Harper might make a *post-mortem* examination. He held many public appointments in the neighbourhood of Bath, and was M.O.H. to the Rural District Council. In March, 1858, he was elected a member of the Bath and Bristol Branch of the British Medical Association, and served on the Council of that body, to which he was appointed in 1876, for many years. In 1893 he became a Fellow of the Society of Medical Officers of Health. He was an active churchman and a keen botanist; indeed, botany was almost his only recreation. He married Miss Skinner, of Devonshire, who survives him as well as two sons—Mr. J. Maurice Harper, M.R.C.S., V.D., of Bath, and Brigadier-General G. M. Harper, D.S.O., commanding the 17th Brigade Expeditionary Force at the front—and two daughters. His funeral took place at Batheaston Church on February 19th. Though at the known desire of the deceased it was conducted as simply as possible, the attendance was very large, so much was Mr. Harper beloved and respected.

DR. GEORGE VICKERMAN HEWLAND, of St. Leonards-on-Sea, died on February 14th, after a long and painful illness, imperfectly relieved by an operation last summer. He had been in practice in St. Leonards for many years, and was one of the best known doctors in the western part of the borough. Dr. Hewland was 57 years of age. He studied medicine at Edinburgh University, and took the degree of M.D. with first class honours in 1888. He worked also at the London Hospital and in Paris and Vienna. He was honorary secretary to the Hastings Division of the British Medical Association, and contributed to the JOURNAL articles on rupture of the kidney, deformity of the hands in chronic rheumatoid arthritis, and the treatment of hay fever by the application of the electric cautery to the nasal passages.

DR. W. OSCAR S. MCGOWAN, whose death at Pondoland from pneumonia, at the age of 31, we regret to announce, was the eldest son of Dr. Wm. McGowan, Maghera, co. Derry. His early education was acquired at Foyle College, Derry, and Royal School, Dungannon. He then went to Edinburgh, and graduated M.B. and Ch.B. in that university in 1906. After spending eighteen months as house-surgeon in Cardiff and Leicester Infirmaries, he held a similar appointment in the New Somerset Hospital, Cape Town, where he remained twelve months. He then received an appointment from the British South African Company near Salisbury in Southern Rhodesia. Subsequently he was promoted by the same company to the charge of a native hospital near Bulawayo. Dr. McGowan, who married in May, 1912, became district surgeon in Pondoland, Cape Colony, last November. During the short time he was there (less than three months) he was very happy and looked forward to a very satisfactory settlement. Owing to his bright and genial temperament he was a universal favourite wherever his lot was cast. He was fond of outdoor sports, especially shooting, and in Rhodesia he had many opportunities, even in the pursuit of big game. He was a strong Imperialist, and after the outbreak of the European war expressed a desire to take a part in it, but felt that his young wife and child had the first claim on him.

SURGEON-LIEUTENANT-COLONEL HORATIO ROBERT ADO CROSS, late of the 1st Life Guards, died suddenly at 96, Eaton Square, London, on February 3rd. After taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1877, he entered the army as surgeon on August 4th, 1878, and after a tour of duty in South Africa joined the 1st Life Guards, and in that regiment spent the rest of his service, retiring on May 11th, 1901. He served in the South African war of 1879–81, the Zulu campaign, with the mounted infantry of the flying column and with the cavalry patrol till the capture of Cetewayo, and received the medal with a clasp; also in the Transvaal campaign of 1881, with the mounted infantry of the Natal Field Force.

Medical News.

THE Local Government Board has issued a list, revised to February 20th, of sanatoriums and other residential institutions for tuberculosis approved by it under the Insurance Act for England and Wales, excluding Monmouthshire. It is a very useful compilation, and can be obtained through any bookseller, price 1d.

THE Milroy Lectures before the Royal College of Physicians of London on industrial pneumonoconioses, with special reference to dust and phthisis, by Dr. Edgar Leigh Collis, will begin on Tuesday next at 5 p.m. The Lumleian Lectures by Dr. Sidney Martin on non-ulcerative infections of the colon will begin on March 18th at the same hour.

A DISCUSSION on maternity and child welfare schemes will be opened at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Tuesday next, by Dr. E. W. Hope, M.O.H. Liverpool. The chair will be taken at 7.30 p.m. by Dr. Arthur Newsholme.

THE eleventh annual meeting of the Association for Promoting the Training and Supply of Midwives will be held at 75, Barkston Gardens, S.W., on Thursday next, when Mrs. Humphry Ward will take the chair at 3 p.m. and Miss S. M. Glass (Inspector Q.V.J.I.) will give an address on the present position of the midwife.

A ROYAL Decree has been published in the Italian *Gazzetta Ufficiale* giving the Ministers of War and Marine acting in concert with the Minister of the Interior, power to make antityphoid inoculation compulsory in the army and navy. The decree will in due course be submitted to Parliament to be entered on the statute book.

BY way of reply to the manifesto of the German intellectuals, which is taken as indicating the solidarity of German culture and Prussian militarism, the Société Nationale d'Acclimatisation de la France has decided to expunge from the list of its members the names of all Germans and Austrians.

THE annual meeting of the Association of Assistant Medical Officers of Asylums (England and Wales) will be held at Horrex's Hotel, Strand, London, on Saturday, March 13th, at 4 p.m. The most important business will be the discussion of the proposed scheme of the Assistant Asylum Medical Officers Subcommittee of the Medical Political Committee of the British Medical Association.

THE Harvard University Corporation has, we learn from the *Medical Record*, set aside £20,000 to aid the Belgian professors who have been driven from their country by the war. Two Louvain professors, MM. Charles Jean de Valée Poussin and Léon Dupriez, will deliver courses of lectures at Harvard, and will be paid out of this fund.

IN the article on German patents and trade-marks, published in the JOURNAL of February 20th (p. 339), it was stated, with reference to the trade-mark Aspirin, that it was the subject of two registrations: one of these, owned by a German firm, was removed from the register some time ago; since the article was written, the other, in the name of the Bayer Co., Ltd., London, has also been removed from the register, and the word "Aspirin" is now open to any one to apply to acetylsalicylic acid.

OF the five milliard marks voted by the Reichstag towards the end of 1914, 200 million were earmarked for the relief of distress caused by the war. Two millions a month were put aside for the maintenance of mothers, belonging to the insured class, whose husbands had been called away on public duties. The attendance of doctors or midwives was provided free of charge for these women, who were allowed from half to one mark a day for a period of eight to twelve weeks after confinement.

THE British Hospital for Mothers and Babies, which will serve as a national training school for district midwives, is being established as the result of the amalgamation of the British Lying-in Hospital from Endell Street with the Home for Mothers and Babies at Woolwich. The scheme was sealed on January 29th by the Charity Commissioners. The freehold of a site, nearly three acres in extent, at Woolwich, has been purchased. The committee has already £12,000 in hand, but double that sum is needed before the building can be undertaken.

ON February 24th Dr. Edward Beresford Collings, of Barnsley, was presented with the bronze medal of the Royal Humane Society and a resolution on vellum in recognition of his rescue of a woman and a plucky attempt to save her child from drowning in the Aire and Calder Canal at Smithies on December 2nd. The facts are set forth in the rider added to the verdict at the coroner's inquest held on December 3rd, which was to the following effect: "The coroner and jury very highly commend the heroism of Dr. Collings who, at the risk of losing his life, jumped into the canal in cold weather and fully clothed, except his coat and boots, and recovered the mother of the deceased from the water, thereby saving her life, and then recovered the body of the deceased, who, however, was dead, and the coroner and jury recommend Dr. Collings for high reward by the Royal Humane Society." The trustees of the Carnegie Hero Fund sent a cheque for £10 and an honorary certificate framed in oak for presentation to Dr. Collings, and an honorary certificate framed in oak with a cheque for £10 for presentation to the mother who, though she could not swim, had jumped into the water to save her child. The presentation was made by the Mayor of Barnsley, and a full bench of magistrates was present. Dr. Collings, who is a member of the British Medical Association, is medical officer to the Barnsley Union Infirmary. In the name of his professional brethren we congratulate him on the performance of a gallant deed which we are glad has not been allowed to go unrewarded.

THE jubilee of the Medical School of the University of Melbourne was celebrated on April 30th, 1914, when His Excellency Sir Arthur Stanley, the Governor of Victoria, presided. Graceful congratulations were sent by other Australian universities, and a jubilee dinner was held. The proceedings have been recorded fully in a volume (Melbourne: Ford and Son) adorned with portraits of past and present professors. The picture of an early dissecting class, a group which includes Professor Halford, is of considerable interest to all of us who had the fortune, or misfortune, to be students of medicine forty or more years ago. This commemorative volume contains a history of the Medical School by the Dean of the Faculty of Medicine, Professor Sir Harry Allen, M.D., LL.D. The school was opened in March, 1862. Sir Richard Owen and Sir James Paget selected Dr. Halford to be the first professor. He was a student of St. George's Hospital, and had held the appointment of house-surgeon to the Westminster Hospital, but there remains a fact of greater interest. We find that when selected he was lecturer on anatomy in the Grosvenor Place School of Medicine. This institution was one of the last of the once famous "schools" which in past days in London meant institutions for medical students independent of hospitals. There is much matter of similar interest in the volume under our notice. As for its subject, we all know that Melbourne University is a noble institution that can speak, through the teaching and deeds of its professors, for itself, and needs no apologist.

Letters, Notes, and Answers.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitology, Westrand, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

SANTONIN IN SPRUE.

IGNORAMUS.—The usual method recommended for giving santonin in sprue is as follows: Five-grain doses of yellow santonin are given the last thing at night and the first thing in the morning. Each dose, according to Dr. Begg, should be well rubbed up in one teaspoonful of olive or almond oil, as the mixture of oil and powder floated on a little milk can be easily swallowed. The powders are given for six days at a time, the progress of the case being carefully watched. If necessary a second course is given, and a dose or two every week during convalescence is useful. If the drug causes nausea the morning dose should be omitted. Though in some cases benefit appears to follow the use of the drug, many cases show no special reaction to it, and experience teaches that the drug is in no way specific for this disease.

LETTERS, NOTES, ETC.

DR. W. J. YOUNG (Harston, Cambridge) thinks that as in view of the present need for retrenchment the problem of the education of children is becoming increasingly difficult, members may like to know that he is able to recommend an old-established and excellent boarding school for girls in Cambridgeshire, where the charges are moderate.

VITAMINE.

DR. JOHN HADDON (Hawick) writes: Dr. James Oliver, in the JOURNAL of February 18th, makes some statements as to vitamine which, if true, are of the utmost importance to every one of us; but where his statements are opposed by facts, I doubt the truth of the statements. I cannot be sure as to the connexion between rice and beri-beri. He says its absence from white flour has been shown to be the cause of a form of beri-beri in the poorer inhabitants of Labrador, whose diet during winter consists *chiefly* of white bread and tea. But there is an undoubted case of a woman who for thirty years lived on toasted white bread and tea; and I met a man who for three years had lived on one slice of white bread and a cup of tea, taken only once a day, at 5 p.m. From these facts, I think, white bread can hardly be the cause of any form of beri-beri; but there are so many conjoint cases that the true cause is difficult to reach.

GRATEFUL VERSES.

A MEDICAL officer in a Red Cross Hospital in Scotland sends us the following copy of verses written by one of his patients in his ward album before he left the hospital:

To the Civilian Doctors.

How can we thank you as we ought
Ye generous hearts who gladly give
To Britain's sons, that they may live,
The skill that years of toil have brought?

In silence wrought ye, and among
The sick; not yours the thrill of war,
Nor yours, when all the strife is o'er,
The plaudits of the welcoming throng.

Yet will ye live in many a heart
When Fame's bright bubble long has burst,
Who in the Maker's sight stand first,
Apostles of the healing art!

T. E. (6th Black Watch).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address
ON
ORAL SEPSIS IN RELATION TO GENERAL DISEASE.

DELIVERED BEFORE
THE ULSTER BRANCH OF THE BRITISH MEDICAL ASSOCIATION,
BY THE PRESIDENT,

H. L. McKISACK, M.D., M.R.C.P.,
PHYSICIAN TO THE ROYAL VICTORIA HOSPITAL, BELFAST.

FOR the customary presidential address I have selected a subject which has of late occupied a great deal of the attention of medical men, and may, perhaps, seem also worn out. It is a consideration of the part which is played by oral sepsis as a cause of general disease. The widespread interest which this problem has of late evoked, and the natural eagerness to discover a tangible and removable cause for disease, has given rise in many cases to a want of moderation in considering this subject from an etiological point of view. Making due allowance, however, for excessive zeal on the part of many of the observers, there is, I believe, sufficient ground for regarding the question of the septic mouth as one worthy of close attention and careful study. It seems to me that there is very good reason for giving special attention to the condition of the mouth when the following points are taken into consideration:

There is hardly any portion of the surface of the body which is normally free from the presence of septic micro-organisms. It is, however, in the alimentary canal that the bacteria flourish in greatest abundance. In the fetus and newborn child the alimentary tract is sterile, but does not remain so for many hours after birth. It is promptly invaded via the mouth by micro-organisms delivered from the mother's nipple, fingers, clothing, etc., and in a short time it has been shown to contain many bacteria. Their presence is quite consistent with health, provided the skin or mucous membrane is healthy, for microbes coming into contact with the protected surface are usually unable to exercise any injurious influence. It is, however, probable that healthy mucous membranes may be penetrated by bacteria, but in most cases in small numbers. In such circumstances the invading microbes are overcome by the resisting forces of the tissues, and are destroyed as they advance. In the course of their destruction they deliver their endotoxins into the surrounding tissues without causing such a severe lesion as suppuration, but merely causing injury to the structures affected. This is the condition spoken of by Adami as subinfection, and is believed by him to be the real cause of the various results usually attributed to alimentary intoxication.

It has, however, been shown, as stated by Adami in his address published at the beginning of last year, that cultures of bacteria can constantly be obtained from the lymph nodes of the respiratory and alimentary tracts, and also from the liver and kidneys of healthy animals. As a result of this constantly recurring mild intoxication and infection the defensive mechanism of the individual is unceasingly trained and developed during his lifetime; an immunizing power is thus gradually built up, until, in the tissues of the animal inhabitants of our planet, a power of defence is established by which they can successfully resist the ever-present germs. Slight damage to the surfaces, external and internal, admits larger doses of the poisons, and the defensive mechanism is thus in most cases developed to a degree whereby serious infections are successfully repulsed.

As an additional defence against the injurious effects of these and other poisons upon the organs and tissues of the body, we have an important support in the liver. The portal circulation delivers a large proportion of the materials absorbed from the alimentary canal to this organ, where they undergo changes, and where toxic ingredients are rendered less harmful to the tissues. It is the absence of this safety valve from the area of mouth absorption which, in the opinion of Hunter and others, makes oral sepsis especially active as a cause of disease. There are, however, other defensive structures—for example, the thyroid gland and the lymph nodes—which render good service in the general defence.

It will, therefore, be understood that it is possible for a person to remain apparently in good health while he is absorbing steadily, and perhaps copiously, the poisons manufactured by bacteria in the alimentary tract or elsewhere in the body. It is, however, to be expected that such long-continued exposure to the effects of toxins will have a deleterious influence upon the tissues, and it is believed by most observers that this chronic poisoning gives rise in the course of time to serious damage of tissues and viscera, either in the vicinity of the seat of the poisoning, or at a distance from it.

It is this remote injury and the effects of long-continued poisoning which have given rise to so much discussion and difference of opinion. The more direct and local effects of poisoning need not detain us, as they are so obvious and well known to us all. I propose to consider the more distant result of septic absorption, and further to narrow the subject to sepsis of the cavity of the mouth and its causal relations to internal medicine.

In the first place, we must realize that the number, variety, and even virulence of the germs present is not the only or even the chief factor in local poisoning. Thus the normal colon and rectum contain more bacteria than the normal mouth; none the less the mouth is more poisonous than the bowel. It has been shown that many varieties of pathogenic micro-organisms are to be found constantly in the mouths of apparently healthy persons. In the stomach the presence of hydrochloric acid inhibits to a large extent the growth of bacteria, though at times the absence of acid secretion may permit the microbes to exist and multiply in the stomach. In the small intestine the conditions are more favourable for the cultivation of bacteria than in the stomach, but not so encouraging for them as in the mouth or, still more so, as in the large bowel. In the colon and rectum huge multitudes of bacteria are present, and of these the *Bacillus coli* is by far the most numerous. A large proportion of the microbes in these regions are fortunately dead. The mere enumeration of the bacteria does not, as has just been stated, give one a correct idea of the relative importance of the different regions of the alimentary tract as a focus of disease. The chief point to be determined is, Where do the microbes most actively exert their toxic influence? This must be wherever they can most readily gain admission to the neighbouring tissues. It is only when the surface is broken, and, indeed, not usually even then, that serious results follow. The condition of the surface is, therefore, the chief indication of an infective focus.

If one examines carefully a large number of mouths, and takes note of even slight departures from a healthy state of the mucous membrane, one must, I think, come to the conclusion that almost all the adult mouths in this country, and probably in other civilized countries, are in an unhealthy condition. No doubt among the more enlightened classes there are many who do their best, by cleanliness and frequent visits to their dentists, to keep their mouth in a healthy condition. Even in this class, however, an extraordinary amount of neglect is present. Various figures have been published, showing the prevalence of mouth sepsis; thus, V. P. Blair states that 95 per cent. of the adult population have dental caries, and in a series of cases examined in the Royal Victoria Hospital the unhealthy mouths were 94 per cent. of all those reported on.

We have no instance of such a prevalent inflammatory process in any other portion of the body; certainly not on the skin surfaces, and there has been no evidence produced from *post-mortem* examinations, nor from the results of surgical operations, of anything approaching this state of affairs in any of the internal regions. Even in the bacteria-infested region of the large bowel there is no reason to believe that an unhealthy state of the surface is the habitual condition, such as one finds in the mouth. In the small intestine and the stomach we have also reason to believe that lesions of the mucous lining are much less prevalent than in the mouth.

The reason for the excessive frequency of mouth lesions can be stated at once: it is the presence of teeth. If we were fortunate enough to remain in the edentulous condition in which we are born we should suffer much less from those lesions which render the normal oral sepsis

dangerous. At times, no doubt, there may be seen ulcers or injuries of the surface of the mouth which cannot be attributed, directly or indirectly, to teeth. These are of comparatively rare occurrence and may be due to injury, infection, or new growths. The tonsils also are a very frequent source of trouble, and even when the gums and teeth are perfectly healthy the tonsils may be the seat of bacterial activity. It is, however, very common to find the fauces or the naso-pharyngeal region inflamed as the result, in all probability, of the direct conveyance of infection from the gums.

Giving full and due weight to all the mouth lesions arising without obvious dependence on the state of the teeth, we must still recognize that the teeth—or foreign bodies introduced into the mouth as substitutes for teeth—are in most instances the starting point of oral sepsis.

It is at the junction of the gum with the dental periosteum that inflammation very often occurs. The accumulation of bacteria in this situation is facilitated by the constriction of the neck of the tooth, which provides a resting-place for food and microbes; here, also, insoluble salts in the form of tartar are deposited. If not removed at frequent intervals, these foreign substances form a culture medium for the bacteria, which on the one hand act injuriously on the teeth by producing acids from the food (especially from the carbohydrates), and, on the other, attack the adjacent soft tissues at the junction of the gum with the periodontal membrane, or dental periosteum. This is the condition known as marginal gingivitis, and may be recognized by the presence of a red line at the edge of the gum, with swelling of the portions of gum tissue intervening between the teeth, and in later stages by the exudation of pus from the margin of the gums. As the inflammatory process advances, the microbial action extends deeper in the periodontal membrane, forming pockets surrounding the affected teeth, from which pus may easily be squeezed, and the walls of which are practically ulcerated surfaces. This is the condition now generally known as pyorrhoea alveolaris. These ulcers readily admit bacteria and their toxins into the adjoining tissues. It is surprising what a large extent of ulcerated surface may be furnished by pyorrhoea. A simple arithmetical calculation will show that an area of two to five square inches of ulcers may be present in a mouth which is seriously diseased in this manner. The inflammation may extend more deeply, an alveolar abscess being formed, and often involves the bone, causing enlargement of the alveolus, and eventual destruction of the dental process or projecting bony ridge which forms the walls of the alveoli and intervening bony septa.

The teeth themselves, when caries has opened a pathway through the hard enamel and dentine, become a channel for the conveyance of sepsis to the tissues. In the dead pulp of a tooth many varieties of bacteria have been found. These and their toxic products easily gain admission to the body by the lymphatics and blood vessels which pass through the aperture at the apex of a root.

There is only one other class of damage to the mouth to which I have to refer, and it is also associated with dental defects—namely, the injurious effects of reparative dentistry, such as plates, bridges, crowns, and imperfect stoppings. In most cases the objectionable results presented by artificial dentures are due to neglect or ignorance on the part of the patient, who omits the very necessary attention to the mouth which alone can prevent injury being sustained from the presence of septic foreign bodies. In some cases, however, the dentist is at fault, not so much, perhaps, in his workmanship, which must often excite our admiration, as in the principles which guide him. An extraordinary high degree of manipulative skill is required to produce unobjectionable crowns and bridge work. The mere retention in the mouth of a pulpless tooth or root, which forms the foundation on which an admirable superstructure may be built, is unscientific, and often causes serious septic trouble.

One of the most obvious results of pyorrhoea is the passage of bacteria and toxins directly into the stomach. This is by some observers considered the chief direction in which the evil influence of pyorrhoea is exerted. The reduction of acidity of the stomach contents during the periods of inaction of digestion gives an opportunity to the bacteria to exercise their function with impunity in the stomach and bowels. This in most cases does not amount to much in the way of damage, but under certain conditions may have serious consequences. It is desirable, therefore, to pay special attention to the state of the mouth at bedtime. Absorption of toxins from diseased gums directly into the surrounding tissues is the more obvious route, the ulcerated surfaces forming an ever-open door, which during the whole twenty-four hours of the day freely admits the enemy.

While the advocates of oral sepsis as the main factor in disease have no hesitation in attributing all sorts of remote disorders to a septic state of the mouth, they have not, so far, made a very convincing case, in my opinion, for the more extreme views. The chief points relied upon are, first, the beneficial results which in some cases ensue upon the surgical cleansing of the mouth; and, secondly, the extreme prevalence of septic mouths. It must, however, be observed that a diagnosis based on the results of treatment contains fallacies. There are so many factors involved in the treatment of all diseased conditions that one is entitled to demand very clear and indisputable evidence before accepting the result of a certain treatment as proof of the nature of the disease. As regards the widespread existence of the condition, it is to be expected that the individual may have acquired a sufficient degree of resisting power or immunity to the action of the disease germs, and, in spite of their presence in great abundance, he may lead a fairly healthy life. We all know how very prevalent a foul condition of the mouth is among all classes of the community, and particularly among the working classes. In this connexion I would like to draw your attention to the results of a careful examination of the mouths of the patients in the medical wards of the Royal Victoria Hospital for a short period. This has been done for me in a most thorough and complete manner by my house-physician, Dr. Hall. Though the number of cases is small and insufficient to enable one to form a very definite opinion on the question of oral sepsis, there is, I think, some light to be obtained by a short examination of the results of this investigation.

Condition of the Mouth in 155 Cases in the Medical Wards of the Royal Victoria Hospital, Belfast.

Disease.	Number of Cases.	Age.			Sex.		Condition of Mouth.				Total Number of Teeth present.	Percentage of Carious Teeth.
		20 and under.	21 to 35.	Over 35.	Males.	Females.	Clean.	Fair.	Bad.	Very Bad.		
Chronic gastritis... ...	19	—	6	13	5	14	—	2	7	10	247	48
Gastric and duodenal ulcer	10	3	6	1	—	10	1	6	3	—	191	21
Acute tonsillitis	3	1	1	1	1	2	—	1	—	2	52	36
Rheumatoid arthritis and chronic rheumatism	7	—	2	5	4	3	—	2	1	4	105	78
Acute rheumatism ...	16	8	5	3	3	13	3	3	6	4	341	23
Heart disease	25	11	8	6	12	13	2	6	12	5	509	28
Arterio-sclerosis	3	—	—	3	2	1	—	—	2	1	40	37
Chlorosis and secondary anaemia	8	2	5	1	2	6	—	—	5	3	130	42
Pernicious anaemia ...	4	—	—	4	1	3	—	—	3	1	32	39
Exophthalmic goitre ...	3	—	1	2	—	3	—	—	2	1	20	80
Tuberculosis of lung and pleura	6	1	1	4	1	5	—	2	1	3	94	36
Chronic bronchitis ...	4	—	2	2	2	2	—	—	3	1	52	25
Asthma	3	—	—	3	3	—	—	1	2	—	40	25
Sundry cases	44	9	17	18	26	18	3	13	14	14	801	26

In the first place, we find, in 155 medical cases taken without selection, that there are only 9 in which the condition of the mouth can be looked on as normal. I do not, of course, mean that these nine mouths were aseptic, but there was no obvious injury to the lining of the mouth or to the teeth. This is probably a fairly liberal estimate of the proportion of healthy mouths in the adult hospital cases in industrial communities, and it amounts to almost 6 per cent. of the cases examined. If this can be accepted as anything like the average condition, we have to

recognize the existence of over 90 per cent. of unhealthy mouths in the community. The almost universal occurrence of the condition is relied on, as I have just said, as an argument in favour of the activity of mouth sepsis as a cause of general disease. It can, however, be argued on the other side that the frequency of its occurrence makes it hopeless to estimate its influence in such a variety of diseases as are often attributed to it. That it had an influence there can be no doubt, but when one examines the claims of some of the more extreme champions of oral sepsis one is left unconvinced. For example, it is not only maintained by some observers that rheumatoid arthritis is caused by poisoning from the mouth, but it has been recently stated[1] that 70 per cent. of the cases of rheumatoid arthritis are due to pyorrhoea alveolaris. We all know that sepsis is an important factor in various forms of arthritis, but I do not think we have sufficient grounds for believing that so large a proportion is due to this particular mode of infection. There are only 7 cases of this description in the table which you have before you, and though the number is too small to bear much weight, they corroborate the connexion between mouth sepsis and the chronic arthritic conditions. The condition of the teeth in these 7 cases was very unsatisfactory, there being 78 per cent. of them carious. The proportion of carious teeth is not a very reliable guide as to the degree of oral sepsis, but at least it indicates in this group an extensive lesion. No doubt there are many cases recorded in which improvement and even cure of rheumatoid arthritis has followed the cure of oral sepsis, but in my experience the removal of carious teeth, and the cure of pyorrhoea has not been followed by any material benefit in cases of chronic rheumatoid arthritis. This, of course, may be explained by the fact that the poisoning has been going on in most cases for many years, and that the structural damage to the joints has proceeded so far that the removal of the chief focus of infection cannot be expected to relieve the established arthritis. When we examine the diseases of the blood, we are, I think, equally unable to agree with the view that oral sepsis is the chief cause of serious forms of anaemia. In the twelve cases of anaemia in this table, the condition of the mouth is undoubtedly bad in every instance. Here, again, I think the results of treatment of the mouth have rarely been sufficiently brilliant to justify one in accepting the oral sepsis etiology. It is, perhaps, in the cases of chronic gastritis and general debility, associated with oral sepsis, that thorough treatment of the mouth produces the best effects. I suppose every one present has been struck with the prevalence of septic mouths in cases of this description. Of the nineteen cases of chronic gastritis in this list there were seventeen with a very bad condition of the mouth, and the percentage of carious teeth was very high. This is in marked contrast to the ulcers of 'the stomach and duodenum; the majority of patients in this group had mouths to which but little exception could be taken. This may, no doubt, be partly due to the fact that the disease was often in younger persons, who have usually less septic mouths than their elders, but still it does not bear out the view expressed by many, that gastric ulcer is commonly the result of oral sepsis.

Another condition to which attention has been drawn of recent years as commonly resulting from alimentary toxaemia is exophthalmic goitre. The mouth may doubtless be a source of infection in this condition and in the few cases recorded in this list it very distinctly appears to be so. The work of Major McCarrison in this region has proved that septic absorption from the bowel has a profound influence upon the thyroid gland. It is probable that this organ, like the liver, is largely occupied in neutralizing the effect of absorbed toxins, and as a result of prolonged excessive work of this description it may become hypertrophied and over-active, or, on the other hand, cystic and degenerated. The influence of chronic poisoning upon the arteries has been well established; among the poisons which produce hardening and degeneration of the arterial coats, those derived from the mouth may very well play an important part. The few cases of arterio-sclerosis mentioned in this list were examples of severe oral sepsis. The connexion between tuberculosis and mouth sepsis is not very obvious. No doubt tubercle bacilli have been frequently found in carious teeth, and in the pockets of pyorrhoea. In this position they would naturally be a source of danger, and, together with the numerous other organisms present, might be expected to produce their usual results. It is, perhaps, in the influence which a septic mouth exercises on the organs of digestion that the ill effects of oral sepsis in cases of tuberculosis is manifest. The cases recorded by Dr. Wingfield[2] are interesting, and confirm this view of the question. In all of the 41 cases of phthisis which he tabulates there was pyorrhoea, which he treated in every case by wholesale extraction of the teeth. His results were satisfactory enough, but not brilliant. He is, I think, more to be congratulated on his success in radical dentistry than on any exceptionally favourable effects on the diseased lungs.

There were 16 cases of acute rheumatism, and of these 10 had a bad condition of the mouth. This is contrary to what one would expect in a series of young adults, and it is possible that the septic state of the mouth may in some of the cases have been a factor in the production of the disease. The 25 heart cases may be considered in conjunction with acute rheumatism. As the majority were young adults, the proportion of serious oral sepsis (17 out of 25) is a rather high one. Here again one cannot ignore a possible causal relationship.

Of chronic bronchitis and asthma there is nothing to say; the cases were too few, and did not lend any strong support to the oral sepsis theory of the cause of these diseases.

In this list there is only one case of cancer; it is among the 44 sundry cases; it was carcinoma of the oesophagus, and the mouth was in a very septic state. The relation of cancer to oral sepsis is not well established, but the subject is ably discussed by Mr. Steadman in a paper read before the Royal Society of Medicine.[3] The figures he adduces in support of his opinion that oral sepsis is a very common cause of cancer are certainly suggestive, though by no means convincing. He examined the mouths of 192 persons suffering from cancer, and he found that the proportion of highly septic mouths was very much greater in these cancerous cases than in a large number of non-cancerous individuals whom he examined as a control. An objection may be adduced in the fact that the age in cancerous subjects is somewhat advanced, and it is, of course, in elderly people that dental caries, tartar, and pyorrhoea are most frequently found.

Among the 14 sundry cases were examples of organic disease of the central nervous system, of neuritis, of muscular rheumatism, and of functional nervous diseases. These do not call for special comment, as the degree of oral sepsis did not depart materially from the general run of cases, with the exception of the neurasthenics, of whom there were 3, whose mouths were exceptionally clean.

There was one case of mercurial stomatitis whose teeth were much decayed. He had sixteen sound teeth and seven carious; there was severe pyorrhoea, and much general inflammation of the gums. This is in accordance with the usual experience that persons with unhealthy mouths are more liable to become salivated by mercury than those whose mouths are in good condition.

The remaining cases included Addison's disease, chronic Bright's disease, syphilis and gonorrhoeal arthritis, but there is nothing in their condition worth referring to.

I have not attempted to deal with the relationship of oral sepsis to any disease outside those strictly within the purview of the physician. It is well known that in ophthalmic practice many eye affections are attributed to sepsis of the mouth. Mr. W. Lang states that of 215 cases of inflammation of the eyeball 139 were due to oral sepsis. Dermatologists, urologists, rhinologists, gynaecologists, and general surgeons have in many instances been known to assign the causation of diseases in their respective departments to poisoning from the mouth.

To make even a cursory review of the voluminous literature which has grown up around this subject during the past few years would occupy more time than I am justified in claiming from you to-day. I may, however, direct your attention to an article by Mr. J. G. Turner,[4] which presents a very complete and admirable review of of oral sepsis, considered from the standpoint of the dental surgeon. As examples of the sharp differences of opinion, one may point to the recent animated correspondence in the *Lancet*. The ball was set rolling by Sir James Goodhart, who threw down his glove to the oral sepsicists in a vigorous letter to that journal on

July 25th, calling forth a display of divergent opinions. There have been many interesting articles in medical publications on the subject; dentists, physicians, and bacteriologists have all taken a share. Among the more interesting were a paper read by Dr. Horder at the Odontological Section of the Royal Society of Medicine last spring, and a prolonged debate in the same society a year previously, in which a numerous company of practitioners of every conceivable speciality took part. The subject of this debate was the wide one of alimentary toxaemia, but oral sepsis received ample attention. Every medical journal in this country and abroad has been occasionally occupied with the subject, and no small number of books dealing with mouth sepsis have been published within recent years. After consulting a number of these writings, the impression left on my mind is that a gentle spirit of moderation is becoming evident. There are still the stalwarts of blood and iron, who hale their victims straightway to the tormentor, being convinced that oral sepsis is the source of most human disorders, and that a clearance, root and crown, is the only remedy. This is a most attractive theory. It would be a great satisfaction to all concerned if we had the cause of so many of our ills under our very noses, in a most accessible position where it could be attacked with every hope of complete victory. Unfortunately there is not, to my mind, enough evidence to convict the mouth of being the *causa causans* of so many diseases. In the phraseology of the Scottish law courts, the guilt of the accused is "not proven," but he remains under grave suspicion.

In conclusion, I will only say a few words as to the treatment we should advise. Caries of the teeth must not be allowed to remain unrepaired. In the earlier stages of gingival inflammation careful attention to the state of the gums and the application of suitable antiseptics works wonders. Later, when deeper pockets have formed, thorough drainage of the little abscesses and ulcers and frequent cleansing of the septic surfaces may result in a cure. This is denied by some, who state that when once a definite pocket has formed there is nothing for it but to remove the tooth. So long as there is a source of poisoning, they say, which is difficult to remove by mild measures, and which in the meantime is producing arthritis and other maladies, we must have no mercy on the tooth. This is not a sound practice. Before resorting to the sacrifice of a tooth one must make a persevering attempt by local treatment, vaccines, change of air, tonics, etc., to effect a cure.

In the advanced stages of pyorrhoea alveolaris, where there is not merely destruction of the dental periosteum, but where the bone is seriously diseased, there is no hope of any treatment which does not include extraction of the teeth which are involved. Scrupulous care should be given to the thorough cleansing of all artificial teeth and other fittings and foreign bodies in the mouth.

Prevention is, of course, what we should attend to. If one desired to epitomize the prophylaxis, it might be put in four words—active mastication, efficient cleansing. Finally, to summarize in some measure the subjects we have been discussing, I shall submit for your consideration the following conclusions:

Oral Sepsis

1. Is sometimes tolerated by the patient for many years with little apparent injury.
2. Is always a possible source of danger.
3. May give rise to (*a*) disease in the vicinity of the mouth; (*b*) disease in situations which come directly in contact with the unhealthy secretions of the mouth, such as the stomach and the intestines; (*c*) disease in distant parts of the body not in direct communication with the morbid secretion; (*d*) a state of ill health and lowered vitality without obvious involvement of any organ. It may thus be said to aid and abet disease arising from some other source.
4. Is commonly the result of imperfectly cleansed teeth.
5. Does not necessarily involve the extraction of teeth.

References.

[1] Dr. D. D. Brown, British Medical Journal, October 17th, 1914. [2] *Lancet*, July 18th, 1914. [3] *Proceedings of the Royal Society of Medicine*, March, 1914. [4] J. G. Turner, British Medical Journal, 1914, vol. i, pp. 1244 and 1301.

ON THE TREATMENT OF DIABETES MELLITUS WITH CASEIN AND CREAM.

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Recently I have employed the following method of dietetic treatment in certain cases of diabetes mellitus with more prompt and satisfactory results than I have obtained by any other treatment. The method is worth trying in most cases of diabetes if ordinary diabetic diet does not check the glycosuria. But in some of the most severe forms with marked acidosis, as will be mentioned later, I should not advise it.

In this treatment casein and cream are given in small quantities every two hours. The patient is kept at rest in bed, or on the sofa, and every two hours, from 8 a.m. to 10 p.m., receives a glass of artificial milk prepared from casein, cream, and water. One tablespoonful of casein is well mixed in a tumbler with one tablespoonful of cream until a paste is formed; then hot water (or cold if preferred) is added gradually until the tumbler is full, the mixture being well stirred with a teaspoon whilst the water is being added. A white fluid is thus prepared which has the appearance of milk. It contains milk albumin and fat, but only a very small percentage of milk sugar derived from the cream. The fluid may be sweetened with saccharine or saxin if desired, or a pinch of salt may be added, or it may be flavoured with nutmeg, according to the patient's taste. Most patients prefer the fluid warm. Usually the patient takes this artificial milk quite well, and likes the taste; some take it well, but do not find the taste quite satisfactory; but a few patients complain that it causes nausea, and in such cases it should be at once discontinued. The fluid may be taken well when it is hot, but may cause nausea when lukewarm or cold. When it produces nausea, or is distasteful even when the fluid is warm, another preparation of casein should be tried; or, in place of casein, biogene should be employed, but double quantity of the latter should be used—that is, *two* tablespoonfuls of biogene with two of cream to the tumblerful of water. I have employed usually a cheap casein preparation, sold at 1s. a pound, but a more expensive casein, dietetic casein (A), is more palatable to some patients. Recently I have chiefly employed biogene (which is a casein preparation) though it is more expensive (3s. a pound). It may be obtained from Mr. Bonthron, 50, Glasshouse Street, London, W. Most patients like the taste of biogene much better than casein.

The diet of casein and cream, as just described, is sufficient to satisfy some patients at least for several days; but many, of course, feel very hungry, and in a few cases the casein treatment causes the patient to feel very exhausted.

When the patient feels very weak or exhausted on the casein treatment alone, he may be allowed, in addition to the casein and cream, a cup of tea and beef-tea twice a day; if he still feels very weak on this diet, two eggs (buttered) may be allowed daily, and after a few days one casein pudding may be added. The casein pudding is prepared as follows:

One tablespoonful of casein.
One egg well beaten up.
A small pinch of salt.
One teaspoonful of baking powder.

Mix well together, adding the baking powder just at the last. Then bake in the oven like a custard for thirty minutes. The addition of a little water may be necessary if the egg is a small one. This forms a cheap and palatable pudding.

Usually the treatment with the casein and cream causes a little loss of weight; but for a week or two if the patient rests in bed or on the sofa all day, the loss is only a few pounds, and it is desirable to keep the diet down to the minimum amount; but it is important not to allow the patient to become exhausted by the treatment.

In milder cases of diabetes and in many cases of medium severity the urine becomes quite free from sugar in two or three days or in a few days, even when an ordinary very rigid diabetic diet has failed to check the glycosuria. In many cases the casein treatment can be continued for two or three weeks, or a little longer, without much loss of

weight and without producing much weakness or unpleasant symptoms; and the urine may be kept free from sugar during this period. The patient's condition, however, should be carefully watched, and if he should become weak or exhausted at the end of the first week (or earlier) additions to the diet should be made at once. If he tolerates the casein treatment it may be continued for two weeks or a little longer. But then, if not earlier, additions to the diet should be made. A buttered egg or casein pudding may be allowed once a day, then a little suitable diabetic bread (3 oz. daily) may be allowed (casein bread, or cocoanut and biogene cakes, or casoid, or akoll biscuits), or two buttered eggs may be allowed daily. If these additions to the diet cause the sugar to return in the urine, they should be cut off and the diet restricted to the casein and cream. Whilst these additions to the diet are being made the amount of casein and cream should be gradually diminished to three or four glasses daily.

The following is another diet which is often useful if the patient feels very weak; or if the biogene and cream be unpalatable, or if he should be losing weight considerably:

8 a.m. Cream, 1 oz., and tea; one buttered egg.
10 a.m. Cream, 1 oz., with beef-tea, 10 oz.
12. Biogene and cream and water (or egg and cream).
2 p.m. Custard.
4 p.m. Cream, 1 oz., and beef-tea, 10 oz.
6 p.m. One egg, boiled or buttered; cream, 1 oz., and tea.
8 p.m. Biogene and cream (or egg and cream or beef-tea).
10 p.m. Cream, 1 oz., and beef-tea, 10 oz.

If the additions to the diet are not followed by a return of the glycosuria further additions may be made. The following is a diet I often allow at this period:

Breakfast.

Coffee (or tea) with cream, or casein and cream.
Eggs buttered (poached or boiled), or tomatoes, or mushrooms.
Biogene and gluten cakes, gluten and cocoanut cakes, cocoanut and biogene cakes; casoid or akoll biscuits, or suitable diabetic bread; butter.

Dinner.

Bacon cooked in any way, or fat of meat (cold), or fish; cabbage, cauliflower, Brussels sprouts, turnips, French beans, spinach, broccoli, boiled walnuts, asparagus, vegetable marrow, tomatoes, mushrooms, salad, lettuce, cucumber, watercress, celery, radishes.
Casein pudding, or cocoanut pudding (free from sugar), or custard.
Suitable diabetic biscuits or bread.
Water, claret, hock, Salutaris water.

Tea or Evening Meal.

Tea and cream, or casein and cream.
Eggs (buttered, poached, or boiled), Welsh rabbit, cheese.
Salad, lettuce, cucumber, radishes, mushrooms, tomatoes, boiled egg and spinach, watercress.
Biogene and gluten cakes, gluten and cocoanut cakes, cocoanut and biogene cakes; casoid or akoll biscuits, suitable diabetic bread; butter.

If this diet is not followed by glycosuria then the patient is allowed an ordinary rigid diabetic diet—meat, fish, or fowl, being given in place of bacon at dinner, and bacon being allowed for breakfast. Much later a small amount of white bread may be added (at first only 3 oz. daily).

As I have only employed this casein treatment for twelve months I cannot say what will be the permanent effects. At present one can only speak of the temporary results. By the casein treatment followed by other additions to the diet gradually made, as just indicated, the urine may often be kept free from sugar for three, four, or six weeks, and after the return to the ordinary diabetic diet it may remain free from sugar for months, though previous to the casein treatment, when the patient was taking an ordinary rigid diabetic diet, sugar was excreted in the urine in considerable or large quantities. Thus in one case the urine was still free from sugar eight months, in another six months, after the casein treatment (and both were young patients).

In the majority of cases, however, in course of time, sometimes rapidly, sometimes slowly, the sugar reappears in the urine after the patient has returned to a less rigid diet. But the benefit of the treatment is shown by the fact that the sugar excretion on such a diet is much less than that when the same diet was taken before the casein treatment. A return to the casein treatment may be then desirable for a short time; and such periods of casein treatment may be recommended once a month or less frequently.

The casein treatment must not be regarded as a cure for diabetes in the strict sense, but as a powerful method of temporarily removing the sugar from the urine in many cases, and of improving the power of sugar destruction, so that the sugar excretion may be afterwards more easily controlled by ordinary more or less rigid diabetic diets or restricted diets.

In the most severe forms of diabetes with marked diacetic reaction in the urine, I do not at present feel justified in recommending the casein treatment. My experience so far has been that in many such cases it is of little value, and it may be very unsuitable in certain cases. In other cases, however, I have obtained very satisfactory results, and both diacetic acid and sugar have disappeared from the urine for a time under the casein treatment. In spite of the excellent temporary results in some of these severe cases I hesitate to recommend others to employ it. I should use it myself in certain cases after careful examination; but I do not recommend others to employ it in this class of cases, because I fear the treatment may be given to unsuitable cases.

When I do employ the casein treatment in severe forms of diabetes with marked diacetic acid reaction in the urine, I give first, for two days, a small amount of oatmeal porridge and cream twice a day and biogene and cream four or five times daily, and then I discontinue the porridge and follow on with the biogene and cream alone, as described in this article. In some cases I have given oatmeal porridge three times a day for two days and then followed with the biogene and cream with excellent results. But much caution is desirable, and such treatment may not be advisable in certain cases.

The treatment with casein just suggested is a prompt method of removing the sugar from the urine in many cases of diabetes of the milder form, and in many cases of medium severity. The ordinary rigid diabetic diet should be tried first, and if this succeeds the casein treatment is not necessary; but in the numerous cases in which the ordinary rigid diabetic diet fails to remove the sugar from the urine the casein treatment often succeeds, and for some time—weeks or months—the urine remains free from sugar, and this is the value of the treatment. In some cases, of course, the treatment fails.

Advantages of the Casein Treatment.

1. This method will often remove the sugar from the urine when the ordinary rigid diabetic diet has been unsuccessful, and this is its great value.
2. The results are often prompt, the urine being free from sugar after two or three days.
3. After a period of treatment with casein and cream the patient is often able to take ordinary diabetic diet, or even a less rigid diet, without the appearance of sugar in the urine, whilst previous to the casein treatment the most rigid diabetic diet did not remove the sugar from the urine.
4. Though the sugar will return in the urine in course of time in most cases after the patient's diet has been relaxed, still I am inclined to think that the return is much less rapid than when the sugar has been removed from the urine by an ordinary rigid diabetic diet.
5. The casein method is not expensive and is easily carried out.
6. In most cases of the very severe forms of diabetes in which the urine contains much diacetic acid the casein treatment is of little value, and sometimes may be very unsuitable; still in certain cases it is of much service, and may remove the diacetic acid and even the sugar from the urine for a short time, and on returning to a less rigid diet the sugar excretion may be very small for a long time and the diacetic acid may not return for a long period. Of course, such cases form only a minority of the cases of this class.

Unfavourable Results and Dangers.

I have hesitated to publish this article for some time owing to the bad results obtained in a small percentage of the cases. The treatment requires to be very carefully watched and the patient seen daily and the urine tested daily during the casein treatment. Though I have never

had any serious bad results, it is necessary to discontinue the treatment promptly, in a small percentage of the cases, owing to the onset of the symptoms which I shall now mention.

From experience I do not now place a patient on the casein treatment unless I can see him daily for a week, or unless I can be daily informed of his condition by his medical attendant and have the urine sent to me daily.

I have met with unfavourable symptoms in about 20 per cent. of cases. A feeling of great weakness and exhaustion occurs in a few, and it is then desirable to discontinue the treatment on this account. Others become mentally depressed and irritable at what they consider a harsh treatment, and will not continue it. In a few it produces dyspepsia, or diarrhoea, or constipation. But in the majority of cases it can be followed quite easily and without unfavourable symptoms. When it cannot be taken the diet of cream, eggs, custard, beef-tea, already described, may be recommended.

Patients who are fond of the pleasures of the table and like nice foods will probably regard the casein treatment as monotonous, or as one of my patients expressed it, "not interesting." But many take it readily and without any dislike, and are delighted at the results as regards the sugar excretion.

In the casein treatment just described—

1. The amount of carbohydrates in the food is reduced to the minimum;
2. The total quantity of food is reduced to a very small amount;
3. The food is given in small quantities at frequent intervals—every two hours.

I am inclined to believe that the last two points are of much importance in the success of the treatment.

(Knowing the great pressure on the space in the BRITISH MEDICAL JOURNAL I have not added descriptions of cases. Such detailed accounts I hope to publish later in the *Medical Chronicle*.)

THE EARLY ADMINISTRATION OF VACCINE IN PNEUMONIA.*

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In the treatment of acute lobar pneumonia vaccines have been used, mainly as a last resort, in cases which were not doing well under other treatment. Some physicians advise that a vaccine should be prepared from the sputum early in an attack, to be used in the event of continued severity or relapse of symptoms, and in cases of slow resolution. This attitude is illogical. If a vaccine is of service at all, it should be used as soon as possible, in order to limit the intensity of the infection and prevent the occurrence of grave symptoms. A vaccine can give little or no assistance when the infection has been allowed to go on uncontrolled to the point of cardiac and nervous exhaustion. That they have principally been used late in the disease, and then usually in quite inadequate doses, is the reason that their value is not the subject of agreement. My own practice is to give a vaccine as early as possible after the onset of symptoms. The object of this paper is to give the results obtained in a number of cases which were injected not later than the third day of the disease.

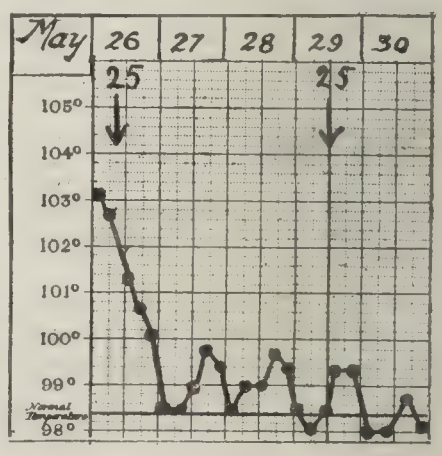
Pneumonia is primarily a septicaemia, and it may prove fatal in this stage before there is any localization in the lungs. In laboratory animals injected with pneumococci septicaemia is the rule, unless they are immunized or the injected organisms are of low virulence. Man has a greater resistance than animals, and local lesions usually follow the septicaemia. The consolidation of the lungs must be regarded as a defensive process, an attempt to localize the infection. It is not true bacteriologically that infections attack the place of least resistance. They attack the place of greatest resistance. A fortress city suffers more than an open, undefended town. The chief defence against the pneumococcus is phagocytic, and the lungs contain a larger number of leucocytes than any other organ, except the marrow, which is their birthplace, and the spleen, which is their grave. The emigration of leucocytes and the clotting of the fibrinous exudate in the alveoli prevent the spread of the germs but at the same time impede the access of antibodies from the blood. During the stage of firm consolidation little can be expected from vaccine treatment so far as the affected parts of the lungs are concerned; but inasmuch as other parts of the lungs are still patent the raising of the antibody content of the blood will be of some value. Further, by accumulating antibodies in the blood, we make them available for the time when unorganized ferments have liquefied the fibrin sufficiently for fluids to enter. But when vaccines are given late in the disease an increase of antibodies can have no effect upon the damage already done, and the patient may die of heart failure or nervous exhaustion. Elsewhere [1] I have shown the good results which can be obtained from using appropriate vaccines in septicaemia caused by the *streptococcus*, *staphylococcus*, *gonococcus*, or *Bacillus coli*. In spite of the pessimistic conclusion of Dr. Samuel West at a recent discussion that "in the acute general infections vaccine treatment offers but little prospect of benefit," I regard, after much experience of this class of case, the septicaemias as one of the best fields for the skilled employment of vaccines, and the septicaemic stage of pneumonia is no exception.

All the cases of pneumonia described here have been treated with a *stock* vaccine made from a highly virulent strain of pneumococci. The diagnosis was made at first on clinical grounds and confirmed later by bacteriological examination and the progress of the case. The number of cases is small, as a physician does not get many opportunities, either in private consultations or in hospital, of seeing cases of pneumonia in their early stages. By far the majority of the cases which I have treated with vaccine were first seen on the fourth or later days. These are excluded from the scope of this article. Six cases received their first injection within twenty-four hours from the onset of symptoms, three were injected during the second day, and six during the third day.

Cases Injected within Twenty-four Hours of the Onset of Symptoms.

CASE I.

A lady, aged 25, at 1 a.m. on May 26th, 1913, had a severe rigor with vomiting. This was followed by pain in the left side of the chest and a frequent restrained cough. She was seen by her doctor, who was a relative, at 3 a.m., and by myself in consultation at 11 a.m. The temperature was then 103°, pulse 120, respirations 38. She had the typical symptoms and appearance of pneumonia—hot dry skin, shallow breathing, grunting expiration, pain in the side. There were subdued breath sounds at the base of the left lung with a few fine crepitations. Sputum was already rusty; 25 million pneumococci were injected at once. This was followed by a fall of temperature, which reached normal during the following night. The respirations and pulse-rate fell with the temperature. Slight fluctuations of temperature occurred for three days, but after a second injection on the fourth day the temperature remained normal. In spite of the absence of symptoms there was well marked consolidation in the lower lobe of the left lung and a small patch in the right. The sputum contained large numbers of pneumococci. The lung rapidly cleared, and the patient was allowed out of bed in a week from the onset.



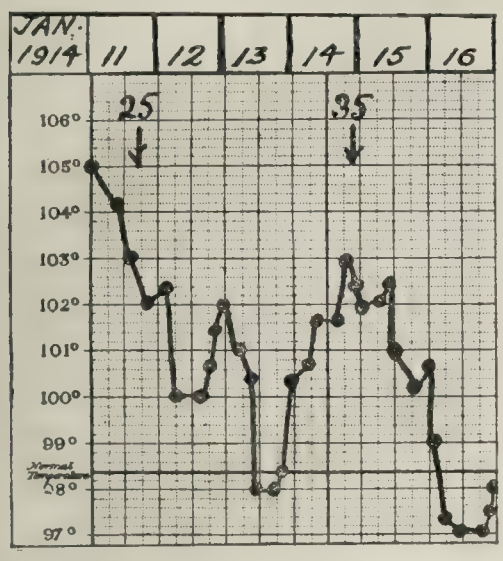
Case I.—Female, aged 25. Injected ten hours after onset.

CASE II.

A man, aged 45. Several attacks of bronchitis during the previous year. A sharp rigor occurred on the evening of January 11th, 1914. Temperature rose to 105°, with a pulse-rate of 128 and respirations 38. When seen by me exactly twenty-four hours later he was somewhat cyanosed, his pulse was soft, and there was a mitral systolic murmur. Sputum was rusty. At both bases the breath sounds were subdued, with fine crepitations. Scattered rhonchi in both lungs. Herpes on lips. Considerable pain in right lower axillary region. The outlook seemed bad, and it was feared that his heart would not stand the strain. Twenty-five million pneumococci were injected. The temperature fell to 100° next morning, and, after a rise to

* The substance of this paper was given as a post-graduate lecture at the General Hospital, Birmingham, on April 28th, 1914.

102°, reached 98° on the 13th. Later on the same day it rose again to 103°; a second injection of 35 million was given on the evening of the 14th, and was again followed by a rapid fall of temperature. After the second day there was well-marked consolidation of both lower lobes, but this quickly resolved, and the patient's general condition was so good that he was sent away to the seaside a fortnight after the illness began. The sputum contained pneumococci and *Micrococcus catarrhalis*.



Case II.—Male, aged 45. Injected twenty-four hours after onset.

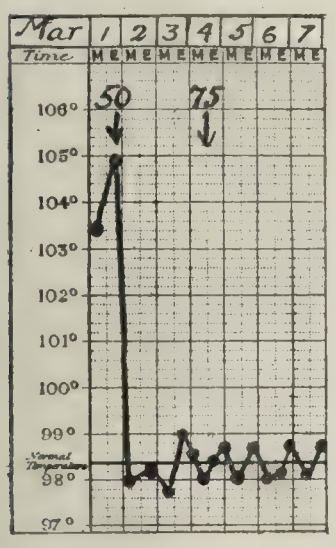
CASE III.

This was the only fatal case in the series. A lady, aged 29, was pregnant at full term and hourly expecting her confinement, when, early on November 5th, 1913, she had a severe rigor, and symptoms of pneumonia followed. I saw her in the evening of the same day. There were labial herpes, pain in the left side, quiet broncho-vesicular breathing over the greater part of the left lung and at the right base. Pulse-rate 114, respirations 34. Twenty-five million pneumococci were injected. The temperature fell to 98.4° in about six hours. The pulse and respirations, however, remained quick, and there was much respiratory distress owing to the size of the abdomen. Labour occurred early the following morning, and she was delivered with considerable difficulty with the aid of forceps. For a time the outlook seemed hopeful, but there was consolidation of nearly the whole left lung and a large portion of the right lower lobe. Twenty-five million were injected again on the 8th, and 30 million on the 10th, but she died of heart failure on the 11th. In earlier years the patient had been asthmatic and suffered from attacks of cyanosis. The vaccine seemed to lessen the toxaemia, but the heart, in spite of oxygen and alcohol vapour and other stimulants, failed to stand the double strain of the labour and the pneumonia.

Looking back upon these three cases I consider the dose of vaccine was too small, and in Case III it should have been injected more frequently. In Cases I and III I should now give 50 million and in Case II 100 million.

CASE IV.

A medical man, aged 52. He had felt rather unwell for a few days, until March 1st, 1914, when he shivered violently and went to bed, "feeling worse than he had ever done in his life." I saw him at 11.30 p.m. Temperature was then 105°, pulse 136, respirations 40. It was evident that a severe attack of pneumonia had begun. There was quiet, almost bronchial, breathing at both bases, with fine crepitations. Fifty million pneumococci were injected at once, and the response was very striking. Next morning, in less than twelve hours, all symptoms of distress had gone, temperature was normal, pulse 76, respirations 20. Herpes was beginning on the lips, the sputum was blood-stained, and contained pneumococci with *Micrococcus catarrhalis*. In spite of this great general improvement extensive consolidation developed in both lungs. The patient presented a striking picture of all the physical signs of pneumonia without any symptoms of toxaemia. He was allowed up in a week, and went to the seaside on the fourteenth day. All physical signs had disappeared by the twelfth day.



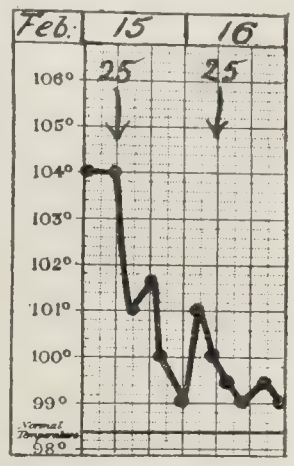
Case IV.—Male, aged 52. Injected during first twenty-four hours.

CASE V.

A girl, aged 6, complained of severe pain in the right side of the abdomen on February 6th. Temperature rose to 103° to 104°, pulse 140, respirations 42. Appendicitis was suspected, and a surgeon who was called in advised operation. Before this was finally decided upon I was asked to see her, and found signs of pneumonia in the right lower lobe. The abdomen was generally tender, but especially on the right side. There were also meningeal symptoms—headache with screaming, retraction of the head, and slight opisthotonos. Kernig's sign was present. It was decided to treat the case with vaccine, and 5 million pneumococci were injected. Next morning consolidation of the right lung was more marked, but there was considerable general improvement, the headache, screaming, and head retraction having disappeared. A second dose of 10 million was injected on the 8th, and temperature fell by lysis.

CASE VI.

A boy, aged 11½, after a few days' slight feverishness, complained, on the evening of February 15th, of great pain in the left side of the chest. Temperature next morning was 104°, pulse 120, and respirations 32. Commencing consolidation was found in the left lower lobe. Twenty-five million pneumococci were injected and repeated the next day, after which the temperature fell to 99°. After the first injection there was great general improvement and a fall in the pulse and respiration rate, although consolidation was more marked. The temperature remained irregular for a few days before finally settling down.



Case VI.—Male, aged 11½. Injected during first twenty-four hours.

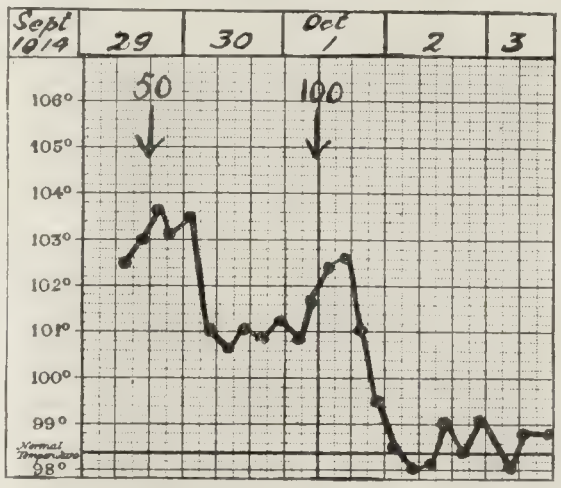
Cases Injected during the Second Day of the Disease.

CASE VII.

A boy, aged 6½, had three convulsions at 2 a.m., February 5th. His temperature rose to 104°, with a pulse-rate of 144, and respirations 52. The physical signs of pneumonia developed in both lower lobes, with severe pain on the right side. Twenty-five million were injected on the 6th, and 20 million on the 8th. Temperature began to fall after the first injection, and reached normal on the 9th. Convalescence was rapid and uninterrupted.

CASE VIII.

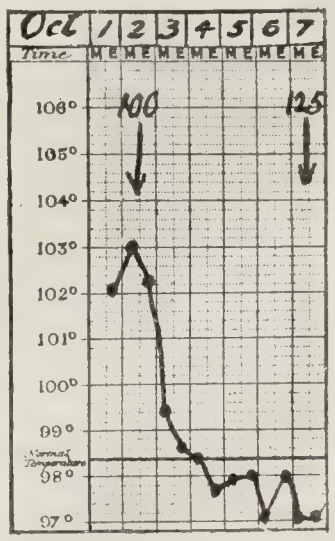
A woman, aged 29, admitted to hospital on September 29th. She began to be ill on the evening of the 27th with a rigor and severe pain in the left lower axillary region. On admission, respirations were 40 and pulse 128. Dullness in both lower lobes, tubular breathing and crepitations; sputum rusty and loaded with pneumococci. Fifty million pneumococci were injected on the 29th, about thirty-six hours after the onset of symptoms. Next day temperature had dropped to 101°, and there was considerable general improvement. A dose of 100 million on October 1st was followed by crisis. The lungs rapidly cleared.



Case VIII.—Female, aged 29. Injected on second day.

CASE IX.

A soldier, aged 19, admitted to the 1st Southern General Hospital after an illness of thirty-six hours, commencing with a sharp rigor. Temperature was 103°, pulse 100, respirations 38. Great pain in right side of chest. Consolidation of whole of right lower lobe. One hundred million pneumococci injected on October 2nd. Crisis immediately followed. A second dose of 125 million was given on the 8th, and he was allowed up on the 9th. He was discharged from hospital quite well on the 14th.



Case IX.—Male, aged 19. Injected on second day.

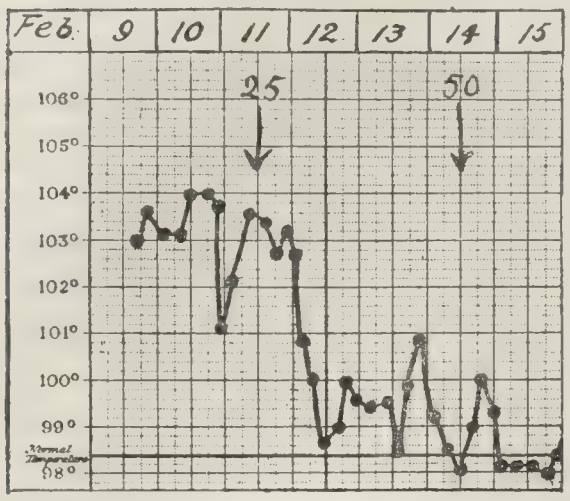
Cases Injected during the Third Day.

CASE X.

Boy, aged 10¾. Fell ill on the evening of January 28th with shivering and pain in the left side. On the 30th temperature was 104°, and on the 31st 105°, with a pulse-rate of 134 and respirations 46. Consolidation of left lower lobe and portion of upper lobe. Fifteen million pneumococci injected on the 31st, followed by general improvement, and a crisis on February 2nd. A second dose of 15 million was given on the 4th. Convalescence was quickly established.

CASE XI.

Woman, aged 54, admitted to hospital February 9th. Illness began on the 8th with a severe rigor and left-sided pain. On admission, temperature was 103° to 104°, respirations 40 to 56, pulse 136 to 140. On the eleventh there was consolidation of the whole of the left lower lobe and part of the upper lobe, and 25 million were injected. This was followed by a crisis on the 12th. Temperature irregular for a few days until a second injection of 50 million was given on the 14th. Physical signs had disappeared on the 18th.



Case XI.—Female, aged 54. Injected on third day.

CASE XII.

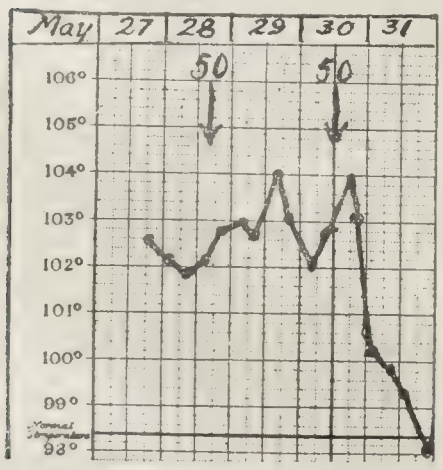
Man, aged 72. Seen in consultation on the third day of the illness. He was then in a semi-conscious typhoid state with delirium. Extensive consolidation in both lungs. Temperature 100° to 101°, very septic mouth, much flatulence. A typical case of severe pneumonia in an elderly patient with poor reactive powers. Injected with 25 million pneumococci. There was no great change in temperature or physical signs, but general aspect improved in a few hours. A second injection of 30 million was followed by a fall in temperature to normal, and the patient quickly recovered.

CASE XIII.

Lady, aged 40. Rigor early on February 22nd. On the 24th consolidation of both lower lobes and part of left upper lobe. Considerable collapse and depression. Fifty million injected on the 24th and 26th. Temperature began to fall after the second injection and reached normal on March 2nd.

CASE XIV.

Lady, aged about 30, began to be ill on March 7th with shivering and very severe pain in the right side. She was seen by me on the 9th; her temperature was then 104.4°, pulse 152, and respirations 52. She complained of agonizing pain all over the right side of the chest, and examination showed consolidation of the greater part of the right lung with a small area in the base of the left lung. No sleep since the onset, sputum rusty, herpes on lips. Fifty million pneumococci at once injected. Within a few hours she was free from pain. Next morning the pulse was under 120 and respirations had dropped to 42. She was brighter and less anxious and said she felt wonderfully better. Two more injections of 50 million were given on the 11th and 13th, each being followed by general improvement. Temperature fell by lysis. After a few days' normal temperature, as the patient was feeling well and conditions at the nursing home were not very comfortable she was moved to a friend's house. This was followed by a rise of temperature and the development of a right-sided empyema. This was the only case which had an after complication. Although the chart does not show the striking changes seen in some of the others, those who saw the patient were struck with the great change in the appearance of the patient from distress and danger to one of comfort and security which followed the first injection. I had no opportunity of seeing the patient after the 13th, but it would have been wise to have continued the injections in increasing doses after the temperature had fallen, for it is in cases ending by lysis, especially when there has been much pleurisy, that an empyema is likely to occur.



Case XV.—Male, aged 28. Injected on third day.

CASE XV.

A delicate, anaemic man, aged 28. Illness began on the evening of May 25th, with shivering and pain in the right side. Admitted to hospital on the 27th. On the 28th, temperature 103°, pulse 128, respirations 44. Consolidation of right lower lobe, and commencing in left lower lobe. Pulse soft, general condition distinctly bad. Fifty million injected on the 28th and 30th. The second injection was followed by a crisis. As temperature was irregular for a few days, and there was some fluid in the right pleura, 75 million were injected on June 2nd, and 100 million on the 4th. The fluid was absorbed, and the patient became quite well.

These cases were not selected in any way. There can be no doubt about the correctness of the diagnosis in each. All had the typical symptoms and appearance of acute pneumonia. Consolidation of the lung was present either at the time of injection or appeared later. The sputum contained large numbers of pneumococci. Most of the patients had no other treatment beyond ordinary nursing measures. To some a simple diaphoretic mixture was given. When severe pain was present at the onset a Dover's powder was prescribed. Only Cases III, XII, and XV required heart stimulants, and they were given oxygen with alcohol vapour and hypodermic injections of strychnine.

Of the 15 cases, only 1 died, and this case was complicated with pregnancy and labour, nearly always a fatal complication in pneumonia. Only 1 case developed an empyema, and this, I think, could have been prevented by continuing the vaccine treatment.

The most striking results were seen among those cases injected on the first or second day. In these there was little doubt that the course of the disease was greatly modified. In no case, even when the first injection was given ten hours after the initial rigor, was consolidation prevented, and in several the unusual picture was seen of a patient with a large portion of the lung solid, but with normal pulse, respiration, and temperature, together with an absence of symptoms. I formed the impression from these cases that vaccine treatment greatly hastened the evolution of the lung through its various stages. Consolidation, when absent at the time of injection, quickly followed, redux crepitations occurred early, and complete resolution was more rapid than usual. The general condition of the patient after the temperature had become normal was far better than that seen in uninoculated patients in the same stage. Several of the cases were allowed up in a week from the first onset, and two undertook a long railway journey in a fortnight. Even when there was no fall of temperature after an injection there was always an improvement in general symptoms, which was felt by the patient and was obvious even to the uninstructed observer. This improvement seemed to occur with some suddenness about six to eight hours after an injection. One doctor, writing about a patient, states: "Since six hours after the first dose of vaccine the patient, who was before very acutely ill, has been perfectly comfortable, and on the sixth day was on solid food."

With the exception of the one case in this series all the deaths in my inoculated cases of pneumonia have occurred in cases injected on the fourth or later days. I hope in a subsequent paper to discuss the vaccine treatment of the later stages of pneumonia.

Early Diagnosis.

Early administration necessitates early diagnosis. It may be argued that if a patient is injected during the first twenty-four hours there is no proof that he was suffering from pneumonia. Pneumococcic infection may cause a rigor with a high temperature lasting but a few hours. I have seen two patients who suffered from severe shivering fits in which the temperature rose to 104° or 105°. The attacks generally occurred in the evening, and next morning the temperature would be normal. Labial herpes always followed an attack, but careful examination never showed any lesion in the lung. Occasionally there was a cough lasting a few days, with scanty sputum containing pneumococci. Under vaccine treatment both patients completely lost the attacks, and have remained free for five and four years respectively. Such a case might be injected under the impression that the rigor marked the onset of pneumonia. If the attacks were caused by a pneumococcic infection the vaccine would do nothing but good, and if they were pneumonia, consolidation would develop. Only cases with lung consolidation must, of course, be recorded for statistical purposes.

In practice there seems to be a lack of confidence in diagnosing pneumonia before the onset of consolidation. A patient is taken suddenly ill with general febrile symptoms, high temperature, shivering, rapid respirations, but no sign of pulmonary disease. The case is loosely regarded as one of "influenza," and when physical signs

appear a few days later the pneumonia is said to have supervened upon influenza. This may sometimes be correct, but influenza is not now prevalent, and what is called influenza is the initial septicaemic stage of pneumonia.

When pneumonia begins in its most characteristic form with a rigor, high temperature, rapid respirations, flushed cheeks, hot dry pungent skin, and pain in the side, there can be little doubt about the diagnosis. When it begins insidiously, as in old people, patients with kidney disease, and occasionally in young adults, the diagnosis may be in doubt for a few days. Even before there is definite consolidation characteristic physical signs can generally be found in the lungs. Within a few hours of the onset there are peculiarly subdued and roughened breath sounds at one or other base, passing gradually into bronchial breathing. Crepitations may appear quite early.

In the majority of cases pneumonia can be definitely diagnosed within a few hours of the onset, and in such cases consolidation should not be waited for, but action taken at once. The events of the first few hours largely determine the course of the disease, and prompt action would save many lives. Of course, in many cases the patient is responsible for the delay, as medical advice may not be sought until three or four days have passed.

Stock versus Autogenous Vaccine.

For early administration a stock vaccine must be ready. It is commonly stated that a stock vaccine is useless because of the great variations in strain of pneumococci. But differences in strain chiefly concern the virulence, and if a stock vaccine be made from a highly virulent strain this should be efficacious against infections caused by pneumococci of less virulence. My own practice is to make a stock of vaccine whenever I obtain a pure culture from a case whose clinical course showed that the infection was a particularly severe one. For some time I have used one derived from a rapidly fatal case of pneumococcic meningitis.

The vaccine must be made from first cultures, and not from subcultures, which may have lost their virulence.

Pneumonia Caused by other Organisms than Pneumococci.

Another objection to the use of a stock vaccine is that pneumonia may be caused by Friedländer's bacillus, streptococci, staphylococci, *B. typhosus*, and *B. coli*. It is true that all these germs may cause consolidation of the lung, and therefore pneumonia, in the pathological sense; but their clinical features can rarely be confused with those of acute lobar pneumonia. I have never seen a case due to streptococci, staphylococci, or *B. coli* which did not at once give rise to suspicion that the infection was other than pneumococcic. Typhoid pneumonia may occasionally be a source of confusion. The cases of Friedländer pneumonia seen by me (four of which were successfully treated with a vaccine) were clinically different to cases of true acute lobar pneumonia.

Mixed Infections.

I admit the frequency of mixed infections. In some seasons the *B. influenzae* may be present with the pneumococcus. Last winter many of my cases showed *Micrococcus catarrhalis* in the sputum. But in these cases the pneumococcus is presumably the predominant organism in causing the pneumonia. In such cases a stock vaccine should be used at first, and an autogenous vaccine, including the secondary organism, can be made later if necessary. But a stock vaccine of known activity is of greater value than an autogenous vaccine of unknown activity.

By using a stock vaccine promptly we may occasionally inject a case which afterwards is proved not to be pneumonia or even a pneumococcic infection. But in a case of suspected diphtheria we do not wait for the result of the examination of the throat swab before injecting antitoxic serum, and in this instance the injected substance is not entirely innocuous. Errors in the diagnosis of early pneumonia should be uncommon in the practice of an experienced clinician, but if an error is made I know of no harm which could arise from the injection of 50 or 100 million of pneumococcic vaccine into a patient suffering from typhoid fever or other infection. If the patient is not infected with pneumococci he is not sensitized to the vaccine and cannot react.

Dosage.—With the first cases, treated years ago, I began tentatively with doses of 5 to 10 million. While occasionally effective in young children they were quite useless in adults. With further experience my doses increased and the cases here recorded show to some extent the evolution of my methods. I now regard 100 million as a suitable initial dose in an average adult man. In women and the less robust 50 to 75 million may suffice; 25 million is certainly too small a dose, and even when given during the first twenty-four hours rarely has that definite effect in cutting short the fever which is seen with larger doses. When a dose of 100 millions has no effect upon the symptoms the next dose should be increased, injections being given every day until an effect is obtained. When a definite improvement has followed the first dose, the next should be given in forty-eight hours. It is advisable to continue the injections until the lungs have completely resolved.

Sir A. E. Wright, in his recent work on the use of vaccines in pneumonia, found that inoculation in the form of small doses frequently repeated was absolutely ineffective, and that, on the other hand, inoculation in the form of a single large dose, administered in the incubation period, often arrested the disease and averted death. He thinks it reasonable that the results obtained during the incubation stage with doses of 250 to 1,000 million would repeat themselves if this treatment were applied in the early stages of pneumonia. We know the limit below which a pneumococcic vaccine is ineffective, but we do not know up to what limit of dosage it would be safe to go. I have not exceeded 200 million in acute cases, and find the results satisfactory. Much, however, depends upon the activity of the vaccines; 50 million of one vaccine might be more effective than 250 million of another. I believe that much lack of success in vaccine treatment generally is due to the use of vaccines of little activity. A mere enumeration of the organisms tells us little about the dose required, for the strength of the vaccine has still to be determined by its action upon the human patient.

The results obtained in the few cases here recorded have been confirmed by several practitioners to whom I have sent vaccine for use in their own practices, and who have kindly sent me charts and notes of their cases. The general practitioner alone has many opportunities of seeing pneumonia in its earliest stage, and upon him I would urge the importance of taking prompt measures to combat the infection and of seeking earlier consultations.

Owing to the hardships and exposure inseparable from a time of war, pneumonia is prevalent in military camps. Up to January 31st, 1,508 cases of pneumonia, with 301 deaths, had occurred among the British troops in the United Kingdom. I am confident that the early administration of a pneumococcic vaccine would save many lives and shorten the duration of the illness. In military practice it should be possible to discover cases of pneumonia sufficiently early to administer vaccine during the most favourable stage. If removal of the patient to a military hospital entails much delay, whenever possible the vaccine should be administered before removal and as soon as the case is diagnosed. As in early cases improvement occurs within a few hours, the patient would withstand better the journey to hospital. The rapid resolution of the lung and the short period of convalescence seen after the early administration of vaccine enable a soldier to return to active duty in a shorter period than with any other method of treatment.

REFERENCE.

[1] *Journal of Vaccine Therapy*, September, 1912; *Clinical Journal*, April 30th, 1913.

ON Tuesday next, at 3 p.m., Professor Sir J. G. Frazer will begin a course of two lectures at the Royal Institution on "The belief in immortality among the Polynesians"; and on Thursday Dr. Aubrey Strahan will commence a course of two lectures on "London geology."

KING EDWARD'S Hospital Fund has recently received a cheque for £500 from Sir John Ellerman, Bt., given as an annual subscription to be terminated a year or two after the war, when things become normal again, and thus to assist the hospitals over a period during which there is considerable fear of a material reduction in subscriptions and donations.

THE ACTION OF CALCIUM SALTS.

BY

CHARLES O. JONES, M.D., M.Sc., M.R.C.S.

(From the Biochemical Laboratories, University of Liverpool.)

THERE is at the present time a certain vagueness as to the powers of the animal organism to excrete calcium salts, some authorities even prohibiting milk as a diet in certain conditions, supposing that the calcium is liable to accumulate owing to faulty excretory powers.

The work here described was undertaken to endeavour to estimate the excretory powers of animals for calcium salts, and also to find out the channels whereby the animal is enabled to protect itself against any excess. Rabbits were used in all the experiments, and all doses were given intravenously, as it was found that when given by the mouth there was some vagueness as to how much had been absorbed, while hypodermic injections were unsatisfactory owing to slow absorption and consequent abscess formation.

The salt used was pure calcium chloride in 10 per cent. solution; the calcium was in all cases estimated gravimetrically.

The first rabbit was given 1 gram of calcium chloride intravenously; death was instantaneous. Clotting was found to have occurred from the point of injection to the heart, which had stopped in diastole. A second rabbit was given the same dose, and died at once with a convulsion. Coagulation was found extending from the point of injection to the heart. The other vessels were found normal.

It was found that 0.5 gram of calcium chloride was a maximum dose; this is equal to 0.252 gram of calcium oxide. All results are calculated to calcium oxide.

Each column in the tables shows a daily excretion in cubic centimetres or grams.

Experiment: Excess Excreted by Intestine.

A rabbit was given an injection of 0.5 gram of calcium chloride, the urine and faeces being examined daily to estimate its excretion.

Before Injection: Normal.		After Injection.						
Urine:								
Volume	45	Nil	10	Nil	Nil	13	Nil	8
Calcium	0.03	Nil	0.04	Nil	Nil	0.05	Nil	0.3
Faeces:								
Weight	21	Nil	10.5	7	6.5	Nil	1.5	2.5
Calcium	0.181	Nil	0.361	0.093	0.157	Nil	0.04	0.051

It will be seen that the calcium excess is nearly all excreted by the intestine. One other point was noticed, namely, the gradual diminution in quantity and also the increasing dryness of the faeces which follows. This will be dealt with later. It is also evident that in the above example the calcium has a marked effect on metabolism; this was further investigated, and another rabbit injected with the same dose.

Experiment: Renal Irritation and Paresis.

Before Injection: Normal.		After Injection.						
Volume ...	45	Nil	Nil	Nil	10	Nil	Nil	40
Urea	0.385	Nil	Nil	Nil	0.25	Nil	Nil	0.796
Chlorides ...	0.155	Nil	Nil	Nil	0.02	Ni	Nil	0.036
Microscopic examination	Nil	Nil	Nil	Nil	A few casts	Nil	Nil	Carbonates, phosphates, oxalates.

In this example the injection had a powerful effect, and it is to be noted that the variation in the effect was very marked. There was in this case complete anuria for three days, with symptoms of marked renal irritation, and finally the excretion of insoluble calcium salts.

This renal irritation and paresis explains why calcium is excreted by the bowel. The kidney is only able to deal with a certain concentration of calcium. This limitation point of kidney efficiency towards calcium differs in every animal, and probably varies at different times in the same animal's life.

When the accumulation of calcium exceeds this point it throws the kidneys out of action, and the excretion is then taken on by the intestine, and when the calcium accumulation has been lessened the kidney is once again enabled to take on its duties and sweep the excess of the salt out of the blood.

This calcium "toleration point" varies very considerably from animal to animal, as the next example shows. The rabbit was given the same injection as the previous one, namely, 0.5 gram.

Experiment: Toleration Point.

Before Injection: Normal.		After Injection.		
Urine:				
Amount in c.cm. ...	50	58	110	115
Calcium as oxide ...	0.025	0.123	0.369	0.143
Faeces:				
Amount in grams ...	26	40	23	27
Calcium as oxide ...	0.208	0.312	0.415	0.356

Here it will be noticed the kidneys and intestines both excreted the calcium. The toleration point was higher in this animal than in the previous case, and was just above the amount injected. If the injection had been larger the dose would have put the kidneys out of action; if smaller the kidneys alone would have dealt with the excess.

Another point is to be noticed. The organism does not confine itself to throwing out the calcium excess; along with it go reserve supplies of calcium, which often, as will be seen later, amount to far more than the amount injected. It is possible that the toleration point depends largely on the amount of reserve calcium.

The next example, given the same amount (namely, 0.5 gram), shows again the injection passing the toleration point of calcium.

Experiment: Toleration Point.

Before Injection: Normal.		After Injection.			
Urine:					
Volume	45	Nil	50	50	32
Calcium	0.04	Nil	0.169	0.175	0.135
Faeces:					
Weight	27	17	22	40	20
Calcium	0.150	0.261	0.165	0.495	0.403

It will be seen that during the next day the kidneys were inactive, and that the bowel excreted a quantity of calcium. The toleration point was now reached by decrease in calcium salts, and henceforward kidneys and intestine excreted large quantities of calcium.

Chemical Form of Excretion.

An attempt was now made to find in what form the calcium was excreted into the intestine. The faeces were dried, and one part was used to estimate calcium gravimetrically; another part was extracted with ether in a Soxhlet apparatus. From this portion the fatty acid was estimated by dissolving in absolute alcohol and titration with N/10 caustic soda. The residue after ether extraction was titrated with hydrochloric acid, dried, and again extracted with ether.

The following series will show that in each case with a maximum injection of calcium salts there is excreted with it an extra quantity of soap, and this soap is an insoluble soap.

Experiment 1.

Before Injection: Normal Average.		After Injection.		
Neutral fat	0.690	0.405	0.336	0.762
Fatty acid...	0.704	0.756	0.816	0.986
Soaps	0.718	1.780	1.486	0.306
Calcium oxide	0.767	1.544	1.251	0.276

Experiment 2.

	Before Injection: Normal Average.	After Injection.	
Neutral fat	0.726	1.028	1.599	0.889
Fatty acid...	1.153	0.879	1.349	0.862
Soaps	0.840	1.297	1.310	0.440
Calcium oxide	0.759	1.209	1.799	0.382

Experiment 3.

	Before Injection: Normal Average.	After Injection.	
Neutral fat	0.484	1.27	0.991	0.735
Fatty acid	0.782	1.27	0.818	0.740
Soaps	0.584	1.512	0.622	0.335
Calcium oxide	0.506	1.462	0.654	0.427

Experiment 4.

	Before Injection: Normal Average.	After Injection.	
Neutral fat	0.986	0.611	0.861
Fatty acid...	0.778	0.902	0.854
Soaps	0.526	0.714	0.706
Calcium oxide	0.640	0.984	0.721

Experiment 5.

	Before Injection.			After Injection.		
Weight of faeces ...	30	28	24	29	28	36
Fat and fatty acid ...	3.018	2.285	1.928	2.221	0.728	1.206
Soaps	0.258	0.140	0.268	0.240	0.345	0.425
Calcium oxide ...	0.780	0.632	0.648	0.469	1.036	0.853

Experiment 6.

	Before Injection: Normal.	After Injection.		
Neutral fat	0.300	0.405	0.336	0.662
Fatty acid	0.307	0.756	0.846	0.582
Soluble soaps	0.041	0.084	0.015	0.015
Insoluble soaps	0.272	1.696	1.456	0.276

From these tables it is observed that a maximum sublethal dose of calcium produced an extra excretion of soap. The results obtained in experiment 6 show that the soaps increased in quantity, and are almost entirely the insoluble soaps of calcium. But it is to be noted that the effect of a definite dose of calcium will have different effects on different animals. In one it will call forth a large increase in the soap excretion, while in another a large quantity of calcium is excreted, but with a relatively small accompanying amount of soap. It seems probable that it is only excessive amounts of calcium salts in the blood which throw out soap, and that increases, if they are not excessive, will simply be excreted as inorganic calcium salts through the intestine. This is demonstrated by the following experiment:

Experiment: Rabbit; Smaller Dose (2.5 c.cm. of 10 per cent. Solution of Calcium Chloride).

	Before Injection.			After Injection.	
Weight of faeces ...	30	17	28	33	34
Fat and fatty acid ...	2.13	1.89	0.879	1.24	0.930
Soaps	0.258	0.150	0.123	0.277	0.279
Calcium oxide ...	0.432	0.371	0.330	0.713	0.514

Here there is little or no increase in the soaps, while the calcium excretion is largely increased. Consequently it would appear that calcium is usually excreted by the intestine as an inorganic salt, and that it is only when the amount in the blood is very great that fatty acid is dragged out with it and forms soaps.

An attempt was next made to find out the effect of accumulation of calcium salts after several injections at short intervals. It was noticed that following an injection, and more so after repeated injections, the faeces became dry and smaller in amount, and finally the animal died. The action of calcium salts as an intestinal astringent appears to occur after intravenous injection, and is, therefore, not altogether a local effect.

On examining an animal killed by repeated sublethal doses of calcium chloride at short intervals, extensive clotting was found to have taken place in the heart and vessels, and this clotting appeared *ante mortem*. The stomach was full of food; the appetite appeared almost unimpaired. The small intestine was full of food; the large intestine, and more especially its lower third, was almost empty, containing only a very few small and dry scybala.

A second rabbit gave similar *post-mortem* results.

The explanation appears to be as follows: The calcium equilibrium is kept constant normally by the kidneys, excess being thrown out as phosphate, carbonate, and oxalate. Calcium as inorganic salt, probably as phosphate, is normally excreted by the large intestine, and probably many cases of constipation are due to excessive excretion by the gut. If the calcium increases in the blood, the kidneys and intestine work harder to throw it out. When a certain point of accumulation occurs (which may be called the animal's calcium toleration point) the kidney is thrown out of action; the intestine is still able to excrete it, and does so, though less and less actively owing to the astringent effect.

The calcium content of the blood is now high, and finally fatty acid is combined with the calcium and excreted by the bowel as calcium soap. The intestine is now working slower, owing to intestinal paresis from astringent action of lime salts. The calcium is increasingly dammed back till the calcium causes clotting of the blood and the animal dies.

If this is so, what protection has the animal organism against a sudden invasion of calcium salts? Is immunity confined to the organic world, or does the same result occur in the inorganic?

Experiment: Increasing Doses.

A rabbit was injected with 5 c.cm. of 2.5 per cent. solution of calcium chloride. There was no appreciable increase in the excretion, calcium salts, or soaps. After an interval of five days the injection was increased to 5 c.cm. of 5 per cent. solution of calcium chloride. Again there was only a very slight increase, if any. A few days were again allowed to elapse, and a full dose (5 c.cm. of 10 per cent. solution) was injected. Neither the calcium excretion nor the soaps were increased as a result, showing clearly that the organism can accommodate itself to increasing doses of calcium salts as long as the animal is allowed to excrete one before the second arrives, and in this way it is able to neutralize a large dose, which, without such artificial chemical immunity, would have profound effects on the animal.

Weight before Injection.				Injection, 5 c.cm. of 2% Sol.		Injection, 5 c.cm. of 5% Sol.		Injection, 5 c.cm. of 10% Sol.	
				After First Injection.		After Second Injection.		After Third Injection.	
Faeces... ...	21	22	18	24	17	21	16	15	20
Fat	0.735	0.488	0.472	0.621	0.484	0.567	0.432	0.483	0.528
Soaps	0.290	0.207	0.155	0.184	0.164	0.277	0.192	0.156	0.140
Calcium oxide	0.235	0.321	0.144	0.210	0.186	0.256	0.173	0 136	0.128

Conclusions.

1. Calcium salts, when injected into the blood in small quantities, are excreted by the kidneys as phosphates, carbonates, and oxalates.

2. In larger quantities the bowel also takes part in the excretion, and the calcium is excreted as inorganic salt.

3. At a fixed concentration of calcium in the blood

greater than the above, the kidneys are thrown out of action and all the excretion is performed by the intestine, until a point is reached where the quantity in the blood is again brought below the "toleration point," when the kidney again takes on its excreting function.

4. If the concentration in the blood is greater still, the calcium is excreted also as calcium soap by the intestine.

5. The excretion of large quantities of calcium through the intestinal walls has an astringent action, and causes diminished action and paresis of the intestinal movements. The faeces cease to be excreted so freely, and if more calcium arrives in the blood the increased concentration of the calcium ion produces spontaneous intravascular clotting and death.

6. The calcium "toleration point," or the point of concentration of calcium in the blood above which the kidneys are unable to act, can be raised by injecting increasing doses of calcium chloride into the blood, provided time is given for the animal to complete the excretion of one injection before the next is given. This action appears to extend the theory of immunity into the inorganic world, and shows that the body can react to calcium salts much in the same way that it reacts to an organic toxin.

AN APPARATUS FOR X-RAY LOCALIZATION.

BY

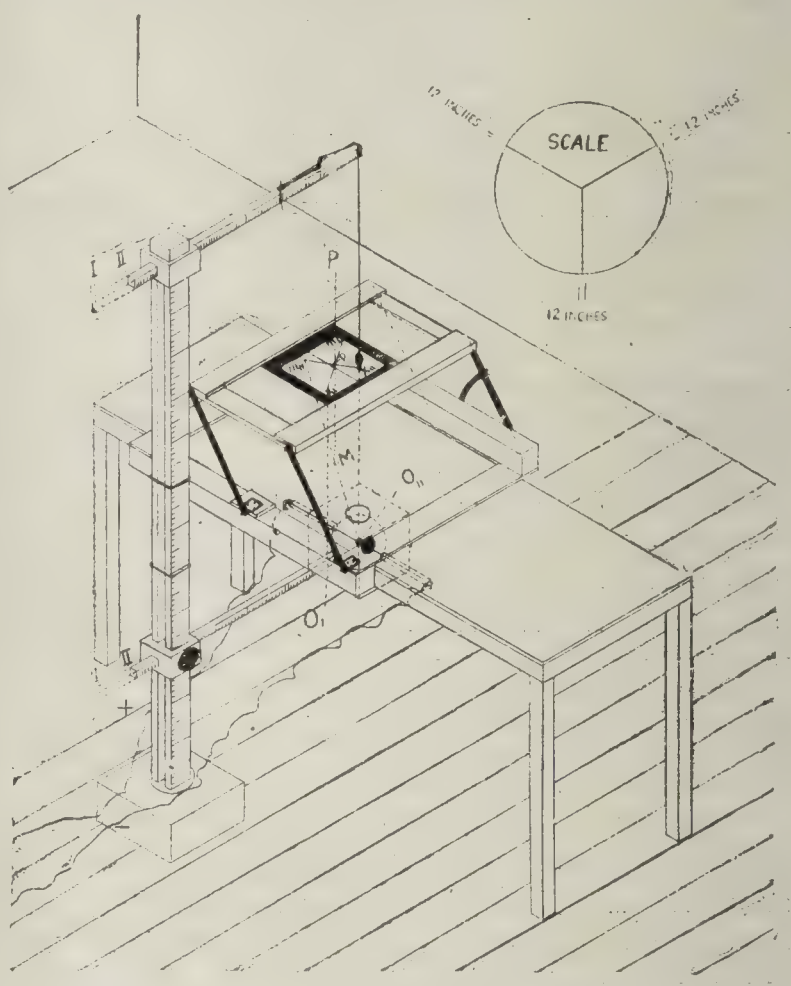
WILLIAM COTTON, M.D.,

BISHOPSTON, BRISTOL.

In view of the present interest in this matter I have sketched (in isometric perspective) an apparatus with many familiar and some novel details. This is adapted for almost any of the prevailing methods of localization and for any part of the body, except perhaps the orbit. Any form of upright tube stand, if not too elaborate, will do; nor is any special table required, provided it is level, narrow, long, straight-edged, and transparent to x-rays. More particularly I would call attention to the plate-holder, which consists of an upper and a lower deck, connected similarly as in the case of the two beams of the ordinary parallel rulers, and capable either of being clamped in any position or of being used free. The lower deck can be slid along either edge of any straight table, and, being reversible, can be applied to the table from either side or end, and is not any obstacle to the passage of x rays. The upper deck can, by means of adapters, support any plate or fluorescent screen, so as to slide from either side of the table to the other. On the fluorescent screen and in close contact with its surface can be placed a widely overlapping sliding protective glass shield (in sections if preferred) of lead-glass, slightly sand-blasted or otherwise roughened on its upper surface, and sufficiently optically transparent to act as a temporary recording surface for outlining the shadows by means of a lead pencil when the screen is lit up. This recording surface being much more extensive than the fluorescent screen, permits the position of the points of the plumb-bob upon it to be marked irrespective of the actual place of a, perhaps, small fluorescent screen, and at the same time provides some protection for the hands of the observer; the pencil marks can afterwards be washed off.

O_1 and O_{11} are the first and second positions of the x-ray centre of emission, constituting the Base and parallel to the plane of the fluorescent screen, which plane is always horizontal if the surface of the table is so; x_1 and x_{11} are the two points indicated by the successive positions of the point of the plumb-bob, where the vertical x rays cut the picture plane, constituting the base on the plate; and m_1 and m_{11} are respectively the first and second positions of the shadow of a foreign body thrown from O_1 and then from O_{11}. If on the recording surface of the shield when the light is turned on we mark the points x_1 and x_{11} and join x_1 with m_1 and x_1 with m_{11} we get a sort of x-shaped figure; the point of intersection is the crucial point p. If the plane of the upper deck is truly horizontal and the plumb-line correctly centred over the x-ray centre of emission (as can be done once for all in various ingenious ways), then we know that the centre of the geometrical space occupied (but probably not completely filled) by any foreign body M is always in the vertical line P M below p. The distance p M is the depth of this "meta-centre" of the foreign body below p and within the patient. By means of a free plumb-line we can now mark the point on the patient vertically below p, noticing carefully at the time the depth (if any) between the surface of the patient and the point p at the level of the upper deck. We can now dismiss the patient until he is wanted for operation.

To get the depth p M we have only to plot out one or other of the triangles $O\,x\,m$, and mark in the position of p in some of the ordinary well-known ways. It is wise always for the radiographer to add half an inch or more



to the depth p M, once he is sure of his vertical direction, when he knows he is dealing with any irregularly shaped foreign body of any size much larger than a small shot or fragment. With an undistorted service bullet the surgeon may be safely left to make his own correction.

A good deal of the apparatus depicted can be improvised with the resources necessarily present when an x-ray installation can be installed and worked. As a rule existing practice prefers to get the point x_1 and m_1 over each other and to ignore p as a separate entity; this also can fairly easily be done by means of this apparatus. I and II indicate the first and second positions of the brackets bearing the tube box and the plumb-line.

SANITATION OF CAMPS (SAND AND WATER).

BY

MAJOR T. FORREST, R.A.M.C.(T.),

S.M.O., GAILES CAMP, AYRSHIRE.

An outbreak of diarrhoea in two companies of the 16th (S.) Battalion H.L.I. on December 16th, 1914, when ninety men were affected, caused an investigation to be made. Complaints as to the quality of the water supply had already been noted, and the valuable assistance of Dr. R. M. Buchanan, City Bacteriologist, Glasgow, was obtained. The water was, however, ruled out, as the number of men affected was only a fraction of the whole number using the same water supply. The same process eliminated the food supplies, which are daily inspected, and invariably of excellent quality.

In the search for evidence of local contamination it was found that the camp kettles were being scrubbed with sand picked up indiscriminately. Clean sand was provided, and orders issued that it only was to be used for scrubbing purposes. Thereafter no further cases occurred.

The ground at Gailes has been used yearly for over two decades for camp purposes; refuse pits have been opened and covered over; much traffic, horse and otherwise, has occurred in the vicinity of the drains, and indiscriminate use of sand meant the use of polluted material. A bacteriological report on the sand in question and valuable suggestions made by the bacteriologist are appended.

BACTERIOLOGICAL EXAMINATION OF SAND.

Sample 1 was collected from a small heap which had been used for cleansing food utensils and which presented a soiled appearance. It was examined same day to determine the nature and amount of bacterial contamination, if any. Sample 2 was collected from foundation pit for comparison with Sample 1.

Sand I.

Bacterial Content: 2,060,000 per gram in gelatine at room temperature; 95,200 per gram on agar at 37° C.

Colon Group (Lactose+ Indol+).—Details:

B. coli ...	Present in 0 01 gram.
B. neapolitanus ...	Present in 0.01 gram, absent in 0.05 gram.
B. coscoroba ...	Present in 0.05 gram.
B. acidi lactici ...	Present in 0.001 gram.
B. proteus ...	Present in 0.C01 gram.

Sand II.

Bacterial Content: 21,200 per gram in gelatine at room temperature; overgrown with colonies of mould (mucus).

Colon Group (Lactose+ Indol+).—Absent in 1 gram. Details:

B. coscoroba ...	Present in 0.01 gram.
B. proteus ...	Present in 1 gram, absent in 0.1 gram.

The results obtained from the examination of Sand I serve to show the extent to which sand becomes polluted by its use in the cleansing of food utensils. The nature of the pollution indicates that this practice may become a source of dangerous contamination. The danger would be sufficiently guarded against by the use of clean sand from a sandpit placed in boxes. The requisite amount of sand would be lifted out and the possibility of its use a second time would thus be obviated.

R. M. BUCHANAN.

December 10th, 1914.

The result of an investigation into the water supply is added, as every year complaints are made as to its colour and turbidity, especially in wet weather. A large more or less permanent camp has been erected at Gailes, which may be further extended, the sandy soil and healthy situation, with ample manœuvring ground in the near vicinity, making this one of the most suitable localities for training purposes. It is desirable that an authoritative statement as to the water supply should be put on record.

SUMMARY OF REPORT ON WATER SUPPLY.

The water supply as delivered from several taps was examined bacteriologically on November 30th and on December 4th and 10th.

Owing to the interval between the collection and examination of *the first and second samplings* the numerical results have no value beyond indicating (1) the possibility of rapid multiplication of bacteria if the water is allowed to remain for any length of time in the end pipes, and (2) the need for systematic flushing of those standard taps which are not much in use.

The results of *the third sampling* (gelatine count 68 to 154 per c.cm.; agar count 26 to 52 per c.cm.; colon group — (*a*) *B. coli* "lactose + indol +" present in 100 c.cm., absent in 10 c.cm.; (*b*) other coliforms present in 10 c.cm, absent in 1 c.cm.) may be interpreted as indicating a fairly pure upland supply when local conditions and circumstances are fully taken into account. At the same time it may be stated that the total number of bacteria per c.cm. and the colon group content are comparatively high, and point to some contamination which, although not presenting evidence of a specifically dangerous nature, is undesirable, and most probably preventable. It is of a nature that suggests pollution of the reservoir by the intermittent visits of sea birds.

R. M. BUCHANAN.

DR. R. THOS. JONES, J.P., Harlech, has been appointed High Sheriff for the County of Merioneth for 1915–16.

THE Foundation Oration of the Union Society of University College, London, will be given by Lord Parmoor on Thursday evening, March 18th, at 8.45 p.m. The lectures will be founded on a text from George Herbert: "Do well and right, and let the world sink." The annual dinner will be held in the college refectory on the following evening at 7.30 p.m. It is particularly hoped that members serving with His Majesty's Forces will avail themselves of this opportunity of meeting old friends. Tickets for the dinner, 5s. each (men only), can be obtained from Mr. Godfrey H. Ince, at the college.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

BY

J. C. G. LEDINGHAM, M.B., D.Sc.,

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WHAT I have got to say in regard to the bacteriology of epidemic cerebro-spinal meningitis is doubtless familiar to many, but it is perhaps well, in a general discussion, to restate briefly certain points in connexion with the biology and distribution of the meningococcus which have a distinct bearing on the epidemiology of the disease.

The meningococcus of Weichselbaum is universally regarded as the essential specific cause of epidemic cerebro-spinal meningitis, as also of certain forms of sporadic meningitis. It belongs to a small group of Gram-negative diplococci, the only other important member of which is the gonococcus. In many relationships, and especially the serological relationships, it bears a close family resemblance to the *gonococcus*, and if the distribution of the *gonococcus* were other than it is, there is no doubt that the difficulties in differentiation surmountable though they are, might be greatly increased. Records of cerebro-spinal meningitis, as we know it, are wanting before the year 1805, and the daring hypothesis has been put forward that the *meningococcus* may have arisen as a mutant form of the *gonococcus*, with its seat of predilection in the meninges instead of the genital tract.

It would be idle, however, to speculate further on this point at present, as research is hampered by our inability to communicate either cerebro-spinal meningitis or gonorrhœa, as we know them, to laboratory animals. The serological and other affinities that exist between the *meningococcus* and the *gonococcus* find an interesting parallel in those that exist between the bacillus which which causes pseudo-tuberculosis in rodents and the bacillus of human plague.

The *meningococcus* is a delicate short-lived organism and requires for its successful isolation and for a variable time after isolation the presence of serum, ascitic fluid, or some such substance in the nutrient medium. Later it can grow without these additions, but it still retains certain properties which mark it off as an organism which cannot under any circumstances lead a saprophytic life outside the human body. These properties are its great susceptibility to (1) cold, and (2) to drying. It will not grow below 25° C., and cultures kept at room temperature very rapidly die out. If no precautions are taken against drying the organism dies out even at 37° C. in a few days, but if such precautions are taken it has been found possible to keep the organism alive for so long as six to ten months. The observations of various authors vary somewhat, and it is unnecessary to cite details, but all are agreed that the *meningococcus* is an organism which is extremely susceptible to external influences of the kind mentioned.

When found in the lumbar fluid of cases of meningitis, the *meningococcus* is readily identified by its Gram-negative character and its frequent intracellular disposition. After isolation, the growth is distinguished by its emulsibility in saline, its action on certain carbohydrates, and its behaviour towards an agglutinating serum. As organisms other than the *meningococcus* are only very rarely met with in samples of fresh lumbar fluid from cerebro-spinal cases, some of these tests may legitimately be dispensed with, especially if work is pressing; but in the case of suspicious organisms isolated from the naso-pharynx of cases or carriers, identification tests have necessarily to be more strict in view of the fact that other Gram-negative diplococci, such as the *Micrococcus catarrhalis* and the group of chromogenic diplococci, are liable to occur in this situation. The criteria employed for the identification of meningococci from the naso-pharynx have probably not always been of a uniformly strict character, and this fact has undoubtedly to be taken into consideration in appraising the percentages obtained by various workers who have searched for carriers either during the epidemic season or at epidemic-free periods.

It would be exceedingly desirable to have an agglutinating serum which would act with some uniformity against meningococcal strains of various origin. In hunting for carriers it would be invaluable, but so far the difficulties

presented by the fact that a considerable number of strains are relatively inagglutinable have not been surmounted. A serum prepared by immunization with one strain may agglutinate only a small proportion of other strains. For example, Elser and Huntoon in America tested a monovalent serum against 65 strains, with the result that 25, or 40 per cent. of them, were not appreciably affected. Similar results have been got by Arkwright and other workers.

On the other hand, some of these inagglutinable strains may have slight but definite absorptive powers, and may, when injected into animals, produce serums which affect agglutinable strains, though remaining without action or with only slight action on the homologous organisms.

It is possible, however, that these difficulties may yield to further research, which the present outbreak will doubtless stimulate, but it has to be remembered that in the coccal group generally these serological difficulties due to apparent high specificity of the individual strain are constantly met with—for example, in the case of the *pneumococcus*. The phenomenon is not confined to this group, however, as very occasionally strains of *B. typhosus* are met with which are relatively inagglutinable, but which are able to produce agglutinins for other strains.

With regard to the distribution of the *meningococcus*, it has never been isolated from dust, air, or fomites generally, and, indeed, its short-lived character renders very remote the possibility of its transmission by such media.

Apart from the actual case of the disease, the *meningococcus* is found in the naso-pharynx of a certain proportion of persons living in more or less contiguity with cases. I will refer only to its occasional presence in the naso-pharynx of healthy persons at epidemic-free periods. In the book on the *carrier problem* by Arkwright and myself[1] a list of observations on this point is found, and Sophian in his book[2] publishes a similar list. Some observers have found a small percentage of carriers in such populations, while others have found none, but the total number of cases examined has not been large. The only large series is that by Mayer and Waldmann (1910), who examined 9,111 men in the Munich garrison at an epidemic-free period and found roughly 2 per cent. of carriers amongst them. In a recent paper in the BRITISH MEDICAL JOURNAL, Sir William Osler quoted these figures and added a point of exclamation, the inference to be drawn probably being that he (Sir William) was inclined to subscribe to Mayer's sweeping generalization from his figures—namely, that the *meningococcus* was an ubiquitous organism occurring in 2 per cent. of normal people.

This question is, of course, a most important one. If one were to accept a generalization of this kind, it would amount to placing cerebro-spinal meningitis on the same plane as pneumonia, where epidemiology does not come in—that is, if we accept the current view that a person gets pneumonia by infection from a strain which has been growing saprophytically in his respiratory tract.

Now, it must be said that at the time some doubt was cast on these observations of Mayer by his own compatriots, and in a footnote to his paper Mayer refers to this feeling of scepticism; but probably the feeling was one rather of disagreement with his generalization above referred to. In my view there is no reason to doubt the figures, but in appraising them one has to remember that the population examined was one in which cases had been occurring yearly. It is therefore not at all improbable that some of his carriers revealed at the meningitis-free period had been chronic carriers for some months, while others had been infected by such carriers. As a matter of fact, Mayer admits that 4 out of 35 persons who were carriers during the meningitis season proved to be still harbouring the *meningococcus* at the meningitis-free period. The way in which one carrier gets surrounded by a zone of carriers has been very clearly demonstrated by Selter, whose observations are to be found in the book on the carrier problem.

The presence of such carriers at an epidemic-free period is indeed necessary to explain the peculiar manner in which cerebro-spinal meningitis springs up in areas between which and previously infected areas no apparent connexion can be traced. The chronic carrier, with probably a zone of carriers round him, acts as the bridge between one epidemic and the next. A generalization, therefore, like that propounded by Mayer is entirely unjustified at the present time, and is calculated to give a false sense of security to the general and medical public.

REFERENCES.
[1] Ledingham and Arkwright: *The Carrier Problem in Infectious Diseases*, London, 1912 (Edward Arnold). [2] Sophian: *Epidemic Cerebro-spinal Meningitis*, London, 1913 (Kimpton).

CEREBRO-SPINAL MENINGITIS: DIAGNOSIS AND PROPHYLAXIS.

BY

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SUCCESSFUL prophylaxis depends upon a clear conception of what the disease actually is. The name is unfortunate. It recognizes only one set of symptoms that are practically terminal.

The disease is more prevalent than is commonly known. It has three stages:

1. Catarrhal.
2. Septicaemic.
3. Meningeal.

The catarrhal stage is probably very prevalent. It causes no symptoms that occasion any alarm, and is looked upon as a pharyngitis, or that and a laryngitis combined.

The septicaemic stage sets in when invasion of the blood stream has taken place. It is apt to be mistaken for influenza, and often it ends there and nothing occurs to cause any suspicion that there has been a mistake in diagnosis. Occasionally it happens that the true nature of the disease is recognized, and it is notified, but before time has been found to perform lumbar puncture the whole train of serious symptoms has disappeared. The result is a reversal of the diagnosis, and some degree of discredit to the original examiner of the case.

The diagnosis depends upon the recognition of the existence of these three stages.

Fever, headache, and other constitutional symptoms need not be expected in the mild catarrhal stage. An examination of the pharynx shows redness—catarrhal as opposed to granular pharyngitis is seen. But it must be remembered that the former may be superimposed upon the latter, and thereby confusion may arise. The question of the nature of the infection can only be settled bacteriologically. A pure culture is practically never to be got directly, and the usual methods must be observed to separate different organisms. Certain streptococci and pneumococci are very frequently found, but the important point is to find out the presence or absence of meningococci. This is done by the excellent method devised by Gordon.

The question arises whether if meningococci are found and there is no other symptom but pharyngitis, is the disease to be attributed to the meningococcus? It certainly ought to be, for the following reasons:

1. The meningococcus resembles the gonococcus in having great vitality in a favourable nidus, and in being extremely susceptible to adverse influences when removed to situations where other organisms could still survive. Implanted successfully upon the pharyngeal wall it tends to hold its own, just as does the gonococcus when it reaches the site of its predilection. (The utility of gargles and other forms of local treatment has yet to be proved in dislodging it, but the attempt to do something in the way of thorough local treatment should not be neglected.)

2. In all probability the tendency is for the organism to make headway and to enter wandering cells and travel eventually into the blood stream. Even in the blood it may do little mischief beyond causing a toxic headache and other symptoms usually attributed to influenza. Cases of this sort may have typical or more usually atypical and protean nervous symptoms, and may suddenly recover or become quite easily diagnosable clinically.

3. Instead, however, of the disease progressing so far it may become chronic, and spread over a greater area and cause laryngitis. Sufficient resistance is raised by the leucocytes to prevent living cells entering the blood stream, and a state of perimucosal induration arises that is very painful and tender, and causes trouble in swallowing and moving the neck. This is not the later neck rigidity pathognomonic of meningeal irritation. These symptoms are all aggravated by the association of other organisms, such as the *Streptococcus maximus*, and may be successfully treated by a vaccine chiefly of that organism. The symbiotic association of these other organisms probably aids rather than hinders the successful survival of the meningococcus, but they alone without it may cause similar symptoms.

4. The gonococcus and the meningococcus are intra-leucocytic organisms. Phagocytes seem to give them a shelter that defends them from the action of the anti-bodies that ought normally to be formed in organismal invasions of the body. No doubt they are carried in this way to the meninges. Gonococci have the same properties, and in suitable shelter, such as joint cavities, thrive and cause trouble. The meningococcus occasionally enters a joint, and, vice versa, the gonococcus occasionally enters the cerebro-spinal canal.

The usual gonococcal disease is confined to mucous surfaces. Similarly the usual meningococcal disease is one of mucosa. It is already known that carriers are more numerous than so-called cases, but really all carriers and cases alike are, no doubt, genuine cases. Therefore the prophylaxis of meningococcal disease is the treatment of these early cases, preventing them from infecting non-immunes, and from themselves developing more advanced stages of the disease. It amounts to the examination bacteriologically of all cases of sore throat during epidemics, the elimination of meningococcal cases, and the special segregation and treatment of these. The chief burden of this work would fall upon the bacteriologist; but there could be no question of the benefit that would result, and the ultimate saving of time to men in training, and the saving of life too.

It has just been observed that on suitable media, and exposed for several days to temperatures generally recognized as unsuitable, the meningococcus is *still* viable, and can be subcultivated. It is inferred that this is perhaps possible in Nature.

As a measure of prophylaxis it is suggested that carriers ought to be treated by autogenous vaccines.

It is believed that routine examination of contacts will ultimately be more valuable and less laborious than that either of alleged contacts under present conditions or of whole regiments, which is a counsel of perfection and too large a problem to tackle.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE.

The Interpretation of the Features of Cerebro-spinal Meningitis Epidemics and Preventive Measures.

AT a meeting of this section held on Friday, March 5th, the President, Dr. C. J. MARTIN, being in the chair, the discussion was reopened by Dr. J. C. G. LEDINGHAM, whose contribution is published in full at p. 465.

Dr. J. A. ARKWRIGHT said that a striking feature concerning epidemics of cerebro-spinal meningitis was the apparent isolation and want of ascertainable contact between the patients. The majority of houses afforded only one example, but the proportion differed in different epidemics. In one epidemic, of 1,957 houses implicated, 6.9 per cent. furnished more than one case. Cases often occurred simultaneously in the same house. If not simultaneous, a second case might arise after an interval considerably longer than that of the accepted incubation period. Such observations were against the view that the infection was spread from one patient to another. To overcome this difficulty two hypotheses were possible: (1) the virus might be spread abroad, and remain capable of infecting for long periods. This was, however, impossible in the case of the *Diplococcus intracellularis*. (2) The organisms might be transported by carriers—persons themselves insusceptible, but capable of transferring them to others more susceptible. The latter hypothesis was supported by many observations conducted by many observers in many different countries. Carriers might or might not show obvious signs of inflammation of the naso-pharyngeal mucous membrane, and might carry the organism for some months. Adults more frequently acted as carriers than children. Of thirty carriers, in twenty-six the organism was obtained from the naso-pharynx on one occasion only. A carrier could transport the organisms for long distances, and the readiness with which they could be distributed by sneezing, coughing, etc., was well known. Kissing and the use of utensils afforded other means. The organism was present in the naso-pharynx in the early stages of the disease, and exceptionally persisted for a long time. In one it was found on the thirty-fifth day from the onset. The detection of the organism in the blood afforded a reasonable explanation of its route from the naso-pharynx to the meninges. Its usual site was the upper part of the pharynx and about the posterior nares, and it could readily be reached by a small swab on a bent wire introduced through the mouth. A widespread distribution of carriers had been demonstrated. Among 30,000 men 40 cases of meningitis had occurred. These were widely distributed, no two cases arising in the same hut or tent. The greater part of one battalion was examined for carriers, and of 887 men 3.3 per cent. carriers were found. The number of carriers might amount to twice, ten times, or forty times the number of cases. The condition which made a search for carriers desirable was the possibility of their isolation during the early stages of an epidemic. The total number of persons harbouring the micrococcus should be looked upon as constituting the epidemic. The carriers formed the bulk of an epidemic, the cases forming only a small minority. Epidemics of meningitis occurred when and where carriers became numerous.

Dr. W. H. HAMER said that epidemics of the disease had been described in the fifteenth, sixteenth, and seventeenth centuries, and he did not accept the statement that the disease began in 1805. Sydenham's description of a new fever in 1685 corresponded closely. During the last eight or ten weeks there had been a large number of deaths from diseases variously called pneumonia, bronchopneumonia, and influenza. He thought that there was only a small increase of deaths from cerebro-spinal fever. He questioned whether the various organisms described played any more important part than that of secondary invaders.

Professor W. J. R. SIMPSON said that the disease had been met with frequently in the tropics during the last few years. There had been recrudescences, but the disease had not yet arrived at its climax. One epidemic had occurred in the northern part of the Gold Coast, another in Nairoba. In the latter the cerebro-spinal fluid had been examined in a large number of cases, the organism being found in 80 per cent. If not found in the cerebro-spinal fluid it was isolated from the blood. Meningococcal serum had not proved of use for the natives, but good effects had followed the employment of soamin injected into the buttocks once a day for five days. No equivalent results had been obtained in the epidemic in Belfast, where the mortality was 38 per cent. In the Nairoba epidemic, of eight Europeans affected only one died. In West Africa there was a notion among the natives that the cattle and fowls were also affected. This had not been confirmed, but the point was worthy of being kept in mind.

Dr. F. E. BATTEN spoke of the endemic form which was constantly present in London. It had a seasonal incidence, beginning in February and reaching its maximum in April, but varying somewhat in different years. The meningococcus was of a different strain from that of the Belfast epidemic, as the blood of one did not agglutinate the organisms of the other. The endemic cases were not as a rule so acute, but at times were very severe. Fulminating cases occurred, accompanied by purpura and rapid death. These cases were nursed in the general ward, and he had never known the disease to spread, nor, indeed, had he ever known a case start in hospital. An interesting comparison was with poliomyelitis, which also showed a seasonal variation, reaching its maximum in August. In it there was the same absence of transference from case to case. He had never been able to obtain any good evidence

as to the duration of the incubation period of cerebro-spinal meningitis. He could not refrain from uttering a warning against the use of soamin. It had been used at one time extensively for syphilis, and not a few cases of optic atrophy had resulted even without the use of very large doses.

Dr. J. ROBERTSON said that every year a large number of deaths occurred from ill-defined causes, among which were very probably cases of cerebro-spinal fever, some of which, he thought, escaped recognition. However, about 8 to 20 were diagnosed yearly in Birmingham by lumbar puncture. Special circumstances must account for its increased prevalence. The present epidemic was very widespread. The same thing had occurred in other countries when armies were rapidly brought together. It was difficult in children to obtain a swab without a high degree of contamination. He questioned whether one swabbing was sufficient, and did not rely on one examination in other cases. A large proportion of cases occurred among slum dwellers, and he could not help thinking that the conditions under which the soldiers were living were responsible for the present epidemic. This was not from a fault in what was provided, but the men closed all the windows and shut off all ventilation.

Dr. J. R. WILLIAMSON said that in India ventilation seemed to have no effect. There it occurred in gaols, and perhaps in those which were best ventilated. It appeared also in famine camps, where grass huts were used, which ensured thorough ventilation. The only common factor seemed to be the aggregating of large numbers of people together. Individual susceptibility was perhaps explained by the congestive condition of the throat. In certain epidemics in India it occurred among those who were concerned with dirty occupations; in others, during the prevalence of catarrhal conditions.

Lieutenant-Colonel R. BULLOCK, R.A.M.C.(T.F.), said that of thirty cases which he had seen, two furnished evidence of the duration of the incubation period. It had been four days in each.

Dr. J. H. THURSFIELD recorded a case in which the organism had been obtained from the throat, and the patient had been under observation for fully a week before he developed the attack. The use of a hollow metal tube, slightly curved, through which a swab could be passed, allowed practically a pure culture of organisms to be obtained.

The discussion was continued by Dr. ATKINSON, Dr. D. A. DALE, Dr. F. W. TUNNICLIFFE, Dr. CARNEGIE DICKSON, Dr. W. D'ESTE EMERY, Dr. G. S. BUCHANAN, and Dr. A. M. FRASER.

SECTION OF OPHTHALMOLOGY.

AT a meeting on March 3rd, Mr. J. B. LAWFORD, Vice-President, in the chair, after the exhibition of cases, Mr. LESLIE PATON read a paper entitled, *The Montessori system and its use for children with defective vision.* The method was most applicable to children between 3 and 6 years of age, the most important period of sensory education. There were several of these schools in the country, but the difficulty was to find the right conductor. It was not easy to resist the temptation to interfere with the child, but the reward came in the child's intense satisfaction when he had succeeded unaided. If the child were really interested in his task no outside influence would prevent his continuance at it. Even in normal children most of the exercises were done blindfolded, so as to exercise the tactile muscular and stereognostic senses. By this system vision played but a small part in learning to write; the art was acquired almost as a by-product during the training of the tactile muscular sense. He described, aided by actual models, the kind of training given, which included the discrimination of various sounds and rhythm. The method enabled children to perform, by the assistance of these senses, many complex acts accurately. It left the child to develop its inherent capacities, in opposition to the usual method of inculcating from outside truths in the form of dogma. The children seemed to be unconscious that they were doing more than playing at a most absorbing game, yet they were undergoing self-discipline and a social recognition of duties to others. Mr. N. BISHOP HARMAN read a paper on the *Education of children with defective vision.* The claims of the Montessori system were compared with the scheme of "myope classes," which had been working in this country and America seven years. In Italy the Montessori system had one great advantage over the current modes of education in that it allowed for the personality of the child, and it had proved of great value for mental defectives. But the spirit of England was against anything in the nature of drill-sergeant education, personality having always been fully recognized; moreover, in its technical methods the Montessori system had nothing new to offer, and it had been claimed that a substitution of feeling for sight was a reversion to a lower order of things. If the claim was substantiated that by the Montessori system a child learnt to read two years earlier than by the ordinary methods, it effectively condemned the system for children with defective vision; it placed the child too early into the unreal world of books, and there was an absence of childish questioning for information. The myope class had a natural origin; numbers of short-sighted children had to be dealt with. The scheme resolved itself into three parts—(1) oral teaching with normal children; (2) literary work in the special class where all the work was done on blackboards; (3) handicraft work, which had both utilitarian and "expressional" value; and to this work were attached the practice of history, arithmetic, geography, etc. Despite the regulation forbidding work necessitating stooping and the use of rules and scales, the handicraft work had been highly developed. It was working as a full scheme in elementary schools for children aged from 7 to 14 years; and was also used, with modifications, in the teaching of children in well-known public schools with equal success. The papers were discussed by Mr. CHARLES WRAY and Dr. G. E. SHUTTLEWORTH, and the authors replied.

MEDICAL SOCIETY OF LONDON.

Adjourned Discussion on Radiography in Connexion with the War.

AT a meeting on February 22nd, the President, Sir JOHN BLAND-SUTTON, being in the chair, Dr. A. C. JORDAN exhibited radiograms demonstrating points concerning which the radiographer could be of assistance to the surgeon and an apparatus affording a rapid method of localizing foreign bodies by the fluorescent screen. Dr. G. HARRISON ORTON demonstrated an adaptation of the triangulation method for localizing foreign bodies in the tissues. It was not difficult for an operation to be done directly on the *x*-ray table, a small sterilizable screen being employed. Mr. S. GILBERT SCOTT said that necrosed splinters of bone were of two kinds—the one soft, poor in lime salts, and consequently giving a faint shadow, the other hard, denser, with a heavier shadow. Necrosed splinters could only be demonstrated if there were a sufficient contrast between their shadows and that of the tissue in which they lay. Rarefaction could often be seen in bone at some distance from the injury, but from its distribution did not appear to indicate merely atrophy from disuse. Dr. STANLEY MELVILLE said that the radiologist was commonly asked to say whether a foreign body were present; and if so, what was its nature and its approximate anatomical relationships. The most careful localization as to depth from the surface, etc., might be upset unless the surgeon had determined where he intended to make the incision before the localization was attempted. He had come to rely more and more upon stereoscopic radiograms, and exhibited a portable stereoscopic frame. Mr. SHENTON remarked that the use of a negative at the time of the operation, together with a sterilizable graduated scale, was a simple and often very effective method. He had devised a probe for the detection of foreign bodies which sterilized itself after introduction into the tissues. The PRESIDENT said that it seemed that the radiologist was disposed to dictate whether a foreign body should or should not be removed—a position which could not be conceded by the surgeon. All accessible foreign bodies which could be localized accurately should be removed. The rarification of bone referred to by Mr. Scott was explained by sepsis. Mr. V. W. Low denied that any one method could be relied upon in all circumstances. For foreign bodies near the surface he thought that the exact methods, giving their depths, were very useful; but when the foreign body lay in the deeper parts,

it was more important to know its relation to anatomical structures than its exact distance from the surface. He agreed as to the value of stereoscopic methods in such circumstances.

At a meeting on March 1st, Sir J. BLAND-SUTTON, President, in the chair, Drs. W. H. WILLCOX, B. H. SPILSBURY, and T. M. LEGGE presented a paper on *An outbreak of toxic jaundice of a new type among aeroplane workers*, founded on the cases described in the JOURNAL of December 26th, 1914, p. 1105, under the title "Poisoning by tetrachlorethane." Speaking of the toxicology of the condition, Dr. Willcox said that the severity of the illness corresponded to the extent to which the patients had been exposed to the action of the "dope," which consisted of benzene, methylated spirit, acetone, tetrachlorethane, and acetate of cellulose. Animal experiments had shown that the tetrachlorethane was responsible for the condition. Speaking of the pathology, Dr. B. H. SPILSBURY said that fatty degeneration was found in the liver, heart, and kidneys. The liver was most affected; it became small and soft, its capsule wrinkled, and its surface slightly nodular; it was deeply bile-stained. Microscopically, much necrosis was found, especially in the centres of the lobules, which were sometimes occupied only by débris and dilated capillaries. In one protracted case much replacement, fibrosis, and regenerated tissue were found. The livers of rats exposed to tetrachlorethane showed similar changes, which closely resembled those of delayed chloroform poisoning. Dr. LEGGE said tetrachlorethane was used for dry cleaning, for the destruction of vermin in army laundries, and for painting the wings of aeroplanes. It had the property of contracting and tightening the fabric in a way that other substances had not. The temperature of the workrooms had been kept at 65°. He had investigated the majority of the aeroplane workshops, and had been able to trace 26 cases with 5 deaths. Jaundice had been a prominent symptom, but there were many others in which gastric and intestinal symptoms had been present. The Admiralty and War Office had since issued a circular containing three provisos: (1) That a special department, or a part screened off, should be used for doping; (2) that an exhaust fan should be used; (3) that workers should not remain in the shop during meals. Dr. E. A. COCKAYNE spoke of the close similarity between this condition and epidemic catarrhal jaundice. The clinical features and pathological changes were closely parallel, and in the latter disease during an epidemic some cases also only manifested intestinal symptoms without vomiting. Remarks were also made by Dr. J. BERNSTEIN, Dr. F. J. POYNTON, and Sir F. HEWITT; and Dr. WILLCOX replied.

ULSTER MEDICAL SOCIETY.

AT a meeting on February 11th when the President, Dr. J. S. MORROW, occupied the chair, a discussion on *Caesarean section* was introduced by Mr. R. J. JOHNSTONE, who analysed the results of the operation in twenty-eight consecutive cases. When the operation was performed at the time of election, the mortality in his cases was *nil*, and would, he said, always be a negligible quantity with proper precautions. On the other hand, when it was performed after other methods had been tried, and the interior of the uterus had been infected, the statistics were no better than in the other methods. Sir ALEXANDER DEMPSEY said the great argument in favour of Caesarean section was a living child; and the safety of both mother and child was most likely to be preserved by this operation. Dr. JOHN CAMPBELL referred to fibrotic conditions of the vagina and cervix; his experience led him to believe in leaving such cases to Nature; great softening took place, and delivery was sometimes not delayed. Mr. HICKS said he had had considerable success in induction. Dr. LOWRY also spoke in favour of induction of labour before full time. He referred to the variability of the response to the introduction of a Champetier de Ribes's bag; some patients, went into labour at once, and others not for days. Dr. ELIZABETH BELL, Dr. RUSK, Dr. BURNS, and the PRESIDENT also spoke; and Mr. JOHNSTONE replied. Mr. MITCHELL, Mr. FULLERTON, and Mr. ISAAC DAVIDSON showed interesting general clinical cases.

At a meeting on February 25th, Dr. J. S. MORROW, President, in the chair, Mr. P. T. CRYMBLE gave a demonstration of instantaneous skiagraphy. He showed instances of its use as a means of recording normal and abnormal conditions of the thorax and abdomen. He exhibited stereoscopic plates of the skull and of a dislocated shoulder-joint; he also demonstrated the apparatus for instantaneous skiagraphy, orthodiagraphy and localization of foreign bodies. Mr. Crymble and Dr. Foster Coates showed skiagrams of phthisical chest. The PRESIDENT, Professor LINDSAY, Dr. RANKIN, Professor SINCLAIR, Dr. CALWELL, Dr. ALLWORTHY, Dr. MACILWAINE, Dr. MCKISACK, and the PRESIDENT offered criticisms dealing chiefly with the value of skiagraphy in the diagnosis of the early stages of phthisis, the localization of bullets, and value of bismuth meals. Mr. CRYMBLE replied. Mr. A. FULLERTON read a paper on the *Mechanism of enlarged prostate*, with some hints on the diagnosis and treatment, illustrated by lantern slides. The anatomy of the parts was closely examined, and what could and what could not be accomplished by operation was explained. Statistics and illustrative cases were given. Dr. DARLING, Mr. MITCHELL, Professor SINCLAIR, Mr. STEVENSON, and others offered criticisms.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting on January 28th, Dr. E. W. HOPE in the chair, Professor ERNEST GLYNN read a paper on the principles and practice of the *Prophylactic use of typhoid and other vaccines*. He pointed out that man may acquire immunity to typhoid *naturally* by contracting the disease. This is associated with a great increase of antibodies in his serum, such as agglutinins, opsonins, bacteriolysins, etc. Animals may acquire active immunity to typhoid artificially by vaccines: this is also associated with a great increase of antibodies. He referred to the terrible mortality from typhoid in recent wars, and gave a short account of the introduction of typhoid vaccines by Wright in 1896. He reported statistics from Britain, America, France, Germany, Japan, and Italy, proving the great reduction in typhoid incidence and mortality as the result of antityphoid inoculation. The objections of antivaccinationists and others were referred to. In his opinion the prophylactic use of typhoid vaccine in the British army, was based on sound scientific principles, and confirmed by practical experience from all parts of the world. He vigorously denounced the opposition of the antivaccinationists at the present critical time as criminal. Sir JAMES BARR proposed that Professor Glynn's paper should be published; Mr. BICKERTON seconded this proposition, which was carried. Captain PERMEWAN proposed the following resolution:

> That this meeting of the Liverpool Medical Institution expresses its strong conviction that the time has come to make antityphoid inoculation compulsory in the British army.

It was further resolved:

> That this resolution be communicated to the Prime Minister, the Secretary of State for War, the President of the Local Government Board, the Leaders of the Opposition, the Irish Nationalists and Labour Parties, and to the press.

This was seconded by Dr. BICKERTON, and Professor GLYNN replied.

AT a meeting of the Court of Assistants held at Apothecaries' Hall, Blackfriars, on March 9th, the honorary freedom of the society was conferred upon Sir Ronald Ross, K.C.B., F.R.S., in recognition of the very valuable services rendered by him to medical science, especially in connexion with the prevention of tropical disease. At the same meeting grants were made to various charitable funds in connexion with the war.

OUR attention has frequently been drawn to leaflets issued by the National Antivaccination League and sent to parents at addresses taken from birth notices in leading newspapers. The circulars, on which we have commented before, advertise the objects of the league, appeal for subscriptions, and give details of "How to Avoid Vaccination." The misrepresentations of antivaccinationists have received the attention of the Jenner Society, and suitable pamphlets and leaflets will be forwarded to any address on application to the honorary secretary, Dr. Drury, Landon House, Halifax.

Reviews.

STEWART'S "PHYSIOLOGY."

PROFESSOR N. G. STEWART has issued the seventh edition of his *Manual of Physiology*,[1] having extensively revised the whole. The result is an interesting and readable account of the science treated in a masterly manner. Professor Stewart has devoted his life to research, and has made himself proficient in all the chief branches of physiological inquiry; he has, moreover, a judgmatical eye which gives him the power of selecting the essentials out of the mass of physiological publications. We can confidently recommend this book to the student.

In discussing anaphylaxis, Professor Stewart considers the case of those who suffer from nettlerash after eating some particular article of food. "It has been suggested," he writes, "that these persons have become sensitized to certain foreign proteins—such as those existing in eggs, veal, pork, strawberries, shellfish, or whatever the peccant article of diet may be—possibly by absorption at some previous time, owing to gastro-intestinal disturbance, of small quantities of the proteins which have escaped complete digestion." Turning to the chapter on the coagulation of the blood, we note the following: "Viewed with the ultra-microscope, the blood platelets in a drop of clotting plasma, which are at first homogeneous in appearance (optically empty), become granular. Then the platelets begin to agglutinate and swell up, and the agglutinated platelets are transformed into clumps of granules, from which needles of fibrin shed out other needles, and filaments of fibrin form in contact with the glass or free in the plasma, and soon the field is occupied by a fretwork of fibrin." Figures are given showing the fibrin network as seen with the ultra-microscope in the normal blood and in that from a case of haemophilia. The author includes an interesting observation by Cannon to the effect that stimulation of the splanchnic nerve which supplies secretory fibres to the adrenal greatly hastens coagulation, but has no such effect if the adrenal on the corresponding side has been previously removed. Possibly this effect is exerted through the liver, just as is the effect on the sugar content of the blood under the same experimental conditions.

Professor Stewart thinks that our knowledge of the chemistry of the circulating plasma is likely to be notably augmented by the method of vivi-diffusion recently introduced by Abel. An artery of an anaesthetized animal is connected by a cannula to a system of celloidin tubes immersed in a saline solution. Blood passes from the artery through the tubes, where it exchanges diffusible constituents with the solution, and is then returned to the animal's body by another cannula attached to a vein. Coagulation of the blood in the apparatus is prevented by hirudin, and under aseptic conditions the circulation may proceed through the tubes for a long time. The saline solution can then be analysed for substances which have entered it from the blood—amino acids, for example.

In the chapter on the circulation the author includes an account of the interesting method of measuring the velocity of blood-flow in man, introduced by himself. "In the calorimetric method of measuring the quantity of blood which passes through such parts as the hands (or feet) in man, the flow is deduced from the quantity of heat given off by the part in a given time, and the difference between the temperature of blood entering and leaving the part." The temperature of the blood in the radial artery is taken as 0.5° C. below the rectal temperature, and that of the venous blood as the same as that of the calorimeter in which the hand is immersed. On page 187 figures are given which show how the flow is quickened reflexly in the right hand when the left is put in warm water, and slowed when the left is put in cold water.

A particularly interesting chapter is that on the exchange of materials in the placenta. The haemoglobin of the mother appears to be the source of the iron supply which reaches the fetus. Erythrocytes in all stages of decomposition can be found in contact with the chorionic villi, and iron can be demonstrated in the villi in fine granules. The picture is very like that seen in the absorption of iron from the intestine, and probably the process is the same in the two cases. In the case of a mother who died of diabetic coma and was delivered of a stillborn child, the blood of the child contained 2.2 per cent. of sugar and its urine 5.24 per cent. The metabolism of the fetus per kilogram of body weight is considerably higher than that of the mother, although the fetus is within the calm haven of the uterus protected from cold. The conclusion is reached that the growth processes are associated with a large amount of oxidation and cleavage.

Discussing the recent work on the growth of tissues in media *in vitro* the author says: "Connective tissue cells grow very easily, and can apparently be preserved indefinitely in the living state. A strain of these cells, originally obtained from a fragment of the heart of an embryo chick which had been pulsating *in vitro* for 104 days, has been seen to proliferate rapidly outside of the organism for more than sixteen months, and after more than 190 passages into fresh media. At the end of this time the rate of proliferation was even greater than that of a sample taken fresh from an embryo." Extracts of tissues may accelerate growth, particularly of embryos, adult spleen, and certain sarcomas. An account of the transplantation of tissues and organs from one animal to another, and of the joining together of animals, Siamese-twinlike, gives an end to this chapter, the last in a book the eleven hundred pages of which are none too long.

[1] *A Manual of Physiology, with Practical Exercises.* By G. N. Stewart, M.A., D.Sc., M.D.Edin., D.P.H.Camb. The University Series. London: Baillière, Tindall, and Cox. 1914. (Demy 8vo, pp. 1156; 1 plate, 467 figures. 18s. net.)

BOY LIFE AND LABOUR.

Maxima debetur pueris reverentia. The insight of Juvenal is being recognized in the number of books—to one of which we refer elsewhere (p. 476)—now being published relating to the care of adolescents. It is a matter of the utmost moment to the State as well as to the family. Adolescence is the infancy of manhood. And the present book may form a stimulating introduction to the subject.

The first third of Mr. FREEMAN'S book, *Boy Life and Labour*,[2] gives the facts about a number of boys—a fairly typical sample—in the workaday population of Birmingham. The facts are dry, but have enough human element in them to stimulate the reader's curiosity. When the author "gets off" he shows himself an enthusiast as well as a careful analyst. It is an indictment of our whole system, which leads boys—and girls—to the brink of real education, and then, when they come to the water's edge, leaves them alone to flounder through as best they can. Finished at 14! It is the age of the second birth; the sexual and religious emotions vibrating into life, the intelligence awakening, the imagination bursting into activity, the need of guidance, influence, sympathy most clamant. The social intelligence in its infancy, instead of being nursed and fed, is stifled in a thick atmosphere of industrial jobs, short-lived, changing, and only varied by the dubious influence of the street, music hall, and picture palace, the home too often adding no healthy seasoning, and the employer unable, though sometimes willing enough, to help the budding personality into a truer estimate of the values of life.

Efficiency is regarded by the author as a term to be widely interpreted. Industrial efficiency is not all, though it ought to be a part. The boy must not only grow into the efficient workman, but into the good citizen and husband. The years after 14 are years of instability, vacillation, temptation; if not guided aright the higher nature of the man will die in its infancy. The picture is powerfully drawn, and seems to us substantially accurate. The present state of affairs calls loudly for reform. Boy labour has not yet ceased to be a necessity in the industrial world, but it is to some extent used as a cheaper substitute for new and complex machinery. Though it cannot be done away with, it could be directed in more healthy channels, without causing detriment to industry, and to the great advantage of the State. The continual shifting from one job to another—all relatively unskilled—for slightly higher pay, is one of the great evils; long hours constitute another; the absence of time and opportunity for elevating influences is the sequel.

[2] *Boy Life and Labour: The Manufacture of Inefficiency.* By A. Freeman, M.A., B.Litt., F.R.Hist.S. Preface by Dr. M. E. Sadler, C.B. London: P. S. King and Son. 1914. (Demy 8vo, pp. 265. 3s. 6d. net.)

The remedies suggested are not too drastic and appear practical. First, public education should continue till 15; this is bound to come. Secondly, employers should take on boys with a view to keeping them on into manhood, so as to check the aimless drift from one occupation to another. Thirdly, the hours should be compulsorily reduced to about half their present length, so as to admit of secondary education, for which ample opportunity should be provided by the State.

It is said that if a child is not taught to speak in its early years it can never learn. "There is a tide in the affairs of man," and if a boy, between the ages of 14 and 18, does not learn the elements of social discipline, does not fix his ideals, does not gain a stable outlook on the world of people and ethics, he may never do so. If this be true, then we have facing us the greatest of national problems, to which, indeed, the housing problem is but ancillary. It can only be hoped that after the war we may be in a mood to clear our minds, politically and socially, and to face our problems with the same spirit of determination that has been evoked by the war.

The book cannot be read without catching a spark of the gifted author's enthusiasm; the style, especially when rid of detail, reaches a high quality; the matter is thoroughly digested and well interpreted. It may, perhaps, be doubted whether the author quite appreciates the full influence of inherited disease as a factor in the disasters of adolescence; on the other hand, he makes it clear that he does recognize the importance of good parentage, both from the point of view of inheritance and upbringing. Disease must have played some part in the damaged development of some of the youths who form the text of this discourse; and we are glad to see that its author urges the necessity of early enlightenment on the sexual side, so as to save youths from the physical disabilities which too often spring from youthful ignorance rather than from habitual vice.

A medical man will be able to fill in the gaps which are undoubtedly present on the medical side of the essay, and this will not detract from the deep and lively interest which the book will arouse in the mind of anyone, medical or lay, who has something of the instinct of a social reformer.

ANNUAL REPORTS OF THE ROYAL DENTAL HOSPITAL OF LONDON.

THE *Annual Reports*[3] of the Royal Dental Hospital of London for 1913 contain much that is of interest to the medical practitioner. Dr. W. J. Penfold contributes a paper on the theoretical basis of vaccine therapy, and a note on the spirochaetoidae of the mouth. Discussing the isolation of the supposed infecting organism, he insists that we must have evidence that the strain isolated is really infecting the patient. If the strain be obtained direct from the blood or tissues, and the possibility of contamination can be excluded, then a pathogenic germ has been isolated, which is either a primary or secondary agent in the infection, and may very legitimately be used as a vaccine. If, however, the organism is obtained from pockets communicating with the mouth, it must not be hastily concluded that the infecting organism has been found. Streptococcus has often been reported as found in pure culture, when dark-ground illumination has shown that many other organisms were present. All that has been learnt is that streptococcus was present and that it alone grew on the medium used. In periodontal disease isolation should be practised from the tissues, or if isolation be practised from the tooth pockets, specific antibodies in the blood serum should be sought for, or an anaphylactic skin reaction tried with the isolated strains. Vaccinating with one strain after another, in hope of at last finding the right one, presupposes an inexhaustible power of response such as the human body does not possess. The article shows that much work must be done before "vaccination" for pyorrhoea alveolaris is either accepted or rejected.

In a paper on dental caries from a clinical standpoint Mr. J. G. Turner adduces strong evidence from man and the lower animals to show that the important factor in the causation of dental caries is the stickiness of fine-ground starchy and cereal foods. The incidence of dental caries always increases with the stickiness of starchy and sugary food. The acid which destroys the enamel is the acid occluded in the minute masses of sticky carbohydrates lodging in the crevices of teeth and stagnating on uncleaned surfaces. This acid is formed *in situ* by the fermentative action of mouth bacteria. Weak acid circulating freely in the mouth is cleansing in action rather than dangerous. While not denying the value of plentiful and alkaline saliva, Mr. Turner says: "There comes a point, and that quickly, where stickiness defies all the power of plenteous and alkaline saliva." A table of the results of the examination of some hundreds of skulls of various races is given, showing that the increase of dental caries is due to its occurrence in a part where only the finest particles can lodge—that is, at the abutment point of two contiguous teeth.

Dr. Dudley Buxton contributes a paper on nitrous oxide gas in dental surgery, which should be read by every medical practitioner who gives gas for the dentist. He touches on a fruitful source of failure when he says: "The second source of failure is excessive prolongation of the administration."

Mr. Dolamore makes an interesting communication on misplaced mandibular molars, accompanied by an excellent series of *x*-ray pictures, showing the third lower molar at ages from 10 to 20. He concludes that the primary cause of misplacement is an abnormality in the direction of the tooth, and thinks further misplacement is due to cystic development.

Mr. J. F. Colyer has a paper on periodontal disease ("pyorrhoea alveolaris"), well illustrated by *x*-ray pictures, showing early bone destruction. He reproduces some of Mr. Hopewell-Smith's illustrations, and claims that what Mr. Hopewell-Smith regards as normal is actually an early stage of bone destruction. Of special interest are the records of cases showing the benefit following extraction of teeth apparently but slightly septic.

Dr. Austen records two cases of round-celled sarcoma of the mandible, remarking that it is not to be wondered at that both these patients should attribute their trouble to their teeth. The readers of the descriptions will incline to endorse the patients' view.

There are other papers of more particular interest to the dentist. We take this opportunity of congratulating the staff of the Royal Dental Hospital of London on the excellent research work this volume shows they are doing.

THE YEAR BOOK OF PHARMACY.

The Year Book of Pharmacy for 1914[4] maintains the reputation of the work as a useful and convenient record of the year's progress in the various branches of knowledge on which pharmacy is based, as well as in the art of pharmacy itself. As usual, it is divided into two sections, the first consisting of abstracts of papers published in English and foreign journals, while the second contains a record of the annual meeting of the British Pharmaceutical Conference, the papers and discussions being reported at length. Both sections contain much of value and of interest. The subjects dealt with in the abstracts are the constituents of vegetable and animal drugs, with particular reference to the quantitative analysis and standardization of such drugs, the chemistry of inorganic drugs, clinical testing, new remedies and new applications of known remedies, pharmacology, galenical pharmacy, dispensing, etc. Several hundred papers are abstracted, and no one interested in drugs, whether as prescriber or pharmacist, can turn over the pages without encountering information of value.

The reports of the meeting of the Conference, which was held at Chester, include an interesting address by the President, Mr. E. H. Farr, F.C.S., on recent work on plant products. Some of the papers read were of such a technical character as to be chiefly of interest to chemists and pharmacists, but others were of much importance to medical practitioners; as an example of the latter may be mentioned a paper on the incompatibility of strychnine

[3] *The Royal Dental Hospital of London: Annual Reports for 1913.* London: John Bale, Sons, and Danielsson, Limited. 1914. (Cr. 4to, pp. 136; illustrated.)

[4] *Year Book of Pharmacy, comprising Abstracts of Papers relating to Pharmacy, Materia Medica, and Chemistry. With the Transactions of the British Pharmaceutical Conference at its Fifty-first Annual Meeting, held in Chester, July 20th to 23rd, 1914.* J. O. Braithewaite, Editor of the Abstracts. R. R. Bennett, B.Sc., F.I.C., Editor of the Transactions. Compiler of the New Remedies Section, T. Stephenson. London: J. and A. Churchill. 1914. (Demy 8vo. pp. 566. 10s. net.)

and nux vomica with alkalis, bromides, and iodides, by Mr. H. Finnemore, B.Sc., F.I.C., in which it was shown that tincture of nux vomica may be prescribed in ordinary doses with alkalis or iodides without risk of precipitation of strychnine, whereas such precipitation is prone to occur if the tincture is replaced by its equivalent of the official solution of strychnine. One of the most important papers was that read by Mr. E. Saville Peck, M.A., before the Practice Section on a suggested code of rules for securing uniformity in the dispensing of abnormal prescriptions. Prescribers do not always indicate how they wish a particular drug or combination to be presented: for example, whether powders should be supplied in cachets or wrapped in papers, whether a proprietary article should be supplied in the original package or otherwise, etc.; and any difference in practice when a prescription is dispensed at different pharmacies may cause uneasiness to the patient. More important questions arise in regard to apparent overdoses, illegible prescriptions, dangerous incompatibilities, etc. As a result of the discussion a provisional code of rules was adopted, and the Executive Committee was directed to take such further steps as may be necessary to secure uniformity of action.

NOTES ON BOOKS.

MRS. CLARKE'S *Paris Waits*[5] is interesting all through, for it is a record of the impressions of an acute and sympathetic observer who was in Paris during the fateful days at the end of July and beginning of August, and did not flee before the threat of von Kluck's advance; but perhaps the most interesting chapter is the first, which describes the suspense of mind of Paris before it was known what action Great Britain would take. If Mrs. Clarke could have been in two places at once, she would have found a very comparable state of mind in this country. Another very striking chapter is that on French impressions of England, which shows the sensitiveness of French opinion and the tact which our countrymen and women engaged in any capacity in France should exercise, except, perhaps, the man in the ranks, who seems to have been taken to their heart by the French people. Mrs. Clarke speaks in terms of high praise of the work of the Hertford British Hospital, which was established and endowed by Sir Richard Wallace after the events of 1870. The committee, she states, had decided to send the nursing staff to England, and preparations were being made for its dispersion, when the doctors and the chaplain demanded that not only should the hospital remain open, but that its accommodation should be increased. It was thus the first British hospital to be in full working order in Paris. Mrs. Clarke has another chapter on the Paris Red Cross hospitals, in which she speaks of the defective organization which the emergency disclosed in the arrangement of the French societies, and again praises the Hertford Hospital; it could, she says, only take in forty soldiers, but it was ready when the other hospitals were not, and it was in its wards and gardens that many of the men recuperated after the great retreat. The book is well worth reading and preserving, for it gives a vivid picture of events in and around Paris at a time when this country was allowed to know very little of what was going on there.

MEDICAL AND SURGICAL APPLIANCES.

Barnet X-ray Plates.

IN commenting upon the *x*-ray plates made by Messrs. Elliott and Sons, Limited, of Barnet, in the JOURNAL of January 23rd, it was stated that they were rapid, gave soft negatives full of detail, but were slow in fixing. This defect has now been remedied, and we find that the plates now being issued are as rapid as others, and present advantages over most.

MEDICINAL AND DIETETIC PREPARATIONS.

Lanolin-Wax Cresol Paste.

MESSRS. CHARLES ZIMMERMANN AND CO. (London, E.C.) inform us that they have for some time been making an antiseptic paste consisting of a lanolin and wax base with 25 per cent. of cresols. The preparation, therefore, resembles that recommended by Sir Watson Cheyne in his recent Hunterian Oration (BRITISH MEDICAL JOURNAL, March 6th, p. 432).

Tabloids for Sterilizing Water.

We have received from Messrs. Burroughs, Wellcome, and Co. (Snow Hill, London, E.C.) samples of a set of tabloid products which they are preparing for the sterilization of water by means of chlorine, as recommended by Professor Sims Woodhead. The first products consist of chlorinated lime, the quantity in each being intended to contain 1 grain of available chlorine; one of these is to be added to ten gallons of water, and after the end of fifteen minutes the water is to be tested with potassium iodide and starch, tabloids of which form the next product. If a blue colour is not produced showing the presence of excess of chlorine in the water, a further tabloid of the chlorinated lime is to be added. When the test with potassium iodide and starch shows an excess of chlorine, one of the third products, consisting of sodium thiosulphate, is to be added as an antichlor, so preventing any taste of chlorine in the treated water, while the extremely small excess of the thiosulphate is of no consequence. Our examination of the products showed somewhat less than 1 grain of available chlorine from each tabloid, but as this substance is to be added until excess is proved by the test, the exact quantity in each is not material. The whole series provides in an extremely compact form the means of sterilizing considerable quantities of water, and will no doubt prove very useful, both for army work and otherwise.

MILITARY HYGIENE AND THE EFFICIENCY OF THE SOLDIER.

SICKNESS IN THE ARMY.

IN his fourth lecture Major Lelean said that owing to the sex, age, and careful selection of the fighting force, the army sanitarian had little concern with such cases of ill health as degenerations, neoplasms, and functional failures. He had to deal with the diseases which formed the overwhelming part of the losses of the fighting forces. The causes of these were almost wholly bacterial and mainly preventable, and herein lay the appeal which excess sickness made to the energy of the sanitary officer.

The General Improvement in Sanitation.

The death-rate for the whole British army at home and abroad had in 1905 fallen to 33 per cent. of the figure at which it stood in 1855, and the total sick-rate had fallen to 48 per cent. of the figure of fifty years ago. Taking a more recent ten-year period in the British army in India, whose conditions somewhat resemble those of active service, the death-rate had fallen in 1912 to 50 per cent. of the rate of 1902, the sick-rate to 70 per cent., and the invaliding-rate to 30 per cent. of the rates of 1902. The results of the progress made in the last ten years worked out annually at an average of 2,000 men less in hospital in the year, an annual saving of 500 deaths, and 200 fewer men invalided out of the service. In the same period enteric fever had fallen to one-tenth of its former death-rate, and that alone represented to the British army in India about £45,000 a year saved in the expense of recruits and hospital treatment, and 103,000 days of sickness less in the year. It was interesting to see how military and civil mortality-rates for males of military age compared at the beginning and end of this half-century. Whereas in 1855 the military death-rate was 85 per cent. more than the civil death-rate, in 1905 it was 22 per cent. less than the civil rate.

Special Sanitary Measures.

Special measures could most usefully be considered in relation to actual war conditions, and the indications could be best seen by taking the incidence of enteric and cholera on the British army in India. In 1859–60 cholera gave 37 per cent. of the total death-rate; in 1899 only 1.9 per cent. The great part of this striking fall was due to the protection of water supplies, the importance of which was emphasized by Koch's discovery of *Sp. choleræ* in 1884. In the United Provinces in 1908 there was a total cholera mortality of 83,000; in that year, amongst 12,000 native troops in the same province, whose principal difference in condition was that they had a pure water supply, there were no cases. Similar phenomena were recorded in regard to the troops throughout India. During the 1859–1899 period, however, enteric fever incidence increased, until finally it reached nearly the same

[5] *Paris Waits.* By M. E. Clarke. London: Smith, Elder, and Co. 1915. (Cr. 8vo, pp. 289. 5s. net.)

unpleasant relative proportion as cholera initially. This clearly indicated that, whatever part water infection might play under bad conditions, water was not the dominant factor it was once thought to be in the conveyance of enteric infection. The increase in the number of inoculated men brought about a considerable fall in the incidence, and other measures were pressed forward concurrently. In 1904 it was noticed that cantonments which did not trench excreta within three miles of barracks gave 30 per cent. less enteric cases per 1,000 than cantonments which trenched close by. Action was taken, and a fall in the number of cases followed. In 1906 the precaution was adopted of supplying disinfectant to keep flies away from excreta in latrine receptacles; that was also followed by a fall. In 1907 Government stopped the supply of disinfectant, and it was possible that the rise in 1908 reflected that short-sighted economy. In 1910 sanitary squads came largely into use and kept the cantonments in a satisfactory state of cleanliness. In 1908 the whole of the post-enteric cases were isolated for bacterial examination, and chronic enteric carriers were invalided out of the service. The result of all these sanitary measures was that, whereas in 1903 there were amongst British troops in India 1,384 cases of enteric and 276 deaths, in 1913 there were 85 cases and 16 deaths.

Bacteriological Investigations.

Faeces might contain 16 million enteric germs per grain, and urine 1,000 million per cubic centimetre; this was so for 25 per cent. of enteric cases. *B. typhosus* would live in ordinary water from three days to three weeks; the period depended on the number of saprophytes present. In faeces and soil they lived for three days, the number of saprophytes being sufficient to outgrow and dispose of them. In textiles they would live for two months; hence the importance of spreading textile articles in the sun when unpacked. In butter the germs would live for four months.

Carriers and Contacts.

Highly important work has been done in respect of infection carriers. Klinger in Germany studied 8,486 cases of enteric occurring amongst 2,399,999 population, and found that 20 per 1,000 were post-enteric carriers after two years, and continued on the average to be carriers for four years. The habitat of the infective organisms was certain necrotic patches of mucous membrane on the interior of the gall bladder. These being avascular, the antibodies in the blood stream were unable to attack the organisms, and further protection was afforded by the fact that the antibodies were precipitated by the bile salts. Any disturbance such as diarrhoea, producing a gush of bile, poured out huge numbers of the organisms into the intestines. Contact carriers—cases from whom no history pointing to enteric fever could be elicited—were liable to autoinfection. Their numbers were estimated by Klinger at 0.035 per 1,000. Taking the whole population, it was estimated in Germany that about 0.1 per 1,000 remained permanent carriers, so that every division of the army going into the field almost certainly contained its quota of enteric carriers. Instances were given of the capacity for harm exercised by the carriers. A cook in Wrexham infected 110 cases, with 6 deaths (paratyphoid); a cook in six years infected 28 cases, with 2 deaths; a sailor, having no duties in connexion with food, infected 13 cases in eighteen months. Major Lelean showed a specimen containing five colonies of *B. typhosus*, the result of a finger smear, taken from a bacilluric carrier.

Examinations to find these carriers involved a difficult technique. Faeces contained 70,000 million total organisms per gram. He had calculated that if four plates were used, giving 250 colonies per plate, the odds were 4 to 1 against finding *B. typhosus* in any one examination. As the passing of the bacilli might be intermitted for three months at a time, the odds against catching an enteric carrier at one examination were 360 to 1. It would be impossible to examine any striking force with the idea of weeding out all enteric carriers. In dysentery the carriers played as important a part as in enteric; in cholera even more so. Eighty per cent. of the contact cases in districts heavily infected by cholera might become temporary or permanent carriers. In cerebro-spinal meningitis the proportion of carriers assumed enormous importance.

Excessive Sickness Incidence in War.

Turning to the consideration of the sickness of forces in war, Major Lelean mentioned some of the heavy sick-rates that had occurred in campaigns of the last fifty years.

As to the factors that determined the excess incidence in war, since the specific organisms must remain the same, the high incidence must be due to lowered resistance or increased facilities for infection. The French view (Kelch and Calmette) was that the infective germs were latent in every individual pending favourable conditions for development. Although this was borne out to some extent by knowledge of "contact" enteric carriers, it either took the inquirer only one stage further back to the infection of the contact carrier from a preceding case, or it involved the theory of mutation of organisms, for which no support was found in experiment or experience. On the factor of increased facilities for infection must be based remedial measures in the field. That this factor was dominant in the field was illustrated by the circumstance that infective diseases other than those of intestinal type were remarkably absent. The increased facilities were due to the fact that in war protection of water supplies and conservancy measures were improvised, other sanitary conditions favouring infection were not under effective control, and the physiological resistance of the individual might be considerably lowered. The high rate of sickness in war was mainly attributable to the prevalence of intestinal diseases of the preventable type. Every force that had taken the field had had enteric, first sporadic cases at the end of a month and cases in epidemic proportions during the second month. In the Hispano-American war 66 per cent. of infections of enteric were traced to other men in the same tent, and certain tents remained free throughout. In a camp for Boer prisoners in Ceylon 700 cases occurred amongst 5,000 prisoners, but none among the guard, although both had the same water and food supply. The prisoners' rate in that case was 140 per 1,000, against 22 per 1,000 for the troops in India in that year. In the Hispano-American war the Reid board of experts estimated that only 46 per cent. of enterics were diagnosed as such. Enteric fever was usually ushered in by premonitory diarrhoea, and this emphasized the importance of the medical officer getting to know of all cases of diarrhoea and particularly epidemics of diarrhoea.

Dealing with the infectivity of cases of ambulatory enteric the lecturer showed a chart indicating that, contrary to the general view, secondary cases occurred during the first week of incubation and that actually more were infected at the incubation stage than in the convalescing period, when carriers were supposed to exercise such enormous influence. All excreta must be regarded as potentially infective; the human being himself, flies, dust, water, every agency had to be considered and every factor watched with minute attention to detail. The bacillary infectivity of dust was short-lived but intense while it lasted. The bad habit of the army cook of scouring out utensils with dust or mud, probably fouled by the feet of men coming from the latrines, should be checked.

In regard to other specific infective diseases in which contacts might play an important part, Major Lelean mentioned cerebro-spinal fever as causing anxiety just now. It was attributed to infection brought by the Canadians; this was hardly fair, because a few cases had occurred annually in England for years past, though the disease had certainly assumed greater proportions since the arrival of the Canadians. The mortality was 70 per cent. (untreated); it was extraordinarily infective from case to case, and 40 per. cent. of the contacts were liable to become carriers, of whom a proportion became permanent carriers.

Travelling Laboratories.

The difficulties of diagnosis in the field had been overcome to a great extent by the provision of travelling laboratories. Before the war had been going on three months the mobile field laboratory, on a motor lorry, had succeeded in detecting two enteric carriers, one of whom—a cook—had caused several cases of enteric. The laboratory was a very advanced piece of work—nothing like it had been provided in previous wars, and it was hoped to have one for every Army Corps in the field. There were now three for diagnostic purposes, and one fitted for

carrying out field chemical work, water examination, and simple food analysis.

Importance of Statistical Records.

Statistical records were of great importance to the sanitary officer, enabling him to keep in touch with excess rates; it was his duty to maintain records, and be familiar with them. Cooks should be examined for enteric carriers; in fact, the whole of the food personnel should be examined and kept under close observation. Medical officers were largely responsible for the health of their sanitary personnel, who were called upon to perform particularly dangerous duties. The medical officer should not only instruct them, but keep a paternal eye on them, and see that they safeguarded their health, always remembering the greatly increased possibility of their becoming infected in the course of their duties.

INSECTS IN WAR.

Major Lelean devoted his fifth lecture to an account of the part played by insects in war; as this subject has been so fully dealt with by Dr. Shipley in our columns during the last few months, we propose only to mention a few of the points discussed by Major Lelean.

The House-fly.

With regard to the house-fly, *Musca domestica*, which he said had been well described by the late Sir John Lubbock as "a winged sponge flying hither and thither upon the foul behests of contagion," he called attention to the fact that the larva burrowed to get warmth and moisture in the pre-pupa stage, so that it was necessary to give manure pits an impermeable floor, otherwise the removal of litter would not be effectual. The young fly could wriggle its way through 6 in. of soil or 6 ft. of loose sand; the fly depended upon starchy or pre-digested food; the latter it obtained from decomposing organic material. The crop was large enough to hold a four days' supply, and this probably accounted for the fact that infective organisms were so seldom recovered from the faeces of the fly, the life of the organism in faeces being only about three days. When the young fly emerged it was extraordinarily hungry, and flew at once to soluble starch or decomposing organic matter. It could devour 70 per cent. of its own weight in the first meal, and defaecate thereafter once every four and a half minutes; the fly had the disgusting habit of regurgitating its crop, and if disturbed whilst doing this might drop its crop contents on the food where it had been resting. A fly was observed to deposit 150 ova every ten days of its six weeks' life, so that one fly could see as many as 2,500 of its progeny. Taking the nine generations of the normal year, if all the progeny survived, the total produced that year would be 5,598,720 million flies—about 6 billion. The only natural enemy of the fly of which there was any hope was the mould *Empusa muscae*, whose spores were inhaled by the fly; it grew through the body of the fly and anchored it to an adjacent object. By the cultivation of a similar mould the clover weevil had been killed out in America, but so far *E. muscae* had not been grown on artificial media.

The fly alternated between filth and food, and was a carrier of disease on account of its faecal habitat, which might contain 16 million bacteria per grain, with a life of three days. The crop would hold 2,000 million organisms, a large part of which might be regurgitated on to food. The feet and bodies of flies could carry enormous numbers of organisms. Cholera was isolated from the first fly examined from a *post-mortem* room in Hamburg where a case of cholera had been examined, and tubercle bacilli had been recovered from four of the first six flies from a consumptive's room. Flies had carried cholera infection to a cruiser when no communication took place in any other way with the shore. The lecturer exhibited a chart showing the close connexion between the prevalence of flies and the incidence of infantile diarrhoea and enteric fever in Indian stations, and mentioned that in a house record of enteric fever in Nottingham during ten years it was found that where houses had water-closets there was 1 case of enteric for every 420 houses, where earth-closets were used there was 1 case to every 151 houses, and in an area where middens prevailed there was 1 case to every 42 houses.

Experiments were being made by the application to manure heaps of 1 lb. of crude borax to every 15 cubic feet. Kerosene and chloride of lime were too costly. The use of fly-papers was undesirable on account of the arsenic they contained, which might tempt a man to suicide. Formalin, 3 per cent., added to sweet milk or alcohol made an effective and safe fly poison. For fumigation 4 oz. per 1,000 cubic feet of a mixture containing equal proportions of camphor and phenol was effective in about six hours. A cloth soaked in kerosene placed along the inner side of a window sill gave off a vapour which flies disliked, and they would not remain in a room to which light was admitted through blue glass.

Baths.

The essential object was to get the whole unit clean at one time. The men fell in outside a large building and removed their outer clothing, which was taken away to be thoroughly disinfected and repaired. Having on nothing but their underclothing, they entered a central hall, where large vats of hot water were prepared. They were given five minutes in which to wash and apply an ointment. The men put on clean underclothing; the garments they had taken off were put into a vat containing 15 per cent. of lysol and afterwards passed through a disinfector. The mens' heads were treated if necessary, and as many as possible visited the barber. They drew fresh clothing on the other side of the building. This consisted of kit which had been put in order after being left by another regiment on a previous occasion. About 1,000 men could be dealt with in this way daily, so that it would be impossible to deal with all at short intervals.

Lice.

Speaking of the head louse, he said that the substance by which the nit was attached to the hair was soluble in 10 per cent. of acetic acid. Kerosene and all volatile hydrocarbons destroyed the head louse. Kerosene and olive oil (equal parts) left on for twenty-four hours, and then washed off, would remove them. Five per cent. of mercuric oleate in ether was effective. For the clothes louse the military authorities were using a solution of soft soap (20 per cent.) with ½ per cent. lysol; it was worked to a lather and applied to the body, and rubbed into the seams of the clothing. The smell of lysol was supposed to be an inhibitor. One of the best preparations, and agreeable in use, was 30 per cent. of borax in powdered black hellebore root; this was alleged to prevent re-infection. For rooms, 5 per cent of kerosene in a 20 per cent. soap emulsion killed vermin in chinks of the floors. Rats were destroyed by pills containing 4 per cent. of phosphorus; and iodoform across the threshold would keep out fleas.

THE annual meeting of subscribers to the Cremation Society of England will be held at the Royal Sanitary Institute, 90, Buckingham Palace Road, on Wednesday, March 17th, at 3 p.m.

THE following have been selected by the Council for election into the Royal Society: Dr. F. W. Andrewes, Professor of Pathology in the University of London and Pathologist to St. Bartholomew's Hospital; Dr. A. W. Conway, Professor of Mathematical Physics, University College, Dublin; Mr. L. Doncaster, Superintendent of the University Museum of Zoology, Cambridge, and well known for his researches into the Mendelian hypothesis; Mr. J. Evershed, Director of the Solar Physics Observatory, Kodaikanal, India; Dr. Walter Morley Fletcher, Secretary of the Medical Research Committee established under the Insurance Act; Mr. A. G. Green, Professor of Tinctorial Chemistry, University of Leeds; Mr. H. H. Hayden, Director of the Geological Survey of India; Dr. James Mackenzie, whose researches into the action of the heart in health and disease have made his name so well known to the profession; Dr. J. C. McLennan, Professor of Physics, University of Toronto; Dr. A. T. Masterman, Fisheries Inspector; Dr. G. T. Morgan, Professor of Chemistry in the Royal College of Science, Dublin; Dr. C. S. Myers, Director of the Laboratory of Experimental Psychology, Cambridge; Mr. G. C. Simpson, Imperial Meteorologist, India; Mr. A. A. Campbell Swinton, one of the early workers with the x rays and wireless telegraphy; and Mr. A. G. Tansley, Lecturer on Botany, University of Cambridge.

British Medical Journal.

SATURDAY, MARCH 13TH, 1915.

THE PSYCHOLOGICAL EFFECT OF WAR.

IT has been asserted by more than one authority that in war that side will win which can hold out a quarter of an hour longer than the other side. This saying not only pithily expresses the fundamental importance of *moral* in warfare but it lays bare impassionately, indeed almost cynically, the kind of *moral* required and the nature of the very ultimate demand made by a belligerent State upon its people. The State demands of its fighting men the ability to suffer and to go on suffering the terrific and nerve-shattering onslaught of modern gun-fire and still retain in their depleted ranks an effective and alert organization; and from its civilian population the State demands the ability to suffer, proudly and gladly it may be, but to suffer and at all costs to go on suffering the increasing pinch of adversity and the loss of its bravest and best-beloved sons. This is the final test to which a nation at war is put, and the manner in which a nation stands this test is in the last resort the decisive factor in war. The mere statement indicates the essential value of psychological factors in war, and little as we may thus far have felt the direct impact of enemy operations in our sea-protected land, it may not be out of place to consider in a general way the psychological effect of the war upon our people.

It may be true, as has been said ever since the Boer war, that romance vanished with the individual combat from the modern battlefield, but it is equally true that never in the whole history of warfare have greater demands been made upon the mental and moral resources of the combatants than in the present war, and never, it should be added, have these demands been more nobly met. Before the war—indeed, for long before the war—there were signs at home which even those who were not by nature pessimistic were beginning to regard with misgiving—handwritings on the wall boding disaster. In practically every department of our daily life disruptive forces appeared to be gaining ground. In all groups, from the family to the State, and insidiously invading every sphere—religious, social, economic, and political—there appeared an increasing inclination to flout conventional canons and to defy legal restraints—from a mere matter of dress and deportment at one end of the scale to preparation for civil war at the other. "Social unrest" became a matter of general wonderment and head-shaking, as if a new disease had suddenly afflicted the social body, and many were not slow to relate this unrest to such widely disparate phenomena as a greatly enhanced love for luxury and play in the masses, a falling birth-rate, an increasing ratio of insane to general population, and an apparent increase in nervous troubles of all kinds, and to lump them all together as accumulative evidences of decay in the national fibre.

Opinion as to the meaning of these portents was divided, and it was at that time impossible to say whether they were the result of disintegrating forces, evidences of a crumbling empire, or only signs of growth—a sort of karyokinesis in the body politic, the birth-pangs of a new and perhaps better order. Then came the war, and we have witnessed during these last six months the sudden settlement of differences, the fusion of opposed bodies, the bending to a common purpose of antagonistic forces, and the steady conversion of a nation devoted to peaceful arts into a nation of warriors, not at the command of any autocratic head, but from the imperious demand of a free people to suffer in a righteous cause.

The translation of such a demand into action, from the psychological point of view, entails that very "concentration of the mind upon the thing which has to be done," and that "magisterial subjection of all dispersive influences," which Macaulay noted as constituting the essence of genius. But these are also the hall-marks of a vigorous and healthy mentality, and if—as we know—the first and most striking psychological effect of the war on our national as on our individual consciousness has been the shedding of a thousand distracting influences in the face of a single and plain duty, and the calm concentration of the national mind, undisturbed by hate or fear or other emotional bias, upon the thing that has to be done, we have here a clear psychological gain.

The reports so far available show no increase in mental troubles since the outbreak of hostilities, but rather the reverse. "In the case of a comparatively small number of persons," says Dr. G. M. Robertson of the Royal Edinburgh Mental Hospital, in his annual report for the year 1914, "it may be admitted that the direct or indirect effects of the war have proved a cause of mental derangement. Taking the population as a whole, however, the war, so far as it has operated, has apparently acted as a mental tonic, for the number of admissions to the Scottish asylums seems to have fallen slightly below the average since it began. That has been our experience with regard to the admissions to Craig House and the West House during the last four months of the year, and the private reports I have received from others confirm our own experience. . . . The war has been an event of such compelling interest that it has distracted such persons from their introspective habits and personal worries. It has taken people out of themselves, and, by making them think of others, sympathize with others, and in many cases work for others, it has probably done our country mental, as well as moral and social, good by bringing all classes closer to one another."

Similar reports have been made by others, and it may be mentioned that in Scotland—from whose Island and Highland districts so many men have flocked to the colours—the admissions to asylums for the five months August to December, 1914, show a decided fall from those for the corresponding months of 1913. In the face of these facts an article by Dr. Richard Henny of the Psychological Society of Berlin, published in the *Münchener Neueste Nachrichten* under the title of "War and Nerves," and abstracted by *Le Journal* of Paris, makes amusing but none the less instructive reading. After asserting the great importance of menaces by Zeppelins and aeroplane bombs and submarines upon the nerves of the British, maintaining that such "suggestions" may determine hallucinations in the masses, he says that "without fear of reproach of exaggeration one may maintain that the whole of the English people, through fear of a war in its own country, is affected with an intense hysteria, manifested in the form known to psychology as moral insanity." "Naturally," he adds, "the German

people do not suffer anything of the kind," and he is able to record their "admirable tranquillity" and "the severe impartiality of their judgement." It is impossible to reconcile this no doubt candid opinion with one of the most interesting psychological phenomena of the war—the appearance in the German people of an intense and widely-diffused hatred of England, unexampled during modern times, at least in its ferocity of expression. However deplorable, we need not quarrel with the fact, for hatred is rooted in fear. Without fear there may be indifference, contempt, even dislike, but without fear hatred is impossible. Men hate evil because they fear its effects; the criminal hates his judge, or his gaoler, because he fears the punishment he has earned, and he hates in proportion to his own weakness and the power of the hated one to do justice.

Probably, however, Dr. Henny is stating a partial truth when he continues: "In Germany all the forces of enthusiastic suggestion are developed to the highest pitch, and discouraging suggestions are entirely wanting," even if his conclusion that "it is on this psychological fact that the guarantee of sure victory for the German arms is to be found" is incorrectly drawn. The value of psychological factors in warfare has not been overlooked in Germany, and it seems to be a fact that ever since the Kaiser, many years ago, saw in his mind's eye the name "Wilhelm" written across the map of Europe, the education of his subjects has been systematically directed to war-like ends. The result—on a people strangely obedient to the voice of authority and unaccustomed to exercise individual judgement and personal initiative—has been to produce a special sort of national or collective consciousness. This, though undoubtedly a source of strength, is not without its dangers, for if it puts at the disposal of the directing minds a nation organized and united as one man, it at the same time renders that nation highly susceptible to the influence of mass-suggestion, and liable to the influx of waves of emotion overwhelming the reason. Hence the extraordinary spread of the hatred against England, hence the popular credence given to fantastic untruths, and hence also the brutal excesses, under an officially ordained policy of *Schrecklichkeit*, of a people by nature generous, kindly, and sincere.

Under the shock of war we are ourselves united as never before as an empire, and are also becoming collectively conscious. The gain is indisputable; the danger, perhaps, less obvious. Fortunately, the character of a collective consciousness must be largely determined by the character of the units composing it. When, therefore, collective consciousness arises spontaneously in a free people, nurtured in independence of thought and action and accustomed to the unfettered exercise of their own judgement, there would seem to be no ground for apprehending any serious disturbance of the reason by emotional epidemics, whether in the form of Zeppelin panics, "Dr. Henny's hysteria," or fanatical hate.

To speak of gain, even of "psychological gain," as proceeding from a war which has already devastated all Belgium and half Poland, which has ruined homes and destroyed human lives by the million, might well seem out of place. Yet it is as gratifying to record the fact that the war in its mental effect on our population has not proved evil, as it has been heartening to witness the emergence of a great national spirit, eager to be tried and tested, and to win through suffering.

THE PROBLEM OF THE HOBBLEDEHOY.

WHEN an English manufacturer takes up the pen to write upon the subject of education, we may well stay to consider what he has to tell. Mr. R. H. Best, joint author with Mr. Ogden of an essay on continuation schools,[1] is chairman of a Birmingham engineering firm and ex-chairman of a masters' association and conciliation board; we may therefore fairly conclude he is a keen business man, as far removed as can well be from the educationalist of popular imagination. Popular imagination visualizes the educationalist as a dear old gentleman, somewhat of an old woman perhaps, who has leisure and culture, and a sense of philanthropy which leads him to interest himself in a vastly expensive hobby; but things may change when "Saul also is amongst the prophets," and schemes of education come from masters of industry.

Mr. Best does not deal specifically with what is known as elementary education, though incidentally he shows how profoundly ideas on this subject have been influenced in those cities where the problem of the continuation school has been mastered and settled. His main thesis is the mode of dealing with the youth of the nation between the years of 14 and 18, just after they are turned out of the elementary schools—done with so far as our compulsory system of education is concerned—and launched into life through this or that type of work, as circumstances and parental necessity may determine.

Mr. Best sets out very convincingly what is being more and more impressed on thinking people—that at this age is the making and marring of hosts of our youths. They are the cheap labour of the community, and the uncontrolled exploitation of this cheap labour leads to a veritable slaughter of the innocents, if not in terms of death, at least in all that counts for effective living and citizenship.

The continuation school has been invented to meet this necessity—places where trades are taught, and the loss of the old apprentice system supplied. We have plenty of these schools; the schools are good, the work is good, and the teachers are good, but the real furniture of the schools—the scholars—is lamentably short. Even the recent expedient of dubbing them "institutes" in London promises no greater success. Mr. Best discusses the reason for the failure; he shows that exactly similar failure has attended similar schemes in other countries when the continuation school was based upon similar conditions. The failure lies in the permissive nature of the provision. Our schools are there, youth may come to them or it may not as it pleases, and it does not. The failure is due to the circumstances which compel youth to plunge from school into the bustle of life and labour, to exhaust its energies on a full day's work. It is asked to cut out of its hours of play and sleep time for that most exhausting work of all—more schooling and the better training of its faculties. A few abnormal youngsters, the ideals of Mr. Samuel Smiles, have done it, but the rank and file cannot, and quite rightly will not try.

Mr. Best shows how dismal failures of this sort have been converted into successes, and, better still, how by this success shoals of youth, who were formerly lost in blind-alley employments, have been saved to good citizenship. Munich did it thus: Young persons between the ages of 14 and 18 were

[1] *The Problem of the Continuation School.* By R. H. Best and C. K. Ogden, B.A. London: P. S. King and Son. 1914. (Demy 8vo, pp. 94; illustrated. 1s. net.)

required to attend special trade continuation schools, which combined practical and theoretical work, for an average of eight or nine hours a week. Compulsion solved the difficulty, and as soon as it was arranged it was found no compulsion was necessary to keep the scheme going. Employers found it paid them to give shortened working hours for these years, for their young employees were better value, then and later; and it paid the city to spend money on these trade schools, and yet more money, for the quality of the work from the factories improved, and with it the prosperity of the city. The lesson of this and similar successes is one that we in this country will do well to profit by.

GERMANY AND EGYPTIAN-GROWN DRUGS.

THE effects of the war on the supply of many drugs have brought to light a number of interesting facts with regard to sources and channels of supply, and one of the most striking is, perhaps, that we have supplied Germany with large quantities of raw materials from which to manufacture the finished articles to be subsequently sold here. This is true of the large number of synthetic products derived directly or indirectly from coal-tar, products in the manufacture of which Germany had established virtually a monopoly. The position is not greatly different, however, with regard to the extraction and purification of the active principles of some drugs derived from parts of the British Empire or its dependencies. It is interesting to notice that in this field, generally speaking, German manufacturers have by no means outdistanced their British competitors as they have in respect of synthetic drugs. Many alkaloids, for example, especially those in the widest use, have been largely of British make. British manufacturers have produced, and do produce, probably by far the larger part of the world's supply of morphine, codeine, and other opium alkaloids; strychnine also is produced in this country in very large quantities for home use and export, and the same is true of many other alkaloids, although the actual quantities are smaller. In certain cases, however, German manufacturers had secured almost a monopoly; cocaine and its salts, for example, have been derived practically entirely from German sources, and the same is true of atropine and the other alkaloids obtained from the natural order Solanaceae. At a recent meeting of the Society of Chemical Industry, when a number of chemical products, the manufacture of which has only recently been taken up in this country, were shown, cocaine hydrochloride, produced by Messrs. Burroughs, Wellcome and Co., was among the medicinal substances displayed, and it was stated that this alkaloid is being produced by this firm on the manufacturing scale. In regard to atropine and hyoscyamine, the position is somewhat curious. It was shown a few years ago, by an investigation carried out at the Imperial Institute, that an excellent source of these alkaloids was the plant *Hyoscyamus muticus*, which grows in large quantity in Egypt. Since then the supplies of this drug have been largely and increasingly taken by German manufacturers under the system by which, in the British Empire and Dependencies, foreigners enjoy exactly the same trading facilities as ourselves. The manufacture of the alkaloids from this drug has come to be practically confined to Germany, with the result that at the present these alkaloids are obtained with difficulty in this country, and at prices which are almost prohibitive. The Imperial Institute has recently brought the matter again before British manufacturers, and, although the supply of the plant at present available is small, heavy purchases having been made by Germany at the beginning of the war, there is a prospect of an ample supply in future; and it is to be hoped that the successful production of these alkaloids in Great Britain will soon further extend the list of such active principles produced here. Another Egyptian drug in regard to which Germany has shown considerable astuteness in securing the supplies has been senna. The world's senna supply comes from India and Egypt, the two varieties being known respectively as Tinnevelly and Alexandrian, although Alexandria is not actually the port through which the trade in the drug passes. Up to the time of the war the trade in Egyptian senna was principally controlled by German firms, who on occasion have made use of their controlling position in regard to this drug, greatly to the disadvantage of British buyers. Since the beginning of the war, however, the export of senna from Egypt to all countries except the United Kingdom and France has been prohibited, while a somewhat similar restriction has been placed on the export of Tinnevelly senna by the Indian Government, and it may be supposed that when peace is again established, German traders will not be allowed to obtain control of this or other drugs coming from the British Empire, to the disadvantage of British firms.

LONDON WATER.

DR. A. C. HOUSTON'S tenth Research Report presented to the Metropolitan Water Board[1] contains a summary of his earlier work and gives an account of a further and more prolonged research for the typhoid bacillus in crude sewage. He points out that it is absolutely necessary to show that when a known number of pathogenic microbes are initially present, some at least can be actually isolated. Hence it is necessary to divide each sample of water or sewage into two parts and inoculate one of them with a known number of pathogenic microbes and then examine them (A and B) under precisely comparable conditions. "The number of pathogenic microbes actually isolated from A (says Dr. Houston) divided by the number per cubic centimetre artificially added gives the number of cubic centimetres of the water which, if a single pathogenic microbe had been present in that number of cubic centimetres, would inferentially have just enabled one to obtain a positive result. In other words the results of the examination of the (A) samples is a gauge of the delicacy of the methods used for the isolation of the microbes sought for, and is the one and only basis for drawing safe conclusions as regards the (B) samples." In practice it was found that the typhoid bacillus and Gaertner's bacillus could be isolated when present in the proportion of 1 and 9 respectively in 19 c.cm. of raw river water. In the (B) samples, on the other hand, if two doubtful typhoid bacilli and one doubtful Gaertner bacillus were excepted, it might be said that the results of 22,141 colonies derived from 101 samples of water were absolutely negative. This result leads Dr. Houston to conclude that the typhoid bacillus and the Gaertner bacillus cannot be uniformly present in the proportion of 1 and 9 respectively per 19 c.cm. of raw river water. This is an important conclusion, because it can be shown by means of other tests that the raw river water is purified one thousand times before delivery to consumers. In the case of crude sewage, owing to the number of bacteria present only very small amounts of liquid can be dealt with. One hundred samples were examined and 23,353 colonies studied. On the (A) side it was found that a positive result could be obtained when the typhoid bacillus was present in the proportion of 1 per 0.00066 c.cm. of sewage. The (B) samples yielded absolutely negative results, the inference being that crude sewage does not uniformly contain the typhoid bacillus in the proportion just stated. These results Dr. Houston considers highly reassuring, and he says they become all the more so if it is permissible to hope, first, that there is a greater tendency to the breaking down of clumps of specific bacteria during storage and filtration than

[1] London: Printed by Chas. Straker and Sons, Ltd. (2s. 6d.)

the reverse process; in short, that if any typhoid bacilli do pass into supply, they occur as individuals widely and more or less equally separated from each other; secondly, that there is no such thing as a cumulative microbial effect, each draught of water being, so to speak, either a hit or a miss—that is to say, an infection or a non-infection, unassisted by succeeding draughts of water; thirdly, that it requires more than one typhoid bacillus to infect a susceptible person with enteric fever, and that under no conceivable set of circumstances can the typhoid bacillus, as known to bacteriologists, ever multiply in water. The other matters discussed by Dr. Houston in the seven sections of his report are methods for the isolation of the typhoid bacillus; the influence of temperature on the vitality of the typhoid bacillus; the study of streptococci in excremental matters; the value of storage; lime as a bactericidal agent; and the vitality of the cholera vibrio outside the human body. Full details of his investigations and results are given and the investigations of other workers are discussed. The report is a monument of patient and fruitful labour, on which both Dr. Houston and the Metropolitan Water Board are to be congratulated.

THE SALE OF SPIRITS IN FRANCE.

As was noted at the time, the French Chamber of Deputies on February 12th passed a law prohibiting entirely the manufacture and sale, by wholesale or retail, of absinthe and similar liquors. It has since been debating the proposals for diminishing the number of spirit shops, but has not done more than prohibit the establishment of new places of sale. This was done on March 4th, when the law was carried by 472 votes to 95. Meanwhile, the Académie de Médecine has been discussing a report of a special commission of its members, and on March 2nd it adopted unanimously a declaration and resolutions to the following effect: "The Académie de Médecine, regretting that the measures designed to combat the development and the diffusion of alcoholism in France have been too long postponed, and being of opinion that patriotic duty imperiously demands that such measures should be taken without delay, renews its congratulations to the public authorities on the suppression of the manufacture and sale of absinthe, and records the following resolutions: (1) That a surtax should be imposed and regulations instituted in respect of the manufacture and sale of all *apéritifs* containing essences, and also of those made from wine of a strength greater than 23 degrees; (2) that Parliament should take the necessary steps to reduce within a short time and to a notable extent the number of *débits* (wine and spirit shops); (3) that the sale of spirits, liqueurs, or *apéritifs* other than those made from wine of strength less than 23 degrees and not containing essence, should be forbidden by law, elsewhere than in restaurants, and otherwise than as an accessory to food; (4) that it should be forbidden under severe penalties to serve in *débits* of any kind alcoholic beverages to women or children of less than 18 years, whether alone or accompanied by their parents; (5) that the privilege of the *bouilleurs de cru* should be abolished; (6) that debts incurred for the purchase on credit of alcohol by retail should be rendered insusceptible of recovery by judicial process. Further, the Académie calls the attention of public authorities to the necessity of making provisions to ensure that the laws or decrees relating to the consumption of alcoholic beverages shall be observed, and demands the enforcement of the law with regard to public drunkenness, which has, unfortunately, been allowed to fall into disuse, by making an appeal, if necessary, to the Ligue Nationale Antialcoolique for its assistance. It draws attention to the importance at the present time of inspecting places of military assemblage, where soldiers—fit, convalescent, or wounded—are brought together, in order to ensure that no reprehensible laxity should expose the soldiers to the serious consequence of alcoholization or drunkenness." It appears that the evils arising from the privileges of the *bouilleurs de cru* are particularly marked in Normandy and Brittany, where there are innumerable small spirit shops belonging to persons who have the privilege of distilling their own spirits. The reason for the introduction of the reference to the Ligue Nationale Antialcoolique appears to be that if the Ligue were thus recognized, it would have power to take legal proceedings to check any infractions of the law.

GERMAN DOCTORS TRIED FOR LOOTING.

THAT the German warrior, from prince to private, should loot whenever he gets the chance need cause no surprise, for it is a characteristic of the race which was noted by Tacitus. There is a description in Alphonse Daudet's *Souvenirs d'un Homme de Lettres* of exhibitions at Berlin, Munich, and Stuttgart, of the products of the pillage of French chateaux—Sèvres porcelain, Louis XVI clocks, Chantilly lace, and so forth—after the war of 1870. The plunderer is not ashamed to display and to sell his spoils. But that those who minister to the sick and wounded should be charged with the same offence must be felt as a disgrace by the whole medical profession. It is therefore with great satisfaction that we learn that the German medical officers who, as stated in the BRITISH MEDICAL JOURNAL of December 5th, 1914, p. 990, were sentenced to varying terms of imprisonment for looting at Lizy-sur-Ourcq in September, have been acquitted on trial by a second court martial, the sentences imposed by the first having been quashed on account of technical irregularity. Meanwhile the incident had been the occasion of a somewhat remarkable correspondence between some Italian doctors and the Société Médicale des Hôpitaux. Dr. Mingazzini, clinical professor of nervous diseases in the University of Rome, wrote, in the name of thirty-three Italian doctors, asking the Société to intervene on behalf of the accused. His letter contained the following sentence: "We, doctors of a city which taught the world the difficulties that surround judicial decisions in criminal charges, beg you to bring influence to bear on the Paris tribunal so that the fullest light shall be thrown on the acts with which our colleagues are charged. The thought that the very noble body of doctors, to whatever nation they may belong, should include vulgar malefactors among its members is repugnant to us." This letter was discussed in secret committee, and the general secretary, Dr. A. Siredey, was authorized to send a reply, from which we quote a few passages. After pointing out that the Société des Hôpitaux was not in possession of sufficient evidence to pass a definite judgement on the case, M. Siredey went on to point out that Dr. Mingazzini had supplied no information that could help it to such a decision, but had based his request on the *a priori* belief that it was impossible that honourable doctors, of undisputed probity, should have behaved like common thieves. He proceeded: "This opinion, in ordinary times, would have been likely to influence us; but, alas! we have had occasion to observe on many occasions during the past few months that the war has caused among the Germans deplorable failures of the moral sense. Inquiries made with minute care and the most scrupulous impartiality by highly-placed magistrates of our country have shown beyond possibility of doubt that a number of officers, and among them even doctors belonging to the best families in Germany, who in the ordinary circumstances of life are assuredly not given to stealing, have taken an active part in numerous acts of pillage in our invaded provinces. They have not refrained from plundering works of art, silver plate, jewels, money, and other property, including women's clothing and a number of things for the taking of which there could be no excuse." Dr. Siredey concludes by recommending Dr. Mingazzini and the Italian doctors whom he represented to do what they could to procure the release of the

medical officers held as prisoners by Germany contrary to the provisions of the Geneva Convention.

MATERNITY AND CHILD WELFARE SCHEMES.

AT a meeting of the Royal Sanitary Institute on March 9th, when Dr. Arthur Newsholme, C.B., Medical Officer to the Local Government Board, was in the chair, Dr. E. W. Hope, M.O.H. Liverpool, opened a discussion on maternity and child welfare schemes. He described the efforts made in Liverpool to co-ordinate the work of medical practitioners, midwives, and various voluntary institutions and organizations with that of the public health service. The midwives and health visitors give mothers practical instruction, and the Corporation provided five infant welfare centres. Ante-natal, as well as post-natal hygiene, was dealt with at the women's hospitals. Where midwives called in medical practitioners, the doctor's fee was provided as to 5s. by the Health Committee and as to 15s. from a fund established by the midwives, who contributed 1s. for every birth attended. About £1,000 was paid to doctors last year in this way. In the discussion which followed, Dr. J. S. Fairbairn congratulated Dr. Hope on having secured the co-operation of the midwives who were in the confidence of the mothers who had selected them. Dr. Eric Pritchard urged that the school doctor should be brought into touch with child welfare centres so that the monotony of his work in the schools might be varied. Dr. Eustace Hill, County Medical Officer for Durham, dealt with the special difficulties of a county area where help could not be obtained from the midwives, many of whom were ignorant and even illiterate. The county council rather than the district councils should be the authority in rural areas, and he urged that the proposed Government grants for nursing services should be given to county councils rather than Insurance Committees. He saw no objection to the use of tuberculosis dispensaries for the work of maternity centres. There should be co-ordination with school health work so that one officer should visit the homes for all health purposes in one district and frequent interference by numbers of officials be avoided. Dr. Nash, M.O.H. Wimbledon, expressed the opinion that the larger towns in a county should retain their autonomy in this work. Sir William Collins, after observing that the course of events had justified the Legislature in combining education and health administration under one authority, pointed out that the work of infant and maternity care provided scope for a happy combination of voluntary and public work. Other matters raised during the discussion were the placing and equipment of maternity centres and the importance of instruction in cooking and other practical subjects. Dr. Alfred Cox, Medical Secretary of the British Medical Association, said that in the discussion the point that the health of the majority of the people was in the hands of the general practitioner had been overlooked. Most of the speakers seemed to contemplate schemes under which the mother would consult a specialist before the child was born, and after the birth would be handed over to a whole-time official, the child itself passing through the hands of officials throughout infancy and school life, until it became a State-insured person. It was not difficult to get the sympathy and help of the general practitioner, who was the first line of defence in all public health schemes, and some effort should be made to do so. Dr. Hope, replying to the discussion, said that in Liverpool the importance of the general practitioner had not been overlooked, and he did not know how child welfare schemes would have made such progress without the help of private practitioners.

THE CARNEGIE UNITED KINGDOM TRUST.

IN October, 1913, Mr. Carnegie, following the precedent he had established by the formation of the Carnegie Corporation of New York for the benefit of the people of the United States and of Canada, executed a deed whereby a capital sum of ten million dollars—approximately two million pounds sterling—was placed in trust so that the income might be used "for the improvement of the well-being of the masses of the people of Great Britain and Ireland by such means as are embraced within the meaning of the word 'charitable' according to Scottish and English law, and which the trustees may from time to time select as best fitted from age to age for securing these purposes, remembering that new needs are constantly arising as the masses advance." Before the institution of the trust Mr. Carnegie had made grants of about £1,770,000 to local authorities in the United Kingdom for the erection of public libraries to be maintained by local rates, and of about £500,000 to churches of all denominations towards aiding them in the acquisition of organs. The first report of the trustees, recently issued, deals with the period from the inception of the trust to the end of 1914. The trustees took over promises made by Mr. Carnegie to the amount of over £200,000 for free libraries and of about £50,000 for organs; further grants for the last-named purpose are not contemplated for the present. The major part of the financial obligations assumed by the trustees consisted in fulfilling promises of grants for library buildings to the amount of £174,970. A map attached to the report shows that the libraries already established are scattered over the British Isles, but are naturally most numerous in large centres of population. Guided by a report made by Professor Adams, the trustees have now decided to make a limited number of experiments in rural book supply; they intend to provide central collections of books for loan on the circulatory system, and to establish the collections for the most part in village schools. Acting on the advice of the same expert, the committee intends to establish special reference libraries of a national character in one or two centres intended to serve the interest not only of localities, but of certain sections of the community. In accordance with this policy a grant has been made to further the work of the Co-operative Reference Library in Dublin, which has for its object the development of the work of rural reconstruction carried on by the Irish Agricultural Organization Society. The executive committee has also voted a considerable sum to the National Institute for the Blind, to defray the cost of the production of metal plates for the issue of a number of standard works by a modern process. The plates will remain in the possession of the Institute, and the books will be placed in the National Lending Library for the Blind. The committee has also resolved to help the Household and Social Science Department of King's College for Women (University of London) to establish a library. The department aims at providing a training on the highest plane in such subjects as sanitary and health inspection, the administration of hospitals and national institutions, the administration of the Poor Law, and the teaching of hygiene and of the sciences which regulate home life. The committee will meet half the cost of the erection of the library building. The trust deed authorized grants for the erection of public baths, and this matter, which raises several questions of general policy, is under the consideration of the committee. It has, however, decided to offer an endowment to the Central Bureau for the Employment of Women, which collects and centralizes information as to the employment of educated women. The bureau gives guidance to over 3,000 women a year as to the directions in which they may train, with the object of pointing out suitable callings and helping them to avoid entering "blind alley" employments. The committee is ready to consider the question of affording assistance to a variety of institutions in the future, but is of opinion that for the present the main energies of the trustees and the greater part of the income under their control should be directed to furthering the library movement, which has always held a high place in Mr. Carnegie's esteem.

BARONETCIES IN THE I.M.S.

SIR BRUCE MAXWELL SETON, who died suddenly in London on March 6th, has been succeeded in the baronetcy, which was created in 1663, by his cousin, Brevet Colonel Bruce Gordon Seton, I.M.S., who was born on October 13th, 1868, entered the Bengal Medical Service on January 30th, 1892, and attained his present rank on June 30th, 1913. His permanent appointment is that of Deputy Director-General of the I.M.S., the post formerly known as Secretary to the Director-General, but he is at present commanding the Indian general hospitals employed in the treatment of Indian wounded at the Kitchener Hospital, Brighton. Sir Bruce Seton is the fifth officer of the Bengal Medical Service who has become a baronet. Two—Sir John James Trevor Lawrence and Sir Alexander Christison—inherited the baronetcies bestowed upon their fathers, Sir William Lawrence, surgeon to St. Bartholomew's Hospital, and Professor Sir Robert Christison of Edinburgh, for eminent professional services. Two gained baronetcies for themselves—Sir William Russell, who retired in 1832, for his services in the cholera epidemic of that year in London; and Sir Joseph Fayrer, in 1895, on his retirement from the presidency of the India Office Medical Board. Sir John McNeill, G.C.B., of the Bombay Service, was also offered a baronetcy for his work as Special Commissioner in the Crimean war, but, having no son, declined it, and received a Privy Councillorship instead.

COLONEL SIR ALMROTH WRIGHT, consulting physician with the British Field Force in France, will deliver a lecture on the septic infection of wounds, at the Royal Society of Medicine on Tuesday, March 30th, at 5 p.m.

Medical Notes in Parliament.

Inoculation against Disease.

An Insinuation.

MR. YEO asked the Under Secretary of State for War whether, in view of the prevalence of meningitis and cerebro-spinal meningitis and of the percentage of deaths that had resulted therefrom amongst British troops in the United Kingdom since the outbreak of the war, he would recommend that a careful investigation be instituted into the possible connexion between inoculation against typhoid fever and the diseases first mentioned. Mr. Tennant: Experts, both military and civilian, have been consulted on this point, and they are of opinion that there could not possibly be any connexion between inoculation and the occurrence of cerebro-spinal meningitis, and in the circumstances it is not considered necessary to institute any special investigation.

A Protest.

Mr. T. M. Healy: As this is the third time that an endeavour has been made to use the papers of this House in order to suggest that this particular disease is spread by inoculation, which nearly everybody knows to be false, will the right hon. gentleman say something to discourage the practice of putting down these questions? Mr. Tennant: I sympathize very much with the desire expressed by the hon. and learned member, but it is a matter for the authorities of the House, and not for me. I have to reply to the questions which are put down.

Royal Army Medical Corps.—Sir C. Kinloch-Cooke asked the Under Secretary of State for War if there had been any cases of junior officers of the Royal Army Medical Corps promoted for services during the war; and, if not, why this corps should have been exceptionally treated in this respect. Mr. Tennant replied that four majors had been promoted to be brevet lieutenant-colonels. Decorations had also been conferred on thirteen majors, twelve captains, and nine lieutenants. Sir C. Kinloch-Cooke asked further as to cases of junior officers, but Mr. Tennant said that he had given all the information in his possession. Mr. Joynson-Hicks asked what were the rates of pay for captains in the Territorial Royal Army Medical Corps who went to the front as compared with pay given to civilian doctors for the same work. Mr. Baker: The present emoluments compare as under:

Emoluments of Captains of the Royal Army Medical Corps, Territorial Force, when Serving at the Front.

	s.	d.	
Pay	15	6	a day.
Field allowance	3	6	,,
Lodging allowance	3	0	,,
Fuel and light	1	3	,,
	23	3	,,

Emoluments of Civil Surgeons Commissioned as Temporary Lieutenants, Royal Army Medical Corps, under the Same Conditions.

	s.	d.	
Pay	24	0	a day.

War Office Contribution to Voluntary Hospitals.—Mr. Harry Lawson asked the Financial Secretary to the War Office what was the basis upon which contributions were made to the voluntary hospitals which, with the approval of the War Office, were admitting sick and wounded soldiers; whether such basis of contributions was uniform throughout the United Kingdom or whether a varying scale had been adopted; and, if so, upon what principle such variations were made. Mr. Baker replied that he was glad to say that the use of these voluntary hospitals had not been offered on a commercial basis, and the assistance given from public funds had taken the form of a grant-in-aid on the basis of a daily rate per occupied bed. This rate was normally 2s., but in some cases a somewhat larger grant might be given by the General Officer Commanding.

The Sight Tests of the Board of Trade.—Mr. Lynch asked the President of the Board of Trade whether his attention had been lately drawn to the inefficiency of the sight tests used by the Board; whether those tests had been adversely commented on by a great number of authoritative members of the medical profession; whether he would take steps to secure the best type of lantern available; whether it was found that the wool test allowed over 50 per cent. of dangerously colour-blind candidates to pass and produced the rejection of over 50 per cent. of normal-sighted candidates; and whether he would abolish that test altogether. Mr. Runciman said he had reason to believe that the sight tests employed by the Board of Trade were efficient for their purpose and that the criticisms made on the lantern were unfounded. The lantern test was submitted about a year ago to a rigorous practical test at Shoeburyness in the presence of representatives of shipowners, shipmasters, and others who had raised objections to its use, and, as a result those objections were formally withdrawn. The figures as to the operation of the wool test were not entirely accurate, but the wool test had now become quite a subordinate part of the examination, and no candidate was finally passed or rejected on that test alone. The question whether the wool test could be dispensed with as superfluous was receiving consideration, but he felt it to be desirable to have a somewhat longer experience of the new system before finally deciding the matter.

Post-Scarlatinal Diphtheria.—In reply to Mr. Touche, who asked a question as to a girl, aged 2½ years, admitted to the Eastern Fever Hospital, Homerton, of the Metropolitan Asylums Board, suffering from scarlet fever, and had subsequently contracted chicken-pox and afterwards diphtheria, the President of the Local Government Board said that he was informed by the managers of the Metropolitan Asylums Board that the child was admitted on October 10th, suffering from a mild attack of scarlet fever; she was placed in a ward of twenty beds reserved for scarlet fever patients. On December 11th she developed chicken-pox, which there was no doubt was introduced into the ward by a patient admitted suffering from scarlet fever and also incubating chicken-pox, which shortly afterwards developed. A. B. was promptly isolated, along with two other patients who were suffering from scarlet fever and chicken-pox (all three being removed from the same ward). On February 22nd Alice Bateman showed signs of diphtheria, and from that date she had been in a separation ward by herself. He was also informed that post-scarlatinal diphtheria was unfortunately

not uncommon—in fact there were some grounds for stating that an attack of scarlet fever predisposed to an attack of diphtheria. Such cases of diphtheria occurring in a scarlet fever ward might be due to an unrecognized case of diphtheria, or to the presence in the ward of a "carrier case." Such cases were quite frequent among school children, and it was possible that A. B. was herself a "carrier case," and that the diphtheria bacilli in her throat became active after her prolonged illness. No other case of diphtheria had occurred in either of the wards in which she was treated. He was further informed that it was quite uncommon to have such a sequence of illnesses in the Metropolitan Asylums Board's hospitals, and even secondary diseases were relatively uncommon, especially when the frequency with which children were exposed daily to infection in schools and crowds was considered. The ratio of the following complications of scarlet fever cases in 1913 (the latest return available) and 1903 respectively was, per 100 cases:

	1903.	1913.
Diphtheria	2.32	1.36
Chicken-pox	2.36	1.48

The question of improved methods of treatment was at no time lost sight of by the managers and their advisers, and the figures given showed that the structural and other provision which had been made to reduce the risk of cross-infection to which all fever hospitals were liable had not been unsuccessful.

Vaccination (Conscientious Objection).—In reply to Mr. Snowden, Mr. Herbert Samuel said that the form of notice of the requirement of vaccination was already addressed to "the father, or mother, or other person having the custody of the child," and the form of declaration of objection to vaccination referred to "the parent (or persons having the custody) of" the child. It was proposed to send a circular to the vaccination officers making it clear that, in the absence of the father, the mother was qualified to make the declaration. On February 22nd he undertook to make it clear in the circular that it would not be necessary for the father to be abroad but serving with the colours in any part of the United Kingdom, and that the mother in that case might make the declaration.

Aniline Dyes and Research.—In reply to questions by Sir F. Cawley and Sir Philip Magnus as to the disposal of the grant of £100,000 to be made to the new aniline dye company, Mr. Runciman said that it would be for the directors to determine the manner in which it could best be utilized for the purposes of research and experiment. He understood that it was the intention that the universities should supply a great deal of the knowledge and the research work of which advantage would be taken. He was not prepared to say what part of the grant, if any, would be paid by the directors of the company to the universities, nor was he prepared to say that discoveries made for the company would be immediately published for the information of other aniline dye manufacturers.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

DURING the week substantial contributions have been received by the Treasurer of the British Fund from Canada and from Denmark. The Danish Union of Doctors has sent, through Dr. Christophersen, a second handsome subscription to the Fund of Kr.3,488, equivalent to £178 8s. 3d. The Canadian Committee for the Relief of the Belgian Medical and Pharmaceutical Profession forwards, through Dr. J. Gibb Wishart, the President of the Ontario Medical Association, a further donation of 1,000 dols. The previous two generous contributions of this Committee, amounting to over £300, were credited to the Ontario Medical Association in error.

We are able to publish this week the fourth list of subscriptions received by the treasurers of the Irish Branch, and a detailed list of the Scottish subscribers. When these large collections, and other local subscriptions still remaining in the hands of local secretaries, are added to what has been received by Dr. Des Vœux, the total is seen to amount to more than £10,000.

Applicants in this country who have received assistance in money or kind have shown themselves, personally or through Dr. Clément Philippe, very appreciative of the help rendered. The distribution of clothes now takes place from the Wesleyan Training College, 130, Horseferry Road, London, S.W., where Mrs. Leonard Colebrook, Mrs. de Bless, and Count Dru are rendering every help.

Subscriptions should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. They will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, when the sum actually received by the Treasurer amounted to £7,500. In this list certain local funds and the Scottish and Irish Funds are not included.

	£	s.	d.
West Croydon and District Medico-Ethical Society (per Dr. F. G. Grapel, Hon. Sec.) ...	1	1	0
Major Boylon Smith, R.A.M.C.	2	0	0
Dr. C. Harold Dyer ...	1	1	0
Dr. John Campbell ...	2	2	0
Dr. Ruth H. Campbell ...	5	0	0
Dr. J. Tearle	2	0	0
Dr. E. B. Morley ...	1	1	0
Mr. R. Burges	1	0	0
Horsham Division, B.M.A—			
Dr. Boxall	1	1	0
Messrs. Vernon and Kinneir	3	3	0
Chichester and Worthing Division, B.M.A. (per Dr. A. L. M. Palmer, Hon. Sec.)—			
Dr. W. J. Patterson ...	3	3	0
Dr. F. L. Alexander ...	1	1	0
Northamptonshire Division, B.M.A. (per Dr. Peverell Hichens)—			
Dr Stone	0	10	6
Dr. Richard H. Sankey...	1	1	0
Anon.	1	1	0
Dr H. F. Hann... ...	2	2	0
Mr. Joseph Baker ...	2	2	0
Dr. J. Fletcher	2	2	0
Mr. J. P. Ellerington (La Pharmacie Française), fifth donation... ...	5	0	0
North Middlesex Division, B.M.A. (per Dr. Stuart Smith, Hon. Sec.)—			
Dr. T. D. Forbes ...	0	10	0
Dr. F. W. Fawssett ...	0	10	0
South Staffs Division, B.M.A. (per Dr. H. C. Mactier, Hon. Sec.)—			
Dr. J. J. O'Brien ...	1	1	0
Mrs. Thursfield... ...	1	1	0
Danish Union of Doctors (per Dr. Christophersen)	178	8	3
Miss C. O'Neild... ...	1	0	0
Dr. W. E. Risdon ...	3	3	0
Dr. G. A. Wolfendale ...	1	1	0
Dr. Isles	2	0	0
South-West Wales Division, B.M.A. (per Dr. D. R. Price), second donation	2	0	0
Dr. James Robinson ...	2	2	0
Oldham Medical Society (per Dr. F. L. Pochin, Hon. Sec.)—			
Dr. A. Bowes	1	1	0
Dr. Douglas	1	1	0
Dr. W. H. Willcox ...	3	3	0
Dr. B. C. Broomhall ...	1	0	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Percival), second list—			
Dr. J. C. J. Fenwick ...	3	3	0
Dr. J. Brownlee ...	1	1	0
Dr. G. H. Anderson ...	2	2	0
Mr. H. E. Armstrong ...	3	3	0
Dr. F. A. Bainbridge ...	1	1	0
Dr. J. R. Fothergill ...	2	2	0
Mr. A. A. Martin ...	1	1	0
Dr. and Mrs. J. A. Menzies	2	2	0
Dr. A. C. Park ...	1	1	0
Dr. H. Widdas ...	2	0	0
Dr. J. C. J. Fenwick ...	3	3	0
Dr. J. Brownlee ...	1	1	0
Dr. W. A. Stephen ...	2	2	0
Dr. A. G. Glass ...	2	2	0
Dr. H. R. Kendal ...	1	1	0
Dr. T. S. P. Parkinson	2	2	0
Dr. S. J. B. Fox ...	2	2	0
Dr. J. J. Campbell ...	2	2	0
Dr. T. M. Martin ...	1	1	0
Professor Morison ...	10	0	0
Mr. G. G. Turner ...	5	5	0
Dr. A. G. W. Stephen	0	10	6
Dr. J. Hodley... ...	3	3	0
Dr. A. H. Hobbs ...	2	2	0
Dr. H. Kerr	2	2	0
Dr. H. Adams ...	2	2	0
Birmingham Local Committee (per Dr. Robert Saundby, Hon. Sec.), tenth donation—			
Dr. and Mrs. St. Clair Ballenden (proceeds of G.F.S. Concert) ...	18	7	3
Dr. Ballenden ...	5	0	0
Dr. Julius H. Beilby ...	2	2	0
Dr. Wm. Welsh (proceeds of Whist Party, additional)	0	10	0
Miss I. Blyth	0	10	0
Mrs. S. Fowle	2	2	0
Mr. H. Jenkins	0	10	9
Halifax Chemists' Association (per Mr. R. V. Sutcliffe)	2	2	0
Mr. T. Jackson	1	1	0
Messrs. G. E. Bridge and Co., Limited	1	1	0
Mr. R. J. Perkin, second donation	0	10	0
Canadian Committee for the Relief of the Belgian Medical and Pharmaceutical Professions (per Dr. J. Gibb Wishart, Hon. Treas.), third donation	200	0	0

MANCHESTER AND DISTRICT.

Dr. E. M. Brockbank announces that the total amount received by this fund up to March 7th was £442 12s., of which £58 2s. were contributed by the general public. The following subscriptions are additional to those published:

	£	s.	d.
Mr. J. Howson Ray ...	21	0	0
Dr. John Wharton ...	5	5	0
Mr. Garnett Wright ...	6	5	0
Dr. Cullen	3	3	0
Dr. H. H. McNab ...	3	3	0
The Misses Hindle ...	2	2	0
Dr. F. W. Hartley ...	2	2	0
Dr. W. S. Moore ...	1	1	0
Dr. H. B. Woodcock ...	1	1	0
Dr. Everard Clage ...	1	1	0
Dr. Thos. Parke ...	1	1	0
Dr. W. C. Rigby ...	1	1	0

SCOTLAND.

The following subscriptions, amounting to £888 5s. 6d., have been received by the Scottish Committee. Further contributions should be sent to either of the following treasurers of the fund: Dr. Norman Walker, 7, Manor Place, Edinburgh; Dr. R. McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh; Dr. W. G. Dun, 15, Royal

Crescent, Glasgow; and Mr. J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.

	£	s.	d.
Sir Alexander R. Simpson	20	0	0
Dr. Robert Thin ...	5	5	0
Dr. Byrom Bramwell ...	5	0	0
Dr. Robert McKerchar ...	1	1	0
Dr. Norman Walker ...	5	5	0
Dr. Sargood Fry ...	2	2	0
Mr. A. Linton Logan ...	1	0	0
Dr. T. P. Stewart ...	2	2	6
Dr. Robert Stirling ...	5	5	6
Dr. W. P. Dester ...	0	10	0
Miss Aylett	0	5	0
Miss Nelson	0	5	0
Miss M. W. Fleming ...	15	0	0
Miss K. I. Fleming ...	15	0	0
Dr. Philip C. Borrowman	1	1	0
Dr. Hill Buchan ...	1	1	0
Dr. Alex. M. Easterbrook	1	1	0
Mrs. Legat	1	1	0
Dr. Barbour	25	0	0
Mr. Dwight Day ...	2	0	0
Dr. F. W. N. Haultain ...	10	0	0
Dr. J. R Hamilton ...	5	0	0
Dr. Andrew C. Keay ...	4	12	6
Dr. Wm. Russell ...	10	10	0
Dr. R. Dods Brown ...	1	1	0
Dr. Melville Dunlop ...	3	3	0
The Association of School Medical Officers of Scotland	5	5	0
Dr. Harry Rainy ...	5	5	0
Dr. John Orr	2	2	0
Dr. Oliphant Nicholson..	3	3	0
Dr John Thomson ...	5	5	0
Dr. W. Hall Calvert ...	0	10	6
Dr. W. M. Selby ...	0	10	6
Dr. G. Minto Johnston...	1	1	0
Dr. T. J. Thyne... ...	3	3	0
Dr. Alex. Hendry ...	1	1	0
Dr. Jas. Wilson... ...	2	2	0
Prof. J. G. McKendrick...	1	1	0
Dr. John Playfair ...	5	5	0
Dr. Thomas Fraser ...	5	0	0
"A Comrade"	5	5	0
Dr. Allan Jamieson ...	10	0	0
Dr. J. W Martin ...	0	10	6
Dr A. Ogston	1	1	0
Dr. F. D. Boyd	4	4	0
Dr. Edwin Matthew ...	5	0	0
Dr. James Gowans ...	0	10	0
Dr. R. M. Ronaldson ...	1	1	0
Dr. A. Murray Drennan	2	2	0
Dr. Ian Struthers Stewart	1	1	0
Dr. R. D. Hotchkis ...	1	1	0
Dr. A. Crum Brown ...	5	5	0
Miss F. M. Harper, M.B.	2	2	0
Major C. L. Williams, I.M.S.	1	1	0
Mrs Low	1	1	0
Dr. F. F. Jones	0	5	0
Dr. Macdonald	2	2	0
Dr. Henry H. Robarts ...	1	1	0
Dr. C. M. Robertson ...	5	5	0
Dr. Claude B. Ker ...	3	3	0
Dr. Aitchison Robertson	1	1	0
Dr. G C. Anderson ...	1	1	0
Prof. Ashley MacKintosh	10	10	0
Dr. Cranston Low ...	1	1	0
Dr. Stanley Fenwick ...	1	1	0
Dr. Lovell Gulland ...	10	10	0
Dr. Keppie Paterson ...	3	3	0
Dr. A. Macnaughton ...	1	1	0
Edinburgh Medical Curling Club	4	0	0
Dr. Bruce McMorland ...	0	10	6
Dr. Harriet McCloghry ...	1	1	0
Royal College of Physicians of Edinburgh...	105	0	0
Royal Colleges' Golf Club, Edinburgh ...	10	10	0
Mr. J. W. B. Hodsdon ...	21	0	0
Mr. Francis M. Caird ...	10	10	0
Mr. J. M. Cotterill ...	5	5	0
Dr. Charles W. MacGillivray	5	5	0
Mr. David Wallace ...	5	5	0
Dr. Logan Turner ...	20	0	0
Dr. George Mackay ...	5	0	0
Mr. Harold J. Stiles ...	21	0	0
Dr.R.McKenzie Johnston	3	3	0
Mr. J. W. Dowden ...	5	5	0
Dr. John M. Bowie ...	10	10	0
Dr. J. H. Gibbs	5	5	0
Mr. Alexis Thomson ...	2	2	0
Mr. D. P. D. Wilkie ...	2	2	0
Mr. L. F. Bianchi ...	2	2	0
Dr. William B Dow ...	5	5	0
Dr. J. A. H. Duncan ...	1	1	0
Dr. Balfour Graham ...	1	1	0
Dr. A. G. Miller... ...	0	10	6
"Doctor's Daughter" ...	0	10	0
Mrs. Marian Wormull ...	0	5	0
Mr. John D. Malcolm ...	2	2	0
Dr Harley P. Milligan ..	2	2	0
Lieut.-Colonel Sir Joseph Fayrer, Bt.	2	2	0
Dr. W. Balfour Gourley	1	1	0
Mr. John Chiene, C.B. ...	5	0	0
Major George R. Livingston	1	1	0
Major William Haig ...	1	1	0
Dr. J. J. Wilson ...	1	0	0
Dr. Norman J. McKie ...	1	1	0
Dr. W. Huntington ...	2	0	0
Dr. John Sinclair ...	1	1	0
Dr. John Mackay ...	1	1	0
Dr. John W. Steven ...	2	0	0
Dr. W. B. MacTier ...	1	1	0
Miss L. de Menezes ...	0	5	0
Dr. J. Keith Robertson...	1	1	0
Mr. George L. Chiene ...	2	2	0
Lt.A.L.Christie,R.A.M.C.	1	1	0
Dr. George A. Dickson ...	2	2	0
Dr. Alexander Stewart ...	1	1	0
Dr. T. G. Nasmyth ...	10	10	0
Dr. Robert Rosie ...	0	10	0
Mr. A. A. Scot Skirving, C.M.G.	2	2	0
Dr. James C. P. Reardon	2	2	0
Dr. Mildred M. L. Cathels	1	0	0
"Two Sisters"	1	0	0
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Dr. Elizabeth T. Gilchrist	5	5	0
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Dr. G. Balfour Marshall	3	3	0
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Ireland.

The following subscriptions have been received by the Irish Committee in addition to those acknowledged in the British Medical Journal of December 5th and 19th, 1914, and January 23rd, 1915. Further subscriptions by members of the profession in Ireland may be sent to Dr. T. P. C. Kirkpatrick, Registrar of the Royal College of Physicians in Ireland, Kildare Street, Dublin, or to Dr. C. M. Benson, Secretary of the Royal College of Surgeons in Ireland, St. Stephen's Green, Dublin, the honorary secretaries and treasurers of the Irish fund.

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Instruments.

The Master of the Society of Apothecaries acknowledges with thanks the receipt of surgical instruments, contributed by the following donors since the publication of the last list:

Dr. F. Miller Wilson, Liverpool.
Dr. C. D. Parfitt, Gravenhurst, Ontario.
Dr. Fowler, Bournemouth.
Dr. Priestley Leech, Halifax.
Mrs. H. Barton, Market Rasen.

AT the meeting of the Royal Microscopical Society at 20, Hanover Square, W., on Wednesday next at 8 p.m., Mr. Edward J. Sheppard will describe a new mitotic structure disclosed as the result of new technique.

THE King has approved the holding of a service in the Chapel of the Order of St. Michael and St. George on April 23rd, at noon, in celebration of St. George's Day. Notices will be sent to every member of the Order in or near England, and in the meantime no application to the Chancery in Downing Street is necessary.

THE WAR.

ON PERISCOPES.

QUESTIONS have been put to us concerning this much-talked-of instrument, and some patterns now on the market have been sent to this office. We refer to the instruments made for use in the trenches, not to that in use in submarine vessels.

The periscope would appear to be a comparatively modern device, for on consulting a well-known encyclopaedic dictionary, dated 1895, we found no reference to the use of the word in connexion with any such instruments as the foregoing; it was only used to denote spectacle lenses of meniscus form as prescribed by ophthalmic surgeons. Yet it was in the same year 1895 we saw this instrument in all its essential features being sold by hawkers on the field of a great review of military forces on the Continent at a price about equal to our florin. It sold readily among the crowd of spectators to enable the hindermost to see over the heads of those in the front ranks.

The instrument as used in trench warfare is in its essentials of the simplest character. By means of a double reflection the view ahead of an observer can be seen below the level of his horizon whilst he himself is totally covered by that bound. All that is necessary to the making of the instrument is a couple of mirrors set one above the other with their reflecting surfaces opposed and parallel to each other and both set at an angle of 45 degrees to the perpendicular. The upper mirror just peeps over the horizon of the observer. The image reflected in the upper mirror is received by the lower mirror, where it is viewed by the observer, whose eye or eyes must be close to the edge of this mirror.

Certain difficulties arise in the viewing of the image. If the two mirrors be of the same size, as they are invariably in all the patterns of periscopes we have seen, the image of the reflection in the lower mirror is small in proportion to the distance between the two mirrors; and indistinct, both actually by reason of the loss of light arising out of the double reflection, and relatively by contrast with the brightness of the light reflected from the unused part of the mirror surrounding the reflected image. Thus, the image in the lower mirror may only occupy one-fourth of its surface; it is a dull image surrounded by a brightly illuminated area receiving light from the sky immediately above and behind the observer. This latter difficulty may be, and is, overcome in some patterns, but not in others.

Again, according to the size of the mirrors, both eyes may be used in binocular vision, or only one eye. This variation is of particular importance when, as is usually the case in trench warfare, the upper mirror is practically on the level with the ground. In such a circumstance a monocular periscope is a poor thing, since there is certain to be gross miscalculation of distances owing to the loss of that subtle sense of the judgement of size and distance of objects which can alone be obtained by natural binocular vision. Also with a monocular periscope the use of field glasses for the magnification of the image is barred unless the observer tries with a single barrel of the glasses, when the relation of size and distance will be still further distorted, particularly with modern high power glasses.

The other day we made an excursion to likely places within a mile of this office, and saw no less than fourteen different patterns of "trench" periscopes. These may be divided into two groups—monocular and binocular; and the latter again into two varieties—a skeleton, or open, sort, and a box, or closed, sort.

The monocular pattern is evidently popular, and at first inspection it would appear to deserve to be so, for it is simple, compact, and essentially portable. Just a hollow tube with an opening at each end, within which are fitted the mirrors. One pattern frequently exhibited is very like a domestic rolling-pin in size and shape. A tin tube is fixed to a turned wood handle, which is held in the hand, one eye is applied to a small sight hole above the handle, and the reflection from the upper mirror is viewed. Variants of this type differ only in the fitting of the mirrors or in a telescopic arrangement of the tube. The defect of such a type is obvious when the foregoing remarks on the advantages of binocular vision are considered.

Of the binocular type a number of skeleton patterns were seen. Most of these were made up of an upright staff to which the two mirrors were clipped by various devices. One pattern had the mirrors fitted to lazy tongs, another to a light skeleton of iron wire and tin. These have all the defects due to difficulty in examining the reflected image owing to its relative dimness to the rest of the observation mirror. But many were faulty from the flimsy nature of their construction, and the desire to make them portable. Portability is obtained by making the parts detachable, and this means loose parts to be lost, and early failure of the instrument. Some were so slightly made as to seem certain of destruction in a few days under such severe conditions as trench usage. One had large mirrors, but they were set with the long edge fore and aft, instead of transversely, so that binocular vision could hardly be got, and the manner of fitting the mirrors on the staff was weak. One other stoutly-made pattern had a grave defect in that the stout staff came between the observer and the mirrors, so that in usage this staff had to be applied to the nose and forehead of the observer, thereby exposing him to serious injury in the not unlikely event of the upper stout fitting of the mirror being struck by a chance missile or even a dislodged lump of dirt.

The box patterns are very much like long, narrow, front door letter-boxes with an upper front slit for the postman and a lower back slit from which the housemaid extracts the letters. They vary mainly in material and devices to make the box collapsible or conveniently short to carry. The favourite lengths are from 2 ft. 6 in. to 4 ft. Those made of wood are certainly inefficient; three-ply wood, glue, and brads make no structure fit for exposure to wet and rough handling. The tin patterns were free from this defect, and the simpler the construction, the more plainly box-like, the better they appeared likely to fill their purpose.

In prices the patterns of instrument mentioned vary from 5s. 6d. to 1½ guineas; and we must confess that the cheapest one seemed the most serviceable. It was a tin box about 36 in. long, fitted with mirrors 3½ in. wide, just enough for binocular vision, for the average interpupillary width is 2½ in. A larger size, a little dearer, of the same make had mirrors 5 in. wide, and was therefore better for use with binocular glasses. The box was divisible by pulling in half, but this is a debatable advantage. It is to be obtained at Messrs. Gamage's.

The question of portability evidently occupies the minds of the makers, as it does the makers of other forms of camp equipment. Our experience leads to the conclusion that this apparent advantage usually works out to be a disadvantage; the life of the article is short and it is not merry for the owner.

In conclusion, the periscope should provide for binocular vision. If portability makes the skeleton form desirable, then there should be provided a cloth veil like that used by the photographer in focussing his camera; this should hang from the upper view mirror down over the head of the observer. Divisible tin boxes are a doubtful advantage, for a chance bump will disorder the draw tube beyond detachment or refitment.

We will make a free gift of a suggestion for a really portable skeleton pattern instrument. Take two modern croquet hoops, hinge on to the crossbar of each one mirror with one screw or clamp wherewith to lock it, and provide a piece of opaque cloth, 36 in. by 12 in., with hooks on one end to clip on to the hinge and sides of the top mirror. When not in use, the two parts of the fitment would coincide, lie flat, and be wrapped up in the cloth. In use, the spikes of the hoops would be stuck into the earth of the front wall of the trench with the cloth hanging from the upper mirror ready to cover the head of the observer. If any enterprising manufacturer should make a commercial success of this suggestion, he might discharge his debt by a sufficient contribution or contributions to the Royal Medical Benevolent Fund, which will have added calls upon it by reason of the loss of medical officers.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[From a Special Correspondent in Northern France.]

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

THERE is nothing very fresh to record in regard to epidemic cerebro-spinal meningitis so far as the Expeditionary Force is concerned. As was mentioned in a note on the subject about three weeks ago, medical officers in every part of the field are keenly on the outlook for instances of this disease. A certain number of cases of true cerebro-spinal fever have been found, but in none has the previous history of the men concerned been such as to suggest the existence of an epidemic focus among the troops. The men have belonged to various units scattered in different parts of the field, and the circumstances attaching to the cases have been such that, had it not been for the fact that the disease is known to be prevailing in England at the present time, they might have been written down as purely sporadic. The only qualification of these statements that seems necessary relates to three or four cases that occurred in a town a long distance from the seat of active operations. I understand, however, that this outbreak, if such it can be called, was among men who had recently arrived from England, and that, as a matter of fact, most of the other cases have been amongst new arrivals.

The occurrence of cases of cerebro-spinal fever must certainly add considerably to the mental strain to which the medical authorities out here are subjected, but I hardly think that the term "anxious" applies to their attitude, unless it applies also to that of officers of the ship which, in not too favourable weather, is making its way up Channel. They are very much on the alert, and whenever occasion occurs they are taking steps at least as active and complete as those which would be applied in any actively administered sanitary area in England. Since remedial treatment of these cases, if it has to have any effect at all, must be applied with the least possible loss of time, and as there are various more or less other obvious reasons why the patients should be moved about the country as little as possible, arrangements for the treatment of all cases arising amongst the units in the area of active operations have been made at a place within easy reach of all the clearing hospitals and field ambulances, and corresponding arrangements are in existence at the various bases. The patients are at once submitted to serum treatment administered by lumbar puncture, the serum employed being, I understand, that prepared by Burroughs, Wellcome, and Co., and in a certain number of cases vaccines, sometimes autogenous, have been used.

In regard to prophylaxis, any men with whom the patients have been living in close contact are removed from the unit and kept under observation in isolation for not less than three weeks. This step is taken even though examination of swabs from the naso-pharyngeal mucous membrane of these men may prove negative so far as Weichselbaum's meningococcus is concerned. I gather that these "contacts" are throwing a good deal of work on the various laboratories. It appears to be easy to make certain of the presence or absence of the meningococcus when the cerebro-spinal fluid is the medium in which search for it is made, but that when swabs are in question, a prolonged series of cultural operations must be undertaken before it is safe to assert that the meningococcus is not present. The medical officer who is in charge of the whole of the machinery for dealing with epidemic diseases of all kinds receives daily telegraphic reports both as to noted and identified cases of various zymotic diseases and plots out the number under treatment on charts. His cerebro-spinal fever chart, I hear, shows a somewhat acute upward curve, which reached its height about three weeks ago, then rippled gently for some time, and now shows a distinct tendency to droop. The total numbers are small. As for the civil population, there was about two years ago a serious outbreak of epidemic cerebro-spinal meningitis in the valley of the Aisne, and more or less through the whole of the area in which the fighting is now proceeding; but there is nothing in the nature of an epidemic at the present time. It may be doubted, indeed, if there are even any sporadic cases, since none, I understand, have come under observation at the hospital for zymotic diseases among the civil population—and more especially Belgian refugees—that was mentioned recently as having been established at Malassines.

SCIENTIFIC MEETINGS.

The branch of the British Medical Association improvised at Rouen in December seems to be leading an active existence; it has been holding meetings at regular intervals since its institution, and at these has been introduced the practice of arranging for expression of French as well as British views on the subject chosen for discussion.

The most recent meeting took place on February 26th, when the subject of wound treatment was introduced on the surgical side by Professor Tuffier, the distinguished French surgeon, who is well known by repute to all readers of the BRITISH MEDICAL JOURNAL, and on the bacteriological side by Colonel Sir Almroth Wright, who had accepted an invitation to come down from Boulogne for the purpose. Soon after the beginning of the war a supply of his antisepsin was obtained by the French Government from the laboratory of St. Mary's Hospital, and an order counselling and explaining its use was issued about the same date to the personnel of the French Army Medical Service. Consequently, it was specially desired that he should attend this meeting, and afford the large number of French surgeons who were expected to be present the advantage of hearing his general views on bacteriological aspects of wound treatment. I hear that after discussing the subject in detail, he summed up the position by indicating a belief that in respect of wounds incurred in environment such as that to which the soldiers of the Allied Forces had been subjected, the introduction either by a surgeon or a bacteriologist of a really efficient treatment might certainly be expected, but not until about the year three thousand and five. I accept this summary of Sir Almroth Wright's speech because I heard him express views quite consistent with it at a meeting a few weeks ago in Boulogne itself. He then showed that in the circumstances of the fighting during the past few months, it was inevitable that the men's wounds should not only be gravely infected, but infected in such fashion that it was bacteriologically impossible to secure their disinfection. Continuous irrigation of the wound, coupled with good drainage and frequent re-dressing, were the measures most likely to be helpful, but in the end it was to the patient's own lymph that one must look for destruction of the bacilli growing on and below the surface of the tissues. By way of preventing invasion of the general system by streptococci and their like, inoculation with a streptococcal vaccine such as the speaker's antisepsin, might in suitable cases be practised every ten days or so, but such treatment should not be used as a routine measure. It had been hoped that on this occasion Sir Almroth Wright might have had something to say as to the work on which he and his assistants have been engaged ever since the war began, but up to the present there has been no disclosure of the degree of success he has obtained in his endeavour to prepare a vaccine likely to be of use in combating infections due to the *B. perfringens* and other "gas gangrene" organisms.

The speech in question was delivered at a gathering which took place one Sunday afternoon about six weeks ago in the buildings of the Wimereux Golf Club. These are used as quarters by the medical officers of the Australian Hospital, and the latter invited two representatives from each of the hospitals at the Boulogne base and some others to afternoon tea to give an account of the methods employed at their respective hospitals in the treatment of compound fracture of the thigh, and afterwards to remain to supper. The Australian surgeons have exhibited the same hospitable and scientific spirit on a later occasion, the subject discussed at the meeting then held being penetrating gunshot wounds of the chest. They are not, however, to be allowed to stand alone in this respect, for the officers of the Meerut Stationary Hospital—practically the only other institution where there is suitable accommodation—have issued invitations to attend a discussion on the methods of *x*-ray localization now in use and their practical value to the surgeon.

THE ROYAL ARMY MEDICAL CORPS.

I hear that the Irish officers stationed at the Boulogne base propose to dine together on St. Patrick's day, and it

seems probable that the gathering will be largely medical. Officers belonging to the medical branch of the army probably outnumber all others at present in Boulogne, and the proportion among them of Irishmen is considerable. Besides that, who that has ever dined with the Irish Medical Schools' and Graduates' Association would not wish to claim Irish kinship at least once a year?

Quartermasters.

The prospective festivity recalls to my mind an allied but quite private affair which took place not so very long ago at Boulogne. It was a gathering of all the quartermasters of the R.A.M.C. (regulars) then serving in Boulogne. They numbered nine. None of them was past middle age or had held his rank for very many years. Nevertheless, their mean length of service I learnt was twenty-nine years, and the average number of war medals worn by them was just a small decimal under four. Furthermore, they were not a specially selected lot, so that the circumstances served to throw a vivid light on the military experience that an average quartermaster must possess. As must be known to any one who has lived in a garrison town, even for a short time, quartermasters as a class are an especially well set-up, quiet-mannered lot of men, who are perfect encyclopaedias in regard to everything connected with the executive details of soldiering work. It could indeed hardly be otherwise, since, together with sergeant-majors, they represent the very cream of the military class from which they have emerged, namely, the non-commissioned officers of the British army, whom a great authority some years ago described as constituting its real backbone. This remark was made mainly in reference to the fighting branches of the army, but it applies with great force to the R.A.M.C. also, despite the fact that the success of the work of that body must depend on the exercise of scientific knowledge of a kind necessarily confined to the professional officers of the corps. There are, however, innumerable occasions—especially on active service—which call for the exercise of soldierly qualities of the highest kind; and even in hospitals work very much depends on the fashion in which the rank and file of the corps perform their duties. If this be true of the latter, it is doubly true of the quartermasters and sergeant-majors. The general tone of a military hospital depends very largely on the character of its commanding officer, and its success as a curative institution on the scientific ability possessed by its executive medical officers, coupled with the skill and conscientiousness imported into their work by the sisters and nurses of Q.A.I.M.N.S. Still, while all this is true, it is not less true that a very great deal turns on the quartermaster and sergeant-major. The former, who is an officer holding a commission from the King, is the direct representative of the commanding officer of a hospital in respect of all the more domestic side of its work. Whatever be required in the matter of supplies, whether medical or domestic, or of repairs, whether large or small, is secured or arranged by him.

Sergeant-Majors.

The sergeant-major is a warrant officer—that is to say, he holds his rank in virtue of a document signed by a Secretary of State instead of by the King. There appear to be two sides to his work, though both in the main are disciplinary. On the one side he may be regarded as head nurse in respect of all the nursing work done by the wardmasters and orderlies, either for cases placed solely in their charge or when acting as the assistants of members of Q.A.I.M.N.S. On the other side, he may be regarded as the representative of the commanding officer in respect of all matters of regimental routine. As such he must maintain a keen watch on the general behaviour of the men below him, and be ready to check instantly himself, or to report if need be to his chief, any tendency towards slackness in discipline. Very many of the officers of these two ranks have been born and bred in the army, and most others seem to have enlisted very young; in either case, and after completing their general education in the army schools, they have passed various examinations in technical and general subjects and have slowly worked their way up from the rank of private. In ordinary times it seems to take about fifteen or sixteen years for a man to become sergeant-major, and in no stage of his career is mere length of service of any assistance to him. To rise he must show himself at each of six distinct stages a better man than his compeers of equal rank. Furthermore, in addition to proving his superior efficiency in drill, in work in the camps and on the march, in the keeping of records of a multiplicity of kinds, as his possession of the various qualities which fit a man for command, he must hold a first-class certificate in general education, and others in the subjects of first-aid work, nursing and dispensing. The number of sergeant-majors who can ever become quartermasters is small; the cadre of the latter only numbers about fifty, and a man must gain admission to it before he is 45. Should he attain this grade he ranks forthwith as a lieutenant, but cannot be promoted to a captaincy for ten more years, except as a reward for gallantry in the field, or other exceptionally meritorious service. He receives the pay of his rank, that is to say, the rank of lieutenant in an infantry regiment. It seems a small sum considering how many admirable qualities necessarily go to the making of a quartermaster R.A.M.C., and that in addition to his being a picked man out of a class of picked men, all having very many years' service to their credit, his position is always one of great responsibility and, from the point of view of recruits for the Royal Army Medical Corps, practically represents the Field Marshal's bâton that every private soldier proverbially carries in his knapsack.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed.

MAJOR F. G. RICHARDS, R.A.M.C.

Lieutenant Pierce Michael Joseph Power, R.A.M.C.

Lieutenant Power was educated in Dublin at the School of the Royal College of Surgeons, Ireland. He took the double qualification of the Irish colleges in 1910, and entered the R.A.M.C. as lieutenant on July 26th, 1912.

Wounded.

Captain J. H. Bell, M.B., R.A.M.C. (Special Reserve).

Lieutenant T. W. Clarke, M.B., R.A.M.C. (Special Reserve).

Temporary Lieutenant C. M. Row, R.A.M.C.

NOTES.

ANTITYPHOID INOCULATION.

THE War Office published on March 4th the following table showing the distribution of the cases of typhoid fever which have occurred in the British forces in the field between the categories of uninoculated, the fully inoculated, and the partially protected:

	Cases.	Deaths.
Uninoculated	359	48
Fully inoculated within two years (two doses)	111	1
Partially protected (one dose)	135	1
Totals	605	50

THE BRITISH RED CROSS SOCIETY.

In the first months of the war, when the pressure upon every department of the military organization was so exceedingly severe, the British Red Cross Society successfully undertook responsibility for an enormous amount of work on behalf of the sick and wounded. Recently, however, the position as between the Red Cross Society and the Royal Army Medical Corps has changed considerably, and there has been a large transference of personnel, many doctors engaged by the Red Cross Society having been given commissions in the R.A.M.C. The War Office has stated that it is prepared to receive applications for the resident appointments at the new King George Hospital, near Waterloo Station, to be opened shortly. Nurses are also required in considerable numbers.

SCOTTISH RED CROSS ORGANIZATION.

The Organization Clothing Committee of the Scottish Branch of the British Red Cross Society, in acknowledging the receipt of gifts of many garments and other articles, reports that since the war began a very large number of packages have been issued from the stores of St. Andrew's Halls, Glasgow. They include over 100,000 sent to France, about 80,000 sent to hospitals, auxiliary hospitals, and convalescent homes in Scotland; over 23,000 to Belgium, nearly 14,000 to Servia, and

nearly 7,000 to Indian hospitals, besides 5,460 to the navy. The last weekly report from the motor ambulance unit at Rouen states that during the previous week the cars had carried 247 stretcher cases and 451 sitting patients.

Clogs versus Boots.

Dr. W. M. Hewetson (Gwanda, South Rhodesia) writes: When about 15 I had to wear for about a year, and while working out of doors daily on a clay soil farm in a very wet district, the ordinary machine-made boot. From early morn till night on most days I went wet-shod. The condition of my feet that winter from chilblains, attendant swelling, and in consequence bad fitting of the (bad) boots was too literally painful. When the boots were worn out I begged for a pair of clogs, knowing from previous experience that they would mean fast-dryness and warmth. So soon as I became the thankful possessor of this pair of clogs —"Lancashire" or "duck-nebbed" ones—I stole away half a mile to a sympathizer to show them. Hence my sympathies go out to the poor fellows in the trenches standing in freezing water. Caulkered clogs have their disadvantages, and would not become the bank clerk of Threadneedle Street, but to the same man who has become a soldier amid the winter ooze of Northern France, the wooden sole, an inch thick of seasoned birch, with cork inner sole (all that is necessary to diminish the hardness) fastened down with an ordinary drawing pin between the heel and fore part, would, I am most confident, be foot salvation. If industrial Lancashire and Yorkshire, and agricultural labourers in the North and in the Low Countries themselves still wear clogs or sabots, there is a prima facie case for this humble piece of attire. Incidentally, and but quite a minor point, they cost about one-third less than boots. They should be, of course, well made, and, equally of course, attended to with regularity.

Medical Officers Wanted.

Welsh Army Corps.

Medical men are required to take temporary commissions in the R.A.M.C. for duty with the Field Ambulance and Regimental Units of the Welsh Army Corps. Applications, stating age, qualifications, and experience, should be made to the A.D.M.S., 43rd Welsh Division, Prestatyn, North Wales.

2/1st Highland Mounted Brigade Field Ambulance.

Medical officers are still urgently required for the 2 1st Highland Mounted Brigade Field Ambulance. Full particulars of duties, pay, etc., will be supplied on application to Captain Mowat, O.C., H.M.B.F.A., R.A.M.C., Drill Hall, Rose Street, Inverness.

East Lancashire Field Ambulance T.F.

There are vacancies for medical men as officers in the East Lancashire (Second Line) Field Ambulance. Applications, giving age, services, if any, etc., should be addressed to the Secretary, East Lancashire Association, T.F., National Buildings, St. Mary's Parsonage, Manchester.

2/3rd North Midland Field Ambulance.

There are vacancies for three R.A.M.C. officers in the 2/3rd North Midland Field Ambulance now being rapidly trained for the front. One of the officers should have a knowledge of and be used to horses, to undertake the control of transport. There is also a vacancy for an officer with the D.P.H. to take charge of a sanitary section. Full particulars can be obtained from the Officer Commanding, Lieutenant-Colonel Lewis W. Pockett, R.A.M.C.T., Frederic Street, Luton.

3rd Line 2nd Northumbrian Field Ambulance.

Several medical officers are required for the completion of this unit for either imperial or home service. Applications should be addressed to the Officer Commanding the Ambulance at the Military Hospital, Bensham, Gateshead.

2/5th London Field Ambulance.

There are vacancies for two medical officers in the 2/5th London Field Ambulance. Further particulars on application to Major R. Corfe, Officer Commanding 2/5th London Field Ambulance, Reigate, Surrey.

2/6th London Field Ambulance.

Four fully qualified medical men wanted immediately as officers. Willing to volunteer for imperial service. Must be able to ride; a knowledge of motors also will be useful. Apply Officer Commanding, 2/6th London Field Ambulance, Trenches, Redhill, Surrey.

1st London (City of London) Sanitary Company, R.A.M.C.T.

Medical men with sanitary qualifications and experience are wanted to complete the establishment of officers of the 1st London (City of London) Sanitary Company. The present necessity has been caused by the dispatch of drafts overseas, and gentlemen now joining the company may expect to be sent on active service at an early date. Particulars as to pay, allowances, etc., can be obtained from the Officer Commanding at Room B. 6, Duke of York's Head Quarters, Chelsea, S.W., either by letter or by calling between the hours of 10.30 a.m. and 12.30 p.m. any day.

England and Wales.

The British Association.

Considerable disappointment is felt in Manchester because, owing to the war, it will not be possible to carry out as fully as was intended the arrangements for the annual meeting of the British Association, which is to be held in Manchester next September. At a meeting of the Local Executive Committee held last week and presided over by the Lord Mayor, it was resolved to report to the council of the association that the meeting could be arranged, if the council so desired, on a more restricted scale for the transaction of the business of the association, for the usual public orations and discourses, and the discussion of scientific matters. The Local Committee felt that in view of the important scientific work done at these annual meetings, and especially considering the new scientific problems arising out of the war, it was most desirable that the meeting this year should not be entirely abandoned, and though in view of the war, the entertainments and hospitality would have to be less than Manchester would otherwise have gladly provided, it is still believed that the essential part of the programme can be successfully carried through. The proposals of the Local Committee have been accepted, and it is understood that the buildings of the University and the Municipal School of Technology will be available for the reception of the various sections and that the public lectures can be given as on previous occasions; though the meeting will unavoidably lose some of its usual attractive features, it is probable that its scientific value will in no way be diminished.

Provision for Sick and Wounded in Manchester.

As stated last week, the total number of sick and wounded men of the Expeditionary Force that have been treated in the Manchester military hospitals is over 10,500, and though this is probably a higher number than any other military hospital in the country has dealt with, the military authorities have intimated that they may soon require further accommodation in addition to the 4,500 beds now available. It was proposed at first to commandeer certain warehouses or other buildings which might be adapted for military purposes for, at any rate, the less serious cases, but the Board of Education has, at the instance of the War Office, asked the various education authorities to consider whether schools found on inspection to be suitable for hospital purposes could not, without serious inconvenience, be handed over to the Army Medical Service. A number of schools in Manchester have been inspected and declared suitable, and it is understood that some of them will be selected after consultation between the education authorities and officials of the War Office, so that they may be ready to be handed over as soon as required. It is possible, too, that, if necessary, certain Poor Law institutions may, by arrangement with the Local Government Board, be utilized for similar purposes. Of the 4,500 beds now available in Manchester and district, about 1,000 were unoccupied last week, and though over 200 fresh cases arrived last week, they were mostly slight, and about half of them were able to go on sick furlough.

The strain placed on the various permanent hospitals of Manchester and district, which have set aside numerous beds for military purposes, was discussed at a meeting of the friends and subscribers of the Manchester and Salford Hospital Saturday Fund, presided over by the Lord Mayor on March 5th. The total amount raised by this fund in 1914 was £6,863, which is only very slightly below the sum raised in the previous year. It was stated that the Manchester Royal Infirmary had had to purchase 208 beds for wounded soldiers, and the Salford Royal Hospital 145 beds, and increased accommodation had had to be made by the Ancoats Hospital and the Royal Eye Hospital. The principal sums allotted out of the fund were: Manchester Royal Infirmary £925, St. Mary's Hospital £467, Children's Hospital £433, Ancoats Hospital £357, Salford Royal Hospital £307, and a donation of £315 was made to the Sick Poor and Private Nursing Institution.

The Manchester School for Mothers.

At the annual meeting of the Manchester School for Mothers, it was reported that the number of women who had attended during the last year was 1,917, and the number of babies registered 1,464, numbers considerably in excess of those of the previous year. The average weekly attendance at the infants' consultations was 255, and about 12,000 dinners were provided for mothers. At the Hulme branch the attendance was so great that it had been necessary to start another consultation day. All the babies attending are under the close supervision of the medical officer, who sees all once a month, and delicate babies once a week. The best results are obtained when the babies are brought at an early age, and 61 per cent. have been brought when less than three months old. The mothers have regularly paid their monthly penny subscriptions, and, as a sum of £600 has recently been contributed out of public funds, the Lord Mayor, who was in the chair, was able to congratulate the school on its good financial position. It is probable that before long a new municipal scheme will be adopted which will prevent any possible overlapping between various agencies, without lessening the need for voluntary educational work. Mrs. H. B. Irving gave an address urging the necessity for increased voluntary work in connexion with the problems of maternity and infant mortality. Speaking from her experience of similar work in St. Pancras and in connexion with maternity centres in general, she dealt principally with the growing tendency towards State control. Apart from the constraint that would inevitably follow State control, she held that no State scheme could cover all the ground in relation to maternity matters. A State scheme might possibly include some compulsory notification of pregnancy or control and inspection of both the mother and the child at fixed intervals, and would mean some curtailment of the liberty of the subject, and she made an earnest plea for more voluntary centres, subsidized by the State, believing that the problems to be dealt with could hardly admit, as yet, of any hard-and-fast rules being laid down, such as would be inevitable under a State scheme.

Liverpool Medical Institution.

At the ordinary meeting on March 4th, the president, Dr. E. W. Hope, referred in fitting terms to the bereavement of Sir James Barr, whose only son, S. Tudor Barr, Lieutenant 3rd (King's Own) Hussars, had recently been killed in action. The president also mentioned the death at the front of the only son of the late Dr. Tawse Nisbet, who was a well-known practitioner in Liverpool and a member of the Medical Institution. Votes of sympathy and condolence with the respective relatives were passed. Dr. Richard Caton, emeritus professor of physiology in the University of Liverpool, entertained the members with a short paper describing Roman medical and surgical instruments of the first century A.D. found in 1914 at Kolophon, Asia Minor. Dr. Caton, whose devotion to medical archaeological research is well known, was fortunate enough to obtain photographs of these old medical and surgical armamentaria, which he displayed by the lantern. He drew attention to the fact that each knife consisted of a bronze and iron blade with bronze shaft. The iron blade was much corroded; the bronze knife and handle, on the other hand, were still in a good state of preservation. Dr. Caton put forward the suggestion that iron as such was "impious" when used on the human body, and to counteract such untoward influences it was welded to bronze, which was "pious" in its nature; for in those days, when medicine and priestcraft were inextricably entangled, surgery had to proceed warily, and the impious iron was overruled by the healing and beneficial action of the bronze, which was supplanted by the sharper and stronger metal in surgical procedures. Forceps readily recognizable, bronze probes, spatulae, uterine curettes, etc., were also found. One instrument puzzled many of those who examined the collection; and, finally, the conclusion arrived at was that it was a specimen of the old bow drill used for trephining. An old double-curved catheter was shown on the screen, and Mr. Rushton Parker showed an ancient Roman ointment applicator for the rectum. Dr. Caton was cordially thanked for giving an account of a most interesting page of medical history brought so recently to light. Captain Arthur Evans on February 11th showed several photographs of so-called frost-bite or trench-bite in soldiers under his care at Fazakerley Hospital. The photographs were taken on Paget plates, and, as examples of coloured photography, were excellent and life-like. The line of demarcation was faithfully portrayed in its colouring, and the impression made was that the actual diseased limbs were there and not the pictures of them.

The L.C.C. Motor Ambulances at Work.

The motor ambulance service of the London County Council for the transport of persons injured in streets or public places to hospitals or to their homes is now an established fact. The movement has received our warm support during the prolonged period of thirteen years during which its claims have been advocated. In the Journal of August 29th we wrote: "In military work the motor ambulances have still to be tested and their relative efficiency compared with horsed ambulances." It did not take as many weeks to prove their superiority in the field of war as it has taken years to secure their benefits for the victims of London traffic. Every Red Cross Commissioner, surgeons and civilians, military and lay authorities, who have personally inspected the provision made for handling the wounded in France and Flanders, have borne unstinted and enthusiastic testimony to the suffering-saving beneficence of the motor ambulances. It was indeed high time that a beginning should be made with this much-needed service in the capital of the Empire, for which due parliamentary sanction was obtained by the London County Council as long ago as 1909.

While it is true that the Council has for a couple of years subsidized the motor ambulance generously presented by the Grand Duke Michael of Russia to the Hampstead Hospital, it was only last month that the first of the new stations established by the Council itself was inaugurated. It is situated in North End Road, Fulham, in a temporary building formerly used as a fire station. In this unpretentious structure are housed two excellent motor ambulances, one by Armstrong-Whitworth and the other by Dennis Bros. The chassis, springs, tyres, and shock-eliminating arrangements of these two machines are well contrived and the interiors are suitably arranged and well fitted. An adequate staff of drivers and bearers is in attendance day and night. Experience will probably suggest improved methods for lifting the sufferers into the rather high bodies, but the advantage is enormous over the old wheel litter, of which, by the way, as it were for contrast, one is to be seen a few yards further up the same street. We should not ourselves have selected a spot so far from the congested centre of London for the first introduction of the new municipal service. The public will doubtless have to be educated up to its use and the police to its speedy summons from the nearest telephone call available. In the absence of a complete system of telephone call posts, like those in the City of London, the Council are endeavouring to arrange with private owners of telephones to permit their use by police in uniform for an ambulance summons. Such houses are to be indicated by a distinctive mark—a blue A on a white ground. We also note from the minutes of the Council for February 9th that a tender has been accepted for the erection of five more motor ambulance stations at Shoreditch, St. George's, Newington, Lee, and Brixton respectively, so that we may hope ere long to see an extension of the service to other parts of the metropolitan area.

Notification of Chicken-pox in London.

As a number of cases of small-pox have occurred among Belgian and other refugees reaching this country, and in view of the fact that mild cases of small-pox are sometimes liable to be diagnosed as chicken-pox, the London County Council on March 9th decided to make chicken-pox compulsorily notifiable until June 30th, 1915. The Local Government Board intimated its approval.

Scotland.

Aberdeen Children's Hospital.

At the annual general meeting of the Royal Aberdeen Hospital for Sick Children the Chairman stated that as the hospital occupied a very exposed position it might suffer should German cruisers make another raid such as they made at Scarborough; the directors had

consequently accepted the offer of Mr. Ogilvie to place Kepplestone House at the disposal of the hospital, free of charge. The house itself was well adapted for use as a temporary hospital, and a difficulty as to accommodation for the staff was got over by the offer by Lady Reid of St. Luke's House, which practically adjoins Kepplestone. The in-patients were removed on January 1st. It was reported that the building fund for the new hospital had increased during the year by over £1,700, but the total amount of the fund paid or promised still fell far short of the estimated cost of the new hospital; consequently the directors did not propose to begin that building.

UNIVERSITY ROLLS OF HONOUR.

A pamphlet containing the names of members of the University of Glasgow and the Officers' Training Corps now serving with the forces of the Crown has been issued, with an introduction by the Principal. The total number of the names on the list is 1,255; it contains the names of 556 graduates, including 36 members of the teaching staff of the University. An additional list of the members of Aberdeen University serving with His Majesty's forces, issued last week, contains 275 members, bringing the total to 1,044. Among these are 613 graduates, of whom 514 hold commissions.

RAID BEDS.

At the meeting of the managers of the Edinburgh Royal Infirmary, on March 8th, Dr. MacGillivray recalled the fact that an appeal had been made some time ago to the citizens of Edinburgh to provide beds in case of any sudden emergency such as a raid. Four ladies had prepared seven beds, and though the raid had not occurred they had now presented them fully equipped to the institution. The Lord Provost, who presided, expressed high appreciation of the gift.

Ireland.

THE HOSPITAL SYSTEM.

THE eighth of a series of lectures on social service was delivered in the Technical Institute, Belfast, on the evening of March 4th, by Professor Lindsay, M.D., F.R.C.P., on this subject. He gave a brief history of hospitals, showing that they were a very ancient institution; there were at one time 20,000 leper hospitals in Europe, and such institutions were found at Armagh, Carrickfergus, Bangor, Downpatrick, and many other places in Ireland. The name Leopardstown was a corruption of Leppers town. Dr. Lindsay then gave a description of hospital growth in Belfast. The two great desiderations in a hospital were efficiency in dealing with disease and convenience and economy of administration; he discussed the construction and equipment of modern hospitals, and spoke of the development of nursing. In concluding his lecture he observed that general hospitals in the British Isles were supported by voluntary contributions, but fever hospitals, asylums, and Poor Law hospitals out of the rates. On the Continent there was much State and municipal help.

LONGFORD COUNTY INFIRMARY.

The Local Government Board in Ireland has refused to assent to the proposal of the committee of management of the County Longford Infirmary to remove Dr. Mayne from the office of surgeon to that institution. The Board states that having given careful consideration to the facts, it is of the opinion that Dr. Mayne, in refusing to permit Sir Thomas Myles to operate in the County Infirmary on a private of the 5th Battalion of the Royal Irish Rifles on December 13th last, acted within his discretionary powers under Article 11 of the rules and regulations of the County Infirmary.

BELFAST LITERARY SOCIETY.

Sir John Byers has been elected President of the Belfast Literary Society for the session 1915–16. This institution is one of the oldest societies in Belfast, having been founded 114 years ago. Sir John Byers was also President in the years 1885–86.

THE annual report of the Wisconsin State Board of Health shows that since the eugenic laws came into force, on January 1st, 1914, the number of marriages in Wisconsin fell by 3,800. In 1913 there were 21,052 marriages, in 1914 only 17,252.

Correspondence.

NEED OF THE ARMY FOR MORE MEDICAL MEN.

SIR,—I should be glad if you would allow me to explain through your columns our position with regard to the employment of medical men for the army. It is briefly as follows:

1. The need of medical men, both for home and foreign service, is acute. We want every qualified man who is physically fit and willing to serve.

2. We are in special need of general practitioners, and would be glad to take on expert surgeons, ophthalmologists, radiographers, etc.

3. We would give suitable men immediate employment.

4. At present we are not, except in special cases, sending men of over 40 years of age overseas, but we should gladly take on older men for home service.

5. We do not wish to denude the country of civil practitioners, but every man who can arrange for his work to be done at home should come forward as early as possible if we are to keep up an adequate supply of medical attendance to our armies in the field. This is really a national emergency, and we hope that the medical profession who have already done so much will assist the responsible authorities to meet it.

Should any qualified man wish to obtain a temporary commission in the Royal Army Medical Corps, he should apply to the Secretary, War Office, Whitehall, S.W., for the necessary forms.—I am, etc.,

ALFRED KEOGH.
Director-General, Army Medical Services.

War Office, Whitehall, March 10th.

THE PHTHISICAL SOLDIER AT THE FRONT.

SIR,—We are all indebted to Sir Thomas Oliver for drawing attention to this subject in his article in your issue of February 27th.

In the belief that added interest might be given to the matter, I would draw your attention to the response of ex-patients of this sanatorium to the "Call to Arms." The fact that many old patients turned up in uniform to bid their friends good-bye prompted the preparation of a Roll of Honour, and this has now reached a total of 47—a highly satisfactory number for a sanatorium opened in September, 1913, and containing, on an average, 90 male patients. Of these 47, 8 are engaged in active operations at the front, while the others are undergoing a course of strenuous training in this country. So far all are bearing the physical exertion and mental strain well. The regiments joined are various, the list including the R.A.M.C., R.F.A., Army Service, Engineers, Marines, and several infantry regiments; therefore, their past illness has proved no special bar to the choice of regiment.

It is of interest to note that 19 were treated by sanatorium methods only, 25 by tuberculin injections, 2 by tuberculin and artificial pneumothorax, and 1 by artificial pneumothorax alone.

Up to the present the results have been highly satisfactory and encouraging. One man has been promoted to sergeant's rank, and one, who was a reservist, has returned to his old rank of sergeant in the Royal Scots Greys; one man has been killed in action.

One of the cases of pneumothorax, now a driver in the R.F.A., reports himself well and quite able to take a good place among his fellows, save at the "double" round the parade ground.

During the course of one of the *Daily Mail* lantern lectures given at the sanatorium I took the opportunity of reading our Roll of Honour to the patients, and I felt that every man present experienced a thrill of hope that a day of usefulness might still be his.—I am etc.,

N. GEBBIE, M.B., Ch.B., D.P.H.
Killingbeck Sanatorium, Leeds, March 2nd.

COLOUR VISION THEORIES.

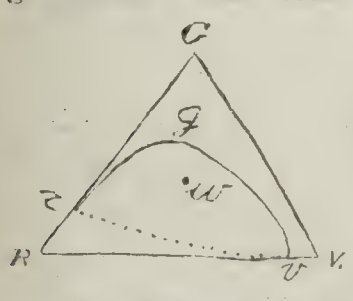
SIR,—I cannot allow Mr. Greenwood's statement that the trichromatic theory is difficult or impossible to disprove to pass unchallenged. The formula $\alpha X + \beta \Psi + \gamma \Omega =$ any colour sensation, the three elemental processes being represented by X, Ψ and Ω, covers every form of the trichromatic theory. Now the whole essence of the theory is that spectral yellow or spectral green light excite the three processes in different proportions. There is not a single fact supporting this assumption; all the facts are strongly against it. I stated in 1912, in *Pflüger's Archiv*, that not a single case of colour blindness I had ever examined could be explained either on this or the Hering theory. There was no attempt to refute this statement. When I was in Freiburg I told von Kries of a number of new facts of colour vision. He replied, "What you state is absolutely impossible: it would upset all our views." There happened to be one of my cases of colour blindness in Freiburg at the time, so I took him to von Kries's laboratory. He appeared at first sight to be a typical case in support of the trichromatic theory; he was a dichromic, with shortening of the red end of the spectrum, that is to say, appeared as a typical case of red blindness. After von Kries had examined him for a considerable time he declared that he was not colour-blind at all, on account of the accuracy of his matches. I finally convinced von Kries that he was not only colour-blind but a dichromic, and I have a letter from him to that effect and giving details of the case.

Now, on the trichromatic theory the defect which caused the shortening of the red end of the spectrum should be spread over the whole or the greater part of the spectrum. On my theory it should be localized to certain red rays, just as it is localized in the analogous condition of those who cannot hear low notes on an organ. A man may have very abrupt shortening of the red end of the spectrum and not be able to see a blazing red light containing only rays of the corresponding wave-length at all and yet be able to recognize red of a very low luminosity when this is higher in the spectrum. For instance, the red may be shortened to λ 680; at λ 670 the perception of red may be defective to about half the normal, and at λ 660 it may be quite normal. If we now test such a case with spectral colours from λ 660 onwards to the violet end of the spectrum, we find that their luminosity—that is, differences of light and shade—is identical with the normal. Thus the subtraction of the element which causes the non-perception of certain red rays cannot be responsible for the dichromic vision which extends from λ 660 to λ 385.

In estimating defects of light perception, colours should be directly compared in order to ascertain their comparative luminosity. For instance, light of λ 589 can be compared with light of λ 570 and λ 535. A comparison with white light may give rise to very fallacious conclusions. —I am, etc.,

London, N.W., March 6th. F. W. EDRIDGE-GREEN.

SIR,—As Mr. Greenwood points out, the trichromic theory is based on the trichromatism of normal colour vision, or, as he says, it "is an attempt to express physiological processes in terms of experimental facts." The difficulty to which Mr. Greenwood alludes—"that mixtures of green and violet appear less saturated than spectral green-blue"—has been got over in this way. From the fact that by previously stimulating the eye with the complementary colour it is possible to obtain a colour sensation that far exceeds in saturation any spectral colour viewed without this previous excitation, it is assumed that colour stimuli exist outside the normal colour diagram. For instance, the *theoretical* red, green, and violet stimuli are represented at the angular points of an equilateral triangle, and inside this the ordinary colour diagram, with its rounded angle for green, is placed. A mixture of the theoretical green and violet will give rise to a saturated green-blue, whereas in the ordinary colour diagram the line between green and violet is convex, so that a point on the straight line joining these two colours must be even less saturated than a point on the curve.



A negative stimulus is devoid of meaning, although when taken in association with a white stimulus the two may be regarded as equivalent to a stimulus of the complementary colour.

As Dr. Edridge-Green says, "it would be as well to compare theory and actual fact, and show how minutely they correspond." We find, indeed, that the correspondence is very minute. The facts to which he alludes are his observations on certain cases of dichromic vision; these we do not dispute—he has probably examined more cases of colour blindness than any one else—and we readily admit that his experience gives some *prima facie* support to his view.

But as yet no evidence whatever has been brought forward in support of his assumption that yellow and green were not recognized as such by primitive man. His theory fails to give a *satisfactory* explanation of the trichromatism of normal vision, or of all the phenomena of intermittent stimulation of the retina, or even of the well-known Benham top. He tells us:

> The various colours of the Benham top are caused by the factors I have given, and the mixture of the various sensations according to the position of the lines, the illumination, and the rate of rotation.

This assertion, even if approved by the whole Congress at Budapest, is no evidence; his theory when tested by physical experiments is found not to hold, and all scientists are therefore forced to dismiss it.—I am, etc.,

Newcastle-upon-Tyne, Feb. 28th. A. S. PERCIVAL.

PETROLEUM AS AN HABITUAL LAXATIVE.

SIR,—In his letter on the above subject in the issue of the BRITISH MEDICAL JOURNAL for March 6th, Dr. W. Allan Jamieson does not appear to recognize the difference between pure refined petroleum, which is taken internally for constipation and which is, or should be, free of all irritating properties, and the crude commercial varieties of the oil which are used for illuminating, cleaning, and parasiticide purposes. Crude petroleum is very irritating to the skin or mucous membrane, and frequently causes eczema in those who work habitually with it. Again, he has confused the issue when he explains that petroleum cannot act as a laxative simply by reason of its lubricating properties, for if this were so cod-liver oil would also be a laxative. Cod-liver oil is a laxative if it reaches the lower bowel; but, as a matter of fact, it is, under normal circumstances, digested and absorbed before it reaches this part of the intestinal tract. On the other hand, petroleum can be neither digested nor absorbed, and consequently does act as a lubricant and an aperient.—I am, etc.,

London, W., March 6th. ERIC PRITCHARD.

THE RUM RATION.

SIR,—At a critical moment of the battle of Ypres, when the line was dangerously attenuated, the officer in command brought into the firing line the very last available man, even to the regimental cooks, and with their aid the enemy was repulsed and the situation saved. But for these last reserves, it is as certain as anything can be that the line would have been broken, the whole army of the Allies outflanked and involved in enormous disaster, and civilization would have been overwhelmed and destroyed by Kultur. We owe our escape from this catastrophe to the regimental cooks. In my address at Birmingham, which Sir Victor Horsley, with that careful abstention from vulgar abuse for which he is famous, called "nauseous," I pointed out that the supreme value of alcohol is its power of enabling the organism to utilize its last reserve of energy. When we are completely exhausted and utterly incapable of further effort, we have, nevertheless, a hidden reserve of energy which may save the situation if only we can make the reserve available. Unaided we cannot bring it out, but the supreme value of alcohol at this desperate moment is that it frees this reserve, places it at the service of the organism for instant use, and, in fact, brings even the regimental cooks into the firing line.

As an illustration of this peculiar and invaluable property of alcohol I am permitted to quote from the letter of a Captain R.A.M.C. who has been good enough to tell me his experience. "I am practically a teetotaler," he says;

"and I *loathe* rum, and yet on one occasion I was just done to the world on the Mons retreat, but a tot of rum carried me on to my destination (doubtless all its dreadful effects came on afterwards, *but it got me to my destination*)."

According to the Habbakuk Mucklewraths of teetotalism, this gallant officer ought to have preferred death or capture to saving his life and liberty by taking his tot of rum; into such ditches are those likely to fall who are blinded by fanaticism. This saving grace of alcohol does not seem to be recognized, and is certainly not sufficiently appreciated. If alcohol does dilate the vessels of the skin and retard the digestion, and so forth, what are these neglectable trifles besides its paramount virtue? Let us grant for the sake of argument that it does take the keen edge off the accuracy of aim, or diminish the rapidity of signalling, what does accuracy of aim matter to a man who is firing into the brown? and is it not better that a man should shoot with impaired accuracy, or signal with diminished rapidity, than that he should not be able to shoot or signal at all? This is, in extreme cases, the true alternative.

I am obliged to Sir Victor Horsley for complying, to the best of his ability, with my request for proof of his assertion that it is admitted that rum is given as an intoxicant. It is true that the proof is not very convincing, but no doubt it is the only proof he can bring forward, and we must take it that it is all he has. It consists in repeating the assertion once again. This is not what most of us mean by proof, but it is the teetotaler's notion of proof, and it is a sign of grace in a teetotaler to admit that any proof is needed of any assertion he may choose to make. Their notion of proof is very much the same as Lord Peter's. When it was objected that a slice of bread was a slice of bread, and not a slice of mutton, he proved that it was mutton in the following convincing manner: "Look ye, gentlemen," cries Peter in a rage, "to convince you what a couple of blind, positive, ignorant, wilful puppies you are, I will use but this plain argument: By G——, it is true, good, natural mutton as any in Leadenhall Market; and G—— confound you both eternally if you offer to believe otherwise."

Is not Sir Victor Horsley a little incautious in admitting that errors of omission are often as serious as errors of commission? This would seem to be an admission that he is in error in omitting to prove his other assertions. It is scarcely possible that any one would ever dream that Sir Victor Horsley could admit that he has been in error, and he can easily avert the possibility by giving similar proof of these other assertions. He can assert them all over again; and teetotalers, at any rate, will admit that the proof is true, good, natural proof as any in Euclid.—I am, etc.,

Parkstone, Dorset, March 6th. CHAS. A. MERCIER.

SIR,—I should like to bring forward a piece of evidence which is strongly confirmatory of Dr. W. Collier's view—that alcohol increases heat loss when given to those who are exposed to external cold.[1]

On January 1st, 1887, I had been in charge of the Brisbane Hospital fever (typhoid) wards for eighteen months. The treatment during that period was the usual expectant and symptomatic treatment, alcohol being given somewhat freely according to the principles laid down by Murchison. On the date above mentioned, systematic cold bathing, according to the Brand formula, was introduced and applied to every typhoid patient admitted (except when clearly contraindicated); and this has been continued with modifications down to the present time. Very soon after the change it was found that much less alcohol was being used, because the circulatory conditions demanding it had become far less frequent.

But a new indication for its use forced itself on our notice. The guide for the number, duration, and coldness of the baths was the amount of temperature reduction (rectum) which followed bathing. In some cases the body temperature was excessively resistant, refusing to fall appreciably even after prolonged refrigeration. This resistance was found to depend upon excessive cutaneous vaso-constriction, as shown by extreme skin pallor and spasm of the radials. Then it was noted that alcohol, even in small doses, markedly modified the vascular spasm, and so enabled baths of shorter duration and higher temperature to effect a much greater reduction in body temperature. Thenceforward it became the routine custom in these special cases to give small doses of alcohol as a preliminary to each bath for the sole purpose of dilating the cutaneous vascular periphery. Whether the extra reduction of temperature so attained was on the whole of advantage to the patient is another question, which, since the *rationale* of cold bathing in typhoid has been more fully understood, is, at any rate, arguable, for the work of Crile and others has clearly shown that the main advantage of systematic cold bathing resides in its power to anticipate and prevent the progressive vaso-motor paresis which in some degree is an invariable accompaniment of all continued pyrexia if at all prolonged—what is commonly referred to as cardiac failure being in reality failure of vascular tone.—I am, etc.,

Beckenham, March 6th. FRANCIS HARE.

[1] BRITISH MEDICAL JOURNAL, March 6th, 1915, p. 447.

SIR,—I am rather pleased Dr. Robert Simpson thinks my letter of February 21st in the BRITISH MEDICAL JOURNAL is "absolutely ridiculous," because if he thought otherwise I am afraid many impartial readers would not look upon it as an answer to his former letter of misstatements. Dr. Simpson no doubt would find it as easy to chew flint stones as to endorse any one's opinion upon the benefit of alcohol.

I never admitted the soldier in question "was narcotized to sleep," but he fell asleep. This word is, I suppose, purposely introduced by Dr. Simpson. A slight stimulation to warmth which quiets the nervous centres cannot be construed correctly into "narcotized."

Dr. Simpson writes: "Dr. Dutton refuses to place vodka and rum in the same category." I do, and I maintain no fair debater would. True, both produce intoxication when consumed in excess, but vodka leaves very ill after-effects. Besides, we are discussing a ration of rum, about 2½ oz., which would not produce the slightest intoxication in strong, healthy men.

The other points of Dr. Simpson's letter are so pertinently answered by Captain R. Musgrave Woodman, R.A.M.C., that I need not take up any more valuable space. Teetotalers seem always to crave for some stimulant. At a consultation at a farmhouse with my friend, the late Sir Benjamin Ward Richardson, I saw him drink six cups of strong, nasty tea. I made no remark, but he could not keep the phobia latent when he saw me partake of two wholesome glasses of ale. Another friend partakes of two to three large cups of coffee when I go to see him to my glass of whisky and soda. If alcohol can be classed as a poison, I prefer it in small quantities to the large quantity of poison in tea and coffee.—I am, etc.,

London, W., March 6th. THOMAS DUTTON.

SIR,—How utterly absurd much of this "anti-rum" talk is! Here we have Dr. Robert Simpson writing about the effects of small doses of alcohol in the performance of "delicate and complex operations," and Sir Victor Horsley basing an argument on the diminution caused by alcohol in the power of restoration from fatigue—both talking as though our men were engaged in highly complex juggling tricks of the Cinquevalli type, and spending weeks at a time straight off in their sewers. Whereas the truth is that trench-work is a coarse, brutal, and bloody business, and rarely lasts more than three days at a time. We shall presently have Dr. Robert Simpson forbidding morphine to the wounded because it would prevent them writing shorthand at 200 words a minute; and Sir Victor Horsley will forbid "forced marches" because they make the men too tired!

There is direct evidence to show that under the existing conditions of trench warfare in winter the rum ration is beneficial, and a great comfort to those who receive it, even if it does have its disadvantages. The anti-rum people have a good case as far as it goes; but it doesn't go in the trenches.—I am, etc.,

Hove, March 8th. RAWDON WOOD, M.D., D.P.H., etc.

SIR,—Instead of prolonging a discussion that is little likely to have any practical value, why should not the British Medical Association themselves appoint, or ask the Army Council to appoint, a small committee of medical men, with special knowledge of alcohol and alcoholism, to inquire into the effects, dangerous or otherwise, of the rum ration? With the ample material at hand in our camps

here, really valuable experiments could be carried out, and the question definitely pronounced upon in a very short time.

To be of real value, such a committee must not be composed entirely of total abstainers.

I am quite unable to endorse Sir Victor Horsley's sweeping assertion (p. 448) that "a man whose cerebration is habitually influenced by taking alcohol is, in direct proportion to its dose, so much the less the possessor of an open mind," etc., my experience being that up to a point such a man is perfectly capable of forming an unbiassed opinion.

Personally, I have taken during a fairly long period of my life a strictly moderate allowance of alcohol; during another long period I have taken no alcohol at all. I have been quite unable to see that my opinions with regard to alcohol differed during either of these periods.

Moreover, it has been my experience that one finds it more difficult to get an unbiassed, reasoned, logical opinion on alcoholic custom from the total abstainer—I am not speaking of individuals—than from one who takes his alcohol in the strictest moderation.—I am, etc.,

Ghyllwoods, nr. Cockermouth, March 9th. J. W. ASTLEY COOPER.

THE COFFEE RATION.

SIR,—Dr. Dutton's views relating to the ill effects of coffee as a beverage are easy to understand when we remember that coffee can be synthetically prepared from urine, and must therefore easily break up to produce those substances which act as toxins in the system. I have known several cases in which coffee taken once a day for a week has invariably resulted in unsightly pimples and skin blotches, and there are people who suffer in the same way after eating kidneys.

One case of susceptibility to the injurious influence of coffee was also remarkable from the fact that bananas would produce similar effects. The patient could never eat two bananas at the same meal without having a small boil appear somewhere on the body within a few days; and this boil would be peculiar in its persistency—that is, it would keep refilling after discharging, and could not be cured until a minute pyogenic membrane was extracted. If, however, one banana only was eaten no trouble followed. This happened so often that it seems reasonable to conclude that the bananas were the cause and the boil the effect. It is curious that the bananas and the coffee should have effected this case in much the same way, though the boils following the coffee were not persistent, but disappeared soon after discharging.—I am, etc.,

Liverpool, March 3rd. WILLIAM BRAMWELL.

Obituary.

DONALD CAMPBELL, M.B., B.CH.,

LIEUTENANT, R.A.M.C.

LIEUTENANT DONALD CAMPBELL, who was killed in action at Ypres on February 17th, at the age of 27, was born at Blair Athol, Perthshire, and educated at Watson's College, Edinburgh. He originally intended to enter the Indian Civil Service, but turned to medicine, and was a student in the University of Edinburgh, where he held several scholarships and bursaries. He graduated M.A. in 1910, and M.B., Ch.B. in July, 1913. In August of the same year he was appointed aural house-surgeon at the Royal Hospital, Sheffield, and was successively casualty officer, house-physician, and house-surgeon at that hospital. He joined the R.A.M.C. with a commission as temporary lieutenant in December, 1914, and went out to France on January 11th. He leaves a mother, three brothers, and two sisters.

A member of the honorary staff of the Sheffield Royal Hospital writes:

It is hard to realize that Donald Campbell is no more. Barely two months ago he came to say "good-bye," proud of his new khaki and all that it meant. Little did we dream how soon he would be called upon to give up his life for his country. That he did his duty bravely up to the last all who knew the man will be certain. He was a resident of the best type, careful and painstaking in all he did, with a thorough knowledge of his work, and a great capacity for getting on with every one with whom he came in contact. During the time he was house-physician I formed a very high opinion of him, and it was a great pleasure to work with him.

One of his colleagues on the resident staff says: "He was beloved by everyone with whom he came in contact. One felt instinctively that here was a chum in whom one could confide the most treasured secret. After eighteen months' close friendship, I have no words with which to describe my feelings towards him. His death has left a blank which can never be filled. There are many sore and aching hearts here."

THE death at Kragujevatz, Servia, on February 14th, of Dr. ELIZABETH NESS MACBEAN ROSS, daughter of the late Mr. MacBean Ross, manager of the London branch of the Commercial Bank of Scotland, has just been announced. In 1901 Dr. Ross took the degrees of M.B. and Ch.B. Glasg. and in 1914 the diploma of Tropical Medicine. She was medical officer at Colonsay for some months, and practised for a year and a half in East Ham; she then went to Persia, holding appointments in Ispahan, Shiraz, and the land of the Bakhtiari, a semi-civilized tribe inhabiting the mountains and upland valleys between Ispahan and Khuramahad. Dr. Ross wrote a history of the tribe. Her health failing, she went to Japan as surgeon in a Glasgow Line boat, and returned to Ispahan in April, 1914. In January she went back to Europe and proceeded to Servia where she worked first at Nish and then at Kragujevatz. At the latter place she volunteered to take charge of the typhus wards; after a week of heavy work she contracted the disease, and died after an illness of thirteen days. The esteem which she and her colleagues of the Scottish unit have won was shown by the remarkable demonstration made at her funeral, which was attended by many Servian nurses and officers. The native clergy took part in the funeral procession, which was headed by the band of the Guards of the Crown Prince of Servia; a service was read at the graveside by Colonel Harrison, the British military attaché. Dr. Ross leaves a widowed mother, two brothers, and five sisters; one brother and one sister are members of the medical profession.

Medico-Legal.

STEVENS'S CONSUMPTION CURE.

THE following appeared in the *Daily Telegraph* of March 10th:

CENTRAL CRIMINAL COURT.

Before the Recorder.

"*A Consumption Cure.*"

An echo of an action against the British Medical Association was heard [on March 9th] when Arthur Alfred Henry Bennett, 54, described as a surgeon, was indicted for having committed wilful and corrupt perjury.

Mr. A. H. Bodkin, for the Director of Public Prosecutions, stated that defendant was called as a witness in July last year in an action tried before Mr. Justice Shearman in the High Court. A Mr. Stevens alleged that he had a remedy for consumption, a vegetable product from Africa. The British Medical Association exposed the remedy in *Secret Remedies and What they Contain*, and Mr. Stevens brought an action against the Association. Evidence was given in that action by the defendant in the name of Alfred Henry Bennett, and he stated he had just come from Liberia, where the cure was well known. The remedy was taken from a plant called "Umckaloabo," or "Life Everlasting." When he was cross-examined in that action, the defendant stated he was M.B. and M.C. (Bachelor of Medicine and Master of Surgery) of Aberdeen. He also said he was born in Australia, and had gone to Aberdeen in 1891 to obtain his degree. Since that time he had practised, he said, on the sea, and the Lord's pathways, and on the ocean deep. The case for the prosecution now was that defendant's name did not appear on the Register of Medical Practitioners, and that Henry Alfred Bennett, who obtained the M.B. and M.C. degrees at Aberdeen in 1891 was Dr. H. A. Bennett, who had been throughout, and was now, in practice at Adelaide.

The jury returned a verdict of guilty, and defendant, against whom three previous convictions were recorded, was sentenced to six months' imprisonment in the second division.

CHARGE OF PERSONATION.

AT the Bow Street Police Court on March 6th a young man giving the name of Paul William Black, of Hampstead, was charged on remand with personating Dr. Percy Webber Black, and on a further charge of obtaining army pay to the amount of £219 17s. 10d. and a naval uniform by false pretences. According

to the report in the *Times*, evidence was called on behalf of the Director of Public Prosecutions to the effect that on August 4th the prisoner applied for temporary service at the Admiralty, representing himself to be Dr. Edward Heffernan. He was requested to furnish his birth certificate and a recommendation from a responsible person, and nothing more was heard from him. Two days later he obtained a naval surgeon's uniform, for which he had not paid. On August 14th he applied for a position as temporary surgeon, R.A.M.C., and signed his application "Percy Webber Black, M.D." He was gazetted temporary lieutenant on September 11th, and continued to draw his army pay down to the time of his arrest. Evidence was given that he had acted as a locumtenent from July 28th to September 11th, and during part of that period wore a naval surgeon's uniform. He had given his name as Dr. Percy Webber Black, but just before he left said that he was Dr. Heffernan, and had given a false name because he had quarrelled with his father. A further remand was ordered.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association, being anxious to assist in facilitating exchanges between medical officers of the Territorial Force in accordance with the War Office letter of December 10th (BRITISH MEDICAL JOURNAL, February 27th, p. 402), is prepared to publish in the JOURNAL applications for exchange. In all cases officers desiring exchange should furnish information on the following points:

1. Rank and name .....
2. Regiment *or* medical unit .....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally .....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Present address and date .....

Captain A Cameron Young, of the 2nd East Anglian Field Ambulance now stationed at Colchester, but noted for foreign service, desires to exchange for the war period; a junior medical officer with a temporary commission would be accepted. The duties at present are the training of the unit and medical attendance on the sick. Field and ration allowances are drawn. Captain Young, who desires to return to Ipswich, is willing to assist in any expenses arising out of the exchange.

Surgeon Captain Shepherd Boyd, 2nd Home Counties, Royal Field Artillery, Territorial, now acting as recruiting medical officer for Harrogate and district, is anxious to remain there, and would accept duty for any medical officer whose unit may be ordered to Harrogate.

INDIAN MEDICAL SERVICE.

A Unique Appointment.

THE *London Gazette* of March 2nd contains an announcement which is unique in the history of the Indian Medical Service. It is that "the King has approved of the grant of temporary rank in the Indian Medical Service to the undermentioned: To be Major: Colonel G. F. Rowcroft, D.S.O., Indian Army, retired (January 8th)."

Colonel George Francis Rowcroft was born on March 4th, 1861, educated at Cheltenham College, and joined the army as a subaltern in the old 54th Foot, now the second battalion, Dorsetshire Regiment, on August 13th, 1879. In 1881 he entered the Indian Staff Corps, and was posted to a famous fighting regiment, the 15th Ludhiana Sikhs. In that regiment he spent the rest of his service—twenty-six years; filling in succession the posts of Quartermaster, Adjutant, Wing Commander, Second in Command, and Commandant. He obtained the rank of Brevet-Colonel on June 1st, 1904, and retired on November 20th, 1907. He has a long list of war service—Sudan, 1885, Suakin, actions of Hasheen and Tamai, medal with clasp, and Khedive's bronze star; Chitral, 1895, medal with clasp; Tirah, 1897-98, reconnaissance of the Saran Sar, and action of November 9th, 1897, operations in the Warran valley, and action of November 16th, 1897, mentioned in dispatches, G.G.O. No. 244 of 1898, two clasps, and the D.S.O., the latter dated May 16th, 1899. After retiring from the army he took up the study of medicine, and took the diplomas of M.R.C.S., L.R.C.P.Lond. last year. He was for a time Casualty Officer at the East London Hospital for Children, Shadwell, and is now employed at the Convalescent Home for Indian wounded at New Milford, in Hampshire.

THE Chelsea Hospital for Women has received from the estate of the late Mr. Edward Baker a sum of £4,788 4s. 1d., of which £2,640 is for the rebuilding fund.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

UMBILICAL CORD ROUND THE NECK.

DR. D. S. CLARKE (Senior Resident Medical Officer, the Infirmary, Bagthorpe, Nottingham) writes as follows: In reply to Dr. Reginald Cock (BRITISH MEDICAL JOURNAL, February 27th, p. 404) on the day previous to my reading his note on umbilical cord round the neck, I attended a similar case. The patient was a primipara, aged 38 years, and single. The labour was full term. It began at 4 a.m., and terminated naturally at 2.30 p.m. The os was fully dilated at 1 p.m. The pains were moderately strong from the beginning to the end of labour. On vaginal examination, the presentation was found to be a second vertex with the head somewhat extended. When the head was born the fingers were inserted into the vagina, when a large mass of cord was felt to be completely encircling the neck. On further descent of the child the cord was found to be twisted eight times around the neck, probably accounting for the somewhat extended position of the head. The remaining portion of the cord was flattened in coils against the child's abdomen. It was scarcely pulsating, and the child was born, after pulling down two loops of the cord over its head, in a condition of white asphyxia. Artificial respiration was resorted to and the child revived, but only lived for twenty-nine hours. The cord was found to be abnormally long, measuring 2 yd. 7 in., and very thin. The placenta (of the battledore type) was born without any difficulty. I cannot myself see how the condition can be diagnosed without actually feeling the cord around the neck on vaginal examination. The most suitable treatment in such cases would seem to be immediate delivery of the child by forceps if necessary, provided the os be sufficiently dilated. If the cord be so taut that slipping it over the child's neck is impossible, it should then be slipped over its shoulder, and failing that, the cord should be cut and ligatured at both ends.

BARLEY STRAW AND LICE.

DR. JOHN FREDK. BRISCOE (Alton, Hants) writes: Direct evidence, as far as I can gather from expert veterinary experience, for the statement "that horses and men who are bedded down on barley straw suffer much more from lice than those who are bedded on wheat straw," is very inconclusive. I do not suppose that any one of us can give proof that barley straw is prone to favour lice, except when the principles of cleanliness are wanting. But all stable men do not appreciate the value of cleanliness as is practised in the best stables, where they only use wheat straw. Neither do they always attend to the grooming of their horses, as is the rigid custom in model stables. Therefore, in an untidy horse-box where, probably, barley straw is used, its tendency to crumble readily under pressure makes it a good nidus for parasitic life. Those who are poultry fanciers, and use a mother hen as the incubator, will find their birds less infected with lice setting on wheat straw than on barley, oat, or hay fibre. A hen may sit for twenty-one days on wheat straw without becoming very lousy; but she may become very uneasy with much lousiness on barley or oat straw. The application to the nest of flowers of sulphur may do its work of destruction at the expense of the chicks.

LETTERS, NOTES, ETC.

OFFICERS' INCOME TAX.

AN Army Order has been issued stating that officers who have not yet submitted claims to relief from income tax for the year ending March 31st, 1915, are advised to do so without further delay, as it will be necessary, in closing the accounts for the year, to adjust tax on the pay of all those who have not claimed relief to the highest rate—namely, 1s. 8d. in the pound in full.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

CEREBRO-SPINAL MENINGITIS:

DIAGNOSIS AND PROPHYLAXIS.

BY

A. LUNDIE, M.B., CH.B.EDIN.,
BACTERIOLOGIST, ALDERSHOT COMMAND;

D. J. THOMAS, M.R.C.S., L.R.C.P., D.P.H.OXON.,
SPECIALIST SANITARY OFFICER, ALDERSHOT COMMAND;
AND

S. FLEMING, M.B., CH.M.EDIN., D.P.H.CANTAB.,
SPECIALIST SANITARY OFFICER, ALDERSHOT COMMAND,
LIEUTENANTS, R.A.M.C.

WE have already been asked what directions we can give to the general practitioner to enable him to make a speedy diagnosis of this disease. Our best answer would be simply to state what we do to help regimental medical officers in the present circumstances, and what we think might further be done to help them.

There are many men of great experience and sound judgement in the command to which we are attached who in civil life are acknowledged to be men of more than average ability, and we know they come across many cases of obscure fevers which they really cannot diagnose to their own satisfaction. We feel that as soon as they have read our preliminary article they will recognize that they have been dealing with mild cases of the disease.

"Experience is fallacious and judgement difficult," and we ourselves would not attempt a final diagnosis without bacteriological confirmation. The practitioner and the regimental medical officer both wish to know what constitutes a case that ought to be referred to the laboratory. Any case that is hard to diagnose within two or three days is a case for the bacteriologist, as are, of course, those cases whose gravity, as shown by their symptoms, requires immediate diagnosis.

In military service and in Government colonial practice the matter is extremely easy, for there is free and liberal intercourse between the different special branches of the service, and when anyone who has not the facilities for making his own diagnosis bacteriologically or by any other special method finds himself at a loss to elucidate the cause of an obscure disease, he frankly calls in the specialist who is most likely to enlighten him upon it, and frequently several specialists are consulted before it is considered that justice has been done to the case. It is different in civil life, where each specialist costs a heavy, often prohibitive, fee—a fact that we must take into account in our recommendations.

Cerebro-spinal fever is a disease as protean in its manifestations as malaria, but that may be relatively a meaningless statement to home practitioners who have not had experience of that disease. Malaria simulates so many different diseases that a far-seeing Government has made it absolutely compulsory that all its medical officers who go abroad on military or colonial appointments should have sound training in tropical medicine and hygiene. It costs much money, but it saves vastly more in the end. The result of this highly specialized training is that in tropical countries not even a black man is satisfied that the best has been done for him if his blood has not been examined microscopically. It may seem a startling statement, but it is absolutely true that a larger percentage of black men, even savages, who come to hospital as patients know what a microscope is than of hospital patients in our own country.

But even in this country the commanding officer of a military hospital will not accept a diagnosis of such a disease as typhoid fever, or sometimes even tuberculosis, without a pathological finding to support it. It is quite right that it should be so, and the more experienced the officer is, the better is he acquainted with the numerous pitfalls of diagnosis that can be clearly exposed by scientific methods.

What happens in practice at the present time may well be illustrated by a consideration of the diagnosis of the disease at each of the separate stages in which it occurs.

STAGE I.—*Catarrhal.*

Stage I is usually detected almost by accident. The accident of a severe case happening in a regiment causes an examination of all the men who slept in the same room as the patient for several nights before he took ill. Having heard of a case anywhere, we proceed there at once, having made the following arrangements: We pack up a number of West's swabs in a case. These swabs are bent wires, thinned at the distal end and slightly roughened to to make them hold the wool firmly. They are enclosed in bent glass tubes, and look like Bellocq's sound in glass instead of metal. In the same bag we also carry a number of plates of "nasgar" medium, or a modification of it made at Millbank. We inoculate these plates at once and return them to the bag. We put in along with them a hot-water bottle at a temperature of 98·4° C., and renew it as frequently as necessary if our journeys are at all prolonged. These are the methods of the Local Government Board, and we are highly satisfied with them. It is certainly the most likely way to get a successful culture of the meningococcus, to inoculate the swab bearing it at once on the plate and then bring it home. We find in practice that the West's swab obviates the necessity of using a tongue depressor, and it serves that function itself, if it is simply introduced sideways till it reaches the uvula, when it is suddenly slipped behind the palate by a deft movement, and the swab is extruded against the posterior wall of the pharynx. The tube is then turned sideways and withdrawn, and the next man called forward before the first has had time to recover from his astonishment. The directions given to the patient are to look the operator straight in the eye. The operator fixes the eye of the patient for an instant (and it has a wonderful psychological effect), and tells him to open his mouth as widely as possible, and then goes through the manœuvre very quickly. In doing a large number tact and gentleness are of the utmost value.



I. II. III.

Swab designed by Mr. West, Aural Surgeon, St. Bartholomew's Hospital; about one-third natural size. I. Wire about the thickness of an ordinary knitting needle, beaten flat at the curve. II. Wire and swab in sterilized glass tube. III. Swab extruded in use.

The rest of the proceeding is done at the laboratory. The plates are incubated for twelve to twenty-four hours, and the likely colonies are subcultivated on plates and incubated at 37° and 23° C. Colonies growing at 37° and not at 23° and having the requisite appearances, are taken as meningococcus, and the person from whom they are obtained is declared a carrier.

We find in practice that all our carriers have catarrh. On one occasion we experienced an eerie or, to use an expressive Scottish phrase, an uncanny, feeling when the roll of contacts was called and the two men who fell out were seen to be suffering from catarrh of a severe degree. On another occasion one carrier was distinctly in the second stage of the disease. He recovered, however, in three days after simple spraying with 1 in 1,000 potassium permanganate.

STAGE II.—*Septicaemic.*

Stage II is that febrile condition which is undiagnosable, unless it passes on to Stage III, which is sometimes as hard to diagnose. Occurring in an epidemic, it ought to give rise to the profoundest misgivings. The palate is often still red and spotted. There may be minute vesicles on it. The pharynx is more or less inflamed. The voice is often husky, and there may be a little dry, harsh cough. There may also be nasal catarrh and profuse discharge. Herpes labialis is common.

There is often more or less elevation of temperature; but this is not of much diagnostic value. The face is very often flushed, and there may be some conjunctival injection. There may also be a greater or less degree of mental confusion just as this stage begins to merge into the third.

The reflexes, if examined at this stage, are often amazingly exaggerated. The condition might be mistaken for the supreme effort of a malingering expert, who has frequently been the subject of medical clinics, but for the facial expression which is somewhat characteristic. There is an expression seen often in the beginning of the sleeping stage of trypanosomiasis, and it may be helpful to those who have witnessed this disease to recollect this in examining a case.

This is the septicaemic stage, and no doubt diplococci are already in the blood stream, and are being excreted by the urine. We have already found them in the urine, in great abundance, but pure cultures are not so easy to obtain as would be imagined, and this point is being at present elucidated at the Lister Institute by Dr. Hort, to whom we are indebted for the original idea of urine examination. Meantime we are trying a method of our own, as the urine promises to be a good material on which to make a diagnosis. At this stage it is often possible to find a few meningococci in the cerebro-spinal fluid, but they usually seem to be dead, and do not give cultures on the usual media. There may be, however, a good deal of albumin present in the fluid.

STAGE III.—*Meningeal.*

The third stage comes on at varying intervals. Sometimes the whole syndrome is run through in a few hours, leaving the patient dead, with the practitioner wondering what killed him. It may set in after mysterious attacks of vomiting, lasting three days, and there being no other symptoms may cause the gravest suspicions of criminal administration of poison, and much valuable time may be lost on a wholly erroneous search for the poison. No doubt part of the nucleus of the vagus is profoundly affected at this time by toxins. Almost any error of diagnosis might be committed, owing to the protean aspect of the clinical picture. Kernig's sign is very valuable in diagnosis, but it is a late sign. Head retraction is more useful, and pain on attempting to move the neck. The meningeal cry is seldom heard. Some cases go on to death without any pain. At other times the headache is appalling. Rash and spots are not very common, and it would be a pity to wait for them. They are probably due to a mixed infection. The *tache cérébrale* ought not to be confused with the wheal caused by scratching the skin, seen in toxic stages of early tuberculosis. The *tache* is a redness without any wheal; it is evanescent. The other is more lasting, and often quite palpable. Macewan's sign is stated to be of value in the examination of children. We have found it in both children and adults. It is, of course, a late sign. A tympanitic note is obtained on percussion of the lateral ventricles. It is quite easy to verify it by using a sound head as a control. One's scepticism is at once disarmed by testing a typical case.

It seems a pity to dwell on this stage; our object is to anticipate it. We realize that the disease is far advanced when it can justify its evil appellation, "meningitis."

In mild cases, such as occur at the onset of an epidemic, there may be pus cells enough to give a distinct turbidity to the cerebro spinal fluid, but apparently no organisms. Even ten or more minutes may be insufficient to find a single one, so we early learnt a method of enrichment that seldom failed. The fluid was promptly citrated to prevent coagulation, and then 3 per cent. glucose was added to it. The mixture was then incubated for twelve to twenty-four hours, and at the end of that time examined. Abundant growth is common, even inside the leucocytes. The same method is excellent for urine examination.

Cultures of the meningococcus are easily got on our Cambridge Hospital (Aldershot) medium, which consists of egg, yolk and white, 66 per cent.; distilled water. 33 per cent.; and to every 100 c.cm. of the mixture, glucose 3 per cent. is added, and the whole is inspissated at 70° C. for two hours or more, according to the freshness or otherwise of the egg. This medium was made first in the Cambridge Hospital to supply a deficiency in the supply of Loeffler's medium for the diphtheria bacillus.

On this medium we find the meningococcus has great tenacity of life, and can, without subculture, survive five days at least in the outside pocket of a service great-coat, carried about in all weather conditions including snow, during long motor-car journeys in the country in the pursuit of our investigations.

Conclusion.

We hope these notes will convince the profession that the disease is more widespread than is usually recognized. It probably gives fair warning of its onset by catarrhal symptoms, and often goes no further. In its second stage it may run a long non-malignant course, giving plenty of time to arouse suspicion, and, if correctly diagnosed, would probably be cured by suitable treatment. During an epidemic, routine examination of all sore throats would probably be of more value in stopping the disease than the examination of a vast number of alleged contacts, most of whom are perfectly healthy, and the examination of cases in the second stage could be made a matter of consultation. The health officer on his visits gives much help to his colleagues in the regiments, and the same ought to be possible in civil life, but this is a matter for the civil administration.

As regards the treatment of the catarrhal stage, we have expressed some doubt as to the efficacy of spraying. Sometimes a carrier may give a positive, a negative, and then a positive result in succession, and it might be urged that the swabbing was inefficient, or that the condition had recurred, or that the spraying had no effect. All these are possibilities, and information on the subject is wanted, but it will eventually be supplied by statistics and more careful work.

We would advocate as an adjuvant to these measures the use of an autogenous vaccine, as it is certainly a valuable help in such throat conditions. One of ourselves prepared three such vaccines for his own use at successive stages of a pharyngitis, and each time different organisms were used, and the eventual issue was satisfactory. The most striking effect was produced by the first dose. In our view, the probability is that by the use of autogenous vaccines many flabby uvulas and throats would be restored to a healthy condition, and thereby prevented from offering a safe harbour to the meningococcus. It is hard to conceive that the meningococcus ever holds undisputed possession of any mucous membrane, or ever even obtains a hold at all, unless its vitality has already been lowered by some means or other.

When we publish statistics of cases, including Stage I, it will be seen that the death-rate is lower than in pneumonia.

CEREBRO-SPINAL MENINGITIS.

THE INTERPRETATION OF EPIDEMIOLOGICAL OBSERVATIONS BY THE LIGHT OF BACTERIOLOGICAL KNOWLEDGE.*

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Characteristics of Epidemics.

ONE of the most outstanding features of epidemics of cerebro-spinal meningitis is the isolation or want of ascertained contact between the cases of the disease.

The majority of houses attacked afford only one case, but the proportion varies in different epidemics. In the Texas epidemic (1912) reported by Steiner,[1] out of 2,135 cases 313 (14.7 per cent. of cases) occurred in houses with more than one case, and of 1,957 houses attacked 135 (6.9 per cent.) had more than one case.

It is, however, a feature of such multiple house attacks that the cases have often occurred simultaneously in the same house, as in the striking occurrences reported by Robb[2] at Belfast, when five cases occurred almost simultaneously in one house on two separate occasions at the outbreak of the epidemic. Where an interval elapses between multiple cases occurring in a single house, it is often considerably longer than the time which has been regarded as the incubation period by several writers—that is, one to five days.

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*A paper read before the Epidemiological Section of the Royal Society of Medicine on March 5th (see JOURNAL for March 13th, p. 467).

Bolduan and Goodwin,[3] in their report on the New York epidemic (1905), record forty-four instances in which the interval between two cases in one house was observed:

In 14 instances it was 1 to 7 days.
In 5 instances it was 1 to 2 weeks.
In 25 instances it was 2 weeks to 3 months.

It is almost universally accepted that doctors and hospital nurses seldom contract the disease. These and similar facts which have been observed in many epidemics are evidence against the spread of the disease being usually due to direct infection from one patient to another. In fact, the direct communicability of the disease has been called in question by some epidemiologists.

Epidemiological Hypotheses.

To explain the disconnected occurrence of cases two explanations suggest themselves:

1. The hypothesis that the infective material is distributed widely outside the human body and remains active sufficiently long to be conveyed long distances by external agencies. This assumption is contradicted by the known sensitiveness of the meningococcus to ordinary air temperatures and to drying especially soon after its separation from the human body.

2. The transport of the causal organism inside the body of human beings, who are either healthy or suffering from a mild unrecognized form of the disease, and its subsequent communication by them to other susceptible persons. Such human intermediaries have occasionally been traced by clinical observers, as in the instance quoted by Steiner and Ingraham[4] in their report on the epidemic at Hartford (Connecticut), 1904–5. A hospital attendant in charge of a case of meningitis went home, and four days later his own child sickened with the disease. Other such instances are mentioned by Bolduan and Goodwin.[5]

Carriers.

The assumption of intermediate human carriers is amply justified by the discovery that meningococci are often present in the nose or throat of persons who have been associated with cases of meningitis, but are themselves free from meningitic symptoms. These observations have been made by many bacteriologists in different countries, for example:

V. Lingelsheim[8] (1906) examined 264 close contacts of cases and found 9.5 per cent. to be carriers.
Bruns and Hohn[6] (1907) examined 609 house contacts and found 36.9 per cent. carriers.
Black[7] (1912) examined 801 close contacts and found 28.3 per cent. carriers.

Carriers may or may not show obvious inflammation of the nasal or pharyngeal mucous membrane, and the proportion of those with an unhealthy naso-pharynx has been variously estimated by different writers.

The duration of the carrier state is variable, but apparently most carriers no longer harbour the meningococcus after three weeks, though some may continue to yield cultures for months. Trautmann records observations on carriers who remained infective for at least sixty-six days. A second examination after an interval of one week often gives a negative result, and further examinations may be equally unproductive. Of thirty carriers whom I recently observed, twenty-six gave a positive result on one occasion only, though all were re-examined three times during an isolation of three weeks to a month. One gave a negative, followed by two positives; one a second positive result, and then two negatives; and two gave a negative on second examination, then a positive, followed by another negative result.

Of the contacts examined by all observers, adults have more frequently been found to be carriers than children (*vide* Bruns and Hohn,[6] etc.). Those persons, then, who are carrying the meningococcus in their naso-pharynx can transport it for long distances and infect others who are far from any case of meningitis.

The readiness with which bacteria are given out in coughing and sneezing, and even speaking, and can in this way be transferred from the nose or throat of one individual to another, are matters of common knowledge. Grosser forms of infection by kissing, or eating and drinking from utensils used without washing, give other obvious chances for transference of the meningococcus to the nose and mouth of other persons from carriers.

Portal of Entry.

Further evidence that the disease is acquired in this way is afforded by the observation that the meningococcus is present in the naso-pharynx of cases of meningitis in the early stages of the disease. It has been found by many observers, and with much greater frequency during the first few days after the onset of the disease than at later stages. Goodwin[3] examined the naso-pharynx of 52 cases of meningitis, and isolated the meningococcus from:

12 out of 22 examined in first week
5 ,, 15 ,, second week
0 ,, 15 ,, third to ninth week
1 case on sixty-seventh day of disease.

showing that the meningococcus may persist a long time.

Among convalescents recently under my observation one man yielded a culture on the thirty-fifth day from onset. V. Lingelsheim[8] examined the naso-pharynx of 49 patients in the first two or three days of the disease, and found that 93 per cent. gave positive results.

These observations complete the cycle of the meningococcus in passing from the naso-pharynx of a carrier in the neighbourhood of one case of meningitis to the naso-pharynx of a second case of meningitis, and leave little doubt as to the method by which the disease is spread.

The detection of meningococci in the blood of patients affords an intelligible explanation of the route from the naso-pharynx to the meninges. Elsler made positive cultures from the blood of 10 cases out of 41 examined. It is probable that those about to develop meningitis are carriers during the incubation stage, and in this way may be explained some of those instances recorded by Steiner,[4] Bolduan,[3] etc., in which two children of different families after playing together developed the disease within a few days, either simultaneously or at a short interval.

Bacteriology of Carriers.

As is now well known, the region of the posterior nares and the upper part of the pharynx is the chief site in the air passages of meningococcus infection. This region is best reached with a small swab on a bent wire introduced through the mouth.

In the case of adults difficulty has seldom been experienced in obtaining a swabbing without contamination from the tongue or tonsils or uvula. A broad spatula and a forehead light are usually required. The best method of inoculating culture plates was found to be the following:

Two plates of serum-agar were used. Only the extremity or last $\frac{1}{4}$ in. of the swab was rubbed on the culture medium at one edge of the first plate, and a glass rod was used for distributing the material over the first and second plates, the rod being used in such a manner as to progressively diminish the amount of seeding on the plates. After incubation at 36° or 37° C. for twenty-four hours sufficient growth had usually taken place; occasionally plates were incubated for another twenty-four hours, but very seldom was any advantage gained. The cultures made in this way showed growth of very few organisms except—

Pneumococcus.
Streptococcus.
B. influenzae (or bacilli resembling this organism).
Gram-negative cocci.

Films made by drawing a loop across the first and second plates and stained by Gram's method showed whether Gram-negative cocci were present in any considerable numbers. Individual colonies of different types were then examined by stained films. The colonies of meningococcus or similar organisms could with a little practice be usually recognized, especially with the assistance of a low-power microscope. Colonies of *M. catarrhalis* could usually be excluded by their cohesiveness and peculiar consistency when touched with a wire.

The micro-organisms which gave most trouble by reason of their resemblance to meningococci were Gram-negative cocci of the chromogenic group, which form more or less yellow pigment. As pointed out by Elsler and Huntoon, if glucose is added to the agar the yellow colour of the growth is often more obvious. Colonies of Gram-negative cocci were picked off to serum agar and, after incubation, were subcultured the next day to:

1. Serum agar and placed at room temperature (an incubator at 20° C. is better).
2. Litmus serum glucose peptone water.
3. Litmus serum cane sugar peptone water.

(The litmus must be only just neutral—that is, not too alkaline.)

The tubes containing sugars were incubated at 37° C. After forty-eight hours, those strains were excluded which:

1. Grew at room temperature;
2. Formed no acid on glucose, but showed growth; or
3. Formed acid from both glucose and cane sugar.

A fallacy to be avoided is the inclusion of streptococci in the culture; this is a very easy error to fall into on account of the small size of the streptococcus colonies. If no growth took place at room temperature and acid was formed from glucose, but not from cane sugar, and, moreover, no yellow pigment was seen in the serum agar cultures, the strain was considered one of meningococcus. It is obvious that at least five days must elapse before a positive result can be reported. No agglutination tests were performed, as no serum was obtainable which would agglutinate any large proportion of undoubted meningococcus strain from cerebro-spinal fluid of cases.

Serum has been obtained by Continental workers (v. Lingelsheim,[8] Kutscher,[9] Bruns and Hohn,[6] etc.) which agglutinated practically all available strains of meningococcus; but, as shown by Elsler and Huntoon,[10] myself,[11] and others, serum made from one or few strains, while agglutinating highly some strains, may be inert towards other races of meningococcus. Probably agglutination with serum diluted less than 1 in 200 is of little value as a means of diagnosing the meningococcus and controls with salt solution and normal serum are always necessary.

Widespread and Disconnected Cases of the Disease.

Referring again to the epidemiology of the disease, it has often been remarked that not only has no direct contact between cases occurred, but that the cases are so isolated and widely distributed that no connexion by means of a single intermediary can be considered possible. This suggests that the infective agent, after being harboured by contacts of a case, is passed on to other carriers in series, one or other of whom infects a susceptible person who then develops the disease.

The widespread character of the disease during an epidemic requires for its explanation a wide distribution of carriers. This widespread distribution of carriers has been demonstrated in many epidemics, especially in the later stages.

During a recent epidemic in a body of some 30,000 soldiers 40 cases of meningitis occurred in about four months. These 40 cases occurred in eighteen different battalions, and no two cases occurred in the same hut or tent.

In some instances in the course of epidemics the chain of intermediaries may be detected, as in the history recorded by Steiner,[4] in which the mother of two children attended the funeral of a child dead of meningitis, and in that way must have come in contact with the relatives of the dead child. She then came home and infected her own two children, who became ill four days later, having in the meantime, whilst themselves well, infected two other children in another street with whom they played.

Steiner and others relate similar instances in which children were apparently carriers of infection before they became ill. A series of instances recorded by Jehle[12] suggests another line of infection by carriers. In this epidemic children were attacked in houses which were not connected except by the fact that the fathers worked in the same coal-pit and the same part of the pit. Jehle suggests that the damp moist air of the mine facilitated the passage of the meningococcus from one miner to another.

Widespread Distribution of Carriers.

In the outbreak mentioned above amongst 30,000 soldiers, with which I was recently concerned, 4 cases of meningitis had occurred scattered through a certain battalion. The greater part of this battalion was examined for carriers. Among 887 men who were swabbed, 33 carriers (3.7 per cent.) were found. They were widely scattered throughout the battalion.

Much larger numbers of carriers have been found in certain other epidemics. In that recorded by Bruns and Hohn[6] (1908), they not only found 36.9 per cent. of carriers among close contacts of the cases, but also among 1,786 less intimate contacts they found 22.5 per cent. of carriers, and among 380 non-contacts 7.9 per cent. of carriers.

The widespread character of epidemics postulates a widely spread distribution of carriers, and this is established by the above and other similar observations.

The number of carriers detected has been shown in different epidemics to be twice, ten times, or even forty times the number of cases of meningitis.

The short time during which most carriers retain the meningococcus emphasizes the ease and rapidity with which the organisms must pass from one person to another, since, nevertheless, large numbers of carriers may be found by a single examination.

Utility of Search for Carriers.

Seeing that carriers are often so widespread during the height and later stages of an epidemic, it is perhaps not always of much practical utility to search for carriers at these stages. The chief conditions which make such an investigation especially desirable are:

1. Means of efficiently isolating such carriers as are detected.
2. The existence of an early localized epidemic.

At the same time, where means are available, the isolation of every carrier who can be discovered would probably be a gain, and the circumstances of each epidemic require special consideration.

Seasonal Prevalence.

The cause of the rise of an epidemic is not explained by the discovery of carriers, though epidemics may be transported from place to place by their means. The seasonal prevalence of cerebro-spinal meningitis may perhaps be correlated with the prevalence of naso-pharyngeal affections. This corresponds in this climate with winter and in some other countries with the season of excessive dust, which has been regarded by some observers as the cause of epidemics of meningitis in parts of India, and, at any rate as a contributing cause, in other hot countries.

Conception of Epidemic.

The large number and widespread distribution of carriers and the small number of cases of meningitis compared to the population forces upon one the view that for a true understanding of an epidemic of meningitis the total number of persons who harbour the meningococcus should be looked upon as constituting the true epidemic. Some of these persons are not ill in the ordinary sense of the word, though they are attacked by the meningococcus and successfully attacked in different degrees: First, according to the amount of change produced in the nasal and pharyngeal mucous membrane (this may be considered the first stage of the disease); secondly, according to whether the meningococcus succeeds in infecting the blood, meninges, joints, etc. From this point of view—the epidemiological one—the carriers constitute the mass of the epidemic, and those who subsequently develop meningitis are only a small accidental minority.

The cases of meningitis, on account of the severity and fatality of this complication, give to the epidemic its importance, and they necessarily bulk largely in the eyes of the clinician.

Whether the fewness of the cases of meningitis is due to a resistance on the part of most of the carriers—either local, that is, in the mucous membrane, or general in the blood or meninges—or is due to changes in the virulence of the meningococcus, there is, I believe, no definite evidence on which to come to a decision.

However this may be, a consideration of all the evidence about carriers leads to the conclusion that the statement that cases of meningitis occur when and where carriers of the meningococcus become numerous, is a more correct way of stating the facts than by saying that many carriers occur in the neighbourhood of cases of meningitis.

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SOME SIMPLE ANAËROBIC METHODS.*

BY

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(*Preliminary Communication.*)

THE methods usually employed for the cultivation of anaërobic organisms are not ideal. Considerable time and trouble must be taken and elaborate apparatus employed if a fair degree of anaërobiosis is required. The methods are not cheap and the apparatus is bulky. It was hoped that the existing methods might be greatly simplified and the attainment of anaërobic conditions greatly hastened by the employment of quite simple apparatus. It is felt that this end has been attained, and although the experiments are not yet complete and it is not beyond all doubt which of the methods to be described below will ultimately prove the best, it is thought advisable to publish a brief account of the methods in order that other people may have an opportunity of trying them. This seems the more advisable as the methods are so simple that they might be used in a travelling laboratory, and so might be of service to those who are working with anaërobic bacteria in the field, for those whose space is limited, and who cannot take a large equipment with them.

The methods are all very simple, and most of them require only the usual media which are used in any bacteriological laboratory. They have been tested on such anaërobic bacteria as *B. botulinus*, *B. tetani*, and the bacillus of malignant oedema. They all depend on the properties which finely divided metals possess of adsorbing gases and other simple substances.

METHOD 1.—*Porous Platinum.*

This method is the simplest and is applicable to solid or liquid media, and for these reasons it will probably prove the best.

Short pieces of platinum wire are fixed into glass holders at the blow-pipe and the free ends are wrapped tightly round small pieces of gas carbon, or other porous material which will char readily, and secured by twisting round the main piece of wire. These pieces of carbon are then heated in the flame from a Bunsen burner to expel the air and dipped while still hot into a strong solution of platinic chloride. After soaking for some time they are removed and dried over the flame. They are then heated red hot and redipped and the process repeated two or three times. It will be found that, on removal from the flame, the reduced platinum on the surface of the carbon will adsorb sufficient oxygen from the air to keep the mass a dull red until all the carbon is burned away.

We have now several pieces of porous platinum mounted on wire and fixed to glass holders. For use the glass is cut short and pushed into the centre of a cork. With these and a Kipp's hydrogen apparatus it is possible to render the atmosphere above a medium anaërobic in a few minutes.

It is particularly suited to the cultivation of anaërobic organisms on small amounts of solid media. Suppose that an anaërobic culture is desired on a blood agar slope in a test-tube. The tube is infected in the usual way. It is turned upside-down and the cotton-wool plug removed. A sterile glass capillary tube connected with the hydrogen apparatus, and with a cotton-wool plug in it, is introduced from below, and a brisk stream of hydrogen run into the test-tube. No precautions are taken to prevent the hydrogen diffusing out of the tube except that the remaining operations are carried through rather quickly. The capillary is removed and the platinum armed cork, which has been sterilized by passing through a flame, is pushed home. If an ordinary cork is used it is advisable to paint the joint with melted paraffin wax. If the right amount of hydrogen has been introduced the platinum will glow dull red as soon as it is introduced and continue to do so until all the residual oxygen is used up in forming water. If too little hydrogen has been led into the tube the platinum will become white hot, and an explosion will result. It is advisable, then, that sufficient hydrogen be passed into the tube in order to prevent this happening. If the procedure has been carried through properly the atmosphere in the tube is now devoid of oxygen and the whole may be incubated. As oxygen in the blood agar is given off one can see the haemoglobin become reduced by the colour change and confirm this with a spectroscope. The deeper layers of the medium give up the oxygen slowly, and some hours elapse before the whole is reduced. This, however, does not matter, since the surface on which the growth is required is anaërobic in a few minutes. As oxygen is given off from the medium it is adsorbed by the platinum and burned to water, as in the first instance.

Using this method the organisms of tetanus, botulismus, and malignant oedema grew with great freedom, and nearly the whole surface of the agar was covered with growth in forty-eight hours. Transplants from these gave visible growth in fourteen hours.

A similar procedure can be used for plating methods if flat bottles, similar to the Roux pattern, are used. The procedure is the same as for test tubes, except that it is advisable to use larger pieces of platinum and to use plenty of hydrogen. Explosions in a bottle might be dangerous. It may be mentioned in passing that it is necessary to allow several minutes to elapse after one of these bottles filled with hydrogen has been opened before introducing a warm platinum loop to take out a sample. A warm platinum loop on one occasion caused an explosion which, though it did no harm, was rather startling. It is better to use large pieces of platinum, because they warm up more slowly and they have a bigger surface. It is essential that the platinum be introduced while still warm, as if cold, the water formed may not evaporate, and if the pores of the spongy platinum become waterlogged the adsorption of gases and their union is very slow. It is quite simple to guard against these sources of error by using plenty of hydrogen and seeing that the platinum glows dull red when it is introduced.

With this method all anaërobes tested grew quite well, and it was found possible to isolate an anaërobic organism from faeces which has not yet been fully identified.

The method can be applied to broth. In this case, since the tube cannot be held upside-down, a very brisk stream of hydrogen is bubbled through the medium and the tube corked up as soon as possible after the capillary is withdrawn.

In every case a little oxygen should be left inside the vessel and the platinum should glow when introduced. In this way a small negative pressure is made inside the vessel, and room given for the expansion of gases on incubation, and for any gas which may be formed by the growing micro-organisms. There is thus no tendency for the vessel to burst or the cork to be blown out.

It will be seen that the method is very simple in theory and in practice. It is also cheap, since the estimated cost of the platinum is threepence to a shilling, and the pieces can be used again and again. Some experiments were carried out with palladium, but no advantage was found. The method is very rapid. A tube or bottle can be infected, rendered anaërobic, and put in the incubator in a few minutes.

METHOD 2.—*Colloidal Platinum.*

Test-tubes are taken, and into each there is introduced a second test tube which is cut off short. The inner tube nearly fills the lumen of the outer, and it is introduced upside-down. These tubes are filled out with broth, to which a trace of methylene blue has been added. The tubes are then plugged with cotton-wool, sterilized, and kept ready for use. When an anaërobic culture is desired 2 c.cm. of a platinum sol are added, the tube infected, and a stream of hydrogen passed through the upper layers of the medium by means of a fine capillary. It will be observed that the methylene blue is gradually bleached. The colloidal platinum acts as a catalyst, and the hydrogen destroys all the oxygen present in the mixture. When this stage is reached the capillary is passed down to the bottom of the tube, and the inner tube filled with hydrogen. This then rises to the top of the fluid and acts as a gasometer. The capillary is withdrawn, and a cotton-wool plug inserted, and the whole incubated. The gasometer of hydrogen supplies a reducing agent which will destroy the oxygen absorbed from the surface of the medium provided

* The expenses of this research have in part been met from a grant from the British Medical Association.

that sufficient platinum is present. The method gave good results with the organisms of botulismus and malignant oedema, but with tetanus the growth was slow and poor.

METHOD 3.—*Colloidal Platinum and Sodium Formate.*

An attempt to dispense with hydrogen was made by adding to broth excess of sodium formate and colloidal platinum. In a system of this kind it was expected that all the free oxygen would be used up in oxidizing the formate owing to the vigorous catalytic action of colloidal platinum. This expectation was not fulfilled completely. The addition of colloidal platinum to a solution of sodium formate in water containing a little methylene blue brings about complete destruction of all the free oxygen in a short time, and this whether the solution be acid, neutral, or alkaline. The anaërobic state of the solution will continue for some time, for as soon as there is any oxygen absorbed it is used up in oxidizing the formate. But when the method is tried on broths the results are not nearly so good. Some constituent, in some specimens of broth, interferes with the reaction. Bouillon made with Wittè peptone, for example, does not give good results. Broth made with a tryptic digest instead of Witte peptone (Douglas) was more suitable. To this medium there was added a trace of methylene blue, sodium formate up to 1 or 2 per cent., and just before infecting 2 c.cm. of colloidal platinum, or platinum black suspension. The infected tubes were plugged with cotton-wool, and thus there was free access of air to the medium. The tubes remained anaërobic for twenty-four to forty-eight hours, and, in cases where growth occurred, for all the time that growth was taking place. *B. botulinus* grew extremely well and regularly, the bacillus of malignant oedema less regularly, but when it did grow it gave a luxuriant growth. *B. tetani* did not grow well, and occasionally did not grow at all. It formed little toxin, and the bacilli stained badly.

After these methods had been devised, my attention was drawn to a paper by Pfühl,[1] who describes some methods of growing bacteria with free access of air. In one of these methods he adds 1 gram spongy platinum to bouillon, and boils out all air just before infecting. Care is taken not to shake the tube, and so allow the medium to take up oxygen. In this way anaërobic bacteria would grow. The exact part played by the platinum in his experiments is not quite obvious, as he does not seem to have added a reducing agent in order to make the reaction continuous. Moreover, the amount of platinum used is prohibitive, although it can be recovered.

In Methods 2 and 3 the platinum is never recovered, but as the weight of the metal thrown away is extremely small, the cost is not great. The platinum sol is made by making an arc between platinum electrodes under water. The sol is protected by the addition of a small amount of gelatine, and sterilized by repeated boiling and incubating.

The last two methods require further work to endeavour to get over the uncertainty and the poor growth of *B. tetani*. Moreover, the fact that some specimens of broth give poor results is a serious objection; and as the colloidal platinum is easily aggregated, and thus its efficiency as a catalyst destroyed, it may be that the difficulties will never be overcome. The colloidal metal seems to have no deleterious effects on the growth of the organisms, unless it is on this account that *B. tetani* does not grow very well. In the case of organisms of botulismus and malignant oedema, on the other hand, the growths are very good, and a rich crop results.

It seems from all the experiments so far carried out that the first method will prove the best, and the facts that it is so simple, can be used with all kinds of media, and that no addition or alteration of the medium is made in any way, seem to show that it will give the best results in the end.

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[1] Pfuhl, Die Züchtung von anaërober Bacterien in Leberbouillon, sowie in Zuckerbouillon und in gewöhnlicher Bouillon mit einem Zusatz von Platinschwamm oder Hepin unter Luftzutritt. *Cent. f. Bact.*, Orig., xliv, 8. 378 1907.

THE Pennsylvania Society for the Protection of Scientific Research has opened a campaign for the education of the public concerning medical research. The organization will include a branch consisting of medical practitioners who contribute £2 or more to further the objects of the society. Dr. William Pepper of Philadelphia is the Chairman of the Finance and Membership Committee.

THE THEORY AND TECHNIQUE OF TREATMENT BY RADIUM EMANATION NEEDLES.

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BRIEFLY, it may be stated that, for therapeutic purposes, radium *per se* is of no value; it is not till it breaks down and the third and fourth generations of the series of elements that come into existence are reached that therapeutic effects are produced. The therapeutic agents are the penetrating beta and gamma rays which are given off during the disintegration of radium B and radium C. The disintegrating radium atom at ordinary temperatures turns into a gaseous element—radium emanation—a gas that can be collected by means of a mercury vacuum pump and utilized as a much more convenient source of radium B and radium C than the solid radium salt.

The disadvantage of using a radium salt is that, owing to its great costliness, it cannot be changed from one form of receptacle to another to suit the requirements of different cases without serious loss of time and valuable material. This latter loss is more obvious when we consider that 50 mg. of radium chloride, which is at present worth at least £1,000, has approximately the same bulk as a grain of calomel.

The only serious disadvantage of radium emanation as a source of radiation is that, owing to there being no parent radium present to go on producing it, it is dissipated comparatively rapidly, its activity being reduced to half in 3.85 days.

At the end of any and every hour there is 0.75 per cent. less emanation present than at the beginning of that hour. This works out as a loss of 4.4 per cent. per six hours, or 16.5 per cent. per day, and of 71.6 per cent. per week. It must not be lost sight of that for the first four hours after emanation—without radium—is confined in a receptacle its activity increases—that is, till radium C equilibrium is established.

The advantages of radium emanation are: (1) It has a much smaller bulk than the parent radium salt. (2) It can be supplied from institutions at a reasonable cost, while for general use the price of radium is prohibitive. (3) It can be collected in capillary tubes, or flat applicators, or in any shape or size of glass or other vessel suitable for the requirements of the case to be treated, and this without risk of loss or permanent diminution of the value of the parent radium. (4) The loss of a tube of emanation is of comparatively little consequence.

Rationale of Radium Therapy.

In the treatment of deep structures, and especially malignant growths, the great advantage radium possesses over *x* rays is that the source of radiation can be inserted among the actual cells to be treated, and the rays, therefore, are not expended on the skin and healthy tissues before they reach their goal. By burying radium the cells that require radiation are primarily and principally affected, and protect the skin and healthy tissues by screening or filtering off from them the less penetrating rays. With the surface application of radium, or by using *x* rays, the reverse is the case: the skin receives a greater dose than the deep parts because it is nearer the source of radiation. For example, by using a soft and unscreened *x*-ray tube the skin may be burnt, while the deep structures, being so effectually screened by the superimposed tissues, may not be radiated at all.

In *x*-ray therapy this undesirable state of affairs is to some extent overcome by using a hard tube which will give off for the most part hard or penetrating rays, and also by interposing filters of various density and thickness, according to the depth of the tissues to be radiated. The filter cuts off the soft rays which would otherwise act on the superficial structures alone. The same consideration obtains in the surface application of radium, with this difference, that the quality or penetrating power of the rays from a given amount of radium is constant. The beta rays (corresponding to cathode rays) and gamma rays (corresponding to *x* rays) of radium B and radium C

may be roughly divided, according to Rutherford, into three groups:

1. Very soft gamma rays, softer than the softest *x* rays.
2. Beta rays and gamma rays, which will penetrate 3 mm. of lead (or about 3 cm. of human tissue).
3. The very hard rays of radium C (some of which will not be stopped by several human bodies).

In treating deep structures by the surface application of radium, only Group 3 can be used. Groups 1 and 2 are cut off by filters of 3 mm. of lead, or about half that thickness of platinum.

Surface application of radium is very wasteful, as the rays go in every direction, and only about one-third of them would be directed towards the deep structure.

Filtering is also necessary when radium is buried—that is, when one or two tubes containing anything from 25 to 400 milligrams of radium are inserted in the tissues—as, should the soft rays not be filtered off, the parts nearer the tube will be greatly over-exposed if the more distant parts are to be sufficiently radiated.

The deduction I wish to draw from these considerations is that all filtering in radio-therapy is simply and solely a method of obtaining uniformity of radiation.

I have attempted very diagrammatically to illustrate my contentions in Figs. 1, 2, 3, and 4.

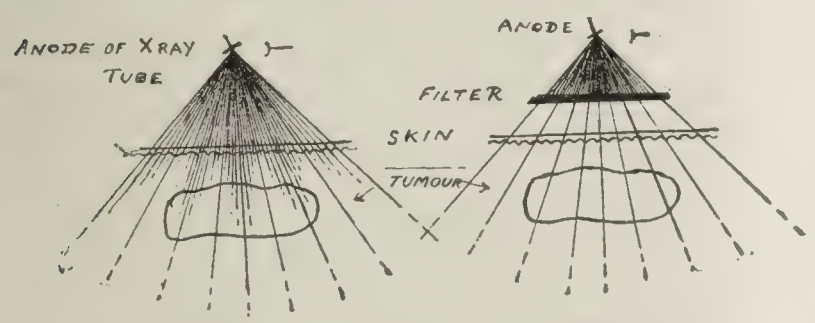


Fig. 1.

Fig. 2.

Fig. 1.—Diagram of a tumour treated by unfiltered rays from an *x*-ray tube. The softer rays are stopped by the skin and superficial tissues, which are over-exposed, and do not reach the tumour, which is under-exposed.

Fig. 2.—Diagram of a tumour being *x*-rayed, with a filter in use to cut off all but the hardest rays. There is greater uniformity of radiation than in Fig. 1. The skin that is nearer the anode still receives a larger dose, per unit area, than the tumour.

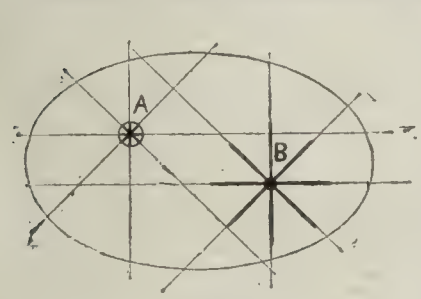


Fig. 3.

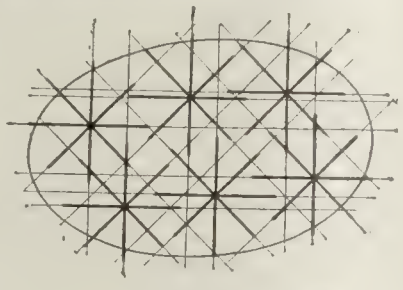


Fig. 4.

Fig. 3.—Diagram of a tumour radiated by (A) a radium or emanation tube in platinum case, with wall 2 mm. thick to cut off all but the hardest gamma rays of radium C; (B) a tube which will allow beta rays and the gamma rays of radium B to pass. Radiation will not be uniform. If the tubes are left in long enough for the tumour to be sufficiently radiated by (A), there will be over-exposure from soft rays round (B) in the area indicated by heavy lines. If (B) were filtered to the same extent as (A), there might still be sloughing round both tubes, though, at the same time, it would be possible for the periphery of the tumour not to be sufficiently radiated.

Fig. 4.—Tumour treated with six emanation needles placed parallel to and within "soft ray range" of one another. Much greater uniformity of radiation is obtainable than in Fig. 3, without screening off and wasting any of the rays it is possible to use. The softest beta and gamma rays, which it would be impracticable to use without local over-exposure, are intercepted by the 0.3 mm. steel walls of the needle. An almost perfectly uniform radiation of the tumour can be obtained by withdrawing the needles and reinserting them in intermediate positions. This procedure, which is quite practicable with fine needles, is hardly justifiable when the incisions necessary to bury comparatively large tubes have to be made at frequent intervals of time and space.

Filtering or screening is not an ideal method of obtaining uniformity of radiation, because the intensity of radiation is, approximately, inversely proportional to the square of the distance from the source of radiation. It is not an economical method, as it cuts off the soft, generally considered the "injurious rays," which compose a large proportion of the total rays given off by radium B and radium C. It is not economical either because these soft rays are the most active therapeutically. Every *x*-ray worker knows the reaction of the skin produced by a soft tube. This reaction is undesirable in a healthy skin which we do not want to treat, but it is just what is required in diseased cells which we do want to treat.

There is no innate objection to using soft rays, as they are employed in a routine manner for surface conditions. In addition, as pointed out by Professor Joly, it is probable that hard gamma rays do most of their therapeutic work by means of the secondary soft beta rays which result in the cells they traverse.

Screening is merely a method of obtaining uniformity of radiation, and if soft rays are not in themselves injurious, it is obvious that they may be utilized legitimately, provided that there is not over-exposure near the source of radiation, that is, that uniformity of radiation is secured. It is obvious also that a method which will allow the soft rays to be used will greatly increase the therapeutic value of a given quantity of radium. The principle of such a technique, namely, the use of a number of sources of "illumination," was suggested by Professor Joly,[1] and the detail worked out in conjunction with the present writer.[2]

I shall briefly contrast the method of burying radium or radium emanation in general use with that which I have been employing for the last ten months, as described in the BRITISH MEDICAL JOURNAL of July 4th, 1914. In the former one or two tubes containing at least 25 mg. of radium, usually a great deal more, or an equivalent quantity of emanation, in each instance surrounded by a metal case, are buried. In the latter six, twelve, or any number suitable for the size of the tumour, of fine serum needles, with 1.4 mm. external diameter, each containing 4 or 5 millicuries of radium emanation in glass capillaries of 0.75 mm. external diameter, are utilized. In the former the soft rays are wasted; in the latter they are not only not wasted, but play an important part in the treatment. In the former, uniformity of radiation is obtained by screening off the soft rays; in the latter, by using a number of sources of radiation within "soft ray range" of one another (the very soft rays of Group 1 are cut off by the walls of the needle—that is, by 0.3 mm. of steel). I may add that in the former method the patient has usually to be anaesthetized and an incision made into the tumour, a procedure which is not without risk of causing dissemination and septic infection. In the latter the skin is only punctured by fine needles, which transfix the tumour, and the patient can immediately go home with the emanation needles *in situ*.

The twenty-eight patients I have treated with inoperable malignant disease during the last ten months have convinced me at least that a great deal of good can be done in malignant growths by the use of such small quantities of radiant matter as would be of little service if other methods were employed. The general opinion expressed by those who work with radium is that very little can be effected in the treatment of malignant disease, excluding superficial conditions, with less than 50 mg. of radium. I have never used more than 24 millicuries. Four of the patients were shown at the Surgical Section of the Royal Academy of Medicine in Ireland on January 29th last. As the Royal Dublin Society were good enough to supply me with the emanation to investigate a new method, I was particularly glad to have the opportunity of permitting others to judge of the efficiency or otherwise of this method for dealing with cancer. I value the kindness of members of the various hospital staffs for opportunities of treating their inoperable cases with emanation needles, which treatment I have carried out in several Dublin hospitals, though most of my work was done at Dr. Steevens's Hospital. I am much indebted to Professor McWeeney for his histological reports on the cases, as an independent opinion as to whether the tumour was malignant or not increases the value of the investigation of this method of treating cancer.

The Royal Dublin Society, aided by the munificence of some of our citizens, especially Lord Iveagh and Sir John Griffith, has recently started a radium institute for supplying emanation to the local medical profession. We are also very fortunate in having Mr. Moss, the Registrar of the Society, who has taken unlimited trouble to devise and make suitable apparatus for collecting emanation in fine capillary glass tubes which he makes to fit the fine needles used. Personally, I am most grateful to him for his invariable kindness and for the great interest he has taken in the work.

The price the Radium Committee have at present fixed for emanation is 4d. per millicurie for free hospital patients and 1s. 6d. per millicurie for private patients.

If the result of the method which I have been employing appeals to others the cost of treatment will be less and more patients can be dealt with.

Emanation is so valuable that I endeavour to keep it in constant use until it is practically exhausted. For instance, in a case of cancer of the cervix uteri with involvement of the vagina, I have used an initial dose of 24 millicuries in six needles for four days. I leave them in the first position —usually the posterior lip, as it is the hardest to get at— for twenty-four hours, in the anterior lip for thirty hours, and, lastly, in the vaginal wall for forty hours. The emanation will be reduced by that time to twelve millicuries, so that the patient would receive an average dose roughly equivalent to 18 milligrams of radium for ninety hours, or 1,620 milligram hours. I have then used the same needles for malignant glands, or a large rodent ulcer, for two days, and for a small rodent ulcer for two more; so that the capillaries are in constant use for eight days, until only five millicuries remain. Frequently, when treating such a structure as the cervix, I collect the capillaries a week old into a cannula and insert it into the os uteri, using them for three or four days longer.

From the practical point of view, needles are most convenient to work with, as they are so easily inserted, withdrawn, and reinserted. They give great facilities for suiting the requirements of a case. For instance, a row of needles placed close together enables the thorough and systematic radiation of a growing edge, which is often of vital consequence when an important structure tends to be invaded. The dose, which of course is a matter of experience, is under perfect control. A short capillary and needle is used for the tonsil, or palate; long ones for a large tumour. The risk of over-exposure is at a minimum when only small quantities of emanation are used in each needle, as there is a considerable margin of safety in the length of exposure. It is somewhat like comparing the latitude of exposure which is permissible in taking a photograph in very strong sunlight and in a dull diffuse light—in the one case the exposure must be measured in tenths of a second, while in the other half a minute might not make any great difference.

The exploring needle is charged by slipping the capillary glass tube containing emanation into it, and then placing the needle in a dish of melted hard paraffin. The needle is taken out, its outside wiped and the paraffin allowed to set inside. The needle is then examined with a fluorescent screen to make certain of the position of the capillary, which should be towards the sharp end, and to see that it has not slipped out, as sometimes happens with a new needle. I use a glass tube of willemite to see the glow, but have found that the needles immersed in boric or carbolic lotion, or if placed on a white marble slab, will show fluorescence also.

The needles are then inserted into the tumour parallel to one another and not more than one inch apart, usually a good deal closer. The length of time for which the needles are left in depends on the size of the tumour, the amount of emanation in each capillary, and their distance apart, but is independent of the number of needles used if the area is correspondingly larger; because using more needles at the same distance apart simply means that a larger area is being simultaneously treated.

The different localities in which cancerous affections have been attacked shows how convenient the method is. I have used emanation needles in growths of the floor of the mouth, tongue, tonsil, pharynx, palate, antrum of Highmore, orbit, frontal sinus, glands in the neck, abdomen, vagina, and cervix uteri. No surgeon would have had any hesitation in saying that the cases I have treated were quite beyond operative interference, and indeed they were sent to me, as a last resort, to see if, by radium treatment, anything could be done to relieve their distress. Under such circumstances, and with this small amount of radium available in Dublin, it was hopeless to expect dramatic cures; but it is a great satisfaction to me to have been able to bring about the local and general improvement, prolongation of life, and relief of pain exhibited in practically every patient treated.

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SMOKE AS A FACTOR COMPLICATING CARBONIC OXIDE POISONING IN COLLIERY DISASTERS.

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IT is well recognized that, following explosions of firedamp and coal dust, and underground fires, the chief danger lies in the in-breathing of CO. For this reason, much attention has been directed to the symptoms and treatment of CO poisoning.

It is also true that many divergencies in the symptoms of CO poisoning have been observed from time to time, and that these have rightly been attributed to the admixture of other gases.

But the part played by smoke, produced at the time of the explosion, or fire, does not appear to have met with the consideration its importance deserves. In addition to CO and CO_2, smoke contains numerous irritant gases, comprising sulphurous and nitrous fumes, acetic acid and ammonia. These dangerous and irritant gases when met with, especially as a result of underground fires, in dense volumes in a confined space give rise to immediate symptoms of a profuse running at the eyes, and coughing, accompanied by a sensation of choking.

These immediate symptoms may give place to those of CO poisoning, if the latter gas has been inhaled, and may thus become virtually masked in the more evident state of CO poisoning.

The irritant gases present in smoke, however, when inhaled under such circumstances, produce after a certain lapse of time, generally a few hours, a well-marked remote effect upon the lungs. In the more fortunate cases bronchitis is superadded to the symptoms of CO poisoning, but in severe cases acute oedema of the lungs, or even bronchopneumonia, may develop.

The development of these complications may naturally increase the dangers of CO poisoning very considerably, and cases are on record in which the greatest difficulty has been encountered from this cause.

That these complications are due to the action of the irritant gases present in smoke is abundantly proved—first, by the fact that in cases of CO poisoning uncomplicated by smoke pulmonary symptoms, such as have been described above, never develop; secondly, that in those cases in which the pulmonary symptoms described have developed there is an invariable history, when such is obtainable, of exposure to smoke; and, thirdly, that in cases of poisoning by nitrous fumes following the use of explosives, whether in the mine field or on the battlefield, precisely similar pulmonary symptoms are met with.

Since the irritant gases present in smoke are freely soluble in water, it might be advantageous to emphasize the value during exposure of tying a wet cloth over the mouth and inhaling through it, and at the same time to point out the fallacy of employing a dry cloth for the same purpose.

THE *Medical Record* of January 30th notes that over two years ago Dr. Little described a form of neuritis rather common in Newfoundland and the coast of Labrador, where many of the natives live on a restricted diet consisting to a great extent of highly milled white flour. He was of opinion that the disease was true beriberi, and more recently Ohler, in the *Journal of Medical Research*, 1914, reports experimental results that bear out Little's conclusions. Chickens fed exclusively on white bread, either with or without yeast, hominy or milled rice, developed polyneuritis gallinarum within six weeks. It is not settled that this disease is identical with beriberi in man, but it would seem that the two conditions are sufficiently alike in their course and etiology to permit of satisfactory conclusions. Control experiments indicated that Ohler's conclusions were worthy of acceptance. The evidence would indicate that white bread as a sole article of diet is undesirable, as it lacks the necessary vitamines.

SERIOUS INJURY TO AN EYE FROM A BURSTING GOLF BALL.

BY

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AND

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In the *Lancet* of July 18th, 1914, Mr. W. H. Jessop published the notes of a severe eye injury inflicted by the contents of a golf ball which the patient was engaged in cutting open with a knife. The core of the ball burst with explosive violence, ejecting the semifluid contents with such force as to strike the ceiling of a room 10 ft. high; some of the caustic core fluid struck the patient's eye, with disastrous results. Although, as will shortly be shown, such accidents have been far too common in America, we can only find this one record, in any English ophthalmic journal, of a case of the kind. The following notes of a similar accident are published in the hope of again attracting the attention of the medical profession, and through it that of the public at large, to a very grave danger to the eyes of people of an inquiring turn of mind, and especially of children.

W. S., aged 7 years, was watching a grown-up friend, who was using a knife to open the core of a golf ball, which had been picked up on a course. The ball had lost its outer cover and the make of it was not known. The child was sitting on the opposite side of the table at the time, when the core suddenly burst, throwing some very irritating fluid into his right eye. He was at once taken to a medical man, who without delay washed the conjunctival sac well out under a general anaesthetic. A few days later the patient came under the care of one of us (W. I.) in Southsea. From his notes of the case the following abstract is made:

The accident happened on August 12th, 1914. When first seen the whole cornea, with the exception of a small area upwards and inwards, was opaque but smooth, and looked like ground glass, only whiter; the lower half of the globe presented a dead white necrotic area, the inner surface of the lower lid and much of the upper lid being in the same condition. The skin of the lids was scarcely affected. For a long time the condition of the eye was regarded as hopeless, as the sclerotic threatened to perforate. The destruction of tissues was too great to permit of the prevention of adhesions; indeed, the adhesion of the lid alone saved the globe from collapsing. For a time there was much contraction of the lower lid, producing an entropion, which, however, disappeared as the granulation tissue grew up.

The child's guardians left Southsea, and the case came under the care of the other of us (R. H. E.) in London, on December 2nd, that is, nearly nineteen weeks after the accident. There was firm and extensive symblepharon of the lower lid, and a limited symblepharon of a frenular nature above. The cornea was opaque over its whole extent, though the opacity thinned off in the upper outer segment; large vessels invaded the cornea from the limbus; the surface of the cornea was rough; the anterior chamber was deep; the iris could be dimly seen, and appeared to be discoloured and degenerate, the pupil being displaced downwards and inwards. The lid was separated from the bulb, and a flap of skin taken from the inner side of the arm was sutured in position. The surgical aspect of the case is, however, of relatively little importance compared with its sociological interest, and may therefore be dismissed without further notice.

Injuries to the eye from contact with the contents of the so-called "water-core" golf balls are becoming so frequent as to constitute a serious menace. Cases have been reported by the following American surgeons:

Casey Wood (*Ophth. Record*, 1912, p. 520).
Lowell, who has reported six cases (*Journ. Amer. Med. Assoc.*, v. 61, p. 2302).
Crigler (*Journ. Amer. Med. Assoc.*, v. 60, p. 1297).
Thomason (*Journ. Amer. Med. Assoc.*, September 20th, p. 965).
Suker, Carroll, Nance, and Adams (*Ann. of Ophth.*, vol. xxiii, pp. 203–4).
In addition, Casey Wood mentions cases of this accident which have happened in the practice of Dr. Guildford of Chicago, Dr. Phillips of Milwaukee, Dr. Jorgenson of Kenosha, and others.

The cause of the accidents has been well put by Casey Wood in the following words: "The cores of golf balls . . . are surrounded by machine-wound indiarubber ribbons, and are thereby subjected to great pressure. It follows that when burst or cut open any fluid they contain is expelled, sometimes with explosive force and noise, to a considerable distance." The contents of the water-core balls seem to vary considerably. The liquid first used would appear to have been water; but this was discarded in favour of heavier fluids. An analysis made for Lowell showed a ball's contents to consist of a mixture of barium sulphate, soap, and a free alkali. Crigler's examination showed a similar paste, with 2.4 per cent. of sodium hydroxide. Suker and Carroll found dilute sulphuric acid. Wilder found a paste of chloride of zinc and soap. Another report affirms the contents of the core to have been a mixture of chloride of lime and soap, and yet another names a solution of chloride of zinc as the filling of the core. In Jessop's case the ball was a "zone zodiac." The patient stripped it nearly to the core and then cut into it, when it burst so violently as to shoot its contents on to the ceiling of a 10-ft. high room; the fluid core consisted of a semifluid mass of soft soap or potash soap, which was very strongly alkaline, and was contained in a small rubber sac, tied round the neck with string. It is of interest to record that in our case the child was about a yard away from the ball when it burst.

It is important to note that the accidents reported have all been due to the balls being *cut open* and not to their bursting during play, and that the great majority of the records have come from America. It is possible that the latter fact is to be attributed to the makes of balls used, but possibly also the national American characteristic of a desire to "find out" things may be partially responsible. It would, however, be a mistake to suppose that such accidents of a grave nature are rare in Great Britain. We have both of us heard of such happenings, and we publish this case in the hope that other surgeons will publish cases of the same kind, and thereby help to awaken the public to the extent of the danger involved.

Dr. Gravely of Fletching, Sussex, has communicated to one of us (W. I.) the notes of a case which came under his care within two hours of the accident, and yet sight has been reduced to a doubtful appreciation of a glimmer of light. The contents of the ball are reported to have been a strongly alkaline powder, some of which was found on the boy's handkerchief. It seems possible, however, that they had dried to this consistency, and that they were originally of the soft-soap variety. Both of us have heard reports of other cases of which we have not been able to obtain details.

Whilst the child whose case is recorded above was in the London nursing home, another patient, a young lady, used to visit him, and, being interested in his history, she volunteered the statement that her brother was "in the habit of cutting open golf balls to see their contents," and that he found certain makes contained a thick fluid paste in the core. He had escaped injury, and this was clearly due to the fact that he always unwound all the outer ribbon of elastic before opening the bag. The parents were warned to stop the practice. The girl's evidence, together with the child's history, would appear to show that not a few people in this country are smitten with a similar dangerous curiosity. From what we have heard we are convinced that this is the case.

A review of the recorded cases shows the following points of interest:

1. The damage done is of a very serious nature; thus of the four cases reported on at length by Lowell three lost the use of one eye; Crigler's case only retained the power of counting fingers at one foot; the final vision in Thomason's case was $\frac{2}{3}$, in Jessop's only $\frac{6}{60}$, and in Gravely's case perception of light, and even that doubtful. In the present case it is limited to the power to distinguish hand movements only.

2. The seriousness of the loss is more fully appreciated when we take into account that a large percentage of the cases are in children or young people.

3. In at least two of the recorded cases the victim of the eye injury was not the person who was opening the ball, but an unfortunate child who was looking on.

The practical point is what should now be done to stop what is obviously a grave, yet preventable, danger. Casey Wood, who is a keen golfer as well as a distinguished ophthalmologist, has pointed out that "air and solid core balls, such as those made by the Spalding brothers, are quite as effective and enjoy even a greater measure of popularity than the dangerous fluid core balls. A bill has been introduced into the Legislature of Massachusetts to prohibit the sale of the dangerous forms of golf ball. The United States Golf Association has issued a warning against the dangerous practice of cutting open golf balls. More recently (January, 1914) it has been suggested by

Dr. Wilder, of Chicago, that an announcement should be made through the Council on Health and Public Instruction of the American Medical Association. There is one thing that all medical men can do, and that is, to warn people widely and continuously of the dangers of cutting into golf balls. If more cases are reported—and we believe that not a few have really occurred—of serious damage to eyesight from this cause, it will be a question whether more vigorous action should not be taken by the profession.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

ANTISEPTIC PASTES.

THE fact that Sir W. Watson Cheyne, in his Hunterian Oration, advocated the treatment of wounds in war by means of antiseptic pastes of lanoline and white wax, induces me to mention that in 1898, when on an ethnographical expedition in New Guinea, I devised a somewhat similar method based upon the same idea.

The treatment was confined practically to suppurating lesions, including granulomata which had broken down, and some of which were complicated with sinuses leading to the subjacent bone.

My attempts were made with vaseline containing creosote (20 minims to the ounce) and mercury nitrate. But as this mixture became inconveniently fluid after its application, I afterwards added cocoa butter, so as to produce a stiffer composition.

This was applied to the lesions (1) without any special preparation of their surfaces, and (2) after the latter had been cleaned up with an aqueous antiseptic solution. The results, however, were disappointing.

Even when a cavity was completely filled with the preparation suppuration proceeded in its deeper parts; and except for minor superficial lesions the treatment was, in fact, deleterious rather than otherwise. My experience was that such materials, when applied to a surface already infected, acted as an impermeable barrier to the escape of fluid, and so led to an aggravation of the condition. I had no experience with recently inflicted wounds, which, for obvious reasons, offer a much more promising field.

C. G. SELIGMAN, M.D.Lond.,
Professor of Ethnology in the University of London.

CUPPING AMONGST THE NATIVES OF NORTHERN NIGERIA.

THE accompanying photograph shows a native being cupped at Abinsi, Northern Provinces of Nigeria. The native barber makes six small incisions, places the horn over them, sucks the air out, and dabs a piece of wet clay on the end. In the picture three lumps can be seen where the cups have been removed after bleeding. I have often seen carriers on the march have painful swellings in the muscles of the back or legs cupped, and go on again with a 60 lb. load for many miles quite free from pain.



LESLIE DOUDNEY, M.R.C.S., L.R.C.P.Lond.
Offa, Northern Nigeria.

PROFESSOR S. KITASATO, organizer of the Imperial Japanese Institute for the Study of Infectious Diseases, of which he has been the head since 1892, has resigned that post and organized a new institute of his own. All his former associates and colleagues, including Dr. K. Shiga, discoverer of the bacillus of dysentery, and Dr. S. Hata, whose name is associated with that of Professor Ehrlich in the invention of salvarsan, have joined the new institute.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting on Friday, January 29th, the President, Dr. F. CONWAY DWYER, in the chair, Mr. M. R. J. HAYES exhibited a case of *Recurrent cancer of the cervical glands treated by radium* in a man aged 45. The tongue had been partially removed two and a half years previously. X-ray treatment did not seem satisfactory. Radium emanation needles were inserted about the middle of December, when the patient had a swelling on the side of the neck about the size of a goose's egg. The growth was soft about the centre, and appeared to be breaking down. Three needles were inserted from above downwards and three from below upwards. They were left in for twenty-four hours, when they were reinserted at right angles to the former positions. They were again inserted in a position which might have escaped radiation in the previous two insertions. There was no general reaction, but there was a slight local reaction. The man was again seen after Christmas, when the tumour was only half its original size. Another insertion was made on January 13th, but could only be tolerated for a few hours. The condition had shown vast improvement. The primary growth was in the tongue, and the submaxillary gland was at no time involved. The size of the swelling now to be seen was only one-third of the original. Mr. R. C. B. MAUNSELL showed a case of *Cancer of the tongue treated by radium emanations* in a man, aged 61, apparently inoperable. The patient first noticed a lump under the tongue to the left of the fraenum in April, 1913; it ulcerated rapidly and spread. When first seen the man looked cachectic. He suffered considerable pain, and glands were to be felt underneath the jaw on the left side, but none on the right. A piece of the growth removed was reported to be a rapidly-growing carcinoma. The patient was given a mouth wash. Radium was inserted on December 2nd. By the time the insertion was made the radium was reduced to 23 millicuries divided into six needles. The only reaction noticed was a rise in temperature to 100° F., but no increase of pulse. Within a few hours of the insertion the pain was relieved. The needles were left in for twenty-three and a half hours, and next day they were inserted into the submaxillary gland, and the following day the whole lot were reinserted in the mouth. On December 24th the cancerous ulcer was completely covered with epithelium. The teeth were then extracted, and again 24 millicuries of radium were inserted, and after this the patient went home for three weeks. On his return he was in good spirits and greatly improved in general health, but glands were to be felt in the right side of the neck. Since then the neck had been radiated as a prophylactic. When the whole area had healed over a piece of the former cancerous growth taken for examination was found to be covered over with practically normal epithelium, underneath which was a fibrous tissue, and in one part of the section a mass of carcinomatous cells was seen, but there was no mitosis. There were a few giant cells. The point of interest was that although clinically the ulcer had healed over with epithelium there were still carcinomatous cells. Mr. Maunsell showed also a patient suffering from *Primary carcinoma of the neck* under radium treatment. The lump, which was large, had been radiated twice, and was said to have reduced considerably in size. The interesting point in this case was that the patient had a reaction each time, whereas the other patient shown had not. The treatment in this case was being continued. Subcutaneous thickening was noticeable when the needles were removed, but this thickening afterwards disappeared. The paper by Mr. WALTER C. STEVENSON on the *Theory and technique of radium therapy*, of which a report with illustrations is published at p. 498, led to a discussion, in the course of which several speakers related cases treated in the manner described. Professor MCWEENEY, who had examined specimens of the growths from Mr. Stevenson's cases, said that four or five of them were typical squamous epitheliomata, and others were squamous sarcoma. There could be no doubt as to their malignancy; he considered that they would have killed the patients speedily. He

had not yet had an opportunity of examining them histologically after radium, but he had seen two microscopic sections cut from Mr. Maunsell's case, and they showed a most remarkable change.

SECTION OF OBSTETRICS.

AT a meeting on February 12th, Dr. M. J. GIBSON, President, in the chair, Sir WILLIAM SMYLY showed a *Myomatous uterus removed during parturition* from a woman who had been in labour twenty hours. The patient was aged 45, and this was the sixth pregnancy. When examined at the Rotunda Hospital it was found that the head was freely movable above the brim, but no fetal heart could be heard. The pelvis was blocked by a large tumour, and the fetal head could only be reached with difficulty. The child was dead. The patient had already been examined by three different people, and the case was therefore not certainly in an aseptic condition. There was not room to perforate, and extraction by version or by forceps was out of the question. It being impossible to push up the tumour, it was at first determined to wait to see what nature would do. Morphine and scopolamine were given. As eighteen hours later there was no alteration in the condition, it was decided to do Caesarean section, and to remove the uterus and tumour. Cervical Caesarean section offered no advantage, so the classical operation was done, and the tumour and uterus were removed. The patient made a normal recovery. Sir William Smyly showed also a *Ruptured horn of a two-horned uterus* removed from a young married woman who was four months pregnant. She had been bleeding from 8 a.m. until 7 p.m. before operation. When admitted to the Rotunda Hospital she was blanched and pulseless, and there was no doubt about the diagnosis of ruptured ectopic pregnancy. When the abdomen was opened, a two-horned uterus was found. The fetus had escaped into the abdominal cavity, and the placenta was extruding through the opening. The horn was removed, and the patient recovered. Sections made by Dr. Rowlette through the torn part showed that the wall was eroded by the chorionic trophoblast. Dr. SPENCER SHEILL gave details of a case of *Gastro-intestinal haemorrhage in the newborn*. The child, aged 2 days, passed and vomited so much blood as to be almost moribund. The treatment adopted was the subcutaneous injection of horse serum—a treatment, so far as he was aware, hitherto untried in such a case. The result was rapid and successful. Sir WILLIAM SMYLY said he had used horse serum, administered hypodermically and by the mouth, in an infant some months old, and it appeared to do some good, but the case did not terminate so satisfactorily as the one now reported. His case was one of purpura haemorrhagica. Dr. TIERNEY recalled three such cases. The first was rapidly fatal. In the second he tried gelatine given by the mouth in drachm doses every hour, and the patient gradually got better. The third case was a milder one, and, with similar treatment to the second, the result was quite good. The PRESIDENT made some remarks, and Dr. SPENCER SHEILL replied.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

AT a meeting held on Thursday, February 18th, Dr. J. J. PRINGLE, President, in the chair, two cases of *Dermatitis artefacta* in women were exhibited by Dr. GEORGE PERNET and one by Dr. J. M. H. MACLEOD. In one of Dr. Pernet's cases the left arm and shoulder had been involved for more than three years; in the other the front of the chest only was affected. In neither case was there any clue to the vulnerant employed. In Dr. MacLeod's case only the back of the right hand was affected, and its production had been preceded by the excision of a ganglion from the part. Dr. J. H. SEQUEIRA also showed a case of an artificially produced eruption in an old soldier, who had presented a similar condition on two previous occasions. The lesions somewhat simulated an eruption due to the halogens, but their primary bullous nature, lack of symmetry, and linear configuration all pointed definitely to their artificial production. Dr. KNOWSLEY SIBLEY showed a case of *Morphoeic scleroderma*, chiefly in the clavicular regions, with some patches of alopecia areata of the scalp, in a middle aged woman, and discussed the relation of the disease to the so-called "white spot disease" and to generalized sclerodermia. Dr. J. L. BUNCH referred to the obvious differences between guttate sclerodermia and atrophic lichen planus, and also to the views held in France as to its possible tuberculous nature. The PRESIDENT referred to the relation frequently existing between morphoea, alopecia areata, and disease of the thyroid gland. He pointed out that the patient had von Graefe's sign well marked; his experience was that such cases seldom or never eventuate in generalized sclerodermia. Dr. GRAHAM LITTLE and Dr. PERNET reported good results from the administration of thyroid extract, and Dr. SIBLEY, in replying, remarked that radiant heat had, in his hands, proved of value in such cases. Dr. GRAHAM LITTLE showed an old man with a typical *Rodent ulcer* behind the left ear and *Squamous epitheliomata* on the backs of both hands. A discussion took place on the relationship of the two conditions, both from the clinical and pathological point of view. Dr. H. W. BARBER exhibited a case of *Parakeratosis variegata* of about eight months' duration in a woman aged 38. The lesions were situated on the legs, where they closely resembled lichen planus, and on the face and neck, where their reticulated and riband-like atrophic band arrangement was characteristic.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 5th, Dr. F. S. PALMER, Past-President, in the chair, a paper, illustrated by lantern slides, was read by Dr. REGINALD MORTON on *The x-ray appearances of some common disorders of the stomach*. The two best materials for the opaque meal were, he said, bismuth oxychloride and barium sulphate; bismuth carbonate neutralized the gastric juice, and should not be used. After showing the appearances of a normal stomach, antero-posteriorly and laterally, in a young, healthy adult, he demonstrated how easily the form and position of the organ was influenced by mechanical, reflex, and sensory impressions. He showed instances of atony, one of the most common abnormalities, sometimes existing alone, but most often in association with gastric ulcer, or pyloric obstruction, or both. The spasmodic constriction of the circular fibres commonly associated with gastric ulcer was shown in several cases, and the method of distinguishing the spasmodic from the organic contractions explained. One case in particular showed the truth of the epigram which said that the most frequent seat of gastric ulcer was in the right iliac fossa. The stomach showed the presence of at least two ulcers, as well as some degree of pyloric obstruction. Suspicion rested on the appendix, which was found to be catarrhal, and removed by Mr. Baldwin. A radiogram made five months later showed a normal stomach. Cases showing different stages in the development of the condition of hour-glass stomach were shown. Of these the *x*-ray examination gave a large amount of information as to the relative size of the two sacs and their condition—an important point in the matter of operative procedure. In most cases gastro-enterostomy was the only possible operation, but where the lower sac was seen to be acting fairly well, and there was no indication of pyloric obstruction, as sometimes happened, the question of joining the two sacs by a gastro-gastrostomy should be considered. The paper was discussed by the PRESIDENT, Dr. STANLEY MELVILLE, and Dr. ARTHUR SAUNDERS; and Dr. MORTON replied.

HUNTERIAN SOCIETY.

AT a meeting on February 24th, Dr. A. C. JORDAN, Vice-President, in the chair, Dr. T. D. LISTER demonstrated an *Apparatus for producing pneumothorax*. Oxygen was run in first to obviate the danger of gas embolism in case a small vein had been punctured. Cases for artificial pneumothorax must be very carefully selected. A suitable type was one in which there was rapid infiltration of one lung without fibrosis or cavity formation, and in which there had been no response to ordinary methods of sanatorium treatment. He believed that favourable results were due not to closure of air tubes, but to diminution of the flow of blood and lymph through the diseased tissues. The number of deaths caused by the operation was very small. They were due to gas embolism, or to the effect of

the "pleural reflex" on the heart. Dr. G. T. WESTERN read a paper on *Vaccine therapy*, in which he referred first to the campaign now being carried on against antityphoid inoculation. It was the duty of medical men to be prepared with a few well-controlled statistics and effective replies to objections. He did not regard generalized infections or septicaemias as cases in which bacteria multiplied in the blood, but rather as local infections from which they were able, on account of insufficient defences, to find their way into the blood stream. In progressive endocarditis he had often seen benefit from vaccines, but never permanent cure. Vegetations on the damaged valves were not vascularized, and consequently blood containing antibodies could not reach them. On the other hand, the mortality of puerperal septicaemia could be very substantially reduced by using autogenous vaccines. The same was true of acute septic infections with lymphangitis following, for instance, a prick or small wound. Doctors and nurses were liable to these attacks, as the direct passage of an organism from one subject to another was the finest way to exalt its virulence. Active immunization by vaccines, if undertaken promptly, held out the best hope of cure in such cases. Stock vaccines might be given while the autogenous one was being prepared.

HARVEIAN SOCIETY OF LONDON.

AT a meeting on February 25th, Dr. EDGAR G. BULLEID, President, in the chair, Dr. E. GRAHAM LITTLE read a paper on *Rodent ulcer*, in the course of which he said it was better to go back to the clear idea enunciated by Jacob in 1827, and to regard rodent ulcer as a clinical term embracing all cases of ulceration of epitheliomatous tumours in which the cardinal symptoms of slowness of ulceration and absence of glandular invasion were present. Dr. Little gave a clinical analysis of somewhat over 100 cases of rodent ulcer occurring in his hospital and private practice. The series showed a very slight preponderance of males, which probably represented a usual experience, but in Bowlby's 66 cases there had been twice as many men as women, whereas in Dubreuilh's 166 cases there had been nearly twice as many women as men. The largest number of cases had occurred between the ages of 40 and 60. He described results of treatment by several methods, and gave preference to that of freezing with carbon dioxide, which compared favourably with any other method both in regard to safety of application, convenience and rapidity of treatment, and permanence of result. Some types of rodent ulcer advanced in spite of all treatments, and he quoted several cases in which all the accepted methods had been tried in turn without avail. Dr. Little showed three cases which had been cured by means of the actual cautery, zinc ionization and carbon-dioxide snow respectively. He also exhibited a case of probable rodent ulcer of the nodular variety. Dr. HALDIN DAVIS, who advocated excision whenever possible, Mr. V. ZACHARY COPE, and Dr. FREDERICK LANGMEAD discussed the paper.

THE late Dr. George Dean, Regius Professor of Pathology in the University of Aberdeen, left personal estate in the United Kingdom valued at £10,179.

Honour is the new title by which the *Alliance of Honour Record* will henceforth be known. The objects of the Alliance are to impress on young men the necessity of leading pure lives; to unite them in a world-wide effort on behalf of purity and a chivalrous respect for womanhood, and to promote the welfare of young men by the circulation of literature and the delivery of addresses with the view of counteracting temptations to impurity. The president is Dr. Harry Grattan Guinness, and among the vice-presidents are Sir A. Pearce Gould, Sir Dyce Duckworth, Sir Victor Horsley, Sir Alexander Simpson, and Sir Malcolm Morris. The magazine will contain articles bearing upon vital questions of personal and social purity, contributed by writers of authority in every walk of life, news of progress of the purity cause, and a record of the work of the Alliance of Honour. Among the contents of the present issue (January-March, 1915) are an article on self-control by Sir Malcolm Morris, emphasizing the hygienic advantages of continence, and other contributions by Mr. Edward Smallwood, J.P., L.C.C., and the Rev. Frederic W. Macdonald, ex-president of the Wesleyan Conference. We wish *Honour* success in its crusade.

Reviews.

A BRITISH SURGEON IN BELGIUM.

MR. SOUTTAR, of the West London Hospital, who worked with the Belgian Field Hospital for some months, first at Antwerp, and after the fall of that city at Furnes, has recorded his experience in a book which is an interesting addition to the ever-growing literature of the war.[1] He tells what he saw in a plain, straightforward manner, without any attempt at fine writing, and the book throughout is stamped with the impress of a man who looks at things through his own eyes. He went to Antwerp in September, and worked in a fine building which, before conversion into a hospital, had been a school. There were 150 beds, with a staff of about 50, including 8 doctors, 20 nurses, 5 dressers, lay assistants and motor drivers. The wards were full when he arrived, and the surgeons had extensive opportunities of studying the effects of rifle and shell fire. Every wound was septic, and in many cases had to be dressed several times a day. The beds were crowded with injuries of the gravest kind, but he and his colleagues felt that they had not worked in vain when they heard that the soldiers in the trenches begged to be taken "à l'hôpital Anglais." During the whole of their stay in Antwerp they never once had to have recourse to amputation of a limb, but, as the author points out, they were dealing with healthy and vigorous men who, once they had got over the shock, showed wonderful powers of recovery. Touching on the subject of rifle fire and the alleged use of dum-dums, Mr. Souttar says:

> The ordinary bullet consists of a lead core with a casing of nickel, since the soft lead would soon choke rifling. Such a bullet under ordinary circumstances makes a clean perforation, piercing the soft tissues and sometimes the bones with very little damage. In a dum-dum bullet the casing at the tip is cut or removed, with the result that on striking the casing spreads out and forms a rough irregular missile, which does terrific damage. Such bullets were forbidden by the Geneva Convention, but the German bullet is more subtle than this. It is short and pointed, and when it strikes it turns completely over, and goes through backwards. The base of the bullet has no cover, and consequently spreads in a manner precisely similar to that in a dum-dum with equally deadly results. There could be no greater contrast than that between the wounds with which we had to deal in South Africa, produced by ordinary bullets, and those which our soldiers are now receiving from German rifles. The former were often so slight that it was quite a common occurrence for a soldier to discover accidentally that he had been wounded some time previously. In the present war rifle wounds have been amongst the most deadly with which we have had to deal.

Every wound with very few exceptions was infected by the organisms which flourish on earth and manure; but their experience of tetanus and of the effects of other virulent bacteria was small. The most effectual remedy for wound infection they found was plenty of fresh air or, better still, oxygen. Men with wounds so foul that their presence in the wards could not be tolerated were placed, suitably protected, in the open air, the wounds being left exposed to the winds of heaven covered with only a thin piece of gauze.

> The results were almost magical, for in two or three days the wounds lost their odour and began to look clean, whilst the patients lost all signs of the poisoning which had been so marked before.

Mr. Souttar thinks it may be partly owing to this that they never had a case of tetanus. In all cases they treated the wounds with solutions of oxygen and avoided covering them up with heavy dressings. This plan was successful as well as economical. The most awkward cases to deal with were fractured thighs. In every case there was a large infected wound, and as a rule several inches of the bone had been blown clean away. As splints were out of the question, the wounds having to be dressed two or three times, they attempted fixation by steel plates. The result was brilliantly successful, for not only could the limb be handled as if it were unbroken, but the wounds themselves cleared up with great rapidity. Mr. Souttar strongly denounces the practice of removing bullets unless they are pressing on some nerve, interfering with a joint, or causing pain and inconvenience. He holds that this is

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[1] *A Surgeon in Belgium.* By H. S. Souttar, F.R.C.S. London: E. Arnold. 1915. (Med. 8vo, pp. 225; illustrated. 8s. 6d. net.)

a matter as to which the public are very largely to blame, for it is the general belief that unless a bullet has been removed the surgeon has not done his work.

At Furnes the work had to be done under rougher conditions, and the cases were of a far more severe kind than those at Antwerp. The patients came mostly from the line between Nieuport and Dixmude, where the fighting was at close range. Among their fellow workers was Madame Curie, who took radiographs of all the cases they could find for her. In connexion with this, Mr. Souttar takes occasion to express his surprise that no car had then been built for radiographic work.

> It only means the building into the frame of a suitable dynamo, and the provision of means for storing the rest of the equipment. It would place an *x*-ray equipment at the disposal of every cottage hospital, or even of a country house, and it would place the cottage hospital, not to mention the country house, at the disposal of the enterprising radiographer.

Mr. Souttar pays a high tribute to the loyalty with which their Belgian professional brethren helped them, and speaks warmly of the kindness and gratitude of the people. Although greatly impressed by the magnificent equipment of the civil hospitals in Antwerp and elsewhere, he speaks his mind very plainly as to the dressing stations on the field both in Belgium and in France. He says:

> It seems to be impossible for our professional brethren on the Continent to imagine any treatment apart from a completely equipped hospital. Their one idea seems to be to get the wounded back to the base hospital, and if they die on the way it cannot be helped. The dressing stations are mere offices for their redirection, where they are carefully ticketed, but where little else is done. Of course it is true that the combatant forces are the first consideration and that from their point of view the wounded are simply in the way and the sooner they are carried beyond the region of the fighting line the better. But, if this argument were carried to its logical conclusion, there should be no medical services at the front at all except what might be absolutely necessary for the actual transport of the wounded. I am glad to say that our later experiences showed that the British influence was beginning to make itself felt and that the idea of the wounded as a mere useless incumbrance was being modified by more humanitarian considerations.

Mr. Souttar gives short but vivid descriptions of what he saw of the work of destruction carried out by the Germans in Belgium, often evidently in a spirit of wanton mischief. His book, which is well illustrated, may be commended to the serious attention of those wrong-headed people who either deny the German atrocities altogether, or say they were, so to speak, sporadic and accidental. Mr. Souttar shows clearly that they were deliberate and organized.

THE EARLY DIAGNOSIS OF HEART FAILURE.

ALTHOUGH not included in the official nomenclature of diseases, the term "heart failure" has come into very general use of late years. Public imagination has accepted it as a sufficient explanation of the cessation of life. But the steps that lead up to such failure are many and insidious, and their recognition at an early stage of their progress is eminently desirable.

The subject has been frequently discussed by Dr. STACEY WILSON, of Birmingham, in papers and addresses, and he has recently collected them into a single volume, *The Early Diagnosis of Heart Failure*,[2] which will be found to contain a vast amount of interesting clinical observation on many aspects of the question that do not often find expression in the textbooks.

The work has engaged his attention for more than twenty years, and his experience has been drawn from public and private practice during that period. Hence the material quoted and the deductions drawn from it are essentially clinical rather than pathological, but the writer has fully recognized the need for evidence in support of theory, and has therefore recorded a large number of cases in detail, and illustrated his work by diagrams and tracings. These, although of necessity adding to the bulk of the book, are of the greatest assistance to the reader, and to some extent enable him to form his own opinion in support of, or in opposition to, the opinions expressed with regard to them.

The right ventricle, from its more superficial position, is the part in which physical changes are first detected. Throughout the whole of Dr. Wilson's teaching the question of the distensibility of the ventricular wall plays a leading part. The adolescent heart is capable of much more distension without evil result than is the more rigid organ of advanced life. This quality of distensibility is of great importance, and calls for close attention to understand its significance as a means of detecting inherent feebleness in its earlier stages. *Post-mortem* evidence of dilatation is often most untrustworthy, cases not infrequently occurring where the most obvious clinical symptoms of distension have been present without any physical change to account for them.

Hence, clinical evidence must be relied upon. Early indications of cardiac failure may often be detected, even when no evidence of distension can be obtained by the ordinary methods of physical examination, and these signs and symptoms are described and examined in detail, as they may be met with in patients at different periods of life.

In the heart failure of the middle and later periods the indications may be numerous, but they are frequently complicated or even obscured by changes in other organs—acute, as in cases of pneumonia, or very slow and insidious, as in many forms of chronic degeneration. In discoursing of all these, the writer makes no claim to scientific accuracy or completeness, but he puts forward his own experience of some of the pitfalls into which the practitioner or the specialist may be led in dealing with obscure cases.

In one of his essays he examines the diagnostic value of an abnormal rise in the level of the diaphragm, as a guide to the volume of blood in circulation, and notes its occurrence in many instances of wasting from starvation or restriction of food during acute illness or from anaemia. The abnormal lowering of the diaphragm, on the other hand, may be taken as evidence of pulmonary congestion.

Dr. Wilson has for many years maintained that part of the expansion of the ventricle during diastole is a true muscular effort, and that a sound is produced in some cases, audible only at the apex, to which he gives the name of the third sound of the heart.

Throughout the work, the writer maintains his points with confidence, but does not dogmatize or attempt to establish his own views as beyond criticism. By way of making clear the matters upon which he lays particular stress, he appends a full summary of his main conclusions, indicating the most important by heavier type. The volume as a whole is of more than common clinical interest, consisting as it does of the original thoughts and observations of a single clinician not hampered by quotation of fragmentary extracts from the works of others.

A new era of cardiac study has been inaugurated since the majority of Dr. Wilson's essays were written. The electro-cardiograph and the polygraph may in time to come serve to confirm or disprove many of his contentions, but in the meantime his work must be recognized as a worthy outcome of the Birmingham School of Medicine.

[2] *The Early Diagnosis of Heart Failure, and Other Essays on the Heart and Circulation.* By T. Stacey Wilson, M.D.Edin., F.R.C.P. Lond., B.Sc.Edin. London: Smith, Elder, and Co. 1915. (Med. 8vo, pp. 637; 11 plates, 153 figures. 12s. 6d. net.)

NOTES ON BOOKS.

THE *Minutes of the General Medical Council*[3] and its various committees for the year 1914 have been issued in a volume, together with nineteen appendices. A general *Index*[4] to the minutes of the Council, its Executive and Dental Committees, and its three branch councils for 1903 to 1914 (Vol. xl to li) has also been issued.

German Technical Words and Phrases[5] is a useful pocket-book. It represents much hard work and judicious selection on the part of Mr. THIMM and Mr. W. VON KNOBLAUCH. Bellows's dictionaries supplied to a great extent the want, as previous to their publication it was only big lexicons that admitted what are usually known as "purely technical" terms. A general dictionary, however, from its very nature cannot include such terms without considerable limitations. In the book before us such limitations are set aside. Words used in medicine are scantily represented, and are all included under the head "Medical Terms"; those employed in pure biology are excluded, but in words associated with science as applied

[3] London: Constable and Co. 1915. Med. 8vo, pp. 534. Price 12s.)
[4] *Index.* Vol. xl to li. (Price 2s. 6d.)
[5] *German Technical Words and Phrases: An English-German and German-English Dictionary.* By C. A. Thimm and W. von Knoblauch. London: E. Marlborough and Co. 1913. (2s. 6d.)

to machinery, chemicals, etc., this handbook is very complete. Music finds place in its pages, as well as trade and business.

The *Transactions of the Southern Surgical and Gynaecological Association*[6] remind us that a great deal of good work is carried on in the Southern States of America, although it is true that this volume includes contributions from distinguished Northerners, such as Dr. Boldt of New York, who writes on intestinal transplantation for the formation of an artificial vagina, and Dr. Charles H. Mayo of Rochester, Minnesota, who furnishes a short but important note on resection of the rectum for cancer with preservation of the sphincter. A paper on surgery of the pancreas is contributed by a western surgeon, Dr. R. C. Coffey. "The word" which Dr. Martin of Baltimore has to say "on behalf of the open operation for the proper fixation and repair of fractures" is an excellent memoir furnished with fine skiagrams. Dr. Ransohoff, of Cincinnati, a Fellow of the Royal College of Surgeons, familiar to those old enough to remember him when he attended the practice of several London hospitals in the early Seventies of the nineteenth century, contributes a short paper on heredity in bone lesions, and relates an unusual family history. Dr. C. E. Caldwell's paper on congenital tumours of the neck is an interesting clinical pathological memoir, and a note on adenomyoma of the recto-vaginal septum, being written by Dr. Thomas S. Cullen, is, we need hardly say, of high scientific value. These *Transactions* ought to be placed on the shelves of all medical libraries in this country, for otherwise much good work will be overlooked.

MEDICAL AND SURGICAL APPLIANCES.

Screw-driver for Bone.

DR. W. CAMPBELL MACKIE (Assistant to the St. Mungo Professor of Surgery in the University of Glasgow) writes: The screw-driver shown in the accompanying sketches has been made with a view to overcoming difficulties frequently met in working with bone. In bone surgery it is necessary to preserve the most rigorous asepsis in order that the results may be uniformly good; even the gloved hand should not come in contact with the wound, as was pointed out by Lane some years ago. When a screw slips from under the driver it is an almost involuntary movement to put the fingers into the wound and pick it out. There are many corners also where it is exceedingly difficult to hold a screw in place with forceps, preparatory to driving it into the bone, and one is tempted to hold it in the first finger and thumb of the disengaged hand. With the instrument shown no such mistakes need be made; the driver and screw are held together in a way



Fig. 1.

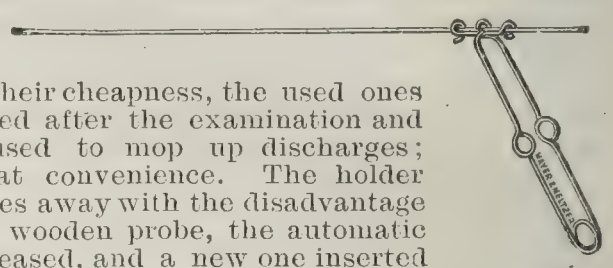


Fig. 2.

that enables the operator to launch the screw firmly and easily in almost any position. The whole instrument can be taken to pieces for cleaning. Fig. 1 shows the instrument in pieces. Fig. 2 shows the driver assembled and holding a screw ready for use. The method of "loading" the tool is to pull back the compression ring A, so releasing the tension on the spring grips B; these are then slipped towards the handle, so exposing the screw-driver blade. The screw is held in sterile gauze and placed with the slot of the head on the blade end; the spring grips are then pushed beyond the head and the compression ring forced over them; the screw is now firmly held on the driver, and it can be driven into the bone without any preliminary boring. When the screw is entered and held by the bone the compression ring is again slipped back and the grips are drawn up the handle; if the ring is now pressed forward the grips are held on the blade, and the driver can be used to drive the screw home. The instrument was made for me by Messrs. Anderson and Buchanan, Renfield Street, Glasgow.

Wooden Probes.

Mr. C. G. RUSS WOOD, F.R.C.S. (Shrewsbury), writes: Wooden probes are very useful in nasal and aural work, and especially so when used as wool carriers.



On account of their cheapness, the used ones can be discarded after the examination and burnt, when used to mop up discharges; this is a great convenience. The holder (illustrated) does away with the disadvantage of the straight wooden probe, the automatic clip can be released, and a new one inserted without soiling the fingers. It is made by Messrs. Mayer and Meltzer.

BOARD OF EDUCATION.

SIXTH ANNUAL REPORT OF THE MEDICAL OFFICER.

(Continued from p. 426.)

EDUCATION AND INFANT WELFARE.

UNTIL this year the reports have dealt with the condition of the school child. Attention has been focussed on the improvement of the child's environment in school and the amelioration of such defects as are found to hinder its progress in school. This work and also the marked attention that has been drawn to the hereditary factors in disease have had the result of throwing back the focus of attention, so that it is to the infant, and still more to the mother of the infant, that attention is being directed. The diseases of the school child are the result in too many cases of neglected infantile conditions, and those again are the result of maternal neglect or of ignorance in the young mother.

The education of the mother is thus recognized as a factor of primary importance, and with that there is the acknowledgement of "mothercraft" as one of the chief—if, indeed, it be not the chief—industry of the State.

Infant mortality is still too high. In 1913 no fewer than 95,801 children under 1 year of age died in England and Wales, or 108 per 1,000 of births. That the condition of the mother has much to do with the vitality of her child is shown by the fact that of legitimate births the death-rate was 104, whilst of illegitimate births it was as high as 213. The figures show a decline on past years, but they are still too high. The most serious causes of mortality are given as: Epidemic diarrhoea and enteritis, due to bad feeding; prematurity and immaturity and congenital defects, due in part to poor maternal physique or disease; bronchitis and pneumonia, due to exposure to cold and infection. These three groups are responsible for 70 per cent. of the deaths.

The lost labour and energy represented in these infant deaths, not to take into consideration the potential loss of so many lives, is colossal. So many women have for nine months been semi-invalided, and all to no purpose. They have given of their life energy, and all to no purpose. They have sustained the shock of birth, and the added shock of the loss of the child. Again, these things have now a monetary value, since the pregnant woman costs the insurance funds so much for her temporary incapacity, and the maternity allowance is wasted. It is, therefore, on the meanest grounds good policy to spend in the hope of retrieving such heavy wastage as this.

What is proposed is the concentration of attention on improved feeding, higher standard of maternal physique, and appropriate infant management. Those are the direct personal matters that require remedy. In addition, there are certain external causes of infant mortality: "Domestic insanitation in the widest sense of the term, industrial employment of married women, unsatisfactory systems of the disposal of excreta, the unfavourable conditions of urban life, overcrowding, unpaved yards and streets, inefficient scavenging, poverty, and filth." Of these we would place the employment of married women as the chief offender.

[6] *Transactions of the Southern Surgical and Gynaecological Association.* Vol. xxvi. Twenty-sixth Session. Edited by W. D. Haggard, M.D. Nashville, Tenn.: The Association. 1914. (Med. 8vo, pp. 587. Illustrated.)

Entrants.

After infant mortality, there comes next as evidence of the necessity for better mothercraft the state of the "entrants," the children on their first admission to school. No less than 8 to 10 per cent. of these are found to be suffering from malnutrition. Rickets accounts for from 4 to 5 per cent. of defectives in industrial districts, whereas in the rural districts it is wholly negligible. Unsound teeth are noted in an extremely large number of entrants; for example, "in Staffordshire, Yorks, N.R., St. Helens, and Todmorden the average number of entrants with defective teeth is over 80 per cent. . . . Much of the existing dental decay in these young children is attributable to unsuitable diet and the absence of cleansing of the teeth." Eye disease accounts for 3 per cent. and squint for 1 to 2 per cent. Bad and unsuitable clothing is noted in from 3 to 30 per cent. of cases according to district, bad foot-gear on the average of 10 per cent.; discharging ears, 2 to 5 per cent.; throat and nose troubles, 25 to 30 per cent. For all these conditions there is an overwhelming evidence at the mouth of many witnesses that "the principal operating influence is the ignorance of the mother, and the remedy is the education of the mother."

It has been argued by some that the extension of what is called grandmotherly legislation has weakened the sense of responsibility of the parent for the child, but the whole experience of the school medical service points in the contrary direction, and is an ample justification of the Board of Education circular (No. 576, issued in 1907) in which it was stated that "one of the objects of the new legislation is to stimulate a sense of duty in matters affecting health in the homes of the people, and to enlist the best services and interests of the parents, and to educate their sense of responsibility for the personal hygiene of their children. The increased work undertaken by the State for the individual will mean that the parents have not to do less for themselves and their children, but more."

Mothercraft is now being taught in the public elementary schools, not only by way of lessons in personal hygiene and domestic economy, but by arrangements whereby parties of girls attend at schools for mothers, day nurseries, and the like. Similar work is done in the secondary schools, and in the evening classes for adolescents and adults.

Medical inspection is one means by which contact can be got with the present-day mothers to their great advantage; not a few medical officers speak to the possibility of educating the mother through the medium of the school doctor, school nurses, and school teachers; "indeed in many districts it has been reported that this training of the mother has been more valuable than the actual inspection and treatment of the child; and many school medical officers have found that they can in this way secure the most benefit for the children."

The supervision and financial help of day nurseries now comes within the scope of the work of the Board. Similarly, schools for mothers are being actively fostered. A very good summary is given of the work to be done in these centres and the rules that should govern the work. These are very similar to those that have been formulated by the British Medical Association. Their object is prevention rather than cure. Treatment required should be arranged not at the school, but independently by private practitioners, at a baby clinic or hospital. The work must be under the regular control of a doctor, who should see the baby at intervals, even though it be deemed thriving. Regular weighing is insisted upon. The difficulties of home visitation are commented upon, and the dangers of mere zeal without discretion. Some schools, it is noted, "have arranged short courses of training for their voluntary helpers, and this practice is greatly to be commended."

One useful function of the school for mothers is the association that can be provided with the ordinary day school for girls. At the mothers' school a real baby can be seen and made the subject of the demonstration to the girls. Not only do the girls learn the better way in the most impressive fashion, but they learn the value of the mothers' school for future days.

The infant life of the nation does not lack supervisors. Rather it is a case of too many cooks. Not considering the several local sanitation and health authorities, there are no less than six central Government authorities concerned in the care of infant life!

Speaking generally, questions of sanitation, public health and infectious diseases come under the supervision of the Local Government Board; the control of the industrial employment of pregnant women comes under the Home Office; the midwives are supervised by the Central Midwives Board under the Privy Council; the domiciliary medical treatment of working women and the maternity benefit are under the National Insurance Commission; the instruction and training of women and girls in the care and management of infancy, in home nursing, and in hygiene, comes under the Board of Education.

There is room for a radical reform here, and the British Medical Association has advocated the appointment of a Ministry of Public Health, and the correlation of all these more or less independent bodies under the rule of a Cabinet Minister directly responsible to Parliament.

New grants in aid of this work are being made, and it is of interest to note that the basis on which these will be made has been arranged to fit the conditions. Attendance is the main check of the Board on the grants given to other "technical" schools, but it is recognized that in these schools for mothers such a basis is in the very nature of the case impossible. Also the Board insists less on the value of regular classes of instruction than on individual teaching. Provided that the provision made by the institution is adequate, and its working efficient, grant may be paid at the rate of one-half of the approved expenditure. Up to date 150 schools have been recognized.

(*To be continued.*)

MILITARY HYGIENE AND THE EFFICIENCY OF THE SOLDIER.

MILITARY ORGANIZATION IN THE FIELD.

MAJOR LELEAN, in his sixth lecture, laid down the rule that the primary duty of the medical officer was that of every other member of the fighting force—the defeat of the enemy in the shortest possible time and at the minimum possible cost. Medical knowledge and sanitary art had but one value to the combatant officer—their effect on the massing of rifles at the decisive point.

Relations of Medical and Combatant Officers.

In his relation with the combatant officers the duties of the medical officer were purely advisory. If he framed his advice on sound practical lines and never put forward proposals for which he could not give good reasons, he would gain the confidence of the commanding officer, and rarely find his advice scouted. The more the medical officer could explain the scientific reasons and commonsense grounds of any course suggested, the more he was likely to win the support of combatant officers. There were times when the commanding officer—perhaps for strategical reasons—found it impossible to fall in with the medical officer's views or to explain why. When this occurred the medical officer who regarded it as a personal affront and made up his mind never again to offer advice failed in his duty.

Distribution of the Medical Personnel.

Major Lelean described the arrangements authorized in connexion with the Expeditionary Force, but indicated that the rapid development of the military machine to cope with ever-increasing numbers rendered necessary a considerable amount of reorganization, which was now proceeding. The Director-General of the Overseas Forces was in immediate touch with the Commander-in-Chief, and dealt with organization, co-ordination and maintenance. On his staff was an A.D.M.S. Sanitary (Assistant-Director of Medical Services) who advised on all matters relating to hygiene, sanitation, and general health of the troops. The Director of Medical Services (lines of communication) superintended everything appertaining to the evacuation of the sick and wounded and controlled the roads and all areas adjoining the lines of communication. His duties included the inspection of hospitals, and the enforcement everywhere in his area of sanitary precautions. Readjustments to meet the increasing demands of the situation were now in progress, but the plan now being brought into effect was that the D.M.S. on the lines of communication should have a D.A.D.M.S (Sanitary) whose duties were to inspect up and down the line and see that sanitation was being maintained satisfactorily. The line of communication was divided into sanitary districts and a specialist

sanitary officer was told off to do the work of medical officer of health in each section.

Medical Staff of the "Field Army."

The "Field Army" now had its own D.M.S. at head quarters. Each division was in charge of an A.D.M.S., each with his D.A.D.M.S. An entirely new formation was the Divisional Sanitary Company. It would probably consist of twenty trained men able to act as supervisors or sanitary inspectors, and thirty labouring men to do rough work. The officer commanding the Sanitary Company acted as the unofficial sanitary officer of the A.D.M.S. of the division, and had to maintain the whole of his area in a satisfactory state. Each regiment had its own medical officer, who acted as a sanitary officer. There was no sanitary unit as such with each unit, but the medical officer had at his disposal one non-commissioned officer and four men of the R.A.M.C. trained in water duties. The drain on the personnel of the R.A.M.C. had been so great that it had been found most difficult to supply these men. Under *Field Service Regulations*, I. p. 46, accessory workers, consisting of two men for each company or platoon, could be obtained by the medical officer on application to the commanding officer, if they were needed for work in connexion with water purification.

Relation of Medical to other Staff Officers.

Medical officers needed to know with whom they should deal, and thus avoid creating friction by going over the heads of officers responsible for particular departments. The General Staff overseas was responsible for the whole conduct of war, and for this purpose was organized into three branches:

1. The General Staff branch, which controlled all matters relating to strategy and actual fighting.
2. The Adjutant-General's branch, which dealt with the care of and accommodation for the sick and wounded, medical equipment, sanitary measures, and discipline of medical personnel.
3. The Quartermaster-General's branch, which was subdivided as follows:
   (1) The Director of Supplies, who dealt with food, forage, fuel, light, and disinfectants. The medical officer should note the last item.
   (2) The Director of Ordnance Supplies: non-medical stores and clothing, apart from hospital clothing.
   (3) The Director of Transport.
   (4) The Director of Railway Transport.
   (5) The Director of Works: buildings and camping grounds on the lines of communication.

All requisitions upon these departments should be passed through the divisional representative of the branch concerned.

Care of the Lines of Communication.

Concentration of attention upon the sanitary condition of the lines of communication must not be allowed to obscure the fact that the first essential was the maintenance of effective rifles in the firing line, and that the lines of communication only existed to ensure that maintenance. However satisfactory the sanitation of complete units, fully officered and fully equipped, might be, sanitation could not be maintained at so high a level in reinforcing detachments not under their own officers and lacking the complete regimental equipment. Moreover, the civil organization was overstrained by the weight of numbers, so that the lines of communication thus became progressively fouled as the campaign proceeded. When sick men began to pass down in the reverse direction, the danger was that contamination might become infection, and the men who reached the front might already be in the early stage of acute infectious disease acquired *en route*, and might thus prove a source of weakness rather than of strength. The railway station, generally speaking, was one of the least cleanly places to be found in the whole zone of operations, and the specialist sanitary officer in charge of a district had first to get this defect remedied. Sanitary arrangements must be made, and shower baths could be improvised along the line just outside the station; they were exceedingly useful when troop trains drew up. The medical officer should also exercise a kindly supervision over the supply of hot food to the troop trains passing through a station. In his district the duties of the medical officer were mainly those of a civilian M.O.H. In billet towns the water supply and conservancy needed careful attention, and it was most important to keep in touch with infectious disease, and see that troops were not billeted in infected premises. Enteric was far more prevalent in the French army than in the British, and this fact afforded an index of the prevalence amongst the civil population.

Organization of the Medical Personnel with the Army.

The duties of the D.M.S. with the field army were similar in scope to those of the D.M.S. on the lines of communication. At the divisional head quarters were the A.D.M.S. and D.A.D.M.S.(San.). At the beginning of the war the D.A.D.M.S.(San.) was required to act as staff officer and sanitary officer, but the impossibility of this dual responsibility had been realized, and the officer in charge of the Divisional Sanitary Company now assisted in sanitary duties during his whole time. The D.A.D.M.S.(San.) exercised general supervision over the work of the medical officers of units in connexion with health and sanitation; he also issued, for the guidance of the troops, standing orders which adapted existing regulations to local conditions. The D.A.D.M.S.(San.) rode on in advance with other staff officers to select camps on the line of march and allocate the various areas within the camp. He saw that the water supplies were sterilized, that sanitary conditions were maintained, and that the men were properly fed. In billet towns he organized sanitation in conjunction with local authorities, and ascertained and picqueted infected houses.

Medical Officers of Units.

The medical officer of a unit exercised general supervision of everything concerning the health or sickness of the men, including their comfort and well-being. He should make every effort to detect and isolate infective disease at the earliest possible moment. Judgement was required in deciding which men should be sent back to the base and which should go forward under observation. The sterilization of blankets until the disorder from which a sick man suffered was diagnosed was very important; ingenuity came into play in making disinfection baths by means of waterproof sheets placed in holes in the ground, or by any other means that could be contrived. The medical officer should interest himself in the design of the trenches, the supply of warmth, facilities for ablution, and provision of hot meals for the men, and see that all necessary measures were taken to prevent "frost-bite." The cleanliness and comfort of billets also came under the medical officer's care.

In conclusion, Major Lelean gave the following list of books recommended for study by military medical officers:

Published by Gale and Polden, 2, Amen Corner, E.C.:
Banning's *Organization, Administration, and Equipment Made Easy.* Price 4s. 6d.

Published by Wyman's, Fetter Lane, E.C.:
Manual of Elementary Military Hygiene. Price 6d.
R.A.M.C. Training. Price 9d.
Field Service Pocket Book. Price 1s.
Field Service Manual. A.M.S. Expeditionary Force. Price 3d.
Field Service Regulations. Vol. i, 6d.; vol. ii, 1s.
Regulations for Mobilization. Price 6d.
Regulations of the Army Medical Service. Price 4d. (Certain information.)
Standing Orders for R.A.M.C. Price 1s.

(All these books can be obtained through any bookseller.)

CONSERVANCY ON ACTIVE SERVICE.

In his seventh lecture Major Lelean remarked that the municipal organization in regard to sewage disposal, by its very perfection, had engendered ignorance and helplessness, not only on the part of the ordinary householder, but even to some extent on the part of those with a medical training.

Disposal of Excreta.

The method of surface disposal, which gave the maximum exposure of infective material and the greatest amount of offence, belonged to primeval times. The next stage was that of burial, a method applicable to the individual and not to the community. Diagrams illustrating various trench methods of disposal used in the army under active conditions were shown. The long trench at which the men fouled the ground at the sides

with urine had given place to a system of parallel short trenches, 3 ft. long by 4 ft. deep and 1 ft. wide. Alternate trenches were first used and then filled in; the men stood on the 2 ft. width of ground between each trench. The frontage in feet required under this system was one-fiftieth of the total strength, so that 1,000 men would require 20 ft. of trench. Fresh trenches were cut behind the first row, and for every two days the camp was occupied another 4 ft. depth of ground was necessary. Boards should be provided at the sides of the trenches to prevent the edges from being broken down.

Paper was a considerable difficulty and best controlled by the use of powdered earth; tins for applying the earth must be provided for each latrine. Flies could be kept away by the use of kerosene or dry lime, and the enforcement of orders that each man should cover his excreta under pain of severe penalties. The orderly officer was required by the Regulations to visit the latrines once a day, and it was not enough to leave it to the medical officer, as was sometimes supposed. In filling in the trench it was useless to cover with 6 in. of earth because flies could struggle through when hatched. The latrines should be thoroughly well filled in and the ground rammed down. The commanding officer was responsible for seeing that the work was done and for marking the site so that troops coming after should not camp on the spot. In view of the risk of uncovered excreta infecting troops following after, the importance of care in this respect could not be too strongly emphasized. Trenching for disposal of faeces in the passage ways leading to the fighting trenches had been abandoned in view of the fact that under present conditions one area might be occupied for considerable periods. Men going to relieve the fighting line now carried buckets with them, and those going off duty disposed of the contents of their buckets at points about 600 yards to the rear.

The desiderata of incinerators were that they should give the most rapid destruction with the lowest exposure of disseminating agents, and that the method should be economical as to fuel, labour, and transport. The dominating question was that of evaporative capacity: 4½ oz. of faeces contained 3 oz. of moisture, and it had been estimated that ½ lb. of liquid had to be disposed of for each man daily. Attempts to dispose of urine by boiling it away or by evaporating it from the surface of cloth had not been successful; but matrices had been found satisfactory. Evaporation could be increased 37 per cent. by the addition of charcoal, and still further by the addition of sawdust. Two-thirds of a pound of matrix was sufficient to evaporate on the average 1 lb. of fluid. Evaporation by this means required 400 lb. of fuel per regiment in the twenty-four hours, and every regiment had 1,500 lb. of combustible material going to waste every day. A regiment was, therefore, self-supporting in this respect; its only additional requirement was about 60 lb. of sawdust to absorb the fluid. In the field one horse gave 8 lb. of litter a day, and this, when damp, was sufficient to burn off the faeces of four men.

Types of Incinerators.

There were many objections to the open types of incinerators; they were slow to start, extravagant in fuel, offensive, and liable to be put out by the rain, and to allow the contents to be disseminated by wind. A model was shown of an incinerator consisting of a square metal box with grid and a chimney. Both the box and the chimney were hinged, and could be folded flat and packed for carriage by a mule. The incinerator weighed 56 lb. and cost £1. If only used for damp material it was very useful; it was not substantial enough to stand fierce combustion. One of these appliances would dispose of the excreta of 250 men. Drawings of the Horsfall incinerator and Horsfall destructor were shown; also of the Meldrum incinerator, supplied for units of 4,000. Incinerators should be placed on low ground, so that the full loads of filth might be wheeled downhill; the buckets should swing from the lorries to prevent loss of material by jolting.

Disposal of Carcasses.

The amount of labour involved in burying an ox made it necessary to find some other method. Partial burial and partial incineration should be resorted to. The entrails should be buried, and then, if 40 lb. of dried hay were placed in the carcass and a quart of kerosene were thrown over the body, the carcass would become scorched and sterilized on the outside, and three weeks later would be quite free from offence. The process of disposal thereafter was one of slow oxidization.

Soakage Pits for Urine.

The two methods of dealing with urine, other than faecal urine, were by trenching and by soakage pits. To trenching there were many objections. With regard to the soakage method, the bacteriological question arose whether it was safe to throw into the subsoil urine which in some cases must be highly infective; even from highly infected urine, however, it was impossible to recover *B. typhosus* after four days, and in the subsoil the bacilli were probably disposed of by the saprophytic flora living at those depths. The soakage method would not be used in a cantonment, but where a camp was only occupied temporarily and the urine could not reach the wells, the method was presumed to be safe. A pit was sunk about four feet each way, a few stones thrown in, and funnels placed in the four corners, the broader ends extending above the pit at the height convenient to men of average stature. The pit was then filled with gravel. To keep away flies, lime or kerosene could be applied to the funnels, or a plug of grass soaked in kerosene and placed in them was effective. On suitable ground these soakage pits would dispose of an enormous quantity of urine. Two such pits were found sufficient to take the whole of the urine for fifteen months of 1,100 men without giving any trouble.

Sullage.

A greater quantity of water than three gallons a head a day should not be allowed, otherwise the problem of disposal was likely to become difficult; in temperate climates the problem was always sufficiently acute. The first essential was that the sullage should be wholly free from grease, otherwise pits became coated with an impervious layer. Major Lelean showed a model of a sanitary trap consisting of a tank divided into two by a partition. At the base of the partition was a sand filter. The sullage was admitted on one side of the partition, and, being rendered comparatively clear by passing through the sand filter into the second partition, could then be disposed of. The sand was renewed at intervals.

Sanitation in Billet Towns.

In emphasizing the importance of sanitary precautions in billet towns, Major Lelean gave a lively description of the primitive sewage disposal arrangements in the smaller French communities. The fact that the population apparently lived in health under such conditions tended to make one wonder whether sanitary precautions were important after all, but an examination of statistics of sickness incidence was convincing. There was three times as much enteric in Paris as in London, and throughout France similar relative proportions obtained. Probably a great deal of the illness amongst children in France thought to be scarlet fever was enteric in the mild form in which it occurred in children. The French had probably gained a considerable degree of immunity to scarlet fever, but the risk to British troops, accustomed at home to different sanitary conditions, was great, and it behoved medical officers to exercise the utmost care.

AMONG the victims of the Italian earthquakes on January 13th were Drs. Cortelli (Agapito), Corsetti, Ferrini (Paride), Gasparri (Cesare), Raynaldi (Alfredo), Sferra (Edoardo) of Avezzano; Dr. Cianciosa (Angelo) of Sora, and Dr. Polidoro of Collarmele.

THE legalization of abortion in the case of women who have become pregnant after violation by Germans has been seriously discussed in France. This solution of an odious situation has been opposed by representative members of the medical profession, amongst others by Professor Landouzy, Dean of the Faculty of Medicine of the University of Paris, on the ground that the principle has been firmly established that any interference with the course of pregnancy is justifiable only when the life of mother or child is endangered. A proposal made by M. Malvy to the Chamber of Deputies is favoured. It would authorize the mothers to abandon the child, openly or secretly, to the care of the State, and, in the case of a married woman, would sanction the repudiation of paternity by the husband. Such intruding infants (*intrus*) would be educated in State foundling institutions.

OFFICERS' INCOME TAX.

IN our issue of last week we drew attention to an Army Order requiring all claims to relief from income tax for the year ending March 31st, 1915, to be submitted at once, and stating that in cases where such claims have not been received when the accounts for the year are closed, the pay will be taxed in full at the highest rate—namely, 1s. 8d. in the £. In these days of high income tax rates the "relief to earned income" and other allowances very substantially affect the amount of tax payable, and the War Office instruction should therefore receive immediate attention at the hands of those whose pay is subject to deduction of tax by the military paymasters.

The preparation of a correct income tax return is in normal times a matter of some difficulty for many practitioners, and this difficulty is now increased for those practitioners who are serving as officers in the Royal Army Medical Corps or in other military capacities, not only owing to the break in the continuity of their earnings but also to the enactment last autumn of certain measures of relief which may be invoked by the claimant to mitigate the hardship that would otherwise arise from the operation of the three years' average basis of assessment of his civil earnings.

The War Office claim to relief consists of a classified statement of all the income of the claimant and his wife, the determination of the amount being necessary to ascertain the appropriate rate of tax deductible. The importance of this will be apparent from the following statement of the income tax rates now in force:

Earned Income:

Where the total income does not exceed	£1,000, 1s. in the £.
Where the total income does not exceed	£1,500, 1s. 2d. ,,
Where the total income does not exceed	£2,000, 1s. 4d ,,
Where the total income does not exceed	£2,500, 1s. 6⅔d. ,,
Where the total income does exceed	£2,500, 1s. 8d. ,,

Unearned Income:

Where the total income does not exceed	£300, 1s. 4d. ,,
Where the total income does not exceed	£500, 1s. 6⅔d. ,,
Where the total income does exceed	£500, 1s. 8d. ,,

The rates given above are those laid down in the Finance Act, 1914, and increased by one-third by the Finance Act, 1914 (Session 2).

It will, perhaps, be well to point out that the recipient of one of the War Office forms of claim may already have made a statement of total income in connexion with the earnings of his private practice, and that this declaration is presumably in the possession of the surveyor of taxes for the district in which the practice is located. With many, if not all, of the War Office forms a flyleaf is enclosed containing a draft statement to the effect that a claim has already been made for the year in the . . . . . district, from an address to be specified by the claimant. Where such a declaration can be made there is no necessity to complete the War Office statement of total income, but before leaving the matter to be dealt with on the basis of the original return, the officer will be well advised to consider his position with regard to the special relief referred to above. An illustration must here suffice for the explanation of this point.

We will suppose that Captain "A." was before August a practitioner whose average annual profits amounted to £700, and whose private unearned income was £200 a year. He made his return and claim to relief in due time, and was assessed in respect of his practice at £700 at 1s. in the £ = £35. His pay as captain for the period from August to April 5th, 1915, would amount, roughly, to £190. If his rate of taxation on that pay be determined solely by reference to his original return, the appropriate rate is apparently 1s. 2d., inasmuch as his total income computed on that basis exceeds £1,000—that is, £700 + £200 + £190 = £1090. In all probability this would be unfair, seeing that the income for the year ending April 5th, 1915, derivable from the practice may be presumed to have fallen short of the average, not only by reason of the employment of a salaried locumtenent, but also on account of a diminution in the gross earnings of the practice. It is precisely here that the operation of Section 13 of the Finance Act, 1914 (Session 2), assists the officer by enabling him to discard the average for this financial year, and base his liability to income tax—and therefore his statement of total income—on the actual year's profits. Reverting to the example taken, Captain A. would be well advised to complete the statement identifying his previous return, and to communicate with the surveyor concerned, giving him an estimate of his civil earnings for the year to April 5th, 1915—for example, £450—and intimating his intention of claiming relief under Section 13. A statement of receipts and expenses will no doubt ultimately be required, and it might be well, on forwarding such an intimation, to undertake to file a more detailed account as soon as possible. On the revised basis Captain A.'s total income would be £450 + £200 + £190, total £840, and he would therefore be entitled to the 1s. rate of tax on his earned income.

We now come to the case of an officer who has so far made no claim to relief. It should be remembered that Section 19 of the Finance Act, 1907, required a claim to "relief in respect of earned income" to be made before September 30th in the year for which the tax is charged, and that that provision is still operative so far as this requirement is concerned. There may therefore be some cases in which the assessors acting for the War Office will now refuse to entertain claims to the "earned" rates of duty. We apprehend, however, that there would be many cases in which such claims could not possibly have been made within the statutory time limit, and would now be accepted—as, for instance, where liability to income tax did not arise until after September 30th, as might happen in the case of a locumtenent or resident hospital surgeon whose military pay dates from October 1st or later, and whose assessable fees or salary were previously at a less annual rate than £160.

Further, it must be borne in mind that the above-mentioned relief is not the only form of reduction from the full income tax charge for which a statement of total income is required. There is the scale of abatements, varying from £160 where the total income does not exceed £400, to £70 where that amount does not exceed £700, and there is now for the first time the lower scale for "unearned incomes" previously quoted. Further, there are the allowances for life assurance premiums, and, where the total income does not exceed £500, the relief in respect of children. Consequently, even in those cases where a claim to the earned rate cannot be made, it may be advisable to complete the statement of total income and any other appropriate declaration, in order that the tax deducted from the pay may be subjected to the proper allowances.

Although the "earned income" relief must be claimed before September 30th—or, at least, an intimation made to the proper quarter before that date that such a claim will be made—the other claims referred to may be made at any time before April 5th, 1918; but if the claims are not made to the War Office authorities at once, the pay will be taxed by the paymaster "at 1s. 8d. in the pound in full," and any allowance thereafter will presumably be obtainable only by way of repayment through the authorities at Somerset House.

In completing the declaration some difficulty may be experienced in stating the amount of the income from military pay. The War Office assessors appear to regard ration money, servants' allowances, and field allowances as *not* being assessable to income tax, but this view is apparently not extended to allowances for special duty. On the other hand, in the case of consolidated pay, such as that of a temporary lieutenant R.A.M.C., income tax is assessed on the whole amount—namely, 24s. a day. The officials, however, are not bound by the amount declared on the officer's statement, and it may be presumed that any error occurring in this matter would not be permitted to affect the calculation of the amount of tax deducted, either to the officer's detriment or otherwise.

It should be clearly borne in mind throughout that the statements to be made are for the year ending on April 5th, 1915, and that each item of total income has to be calculated accordingly.

A BILL has, according to the *Medical Record*, been introduced into the Wisconsin Legislature providing that no educational institution of any kind which is supported in whole or in part by public money shall employ a teacher who smokes cigarettes, and that no such institution shall grant a diploma or certificate of education to any one who smokes cigarettes.

British Medical Journal.

SATURDAY, MARCH 20TH, 1915.

THE MEDICAL NEEDS OF THE ARMY.

THE appeal of the letter from Sir Alfred Keogh, the Director-General of Medical Services at the War Office, published last week (page 488), will arouse the medical profession to make still further efforts and sacrifices in response. The need, he says, both for home and foreign service is "acute; we want every qualified man who is physically fit and willing to serve"; and the need is specially for general practitioners, men under 40 to go overseas, and over that age for home service. That the profession, which, as Sir Alfred Keogh says, has already done so much, will continue to do everything possible to assist the responsible authorities to meet the national emergency is not doubtful. The War Office recognizes that the country must not be denuded of civil practitioners, and the question the profession has to face is how best it may respond as it would wish.

The difficulty is undoubtedly serious, and can be met satisfactorily only by close co-operation and consultation between the army authorities and the civil profession. Each must endeavour to understand the point of view of the other, and there must be give and take.

We have during the last few days received some letters making suggestions for the consideration of the War Office and criticizing some of its methods. The letter from Dr. Charles Buttar has been selected for publication (p. 527) because it seems to express succinctly much of what is passing in the minds of civilian practitioners, and because he is in a position to sign his name. He says most truly that our object, the object of all—the military authorities, the civilian profession, and the public—must be to conserve every ounce of medical service available. He contends that the best is not being done because the military authorities are not making sufficient use of the services of medical men in civil practice who could give part of their time to military work in their own district. This view is shared by a good many other medical men. It deserves the sympathetic consideration of the military authorities, and we believe that they can help to meet the emergency by allowing as much elasticity as the immediate requirements of the army permit. We are aware that in some areas they are using the part-time services of civil practitioners in the locality to give the necessary medical attendance to units in course of formation, but we believe the plan might be extended, and greater facilities might be given under the sanctioned system of exchanges to enable Territorial medical officers—especially those who by reason of age or other circumstances are not likely, so far as can be foreseen, to be employed abroad—to return to the places in which their civilian practices lie, where they can do good and most necessary military work in connexion, for instance, with recruiting stations, dépôts, and reserves.

It would be very well that this policy should be extended, but obviously the immediate need the War Office has to meet is the supply of battalion medical officers and the medical staffs of brigade and divisions for the forces which are going abroad. Lord Kitchener stated on Monday that two Territorial divisions—the North Midland Division and the 2nd London Division—are already with the British army in France; others, no doubt, will shortly follow, and the new armies will also be on the move. There is, we know, a feeling among some medical officers belonging to the Territorial Force and the new armies that the work they have to do is not enough to occupy more than a few hours a day, and that therefore their energies are being wasted. If their time is being wasted, we are disposed to ask whether it may not be because they have not fully appreciated the nature and extent of their duties to the soldiers under their medical care. To such we would commend the reports of the admirable course of lectures given in the University of London by Major Lelean, Assistant Professor of Hygiene, Royal Army Medical College, which are now being reported in our columns.

The regular army and the regular Royal Army Medical Corps are abroad. New armies are being formed, and for them an entirely new Army Medical Corps is required. A battalion medical officer who considers that he does his full duty to his battalion as a part of these armies by giving two hours a day to routine duties, is lamentably lacking in the understanding of what is expected from him. What about the lectures on sanitation which he should give at very frequent intervals? What is the state of efficiency of his own sanitary cadre? How many men has he inoculated, and what time has he spent in persuading men to undergo the process, and in combating the influence of the "antis"? What is the state of his chiropodist department, and what is the state of the feet of the men—the feet on which they will have to march to Berlin? What, also, is the state of these men's teeth? Is he preaching, in season and out of season, the necessity for cleanliness? Is he telling his men how to avoid vermin, or, if they become infested, how to rid themselves of the pests? Does he know every officer and man in the battalion, and his capabilities? Is he present at the gymnastic exercises, watching what the men can do, and looking out for those upon whom the strain is telling unduly? What care is he taking to see that the men's food, ablution, and conservancy arrangements are as they should be? Is he quite certain that his men who are billeted are living in such sanitary conditions as to ensure freedom from disease? And does he lecture to the men of the many unaccustomed dangers to health which we know will beset the troops on the Continent, teaching them how to meet, by taking proper precautions, the insanitary conditions they will there encounter?

The battalion medical officer is the most important individual in the medical organization. The duty of medicine in the army is to enable the army to keep in health to fight and win battles, and this duty is mainly accomplished through the battalion medical officers. What is successful army sanitation but the sum of the apparently inglorious work of the battalion medical officers? It is they who keep armies on their feet and preserve their health so as to maintain their activities in the field.

Some years ago a prominent politician called attention to what he called extravagance in army medical administration. He held that there were too many doctors, and this was his argument: "In 1898 there were (so many) doctors. There were (so many) sick in the hospitals, so many were invalided, and so

many died. Now there are 50 per cent. less sick, invaliding has almost ceased, the death-rate in the British army in India has fallen from 17 per 1,000 to 3 per 1,000, and there are *more* doctors than there were in 1898." The answer was: "Do you not see the causal connexion between these phenomena?"

In England, to-day, we have got together an enormous army; it is a healthy one, taking it all round. Is that a reason why regimental doctors should be sent about their business? No! Most battalion medical officers are working very hard—their camps are clean and well kept, they are propagating the gospel of sanitation amongst the officers and men, they have recognized that sanitation is part of the regimental economy, and by their personal influence have brought it to as high a state of efficiency as in the regular battalions. There is no glory attaching to this, except that which comes from the knowledge of work well done; it cannot be put on paper nor expressed in figures. But the result of such work as is proved by the good health of the regular army abroad was recognized in his speech last Monday by Lord Kitchener, who in this, as in so many of his other utterances, expressed the real sentiments of the country. Results as good with the Territorial and new armies will receive the same recognition.

The health of the new armies, when they go abroad, depends upon the battalion medical officers. We want to beat the Germans, and it is upon the battalion medical officers that we must rely for strong, healthy, well-cared-for troops with which to do it, and if they put their backs into it they can accomplish a very great deal to this end. An example of the efforts which some are putting forth is the fact that one division is inoculated, or was inoculated some little time before going out, up to 97 per cent. of its strength, and we have heard recently of one large unit in which the percentage was 100.

ANTENATAL HYGIENE.

PROFESSOR WHITRIDGE WILLIAMS wisely chose the subject of antenatal hygiene for the presidential address which he delivered last November at Boston before the American Association for the Study and Prevention of Infantile Mortality,[1] for, truth to tell, much spade work must be done before prenatal care can be made to bear good fruit in an increase in the number of living and healthy infants brought into the world, and the speaker's name and position served to emphasize the real importance of the matter.

The particular bit of spade work which Whitridge Williams undertook was a statistical study of 705 fetal deaths occurring in 10,000 consecutive admissions to the obstetrical department of the Johns Hopkins Hospital in Baltimore. This series contained 6,500 indoor and 3,500 outdoor cases, and the "fetal deaths" were all those occurring between the seventh month of pregnancy and full term as well as those in the first two weeks after delivery. Further, 4,600 out of the 10,000 mothers were coloured women. Two important—indeed, all-important—points in the investigation were that the placenta in every one of the 10,000 cases was carefully described and subjected to routine microscopic examination, and that autopsies were performed on most of the 705 dead infants. When, therefore, the causes of death are enumerated, it may be considered that they are no haphazard guessings at the truth, but are founded on serious scientific evidence. It may be noted in passing that Dr. J. W. Ballantyne, on this side of the Atlantic, has been for many years insisting that the description of a deformed or diseased fetus or newborn infant without that of its placenta is an incomplete and therefore unreliable observation, and that both he and Dr. Amand Routh[2] have emphasized the great value of routine examination of all afterbirths and products of abortions.

The results in the Baltimore cases are of supreme interest and importance. It was found, in the first place, that syphilis was far and away the most common etiological factor in the production of death, having an incidence of 26.4 per cent. It caused 186 of the 705 deaths; it was much more common among the blacks than among the whites (as 35 to 14 per cent.); and it was the direct cause of two-fifths of the deaths occurring among the premature infants. But that was not all. The microscopic examination of the placenta showed that 350 syphilitic children had been born of the 10,000 women, and that, therefore, in addition to the 186 dead infants referred to there were 164 still alive at the end of two weeks who were probably to be regarded as handicapped by the dead weight of syphilis. Possibly some of the dead and macerated fetuses also owed their antenatal demise to the same cause, although it was not demonstrable. These are very remarkable facts, and justify, if indeed justification were needed, the Royal Commission on Venereal Diseases, the Commission on the Falling Birth-rate, and other recent collective investigations of the same sort. Whilst the loss of antenatal and neonatal life thus revealed is appalling, there is one hopeful fact which emerges: syphilis is preventable, and even when it has been acquired, its ravages can to a large extent be limited and to some degree arrested by appropriate antisyphilitic treatment. Early diagnosis, however, is essential, and that, for the current pregnancy at least, is not always possible, although it ought, of course, to be so for the ensuing ones.

Perhaps the most startling result which comes from this investigation is that the second largest contingent of fetal deaths (as above defined) contains those due to "unknown causes." Eighteen per cent., or 127, of the 705 dead children had to be put into this group. This fact alone proves up to the hilt the contention that antenatal pathology must be studied with something approaching scientific thoroughness if the causes of death in viable children are to be discovered with certainty. It may be, as Whitridge Williams suggests, that, since fifty-three of this group of dead infants were macerated when they were born, syphilis again should be invoked; but the essentially important thing to remember is that information is lacking and has to be supplied before one can raise the veil that hangs over the cause of death in 18 per cent. of these Baltimore cases.

The remaining results coming from this research must be mentioned more briefly, but they are no less important, and are all worthy of deliberate study in detail. Fetal deaths due to dystocia numbered 124 (17.4 per cent.), and were more frequent in whites than in blacks; not a few of these catastrophes must surely be regarded as preventable. Seventy-nine deaths (11.2 per cent.) were due to "various causes," of which thirty were named, including such conditions as haemorrhagic diseases, bronchopneumonia, cord infection, hydramnios, status lymphaticus, etc. It is an intensely interesting fact, explain it how we may, that 14 deaths were due to haemorrhagic diseases and that 12 of these occurred in negro infants. Fifty deaths were ascribed to prematurity, neither syphilis,

[1] *Journal of the American Medical Association*, January 9th, 1915.

[2] BRITISH MEDICAL JOURNAL, April 25th, 1914, pp. 902, 915, 931.

toxaemia, nor any other cause being discoverable. Toxaemia was responsible for 46 deaths (6.5 per cent.), deformities (such as anencephalus, hydrocephalus, imperforate anus, and dropsy) for 24 deaths, inanition for 23, placenta praevia for 22, and accidental haemorrhage for 13.

Reference has already been made to the opportunities of lessening this great infantile mortality by preventing or by treating parental syphilis; but several of the other causes of death are open to therapeutic attack. Careful midwifery at the time of labour, but determined by examinations made before labour, may be looked to as a means of diminishing the fatalities due to dystocia; prematurity of birth may, in some cases at least, be prevented by the exercise of supervision over the expectant mother; toxaemia, too, offers an undoubted field for antenatal hygiene; and knowledge of the risks run in pregnancy and of the danger signals which may occur then is likely to prevent some of the fetal deaths due to such states as placenta praevia and premature separation of the afterbirth. In a sentence, the possibilities of a prenatal care which leads on to hygiene in pregnancy are by no means few or unpromising.

Professor Whitridge Williams lays much stress upon the development of dispensary work at maternity hospitals among the pregnant women who will in a few weeks or months be attended at their labours from or in hospitals. He would render such work more effective by sending out from the dispensary prenatal nurses, women well trained in the normal progress and in the abnormal happenings of pregnancy, to keep in touch with and give advice to the expectant mothers. In other words, he would trust to what has been termed in Britain "the prematernity out-patient department"[3] in association with a pregnancy dispensary at the hospital. It would be well, however, and indeed it seems to be absolutely necessary for real success, to add to these means the establishment of a prematernity ward in the hospital, such as was opened in Edinburgh some years ago.

THE PRICE OF IODINE AND ITS PREPARATIONS.

As a considerable number of drugs have increased enormously in price in consequence of the effects of the war on both demand and supply, it is not surprising that any high price demanded for a drug should be supposed by some to be a consequence of the state of war. This is not so, however, in all cases, and iodine and its preparations form one of the exceptions. The causes of the present high price of these substances, however, are perhaps of sufficient interest to be worth a brief description. The original chief source of iodine was kelp, or the ash of certain seaweeds, and production from this material has never entirely ceased. Kelp was not originally worked for the sake of iodine alone or even chiefly; in the early days of the industry it was the principal source of soda-ash required in glass making and for many other purposes. The collection of the seaweed and its burning brought a return of about 35s. to 40s. a ton to the actual workers engaged in its production, and as the kelp then sold at about £20 a ton, the profit to the landowners who marketed it was enormous, and very large incomes were made. Other and far more abundant sources of soda, however, made its production from kelp commercially impossible, but as the latter contained a considerable quantity of potassium salts, which realized a comparatively high price, the industry still paid. The discovery of immense deposits of potassium chloride at Stassfurt, in Germany, in turn brought the price of potassium salts down to a very low point, and no other source of potash has been able to hold its own against the Stassfurt mines, with the result incidentally that potash has become virtually a German monopoly, and the development of new sources of potassium compounds is an urgent need of the moment. The amount of iodine obtained from kelp was never very large, but from about 1877 a very formidable competitor has been in the field in the form of the by-products of Chile saltpetre. The annual output of this mineral is enormous, and though it only contains an average of about 0.02 per cent. of iodine, this can be worked up at a comparatively low cost. If all the factories engaged in the production of sodium nitrate were to turn out all the iodine which is the by-product of their main commodity, the amount would be well over 5,000 tons a year. As the world's consumption of iodine is only about 500 tons a year the supply from Chile saltpetre is voluntarily curtailed, and, in order that makers may be content thus to restrict their output, a syndicate of all the principal producers was formed to control the price of iodine, and to maintain it at an artificially high level. The price being thus kept high, the less remunerative sources of production of iodine have been enabled in many cases to keep going, and a certain amount is still produced from kelp in Scotland, France, Norway, and Japan, and, in addition, there is a small production of the article in the Japanese East Indies from certain mineral waters very rich in magnesium iodide; about 24 tons of iodine was produced in 1909 from this source. Although Japan has entered the field of iodine production comparatively recently, the cheapness of labour there has favoured a considerable output, and iodine preparations of Japanese origin have for some years been obtainable on the market, usually at slightly under the prices fixed by the convention. In spite of these other sources, however, the output of iodine from the South American nitrate factories is about four-fifths of the world's supply. In 1912 it was rumoured that a disruption of the syndicate was likely, and a substantial drop in the price of iodine was expected; for a little time, however, nothing happened, and then the price was twice raised by substantial amounts at short intervals, the total increase amounting to 50 per cent. of the previous price. It was surmised that the desire of some makers to break away from the convention had been overcome by thus greatly increasing the profit of their present output, but no reason for the increases was given, and nothing can be authoritatively stated in regard to it. The price, after these increases, for large quantities of iodine was 9d. an ounce; it is believed that a fair profit would be made if the selling price were 2d. an ounce, and it can readily be seen, therefore, that the profits must be very large. The shortage of potassium salts, already alluded to, together with the high price of iodine, has led to hopes being entertained that the kelp industry of Ireland and Scotland might again become prosperous. A recent report of the Board of Agriculture for Scotland showed that during the five years 1907–11 the output was two and a half times as much as that of the ten years 1884–93; but, as regards Ireland, in reply to a question recently in the House of Commons, Mr. T. W. Russell stated that he had no reason to believe there had been any recent new development in regard to this industry. As the above facts show, the syndicate is in a position at any time, if desired, to crush competition in regard to iodine from other sources, and it is therefore hardly to be expected that there will be any considerable development in the kelp industry, especially as there are several other sources of potassium compounds available.

BURSTING GOLF BALLS.

THE report published in this issue of severe injury to the eye of a child by the contents of a golf ball draws attention to the very real risk which curious-minded people incur when they endeavour to investigate the

[3] BRITISH MEDICAL JOURNAL, September 27th, 1913, p. 825.

contents of certain makes of ball. Accidents of a similar nature have for some years past been attracting so much notice in America that the medical profession in that country has taken very energetic action to deal with the dangers involved. The different golf associations have been notified of the dangers run by those who attempt to open golf balls, and notices have been put up in the halls of golf clubs warning players against the practice. In addition, at least one State has moved in the direction of prohibiting the sale of balls of a dangerous make. Even a very limited inquiry makes it evident that, although the number of recorded cases of serious eye injuries inflicted by the contents of golf balls in this country is small, the danger here is none the less real. It is not that such accidents have not occurred, but that they have not hitherto been placed on record. Both the surgeons who are responsible for the notes of the case we publish have been able to hear of other accidents of the same kind. In the circumstances, it will be of interest to give a short description of the method of making the dangerous type of golf ball. All golf balls are made of rubber tape wound, under considerable tension, by machinery, round a central core. This core may be of solid rubber, or may consist of a rubber bag containing either air or some liquid or semi-liquid substance. The neck of the little rubber bag is tied with string. The object of the liquid core is to give greater elasticity and consequently higher bounce. The air cores were said to make the ball too light, and in consequence fluid cores came in. At first water was used, but subsequently various solutions were substituted for that harmless liquid. All these substitutes have a much higher specific gravity than water, and most of them appear to be powerfully alkaline. Apparently a coarse soft soap has been the favourite fluid for core-filling. If the many yards of elastic are patiently wound off till the small rubber bag is reached, the curious golfer runs no risk, but if he splits the ball with a knife, gradually removing the outer layers, until at last his blade finds its way suddenly through the last layers into the core, the result is a violent and explosive escape of the core contents. In the case now recorded, the victim, a child of 7, was seated on the opposite side of the table, about a yard from the friend who was opening the ball. In the only other English case of which we can find a record—that reported by Mr. Jessop last year—the force of the explosion was such as to drive the contents of the ball against the ceiling of a room 10 ft. high. There can be little doubt that the force with which the irritating fluid is expelled is an important factor in the severity of the damage inflicted. It is a very unfortunate fact that not a few of the injuries have befallen unsuspecting onlookers, and that some at least of these have been young children. This is all the more serious, since sight has been lost, or practically lost, in quite a large percentage of the cases which have been placed on record. If it could be shown that the fluid core balls were far superior to all others, it would still be a question whether, in view of the dangers we have pointed out, it is justifiable to allow them still to be manufactured and supplied. It is, however, far from being the case that their superiority is beyond dispute, and good golfers are to be found who maintain that the air and the solid core balls are fully as good as the fluid core balls in play. However that may be, one thing is beyond dispute, namely, that an effort should be made by medical men to call attention as widely as possible to the grave risks incurred in attempting to investigate the contents of golf balls. If it is for any reason considered desirable to examine such contents, the rubber should be methodically unwound to the very end. In any case it is a sound and obvious precaution to work with a sheet of glass between the ball under examination and the eyes. If the material is thrown into the eyes, no time should be lost in washing it out at once with the nearest water available. The patient should then be taken immediately to a surgeon, with the view to the question of a farther lavage under an anaesthetic being carried out.

THE PRESENT DUTY OF LOCAL AUTHORITIES.

THE Local Government Board has issued to local authorities a circular, dated March 11th, discussing the duty of such authorities in the present emergency with regard to facilitating the enlistment of those of their employees who are eligible for military service. While avoiding the suggestion that the normal staffs should be depleted to such a degree that the services for which the local authorities are responsible could no longer be carried on with efficiency, the circular states that at a time when the vital interests of the country imperatively require that as many fit men as possible should be added to the army the Government is compelled to urge that only men who are indispensable for the work of the local authority should be refused permission. The places of men to whom permission is granted can, it is suggested, be taken by others not eligible for the army, or sometimes by women. The circular is accompanied by a reprint of a memorandum issued by the Local Government Board on August 21st, which has, perhaps, not received all the attention it deserves. The memorandum, which is addressed to local authorities, including Poor Law authorities, begins by recalling the answer given in the House of Commons by the President of the Board, in which he said that "it was competent to any local authority to grant leave of absence to persons in their employment who have been called out for active service as members of the Army Reserve or Territorial Forces, and to make reasonable payment in respect of their wages or salaries to persons authorized by them to receive the money." The Board then expresses the opinion that local authorities may properly grant leave of absence to officers in their employ who join His Majesty's forces with their permission, and may properly make such allowances in respect of salary as they think reasonable in particular circumstances, and may properly pay temporary substitutes for officers who are summoned or volunteer with their permission for naval or military services. The Treasury regulations and instructions of August 11th and 20th dealing with the case of civil servants on naval or military service provide for the payment to them or their representatives, during their absence from civil duty, of their full civil pay, less a deduction of army or navy pay and allowances. For a commissioned officer the deduction would be equal to his active service pay, allowances being neglected. The civil posts of these officers will not be permanently filled during their absence on naval or military service, and that service will count for civil pension and for increments of civil salary.

"PUTTEES" AND "FROST-BITE."

THE word *patti* is the ordinary Hindustani (Hindi) term for a bandage of any kind, and has now become naturalized in English under the form *puttees* (plural) to denote the woollen bandages worn round the legs with some forms of uniform. Puttees were first worn in India, and came into general use with uniform there in the later Seventies, at the time of the second Afghan war, but had probably been used by sportsmen in India long before that time. They are now seen all over England, worn by troops in khaki uniform, and are also used by the Expeditionary Force in France. They were also common wear among those who in happier times used to indulge in winter sports in Switzerland, and possibly this is the reason why many people suppose they were invented for walking in snow, whereas they were used in parts of India where snow is never seen. Like most things on this earth, puttees have both advantages and disadvantages. They are warm, and protect the legs from knee to ankle against rain, thorns, and snakebite, an advantage in India more obvious than in Europe. They give no protection against water when the

wearer has to wade through it, and when soaked they are very heavy; they are difficult to adjust neatly and properly, especially on first beginning to use them; and if applied too tightly they cause cramp in the legs and interfere with walking; if too loose, they are apt to come unrolled, and cause much delay in readjustment. We have seen a pattern made by Thomas and Sons, Brook Street, W., which diminishes the difficulty of putting the puttees on. Each is so shaped that it can be put on by making three full turns; when properly adjusted it looks neat. The risk of undue or uneven pressure is undoubtedly diminished. It has eyelet holes at the lower end through which the bootlaces are passed so that they are easily secured at the ankle, and if somebody would devise a better way of fixing the puttee at the top than by a long tape wound round the leg just below the knee a further improvement would be made. The most important consideration at the present moment is whether the use of puttees originates or aggravates the affection which has been so frequent a cause of disability among our troops at the front, and has been variously termed "frost-bite," "wet-bite," and "trench-bite." It certainly seems probable that the interference with circulation in the lower limbs caused by tight puttees would cause, or at least increase, the liability to this affection. Mr. Morley Roberts tells us that when he first used them in the mountains he sometimes caused himself great fatigue before he realized that the real cause was that he had wrapped the puttees so tightly as to hinder the circulation, and he has called our attention to the following interesting observation by Sir Martin Conway in *The Alps from End to End*: "An up-hill turn followed our breakfast halt. We trudged over snow slopes and a zigzag path to the desolate Col de Cochons or de Berard, which divides the Belvedere from the Buet. No walk was ever so toilsome to me. I felt as on the first day out from London. It was only late in the afternoon that a cramp revealed my *pattis* as the cause. They were bound too tightly round my legs. Be warned, therefore, ye who take to *pattis!* Wind them tight round the ankle, but looser round the calf. If, when going up-hill, you feel an inclination to take unusually long steps and a dislike to any position that makes your toes strain up towards your knee, and, if, withal, your legs are like lead and your heart beats feebly and fluttery within you, look to your *pattis!* Assuredly they are ill put on."

EDUCATION OF THE FEEBLE-MINDED.

THE fiftieth annual report of the Royal Albert Institution, Lancaster, for the feeble-minded of the northern counties, contains a brief retrospect of the history of the institution since its inception in November, 1864, when a generous donation of £2,000 from Mr. James Brunton rendered it possible for a few Lancashire gentlemen to launch a scheme for a comprehensive establishment, such as now exists, for all grades of mental defectives. Under the wise guidance of Dr. E. Denis de Vitré, the first chairman of its Central Committee, and of his successors, Lord Winmarleigh, Sir John Hibbert, the Earl of Lathom, and Lord Richard Cavendish (assisted by two able secretaries, Messrs. Diggens and Keir), the institution has now attained a financial position almost unique amongst unendowed charities. In 1914 it possessed, free from incumbrance, an estate of 216 acres, accommodated 696 patients, and had an income on maintenance account of £28,204 10s. 2d., with £5,697 15s. 11d. to the credit of its sustentation fund. Successive extensions have provided a detached infirmary, industrial schools and workshops, the Storey Home for Elder Girls, the Farm Colony, and cottages for the staff, some of these having been erected by individual munificence. The memory of the founder is preserved in the designation of a mansion used for patients of higher social grade, and known as "Brunton House." With these material advantages the arrangements for the care and training of the inmates have made constant progress under the direction of three successive medical superintendents—Drs. G. E. Shuttleworth, Telford-Smith, and Archibald Douglas. It appears from the report of the last named that during the twelve months ending June, 1914, the number of patients admitted was 101; 65 were discharged and 13 died; the number resident in the institution on June 30th was 729. The percentage of deaths, calculated on the average number resident (696) was 1.87; of these, 7 were from tuberculous disease. Of the 65 cases discharged, 24 were unimproved, and the remaining 41 improved in greater or less degree. While the desirability of permanent care for the majority of the inmates has always been kept in mind and has been provided so far as means have been available, it is interesting to note that some of those discharged are earning their livelihood by following trades acquired under training. Thus, a discharged lad is now earning 37s. a week in a Yorkshire bakery; another is stated to have joined the army; another is earning 30s. a week at dye works. The committee are willing to co-operate with boards of guardians and other local authorities in supplying accommodation for those needing it under the provisions of the Mental Deficiency Act, 1913, and also with education committees in meeting the extended requirements of the Education Act (Defective and Epileptic Children) passed in 1914. Education and industrial training (so far as practicable) have from the first been prominent features of the institution's work, and the experience gained cannot fail to be of much service to local authorities. It is stated that 3,433 patients have been received since the opening of the institution, of whom 82 per cent. have shown evidence of noticeable improvement, and 10 per cent. have been rendered self-supporting. Such results justify the encomiums of the Visiting Commissioners as to the continued excellent work of the institution.

"BACK TO LISTER."

THIS was the title—suggested by Sir James Crichton-Browne—of the discourse which Sir Rickman Godlee delivered at the Royal Institution on March 12th. Dealing first with the historic side of the subject, the lecturer said that Pasteur's work presented Lister with two great fundamental facts: that putrefaction is caused by germs which can be destroyed by heat and chemicals, and separated by filtration, and that germs can be carried by the dust in the air. Stated in its simplest terms, the problem seemed to be to kill the germs which might have gained access to the wound before it came under treatment, and to prevent the air from carrying in others afterwards. Naturally enough Lister selected chemical antiseptics, as more convenient than heat or filtration. Carbolic acid—at first undiluted—was used, and the results were strikingly good in spite of a certain amount of superficial sloughing. Lister paid a great deal of attention to the possibility of infection carried by the air; he did not at first recognize that precautions with regard to other sources of infection were far more important. This concern as to aërial infection led to his use of the carbolic spray, filling a small room with pungent vapour, to the great discomfort of all concerned. In time, however, Lister came to see that infection from the air was a negligible quantity, and gave up the use of the spray. When, after Metchnikoff's discoveries in phagocytosis, the lesson had been learnt that every surgical operation, every surgical dressing, is, in fact, a complicated bacteriological experiment, it came to be realized that the germs on the skin of the patient, the dirt on the hands of the surgeon, the unpurified sponge, the dried clot on a badly-cleaned instrument, were the submarines and dreadnoughts of infection and that aërial attacks could be disregarded. As this came to be appreciated it was said that Lister's teaching was obsolete and must be replaced by a newer gospel. Aseptic

surgery thus came into favour, though how far it differed in principle from Lister's methods was an important question. Aseptic surgeons used the most potent of all antiseptics—heat. They boiled overalls, towels, dressings, bandages, and instruments, and used boiled water and normal salt solution. He was not so ignorant or bigoted as to suggest that so-called aseptic surgery was a bad way of treating wounds, but he maintained—and here he was repeating what Lister often said—that it was a troublesome and difficult process, practically beyond the reach of all except hospital surgeons; that it was misleading to set it up in opposition to the antiseptic system, seeing that most of its advocates used chemical antiseptics for one purpose or another, and all employed heat with great freedom; further, infection of the skin and consequent later suppuration was more likely to occur than if Lister's methods were followed. Lister's plan of using a weak antiseptic, applied to the wound itself, could be carried out in the humblest cottage; the assistants—busy country doctors or nurses—had not to be always on the *qui vive* lest their merely aseptic garments should touch some unpurified thing and convey defilement to the wound. Sir Rickman Godlee gave it as his convinced opinion that as regards suppuration the standard amongst aseptic surgeons was lower than Lister's, whose followers had not only watched with regret what they considered a retrograde step in civil practice but feared that a war would bring its weak points into relief. He agreed with Sir Watson Cheyne in advocating the application to dirt-infected wounds of Lister's original method of purification by means of undiluted carbolic acid. He did not urge this in civil practice, but he believed the only chance of destroying the organisms of tetanus and gas gangrene, and the best way of dealing with streptococci, was to use the most potent and safest antiseptic at the disposal of the surgeon. Dealing with the criticism that the use of undiluted carbolic acid caused sloughing, Sir Rickman Godlee said that it was so slight in degree as to be unimportant. Neither did he think undue stress should be laid on the suggestion that because some germs would have escaped into the circulation it was therefore useless to try to make the wound aseptic. These germs would be dealt with by the phagocytes. He urged that the present war was one of the strongest arguments for rallying to the cry of "Back to Lister."

MOBILE BACTERIOLOGICAL LABORATORY FOR THE WELSH ARMY CORPS.

The Mobile Bacteriological Laboratory presented to the Welsh Army Corps by Mrs. Lynn Thomas was formally handed over to the Executive Committee of the corps on March 17th. Mr. Lynn Thomas, in addressing the committee, referred to Lord Kitchener's high praise of the preventive work of the Royal Army Medical Corps, and said that his own interest in the preventive side of military medical work dated from his experience during the South African war. The scientific advance that had been achieved in preventive medicine was illustrated by the fact that whereas in that campaign there were tens of thousands of cases of preventable diseases, in the eight months of this there had been only a few hundred. Comment could add nothing to the significance of such figures. Early diagnosis was essential in infectious disease, but was only possible through bacteriological examination on the spot. The term "treatment" as applied to military affairs meant a great deal more than prescribing for the infected individual. It meant the detection of the infection in contacts and carriers. By this means the small stream of infection was arrested and not permitted to grow into a flood. The organization of the Royal Army Medical Corps had made extraordinary progress since the South African war through the application of scientific principles and methods to the prevention of infectious disease in the army. Health was the keynote of the efficiency of an army in the field. He believed that the mobile laboratory was essential to the complete efficiency of the armamentarium of military preventive medicine; the work it would do would not be a stitch in time to save nine, but to save ninety-nine. Major-General Sir Ivor Herbert, Bt., C.B., in accepting the gift, said that it marked a stage in the evolution of a national army for Wales. The advance in the scientific means for the prevention of disease in armies was a matter of extraordinary interest and profound significance; he congratulated Wales on being in the forefront in this work. He desired to convey to Mrs. Lynn Thomas the thanks of the Committee for providing the Welsh army with an essential part of its organization for the preservation of the health and fighting capacity of the soldiers. Lieutenant-General Sir W. H. Mackinnon, G.O.C. Western Command, in seconding the vote of thanks, expressed the deep appreciation of the military authorities and the satisfaction with which they received so valuable an addition to their organization. Afterwards the mobile laboratory was inspected by Mr. Lloyd George, who is the "father" of the Welsh Army Corps, and has always shown the keenest interest in its welfare. He fully recognized the value of the work that could be done by the laboratory, which carries equipment for six months, and expressed admiration for the ingenuity with which the car had been fitted up. He expressed his gratification that this most modern scientific method of keeping the soldier efficient had been provided for the Welsh Army Corps at a stage which would enable it to be used during the period of the Corps' training for the arduous task before it.

EMERGENCY MEDICAL ORGANIZATION IN A LARGE CITY.

A Dundee Emergency Medical Service was established to secure an equal distribution of the work of practitioners who were absent on military duty amongt those who were left. A central office was set up, with two telephones and a day and night staff of clerks. All messages are received at the office and distributed by the clerks to the practitioners in rotation. Central consulting-rooms were opened, and the practitioners attend by rota. The Royal Infirmary kindly gave the necessary accommodation for both office and consulting-rooms. During last quarter the number of houses visited was 3,720, and the total number of visits made 9,362. About 40 per cent. of the visits are to private patients. The total consultations numbered 11,567, the number of medical hours of attendance being 728. Monday and Thursday are the busiest evenings, and then the number of doctors in attendance is larger. The scheme is financed, as in Birmingham, by 50 per cent. of the panel credits of absent panel doctors, and absent non-panel men pay 50 per cent. of the amounts of the accounts incurred by their patients. In several cases doctors who were ill had their work done through the office, a guinea a day being charged. This has been a very valuable provision. The amount available for distribution among the doctors after working expenses were paid was over £800, and allowed payment at a rate of almost 7s. 6d. an hour. Six visits were taken as the equivalent of an hour's work. In addition, attendance was arranged for 64 maternity cases. The clerks send out record cards for cases visited, and keep those for the consultations. For the period August to December 4,350 cards were sent to the Commissioners. The card used is the ordinary record card, with a large E printed in the corner; for private cases a pink card is used. On the whole the service has worked smoothly and given satisfaction. Visitors both from the Insurance Committee and the Commission have attended. The patients' chief difficulty is the waiting involved by the large attendance at the consulting-rooms. The clerks' difficulty is due to doctors not returning cards after completing attendance.

HANS SLOANE AND THE CADOGAN ESTATE.

IT may not be generally known that the origin of the Chelsea estate which was so greatly developed by the late Earl Cadogan, was the purchase by Sir Hans Sloane of Chelsea Manor in 1712. On retiring from practice as a physician in 1741 he settled there. He was an Ulsterman, who became the leading London doctor of his day. He was born at Killyleagh, co. Down, in 1660, and practised during the reign of six sovereigns—Charles II, James II, William III, Anne, George I, and George II—and was physician to three of them—Anne, George I, and George II. He was president at the same time of the Royal College of Physicians and of the Royal Society. He gathered together an immense collection of objects illustrating natural history, a library of 50,000 volumes, and some 3,000 manuscripts. Among them is the earliest work in the English language on obstetrics, by an unknown author of the fifteenth century; according to Sir John Byers, it is older than the first English edition of *The Byrth of Mankynde*, which appeared in 1540. Sloane's collections formed the nucleus of the British Museum. In 1721 he founded for the Society of Apothecaries the Botanic Garden at Chelsea. He died in 1753 in the ninety-third year of his age. His Chelsea property passed into the Cadogan family by the marriage of his third daughter Elizabeth with Colonel Charles Cadogan, afterwards second Baron Cadogan. Their son, whose name was Charles Sloane, became the third Baron, and he was created Viscount Chelsea and Earl Cadogan, and he was succeeded by his son, Charles Henry Sloane, the second Earl. The late peer was the fifth Earl. Sloane purchased the property from William Cheyne, Viscount Newhaven, whose name is commemorated in Cheyne Walk, while Sloane's association with Chelsea is perpetuated in Sloane Street, Sloane Square, Hans Place and Hans Road.

THE HOME TREATMENT OF TUBERCULOSIS.

THE common agreement of all civilized peoples as to the best methods of combating the spread of tuberculosis has not been proportionately met by common sense in the application of these methods. The recognized source of infection—the advanced case—is still allowed to mix freely with his fellows, and no efficient penalty attaches to free spitting in public thoroughfares. The individual consumptive is taken from unhealthy surroundings for a while, but allowed to return to them in a few months. The trouble and expense of his treatment is too often wasted, and the hygienic lessons that he may have learnt are soon forgotten. If, therefore, it be agreed that, in the words of the exhaustive report of the Charity Organization Society, it is in the home only that the disease can be effectively attacked, it follows that the efforts of dispensary and other authorities should be primarily directed to the conversion of the home into a sanatorium, not only for the consumptive members of the family but for all possible contacts in the same house. This view finds strong expression in the third Annual Report of the Tuberculosis Department of the Birmingham General Dispensary, issued at the close of December, 1914. Experience in that city has shown that only a small proportion of the cases dealt with have had to be transferred to sanatoriums. The object of the health visitors has been to gain the confidence of the infected family, and by degrees to induce them to adopt hygienic rules of domestic management until the home has indeed become a sanatorium in itself. It is pointed out that when such a stage is reached the services of a nurse at £2 a week will suffice to maintain the standard in fifty such homes. Even open-air treatment has been effectively carried out by simple means in courtyards in the midst of the crowded city. The popular idea that hygienic life can only be enforced in special establishments is responsible for much delay and disappointment. A name is entered on a "waiting list," and valuable time is lost. The energetic policy of home education is warmly to be commended, but it calls for much tact, sympathy, and perseverance on the part of those who undertake it. Other means of dealing with consumption are always available; but the dictates of common sense would seem to point unmistakably to the home as the only field for effective victory over the spread of the disease.

Medical Notes in Parliament.

The War.

Medical Examination Rooms in Hut Encampments.

MR. WALTER GUINNESS asked the Under Secretary of State for War whether in many of the new hut encampments there was no accommodation for keeping medical stores and instruments or for the officers in medical charge to see the sick, who in many cases had to walk considerable distances in consequence; and whether steps would be taken to supply huts for this purpose. Mr. Tennant said that at the larger hutted camps there were hut hospitals with suitable accommodation for examining the sick and keeping medical stores. At some others medical examination rooms had been specially built, and generally where the medical authorities had asked for these to be provided they had been built. In some camps where special huts had not been built for this purpose and where the troops were in occupation it was possible to arrange for seeing the sick in some existing huts which were to spare. If it was found that spare huts were not available, medical inspection rooms could be built, as in the cases above alluded to.

Soldiers Incapacitated while Training.

In reply to Sir John Lonsdale, who asked what provision would be made for men in the new armies who became partially or wholly incapacitated on account of illness or injuries received while undergoing training, Mr. Baker said that they were entitled to the full benefits of the regulations in these matters, like other regular soldiers.

Asylums Staffs.

Mr. C. Duncan asked the Home Secretary to state the position of the staffs of those asylums taken over by the military authorities; whether the Government proposed to utilize the services of the existing staffs; whether their continuity of service for the purposes of superannuation would be safeguarded; and whether their pay and prospects would remain not less favourable than those at present enjoyed in the services of the local authorities concerned. Mr. McKenna said that the answer to all the points in the question was in the affirmative. As the asylums would during their use as military hospitals continue to be, for legal purposes, asylums, and the officers would remain in the service and pay of the asylum authority, the Asylum Officers Superannuation Act, 1909, would continue to apply to the officers, and their service for pension purposes would not be broken.

Consumption of Intoxicants.

Mr. Chancellor asked what quantity of rum had been supplied to the troops at the front, the total price paid for it, and the names of the firms from whom it had been purchased. Mr. Baker replied that the total quantity sent overseas was 509,079 gallons. The purchases were made through the Government brokers. Mr. Chancellor would be informed as to the cost as soon as it could be calculated. In reply to a further question, Mr. Tennant said that, as he had repeatedly stated, rum was issued only to those who desired it and on recommendation of medical officers. No alternative was provided.

Ambulance Men.—Mr. Bowerman asked the Under Secretary of State for War if he was aware that, in consequence of the closing of one of the base hospitals in France, certain ambulance men who signed on for the duration of the war, and who had hitherto been paid at the rate of 4s. a day, had had their engagements terminated at a week's notice, and upon their return to London were informed that they could sign on with either the Military Home Hospital Reserve or the Royal Army Medical Corps at the rate of pay of 1s. 2d. a day; and whether, as the men were all certified ambulance men, he would

consider the propriety of continuing to pay them at the rate of 4s. per day. Mr. Tennant said that none of the men enlisted into the Royal Army Medical Corps under the terms of special Army Order of August 4th, 1914, at a rate of 4s. a day had been discharged on a week's notice. If the reference was to men employed in one of the voluntary hospitals, the facts were that these men were not enlisted, but were engaged on a purely civil contract, and paid by the voluntary hospitals.

Antityphoid Inoculation.—In reply to Mr. Jowett, the Financial Secretary to the War Office said that the cost in the laboratory of the Royal Army Medical College of the vaccine used in the army was estimated to be 1½d. per double dose per man. Since the outbreak of the war the inoculation department of St. Mary's Hospital and the Lister Institute had provided a large quantity of this vaccine at cost price, as the output from the College was insufficient to supply the increased number of troops. No fees or other remuneration beyond their salaries were paid to army medical officers for inoculation against typhoid.

Housing and Town Planning Act.—In reply to Mr. Outhwaite, Mr. Herbert Samuel said that the number of town planning schemes made by local authorities and finally approved by the Board was four; three other schemes had been made by local authorities and submitted to the Board for approval, and the Board had authorized ninety-one other schemes to be prepared. It might be roughly estimated that the area of land comprised in town planning schemes approved or in contemplation was equal to about half the area of land already built upon in England and Wales. The Board had no information with respect to the number of houses built or to be built in connexion with these schemes. The schemes did not require the erection of houses, but limited the number of houses to be erected on particular areas. It rested with the owners of the land within the area of the schemes to decide when building should take place, and, subject to the restrictions referred to, what number of houses should be erected.

Measles.—In reply to Mr. Swift, the President of the Local Government Board said that, in view of the prevalence of measles and the mortality from the disease, the issue of a General Order on the lines suggested in the latest report of the medical officer to the Board was now under consideration.

The Supply of Opium.—In reply to Sir J. D. Rees, the Under Secretary of State for India said that at present the market for opium for medicinal purposes in this country and the United States was well supplied, and prices were tending to fall. Opium for these purposes had hitherto been drawn from the Levant or from Persia, and the supply was quite independent of the Indian Government's opium policy.

University Finance.—On Monday, March 8th, 1915, the Universities and Colleges (Emergency Powers) Bill, which was referred to recently in our notes, passed through the Committee and third reading stages in the House of Commons.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

AT a meeting of the Executive Committee, held at the offices of the British Medical Association on March 11th, a circular setting out the objects and activities of the fund was approved for issue. A report received through Mr. Herbert Hoover of a meeting of a society of doctors and pharmacists in Brussels—Aide et Protection aux Médecins et Pharmaciens Belges—which represents the society from whom the appeal to start the fund was originally received, showed that it was doing good work in Belgium by succouring doctors and pharmacists in their need. The society acknowledged the receipt of the fifty cases of medical material sent by the fund a short time ago.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last. In this list certain local funds and the Scottish and Irish Funds are not included.

Seventeenth List.

	£	s.	d.
Mr. A. A. Lipscomb ...	0	10	6
Mr. Pickering	1	1	0
Dr. J. V. C. Denning ...	1	1	0
Captain C. M. Finney, R.A.M.C.	1	1	0
Dr. R. Douglas Dobie ...	2	2	0
Dr. M. A. Collins ...	1	1	0
Lanarkshire Division, B.M.A. (per Mr. Hugh Miller, Hon. Sec.) ...	19	11	0
Mr. Leslie Paton ...	3	3	0
Dr. H. Symonds ...	2	2	0
Dr. J. H. Stowers ...	1	1	0
Chichester and Worthing Division, B.M.A. (per Dr. Morton Palmer, Hon. Sec.), second donation—			
Dr. F. Hind	2	2	0
Mr. and Mrs. Dimphie ...	5	0	0
Huddersfield Medical Society (per Dr. H. G. Tansley, Hon. Sec.) ...	10	10	0
Dr. Hugh M. Raven ...	1	1	0
Mr. A. Hanson	0	10	6
Messrs. Wilcox, Joseau, and Co.	10	0	0
An Essex Pharmacist ...	1	1	0
Mr. E. Brown	0	10	6
Mr. F. H. Hendry ...	0	12	3
Mr. P. Hogley	0	4	0
Mr. R. Hall	1	1	0
Gateshead Chemists' Association, collected by (per Mr. A. D. Wyllie)—			
Mr. W. W. Gale ...	0	10	6
Mr. R Spink	0	10	6
Mr. G. H. Martin ...	0	10	6
Mr. A. D. Wyllie ...	0	10	6
Mr. R. Elliott... ...	0	10	0
Mr. J. Manners ...	0	5	0
Mr. H. S. Davison ...	0	5	0
Mr. C. E. Akeroyd ...	0	5	0
Mr. H. N. Popham ...	0	5	0
Mr. R. Glendinning ...	0	5	0
Mr. W. Moffatt ...	0	5	0
Mr. L. Dunn	0	5	0
Mr. E. Thompson ...	0	5	0
Mr. G. T. Hogg ...	0	5	0
Mr. Robert Gardner ...	0	5	0
Mr. Robby Gardner ...	0	5	0
Mr. W. Greenwell ...	0	5	0
Mr. W. Clark	0	5	0
Mr. R. W. Wilson ...	0	5	0
Birmingham Local Committee (per Dr. Robert Saundby), eleventh donation—			
Dr. E. St. John Whitehouse	1	1	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don, Hon. Sec.), third donation—			
Dr. George Duncan ...	2	2	0
Dr. James Chalmers ...	2	2	0
Dr. T. W. Hay ...	1	0	0
Dr. Crerar	1	1	0
Association of Certificated Dispensers (Society of Apothecaries of London)	16	4	6

Subscriptions should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed Lloyds Bank, Limited. They will be acknowledged by post direct, and a list will appear in the BRITISH MEDICAL JOURNAL weekly.

MANCHESTER AND DISTRICT.

Dr. E. M. Brockbank, secretary to the Manchester and District Fund, announces that the total amount received up to March 14th was £444 13s. from medical men. The following are subscriptions received in addition to those already acknowledged:

	£	s.	d.
Dr. A. Hill Griffith ...	5	5	0
Dr. E. M Ashworth ...	5	5	0
Dr. R. Y. Aitken ...	5	5	0
Dr. J. J. Cox	5	5	0
Dr. Arthur Sellers ...	5	0	0
Dr. W. Macbain ...	3	3	0
Dr. T. A. Goodfellow ...	2	2	0
Dr. J. Stavely Dick ...	2	2	0
Dr. C. H. Bradbury ...	2	2	0
Dr. Arnold Edwards ...	2	2	0
Dr. W. F. Jackson ...	2	2	0
Dr. Thos. Laird ...	1	1	0
Mr. G. B. Warburton ...	1	1	0
Dr. Crichton Hood ...	1	1	0
Dr. John Scott	1	1	0
Dr. E. Vipont Brown ...	1	1	0
Dr. J. B. Cruickshank ...	1	1	0
Dr. D. H. Cheetham ...	1	1	0
Dr. C. W. Thorp ...	1	1	0
Mr. Everard Claye ...	1	1	0
Mr. J. McGrath... ...	1	1	0
Dr. P. Moran	1	1	0
Dr. J. M. S. Preston ...	1	1	0
Mr. John Ferguson ...	1	1	0
Mr. Thos. Hopps ...	1	1	0
Dr. A. A. Edward ...	1	1	0
Mr. W. R. Judd	1	1	0
Mr. G. MacGill	1	1	0
Mr. F. B. Hargreaves ...	1	1	0
Mr. A. Haslewood ...	1	1	0
Mr. J. M. Boyd	1	1	0
Mr. G. E. Crowe ...	1	1	0
Mr. J. C. Mockler ...	1	1	0
Dr. T. J. L. Forbes ...	1	1	0
Dr. W. S. Joss	1	1	0
Dr. J. A. Ashcroft ...	1	1	0
Mr. A. B. Steward ...	1	1	0
Dr. F. G. P. Ilderton ...	1	1	0
Dr. James Fletcher ...	1	1	0
Dr. J. P. Barnes Burt ...	1	1	0
Dr. J. G. Shanklin ...	0	10	6
Mr. John Rust	0	10	6
Mr. R. H. Wolstenholme	0	10	6

Mr. Thomas Miller, 5, Yarburgh Street, Whalley Range, Manchester, has received subscriptions from pharmacists resident in Manchester and district amounting to £104 11s.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments contributed by Dr. W. A. H. Barrett, Melbourne, Australia.

THE Wellcome Historical Medical Museum will be closed for cleaning from April 1st to April 19th inclusive.

THE *Journal of the American Medical Association* states, on the authority of the National Association for the Study and Prevention of Tuberculosis, that during 1914 the expenditure on the campaign against tuberculosis in the United States was £4,100,000. Of that amount 68.8 per cent. was contributed by municipal, county, or state or federal funds. Five years ago the proportion obtained from these sources was only 53 per cent. The largest amounts were contributed by the following states: New York, £640,000; Illinois, £340,000; Pennsylvania, £320,000; Massachusetts, £240,000; and Colorado, £19,300.

THE WAR.

THE WAR RATIONS OF THE ARMIES.

THE average starvation metabolism of the resting German of average weight may be taken, according to Zuntz, as represented by 1,700 (large) calories. The large calorie is the heat required to raise 1 kilogram of water (2.2 lb.) through 1° C. or 1.8° F. That of a man working indoors in his study and doing a day's hard brain work is 2,200 to 2,550 calories; that of an infantryman, doing a 25 kilometre march and carrying a 30 kilogram pack, 4,100 to 4,200 calories; that of an athlete in training as much as 5,000 calories, and that of Canadian lumbermen, doing very heavy labour in a cold climate, 6,000 calories. Zuntz gives an infantryman's (weight 63 to 67 kg.) diet as—

Meat	125 grams.
Sausage	150 ,,
Bread	350 ,,
Yolk of egg...	50 ,,
Marmalade...	50 ,,
Butter	100 ,,
Sugar	30 ,,
Beer	1,793 ,,
Brandy	20 ,,
Mustard	1 ,,

(There are roughly 28 grams to the ounce.)

This diet affords 177 grams of fat, 100 grams of protein, 373 grams of carbohydrate and 77 grams of alcohol. For a soldier 4 kg. heavier, this diet, he says, must be increased by—for example—300 grams milk and 50 grams rice. The value of 1 gram of fat is 9.3 cal., of protein, starch or sugar 4.1 cal., of alcohol 7.0 cal.; the calorie worth of the lighter man's diet was 4,117, of the heavier 4,481.

The Austrian army war diet is given as containing 750 grams bread (or biscuit equivalent), 375 grams fresh meat and 60 grams fat, or the equivalent of these in dried or preserved meat; 250 grams peas or rice or groats, or the equivalent in potatoes or fresh vegetables; 25 grams roasted coffee, 2 grams tea, 17 grams sugar, 25 grams sugar, and half a litre of wine.

For exceptionally strenuous work and bad climatic conditions, the coffee or the tea and sugar ration is doubled, or 0.1 litre of spirits given.

The war ration of the British army during the South African campaign contained protein 138 grams, fat 105 grams, carbohydrate 328 grams, and had a value of 3,9 3 calories. In 1906 the average food supplied gratis to four British regiments was found to contain protein 133 grams, fat 115 grams, and carbohydrate 424 grams, with a value of 3,369 calories (Wanhill and Beveridge). Careful observations were made of soldiers marching and bivouacking as in war time in autumnal weather. These observations were carried out before this war by the Army Medical Advisory Board, and it was thus determined that the war diet was insufficient to maintain the weight and condition, and satisfy the appetite of the men. The value of the diet for war was then raised (chiefly by the addition of bacon and cheese) to between 4,500 and 5,000 calories. This addition sufficed to keep the men in good condition, as was proved in a further experimental period of marching.

The importance of these exact scientific observations in relation to the successful pursuit of the present war can hardly be overstated. The good health of the English army facing the exposure to wet, mud, and cold, and the depressing surroundings of the front in Flanders in winter, has been due above all to the excellent feeding and clothing, the well chosen periods of rest and opportunities of bathing and cleaning, and the sanitary arrangements.

When we consider that each man passes roughly his own weight of faeces in the course of a year we recognize the difficulties of the sanitary corps in dealing with the drainage of the trenches and the disposal of the faeces of many thousands of men. The method of disposal initiated by the soldier of filling bully beef tins and using them as bombs, was given up as the enemy's answer was found to be more bulky and unpleasant. Trenches dug at right angles to the communication trench, and a system of pails carried to and fro from the front to the rear have been utilized.

The discomfort and cold and wet in winter is fortunately balanced by the absence of the fly pest. We look to see how modern science will in the coming months successfully repel the plague of insects—the great carriers of infective disease.

The power of the human race to withstand cold is enormous. To shiver has been the common lot of man during the million years or so of his evolution. Warmth and relaxation with a full belly came rarely to him, and hence these are now so sought after and prized. Many of us in the city life of to-day have too much warmth, a belly filled too often, an insufficient exposure to the weather. Cold stimulates to activity, and accelerates the metabolism of the body. Our body furnace in the open-air life requires well stoking; a sound appetite and digestion, ruddy health and vigour, result. Hard exercise makes for a vigorous circulation, deep breathing, and a natural massage of the abdominal organs to which the sedentary worker is a stranger. Hence the clerk and the shopman in the new armies feel they have never lived in the past, and will hardly return to their old occupations when the war is over. The body louse is the one pest which modern science has so far failed to meet successfully. The men when periodically cleaned are reinfected in their billets in the ruined villages.

The army rations now supplied at the front afford the soldier ample calories to fulfil the needs of his hard labour—the carrying of 60 lb. equipment and trench digging—and to keep up his body heat in spite of continual exposure for days at a time to wind and rain, frost and snow. He is well clothed and has suffered only from excessive local cooling due to the continual soaking of his feet in cold slush and their dependent posture.

The scale of rations includes 1¼ lb. of fresh meat or its equivalent in preserved meat, 1¼ lb. of bread or its equivalent in biscuits or flour, 4 oz. of bacon, 3 oz. of cheese, ½ lb. of fresh vegetables or its equivalent in peas, beans, etc., ¼ lb. of jam, 3 oz. of sugar, 2 oz. of butter twice a week, ⅝ oz. of tea, with salt, mustard, and pepper, and 2 oz. of tobacco or cigarettes a week. The men in the trenches have as extras pea soup, additional tea and sugar rations, and ½ gill of rum at the discretion of the brigadier or divisional commander.

The value of the whole ration is about 4,700 calories, not counting the extras. The rum ration is issued twice a week approximately to all ranks, and an additional half ration is supplied on each of the other days to the men in the trenches. During the very cold inclement weather a full ration of rum has been issued daily to the men in the trenches; the full ration, half a gill, is 2½ oz.

We have ascertained that while the sale of vodka is prohibited in Russia, a "medicinal" dose is issued to the troops at the front. Alcohol is also issued to the Austrian army, and we have reason to believe that the issue of the ration of spirits to the German army has not been stopped. Alcohol has a high caloric value, and is very rapidly absorbed and utilized; the fact that it is a food cannot be doubted, though it is not taken for that reason. Probably, however, it is one of the products split off from foodstuffs and utilized in the normal metabolism of the body. To the sedentary indoor worker with a choked metabolism alcohol is a superfluity and a poison, but a gillie on the Scottish hills takes his whisky with impunity and reaches a ripe old age. So with the soldiers in the trenches, their ration of rum is very rapidly burnt off, and by affording a quickly assimilated supply of food to their tired hearts helps them to stand the monotonous discomfort of their surroundings.

Plenty of hot drinks, well-sugared tea or coffee, and pea soup, not only afford caloric value as food, but warm the body by the heat of the fluid they contain.

Hot food is an enormous help to those who have to withstand extreme exposure to inclement weather. No doubt the rum ration could be replaced by sugared tea. Sugar seems to take the place of alcohol among those who are abstainers; but sugar is an artificial food product no less than alcohol. To the temperate the one may be as harmless as the other, and the moderate rum ration issued to the army can only lead to intemperance if those who refuse it are many and pass on their ration to the remaining few. Discipline should put a stop to this danger.

The fact remains that alcohol is considered by the majority of the medical profession a drug of value

in states of exhaustion, and that all the armies of the combatants employ it. The frightful abuse of alcohol by the intemperate, and the economic waste in its preparation are the factors which now make for national abstinence. While appealing for such abstinence at home we think the medicinal use of alcohol may hold good for exhausted soldiers in the trenches.

SURGICAL EQUIPMENT OF TERRITORIAL HOSPITALS.

THE additional medical and surgical equipment required on the expansion of the Territorial General Hospitals, which is now being carried out in so many districts, will, we understand, be supplied by the War Office. The establishment and equipment of the Territorial General Hospitals when first mobilized were carried out by the County Territorial Force Associations. The ordinary procedure in a Regular Military Hospital is for a medical officer to ask the officer in charge for whatever equipment is required, and it would be well for the surgical staff of the Territorial General Hospitals to follow this rule and to specify exactly the instruments with which they consider the hospitals may most advantageously be furnished. It is the intention of the War Office that the instruments should be of the design and character desired by the surgeons who are to use them, and of the very best quality. It therefore becomes the duty of a surgeon who finds any instrument supplied unsatisfactory in character or quality to notify the fact to the officer in charge, requesting him to communicate the facts to the War Office.

On this subject the following circular letter has recently been issued by the Director-General A.M.S. to the Deputy Directors of Medical Services:

> I am directed to request that the Medical and Surgical Staffs of the various military hospitals in your command, both Regular and Territorial, may be consulted as to their requirements when indents are being framed for whatever additional medical and surgical equipment may be required in connexion with the expansion of those hospitals.
>
> In the event of any surgical instrument or appliance or other article of medical or surgical equipment being subsequently required, the matter should be represented to the officer in charge of the hospital, with a view to the necessary steps being taken for its provision, and similar action should be taken in the event of any instrument or appliance being found to be unsuitable or unsatisfactory, so as to enable the officer in charge to take steps to have it replaced. This procedure, which is the custom in regular military hospitals, does not seem to be quite understood by the staffs of the Territorial Force General Hospitals, and I am accordingly to request that it be brought to the notice of all concerned, with a view to obviating dissatisfaction and irregular complaints regarding medical and surgical equipment.

THE RUSSIAN RED CROSS.

IN the *Daily Chronicle* of March 16th there is an article by a special correspondent who has lately visited Germany "on a secret mission to inquire into the economic life and social atmosphere of the country." In it he says that the Germans are particularly proud of the efficiency of their Red Cross and affect to pity the "poor Russians," who have "practically no Red Cross at all." This is not in agreement with Professor Czerny's criticisms of the German Red Cross organization published on the next page, and seems to be an instance of the characteristic German temper of mind which leads it to swallow whatever comes to it from German authorities and obstinately reject the best authenticated facts from other sources. In the BRITISH MEDICAL JOURNAL of November 28th, 1914, an account of the organization of the Russian Red Cross was given, which showed that the arrangements for the care of the sick and wounded were on a large scale, that the nursing staff consisted of thoroughly trained women, and that ample funds were available for the work. Some time after the date of that article fuller particulars were given in the *Times Russian Supplement* of January 15th. It was there stated that the Russian Red Cross comprised no fewer than 832 branches, and that new ones were continually being formed. According to the statistics of 1911 the Society had then a capital of £3,900,000, and since the beginning of the war the flow of contributions, both in money and in kind, has been increasing. For the training of the sisters of charity—who, it may be recalled, are not nuns, but women who give their lives to nursing without any salary in return for food, clothes, and lodging—the Society has eighty hospitals. The Dowager Empress is patroness of the Society, and in the ranks of the sisters are members of the imperial house and of the Russian aristocracy. An official report shows that the Russian Red Cross is represented at the theatre of war by 70 hospitals, 64 base hospitals, 40 field hospitals, and 22 advanced detachments, with 38,000 beds, which can be increased to 50,000 in case of need. For the provision of aid to the wounded and for the preservation of the health of the troops there are employed six automobile detachments, a flying field detachment, seven detachments for dealing with epidemic outbreaks, a detachment for sanitation and disinfection, sixty-seven first-aid supply stations, each of them capable of feeding 2,000 men a day, eleven field supply detachments, and two hospital trains, with a total staff of 696 doctors, 2,168 sisters, and 8,000 bearers. In addition, 4,522 sisters are appointed by the Red Cross Communes to the hospital establishments of the War Department. For the supply of medicines and food two central dépôts were organized at Petrograd and Moscow in peace time, and on the outbreak of the war three field dépôts were opened with supplies for 5,000 beds each, and eleven branches, three of them field detachments, with a total supply capacity of 40,000 beds. For the equipment of these establishments, their maintenance at the seat of war, and the preparation of dressings and other material, the Society had at the date of the article in the *Times Russian Supplement* expended £1,340,000. A report issued by H.I.H. Prince Alexander Petrovitch of Oldenburg, Chief Superintendent of Military Sanitation and Hospital Service, states that there were then 178,000 beds available in the provinces of European Russia, not counting the vacancies continually occurring in the hospitals at the theatre of military operations by the removal of wounded from them.

HEIDELBERG IN TIME OF WAR.

IN the *Neue Freie Presse* for December 25th Professor Czerny of Heidelberg gave a graphic account of his surgical experiences in the war, with special reference to the part played in it by the surgeons of Heidelberg. At the time of writing, hospital accommodation was ample, and throughout Germany there were, he said, 600,000 beds in readiness for the wounded. In Heidelberg alone 2,500 beds were available, but only 600 of them were needed. Hitherto the war, which had become stationary at both fronts, had been characterized by the relative frequency of wounds inflicted by artillery. Formerly they constituted a fourth of all wounds, now they represent a third, as estimated in hospital. Even this estimate is probably too conservative, as the majority of the wounds inflicted by shells are speedily fatal, the wounded dying before they can be brought into hospital. The nearer a hospital is to the front the greater is the number of casualties from artillery fire; and while the hospitals in Douai, Brussels, and Cologne were packed with the victims of artillery fire and other weapons, the hospitals in the interior of Germany were largely empty.

Until November 1st the Heidelberg district had received 7,399 Germans, of whom 1,741 were discharged as cured and sent back to the army. There were 45 deaths, and 3,400 men were transferred to other hospitals, being unfit for service, or capable only of garrison duty. The remainder were still under treatment on November 1st. During the same period and in the same district 614 Frenchmen received treatment; of these 15 died, 412 were sent to other hospitals or concentration camps, and the remainder, 187, were still under treatment on November 1st. The hospital to which Professor Czerny was attached was originally designed to accommodate 50 beds. It was extended so as to take 40 more beds, and altogether there were 70 beds ready for soldiers and 20 for civilians. Here 147 soldiers were treated, of whom 140 had been wounded; 2 died of tetanus and 1 died of a shrapnel wound, the bullet having passed through the left eye into the occipital lobe of the brain, whence it was removed by trephining a few days before death. In 93 cases the soldiers had been wounded by rifle bullets, in 24 cases by shrapnel bullets, and in 23 cases by shell fragments. Many were wounded in more than one place. In 27 cases

projectiles were found in the body, and in 20 of these they were removed. Heidelberg, being some distance from the front, was supposed to receive only the slightly wounded, but there were 47 cases of fracture, 6 of injury to the joints, as well as many serious wounds of the chest, abdomen, head, spine, and large nerve trunks. The wounds of the chest ran a satisfactory course, although the collection of fluid in the pleural cavity sometimes necessitated an operation. In two of the abdominal cases the wounds were complicated by faecal fistulae. Several of the cases of bone lesions threatened to prove fatal on account of severe suppuration. This complication was observed in 52 cases; in the remaining cases infection of the wounds was avoided.

Professor Czerny found that the first-aid dressings with which each soldier is supplied proved satisfactory for wounds inflicted by rifle fire. These were seldom infected, and usually healed by first intention. But the dressings were totally inadequate for large wounds, which could not be completely covered, and were, therefore, exposed to infection. With this danger in view, the wounded should be removed as soon as possible from the firing line. This counsel of perfection is useless in the face of a storm of bullets, which prevents all ambulance work at the front during the day. Professor Czerny indulged in a vigorous tirade against the Russians for their supposed conversion of ambulance wagons into a stalking horse for artillery. He asserted that they have repeatedly flouted the rules of the Geneva Convention, have fired on hospitals, and taken surgeons prisoners. In this way, he said, the German army had lost, between the outbreak of the war and November 1st, 248 surgeons, 94 of whom were known to be dead.

Describing the transit of the wounded from the firing line to the large hospitals, Professor Czerny said that the most urgent operations were performed behind each division at the first ambulance centre. Here, too, the wounded were prepared for further transport by the application of the most necessary dressings. Those obviously moribund were taken apart to some quiet spot. The severely wounded were kept at the first centre till satisfactory transport to the nearest hospital could be obtained. This transport should be by motor, but the supply of motor cars for the purpose had hitherto invariably been inadequate. The slightly wounded were taken to the nearest railway station, whence they were dispatched to hospitals or their homes. It was the exception for this journey of the slightly wounded to be supervised by doctors, nurses, and attendants supplied with the necessary equipment. Such a staff and equipment did indeed exist, but they were usually employed far behind the first line. It followed that the slightly wounded, during the first part of their journey, had to bundle into goods trains, which had brought ammunition, food, soldiers, and horses to the front. Into these trains they were packed like herrings in a barrel. They were under no medical supervision, they were unprotected against the cold, provided neither with food nor utensils, and had to share a few wisps of straw, left on the floor, with patients suffering from dysentery and typhoid fever. When this mode of travelling through a hostile country took several days, the wounded and sick reached home in a pitiable condition, and convalescence was delayed by many weeks. This state of affairs was particularly disgraceful in the earlier phases of the war; some improvement had been effected more recently by the establishment of refreshment and dressing stations on the various routes.

Tetanus had so far been the greatest danger to the wounded. Out of 60,000 wounded Bavarians, 420 developed tetanus, which proved fatal in 240 cases. In Heidelberg there were 32 cases and 15 deaths. The prophylactic value of tetanus serum had been established, but its extensive employment was not always feasible. Of greater importance was the thorough and early disinfection of the wounds and the rapid transport of the wounded to hospital. This was impossible during the rapid invasion of Belgium and France, when the pace was so furious that the ambulance was left behind. At the time of writing there were facilities for the effective transport of the wounded by ambulance trains in the rear, but dressing stations on the route were obviously needed in the event of the campaign becoming more active again, and this want was being supplied by Bonn and Heidelberg.

Professor Czerny complained that the Red Cross was seldom admitted to the sphere of hostilities, and not with the best grace on the part of the military authorities. This was attributed chiefly to its lack of military organization. Were it organized on this basis, greater efficiency, and possibly greater economy, would result. He said that the neutral countries had not hitherto sent any Red Cross units, presumably because of the mobilization in these countries. As, however, America, Switzerland, Holland, and Scandinavia need not anticipate being drawn into the war, he suggested that the time had come for them to send Red Cross units not to the front, but to the concentration camps and hospitals. He urged the organization of an international society among the neutral States for the purpose of helping the wounded and prisoners in the various belligerent countries.

CEREBRO-SPINAL MENINGITIS.

OUR Special Correspondent in Northern France writes:

In a recent note regarding epidemic cerebro-spinal meningitis it was observed that the precautions that were being taken by the army medical authorities in France seemed comprehensive and ample. Details of the more outstanding prophylactic steps were given, but it may be useful further to exemplify the general statement by mentioning the contents of a memorandum issued several weeks ago by the specialist sanitary officer at one of the bases. Recognizing that there was a possibility of cases of cerebro-spinal meningitis occurring among the patients in ordinary military hospitals within his area, he thought it well to indicate, for the information and guidance of the medical staff and personnel of these institutions, the precautions which should be adopted pending the transfer of the patients. After indicating that the incubation period might be as long as thirty-six days, he suggested that those in attendance on the cases should be careful to disinfect all articles likely to be contaminated by discharges from the nose or throat of the patient—for instance, pillow slips, pocket handkerchiefs, spit cups, etc. For this purpose a 5 per cent. solution of cresol was recommended. It was added that the urine of the patients should be promptly sterilized. It was also advised that those whose duty brought them into contact with a patient should invariably wear overalls while in the patient's room, and that, in addition to the general precautions observed in army hospitals by the attendants on cases of ordinary infectious disease, they should spray their throats and noses with a disinfectant solution when going off duty. One part of hydrogen peroxide in a 9 per cent. solution of argyrol was mentioned as being suitable for this purpose. Finally, the opinion was expressed that if all these precautions were fully carried out those in attendance on the cases need not be kept in isolation.

CANADA.

THE UNIVERSITIES AND THE WAR.

IN compliance with a request from the War Office to increase the capacity of the Canadian General Hospitals the personnel and equipment of the McGill Hospital has been augmented; it will now have a capacity of about 1,000 beds instead of 520. The officers are: Drs. John M. Elder, John McCrae, J. George Adami, W. H. P. Hill, Edward W. Archibald, A. Howard Pirie, L. J. Rhea, William G. Turner, Campbell P. Howard, Herbert M. Little, W. B. Howell, Colin K. Russel, W. Hutchinson, J. C. Meakins, William W. Francis, J A. MacMillan, R. H. M. Malone, L. H. McKim, David Law, quartermaster, and A. Stevenson, dentist. Lieutenant-Colonel Herbert Stanley Birkett will be in command, and will be assisted by Lieutenant-Colonel H. B. Yates. Dr. Lewis L. Reford and Mr. Revere Osler, son of Sir William Osler, will go as supernumeraries. With the exception of Dr. Campbell Howard, who is a graduate of McGill, and at present engaged in work at the Montreal General Hospital, the officers are all members of the staff of the medical faculty. With them will go thirty-eight medical students of the fourth and fifth years who will act as dressers, and arrangements have been made to hold examinations for these men before the hospital leaves in April. No appeal for contributions has been made, but subscriptions to the amount of over 4,000 dols. have already been received by Dr. Birkett. Two motor

ambulance cars, built according to the specifications of the War Office, have been presented, and are being manufactured in England. Many other gifts of supplies, instruments, etc., have been made.

The example set by McGill has been followed by the French Canadians of Montreal, who offered a hospital for overseas service. The offer has been accepted by the Militia Department, and a clearing hospital will be organized, under the auspices of Laval University, by Colonel Labelle and Lieutenant-Colonel A. Mignault. The personnel of the hospital will consist of 1 lieutenant-colonel, 2 majors, 2 junior officers, 1 quartermaster, 9 sergeants, 7 corporals, and 50 rank and file.

The offer of a base hospital for overseas service made by the Faculty of Medicine of the University of Toronto has been accepted by the War Office. The personnel of the hospital will be drawn from students and members of the staff.

Arrangements were made at the opening of the session that standing should be granted to those who by reason of enlisting had been unable to take their September supplementals, and that those who had enlisted, or who would do so, should be shown the utmost consideration at the end of the session that the university's duty to the public in maintaining professional standards would allow. It was decided also to discontinue all teaching and laboratory work after 4 p.m. each day, so that students could take the courses of drill and instruction required by the regulations of the Officers' Training Corps. The women students of the university are devoting the hours from 4 to 6 p.m. to sewing and other work for the Red Cross Society.

Lieutenant-Colonel Fotheringham, associate professor of clinical medicine, has been appointed chief medical officer of the second contingent of the Canadian Expeditionary Forces. Lieutenant-Colonel Arthur Wallace Scott, formerly demonstrator in anatomy, who accompanied the first contingent, will take command of the clearing hospital which will accompany the second contingent on its arrival in England. The unit is being organized by Lieutenant-Colonel G. S. Rennie, of Hamilton. About fifty of the students from the fourth and fifth years in medicine will go with this hospital, and, as they will probably leave before the completion of the academic term, they will be given credit for their year. The officers are: Lieutenant-Colonel A. B. Osborne, Captain G. S. Strathy, Captain H. L. Jackes, Captain Bruce Robertson, of Toronto; Captain J. F. Sparks, of Kingston; Drs. Foster and James E. Davey, of Hamilton. Captain G. B. Strathy, of Toronto, will be Quartermaster.

At Queen's University degrees have been granted to about thirty members of the final year in medicine, and the men left on Friday, February 19th, to join the staff of the Duchess of Connaught Hospital.

A meeting of the Council of the University of Manitoba was held on February 11th, when it was decided that if a fifth year medical student went to the front he should be granted his degree on his return, provided he agreed to take at least six months' training in a hospital in the province of Manitoba.

CANADIAN ARMY MEDICAL SERVICES.

Colonel H. R. Casgrain, of Windsor, Ontario, has been placed in command of the Canadian Hospital No. 2, which has been established in France, thirty miles from the front. Lieutenant-Colonel W. F. Gorrell, of Ottawa, is in command of the Duchess of Connaught's hospital at Cleveden; with him are Lieutenants G. O. Taylor, of Moncton, New Brunswick; R. F. Flegg, of Ottawa; and C. H. Harrison, of Minnedosa, Manitoba. Dr. Maxwell Inglis, who has been in charge of the *x*-ray department of the Winnipeg General Hospital, will be in charge of the *x*-ray work at the front so far as the Canadian troops are concerned. Major E. A. Lebel, of Quebec, who accompanied the first contingent of the Canadian Expeditionary Forces as a member of the staff of General Hospital No. 1, has been given command of the Fighldran Military Hospital. Dr. Orr, Medical Officer of Medicine Hat, has been appointed medical officer of the Third Mounted Rifles. Dr. MacDermott has been appointed regimental surgeon of the 46th Battalion, stationed at Regina. Colonel Fiset, the Deputy Minister of Militia, has been promoted to the post of Surgeon-General of the Canadian Army Medical Corps. At the end of January the waiting list at the Militia Department at Ottawa contained the names of 1,300 doctors and 2,800 nurses. The request to increase the capacity of the Canadian hospitals makes it necessary to send twenty-four officers and sixty nurses to augment the staffs of the two Canadian hospitals in France.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed.

MAJOR FRANCIS GRAHAM RICHARDS, R.A.M.C., was killed at Neuve Eglise on March 5th, aged 41. He was the youngest son of Mr. Richards, of Arnos Vale, Rostrevor, co. DOWN, Ireland, was educated at St. Bartholomew's, and took the M.R.C.S. and L.R.C.P.Lond. in 1899. Entering the R.A.M.C. as Lieutenant on November 17th, 1899, he became Captain on November 17th, 1902, and Major on August 17th, 1911. He served in the South African war, where he took part in the operations from January 17th to 24th, 1900, the action of Spion Kop, action of Tugela Heights, February 14th to 27th, 1900, action at Pieter's Hill, and relief of Ladysmith; and in the operations in Natal from March to June, 1900, including the action of Laing's Nek, receiving the Queen's medal with four clasps, and the King's medal with two clasps.

Died of Wounds.

Captain Harry Vivian Byatt Byatt, R.A.M.C., has died of wounds received in action on March 11th while serving with the 2nd Battalion Rifle Brigade. He was born on December 11th, 1882, and was the elder son of Mr. Henry Byatt, Esq., formerly of Warwick Gardens, Kensington. He took the M.R.C.S. and L.R.C.P.Lond. in 1907, entered the army as Lieutenant on July 29th, 1907, and became Captain on January 30th, 1911.

Died.

Lieutenant Maurice Cameron Anderson, R.A.M.C.(T.F.), died of fever in France on March 2nd. He took the Scottish triple qualification—L.R.C.S.Ed., L.R.C.P.Ed., and L.F.P.S.G.—in 1911, and was in practice at Roslin, Midlothian. On June 11th, 1914, he joined the 8th Battalion Royal Scots or Lothian Regiment as medical officer, and at the time of his death was serving with No. 6 Motor Ambulance Convoy, second army. He was the second son of the late Dr. George Anderson, of Cape Town, South Africa, and was only 24 years old.

Wounded.

Lieutenant G. B. Selby, R.A.M.C.
Lieutenant W. Ormsby, R.A.M.C.
Lieutenant (temporary) J. G. Priestly, R.A.M.C.
Lieutenant (temporary) W. W. Ingram, R.A.M.C.
Lieutenant (temporary) D. C. Turnbull, R.A.M.C.

ROYAL NAVY.

H.M.S. Bayano, armed merchantman, Captain H. S. Carr, R.N., was lost between Scotland and Ireland, torpedoed by a German submarine, on March 10th. Out of a ship's complement of about 220 only 26 were saved; the remainder, including the captain, were lost. She carried two medical officers—Surgeon K. H. Hole, R.N., and Surgeon Probationer R. Batson—both of whom were among those rescued.

NOTES.

THE ARMY MEDICAL SERVICES IN FRANCE.

LORD KITCHENER, in his speech in the House of Lords on March 15th, said: "The health of the troops has been remarkably good, and their freedom from enteric fever and from the usual diseases incidental to field operations is a striking testimony to the value of inoculation and to the advice and skill of the Royal Army Medical Corps and its auxiliary organizations." This passage followed a reference to the substantial reinforcements sent to France since his last statement to the House. They included, he said, the Canadian Division, the North Midland Division, the 2nd London Division, and other units. These, he said, were the first complete divisions of the Territorial Force to go to France, where he was sure they would do credit to themselves and sustain the high reputation which

the Territorials had already won there. "Eye-Witness" present with General Head Quarters at the end of his narrative, dated March 12th, of the recent fighting in the neighbourhood of Neuve Chapelle, pays the following tribute to the work of the regimental stretcher-bearers and bearer parties: "All the wounded have borne testimony to the extraordinary devotion and gallantry of the regimental stretcher-bearers and the bearer parties, who have worked till they dropped from sheer exhaustion under the hail of shrapnel and machine-gun fire, which swept the open fields during the advance."

DISTINGUISHED SERVICE ORDER.

Among the officers appointed Companions of the Distinguished Service Order in recognition of their gallantry whilst serving with the Expeditionary Force is Lieutenant Eric Christison Lang, R.A.M.C., attached to the 1st Battalion of the Leicestershire Regiment, for conspicuous gallantry and devotion to duty on two occasions, especially on February 9th at Rue du Bois in rescuing a severely wounded officer under very difficult circumstances whilst in view of the enemy. Lieutenant Lang graduated M.B., Ch.B.Edin. in 1910, and was for a short time resident medical officer at the Newport and Monmouthshire Hospital.

THE ST. JOHN AMBULANCE BRIGADE.

At the monthly meeting of the Central Executive Committee of the Ambulance Department of the Order of the Hospital of St. John of Jerusalem in England, on March 12th, the Chief Commissioner of the St. John Ambulance Brigade reported that since September 30th last 3,274 men and 1,872 women had joined the brigade, making a total membership of over 32,000. The number of male members of the brigade serving under the naval and military authorities in the Royal Naval Sick Berth Reserve, the Royal Naval Division, the Royal Army Medical Corps (Expeditionary Force), and in military hospitals at home and abroad, was 9,180, and upwards of 2,000 were waiting to be called up if required.

MEDICAL OFFICERS WANTED.

1st East Anglian Field Ambulance.

Two medical officers are urgently required for the 1st East Anglian Field Ambulance. Applications should be addressed to Major G. A. Hetherington, Commanding Officer, St. Mary's Institute, Bury St. Edmunds.

1st North Midland Field Ambulance.

Six medical officers are required at once for commissions as lieutenants in the 1st North Midland Field Ambulance. Applications should be addressed to the Officer Commanding R.A.M.C. Dépôt, 91, Siddals Road, Derby.

3rd Northumbrian Field Ambulance.

Medical officers are urgently required to complete the establishment of the 3rd Northumbrian Field Ambulance (2nd line unit). They may join for either home or foreign service. Full particulars can be obtained from Major O. L. Appleton, R.A.M.C.(T.F.), Officer Commanding, 6, Regent Terrace, New Bridge Street, Newcastle-upon-Tyne.

1st Southern General Hospital, R.A.M.C.(T.), Birmingham:

Four additional lieutenants are required as resident officers. Applications to be addressed to the Administrator.

THE late Sir Robert Michael Simon, M.D., Professor of Therapeutics in Birmingham University, left unsettled property of the gross value of £5,289; the net personalty amounted to £4,843.

DR. S. H. CHUAN, a graduate of Harvard, has, we learn from the *Journal of the American Medical Association*, been appointed surgeon-general of the Chinese army, and president of the Army Medical School, Tien-tsin.

THE seventh Pan-American Congress will be held in San Francisco from June 17th to 21st immediately before the meeting of the American Medical Association. The National Committee is composed of Dr. C. A. L. Reed, president; Dr. A. Van der Veer, of Albany, first vice-president and treasurer; Dr. H. L. E. Johnson, of Washington, second vice-president; and Dr. Ramon Guiteras, of New York, secretary-general. The work of the Congress will be distributed among six sections, as follows: Medicine, including diseases of children, diseases of the mind and nervous system, military medicine, dermatology and syphiligraphy, pharmacology and therapeutics; surgery, including abdominal surgery, orthopædics, military surgery, ophthalmology and urology; obstetrics and gynæcology; anatomy, physiology, pathology and bacteriology; preventive medicine and public health, including general hygiene and demography, marine hygiene and quarantine; laryngology, rhinology and otology.

Scotland.

EDINBURGH ROYAL MATERNITY HOSPITAL.

FOR some months the directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital have, it is understood, been engaged in the consideration of the existing plan of conducting the work of the institution by means of a quarterly rotation of the acting medical staff. The retirement of Dr. Freeland Barbour after fifteen years' service as a physician to the hospital, and the completion by Drs. Haultain and Ballantyne of ten years' service as physicians, made it possible and convenient for the board to consider the mode of staffing and working the institution at this time of interregnum, as it were. Inquiries have been made in Great Britain and Ireland with the result that, save in Dublin, the system of rotation has been found to prevail. Hospitals differ as to the length of time for which the acting medical officers serve, and as to the number of months in each year during which they are on duty, but some plan of rotation is in operation. It is understood that the Medical Board is strongly in favour of the retention of the *status quo*, but the directors are anxious to take a little longer to discuss the situation and to exhaust all the possible plans of staffing and service. They are also interested in the question of the establishment of a more intimate form of co-operation between the University of Edinburgh and the hospital, something of the nature of that which has been set up between the former body and the Royal Infirmary. Consequently they have in the meantime made temporary arrangements in the hospital. Instead of reappointing Drs. Haultain and Ballantyne for a further term of five years as physicians to the institution, they have accepted their services for a year pending possible rearrangements. The vacancy caused by the retirement of Dr. Freeland Barbour has been filled up by the appointment, also for one year, of Dr. Haig Ferguson as a physician to the hospital; and the vacancy in the number of the assistant physicians thus produced has been filled by the appointment for a year of Dr. Barbour Simpson, who has been acting as extern assistant physician, as assistant physician. Another matter which is engaging the attention of the directors and the Medical Board is the establishment of "baby consultations" in the hospital. It is felt that since about two thousand confinements a year are attended in connexion with the institution, and since several hundreds more are dealt with through the five dispensaries which work in association with it, the Maternity Hospital should be the centre of the work of this kind among young infants in Edinburgh. With its present staff the institution should, it is thought, be able to examine, weigh, and advise concerning the infants which have, so to say, been brought into the world under its care for some months, or perhaps a year, after birth; it has done so in a general way already, but the supervision should be systematized.

AN EDINBURGH PREMATERNITY HOME.

The report presented to the annual meeting of the subscribers to the Lauriston Home for Maternity Rescue Work, Edinburgh, on March 11th, which was read by Dr. Haig Ferguson, Chairman of the Committee of Management, stated that many of the pregnant girls were very young, ranging in age from 15 to 24 years, and that ten were under 18. In last year's report (see the JOURNAL for March 21st, 1914, p. 682) it was noted that one-third of the total admissions were girls in their teens. The Countess of Moray, who presided, said that it would be difficult to over-estimate the value of such a haven of refuge which gave shelter at a most trying time, and where every effort was made to prepare the girls for the duties and responsibilities of motherhood. Sir Halliday Croom also spoke.

LECTURER ON SCHOOL HYGIENE IN EDINBURGH.

On March 10th the Edinburgh Provincial Committee for the Training of Teachers met in Moray House for the making of an appointment to fill up the vacancy caused by the transference to London of Isabella Douglas Cameron, M.D.Edin., D.P.H.Camb., to a post under the Local Government Board there. The Committee appointed Ada E. Miller, M.D.Edin., of Dumfries, to be

Lady Medical Officer and Lecturer on School Hygiene. Dr. Miller, who graduated M.B., Ch.B. at Edinburgh in 1907 and M.D. in 1911, had acted as Resident Medical Officer in Drumcondra Hospital, Dublin; as Assistant Medical Officer to the Orphan Homes of Scotland and Consumptive Sanatorium, Bridge of Weir; and has recently been engaged as Assistant Medical Officer and School Medical Inspector for the county of Dumfries. The commencing salary is £330, rising by annual increments of £10 to £350.

CEREBRO-SPINAL FEVER.

Three cases of cerebro-spinal fever have occurred at Galashiels; after the patients had been removed to the town's infectious hospital, disinfection was carried out, and persons who had been in contact with the patients are being kept under observation. In addition to cerebro-spinal fever, cases of measles have occurred among the Territorials; for these the military authorities have provided accommodation, but the Public Health Committee of the town is embarrassed by the fact that while cases of cerebro-spinal meningitis are in its infectious hospital it is not considered advisable to admit any other cases.

SCOTLAND AND SERBIA.

Sir Alexander Ogston, who has for some months been acting as consulting surgeon to the Voluntary Aid Hospital at Southall, has accepted an invitation to go to Belgrade to serve in a hospital there. He is starting at the end of next week, and will be accompanied by his daughter, Mrs. Carter, who has been working in the hospital at Southall.

The condition of things in the Serbian hospitals, in which Scottish women seem to be taking a particular interest, is described as deplorable. We announced last week the death from typhus fever of Dr. Elizabeth Ross, and news has now been received that Sister Louisa Jordan, formerly of Crumpsall Fever Hospital, Manchester, who nursed Dr. Ross, has succumbed to the disease, as well as Miss Neill Fraser (captain of the Scottish Ladies' Golf Team), who was acting as a woman orderly at Kragujevatz. It is reported that one hospital in Serbia, containing 400 patients, is conducted by a single woman, and that the Scottish unit has 300 patients in one central hospital, a small fever building, and three convalescent houses. In the First Reserve Serbians Military Hospital, with 1,500 patients, the conditions are very bad indeed, and such nursing as is done is carried out by prisoners who act as orderlies. On one day six of the doctors were suffering from typhus fever. The conditions are also said to be very bad at Belgrade. It is complained that the medical help sent from Great Britain is inadequate to make any real attempt possible to deal with the needs of the Serbian wounded. The Scottish Women's Hospital is sending out another contingent of doctors and nurses to Serbia, and the same organization has been asked by the French Government to establish a hospital for typhoid fever in France.

THE MORISON LECTURES.

"The New Psychiatry."

Dr. W. H. B. Stoddart gave his course of Morison Lectures for 1915 before the Royal College of Physicians, Edinburgh, last week. Dr. Freeland Barbour, President of the College, was in the chair. In his first lecture, after some preliminary remarks, amongst which was the statement that although Freud was professor in Vienna he was a pure Jew with no German blood, Dr. Stoddart discussed certain objections which had been made to psycho-analysis, and proceeded to define many of the terms which had come into use and others the meanings of which had been altered. Fundamental psychical mechanisms were considered. Regarding instinct as "the blind prompting inherent in an animal to act without deliberation in a certain way," he gave as examples sexual acts, seeking the company of the opposite sex, nest building, herding together, and pulling down the blinds at night. All instincts, he thought, might be grouped under those subserving the functions of preserving the individual or perpetuating the race, or into three classes—those moved by the promptings of self-preservation, of nutrition, and of sex. The advantage of the herd instinct or gregariousness lay in the homogeneity of the herd, which enabled large numbers to act in concert. This was evident in hunting and warfare, for the prey or the enemy was more easily caught or vanquished by a large number of hunters or fighters than by a single unit. When the herd instinct was obeyed, the individual experienced an unanalysable feeling of comfort; when it was disobeyed, he felt an unanalysable sensation of restlessness and discomfort. Examples were found in departure from the custom of one's set in dress, habits, religion, or politics, and a modern instance was found in the change evident in the hostile critic of the war after he had joined Kitchener's army. Another result of the herd instinct was the disinclination to receive new truths which were opposed to herd tradition; herd traditions, however, might be overcome by the new truths, which in their turn would then become part of the herd tradition. These phenomena had to do with intellectual processes, but the same thing was to be observed in moral sentiments. Their growth, with which conscience was indissolubly associated, was produced in the individual by the disapprobation of his set when he acted contrary to the herd instinct and by their approval when he obeyed it. In the child the sexual passion was antagonized by a code of conduct with which it became his instinct to comply. The reason why psycho-analysis had encountered so much opposition was that the whole subject of sex was taboo. Instinct, Freud considered, was simply psychical energy, the driving force of mentation, to which Jung had given the name of "horme." The term could be applied to all the instincts, but when reference was made to the sexual instinct it corresponded to "libido." "Horme" meant psychical energy, desire *plus* a conative trend. Like physical energy, it revealed the principle of conservation—it was never lost—and when a certain amount of horme in a patient appeared to be lost it was necessary to find out where it had gone. When a herd impulse became displaced by the horme of some other instinct, "conflict" ensued and could only be resolved in one of four ways: First, by voluntarily ignoring the herd instinct—a very rare method; secondly, by rationalization, the individual finding excuses; by occupation with other matters and the lapse of time, which caused the "emotional tone" or "affect of worry" to pass gradually off; by banishing the incident from the mind, repressing it into a department of mentation from which it could never again enter phenomenal consciousness and disturb the normal stream of associative thought.

Discussing the Freudian conception of the unconscious, Dr. Stoddart said that on the fringe of consciousness, but outside the field of attention for the moment, were percepts, ideas, and other mental states, which were known as the subconscious; there were also many ideas and memories quite outside the field of attention, but capable of recall when required, and these were named "fore-conscious" or "pre-conscious"; but there were yet other and very numerous ideas of past experiences, incidents, and situations which could not be remembered, for them there was a life-long amnesia, yet they were not lost, and for these the term "unconscious" was proposed, although Dr. Stoddart would have preferred "hypo-conscious" (if it had not been a hybrid). The last-named ideas sometimes flashed into the mind in moments of abstraction and during dreams; it was said that they were all passed in review during drowning, and they could be recovered by such artifices as hypnotism, crystal gazing, and psycho-analysis. The term "unconscious cerebration" had been applied to these phenomena, but it was an unfortunate one. Such other Freudian terms were explained as "psychical determinism" (the view that every mental process is predestined and foreordained), "individual psychology," "complexes" (repressed and partially unconscious constellations of associated ideas), "abreaction," or the taking of the energy out of a complex, and "conflict," or the struggle between two complexes which were out of harmony with one another. Conflict might occur between two nutrition complexes, or between a sexual and a self-preservation complex; but in practice the greatest number of "conflicts" were between a personal complex and a herd complex, between morality, religion, ethics, or fashion on the one hand, and nutrition, self-preservation, or sex on the other. Further, of the personal complexes, the sexual was that most often in conflict with the herd complex.

"Conflicts" could be resolved by four methods; special

attention was paid to that in which sex was involved. The normal and logical way out of the situation was to face it, to recognize that there was a conflict, and to consider what was the right and proper course to pursue and to take it; but one or other of the four methods were often tried, and the situation was evaded. The herd instinct might be repressed; "rationalization" might be tried, the individual endeavouring to keep the conflicting personal complex in a "logic-tight compartment" of the mind (Janet's "splitting of consciousness," or "dissociation," or "double consciousness" of the type of Dr. Jekyll and Mr. Hyde); or the energy of the complex might be diverted into other channels than the natural one, and "sublimated," as instances of this were given the cases of an old maid who bestowed her maternal affection on cats, or a man sublimated his sexual instinct into dangerous sports, academic interests, collecting manias, alcoholic excess, and perhaps tobacco-smoking; or, finally, the conflicting personal complex might refuse to become assimilated to the normal content of consciousness, might be forgotten, be put out of the mind, or rather put "more deeply into the mind," and be "repressed." The continuation of the repression was called the "censure" by Freud, and the "censor" by his British and American followers. Even when repression succeeded for a time there was always the chance that some idea would come into the mind which would become anchored to the unconscious complex. It had to be remembered that sublimation and repression were not always abnormal or pathological; in fact they accounted to a large extent for the normal amnesia of early infancy; when they failed, the conditions necessary for the development of a neurosis or a psychosis were forthcoming. The lecturer contended that complexes related to the sexual instinct were more repressed than any other, and therefore played an enormous part in the psychoses. It was maintained that sexuality gradually developed from small beginnings in earliest infancy, and it was stated that some psycho-analysts regarded such infantile handlings of the body as nose-picking and thumb-sucking as betokening masturbatory complexes. Reference was made to the mouth, the anus, and the neck of the bladder as erogenous zones. Dr. Stoddart considered that the child awakened at the age of 5 or 6 from the state of sexual latency owing to the repression into which it had fallen at 4 and 5 years, and sought to find the causes of various moral perversions in the conflicts then occurring. It is doubtful whether the lecturer's hearers were all content to share his views regarding some of the phenomena dealt with in the last part of his address, and notably with regard to the incest complex and the barriers against it; but the lecture was closely followed throughout, and it certainly formed and will form the subject of much discussion.

England and Wales.

ST. MARY'S HOSPITALS, MANCHESTER.

AT the annual meeting on March 11th of the subscribers to the St. Mary's Hospitals, Manchester, the Chairman, Sir F. Forbes Adam, drew special attention to the dearth of medical men willing to act as house-surgeons. On this account the hospital had been put to extra expenditure although every effort had been made by the staff to render such expenditure as small as possible. During the past year 17,264 patients had been treated—an increase of 1,735 over the previous year. A number of baby patients had also been treated, and during the last six months many dependants of soldiers and sailors had entered the institutions. The Board felt that it was highly important that the best possible treatment should be given to the families of men away on active service. On the whole the income of the institution had been well maintained, the total being £13,613, which was only £123 less than in the previous year. The deficit amounted to £2,512, which was regarded as satisfactory in view of the numerous calls that had been made on the public since the war began. The previous deficit of £2,763 had been met out of legacies, but the present deficit of £2,512 could not be met in that way and would entail a reduction of capital. The Board entirely approved of the recommendation of the Medical Committee that a special ward for septic cases should be opened as soon as possible, but the state of the finances would not allow of that being done at present. Mr. E. Reid, as executor of the Manasseh Gledhill Trust, had offered to build a chapel at the High Street hospital, and the Board had gratefully accepted the offer.

ELECTRO-CARDIOGRAPH AT ANCOATS HOSPITAL, MANCHESTER.

Through the kindness and generosity of a lady, who desires to remain anonymous, a complete electro-cardiographic installation has been presented to the hospital. Connexions have been made whereby records of the heart can be obtained in the cardiographic room from patients remaining in the wards. The operating theatre has been similarly equipped. Demonstrations of this instrument will be held on Thursday and Friday, March 25th and 26th, at 4.30 p.m.

BEQUESTS TO SHEFFIELD CHARITIES.

Mr. William Edgar Allen, chairman and founder of the Sheffield firm bearing his name, who died recently, left an estate of great value; the net personality has been sworn at a little over a quarter of a million. He has left over £100,000 to charities and employees. Among his bequests is the gift of his books, book-cases, etc., to the library of the Sheffield University. He left £2,000 each to four hospitals in Sheffield—the Royal Infirmary, the Royal Hospital, the Free Hospital for Sick Children, and the Jessop Hospital for Women, and £500 to the Samaritan Fund of the last-named hospital; to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, and the Mission to Lepers in India and the East £1,000 each, and £2,000 for the benefit of the Medico-Mechanical Institution founded by him in Sheffield a few years ago; £500 each to the Bournemouth Sanatorium for Consumption, to the West-End Hospital for Diseases of the Nervous System, London; to the Italian Hospital, London; to the Protestant Hospital, Barcelona; to the Hospital for Women; and to the Evangelical Hospital, Turin; £250 to the Free Home for the Dying, Clapham Common, and to the Hospital for Epilepsy and Paralysis, Maida Vale, London. Subject to these and and other bequests, he left the residue of his property as to two-fifths to the University of Sheffield, to be applied as to £5,000 at the disposal of the committee of the Applied Science Department, and as to the balance in founding, at the discretion of the council, Edgar Allen scholarships or exhibitions for students of the university, of whom one-half shall be sons of workmen earning daily or weekly wages, or foremen, or workmen, or managers.

Canada.

THE CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

THE fourteenth annual report of the Canadian Association for the Prevention of Tuberculosis has just appeared. The success of the work of the association is evident from the fact that during the period under consideration nine new institutions were opened for the treatment of patients suffering from tuberculosis. These include the Perley Memorial for Incipient Cases at Ottawa; the Brant Sanatorium, Brantford, Ontario; the Essex Sanatorium, Windsor, Ontario; the Mount Sinai Sanatorium, Ste. Agathe, Quebec; the Jordan Memorial, River Glade, New Brunswick; the Home for Advanced Cases, Halifax; the Preventorium, Toronto; the Queen Mary Hospital for Tuberculous Children; the Connaught Home for Nurses, Weston, Ontario; and the Preventorium, Byron, Ontario. In addition, a provincial sanatorium at Qu'Appelle, Saskatchewan, is being built, the sanatorium at Freeport, Ontario, is almost completed, and the provincial sanatorium at Kentville, Nova Scotia, has been enlarged. It is probable that a provincial sanatorium will be established in Alberta, and 30,000 dols. has been voted by the city of Calgary for a municipal hospital for advanced cases. The sum of 20,000 dols., together with an annual allowance, has been given by a citizen for the purpose of erecting a local sanatorium in Prince Edward Island. In the city of Quebec over 60,000 dols. has been subscribed towards a tuberculosis hospital.

The average daily cost of treatment and maintenance per each patient is about 1.55 dols. Most of the provincial governments make an allowance towards the maintenance grant, the sum given varying in each province. British Columbia gives 7 dols. a week for advanced cases and 4.55 dols. for incipient cases; Saskatchewan 3.50 dols. a week; Manitoba 2.80 dols. a week; Ontario 3 dols. a week. In New Brunswick the patient pays 7 dols. a week and the Government pays the balance. The Nova Scotian Government makes up the balance over 7 dols. a week at the Kentville Sanatorium. Up to the present neither Quebec nor Prince Edward Island have made any grant for this purpose, and on December 14th, 1914, a deputation from the Laurentian Society for the Treatment and Control of Tuberculosis waited on the Quebec Government to ask for some allowance. The Premier, Sir Lomer Gouin, promised that the matter should have consideration, but referred to the present financial stringency. In 1913, an Act was passed in Nova Scotia which provided for the division of the province into five districts, for each of which medical examiners and district nurses are to be appointed. Sanatoriums will be built and county clinics will be held, and the provincial government will bear half the cost.

THE MILK SUPPLY OF MONTREAL.

Montreal enjoys the unenviable reputation of having an infant mortality equalled only by that of Chili. In this connexion the part which the milk supply may play must be taken into account. An investigation of the milk supply of Montreal was undertaken in 1913 and 1914 by Dr. F. C. Harrison, Principal of Macdonald College, Dr. Alfred Savage, and Mr. W. Sadler. A study was made of the manner in which the milk was produced, transported, and retailed. The milk, both in summer and winter, was found to be of very poor hygienic quality and, in many cases, unfit for consumption. In a report recently issued, it is recommended that greater incentives should be offered to the farmer to keep milk clean and sanitary, that a higher price should be paid for pure milk, and that it should be graded, as is all other farm produce. At present milk, no matter of what quality, clean or filthy, commands the same price. The carelessness in transportation and in the treatment of utensils, and the ignorance and negligence of dealers, are also considered, and the report closes with a plea for certain amendments in the law of the province of Quebec and in the regulations and by-laws of the city of Montreal in so far as they affect the sale and distribution of milk.

FAILURE TO NOTIFY INFECTIOUS DISEASE.

In spite of the recent Public Health Act of the province of Ontario, which makes strict provision for the notification of cases of infectious disease, there is still great laxity in this respect. Small-pox and diphtheria are both on the increase; in the case of the former the fault lies sometimes with the physician who fails to notify the proper authorities, but the infection is frequently of such a mild type that its true nature is unrecognized. Many cases of both diseases, of course, occur without a physician being called in at all. In the other provinces the same carelessness exists, as is shown by the constant outbreaks of these maladies in all parts of Canada. An epidemic of measles was recently reported from Goderich, Ontario; some 700 cases occurred, and it was necessary to close the schools and churches. In Ottawa, during the year ending October 31st, 1914, 137 deaths from tuberculosis occurred, whereas only 107 cases of the disease were reported.

MEDICAL MEETINGS.

The Canadian Medical Association will meet at Vancouver on July 6th, 7th, 8th, and 9th. The president-elect is Dr. R. E. McKechnie, of that city. The Panama Exhibition at San Francisco will enhance the natural attractions of the west next summer and, unfortunately, the present situation makes it unlikely that there will be much inducement for travel in Europe. The meeting of the American Medical Association will take place at San Francisco in June, and at first it was thought that some arrangement might be made by which both meetings could be attended; June, however, is too early for the Canadian doctor who usually finds it impossible to get away before July.

The annual meeting of the Ontario Medical Association will be held at Peterborough on May 25th, 26th, 27th, and 28th, under the presidency of Dr. D. J. Gill Wishart, of Toronto. The meeting of the Provincial Health Officers' Association will take place the same week under the presidency of Dr. Hall of Chatham.

Sydney.

[FROM OUR SPECIAL CORRESPONDENT.]

THE TREATMENT OF STATE CHILDREN.

THE President of the State Children's Relief Board, Sir Charles Mackellar, M.B., in his report on the working of the board for the past year, makes certain recommendations regarding the treatment of neglected and delinquent children and the alteration of the constitution of the State Children Relief Department, which he is anxious should be considered by Parliament. In the opinion of the board the Deserted Wives and Children Amending Act, introduced in October, 1913, was calculated, if rigorously administered, to exercise a very salutary effect in preventing wife desertion; and if it were followed by the passing of the law proposed by the South Australian Commission, it would prove a very effective deterrent to persons contemplating that crime. The Act provides for a proportion of the earnings of certain prisoners committed to gaol under the Deserted Wives and Children Act of 1901, or the Infant Protection Act of 1904, to be paid towards the maintenance of their families. The amendment desired by Sir Charles Mackellar is only one of the many advocated by him in connexion with the administration of the various phases of social work conducted by the State Children Relief Board, and for the fuller performance of which a reorganization of the board has become necessary. In 1896 the Act was amended to enable the board to grant aid to children, under 12 years, of widows or of deserted wives who were in necessitous circumstances, with the object of assisting the mothers to maintain their children in their own homes. In 1904, when the Infant Protection and the Juvenile Offenders Acts were passed, the board was charged with duties quite outside the matter of the distribution of charity, and from that time onwards it became, in addition, distinctly and definitely reformative and educational. New factors were introduced into the administration of departmental work which were not anticipated in the original Act under which the board was established. Comprehensive amendment of the various Acts, and reorganization of the department are now considered necessary. Sir Charles Mackellar desires that the present board should be replaced by a Children's Council, to be endowed with powers of a much wider and more specific character. He recommends a council of six members, including two medical men—one a specialist in neurology, and the other a specialist in the treatment of diseases of children. Two members should be special magistrates of the Metropolitan Children's Courts, the other two should be women. Mr. A. W. Green, the boarding-out officer of the department, is recommended as chairman, and Dr. Andrew Davidson and Dr. Litchfield as the medical members of the council.

AN examination for commissions in the Indian Medical Service will be held next July; it is probable that ten commissions will be offered on this occasion, and that no other examination will be held until after the war is over.

OWING to the urgent representations of the medical staff, made in view of the growth of the list of tuberculous cripples waiting admission, another ward has been added to Lord Mayor Treloar's Cripples' Hospital and College for Children at Alton, Hampshire.

THE report presented to the fifty-seventh annual general meeting of the Royal Dental Hospital, Leicester Square, stated that the chief feature of the work for the second half of the year was the treatment of soldiers and recruits. The committee, realizing the urgent necessity of attending to the teeth of the soldier, had made an offer to the War Office which was accepted, with the result that since the hospital reopened on September 1st the total number of attendances under the scheme exceeded 7,000. The total number of new patients of all classes was nearly 20,000, and the operations performed were over 100,000. The hospital is in debt to the amount of over £31,000, and the committee makes an urgent appeal for donations to diminish the amount.

Correspondence.

NEED OF THE ARMY FOR MORE MEDICAL MEN.

SIR,—It appears from Sir Alfred Keogh's letter (p. 488), that there is already a shortage of medical men in the army. It may be inferred that this shortage will become more pronounced as time goes on, and as the number of men under arms, as well as the number of casualties, increases. This being so, may I suggest that Sir A. Keogh's method of dealing with the situation is not quite satisfactory, and may not be either fair to the civil population, or adequate as a means of supplying the necessities of the army?

The important points to remember are:

1. The actual supply of medical men for civil and military work is fixed for some years to come.
2. It is not possible to sacrifice civil requirements to military exigencies to the same extent as in certain trades and occupations.
3. The extra amount of energy available to meet the increased work is certainly small, and not capable of rapid expansion.

Sir A. Keogh does not wish to denude the country of civil practitioners; but this is exactly what his proposal tends to do. He invites every available general practitioner who is physically fit and willing to serve to throw up his usual occupation and join the army. Is it not possible that the result will be that a large number of medical men will be engaged in doing two or three hours work a day in the army, while the practitioners remaining in civil life will be struggling to cope with far more work than they can manage?

Our object should be to conserve every ounce of medical service available, and to direct it into proper channels; to satisfy the needs of the army with as little disturbance as possible of civilian practice. To attain this object I am still convinced that properly organized part-time work should be used more extensively than at present, and would be of benefit to both sides of practice. Not only could men in civil practice devote an hour or two a day to military work in their immediate neighbourhood; it would also be quite possible to arrange for relays of medical men to devote the few weeks usually spent on their holidays to service in connexion with hospitals in this country or in France.

The germs of such a scheme were suggested in the BRITISH MEDICAL JOURNAL some six months ago, but did not appeal at that time to representatives either of the British Medical Association or of the War Department. It may be that later on it will be found that the demand for whole-time service is not only wasteful of energy, but also impossible of attainment.—I am, etc.,

London, W., March 16th. CHAS. BUTTAR.

A MEDICAL SERVICE BUREAU.

SIR,—In order to remedy the unequal distribution of medical service in civil practice, I understand from the JOURNAL that the Divisions and Branches of the Association are urged to make another co-ordinated effort on the lines laid down by the Scottish Medical Emergency Committee.

The British Medical Association is obviously the proper organization for the purpose, and, after so strenuously fighting the Insurance Act, there will be a piquant satisfaction in attempting to meet a situation for which the Act is in some measure responsible. But however successful such attempts may be, they leave untouched the plaintive appeals of hospitals, institutions, and the various opportunities of service which the war has created.

It is a curious thing that whilst the hospitals are unable to secure men to do the work, their advertisements are still in the same old stereotyped form. They might well follow the lead of the Westminster Hospital, and shape their advertisements to meet the changed conditions. I believe there is need for a medical service bureau, by which those who have services to render may be brought into touch with opportunities as they arise. There has been, and is, much wasted and misdirected effort through lack of centralization.

There must be many who have partly or entirely retired from active work who are still able and willing to give useful service, as far as their limitations in regard to age, health, experience, and social claims allow.

I see no reason why the nursing profession should not be included in such a scheme. The bureau might now and then encroach on the domain of existing agencies, but not, I think, injuriously, for those whose chief aim is to see how much they can get and how little they can give would still apply to the agents. At such a time, too, co-operation may well displace competition.—I am, etc.,

London, N.W., March 3rd. J. SCOTT BATTAMS.

EARLY VACCINE TREATMENT OF PNEUMONIA.

SIR,—I have read Dr. Wynn's paper (BRITISH MEDICAL JOURNAL, March 13th, 1915) on this subject with much interest, and I should like to corroborate the general impression which he conveys—namely, that in many cases of pneumonia there is quite a definite improvement in the patient's general condition following upon the early injection of vaccine. My results, however, are not so good as his. I have had 2 deaths in 8 cases treated by pneumococcal vaccine on or before the third day. But I have hitherto given vaccines only in obviously severe attacks. The recovery-rate is not, however, the sole criterion of the value of vaccine treatment in pneumonia. In two of my cases I could not satisfy myself that the vaccine had any effect at all; one of these (aged 78) died, the other recovered. On the other hand, I had one fatal case with a loud mitral bruit, which was certainly benefited for a time.

I have not employed doses so large as those suggested by Dr. Wynn. I have followed the practice of Dr. Parry Morgan,[1] and given doses of 5 to 30 million. Such doses, when injected on or before the third day, have given results in five cases pretty much like those related in detail by Dr. Wynn. In two cases, as already mentioned, there was no appreciable effect of any kind. The eighth case, however, tends to support Dr. Wynn's conclusions, and is, perhaps, worth recording in some detail, apart from the question of vaccine dosage.

First Day.—A man, aged 46, consulted me in the evening. Pulse 92, temperature normal. He had no pain or anything else to suggest the onset of pneumonia, but he looked ill and said he felt ill.

Second Day.—Morning temperature 102°, pulse 108, respirations 40; evening temperature 102.8°, pulse 118, respirations 48. Pneumococci were present in the sputum; 12 million pneumococci injected (the vaccine had been prepared from a strain isolated from the blood of a rapidly fatal puerperal case.) A blood culture, about 10 c.cm., was taken, and gave a copious growth of pneumococci.

Third Day.—Morning temperature 100°, pulse 96, respirations 36; evening temperature 101.2°, pulse 95, respirations 44; 12 million pneumococci injected.

Fourth Day.—Morning temperature 102°, pulse 100, respirations 48; evening temperature 101.4°, pulse 95, respirations 50; 30 million pneumococci injected. Another blood culture, about 10 c.cm., taken; it proved sterile.

Fifth Day.—Morning temperature 102, pulse 120, respirations 58; evening temperature 98°, pulse 76, respirations 54.

Sixth Day.—Morning temperature 98.6°, pulse 86, respirations 54; evening temperature 100°, pulse 80, respirations 58.

Seventh Day.—Morning temperature 97.2°, pulse 80, respirations 36; evening temperature 98°, pulse 76, respirations 42.

The subsequent history was uneventful, except that there was some restlessness and delirium for several days, and the respiration-rate continued high for about a week. There was consolidation of the left lung and upper lobe of right. The patient looked very bad on the morning of the fifth day; 30 million had been injected the previous evening. I certainly thought he was going to die; I was therefore agreeably surprised to find such a radical improvement in the evening.

I direct attention to the positive result of the blood culture on the second day and the negative result on the fourth day. It tends to confirm Dr. Wynn's opinion that "pneumonia is primarily a septicaemia," and it is also of interest from the point of view of the preparation of an autogenous vaccine, which is certainly the ideal procedure.

There is one point, however, on which I cannot quite agree with Dr. Wynn. He says a streptococcal pneumonia "will at once give rise to a suspicion that the infection is other than pneumococcal." I saw a case of the kind some time ago in which such a suspicion was not entertained either by myself or three other medical men in

[1] *Proceedings of the Royal Society of Medicine*, 1910, vol. iii.

touch with the case until the fact was demonstrated by bacteriological examination. Exact diagnosis is essential if we are to form a just estimate of specific treatment.—I am, etc.,

Manchester, March 15th. J. STAVELY DICK.

OPEN-AIR TREATMENT OF TYPHUS FEVER.

SIR,—Having read the account of the sad death of Dr. Ross in Servia when in charge of the typhus wards, one cannot but feel there is grave danger for those in attendance on such cases. I was in Tripoli city during the war when there was an outbreak of typhus; the Italians treated these cases mostly in tents or in special huts; this method of treatment seems to be much better than ordinary wards, as a tent or a hut can be more easily cleared of vermin; besides there is better ventilation, and I believe a free current of air to be a great safeguard. At the North Africa Mission Hospital in Tangier they lost on two occasions both the doctor and the nurse through admitting a typhus case to the ward.

I should most strongly advise, therefore, that typhus cases should be treated in tents, and if that is not possible on account of the weather, in special huts which could be destroyed afterwards.—I am, etc.,

ERNEST J. MAXWELL, M.B., B.C.Cantab., M.R.C.S.

Manchester, March 15th.

PENSIONS FOR THE BLIND.

SIR,—The question, What is blindness? has been semi-officially referred to the Section of Ophthalmology of the Royal Society of Medicine in consequence of the proposal that the Government should bring forward a scheme for granting pensions, not only to the blind, but also to those afflicted with an extreme measure of bad sight. Such a scheme will undoubtedly receive the whole-hearted support of the medical profession.

Although the question would seem easy to answer, nevertheless it led to a long discussion, for the Government, it is understood, seeks guidance as to the exact amount of amblyopia which should be considered equivalent to blindness for the purpose of granting pensions. *Murray's Dictionary* states that blind means "destitute of the sense of sight," and that blindness is "want of sight." We must accept these concise definitions, and if pensions for the blind are, very rightly, not to be confined to the blind, it would be better to add "and for those with serious defects of sight," or "and for the purblind." Purblind is a good old word which has had a chequered career. Originally, blind and purblind were synonymous, both meaning "wholly" blind; but Shakespeare uses purblind sometimes as "wholly" blind and sometimes as "partly" blind, and the latter signification is now the only accepted one. An analogy may be drawn between the use of the words blind and live. However little life a man may have, and however little sight, he is not dead and he is not blind. There is a hard and fast line in each case, and totally blind is just as tautological as totally dead. But on the other hand, there is no similar analogy in the case of the word deaf. A man may be deaf without being stone-deaf. The dictionary definition makes this clear—"lacking, or defective in the sense of hearing." Deafness, therefore, may vary in degree. Every English word may have not only congenital rights, but also an acquired *patina*. Colloquially, we may say a man is blind when he is only purblind, but an Act of Parliament must be accurate. Moreover, many people with defective sight object to being called blind, and we should respect this feeling. As the pensions are not to be confined to the so-called "totally" blind, a definite word should not be used for an indefinite condition. In fixing the limits of purblindness, the correlation of occupation and other factors would require discrimination. A farm labourer might continue his work with $V = \frac{3}{60}$, whereas a clerk could not, and a professional singer might earn the income of a Cabinet Minister with no sight at all.

The conclusions I would draw are: First, that we should not tamper with the English language, and secondly, that we should not make people blind by Act of Parliament.

For the purpose of allocating pensions, each case should be judged on its merits, the prime factor being the inability of the applicant, in consequence of visual deficiency, to earn his living by appropriate work.—I am, etc.,

Bath, March 12th. W. M. BEAUMONT.

THE METRIC SYSTEM IN MEDICINE.

SIR,—The recommendations of the Pharmacopoeia Committee that the metric system should be followed will probably be stultified by a simple outside cause. I refer to the glass bottle question. Some twenty years ago, after doing a lot of analytic work, I wished to try the decimal system in prescriptions, but found the difficulty insuperable from the "ounce" bottle system. Glass bottle makers in this country will not stock metric moulds unless there is a demand, and Germany is *fortunately* unable to supply bottles on the metric system in competition. The Pharmacopoeia Committee will have to look into this matter.

In spite of its scientific value in analytical chemistry, I doubt if the metric system is good for dispensing. The unit, the milligram, is far too small. The grain is *par excellence* the unit for most drugs—for example, opium, quinine, etc.—while the most poisonous alkaloids run about easily-remembered figures, fiftieths or hundredths. To watch a French pharmacist fiddling with "liquids" in a beaker on a balance is annoying while he could "measure" them in a trice, while, after all this meticulous metric manipulation, the patient is directed to consume the "exhibit" in "coffee"- or "table"-spoonfuls!

However, time will show, but with no German bottle competition that time will be "not yet."—I am, etc.,

January 1st. FIASCO.

THE PANCREATIC TREATMENT OF RELAPSE MALARIA.

SIR,—In connexion with the letter by Dr. Beard on the above subject which appeared in the BRITISH MEDICAL JOURNAL for March 6th, I think it may be of interest to point out that Dr. Beard has apparently overlooked a paper dealing with a trial of his method in India. I refer to an article by Captain W. L. Fretz, which appeared in the *Journal of the Royal Army Medical Corps* for November, 1914. Captain Fretz treated 19 cases of malaria by injections of amylopsin and trypsin, but did not get such satisfactory results as Major Lambelle. His conclusions may be quoted. They are as follows:

> I must say that, though optimistic at first as to the efficacy of the treatment, I was soon forced to modify my views. Far from being, as I had hoped, of the nature of a *sterilisans magna*, I found that it was in some cases rather a useless and painful operation. It, however, seems undoubtedly to have some effect on the parasite in fresh infections, and better results were obtained in those cases with the longer interval between the injections. Possibly it may be found that our method of administration is wrong, and some modification of this, or in combination with quinine, may prove to be the ideal method of treating this curse of Indian life.

I cannot myself express any opinion as to the value of Dr. Beard's suggestion, but I should say it required much more extensive trial before being pronounced "highly efficacious." At the same time, such a test should be accorded to it, for though malaria cases would rarely, if ever, relapse provided they were properly treated with quinine from the outset, there are, unhappily, only too many instances where such treatment is either impossible or is not adopted, and chronic malaria not infrequently proves very troublesome and taxes the patience and skill of the physician.—I am, etc.,

ANDREW BALFOUR.

Wellcome Bureau of Scientific Research, London, W., March 10th.

THE TREATMENT OF MALIGNANT DISEASE OF THE SKIN.

SIR,—Dr. J. H. Sequeira, in his lecture published in the JOURNAL of February 27th, states, when speaking of the radio-therapy of rodent ulcer, "When there is a deep infiltration much larger doses are given, even up to eight pastille doses at one sitting, but when this is done the parts are screened by a layer of aluminium varying from 0.2 to 4 mm. These filters prevent chronic *x*-ray ulcer." I should like to ask whether Dr. Sequeira wishes it to be understood that the eight pastille doses which are given at one sitting are applied to the same area, and, if so, upon which side of the filter is the pastille placed—a point of great importance.

I have treated a large number of rodent ulcers by means of the *x* rays, and I have upon occasion given as many as sixteen pastille doses at one sitting, but not upon the same

area, the surface being divided into suitable areas and each irradiated separately, the other portions of the surface being carefully protected by substances impervious to the *x* rays. Thus any one portion of the surface of the ulcer only receives a dose of the rays which is sufficient for the destruction of the diseased cells but which the healthy tissues can bear without danger.

Should this be Dr. Sequeira's intention he does not state it very clearly in his lecture, and I fear that if an inexperienced radio-therapeutist were to administer eight full doses to one area he will regret the result.—I am, etc.,

London, N., March 1st. CHRISTOPHER KEMPSTER.

THE PREVENTION OF TETANUS.

SIR,—I regret that a distance of eight thousand miles prevents my replying sooner to Sir Victor Horsley's letter in the BRITISH MEDICAL JOURNAL, January 9th, p. 93. Had I seen Sir William Watson Cheyne's able and very practical lecture, and the numerous letters which you have since published proving the futility of Sir Victor Horsley's attack upon Sir Rickman Godlee for advocating the use of pure carbolic acid in infected wounds, I should not have written to you as I did (BRITISH MEDICAL JOURNAL, January 2nd, p. 51). It was because our experience of prophylactic measures here is so great (the vital statistics of Calcutta show about 20 deaths a week from tetanus), and the need of antiseptic as opposed to aseptic measures in the field so urgent, that I wrote and stated how efficient we have found antiseptic treatment of wounds and prevention of tetanus by pure carbolic acid to be; so efficient, indeed, that there is no point in Sir Victor Horsley's indictment of the hospital authorities. It is because our results from thorough sterilization of infected wounds are as good as in hospitals where antitetanic serum is used that we have come to rely upon sterilization and do without the costly serum. The disregard for human life exists only in Sir Victor Horsley's imagination. I can only hope that if my son is wounded in Flanders he may fall into the hands of an "antiseptic" surgeon—one who uses pure carbolic acid for choice—and not into the hands of one holding Sir Victor Horsley's views.—I am, etc.,

F. P. MAYNARD, M.B., F.R.C.S.,
Lieut.-Col., I.M.S.

Mayo Hospital, Calcutta, Feb. 4th.

THE RUM RATION.

SIR,—In his letter of the 2nd inst., appearing in your issue of March 6th, Sir Victor Horsley uses the expression "All the professors of military hygiene at the Military Medical College." Having been professor of military hygiene from 1908 to 1912, I beg leave to state that Sir Victor has no authority from me to include my name in the above sweeping statement.—I am, etc.,

Caius College, Cambridge, March 9th. CHARLES H. MELVILLE, Colonel.

SIR,—The discussion on this subject is decidedly interesting. In reasoning on it it is well to bear in mind the following admitted facts:

1. The shooting in the English navy is first class. This has been proved in all the naval actions fought with the German fleet, and also by the excellent marksmanship shown at the Dardanelles and on the coast of Belgium, where our seaman gunners speedily demolished the guns and forts of the enemy.

2. The rum ration is still being daily served out on board our men-of-war to the gunners.

3. It is these rum-drinking men who make this splendid shooting.

In view of these facts I would like to know whether the withholding of the ration would still more improve the shooting? If so, we would truly become a superb nation in gunnery by cutting off rum. Again, the French artillery is said to be most deadly in its accuracy of aim and in its quickness of fire, and yet the French soldiers are almost universally alcohol consumers. They take it twice a day in the form of light wine. Would they greatly improve if the wine were withheld?

The fact that alcohol flushes the capillaries and causes therefore a loss of heat would seem to contraindicate its use where cold has to be withstood for a long period. This same fact, however, might tend to obviate frost-bite if the dose were given only after removal from the source of cold, or when warm food was also being taken.

I would like to see the whole subject discussed, taking into account all these facts, and without any exaggeration or bias either for or against the temperance question. A good cause is never well served by exaggeration, and, on the other hand, exaggeration may do it much mischief.—I am, etc.,

Plymouth, March 4th. T. B. P. WILKINSON, M.B.

SIR,—I have read the correspondence in your columns on the rum ration with considerable interest. I think Sir Victor Horsley and other teetotalers should show more consideration for the wishes of our gallant soldiers who are facing misery and death for *us*. The rum ration is, I understand, looked forward to by them with feelings of satisfaction which no teetotaler can properly appreciate.

If the soldier welcomes the anticipation and realization of the rum ration, despite all real or assumed disadvantages, surely he is entitled to some say in an optional matter. Our army doctors have unique opportunities of judging its good or ill effects. Is it likely that they would countenance its use if they thought it was really injurious?

I think Sir Victor Horsley would do well to subordinate his teetotal principles to a calm consideration of the feelings of the men. These men, I repeat, are fighting for *us*, and he is striving to rob them of an undoubted luxury and pleasure, on grounds which are unsupported by a consensus of medical opinion. Imagine the feelings of a "Tommy" if he was told that the rum ration must cease, not because army doctors and doctors generally disapproved of it, but because Sir Victor Horsley and his brother faddists differed from the majority. I think his answer would be, "Who is doing the fighting?"

Personally, I am rather glad that Sir Victor has taken up this matter. His intolerant attitude has before now been known to produce an entirely opposite effect to that which he intended.

The extraordinary lengths to which teetotalers will go has also been shown in the correspondence in your columns relating to delirium tremens. The highest authorities, and the vast majority of the profession, know that suddenly to cut off the supply of alcohol, in the case of an habitual heavy drinker, is to invite an attack of delirium tremens. Yet it would appear from the correspondence that there are medical men whose teetotal principles are so profound that they are prepared to jeopardize, or sacrifice, the life of the patient in order to uphold their own personal convictions.—I am, etc.,

London, March 16th. GEORGE OGILVIE.

SIR,—The letters of Captain Woodman, Dr. Wood, and Dr. Astley Cooper require a brief reference.

Captain Woodman suggests that it is impossible in trench warfare, as carried on in the present campaign, for the men to have real hot liquid food as refreshment at dawn instead of the cold, deceptive rum. Evidently Captain Woodman has been unfortunate in his sources of information. Except in a very few cases of advanced saps, etc., it has been perfectly possible to heat tea. With the folly, born of ignorance, that characterizes the use of alcohol, the rum has in a very large number of cases been ordered to be put into the tea, thus neutralizing its physiological value. That Captain Woodman is mistaken is shown by the numerous letters which have arrived from the trenches of gratitude for presents of tinned soups, bovril, cocoa, and milk, etc., which charitable people have sent out to the men, and they have heated up for themselves. Captain Woodman cannot have seen daily in the *Evening Standard* a column of subscriptions and appeals to the charitable for sending out thousands of tins of condensed milk for this purpose, and General Wilcocks, in supreme command of the Indian Expeditionary Force, actually wrote a most grateful letter of thanks for the milk thus sent to his men. What is disgraceful to my mind is that our extremely wealthy country deliberately leaves the real support of our men against cold and wet by hot food like milk to the charitable, and then, to prevent grumbling, issues an

intoxicant to delude the men into thinking they are warm.

Dr. Wood says: "Sir Victor Horsley will forbid 'forced marches' because they make the men too tired." I really do not know how a statement of this kind, which is so obviously delirious nonsense, can be supposed to help in the discussion of the best way to help our troops in their arduous task.

Dr. Astley Cooper asks for a committee of inquiry into the subject. If Dr. Astley Cooper will study the literature of the subject he will find a vast amount of work has been accomplished on this question, and that there is no need to tax our depleted funds to prove once more, thoroughly ascertained facts. Dr. Astley Cooper is clearly under the impression that "small" doses of alcohol have no adverse effect on the body, and particularly on the nervous system. Again I must refer him to the literature of this subject, and especially since I notice he makes the statement which one is accustomed to hear from the unscientific man in the street, but not from a physiologist—namely, that he was unable to see any difference in his psychology, whether he was taking some alcohol or none. Of course not. The first psychical change produced by alcohol is precisely inappreciation. But, further, until Dr. Astley Cooper employs accurate laboratory methods of investigation he will continue to overlook the real effects of small quantities of alcohol.—I am, etc.,

London, W., March 1 th. VICTOR HORSLEY.

PETROLEUM AS AN HABITUAL LAXATIVE.

SIR,—When Dr. W. Allan Jamieson published, in the JOURNAL of March 6th, his kindly warning against the habitual use of liquid paraffin as a purgative, suggesting that it may cause cancer, I think that he must have been unaware of some investigations which have been made in this question, and which he will find briefly described in a letter to the BRITISH MEDICAL JOURNAL of July 5th, 1913.

Liquid paraffin is one of the later products of the distillation of crude petroleum, whereas only the intermediate oil fractions seem to be responsible for paraffin cancer. The same rule holds in the case of coal derivatives—for example, tar, pitch, and soot, which also give rise to cancer, but it is only the lighter and middle oil fractions (especially the anthracene fraction) of the carbonization of coal that have this effect on the skin.

There is now more evidence that the auxetics in tar,[1] pitch, and soot are the predisposing cause of pitch cancer, as shown not only by direct experiment but also from the fact that one can by the biological test for auxetics pick out those commodities which are known to predispose a tissue to cancer from a large number of those that do not. Therefore, it would seem that paraffin cancer is also brought about by the auxetic principles which have been detected in the "interim oil scales" produced at the works in Scotland. Auxetics have been made to cause benign cell proliferation (which itself is a predisposition to cancer) both in men and animals; they are set free in the tissues by cell death following chronic injury, as well as being contained in or produced by all the cancer-causing commodities—for example, tobacco, manure, arsenic, etc. Auxetics have in addition been made to cause cell division in many classes of unicellular organisms besides individual tissue cells; indeed, it has recently been proved that some cells will not divide at all without the agency of an auxetic.

Liquid paraffin, on the other hand, if pure, contains no auxetic, as proved by tests. It is produced at about 360° C., whereas auxetics become volatile at 300° C. to 320° C. It has been extensively used internally for more than one decade by the general public, including persons of the cancer age, and there has been no flare in the incidence of intestinal cancer such as one would expect if liquid paraffin were as dangerous as tar, pitch, soot, or the middle petroleum fractions. It would seem, therefore, that this valuable purgative might be given a clean bill of health.

Unfortunately, the same cannot be said of refined paraffin oil (kerosene), which quite recently in these columns has been advocated for administration in acute infective disease. It contains auxetic, and, if used, should only be prescribed for limited periods. Commercial vaseline also contains auxetic, to which its healing properties may be attributed, and the same may be said of liquor carbonis detergens. But these substances are rarely applied for long periods to such a cancerous soil as the intestinal epithelium.

Some proprietary coal-tar pills have lately appeared on the market. In my opinion they should not be taken continuously by persons over the age of 40 years.—I am, etc.,

The John Howard McFadden Research Fund, S.W., March 8th. H. C. ROSS.

[1] Last year D. Norris succeeded in isolating the auxetics from tar; one is a substance already known as pseudo-cumidine, the other is a new substance with a formula $C_{22}H_{14}O_9N_6$.—*Biochemical Journal*, vol. viii, No. 3.

SIR,—I read with much interest, in your issue of March 6th, Dr. Allan Jamieson's remarks on the use of petroleum as an habitual laxative, his opinion being that its action "is not merely that of a lubricant oil," but also that of castor oil and croton oil, "by irritating the lining of the intestines, causing an augmented flow of mucus, and at the same time increasing peristalsis.

Dr. Eric Pritchard, in his reply to Dr. Jamieson's letter, expresses the view that pure refined petroleum, taken internally, has little or no irritant effect on the mucous membrane of the bowel.

I am inclined to support Dr. Jamieson, for the following reason: Highly refined preparations of petroleum are applied to the head as a dressing and for promoting the growth of the hair. It is the experience of myself and some others I have spoken to on the matter that the continued use of petroleum preparations (refined) to the head produces after a time small warts on the scalp, which disappear with the disuse of it. I think petroleum should not be given internally for long periods at a time.—I am, etc.,

Stockton-on-Tees, March 15th. G. VICTOR MILLER.

ARTIFICIAL PNEUMOTHORAX.

SIR,—Dr. Woodcock, in his letter dated January 11th, apparently admits with pride that his operative procedure is characterized by temerity tempered with timidity. It seems, however, that he is timid when, safely, he might be bold, and more than bold where others would be timid. To delay the introduction of gas until the fourth sitting in a simple case is timid indeed, and the advantage to the patient is not obvious. To introduce 30 c.cm. of gas when he does not know the position of the point of his needle is boldness that few would care to emulate. We are assured by Dr. Woodcock that the procedure is not accompanied by danger of gas embolism. I am not prepared to dispute the point; I have not tried. I do contend, however, that the proceeding is not useful and not necessary. To run the risk, even harmlessly, of inflating a patient's pulmonary tissue with gas or of producing subcutaneous emphysema, can have no practical value to aid the induction of an artificial pneumothorax.

The ease or difficulty with which the intrapleural plane is found is a matter of technique. It may not be out of place to mention certain practical details which I have found useful of late and which have rendered the induction of an artificial pneumothorax easier than formerly.

Under local anaesthesia I employ a very blunt needle, with an eyehole 2 mm. from the end. The needle is much too blunt to pierce the skin; I make the skin puncture with a sharp tenotome. This blunt needle is pushed through the soft tissues with ease, until it encounters the resistance of the parietal pleura. Being blunt, it pierces the latter with a very distinct pop. Owing to the lateral eyehole on the needle, the manometer works at once after the needle pierces the parietal pleura. Non-adherent lung cannot be injured by a blunt needle. If, therefore, the manometer does not oscillate immediately after the "pop" of the parietal pleura, one is working over adherent lung. It is justifiable to pass the stilette once, to be sure the needle is clear; but frequent poking about with a stilette is painful and of little value. If we are over adhesions, we must puncture elsewhere, but not introduce gas, even in small quantity, in the hope that we may possibly discover the intrapleural plane.

The moral is that early cases present no difficulty. I am not at the moment concerned with the propriety of pneumothorax treatment for early cases. Late cases

must be carefully chosen, if we are to avoid failure. Fruitless vain punctures are disappointing for the patient. In this connexion I think one cannot over-emphasize the importance of a preliminary radiograph. When the radiograph shows a very contracted lung, with marked displacement of the heart and mediastinal structures, laterally towards the diseased side, we know there must be strong adhesions. I think it is waste of time to attempt to induce pneumothorax in such cases. Either we shall fail entirely, or if we do succeed in introducing a little gas, the pneumothorax will be too partial to be effective. In other advanced cases, which appear suitable for the treatment, a good radiograph and careful physical examination should make it impossible to puncture through such grossly diseased areas that adhesions are certain to be encountered. Granted, therefore, that we choose an apparently free locality for the site of puncture, if the manometer does not work as soon as the parietal pleura is pierced, we are, in spite of our precautions, over adhesions, and probably in the lung itself. It is our duty to make a fresh puncture and not introduce gas "on spec," so to speak.

I am not sure whether the needle suggested by Dr. Lister is identical with the one I use. I am uncertain, from descriptions I have seen, whether his is sharp or blunt.—I am, etc.,

HUGH H. CARLETON, M.D.Oxon.,

Davos Platz, Jan. 22nd.

MEDICAL CERTIFICATION IN IRELAND.

SIR,—Let me cordially endorse your observations *re* medical certification in Ireland. It is a scandal and a fraud on the poor. The fault is clearly with the Insurance Commission, who seem to think that the best plan for working the Act is to spit in the face of the medical profession.

Owing to the imbecile action of the Commissioners in refusing to pay fees to ordinary practitioners for certificates for cases of tuberculosis, the operation of sanatorium benefit is a ghastly failure. I can claim to speak with some authority on the working of the Act since I have been chairman of the Dublin Insurance Committee since the Act came into operation, and hence hear most of the complaints about the operation of the Act in this city.—am, etc.,

Dublin, March 8th. J. C. MCWALTER, M.D., LL.D.

CAT-LIKE PUPILS IN MAN.

SIR,—The author of the note on the above must have momentarily let his fancy stray to other eyes when he wrote the last sentence, for the keratometer surely does not show that cats' eyes—or any other eyes, for the matter of that—are not astigmatic. It merely shows the presence or absence of corneal astigmatism, and does not take into account any lenticular astigmatism.

To settle the question about the stenopaeic pupil in cats the following experiment is necessary: The corneal curvature should be examined with a keratometer and then a careful retinoscopy done under an efficient cycloplegic.—I am, etc.,

Upham, Southampton, March 6th. JAMES C. HOYLE, M.D.

COLOUR VISION THEORIES.

SIR,—In my last letter I gave the trichromatic theory. It is curious how many persons seem quite unable to understand this theory. This is due to the confusion of red light, or sensation arising from red light, or light in which red predominates, with the fundamental red sensation process, and to the use of impure colours (pigments) instead of pure spectral light. Every explanation, therefore, in which red light, or sensation caused by red light, or light in which red predominates, can be substituted for red must be excluded, and does not support the theory. Mr. Percival's ingenious explanation comes under this category. He should read the papers by Bidwell, in the *Proceedings of the Royal Society*, on the Benham top. Those physicists who state that the trichromatic theory is not a theory but a fact simply do not understand the theory. Bidwell was not one of those, and he states that there is no direct evidence of the primary assumption of the theory. He also shows and states that the phenomena of intermittent light cannot be explained on this theory. He shows that the red lines on the top do not appear when the light illuminating the top does not contain a red constituent. On the theory a simple yellow and a mixture of red and green light matching it are physiologically identical, but when the top is illuminated by the yellow formed by the mixed lights the red lines appear, but not with the simple yellow. On the trichromatic theory the sensation excited by spectral yellow contains a much larger percentage of the red sensation process than white light. Therefore the red lines should be more marked when spectral yellow light is used than with white light. If Mr. Percival will read Bidwell's papers and interpret the facts in the light of my explanation, he will find that they agree with the explanation as minutely as the facts of colour-blindness do.—I am, etc.,

London, N.W., March 13th. F. W. EDRIDGE-GREEN.

SIR,—I have read with great interest the correspondence that has taken place in your columns on the work of Dr. Edridge-Green and on colour vision theories in general, and having had occasion, in preparing my *Psychology*, to pass certain of these theories in review, I beg to offer a few remarks.

Let me say a word of cordial agreement with those who have suggested that some signal honour should be conferred on Dr. Edridge-Green in recognition of his researches. His work is not only original in its conception, but in regard to the ingenuity shown in his experiments and the mental energy manifested in a long series of papers showing new findings year by year, it is evident that all this proceeds from a love of science for its own sake, and a devotion to its service. Dr. Edridge-Green is that rare and valuable being—a truly scientific character.

The Young-Helmholtz theory is excellent as an invention, but it fails at the essential point, namely, that of demonstrating the sets of three nerve fibrillae which vibrate respectively to the impulses of the fundamental waves. That Young's hypothesis was not convincing is shown by the fact that Hering, playing on the same set of notions, found it necessary to invent another arrangement; but there, too, we look in vain for demonstration. This criticism applies also to the theories of von Kries, of J. Bernstein, and others. In comparison with these Dr. Edridge-Green gives us something tangible.

Moreover, the constant reference to this theory by Dr. Edridge-Green has suggested to him the discovery of new facts, and experiment or histological research has in every instance verified his anticipations. Evidently the theory brings us face to face with serious considerations and highly interesting results.

The discoveries of Dr. Edridge-Green have enabled us to lift a corner of the veil. It behoves his opponents to produce greater illumination and to attack him with more serried and cogent arguments than they have yet displayed.—I am, etc.,

House of Commons, March 9th. ARTHUR LYNCH.

Universities and Colleges.

UNIVERSITY OF OXFORD.

MR. HORACE M. VERNON, D.M., Fellow of Magdalen College, has been appointed University Lecturer in Chemical Physiology for four years from January 1st, 1915; and Mr. John W. Jenkinson, M.A., D.Sc., Exeter College, as University Lecturer in Comparative and Experimental Embryology for five years from October 10th, 1915.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on February 24th.

Conferment of Status of Appointed Teacher.

The status and designation of appointed teacher were conferred upon the following, who received University titles:

King's College: W. Brown, Reader in Psychology; F. S. Locke, Reader in Physiology; O. Rosenheim, Reader in Biochemistry; W. J. R. Simpson, Professor of Hygiene and Public Health.

Westminster Hospital Medical School: R. G. Hebb, Reader in Morbid Anatomy.

London Hospital Medical College: H. M. Turnbull, Reader in Morbid Anatomy.

Middlesex Hospital Medical School: J. Cameron, Reader in Anatomy.

Charing Cross Hospital Medical School: W. Hunter, Reader in Pathology.

St. Mary's Hospital Medical School: J. E. S. Frazer, Professor of Anatomy; H. E. Roaf, Reader in Physiology.
London School of Tropical Medicine: R. T. Leiper, Reader in Helminthology.
Lister Institute: M. Greenwood, Reader in Medical Statistics; J. H. Smith, Reader in Bacteriology.

Professor Halliburton's Gift.

Professor Halliburton's gift to the Department of Pharmacology at King's College of a large Zeiss microscope, which he had purchased from the effects of the late Mr. Myers Ward, was accepted with thanks.

Appointment of Representatives.

Dr. Frederick Taylor was reappointed a member of the General Medical Council and Dr. E. G. Perodeau was elected a governor, in respect of the University College, of Hampton Grammar School.

Regulations for M.B. Examination.

The regulations for the M.B., B.S. examination for internal and external students have been amended by the insertion of the following:

At the M.B., B.S. examinations to be held in May and October, 1915, students will be permitted to base their replies either on the old or the new edition of the *Pharmacopoeia*, provided that they shall be required to state on which edition such replies are based. For examinations in and after May, 1916, replies must be based on the new edition of the *Pharmacopoeia*.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examination indicated:

SECOND M.B., CH.B.—J. D'Arcy Champney, Evelyn Bessie Salter.

VICTORIA UNIVERSITY, MANCHESTER.

Professorship of Pathology.

DR. HENRY ROY DEAN, Professor of Pathology in the University of Sheffield since October, 1912, has been appointed Professor of Pathology and Pathological Anatomy in the University of Manchester.

UNIVERSITY OF GLASGOW.

THE annual statistical report of the University shows that the total number of matriculated students for the year 1913-14 was 2,916, of whom 821 were in the medical faculty. Among the bequests received was that of Dr. G. P. Tennent, of Glasgow, amounting to £25,000, to be applied for the benefit of the faculty of medicine in such manner as his trustees might determine. The university library had received £5,000 from the Carnegie Trust, and over 2,300 volumes, besides numerous pamphlets, had been added during the year.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on Thursday, March 4th, when Sir Thomas Barlow, Bt., K.C.V.O., the President, was in the chair.

A communication was received from the Secretary of the Charity Commission, dated February 19th, 1915, enclosing a scheme for the administration of the charity to be called The British Hospital for Mothers and Babies, to the Managing Committee of which the College consented to send a representative. It was resolved that it should be left to the President to nominate a representative. A discussion then took place, which was declared to be *secreta collegii*. The President then dissolved the comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on March 11th, when Sir W. Watson Cheyne, Bt., President, was in the chair.

Diplomas were granted to twenty candidates found qualified for the Licence in Dental Surgery.

University College, Cork, was added to the list of dental hospitals and schools recognized by the College.

Mr. C. H. Golding-Bird was re-elected the College Representative on the Central Midwives Board for the ensuing year, and the thanks of the Council were given to him for his past services.

Sir Henry Morris was re-elected Representative of the College in the General Medical Council.

The diploma of Fellow has been conferred upon Mr. Shamrao Ramrao Moolgavkar, L.R.C.P., M.R.C.S.

The Services.

ARMY MEDICAL OFFICERS AND THE G.C.B.

SURGEON-GENERAL writes: It was recently stated in the House of Lords that the Government had under consideration the granting of the G.C.B. to officers of the Royal Marines. It is suggested that they might at the same time consider why officers of the Army Medical Department are precluded from receiving the same honour. Now is the time for the British Medical Association to take action in the matter.

Obituary.

SIR GEORGE TURNER, M.D., D.P.H.CANTAB.,

LATE M.O.H., TRANSVAAL.

WE regret to have to record the death, on March 13th, of Sir George Turner, formerly medical officer of health for the Transvaal, in his 70th year. He was educated at the medical schools of Guy's Hospital and Montpellier, and took the diplomas of L.R.C.P. and M.R.C.S. in 1872, and D.P.H. in 1875; in 1886 he graduated M.B. Cambridge.

In 1895 he entered the Civil Service of Cape Colony as medical officer of health. He was then nearly 50 years of age, but in the period that followed, until his retirement twelve years later, he rendered very great services to South Africa and to the world at large. An outbreak of rinderpest occurred in Cape Colony in 1896. The late Professor Koch was then studying the disease, and had devised a system of inoculation, but had to leave South Africa before his work was complete; for the last three weeks of his stay Dr. Turner was with him. Six months later Dr. Turner had prepared a curative and preventive serum, but the immunity it produced lasted only for three weeks. He accordingly continued his researches, and had for his assistant Wilhelm Kolle; within six months a system of simultaneous inoculation of virus and serum was devised, which produced the most excellent results. The report on this subject was signed by him and Dr. Kolle, and the method is now commonly spoken of as the Kolle-Turner method, whereas it ought certainly to be known as the Turner-Kolle, or the Turner method. The inoculations then made amounted to an experiment on an unusually large scale, and the results were ascertained in the case of 14,000 animals, though a much larger number were treated. The epizootic was arrested, and within a year the disease was stamped out. The Government of Cape Colony then closed Dr. Turner's station, but as the prophylactic there produced was urgently required in Rhodesia and Egypt, Mr. Cecil Rhodes defrayed the cost of carrying it on for another four months; then the work finally ceased. Dr. Turner afterwards took a holiday in England, and on his return to Cape Colony the then Minister of Agriculture expressed his intention of proposing a vote of thanks in the Cape Parliament and of moving for a grant of money, in recognition of Dr. Turner's great services, which had resulted in the saving of millions of money in South Africa alone; but the Ministry fell, and nothing was done. When the war in South Africa broke out Dr. Turner volunteered, and later, when the prevalence of typhoid fever had become very severe, Lord Roberts asked for his services in dealing with the epidemic in the army and in the concentration camps; subsequently, Lord Roberts bore testimony to the value of Dr. Turner's work. In 1901 rinderpest broke out again, and Lord Kitchener asked for Dr. Turner's help. A station was started at Pretoria, and in twelve months rinderpest had once more been stamped out. On this occasion, also, the prophylactic was supplied to Egypt and Natal.

There was at that time at Pretoria a leper asylum containing about fifty Dutch and forty native patients. Dr. Turner worked there for seven years, the first three purely as a labour of love. He saw the lepers each morning and evening, and gave up the whole of Saturday and Sunday to them. Here he conducted many *post-mortem* examinations, and arrived at certain conclusions, the most important of which were that leprosy was not hereditary, but spread solely by contagion immediate or mediate, that it was communicable from the sick to the healthy, but not nearly so easily as tuberculosis, and that it was not such a danger to the public health as syphilis. While admitting that difficulties might be encountered in making a diagnosis even when the disease had been in existence for some time, he urged that it should be made notifiable, and expressed the opinion that lepers "should cheerfully submit to any and every precaution likely to prevent others from suffering in the same way as they themselves are suffering." During his connexion with the leper hospital he himself contracted this terrible disease. In 1908 he resigned his appointments in South Africa, and afterwards went to live in retirement in Devonshire. He suffered from the nervous type of the disease, which

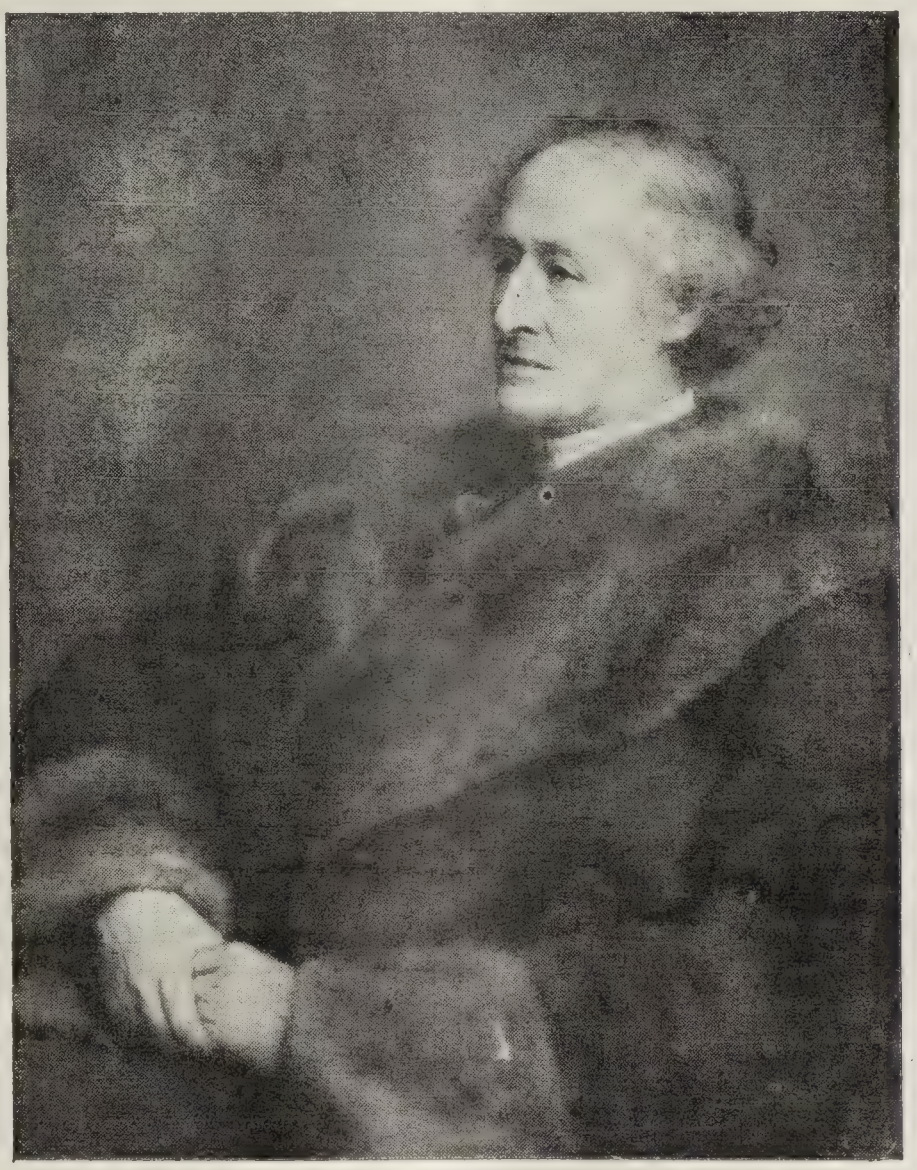
greatly crippled his activities, but he bore his sufferings with great courage.

In 1913 his services were recognized by the conferment upon him of a knighthood, and the gratification he experienced was the greater because the honour was conferred on the direct initiative of the King. Sir George Turner in the earlier part of his career was appointed the first medical officer of health for Portsmouth, a town with which his family had long been associated. His work there, which was both distinguished and successful, was not forgotten, and in March, 1913, the Town Council passed a resolution recording their great appreciation of the valuable services rendered by him to the country and to Portsmouth.

WILLIAM MURRAY DOBIE, M.D.,

CHESTER.

On the evening of March 12th there passed away at the ripe age of 86, peacefully and almost imperceptibly, one who had been a notable figure in the Cheshire and North Wales district for half a century and more. Of tall and striking presence, with refined features, pleasing expression, and a voice whose every inflection betrayed a kindly interest, Dr. Dobie had earned and retained the esteem and affection of everyone with whom he came in contact. His influence on his patients is best described in the words of the late Duke of Westminster on the occasion of the presentation of his portrait: "So genial, so amicable, and so delightful. . . . I am sure those ladies and gentlemen who have been under his sway can conceive no one with whom the principle of *suaviter in modo* can have been more thoroughly combined with *fortiter in re*."



WILLIAM MURRAY DOBIE.
(*From the Presentation Portrait by Ouless.*)

His skill and success as a physician abundantly bore out the promise of his early scientific training and accomplishments.

William Murray Dobie was the son of Dr. W. Johnson Dobie, of Greysford. He was born in 1828 in Liverpool, and studied at Edinburgh. He early became addicted to the astronomical and microscopical studies which interested and delighted him during the whole of his busy life. He graduated M.D. with honours in 1849, being awarded the gold medal in surgery.

Whilst in Edinburgh he held the resident medical and surgical appointments at the Royal Infirmary, studied under Syme, and formed friendships with Lister and Murchison which persisted through life. He completed his studies in Berlin, Paris, and Dublin, and commenced practice in Chester in 1855. He married Janet, daughter of Mr. William Smith, of Mount Alyn, Rossett, in the same year. By this marriage he had five sons and five daughters, three of his sons—Henry, Herbert, and Cyril—being now medical practitioners in Chester.

Amongst his early contributions to science were the discovery and description of a new crater in the moon, which bears his name, and which he was in the habit of describing as "about the size of the Roo-Dee" (the Chester race course). In October, 1849, he communicated to the *Annals and Magazine of Natural History* a description of two new species of Floscularia, and in 1850, to the Royal Medical Society of Edinburgh, a paper on the Cilia of Grantia. His thesis for the degree of Doctor of Medicine dealt with the minute anatomy of muscular fibre, and described "Dobie's line," which has become classical.

During the epidemic of cholera in Chester in 1867 Dr. Dobie rendered signal service, and, with the assistance of a few devoted ladies, whose names are gratefully remembered in Chester, was instrumental in checking the ravages of the scourge. In connexion with this subject he wrote an article on the use of chlorine in the treatment of Asiatic cholera and choleraic diarrhoea. When Canon Kingsley went to Chester and founded the Natural Science Society he found a friend and able coadjutor in Dr. Dobie, who afterwards became president of the society, and was awarded the Kingsley Medal for the advancement of some department of natural science.

He was elected honorary physician to the Chester Infirmary in 1875—a position which he held for twenty years—and was elected consulting physician on resigning it in 1895. He also held the appointments of honorary consulting physician to the Wrexham Infirmary and the Royal Alexandra Hospital, Rhyl.

In 1896 a public presentation was made to him of his portrait by Mr. Ouless, the chair being taken on the occasion by the late Duke of Westminster, who was supported by all the leading inhabitants of the city and district. Dr. Dobie was made a honorary freeman of the city in 1897. He was also a magistrate for the city, and was connected with the various learned and scientific societies of Chester and North Wales.

Among his many distinguished patients was the late Mr. W. E. Gladstone, whom he attended in his last illness.

For several years Dr. Dobie had relinquished the more active practice of his profession and devoted himself more and more to his favourite microscopical studies, especially in connexion with the structure of striated muscle, of which he made many beautiful preparations and photomicrographs. He was of an earnestly religious disposition, and was a regular attendant at St. Oswald's Church. Although never robust he fulfilled the exacting requirements of a very large consulting and private practice, and lived to a great age, esteemed by his fellow citizens and honoured by all.

DR. WILLIAM MORTIMER, of Turriff in Aberdeenshire, who died on March 6th at the age of 82, was born at the Schoolhouse at Midmar in 1833, where his father was master. He received his early education under his father and afterwards at the Grammar School, Aberdeen, where he passed through the hands of Melvin, the famous Latinist. He afterwards studied medicine at Aberdeen where he graduated M.D., C.M. in 1861. In the same year he began practice in Turriff, where he remained to the end of his life. Dr. Mortimer was surgeon to the 2nd Volunteer Battalion of the Gordon Highlanders for nearly thirty years; he retired about fifteen years ago with the

rank of surgeon lieutenant-colonel, and the right to wear the uniform. The decoration of V.D. was conferred on him. During the whole of his practice in Turriff he was joint medical officer to the old Parochial Board, and afterwards to the Parish Council; he held also the position of medical officer of health to the burgh, and was on the staff of the Fever Hospital. He was probably the oldest practitioner in the county on the insurance panel. He worked with untiring devotion among the aged poor, and his loss will be mourned by a wide circle of friends both at home and abroad, for his practice extended over three generations. He was a great reader and kept himself well abreast of the advance of medical science. He married the eldest daughter of the late Provost Hutcheon, vice-convener of the county of Aberdeen, and in two years they would have celebrated their golden wedding. He is also survived by a daughter and a son who is now serving in Kitchener's Army as a member of the R.A.M.C.

THE death is announced, at the age of 67, from pneumonia, of Mr. ROBERT MACKERCHAR, who graduated M.B., C.M.Edin., in 1870. After serving for some time as assistant surgeon to Leith Hospital he settled in Dalbeattie, where he had resided ever since. He was parochial medical officer of Buittle and Kirkgunzeon. He was a member of the first School Board of Urr in 1873, and continued a member of the Board till 1882. He was at one time a lieutenant in the Dalbeattie Rifle Volunteers.

DR. T. J. CROWLEY, Medical Officer of the Clonmoyle dispensary district, Coachford, co. Cork, died suddenly on March 7th. He had for some time been suffering from an affection of the heart, owing to which he had decided to retire at an early date from his official position, as well as his private practice. As a medical student he had a distinguished career in the Queen's College, Cork, where he was a medical scholar and prizeman. He took the M.D. and M.Ch. of the Queen's University in 1872. Dr. Crowley's death recalls a tragic occurrence, resulting in a famous trial—the Cross murder case at Coachford, co. Cork. Dr. Cross was a retired army surgeon, who within a few weeks of the untimely death of his wife married a lady who was in his employment as governess; the circumstances led to inquiries, which resulted in his arrest. He was convicted of the murder of his first wife by arsenic and executed. Dr. Crowley and Professor C. Y. Pearson, F.R.C.S., University College, Cork, were the chief witnesses against Dr. Cross, and it was almost entirely on their medical evidence that he was found guilty.

LIEUTENANT-COLONEL MALCOLM ALBERT KER, Bengal Medical Service, died in a nursing home in London on February 24th. He was born on December 26th, 1862, the son of Mr. R. D. Ker, of Edinburgh. He was educated at the university of that city, where he took the degrees of M.B. and C.M. in 1884, and entered the I.M.S. as surgeon on March 31st, 1887. He became major on March 31st, 1899, lieutenant-colonel on March 31st, 1907, and was placed on the "selected list" for promotion on June 30th, 1913. He had spent his whole service in military employment, his last appointment being that of medical officer of the 2nd Battalion 5th Gurkhas. He had a long list of war service, all on the North-West Frontier of India, where he had served in six campaigns: the Hazara expeditions of 1889 and 1891, medal with two clasps; the second Miranzai expedition of 1891, clasp; Waziristan, 1894–5, clasp; Tirah, 1897–98, medal with two clasps; and Waziristan, 1901–2, when he was mentioned in dispatches, in G.G.O. No 611 of 1902, and received a clasp. He was granted six months' sick leave last January.

LIEUTENANT-COLONEL JOSEPH ROSAMOND ADIE, Bengal Medical Service (retired), died at Ambala on January 24th. He was born on March 22nd, 1859, educated at University College, London, and took the M.R.C.S. and the M.B.Lond. in 1884. In 1906 he took the Diploma in Tropical Medicine of the Liverpool School. Entering the I.M.S. as surgeon on October 1st, 1885, he became surgeon-major on October 1st, 1897, lieutenant-colonel on October 1st, 1905, and was placed on the "selected list" for promotion on May 17th, 1910. He was granted two years' sick leave in May, 1912, and retired on March 22nd, 1914, receiving an "extra compensation pension." He served in the Burma campaign of 1885–87, and received the medal with a clasp. Most of his service was spent in civil employ, at first in Bengal, afterwards in the Punjab, where he was for long civil surgeon of Firuzpur. He had the reputation of being one of the most able research workers in India, especially on malaria, but worked chiefly for his own satisfaction, and published very little.

MAJOR CHARLES ELPHINSTONE FLEMING, R.A.M.C., died at his parents' residence in Glasgow, on March 2nd, of disease contracted on service. He was born on November 6th, 1874, and educated at Glasgow, where he took the degrees of M.B. and C.M. in 1897. After filling the posts of outdoor assistant-surgeon, house surgeon, and house-physician at the Victoria Infirmary, Glasgow, and resident physician of the Glasgow Maternity Hospital, he went out to South Africa as a civil medical officer with the Natal field force. There he served in the Transvaal, and received the Queen's medal with four clasps and the King's medal with two clasps. He was appointed Lieutenant in the R.A.M.C. from January 14th, 1900, became Captain on November 14th, 1903, and Major on May 14th, 1912.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Dudley Peter Allen, for many years professor of principles of surgery in the medical department of Western Reserve University, Cleveland, and later emeritus professor, aged 62; Dr. Joseph Eve Allen, professor of obstetrics in the Medical College of Georgia, Augusta, of which he was also dean, aged 57; Dr. James Morrison Bodine, for forty-five years professor of anatomy in the University of Louisville, of which he was dean from 1867 to 1907, and afterwards president, aged 83; Dr. C. F. Brackett, professor of chemistry in the Medical School of Maine, Brunswick, from 1864 to 1873, and afterwards of physics at Princeton University till 1908, aged 81; Dr. Samuel Augustus Fisk, professor of practice of medicine in the University of Denver from 1884 to 1899, aged 59; Dr. Gilbert, of Moulins, corresponding member of the Paris Academy of Medicine, author of numerous writings on chemistry, physics, botany, pharmacy, medical hydrology, and hygiene; Dr. Lothar von Frankl Ritter von Hochwart, professor of neuropathology in the University of Vienna; Dr. Magen, editor of the *Aerztlicher Vereinblatt*, a journal which has done much for the economic betterment of the medical profession in Germany; and Dr. Arturo Marcacci, professor of human physiology in the University of Pavia, and author of numerous valuable memoirs.

Medico-Legal.

ACTION FOR ALLEGED NEGLIGENCE (CONSUMPTION).

AN action of an unusual nature was heard before Mr. Justice Low and a special jury, in the King's Bench Division, on March 9th. Messrs. Hooper, Struve, and Co., chemists and mineral water manufacturers, of Pall Mall East, were sued by a clerk who had been in their employment from November, 1906, to October, 1910, to recover damages for personal injuries received by him owing to the alleged negligence of the defendants. According to the report in the *Times*, the negligence alleged was that the plaintiff had been employed with two other persons in the room of the late secretary to the company who was suffering from consumption, and that he had thereby contracted phthisis, with the result that since May, 1911, he had been incapable of doing any work. The medical evidence was to the effect that the secretary died of laryngeal phthisis. Colonel Probyn, managing director, said he did not know that the secretary was suffering from phthisis while in the employment of the company. Dr. F. J. Allan, M.O.H. Westminster, said that the room in which the plaintiff was employed was exceptionally well ventilated, and afforded ample accommodation for four persons. The jury found a verdict for the defendants, and the judge said that so far as he could see—and he believed the jury agreed with him—there was not the slightest justification for the very serious allegations made against Colonel Probyn.

Medical News.

DR. A. C. MILLER, Fort William, has been appointed Honorary Sheriff-Substitute for the Sheriffdom of Inverness, Elgin, and Nairn.

BOOKS, periodicals, and communications intended for the *Canadian Medical Association Journal* should, in future, be addressed to Mrs. Hamblen, 85, Sherbrooke Street W., Montreal.

THE thirty-second annual meeting of the Medical Sickness Annuity and Life Assurance Society will be held at the offices of the Society, 300, High Holborn, W.C., on Tuesday, March 30th, at 4.30 p.m.

ACCORDING to the *Medical Record*, the transfusion of blood as a therapeutic measure is becoming so frequent in the hospitals of New York as well as in private practice that a demand for healthy donors has arisen. It is said that several students have lately received from £5 to £10 for eight ounces of blood.

HOSPITALS in the County of London, or within nine miles of Charing Cross, desiring to participate in the grants made by King Edward's Hospital Fund for London for the year 1915 must make application before March 31st to the Honorary Secretaries, 7, Walbrook, E.C. Applications will also be considered from convalescent homes and sanatoriums for consumption taking patients from London.

THE new law regulating the sale of alcohol came into force in Italy on January 22nd. It provides that spirituous liquors shall not be sold except by vendors specially licensed by the prefect. The sale of such liquors on days of public rejoicing and during political and administrative elections is strictly forbidden. No such liquors must be supplied to minors under the age of 16—this prohibition includes wine and beer, except with meals—to notorious drunkards, and to weakly and mentally deficient persons. The sale, manufacture, and importation of absinthe are absolutely forbidden.

THE report on the Nurses' Co-operation for the year 1914 congratulated the members on the acquisition of the lease of a commodious and suitable house at 22, Langham Street, Portland Place, W. The principle on which the co-operation is conducted is that the nurses receive the whole of their earnings, subject to a deduction for the expenses of the central office, and the maintenance of the policy by which the nurses are insured under the Workmen's Insurance Act. There are also policies of insurance against accident, and against sickness and disease, under which on payment of a small annual contribution, supplemented from the funds of the co operation, each nurse becomes entitled to a weekly allowance whilst temporarily incapacitated through sickness or disease. There are 469 fully trained nurses on the general staff, 31 asylum-trained nurses for mental patients, and 12 nurses, eligible for election, working on probation for six months. The total number of cases nursed in 1914 was 6,364, and the financial statement shows that the gross receipts from patients amounted to over £50,000, of which over £47,000 had been paid to the nurses. The deduction for expenses is—for nurses who joined before 1908, 5 per cent.; and for those who joined later, 7½ per cent. We believe this institution to be thoroughly well conducted, and that the nurses belonging to it can in every way be entirely relied upon.

LAST week Mr. Adolphe Smith, who served with the French ambulances in 1870, gave a lecture on war and the wounded, at the Royal Society of Arts, under the auspices of the Chadwick Trust and the League of Mercy. The Entente Powers, he said, had learnt from the experience of 1870. Then Germany had routed the partisans of the French Empire at Sedan, and had starved Paris into surrender; to-day it was confronted by the united French nation. How severe the privations of Paris in 1870 were was shown by the fact that the deaths rose from 900 to 6,000 a week. That was due to want of proper food, and showed what London might be enduring had the British fleet failed to safeguard its supplies. He illustrated by lantern slides the development of the scientific treatment of the sick and wounded; in spite of the greater risks and difficulties due to more extensive battlefields, there was to-day a much smaller mortality from wounds and a wonderful immunity from infectious diseases. The great need at the present moment was promptitude in removing the wounded. Many lives would be saved, especially in the case of abdominal wounds, if immediate operations could be performed close to the battlefield. Still greater efforts to care for the sick and wounded would soon be wanted, and he noted that cholera prevailed in the Austrian army and that there was typhoid fever among the Belgian troops. The former disease often travelled on the heels of the latter, so that every nerve must be strained to ensure perfect sanitation.

THE annual meeting of The Mental After-care Association, the chief objects of which are "to facilitate the readmission into social life of poor persons discharged from institutions for the insane," was held at Bethlem Royal Hospital on March 2nd. Dr. Henry Rayner, who presided, said that he was glad to be able to report steady, if slow, progress in the benevolent work of the association. Its title had been changed to that of "The *Mental* After-care Association," to distinguish it from other "after-care" societies for school children and others. The finances were in sound condition, though there had been some falling off in subscriptions and a total absence of legacies during the past year. There was, however, a considerable reserve fund, which might have to be drawn on for the establishment of cottage homes for convalescent patients, the number of whom was on the increase owing to the association having recently undertaken the care of those leaving asylums on probation, as well as of those discharged recovered. The annual report of the council was read by Miss Vickers, the assistant secretary, in the regrettable absence, through illness, of the secretary, Mr. Thornhill Roxby. In it particulars were given of numerous cases benefited by the society's operations: 373 applications had been considered by the council, and, in addition, about 200 old cases had been dealt with by the officials. The aid given in finding suitable occupations for recovered patients, to prevent relapse by the avoidance of mental strain, involved a large amount of personal care and tactful individual attention. Between five and six thousand cases had been dealt with since the appointment of the present secretary in 1886. The adoption of the report was moved by Dr. Needham, Commissioner of the Board of Control, seconded by Dr. R. Percy Smith, supported by Miss Helen Webb and Sir George Savage (Treasurer), and unanimously carried. The re-election of council and officers was proposed by Dr. F. R. P. Taylor (East Sussex Asylum), and seconded by the Hon. John Mansfield. The proceedings closed with various votes of thanks, in proposing which speeches were made by Messrs. Stanley Keith, Gabain, and Drs. Maurice Craig and W. H. B. Stoddart.

IN the first of a series of lectures on the development of children, delivered at a meeting held under the auspices of the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, at the Royal Society of Medicine, Wimpole Street, Dr. David Forsyth said that a child very soon after birth began to experience various sensations, derived in the first place from hunger and pain, and to a less extent from light and sound. It began to develop control over its muscles during the third or fourth month, the most important acquisition being the power of balancing the head on the shoulders; the absence of this power at this stage was one of the earliest signs of mental deficiency. At this period, also, it began to take an interest in bright shining objects, had learnt to co-ordinate eyes and arms, and usually began to recognize familiar objects and persons. During the next three months the most important development was the first dawnings of a consciousness of self, which usually appeared about the sixth month or even later. The power of balancing the head was supplemented by that of balancing the body in a sitting position, and primitive attempts at grasping were made. Somewhere about the eighth month it began to develop the static sense, and during the ninth and tenth months the earliest attempts of imitative action appeared. A little later the normal child began to stand and to speak, though his understanding of words was usually greatly in advance of his ability to pronounce them; early in the second year he acquired the power of locomotion. The tendency to touch and handle all objects should be encouraged as a means of educating the child in the knowledge of his own powers and their limitations. In his second lecture he said that in very young infants the emotions and desires were almost entirely animal, and were necessarily of the simplest nature. A little later pleasure was derived from the stimulation of the skin over any portion of the body. The child tended to rehearse the pleasure derived from these feelings, and in so doing elaborated certain fancies, usually of a crudely sensual or animal nature. This period was succeeded by another, during which the child experienced shame and disgust at his former fancies and pleasures leading to a mental conflict, in the course of which the seeds of later neurotic trouble were often sown. It was at this period that children required above all the most sympathetic and careful handling.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

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2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

THE COLLARGOL METHOD OF DEMONSTRATING SPIROCHAETES.

A. G. P.—The use of collargol in place of Indian ink for the demonstration of spirochaetes in films was recommended by Nitsche in June, 1912 (*Cent. f. Bakt.*, Bd. 63, p. 575) and a note on the same subject by Harrison appeared in the *Journal of the Royal Army Medical Corps*, December, 1912 (p. 749). Harrison gives the following notes as to technique:

"The suspension (of collargol) is prepared according to the directions of the makers (Chemische Fabrik von Heyden), one part of the powder being made up with nineteen parts of distilled water. The powder is first put into a black bottle (or an ordinary bottle wrapped round with black paper) and the distilled water poured on it. After standing for a few minutes the bottle is well shaken and again allowed to stand. It is again shaken and is ready for use. The suspension is used exactly as if it were Chinese ink, a loopful of the suspected serum and one of collargol being mixed together at one end of a microscope slide and then spread like a blood film. The film may be examined with an oil immersion lens as soon as it is dry; spirochaetes appear white on a reddish-brown field which is almost perfectly homogeneous. The examination requires a fairly good light, but good daylight is sufficient."

The chief advantage of collargol over Chinese ink is that it is a finer colloidal suspension, giving consequently a more homogeneous field.

LETTERS, NOTES, ETC.

CAPTAIN KEYWORTH has now added to his set of pamphlets *Easy Italian and How to Pronounce it.* It is published by Combridges, 56, Church Road, Hove, price 3d., and, like the rest of the series, can be obtained at most booksellers'.

THE ORIGIN OF THE PERISCOPE.

MR. GEORGE BETHELL (Chandos Street, Cavendish Square, W.) writes: I was greatly interested in the article on periscopes in the JOURNAL of March 13th. With regard to the remark that the periscope appears to be a comparatively modern device, the following may be of interest. I am indebted to the *Optician* of March 5th, 1915, for the facts. Mr. Frederic J. Cheshire in a short note states "that optical science was at a very early stage in its history called upon to furnish an instrument by means of which one could see without being seen. Thus, in a work on lunar topography entitled *Selenographia*, published at Dantzig, in the year 1647, by the famous astronomer, town councillor, and brewer, Johann Hevelius (1611–1687), appears an illustration describing what he calls a Polemoscopium." I have discussed this matter with several makers of the present-day periscopes, and they tell me that the illustration given describes in every detail the periscope now being made. Hevelius adds a note to his illustration as follows: "Now I turn to the fourth kind of tube, which I call a Polemoscopium, because it is very useful in time of war; it can be used either by besiegers or the besieged. The optical instrument itself I invented and improved in the year 1637, nor do I think it has ever been thought of or put together by anybody before this time." Your suggestion that the periscope should provide for binocular vision is excellent, and the idea in this respect is worthy of every consideration of manufacturers. In conclusion, I am confident that the enterprising manufacturer who succeeded in providing an efficient instrument would sell it by the thousand. Your excellent suggestion that they should contribute a portion of their profits to the Royal Medical Benevolent Fund comes at a very opportune time, as the fund has many additional and very urgent requests for help from persons who have and are suffering in consequence of the war.

ORAL SEPSIS IN RELATION TO GENERAL PRACTICE.

MEDICUS writes: In the paper by Dr. McKisack on this subject, in your issue of March 13th, I observe that no mention is made of the treatment of pyorrhoea alveolaris by the injection of hydrogen peroxide under the gums and into the pockets by means of a fine syringe. A case of the very worst type, in which the pockets were very bad and the teeth so loose that two dentists of repute advised the removal of all the teeth, has been completely cured under my observation by means of this treatment. The gums are now healthy and the teeth firm. I should strongly advise this treatment being tried in every case in which the wholesale removal of teeth is being contemplated, and, I need not add, in all slighter cases. The injections, which can be made in a very few minutes, should be given at least twice daily at the outset; later a daily injection is sufficient.

TRAGUS TRUSS AND DOUBLE LOOPED HEAD BANDAGE.

DR. H. ELLIOT-BLAKE (Beer, Devon) calls our attention to his tragus or external ear truss to cut off or modify the noise strains of war. He admits that it does not entirely prevent severe bone convection vibrations, and directs that it ought to be applied rather intermittently, to avoid any susceptibility to pressure vertigo. The tragus truss is made by Messrs. Mayer and Meltzer. Dr. Elliot-Blake likewise urges the advantages of his head and neck bandage, described in the *Lancet*, October 4th, 1902, as readily applicable in the field, where elaborate chef's white caps and skull caps of the shops are not at hand. In applying the bandage, the surgeon starts from the vertex, passes the bandage obliquely down behind the left ear to below the occiput, continues it round the *right* half of the neck, and obliquely under the chin to the outside of the left ramus of the jaw. From that point it is carried obliquely over the left side of the face in front of the left ear back to the vertex. The second loop is made in the same way on the other side, beginning from the vertex down behind the right ear to below the occiput. The two loops being complete the bandage is fastened with a single safety-pin at the vertex. Dr. Elliot-Blake believes that there is no other head bandage so simple, yet so complete. The pressure should be such as not to interfere in any way with the carotids or the branch circulation. The double-looped bandage is also applicable to stumps; army bearers and St. John Ambulance men can apply an emergency double-looped bandage by tying at the vertex two ordinary fair length handkerchiefs and making them follow the turns of the two loops as above described.

CEREBRO-SPINAL MENINGITIS.

IN the discussion on this subject in the Section of Epidemiology and State Medicine of the Royal Society of Medicine, the report of the remarks of Professor W. J. Simpson on the use of soamin should have been to the effect that the dose of the drug given to natives at Nairobi was five grains once a day for two or three days. The case-mortality in natives treated was 38 per cent., but no equivalent results were obtained to those in the epidemic in Belfast with meningococcal serum, which was 25 per cent.; in the Nairobi epidemic, of eight Europeans treated with soamin only one died.

In the same discussion Dr. d'Este Emery said that the discrimination between the meningococcus and the gonococcus was often a matter of some importance, since gonococcic meningitis occurred, though rarely. He thought the case-mortality was greatly exaggerated, owing to mild and non-fatal cases being missed. Where systematic lumbar punctures were done in children's hospitals, cases of meningitis which ran a mild course were found fairly frequently; these, in the absence of modern methods of diagnosis, would have been regarded as rheumatism, bronchitis, etc. He thought that, instead of the usually accepted 70 per cent., the case-mortality was not 35 per cent., and was perhaps much less. He stated the disease might begin gradually, be almost afebrile, and show no characteristic symptoms, except perhaps headache. In opposition to a former speaker, he thought mixed or secondary infections in meningitis extremely rare. With regard to the incubation period, he thought it varied, but had seen a case in which the symptoms developed within three or four days of birth.

A CORRECTION.

DR. ALBERT WILSON draws attention to an error in his article on The Value of Salicylic Acid in the Treatment of Wounds and Typhoid Fever (JOURNAL, February 20th). In the third line of the paragraph on *B. tetani* (p. 332) the figures 0.05 should be 0.5.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Preliminary Notes
ON
THE TREATMENT OF THE CRANIAL INJURIES OF WARFARE.

BY
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AND
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NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN SQUARE, LONDON.
[FROM THE BASE HOSPITAL, BOULOGNE-SUR-MER.]

DURING the past five months we have had the opportunity of seeing and dealing with a large number of cases of head injury at the base hospitals in France, and we now feel that our experience is sufficient to justify a preliminary communication.

Any such experience is the more important as, owing to modern methods of warfare, and especially to trench fighting, the proportion of head injuries to the total number of wounded is surprisingly large. The excellence of the British transport arrangements allows a large number of these cases to be dealt with at the base hospitals at an early date after the infliction of the wound, and many even of the severest cases now reach the base which would not survive the journey if the means of transport were less efficient. Further, the patients are rarely seriously affected by the journey, and the most important and in many cases the determining factor in the prognosis is proper early treatment before the wounds have become seriously septic.

DIAGNOSIS.

Too much importance cannot be attached to a complete examination, not merely of the local lesion, but also of the symptoms of cerebral disturbance in each case, as these are the only reliable indication of the extent and intensity of the intracranial injury. A proper appreciation of the probable nature of the damage is essential before deciding, not only whether an operation is necessary, but also what kind of operation ought to be undertaken. An examination of the optic discs, for instance, is important, as many of those cases in which there is little other evidence of increased intracranial pressure have definite optic neuritis within a few days of the infliction of the wound. The exigencies of the work at the base hospitals may not permit much delay, but an examination adequate for the proper treatment of the case does not require an unreasonable amount of time.

It must, of course, be recognized that the sum of the symptoms in many cases, and certainly in the early stages of all, is made up partly of functional disturbances (shock, diaschises) which gradually subside, often without any local treatment; and it is only by a proper consideration of this factor in the first place that the extent of the damage can be estimated, and in the second that an approximate idea of the amount of ultimate recovery can be attained.

WOUNDS OF THE DURA MATER.

Many varieties of cranial wounds are seen in warfare, but from the practical point of view the most important distinction is between those in which the dura mater is, and those in which it is not, opened. It is only on the former class that we propose to offer certain remarks here, as injuries in which this membrane remains intact are sufficiently familiar, and require treatment on the same lines as similar injuries met with in civil practice, excepting that in these injuries of warfare a septic scalp wound is almost invariably present. This circumstance naturally modifies the line of procedure, and makes incision of the dura mater so dangerous that this step must be postponed in many cases in which under aseptic conditions it would be clearly the right line of treatment.

Recognition of Extent of Injury to Brain.

The commonest type of case is that in which disintegrated brain matter is exposed or protrudes through the wound of entry or exit, or through both; or where the missile has not entered the cranial cavity but has produced a comminuted fracture and laceration of the dura mater, by a glancing blow. It is usually found that the damage both to the skull and brain is more extensive than inspection, palpation, or even an *x* ray examination would indicate. This is particularly so when the wounds of entry and exit are not far apart; then there is almost invariably extensive comminuti n of the bone between them, and often fissures radiating far in several directions. This extensive comminution is particularly frequent when the frontal bone is involved. The problem of dealing satisfactorily with such wounds is the problem that most frequently confronts us. It is complicated by the almost invariable presence of infection in the scalp wound. In such cases the choice lies between a conservative line of treatment, which consists of cleaning up of the scalp wound, removal of fragments of bone and antiseptic dressings, and more radical measures aimed at the prevention of such complications as commonly follow the conservative line of treatment.

Frequent Need for Radical Measures.

There can be no doubt that many patients recover, or at least survive, when little is done, but the course of a considerable proportion of these cases, not only from the point of view of life, but also from that of the function of the brain, is such as to lead to the conclusion that more radical measures are often required. Mere survival of the patient—perhaps hemiplegic, aphasic, or demented—cannot be regarded as a satisfactory result, and if a more complete recovery or preservation of function can be obtained by a more thorough operation, this must be at least considered even if it were to entail an increased risk to life. In our opinion, however, this increased risk is not great, in view of the usual course of such cases when treated on more conservative lines.

Early Clinical Course.

Let us briefly consider the usual course and fate of a patient in whom the brain is exposed through a relatively small opening, whether produced by a bullet or by a timid trephining operation. These patients are usually unconscious immediately after the infliction of the wound, and are drowsy and obviously suffer from the effects of shock on regaining consciousness. A gradual improvement may be observed in the general condition and in the direction of recovery of function during the next few days, but soon some protrusion of the brain is observed, together with symptoms of progressive loss of certain functions according to the site of the injury. The patient becomes duller, apathetic, and more drowsy, or may be restless and noisy, and often complains of headache; optic neuritis frequently develops, together with other symptoms which point to a pathological increase of intracranial pressure. This naturally leads to further protrusion of brain matter which then becomes strangulated and more and more septic. Even at this stage the septic process may come to an end and the patient survive; but if so, it is often at the expense of an irremediable loss of function.

Fungus Cerebri: Pathology and Prevention.

On the other hand, the hernia or fungus cerebri often increases and entails, as we will later emphasize, destruction of portions of the brain, which were not primarily injured, and death eventually ensues. The development of a fungus cerebri is therefore the most deplorable incident, to the prevention of which our treatment must be directed.

To decide the best means of obviating this danger, and the most rational method of dealing with it when present, we must shortly consider the pathology of such a fungus as is liable to occur with injuries of the skull when these are associated with conditions that may lead to a pathological increase of the intracranial pressure, and the opening in the skull is not sufficiently large in relation thereto.

If the brain of a patient who has died with this condition soon after the infliction of the wound be examined softened disintegrated tissue is found protruding through the dural opening, the gyri of both hemispheres are flattened, and appear compressed; there is very little cerebrospinal fluid on the surface, though the ventricles may be

distended, and the whole brain may appear too large for the cranial cavity. It is noteworthy, however, that even when the disintegrated brain is very septic there may not be, and frequently is not, any general meningitis; this must be largely attributed to the adhesions that form early between the dura mater and the pia arachnoid in the neighbourhood of the injury, and often block effectively the meningealward spread of the infection. A diffuse spreading infective encephalitis is also rare.

If such a brain is more closely examined, the tissue beneath and around the hernia is found soft and is almost fluctuating to touch. Incision, however, rarely reveals an abscess or any actual collection of fluid, but only pale, oedematous, partly disorganized white matter of the centrum ovale, in which there is as a rule no evidence of active infection. This oedematous area is not sharply demarcated, but extends widely and diffusely from the base of the hernia. There may be small haemorrhages into it as well as into the hernia, but we have rarely seen a clot sufficiently large to contribute seriously to the pathological tension.

Rise of Intracranial Pressure.

It is impossible to discuss the complicated subject of pathological intracranial pressure here, but its effects when the skull is opened must be briefly described, and the causes to which it is due considered.

When the skull is opened in a person in whom the tension is normal, the dura mater rises with each arterial pulsation and falls below the level of its normal convexity between them. On palpation it can be easily indented without much pressure, and when it is opened the brain matter shows no tendency to protrude through the incision. If the intracranial pressure is raised, however, the normal pulsations of the brain may disappear, and when the dura is incised the brain matter at once protrudes through the opening, or rises to a higher level than that represented by the concave internal surface of the skull, and continues to do so, if no obstacle is offered, till sufficient tissue has been extruded to reduce the intracranial pressure.

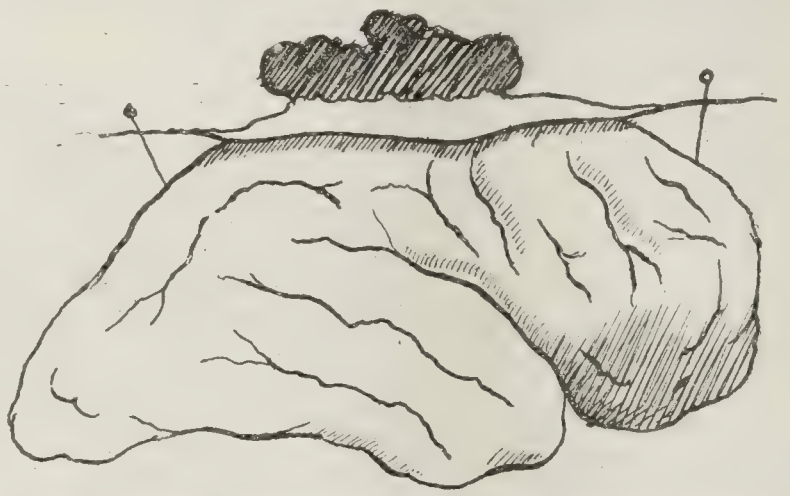


Fig. 1.—Shows a strangulated necrotic fungus projecting through an opening in the dura mater. The central cortical veins which lead to the longitudinal sinus are obstructed.



Fig. 2.—An oblique sagittal section of the same hemisphere showing the strangulation of the protruding brain by the dural edge, oedematous softening beneath it, the existence of dural adhesions, and a rifle bullet behind the softened area.

When the opening in the dura is sufficiently large the hernia so formed may, and usually does, as after the ordinary decompression operation, consist of undamaged brain, but when it is small, or too small in relation to the intracranial pressure, the brain matter protruded through it must be stretched and torn and its blood supply is seriously interfered with. Further, the pia arachnoid is torn, the cortex is ruptured, and soft disintegrated tissue is extruded. Eventually the hernia so formed becomes strangulated and its vessels compressed at the edges of the opening, so that the whole must be permanently destroyed and functionless.

Further, the compression of the cortical vessels, particularly the large cortical veins, at the edge of the dural opening, interferes with the circulation of adjacent areas of the brain still within the skull and leads to important changes which, if long continued, entail permanent functional impairment. It also produces oedema and swelling of portions of the brain which were not originally damaged, and consequently leads to a further increase of intracranial pressure. Thus a vicious circle is established which may rapidly lead to a functional and organic destruction of large portions of the brain.

Cause and Early Symptoms of Rise of Pressure.

It is, however, necessary to account for the early rise of the intracranial pressure that produces protrusion of the brain within a short time of the injury. This occurs chiefly when the injury is sufficiently severe to produce considerable concussion, and it is then obviously due to the histological changes associated with concussion, and especially to traumatic oedema, which can raise the intracranial tension sufficiently to start a hernia.

The same changes of course occur with severe head injuries even when the dura mater is not opened. To them the headache, drowsiness, and lethargy after the recovery of consciousness are due, and a further indication of the rise of intracranial pressure may be found in the early development of a mild degree of optic neuritis, or the blurring of the inner or vertical margin of the discs with congestion of the retinal veins. This traumatic oedema and the symptoms associated with it subside within a short time if an opening of the dura mater does not permit infection of the brain or the development of a hernia, but the headache may persist a week, ten days, or even longer. Recognition of this fact is extremely important to those under whose care the patients first come, as the persistent headache, slow pulse, and drowsiness may suggest a condition which requires relief by decompression; this is not only unnecessary, but if resorted to may entail the series of events we are now discussing, as well as the fatal spread of infection from the scalp.

Frequently, however, the protrusion of brain is not observed until some time after the infliction of the wound, or a limited trephining operation; then the swelling of the brain can be attributed either to direct local septic infection, to which the pressure of indriven fragments of the bone may contribute, or to a toxic oedema. Abscess formation in the depth of the brain is a much less common cause than might be expected, and extensive intracranial infection, or a widespread meningitis, is an early cause in only a small proportion of the cases.

Hernia and Fungus Cerebri.

We usually distinguish between a hernia cerebri and a fungus cerebri: by a fungus we mean the strangulated, disintegrated, and partly necrotic mass of brain matter which forms a cauliflower-like structure connected with the intracranial contents by a relatively narrow pedicle; while by hernia we describe the protrusion of relatively intact brain matter covered by unruptured pia mater, through an opening sufficiently large to avoid any danger of its strangulation.

TREATMENT.

Classification of Cases.

Leaving aside cases of injury to the longitudinal sinus, which form a class apart, and which will be considered separately, there are three main groups to be dealt with:

1. Where there has been a glancing blow, or where the wounds of entry and exit in the scalp lie so close together as to form practically a single lesion.
2. Where the missile has entered and remains within the cranial cavity.
3. Where the missile has traversed the cranium.

I. *Wounds of Entry and Exit Close Together.*

This is the most common class of case seen in base hospitals. The scalp wounds are irregular, contused and lacerated, often with everted edges, usually very septic, and surrounded by a wide area of oedematous scalp. Unless urgent cerebral symptoms demand immediate relief, it is best to delay operation for two or three days, during which every effort must be made to render the wounds reasonably clean. They cannot, however, be made aseptic. We have found the following technique to give the best results.

The whole head is cleanly shaved and the scalp washed with alcohol, after which the skin for a wide area round the wound is painted with 2 per cent. spirit iodine solution. The wound, which may require opening up, is then dressed with cyanide gauze wrung out of 1 in 40 carbolic lotion, to which has been added sodium chloride to the extent of 5 per cent., and covered by a sheet of jaconet to keep it moist; this dressing must be changed two or three times a day. Treatment for a few days on these lines will diminish considerably the danger of spread of the infection after operation.

Immediate operation must often be considered when the patient remains deeply unconscious for some time after the infliction of the wound, as the unconsciousness may be due to the cerebral compression.

But to avoid unnecessary interference it is essential to establish this as the cause. Unconsciousness is a very common symptom in severe head injuries, and should be regarded only as a symptom. Further, serious intracranial pressure is unlikely within a short time of the wound, and the limited operations which may alone be possible in the surroundings, or safe to the patient, would be useless in relieving such pressure. The removal of a small depressed fragment of bone can rarely have any influence on the intracranial pressure, and if performed merely as a temporary measure, it may be followed by the development of a fungus cerebri with the attendant vicious circle above described.

Primary Operations.

As it is impossible to foretell the extent of bone removal which will be necessary, the scalp flap must be so planned as to provide for the widest craniectomy that may be required. Once the flap is turned down it is difficult, and may be impossible, to enlarge it, and as bone should not be removed up to the full extent of the flap, because the suture line must never lie over exposed brain, a small and timid skin incision may render impossible the performance of an adequate craniectomy. The flap including the wound having been turned down and any loose fragments of bone having been removed, the opening in the skull must be enlarged in all directions.

Estimation of Degree of Pressure.

The exposure of the dura so effected allows some opinion to be formed as to the degree of intracranial pressure, and this is a guide to the probable extent of the opening which must be made. If chloroform is being given the intracranial pressure is, owing to the lowering of the blood pressure caused by this drug, lower than it will be after recovery from the anaesthetic, particularly if much blood has been lost in making the scalp flap, so that a false impression of the degree of intracranial pressure may be conveyed. The size of the bony opening must be such as to allow of a sufficiently wide incision of the dura mater to afford complete relief of the existing pressure, so that in fact the extruded brain shall escape the possibility of strangulation by pressure of its periphery against the dural opening.

Further, allowance must be made for the temporary increase of tension which, from rise of blood pressure or from traumatic oedema, usually occurs during the first two or three days. If the opening is only just large enough to relieve existing pressure at the time of operation it may prove inadequate afterwards, and some interference with the cerebral circulation may occur later and be demonstrated by an increased, though perhaps temporary, functional loss.

Treatment of Lacerated Brain.

The lacerated brain is next dealt with; any fragments of bone are gently removed and bleeding vessels tied. On no account must the finger be thrust deeply and roughly into the brain. If the intracranial pressure does not seem to be raised, a complete opening of the dura may be postponed, and may eventually be found unnecessary; these cases are amongst the most favourable.

Treatment of Scalp Wound.

When, however, it has been necessary to make a decompressive opening in the dura mater, the problem next presents itself how best to avoid placing a dirty scalp wound in contact with exposed and lacerated brain. To excise the wound and approximate its edges by suture is rarely practicable, as the want of elasticity of the scalp does not permit it, and even when this can be done it is undesirable to place such a sutured wound in contact with the brain; moreover, it is unsound practice to suture completely without drainage.

To solve this problem we have tried several methods.

Cargile Membrane.—At first we placed a sheet of "Cargile membrane"* on the under surface of the flap so as to interpose a barrier between it and the brain. The material proved unsatisfactory for the purpose; it appeared to provoke a continuance or an increase of suppuration, and required removal later.

Dural Flap.—We next used a dural flap, planning the incisions in that membrane so as to be able to slide a pedicled flap over the site of the wound to cover and protect the lacerated brain, and to form a floor for the hole left after excising the edges of the scalp wound. This plan proved satisfactory for the cases in which it was found practicable, but extensive laceration of the dura by the original wound, the inelasticity of the membrane, and unsuitable positions, on account of proximity to sinuses and so on, render this method not always applicable.

Pericranial Flap.—A third method is more often available, and is very suitable for certain cases. The edges of the original scalp wound having been cleanly excised, the pericranium is detached by undercutting for a wide area around the wound; then, by suitable incisions at its periphery, one or two flaps, as the case may require, pediculated at one or both ends, can easily be fashioned and brought together with a fine catgut suture across the under surface of the scalp defect, so as to form a complete barrier between it and the brain. The scalp flap is then sutured in position, leaving ample provision for drainage; the excised original wound is left unsutured. This method, modified to the demands of individual cases, has proved very satisfactory. When there is no obvious infection of the brain the raw surface of the pericranium now forming the floor of the wound quickly granulates, whilst the smooth surface previously in contact with bone forms an admirable covering for the lacerated brain.

Drainage.

For the necessary drainage of the space beneath the flap gauze strips are most unsatisfactory, as they adhere to the brain and to the edges of the wound; whilst their capability of acting as drains at all is no less questionable here than in other parts of the body. Rubber tubing is too hard and rigid to place against the brain. We have found the satisfactory drain to be one formed of a loose roll of thin sheet rubber.

These three methods, although possessing individually certain advantages, have one drawback in common—namely, that the only drainage of the lacerated brain is along an oblique track. In order to provide more direct drainage, especially in the more septic cases, whilst at the same time shutting off the subarachnoid space, we have devised and carried out the following procedure, taking advantage of the adhesions which quickly form between the torn pia arachnoid and the edges of the dural wound. A sufficiently large bone defect to allow a free decompression having been made, the dura is incised circumferentially about a quarter of an inch from the bony edge. This incision is carried almost the whole way round, leaving a pedicle about an inch wide at some convenient spot. The brain then herniates, carrying with it the dura mater covering. The scalp wound is now excised, and the scalp flap is replaced and sutured in position. Then the intracerebral pressure pushes the dura mater outwards against the upper surface of the scalp flap, shutting off the

* Peritoneum of the ox.

subarachnoid space. The lacerated brain or fungus cerebri, as the case may be, shut off by adhesions at the edge of the original dural opening, now lies at the bottom of the excised original scalp wound, and can be dealt with according to circumstances by removal of bone fragments, irrigation, and drainage. This method can be employed in secondary operations for fungus cerebri as an alternative to the contralateral subtemporal decompression suggested elsewhere.

II. *Cases in which the Missile remains within the Cavity.*

We are unable as yet to say what may be the ultimate fate of a patient in whom a missile remains embedded in the brain. It would appear probable, however, that a spreading encephalitis or a localized abscess may occur, or if complete recovery were to ensue, Jacksonian attacks may supervene. It is clear that in certain situations the projectile is not accessible to legitimate surgical adventure; but in some cases it does lie in an accessible situation, and can be removed through a clean incision at some distance from its point of entry. We have safely removed such bullets from the substance of the brain on several occasions, with recovery, and we have had no unfavourable results.

III. *Cases in which the Missile has Traversed the Cranium.*

When the missile has traversed the cranial cavity the treatment of both entrance and exit wounds should be carried out on the same lines as indicated under (I).

Secondary Operations.

We have had to deal with a considerable number of cases which have already been operated upon, the operation consisting of removal of bone fragments through an enlargement of the original wound, or through a small horseshoe flap turned down over it; in many instances a trephine hole has been made close to the fracture. These incisions have usually been found sutured wholly or partly, and in almost all cases pus has been found imprisoned beneath them together with a cerebral fungus.

Increased Intracranial Pressure: Meningitis.

The problem as to whether anything further can be done for these cases is a difficult one. In some the symptoms of generalized meningitis are definite enough to contra-indicate any active treatment, though patients with headache, pain and stiffness of the neck and pyrexia do not always succumb.

Unless, however, the intracranial pressure can be relieved, death will occur, or, more and more brain being destroyed in and beneath the fungus, the recovery which might ensue would be accompanied by a deplorable amount of functional loss.

Were it not for the septic condition of the wound the obvious mode of affording relief of pressure would be to enlarge the bony and dural openings, allowing temporary protrusion, but without strangulation, of a large surrounding area of brain. It sometimes happens that a local abscess is present in or beneath the fungus, or beneath the dura in close proximity with the fungating brain, but in our experience this condition is rare; certainly it is not common enough to warrant any but the most tentative exploration should its possibility be suspected.

Contra-lateral Decompression.

As the spread of infection is almost inevitable, if a local decompression is done, it occurred to us that a clean contra-lateral decompression might offer a solution of the difficulty, and this operation we have carried out on several occasions with a remarkable degree of success, even though only the worst cases were purposely selected. The wounds have healed by first intention, the optic neuritis when present has subsided, the fungus has rapidly shrunk, and the general condition of the patients has quickly and definitely improved. The results obtained by this procedure have been so promising as to encourage us in the belief that it may prove to be of value in other and perhaps less severe cases.

Lumbar Puncture.

Some relief of intracranial pressure can also be obtained by lumbar puncture; after withdrawal of even 15 c.cm. the fungus frequently begins to subside, and if repeated daily the protrusion of the brain may be controlled. There is, unfortunately, the danger that the sudden withdrawal of cerebro-spinal fluid from the neighbourhood of a septic fungus may disseminate infection and start a general septic meningitis—we have, in fact, seen this occur on more than one occasion, but this method may be safer in the early stages after the injury, and especially for the relief of headache in the concussion stage, when the dura mater is not opened, and also later when adhesions between the dura mater and pia arachnoid have formed. From our experience, however, it is not a method that can be used indiscriminately.

Injuries of the Superior Longitudinal Sinus.

Injuries of the superior longitudinal sinus are common, and form quite a large proportion of the cases of cranial injury. In symptomatology, course, and treatment they form a distinct group, presenting many features of considerable interest. We hope to deal fully with these cases in a future communication, but at present we are unable to offer more than a few preliminary observations.

The majority are produced by rifle bullets which just graze the vertex of the cranial vault, producing a depressed fracture. This is not necessarily in the middle line, and usually more damage is done to one side of it than to the other. In the frontal region the upper border of the falx with the sinus may be torn across without producing the clinical picture which characterizes lesions of the sinus further back, and more particularly those which implicate the parietal lacuna. This lacuna, as one of us has pointed out elsewhere, receives the main cortical veins that drain the Rolandic area, of which the post-central and precentral veins are the chief. These enter its under surface, and do not as a rule pass directly into the sinus. This lacuna extends outward on either side of the sagittal suture for a variable distance, sometimes as much as an inch and a half, and its upper or outer wall lying in contact with the bone is very thin. Hence it comes about that a small depression of bone interferes easily with the return of blood from the cortical veins into the longitudinal sinus, and leads to far-reaching effects in loss of function of the area which they drain. We have evidence to show that in the majority of cases this loss of function is not due to laceration of brain or to subdural or intracerebral haemorrhage, though these occur, but to interference with the cortical drainage and the consequent oedema. In more severe cases there may be, in addition, laceration of the dura and gross damage to the brain, but in many instances there is no such complication.

Indications for Operation.

The question of operation in these cases is most difficult, for the additional damage that may be done may leave the patient worse off than if he is left alone. A certain extent of thrombosis must be assumed to exist already, and, if progressive, this leads to an increase in the symptoms, increasing intracranial pressure from the cerebral oedema, and ultimately to death. If operation is performed, the elevation of the depressed bone may at once be followed by such free haemorrhage as to necessitate plugging, and this will almost certainly involve a complete thrombosis of the sinus, which in our experience is often fatal; on the other hand, many of these cases, if left alone, show a very decided tendency to spontaneous recovery.

We think, therefore, that such cases should be watched carefully, the scalp wound in the meantime being cleaned as thoroughly as possible. If no improvement occurs in a few days, or if symptoms of increasing intracranial pressure become manifest, and it is therefore necessary to interfere actively, the following procedure should be adopted.

A large scalp flap is reflected exposing the whole damaged area of bone and, with its two limbs directed laterally so as to allow, if necessary, of their being continued downwards later for the performance of a decompressive operation. The bone is then freely removed around the depression leaving the depressed bone isolated but undisturbed.

If when this piece of bone is very gently removed haemorrhage from lacuna or sinus occurs, one is in a position to see the bleeding point clearly and to control it. The sinus should not be plugged with gauze. The haemorrhage can be arrested by applying a piece of tissue cut from the under surface of the flap, as Sir Victor Horsley originally suggested; if this is pressed gently down upon the bleeding point for a few minutes it will adhere firmly to the dura and control the bleeding effectually, but without obliterating the lacuna or sinus, as is almost certain to occur if gauze plugging is employed. This method has been found satisfactory. It encourages re-establishment of the cortical venous drainage, and leads to a diminution of such intracranial pressure as was due to oedema. Should the compression, however, persist, it may be advisable later to perform a decompressive operation, but of the effect of such a secondary operation we are not yet in a position to express an opinion.

It must not be supposed that we are recommending extensive operations in all cases, or even in a large proportion. Naturally, the indications in each individual case must be considered carefully, and the question as to what symptoms an operation may relieve or prevent must be answered before the exact nature of the contemplated operation can be determined. Indiscriminate extensive operations might well prove as discouraging in their results as indiscriminate limited trephinings.

We desire to emphasize this point, as it is, of course, possible to do much harm in one case by an operation which would be wholly suitable in another.

The drawings have been kindly made by Dr. W. Crampton Gore, British Red Cross Society.

EPIDEMIC CEREBRO-SPINAL FEVER:

THE PLACE OF THE MENINGOCOCCUS IN ITS ETIOLOGY.

A BACTERIOLOGICAL STUDY.

(Preliminary Note.)

BY

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Is the Meningococcus the Primary Infective Agent?

IT is believed by many authorities that the meningococcus of Weichselbaum is the primary infective agent in the disease known as epidemic cerebro-spinal fever. And it is also believed, both in the profession and outside it, that the available evidence in support of this view is satisfactory.

Briefly the evidence is based on the following facts:

1. The frequency with which the organism can be isolated from the naso-pharynx, cerebro-spinal fluid and blood in acute cases of the disease, and from the meninges and other tissues *post mortem*.
2. Its frequent isolation from the naso-pharynx of primary and secondary contact carriers.
3. In some ascertained carriers the disease subsequently develops with typical meningococci in the cerebro-spinal fluid or elsewhere.
4. Its presence in the naso-pharynx of carriers acting as a theoretical bridge from one epidemic to the next.
5. Meningitis can be produced in monkeys after exposure of the arachnoid and injection of living cultures of the organism, or by direct inoculation into the spinal canal.
6. The injection of antiserums produced by injection of cultures of the meningococcus is sometimes followed by cure.
7. Emulsions of the organism can often be agglutinated by the serum of a patient suffering from the disease.

Taken together these seven points constitute at first sight a formidable mass of proof.

Before discussing their true value it may be well briefly to enumerate the few ascertained facts which suggest that the meningococcus, as we know it in artificial culture, may not be the cause of the disease, however much it may prove to be responsible for the more or less terminal event of meningitis.

These facts are:

1. The attendants on acute cases of the disease rarely contract it, although the percentage of such acute cases harbouring the organisms in the first few days is very high.
2. For every case of the disease there are ten to fifty carriers, but of detained carriers of the meningococcus in the naso-pharynx only few develop cerebro-spinal fever.
3. Injection of cultures of the meningococcus into monkeys elsewhere than into the meninges or spinal canal does not reproduce the disease, or meningitis.
4. Agglutination reactions with serum from cerebro-spinal cases are often unsatisfactory both at 37° C. and at 55° C., both with autogenous and with heterogenous emulsions.
5. The marked instability of the organism in the laboratory, both culturally and biochemically.

These five points, whilst not disproving the reputed etiological relationship of the meningococcus to the disease, at the same time suggest that extreme care is needed in judging of the value of the positive evidence usually relied on.

A good deal of stress has been laid on the fact that cure may follow the injection into the spinal canal of Flexner or other antiserum. Against this must be set the fact that in the present epidemic Flexner's results have not been reproduced. Moreover, not a few cases, even of extreme gravity, recover without specific treatment, and we have no control observations to show the value of the injection of normal serum; and, thirdly, as suggested by Dr. W. M. Fletcher, it is conceivable that careful control observations may show that simple puncture alone may be as beneficial as injection of normal serum, or of antiserum.

The evidence afforded by antiserums is, therefore, at present worth little. The evidence derived from the occurrence of a fatal meningitis in monkeys after the formidable procedure of exposing the arachnoid, followed by injection of cultures of the meningococcus, is of small value, since meningitis can be produced in monkeys by other organisms when injected in the same way, and we have no evidence that meningeal infection can produce cerebro-spinal fever, however capable it may be of setting up meningitis.

The evidence afforded by agglutinability of the organism by serum from cases of the disease must not be taken too seriously, because we now know that secondary invaders are capable of specific agglutination even in relatively high titre. And in the absence of experimental evidence to the contrary we cannot at present deny that the meningococcus may be only a secondary invader, as was suggested at a recent discussion on the subject, just as a streptococcus may be in scarlet fever.

Moreover, apart from secondary invasion, the mere presence of the meningococcus, however frequent, in acute cases of the disease, or in healthy carriers, does no more than suggest a causal relationship. In the absence of good collateral evidence, and especially of experimental reproduction of the disease in animals, the association does not prove that the meningococcus is the cause of epidemic cerebro-spinal fever. And finally, we have yet to show that the meningococcus occurs frequently in the blood in abortive cases with fever in a disease that frequently presents all the clinical features of a septicaemia. On the whole, therefore, it would appear to be unwise to make dogmatic statements that the meningococcus, as we know it, is the cause of epidemic cerebro-spinal fever, though this does not imply that the future may not provide better evidence than at present exists. The purport, in short, of this note is to show that the evidence at present available, however suggestive, is inadequate, and to plead the necessity for fresh research into the etiology of the disease.

In illustration of the possibilities opened up by fresh research on this subject, the following results of a bacteriological study of the urine in the disease may be related. The observations are at present incomplete, and are only brought forward now in the hope that other observers of the disease will enter the same field and will record their results before the present epidemic has run its course.

As I have shown elsewhere, working with Dr. Ingram, the bacteriological study of the urine in all cases of continued fever, however slight, deserves greater attention from clinicians and experimentalists than it at present receives, both in diseases in which the causal organism is known as well as in those in which it is not.

When, therefore, the present epidemic arose, I sought for, and readily obtained, facilities from the War Office for examination of specimens of urine, as well as of blood and cerebro-spinal fluid and swabs from the throat, in acute cases.

For this purpose I invited the collaboration of my laboratory colleagues at Addington Park War Fever Hospital—Dr. C. E. Lakin, Dr. T. H. C. Benians, and Dr. Elizabeth H. Lepper—who have shared with me the labours of this inquiry.

Is the Meningococcus merely a Phase of the Causal Organism?

The starting point of our work was the thesis that in cerebro-spinal fever the meningococcus might prove to be a late non-infective phase in the life-history of a minute organism not yet discovered, which is only infective in its earlier stages—that is to say, it is only in these early stages that it causes the disease. If this be so, the early infective phase might prove to differ widely, morphologically, culturally, and biochemically, from a late non-infective meningococcal phase. The basis for this theory was the fact that Hort and Ingram had already described a minute pleomorphic organism in typhus fever, and had produced experimental evidence, not yet completed, which suggested that this minute organism was in its earliest phases the primary infective agent in that disease, whilst the late phases were non-infective. They had, in fact, shown that typhus urine, blood, and cerebro-spinal fluid often contained a minute pleomorphic organism which appeared rapidly to develop into larger organisms morphologically indistinguishable, apart from size, from one of the minute forms, and that the large form was non-infective to monkeys, whilst the minute forms produced in these animals a disease characterized by fever at the end of a latent period, the minute forms and large forms being again recoverable from the injected monkeys. Now these large forms had been noted by numerous observers, some of whom claimed that they were the primary infective agents. This they certainly are not, and they must therefore either be contaminations or secondary invaders, or must represent late stages of some undescribed organism. That they were contaminations is an unnecessary aspersion on the numerous competent observers who have recovered them from the blood in various parts of the world, and the large percentage of cases in which they have been recovered in some epidemics makes the theory of secondary invasion no more probable than in the case of the meningococcus in cerebro-spinal fever, especially as they were found by Hort and Ingram to be preceded by the minute pleomorphic form in many cases, the latter always rapidly disappearing. Hence, without making undue claims, it may reasonably be said that in cerebro-spinal fever, as in typhus, there is a clear case for investigation.

In connexion with the question of minute organisms, without or within the limit of vision, which subsequently develop into larger forms, arises the interesting problem of how organisms reach the meninges and cerebro-spinal fluid from the blood stream. It is true that the majority of organisms capable of producing meningitis do not do so even when present in the blood in large numbers, except in rare instances. In some of these, as in tubercle, an obvious explanation can be found. In the case of cerebro-spinal meningitis it is possible that at some phase in the life-history of the organism the latter exists in so minute a form in the blood as to be able to pass through the filter bed between the circulatory and cerebro-spinal systems. And, as will be seen with our experiments with filtered urine, and as Hort and Ingram showed with filtered typhus urine, this may prove to be a good explanation.

Experimental Evidence.

We have in cerebro-spinal fever—thanks to the courtesy of the commanding officers, bacteriologists, and medical superintendents at Caterham, Aldershot, Stockwell, and Wandsworth—examined the urine of 19 acute cases, the blood of 15 cases, the cerebro-spinal fluid of 4 cases, and throat swabs from 3 cases. In the great majority of these we have found, isolated, and as far as possible identified, especially from catheter specimens of urine, the Gram-positive and Gram-negative organisms of Jaeger, at one time believed to be identical with the meningococcus of Weichselbaum. The organism of Jaeger appears to be identical with the *Diplococcus crassus*, and possibly with the organisms described respectively by Heubner, by Lepierre and by Lehmann. It was claimed in 1903 by Allbrecht and Ghon that Jaeger's meningococcus is quite distinct from the meningococcus of Weichselbaum, but this question will have to be re-examined. Jaeger's organism was in his cases mainly isolated from the throat, but in our cases we recovered it frequently from the fresh urine, and from incubated urine (catheter specimens), from incubated citrated blood kept in sealed flasks. The organism in question on artificial culture (serum-agar, ascitic-agar, nasgar), and in incubated natural media, is a somewhat larger organism than the meningococcus of Weichselbaum, and it occurs as a rounded diplococcus, in pairs and tetrads, and sometimes in short chains. It resists heating at 58° C. for an hour, and emulsions in saline resisted the action of toluol for thirty minutes. In early cultures (twelve to twenty-four hours) Gram-negative forms are sometimes as numerous in a field as are the Gram-positive individuals. On subculture Gram-positive organisms appear to predominate. The reaction of these organisms on the sugars approaches that of the staphylococci. They do not coagulate milk or produce indol in peptone water. In some cases the organism produced acid readily in glucose, but slowly in lactose and saccharose, and was without action on mannite or inulin. In two cases glucose alone was fermented, maltose unfortunately not being at the time available. The organisms emulsify freely in saline, and the two strains tested were not agglutinated by antimeningococcal serum, but gave equivocal results with serum from cases of the disease in man.

When once established on media containing ascitic fluid or serum, they grow readily on agar or in broth. Confluent transparent minute colonies, at first greyish, becoming opaque in a few days, give on film preparations a thin bluish smear, which is sometimes difficult to see. Even in young cultures the Gram-negative individuals sometimes take up the counter-stain with difficulty; in others the counter-stain is well taken up. The transparent colonies soon become opaque on culture plates. These organisms occurred so frequently in catheter specimens of urine in sealed flasks as to constitute a useful indirect aid to diagnosis, which was frequently confirmed by the clinical history and by the isolation of Weichselbaum's meningococcus from the cerebro-spinal fluid. It is not here suggested that the "meningococcus" of Jaeger as found in some specimens of urine, blood, and cerebro-spinal fluid is the same organism as the meningococcus of Weichselbaum, from which it presents well-marked cultural and biochemical differences. Its frequent presence, however, in our cases suggests that further study of its relationship to the latter, in the urine and blood especially, is much to be desired.

In addition to this organism, we also frequently found, in films of fresh urine, cerebro-spinal fluid, and blood (in order of frequency), Gram-negative and Gram-positive bacilli, both very small and large. Cultivation of this organism from the cerebro-spinal fluid and from most of the specimens of blood unfortunately failed. In two cases, however, a small Gram-negative bacillus was isolated from the incubated citrated blood, and in a few cases from the urine. Gram-negative bacilli in the cerebro-spinal fluid in cases of cerebro-spinal fever have been often described by Arkwright and other observers. Some workers have referred to them as members of the haemophilic group,

such as Pfeiffer's bacillus. The strains we isolated from the urine grew readily in broth without the addition of serum or blood, and did not give coliform reactions.

In several of the urines, both in fresh catheter specimens and in incubated samples, considerable numbers of Gram-negative diplococci were seen, often in clumps. They also occurred free in pairs and in tetrads. They mostly had flattened opposing surfaces, and were morphologically indistinguishable from meningococci or gonococci. In some of the films they varied from 0.1 to 0.4 μ in their greatest diameter. They were sometimes to be found in epithelial cells from the bladder, and sometimes in clusters. In no case were any considerable number of pus cells seen. The diplococci could not be cultivated as persistent Gram-negative organisms, but appeared to merge into Jaeger's organism, colonies of Gram-positive and Gram-negative rounded individuals alone surviving.

In all the specimens of urine examined in the fresh state, turbidity of varying degree was present. This turbidity was in no case due to pus cells, to blood, or to crystalline phosphates, as gauged by microscopical examination of centrifuged deposits. It was determined, therefore, to filter a specimen of fresh turbid urine from an undoubted case with meningeal symptoms through a tested Berkefeld filter. Filtration was completed in five minutes, and a few loopfuls of the filtrate were spread over the surface of a nasgar plate, proved to be sterile by previous incubation. Examined after four days the plate showed a minute growth. A single colony under a low power lens was grey, punctate, and showed a broken outline. Films were made from this single colony and showed:

(*a*) Large numbers of Gram-negative diplococci, morphologically indistinguishable from the meningococcus, also a few Gram-positive forms, the former staining feebly with methylene blue.
(*b*) Small Gram-negative bacilli.
(*c*) Gram-positive and Gram-negative organisms morphologically similar to Jaeger's meningococcus.
(*d*) Gram-negative rod-shaped organisms, with two to six Gram-negative "granules" in its long axis at regular intervals, occasional Gram-positive "granules" being sometimes seen. Each granule was composed of a diplococcus, with flattened opposed surfaces. In some the terminal diplococcus was detached, and was indistinguishable from the meningococcus of Weichselbaum.
(*e*) Gram-positive diplo-bacilli, which were sometimes unequal in size.

From the unused portion of the single colony an emulsion was made *in situ* (that is, on the original plate) with a loopful of broth, and fresh plates of nasgar were inoculated in series. These were examined after forty-eight hours, and extremely minute colonies were found in clusters. These under the low power lens were again seen to be grey, punctate, and to have irregular outlines. Films made from these colonies, which were too small to be picked off individually for smears, again showed the films (*a*) (*b*) (*c*) (*d*) (*e*) as in the first single colony, with the exception that Jaeger's rounded meningococcus appeared to predominate, Gram-positive organisms being numerous. These small colonies were again subcultured on to fresh nasgar plates, and the growth examined in twelve hours. The colonies now present were, many of them, extremely small, but were all similar in appearance to each other under a low power as regards colour, outline, and punctation. They were also transparent to the naked eye, and film preparations from isolated colonies, slightly larger than those on the first subculture plate, showed (*c*) (*d*) and (*e*) only, the diplococcal flattened organisms resembling the meningococcus of Weichselbaum being no longer found. Gram-positive organisms, both bacilli and rounded diplococcal forms similar to Jaeger's organism, predominated. The biochemical and serological reactions of this strain of this apparently pleomorphic organism are now being studied, and fresh filtrates of new specimens of urine sown.

It is, of course, obvious that in single colonies showing organisms of diverse morphology and staining reaction pleomorphism is easier to suggest than to prove. In all such cases mixtures of different organisms may be present which are not derived from a common ancestor, and severe tests of pleomorphism must be established. So far the organisms referred to have successfully passed these tests, though much further work is required before any definite statement can be made as to this or as to the relationship of the various organisms here noted to the meningococcus of Weichselbaum. Enough, however, has been said to justify a plea for extensive bacteriological examination of the urine, side by side with that of the blood, cerebro-spinal fluid, and naso-pharynx, in the present declining epidemic of cerebro-spinal fever.

Disinfection of the Urine.

Owing to the fact that a highly pleomorphic organism appears to be present, bacteriological study of the urine in this disease is one of great complexity and difficulty; but it is, perhaps, not unreasonable to suggest that the theory that the meningococcus is only a phase in the life-history of the true infective agent in cerebro-spinal fever is one that is worth full investigation. And in the meanwhile it would appear to be wise to disinfect the urine of all known cases, and of all known carriers of Weichselbaum's meningococcus.

It will, of course, be understood that the presence in the urine of the meningococcus, or of organisms related to it, in no way removes the necessity for examination of the throats of contacts and of secondary carriers as at present carried out, since whatever the true cause of the disease, the meningococcus is certainly associated with it. And even if the meningococcus be eventually shown to be a harmless phase in the life-history of the true infective agent discharged into the urine, it will still be wise to disinfect the latter, as advised by other workers who consider the case for the meningococcus to have been fully proved.

CEREBRO-SPINAL FEVER: DIAGNOSIS AND TREATMENT.

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IN connexion with Colonel Hobhouse's valuable contribution[1] regarding the diagnosis of cerebro-spinal fever, I wish to contribute a few notes on the disease from our experience at the 1st Eastern General Hospital at Cambridge.

In my own open-air ward I have had 19 cases, and have seen two cases at another centre in the command and four other cases at the Eastern General Hospital under Major Wright, which I have included in this paper. This gives a total of 25 cases, which have been drawn from a very wide area, comprising places in Cambridgeshire, Huntingdonshire, Norfolk, Essex, Bedfordshire, Hertfordshire, Buckinghamshire, and Northamptonshire. Three stations supplied ten cases between them. In fourteen instances the patients appear to afford solitary examples of the occurrence of the disease in the locality. Of these 25 cases, 5 have died—a mortality of 20 per cent.—and 2 have been already discharged cured. In 19 the meningococcus was recovered from the cerebro-spinal fluid. In the other 6 the diagnosis was indisputable from the history and clinical symptoms.

In this connexion I should like to refer to certain difficulties in the bacteriological diagnosis which Captain Gaskell has kindly pointed out to me. In several of the cases the cerebro-spinal fluid has proved sterile at the first puncture, but the organism has been grown at a subsequent one. The organism—a Gram-negative diplococcus growing within the cells—is rarely found in smears taken direct from the cerebro-spinal fluid, but has to be cultivated. When, however, the organism with its characteristic intracellular growth is easily found in smears in the cerebro-spinal fluid, either in the first instance or at the second or third attempt, its presence is of grave prognostic import. A further point is the presence or absence of sugar in the cerebro-spinal fluid; this, which is generally absent in the first instance, may reappear as the case improves, and again disappear in a relapse.

Symptoms.

1. Retraction of the head has been present in every case save one—that of a man found unconscious in bed. He died at the end of twenty-four hours with no other symptoms than delirium and air hunger; large diffused purpuric spots were present all over the body. The organism was recovered from the cerebro-spinal fluid, and purulent meningitis was found after death. In this case no rigidity was observable at any time. In all the other cases retraction was present at one time or another, often to an extreme degree, or there was a clear and definite history of its presence.

2. In four of the cases a definite rash appeared. It consisted of discrete papules about the size of No. 1 shot, which did not disappear on pressure, and varied in colour from scarlet to mulberry. The rash was uniform in distribution, affecting the abdomen, the extensor surface of the arms, the backs of the hands, the extensor surface of the thighs and legs, and the dorsal aspect of the feet. In none of these cases had any serum been given. Another type of rash consisted of the large purpuric spots already mentioned. In another fatal case a petechial rash was present on the legs; while in yet another, which is recovering, a purpuric rash was present on the elbows and knees. In two other cases, which were admitted after some weeks of illness, there was a history of a previous rash. From the above account it will be seen that although a rash of such uniformity in aspect and distribution as to warrant the term "specific" occasionally appears, in this series of cases the majority presented no such symptom. As a diagnostic criterion it would appear that the absence of a rash is of slight value. In this connexion it may be mentioned that herpes occurred in eight cases only; in one case it involved the whole labial circle, spreading on to the mucous membrane of the lips; in another both labial and facial herpes appeared on the same side of the face. Herpes would seem to be of sufficiently frequent occurrence to merit its presence being taken into account in arriving at a diagnosis.

3. My observations entirely coincide with those of Colonel Hobhouse as to the slight incidence of any affection of the cranial nerves. Strabismus in one case, diplopia in another, slight nystagmoid movements in a third, and slight ptosis in a fourth, are the only instances met with. The comparative rarity of such symptoms presents a striking contrast to their frequency in tuberculous meningitis, and should prove of value in diagnosis. Excluding fatal cases which have never recovered consciousness, deafness has only occurred twice.

4. The mental condition has presented every gradation from profound coma with inability to swallow, through violent noisy delirium, to a mere condition of mental hebetude. Some patients seem to fall suddenly into a state of coma; two have been found unconscious in the morning after having been in their ordinary health the night before; others, again, after two or three days of headache and vomiting, pass through a period of drowsiness and incoherence into a condition of profound coma.

5. The aspect of the patient presents many phases. In the earlier stages or milder cases there is the suffering look of severe headache; in the more severe cases, a dull appearance suggestive of typhus.

6. Vomiting has always been present except in fulminating cases; the urgency of this symptom has varied from one or two attacks, to a persistence for two or three days.

7. Rigidity of the muscles of the limbs has not been a marked feature. The knee-jerk has, except in one or two instances, been present, it has never been exaggerated; the plantar reflex has always been flexor. Kernig's sign has always been present. In this connexion it may be noted that this sign was absent in several suspicious cases sent in for observation, but which proved not to be cerebro-spinal meningitis. The *tache cérébrale* was invariably present.

8. I wish to draw particular attention to the condition of the sphincters. They have been affected in a considerable proportion of cases. In five of the more severe there has been a period of incontinence both of urine and faeces; while in six other severe cases there has been retention of urine. The striking point is that in five cases in which the cerebral symptoms have been comparatively slight, and where there has certainly been no mental dullness, retention of urine for two or three days has occurred. This symptom coupled even with mild cerebral symptoms may reasonably give rise to a distinct suspicion of cerebro-spinal meningitis.

9. Finally, as regards the character of the fever, in fourteen cases there was a distinct history of an initial rigor. The subsequent course of the pyrexia varied in a most striking manner. Several of the more severe showed only a small range of temperature. On the other hand, in four confirmed cases in which the cerebral symptoms were slight the pyrexia continued from two to three weeks, and in two instances assumed a curious resemblance to that of a tertian fever.

In conclusion I would submit that the occurrence of headache and vomiting, coupled with retraction of the head and retention of urine, comprise a group of symptoms which should indicate the probable nature of the disease. Kernig's sign is of value in mild suspected cases.

The presence of a rash may be confirmatory, but in forming a diagnosis no weight should be attached to its absence.

As regards treatment I should like to point out the excellent results which, even in severe cases, have followed repeated lumbar puncture with the removal of from half an ounce to an ounce of cerebro-spinal fluid.

Antimeningococcic serum has been injected into the theca, but, in so far as a conclusion is warranted from so small a number of cases, this method does not give better results than lumbar puncture alone.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, March 6th, p. 419.

LOCAL ANAESTHESIA IN SKIN-GRAFTING BY THIERSCH'S METHOD.

BY
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AND
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No doubt the possibility of using injections of local anaesthetics for cutting skin grafts is well known, but having seen its use at the Royal Naval Hospital, Haslar, during the last seven months, we are tempted to publish a brief account of our experience. Since the war provides such an enormous number of granulating wounds where healing can be accelerated by successful skin-grafting, simplifications of this trifling surgical procedure will be specially appreciated at the present time.

The cases we have treated have been granulating wounds caused in a variety of ways—by burns, shell wounds, accidents such as lacerating wounds accompanied by fractures or dislocations, etc.—and the area of wounds grafted at one sitting has varied from one square inch to eight or ten.

The anaesthetic is introduced in two ways according to the size of the graft required.

1. If this be small, up to two or three square inches, after the shaving and cleansing of the site selected the anaesthetic is injected intradermically with an ordinary hypodermic syringe, or better, a larger syringe carrying a hypodermic needle, until the necessary area is infiltrated. The injection should be at such a depth that the skin is blanched and swollen, with a *peau d'orange* appearance. From this immediately a graft can be painlessly cut; in fact, owing to the distension of the layers of the skin itself, the cutting of a satisfactorily thin Thiersch graft is considerably facilitated. The graft so cut is then transferred direct, or after a short rinse in warm saline, to the surface of the wound.

2. If the grafts required are more extensive the infiltration of the whole area is tedious and unnecessary. The quicker and equally satisfactory plan is to block the sensation by an injection at a slightly deeper plane, that is immediately beneath the skin, of a strip above and on each side of the skin area, that is by the ordinary regional method.

The anaesthetics that we have used have been novocain in 1 per cent. solution, urea and quinine hydrochloride

½ per cent., and most recently in method (1) sterile water. The urea and quinine hydrochloride requires a little longer to act, but its effect is more prolonged than that produced by novocain, otherwise there is nothing to choose between them; whilst for an intradermic injection, water alone is perfectly satisfactory. At first we were doubtful of the action of this anaesthetic on the vitality of the grafts, but even when transferred direct to the wound they took perfectly, although as a matter of convenience in handling, we, as a rule, put them first into warm saline.

The advantages of a local over a general anaesthetic for this purpose are obvious. There is no need of an assistant, of previous preparation of the patient, or of moving the patient from his bed. In the eyes of the patient it appears a much more trifling business—an important point if it has to be done frequently, as in the case of large wounds, or repeated if the first grafts fail to take. Lastly, perhaps, if one can skin-graft with no more trouble than doing a dressing, one will be inclined to graft even small wounds, which would heal perfectly well without it, but in which, nevertheless, a week or ten days can thereby be saved.

GAS GANGRENE AND TETANUS.

BY

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So-called gas gangrene is not infrequently met with in civil practice in tropical climates, which afford conditions favourable to the growth of germs. My experience of this disease was derived from cases occurring in the wards of the Sir Jamsetjee Jeejeebhoy Hospital, Bombay, between the years 1882 and 1902, and also from cases outside the hospital. The conditions favourable for the rapid growth of germs of every kind are ever present in Bombay—namely, moist heat and dirt; these conditions were probably more than usually favourable in France owing to the hot dry summer by which the ground was much heated, followed by heavy rains.

In Bombay many patients developed gangrene after admission, others were admitted with the disease more or less established; in some applications of earth, cow-dung, etc., had been made by way of treatment to the injured part; in others the wounds appeared clean and healthy. I do not remember to have met with the gangrene after an operation. I am quite certain, however, that this disease was more common in the earlier years, between 1883 to 1892, than later, when wounds were treated by more active antiseptic measures. Frequently quite slight injuries, comparatively speaking, and notably Colles's fracture, with only a few superficial abrasions of the skin, were followed by gas gangrene; in one case, in which the disease appeared in the scrotum and spread rapidly to the perineum and upwards to the abdomen, no injury of any kind was visible to the naked eye; this patient died in two days. It is a curious fact that I have never seen gas gangrene occur after scalp wounds, many of which were of a very extensive nature, as in the riots in Bombay on two occasions, though in a very foul condition from contact with dirt from the streets; many of these patients were attacked by tetanus of very severe type.

Amputation was the treatment always adopted for gas gangrene, but it is by no means necessary to amputate above the crepitating area, provided that the deeper parts are not involved and flaps can be made from crepitating skin. As an instance I may mention the case of a boy admitted with a gangrenous arm, crepitation being present over the whole of the front of the chest. The question of amputation was discussed, and I advised it strongly on the strength of my experience in former cases; it was performed at the shoulder-joint, and the patient made a good recovery.

At the time of operation iodoform was always rubbed freely into the flaps and the face of the stump; no sutures were employed, but a large drainage tube was placed across and dry dressings loosely applied, no bandage being used. This is important on account of the likelihood of secondary haemorrhage. I well remember one case in which the axillary artery suddenly began to bleed on the day following operation. Fortunately the house-surgeon was at the next bed; he quickly removed the dressings and applied a pair of haemostatic forceps, which were left *in situ* for several days. After removal no further haemorrhage took place.

Tetanus, too, is an extremely common disease in Bombay, and it seemed to me that the most acute cases were met with before and after the rainy season. All methods of treatment except injection of magnesium sulphate and elevation of trunk and legs were tried by the staff. If the type of cases was severe no one method gave better results than another. The milder cases met with during the cold season gave equally good results by all methods. Therefore I conclude that the severity of the case is really the deciding point in the result.

At the request of a member of the Plague Commission we tried the injection of antitetanic serum into the brain. Two serious cases were selected; in both it seemed to me the severity of the symptoms was increased, and both died; but death, I think, would certainly have occurred whatever treatment had been adopted.

There appears to be a cyclical increase in the number and severity of tetanus cases, as is seen also in plague.

Infected wounds of all kinds were usually treated by me with pure carbolic acid, which I rubbed freely into the wound; this was always done for bites and claw wounds of wild animals and dogs. In the case of dog bites the wounds were also excised, when possible, and carbolic acid again applied. I have never seen any bad result from the application of carbolic acid to such wounds, or any cases of hydrophobia follow in patients in whom the bites were thus treated, although in several instances that the dogs were mad was subsequently proved by *post-mortem* examinations.

The statements made recently of the danger of applying pure carbolic acid to infected wounds appear to me to be quite groundless.

THE TREATMENT OF PAINFUL "FROST-BITE."

BY

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THE problem of how best to treat painful frost-bitten feet is one which doubtless has caused those in charge of military wards some anxiety. The best remedy I have found to be cocainae gr. viii, ol. olivae ʒiv, liq. calcis ʒiv, which simply means carron oil and cocaine. A small quantity is rubbed into the feet twice daily, special attention being given to the toes; the feet are massaged with it for a few minutes, and afterwards wrapped up in cotton-wool. It is an improvement to add 1 oz. of liquid paraffin to 4 oz. of carron oil, as by this addition it is prevented from oxidizing so quickly, and also from drying up so rapidly, and makes it less liable to rancidity. When the oil dries on the feet, the following dusted on is an excellent powder: Camphor gr. xxxv, zinc oxide and pulv. amyli āā ʒss.

In all my recent cases in which there has been no ulceration this form of treatment has been entirely successful; one advantage is that the patient is able to sleep without any narcotic.

When the acute stage passes off the carron oil and cocaine is mixed with equal parts of carbolic oil, the percentage of which is increased as the pain decreases.

Another very important consideration is the fact that the men can be the more quickly put on the convalescent list, thereby enabling them to get back sooner to the front.

THE late Fleet-Surgeon Godfrey Taylor, R.N., who was lost in the *Formidable* on January 1st, left unsettled personal estate in the United Kingdom £4,366.

SOME idea of the capabilities of British Columbia is afforded in a short report by the inspector on the production of honey. It appears that the total crop, which was 50 tons in 1913, was between 150 and 200 tons in 1914. It is true that 1913 was a bad, and 1914 a good, honey year, but evidence is given to show that the results may be greatly improved even in bad years.

SOME *A PRIORI* PATHOMETRIC EQUATIONS.

BY

SIR RONALD ROSS, K.C.B., F.R.S.

IN the second edition of my book on the *Prevention of Malaria* (Murray, 1911) I published a considerable amount of work (which had occupied me for a long time) on what may be called pathometry—that is, the mathematical study of epidemiology. In these studies I followed the *a priori* method: in other words, I *assumed* a knowledge of the fundamental laws governing the time-to-time variations of disease in a population of living creatures; formed the corresponding difference- and differential-equations; and then sought by solving these to ascertain the more remote laws which should govern the variations if my assumptions were correct. My work was concerned chiefly with insect-borne diseases; but on page 678 I gave brief, but not quite complete, integrated equations on the general theme, these equations being obtained on the supposition that the total population remains constant during the considered period of time. A year ago, however, I was able to remove this restriction by integrating the original differential equations even when the population varies, and I have now found a simplification which enables us to state the equations in forms which are easy to analyse and which will be readily understood by any one who has some knowledge of the calculus. Thus put, they give us an elegant (though tentative) mathematical theory both of epidemic and endemic communicable diseases.

The theory is of course based upon certain probable assumptions; but its utility lies in this very point, because it enables us to test these assumptions by comparing the resulting curves with those derived from observation or statistics—a verification which cannot otherwise be obtained. My full paper on the subject is more suitable for mathematical than for medical publications; but you may possibly consent to publish the following very brief statement for the information of some epidemiologists who, I believe, will be interested in it. I will first give the identities and equations and will then add a short explanation.

1. $r = n - m + i - e$
2. $V = N - M + I - E$
3. $K = c - (v - V)$
4. $L = 1 - (N + r)/K$
5. $\frac{dx}{dt} = Kx(L - x)$
6. $\frac{dP}{dt} = vP - (v - V)Px$
7. $x = x_o \frac{L}{x_o + (L - x_o)\epsilon^{-KLt}}$
8. $P = P_o \epsilon^{rt}\left(\frac{x}{x_o}\epsilon^{-KLt}\right)^{\frac{r-V}{K}}$
9. $KLt = log_\epsilon \frac{L - x_o}{x_o} - log_\epsilon \frac{L - x}{x}$
10. $f = cx(1 - x)$
11. $\frac{df}{dt} = cKx(L - x)(1 - 2x)$
12. $\frac{d^2f}{dt^2} = cK^2x(L - x)\{L - 2(2L + 1)x + 6x^2\}$

Here t denotes the time, measured from the beginning of the inquiry; P_o is the total population at the beginning of the inquiry (when $t = o$), and P is the total population at the end of the time t. The symbols n, m, i, e denote respectively the nativity, mortality, immigration, and emigration rates per unit of time (hour, day, or week, etc.) of the unaffected population, and v is the sum of these. The capitals of the same letters in (2) denote the same rates among those of the population who are affected by the considered disease. All these quantities are taken as being constant during the inquiry,[1] but the constants of the affected population, especially the mortality, will often be different from those of the unaffected population, and V will generally be smaller than v. The symbol r denotes the proportion of the affected population who recover in unit of time, or rather who become unaffected—that is, lose infectivity and also acquired immunity. The symbol x denotes the proportion of the total population P who are affected by the disease and living at the end of the time t, and x_o is this proportion at the beginning of the inquiry when $t = o$. The symbol f denotes the current proportion of new cases to total population at the time t, and, when multiplied by P, gives the current number of new cases—that is, the curve generally shown in statistics of epidemics.

I call the important constant c the *infection rate;* and these equations are based on the assumption that each affected individual infects or reinfects c other individuals in unit of time, and that c is a constant. But some of the individuals to whom he thus gives the infection may be affected already, and we must allow for this. The actual number of affected individuals at the time t will be xP; and by supposition these will infect or reinfect cxP individuals; but of these only the ones which are not affected at the time t will be *new* cases. The actual number of new cases, F, will then be given by the proportion,

$$F : cxP :: (P - xP) : P$$

that is $F = cxP(1 - x)$. But $f = F/P$; therefore finally we get the equation (10). This equation may, however, be also deduced from the fundamental differential equations (5) and (6) described in my book. The magnitude of c, as of the other constants, will, of course, depend on the unit of time taken. It is always positive, but must not be so small as to render KL negative.

The Curve of Affected Individuals, x, is an S-shaped curve beginning at x_o when $t = o$, and approximating to a limit L when t is large. Its tangential, $\frac{dx}{dt}$, is a symmetrical bell-shaped curve with a maximum which $= \frac{1}{4}KL^2$ when $x = \frac{1}{2}L$ and $KLt = log_\epsilon \frac{L - x_o}{x_o}$. The Curve of New Cases, f, is especially important as it should agree when multiplied by P with observed curves if our assumptions are sound. It begins at a small value when x_o is small and $t = o$, and then rises more or less rapidly, reaching its maximum, $\frac{1}{4}c$, when $x = \frac{1}{2}$ and then falling again and approximating to a limit which $= cL(1 - L)$ when t is large. In this case (Type I) it has an irregular bell shape, but one which tails away more gradually than it rises. But if L is not greater than $\frac{1}{2}$, x never exceeds the value $\frac{1}{2}$ and consequently f loses this bell shape and becomes an S-shaped curve (Type II) which constantly rises towards the limit $cL(1 - L)$. The former would appear to be the curve of true epidemic outbreaks, and the latter of slowly increasing endemic maladies. In both cases the value of f when t is large expresses and explains the endemic persistence of the disease in a locality.

The curve f is also much modified if (as usual) the reversion factor r does not come into play until months or years after infection, in which case f will at first approximate very closely to the curve $\frac{dx}{dt}$ and then tail off more slowly. Moreover, the infection rate, c, may be changed by local conditions, as for instance those of climate and season, which may favour or disfavour the transference of infection from individual to individual. It is impossible to examine these and other consequences of the equations except at considerable length; but I should add that the functions are usually easy to manage in finite terms, and seem to me, judging from general knowledge both of epidemic and endemic diseases, to be likely to agree with the facts.

So far as I know, these are the first attempts to obtain *a priori* equations on the subject; but it is interesting to compare them with results obtained *a posteriori*—that is, by trying to fit functions to observed curves of epidemics. Dr. John Brownlee has published some able papers on this part of the subject. In one paper[2] he says that the late Dr. Farr had found long ago that the second difference of the logarithm of epidemic curves is a constant. From this Dr. Brownlee deduces for epidemics a normal curve of probability (Type IV), *which is also a bell-shaped curve*, and he proceeds to fit this, with considerable success, to many epidemics. As a result he appears to conclude (page 516) that an epidemic depends on the acquisition by the infecting organism "of a high grade of infectivity at the point where the epidemic starts, this infectivity being lost from that period, till the end of the epidemic." In a

later paper[3] (page 2), in commenting upon the symmetry observed in certain epidemic curves, he says that "The deduction from this phenomenon is direct and complete—namely, that the want of persons liable to infection is not the cause of the decay of the epidemic. On no law of infection which I have been able to devise would such a cause permit of epidemic symmetry." I have not seen his studies referred to in this last sentence, but may point out that my equation (10) gives an almost completely symmetrical curve if P is nearly constant and L approximates to unity; that is, when N and r are small and c is large; that is, when the epidemic is short and sharp—just in such cases as those which Dr. Brownlee refers to. I am also inclined to doubt on biological grounds whether infectivity can be increased and diminished by any act, so to speak, of the infecting organism itself, but am much more disposed to think that the infection rate may be altered by local conditions, such as those of environment and climate. It seems also likely that epidemics in certain diseases may be due to a previous lowering by chance of the constant of endemicity in the population concerned, followed by a chance increase of affected immigration. I am, however, by no means prepared to contest Dr. Brownlee's very valuable results until some attempt has been made to fit my curves to known cases. The whole subject appears to me to be of such interest and importance that I have ventured to write a somewhat long letter upon it.

REFERENCES.
[1] See *Prevention of Malaria*, p. 658 et seq. [2] *Proceedings of the Royal Society of Edinburgh*, 1907, vol. xxvi, Part VI. [3] *Proceedings of the Royal Society of Medicine*, June, 1909.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A NOTE ON THE BACTERIOLOGY OF TWO CASES OF ULCERATIVE STOMATITIS.

ALTHOUGH the infectious nature of ulcerative stomatitis in children has been recognized for a long time, little as to the nature of the organisms causing the disease has been published. Bernheim and Popischill[1] described a diphtheroid bacillus and a spirochaete in 30 cases examined; but J. G. Turner,[2] writing on the subject more recently, states that the nature of the causative micro-organism is uncertain.

In view of the scanty information available, it has been thought worth while, therefore, to record the bacteriological findings in two cases lately examined. The patients were two boys, both aged 8 years, who sat near one another in the boys' department of a London elementary school. Both children were fairly well nourished, and were apparently in good health prior to the attack of stomatitis. In the first case there was severe ulceration of the gums on both sides of the lower jaw, and of the adjacent inner surface of the cheeks. The ulceration was accompanied by the usual fetor of the breath, enlarged glands, and considerable constitutional disturbance. Shortly after the first boy was seen, the second was found to be similarly affected; but in his case the ulceration was confined to the left side of the mouth, and neither the local condition nor the general symptoms were as severe as in the other case. Swabs were taken from the deepest parts of the ulcerated surface in the side of the cheek, and in each case a streptococcus was obtained in pure culture, except for one or two colonies of *Staphylococcus albus*. The streptococcus corresponded in its morphological and cultural characteristics with *Streptococcus pyogenes*, cultural characters differentiating it clearly from *Streptococcus salivarius* of the healthy mouth. Broth cultures showed long chains of cocci, with branching arrangement; there was slight growth on gelatine at 22° C.; milk was rendered acid, but was not curdled. Animal inoculation tests were carried out, unfortunately, only after the two strains had been subcultured repeatedly. Two rabbits were apparently unaffected after intraperitoneal injection with three days old broth cultures.

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[1] Bernheim and Popischill, *Jahrbuch f. Kinderheilk.*, vol. xlvi, p. 434.
[2] Turner, *Science and Practice of Dental Surgery*, chap. xlix, 1914.

SERUM SICKNESS AND ANAPHYLAXIS.

I HAD occasion recently to give a prophylactic injection of diphtheria antitoxin to a healthy man, aged 35. He had never had any previous inoculation in the accepted sense of the word, but ten years ago he had been revaccinated during an epidemic of small-pox. The serum used was one of the well-known brands, the dose the ordinary prophylactic one of 1,000 units, and the injection was given under strictly aseptic conditions.

Immediately after withdrawing the needle, I was proceeding to apply a dressing to the site of the puncture when the patient became very pale and fell forward out of his chair, uttering a groan not unlike the epileptic cry. There were convulsive movements of the face and jaw, slightly stertorous breathing, complete loss of consciousness, with widely dilated pupils, livid complexion, and cyanosis of the ears and finger tips. After a few seconds he partially regained consciousness, and showed signs of becoming rather voluble, trying to talk and laugh loudly; then he quickly relapsed into a state resembling that of severe shock, with a profuse perspiration and a pulse-rate of only 20. At one time the radial pulse was quite imperceptible. After energetic treatment, persisted in for an hour or more, he at length began to respond, and eventually became more or less himself again, though naturally rather shaky.

All he remembered of the early stage was a feeling of annoyance at being roused out of pleasant dreams. There were no local signs such as oedema at the site of inoculation.

Is one to conclude that this alarming train of symptoms was due merely to nervous shock in a possibly "highly strung" subject, or should one regard it as a case of true anaphylaxis? If the latter, then is it possible that ordinary vaccination with calf lymph may in certain individuals have a similar effect to that of horse serum in inducing a condition of hypersensitiveness to any future inoculation?

Hale, Cheshire. W. TURNER, M.B.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, March 11th, 1915.

Sir WILLIAM CROOKES, O.M., President, in the Chair.

Restoration of Paralysed Muscles by Means of Nerve Anastomosis.

PROFESSOR R. KENNEDY'S third contribution on this subject dealt with the anastomosis of the brachial plexus, and included a consideration of the distribution of its roots. The experiments recorded consisted of division of one or more roots of the brachial plexus, and anastomosis of the divided root or roots either to another part of the plexus or to the spinal accessory. Restoration of function took place, and physiological examinations showed that this was due to the nerve which was substituted for the severed roots. When less than two roots were divided restoration of function took place much earlier, and was shown to be a spontaneous recovery due to the affected muscles being each supplied through more than one root. The distribution of the roots of the plexus was also considered, and the results of the stimulations of six plexuses in man were compared with the same number of examinations in Macacus, the comparison showing a close similarity between the two.

Mechanism of the Cardiac Valves.

Professor A. F. S. KENT presented a preliminary communication dealing with the structure and mode of action of the auriculo-ventricular valves of the mammalian heart. Muscular tissue derived from the auricular wall ran for a considerable distance into the substance of the valve flaps, being situated principally towards their auricular surfaces. It was permissible to conclude that this muscle exercised an important function in connexion with the closure of the valves. Receiving its stimulus from the base of the auricle, of which it was indeed an extension and with which it was directly connected, it came into action at the appropriate moment in the cardiac circle, and contracted (and remained contracted) last of all the auricular muscle.

Thus it kept the valve flaps away from the ventricular wall, and ensured free play to the retrovalvular eddy right up to the time when the valve closure began to be finally accomplished. The function of the muscular slips now described might be regarded as a double one—(*a*) to keep the flaps away from the ventricular walls, and thus to ensure the provision of an adequate space between the flap and the ventricular wall for the full development of the retrovalvular eddy; and (*b*) to afford by their contraction direct mechanical assistance in the raising of the flaps into the position of final closure.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

AT a meeting on March 12th, Mr. CHARTERS SYMONDS, President, in the chair, Dr. J. PORTER PARKINSON showed a case of *Tumour of the neck, with obstruction of the vena cava*, in a woman, aged 50; she had had lumps in the neck since the age of 10. These were possibly a calcified cystic adenoma of the thyroid. Evidence of obstruction of the vena cava superior had been noticed for four or five years. General rigidity of the back, probably due to spondylitis deformans, was also present. The case was shown for diagnosis. Dr. F. P. WEBER showed: (1) *Non-syphilitic arteritis obliterans* ("thrombo-angitis" of Leo Buerger), with gangrene of the toes, in a Russian Jew, aged 25. He remarked that confusion might arise in connexion with trauma in such cases. Injury provoked the symptoms, while the cause might be overlooked. (2) *Sclerodactylia of feet*, associated with arteritis obliterans and gangrene of the toes, in a Russian Jew, aged 48. (3) *Acromegaly*, also in a Russian Jew, aged 48. It was but slightly marked, and was associated with chronic glaucoma. (4) *Syringomyelia of the Morvan type*, in a man, aged 45. Dr. Parkes Weber also read a short paper on a case of *Splenomegaly*, with the clinical picture of Banti's disease.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on February 16th, Dr. MANKNELL in the chair, Mr. PHILLIPS read notes on some cases of *Uterine fibroids associated with pregnancy*. Many eminent gynaecologists recommended hysterectomy whenever the condition was diagnosed. During pregnancy the chief dangers were: (1) Miscarriage; (2) red degeneration of the tumour, with liability to infection. During labour there was a danger of (1) obstruction; (2) mechanical interference by an intramural fibroid. In the puerperium infection of a degenerating fibroid was the chief danger. Mr. Phillips read short notes of the following examples: (1) Necrobiosis of fibroid, (2) suppuration in fibroid, (3) necrobiosis during puerperium, (4) sloughing of fibroid during puerperium, (5) malignant change in fibroid, (6) puerperal degeneration of fibroid producing intestinal obstruction. He could not agree that hysterectomy was necessary in every case. When the condition was diagnosed, the patient should be kept under close observation and a laparotomy performed, if the local and general symptoms pointed to a degeneration of the fibroid. If the tumour seemed likely to cause obstruction, Caesarean section might be performed when the child became viable. Many cases pursued a normal course, and when the patient was convalescent an operation should be advised, either hysterectomy or myomectomy being performed as the condition required. Dr. BUCHAN, M.O.H., opened a discussion on the *Prevention of epidemic disease in camps*. He pointed out that the mortality from disease in previous wars had been two to three times greater than from wounds. In the South African war 69 died from disease to 42 from wounds. In the Crimea 230 from disease to 150 from wounds. In the Peninsular war the relative numbers were 200 from disease to between 50 and 60 from wounds. Dealing next with the duties of the medical officer on active service, he said that in first aid his duty was mainly to supervise the removal of wounded from the front to the base. But the most important of all the medical officer's duties was the selection of a suitable site for a camp; 330 men per acre was about the average number of men on a camp ground. The size of area for a field ambulance was usually 120 by 200, and 94 men per acre allowed; 15 men to a bell-tent and 15 sq. ft. per man, but in tents overcrowding was apt to occur. It was the duty of the medical officer to choose his camp where there was a suitable water supply for drinking purposes, watering horses, and washing, and then to guard it carefully. If the camp was near a town it might be possible to utilize the town water, but this was not often practicable. Small streams were better than large streams as they were less liable to pollution. The medical officer had to consult his map carefully to note whether water from arable land ran into it, and note the district and character of the country through which a stream took its course. He then had to test the quality of his water supply. The purification of water supply was of great importance. This could be carried out by filtration or sterilization, by heat or chemicals. The usual method adopted was by Berkefeld filters carried in water-carts. Dr. Buchan did not think that sterilization by heat was practicable on a large scale, and he had not much faith in sterilization by chemicals, it being difficult to get the men to carry it out as it was liable to affect the taste of the water. The men should all be instructed not to waste the water in their water bottles, and not to fill them promiscuously in streams by which they passed. Next in importance to water supply was the selection of the ground suitable for latrines. These should be placed far from the water supply, and at least 100 yards from tents. The type used was the short trench latrine—3 ft. by 2 ft. by 1 ft. wide and 2 ft. apart from one another. They were gradually filled in with earth. A sanitary squad was attached to each regiment; they had to see that excreta were covered with earth and keep latrines in a sanitary condition, and prevent breeding of flies. The medical officer also had to attend to the general cleanliness of the camp, the disposal of refuse; to see that papers, cigarette ends, scraps of food, etc., were not thrown about the ground. Kitchen garbage was collected in covered tins and burnt in the camp crematorium. The selection of sites for kitchens was another matter of first importance. Slop pits must be made into which the slop water was led and the pits covered with wood to prevent flies breeding. No food should be allowed to be taken into tents. It was most important that the health of all cooks and men orderlies should be looked to. In choosing an encampment it was important not to occupy the site of a previous camp; the site of tents should be changed every four days in order to air the ground. Dr. Buchan concluded by saying he thought the profession should impress upon the public the great value and importance of inoculation, but he was not yet prepared to say that inoculation had been absolutely proved to be a positive preventive of typhoid fever occurring. The PRESIDENT, Dr. MOSSOP, Dr. MITCHELL, and Dr. EURICH spoke. Dr. BUCHAN replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting on February 26th, Dr. F. CONWAY DWYER, President, in the chair, Mr. W. S. HAUGHTON showed a case of *Double congenital dislocation of hip treated by Lorenz's method*. The treatment extended a little over two years, which was about double the normal time required. The delay was due in the first instance to gastric attacks, and then to an attack of measles. Skiagrams before the treatment and during its progress were exhibited, and attention was directed to the relation of the head of the bone to the acetabulum, the development of the bone, the development of the femur, the development of the acetabulum. Mr. W. C. STEVENSON showed a similar case. Mr. SETON PRINGLE showed a case of *Arthroplasty of the knee for bony ankylosis*. He believed it was the first one of the kind done in Dublin, and it had been a failure. The man, some two years ago, had accidentally stuck a penknife into his knee-joint. The joint became septic, and nine months afterwards he had bony ankylosis, and his leg was almost at a right angle. Mr. Pringle decided to try arthroplasty. Murphy's technique was carefully followed. The essential points of the operation were to remove the old articular surface, remodel the bones, and then turn in from the tibia and femur flaps to cover the bones. The leg was then put up with an extension of 20 lb. on it for from three to five weeks, after which time

the patient should be allowed to develop active movement. When the patient shown was allowed out of hospital he had a fair amount of movement in the joint. He wore a splint and used crutches for some time, but about four months after operation he gave the joint a wrench. There was now very little movement in the joint, and it was very painful. *X*-ray photographs of the joint before and after operation were shown. He believed the operation could be done with a successful result. Mr. ADAMS A. MCCONNELL read a paper on the *Rôle of the high-pressure frequency in the treatment of tumours of the bladder*. He had treated several cases by this method since he learnt the technique from Beer in New York three years ago. After relating the histories of four cases and illustrating the course of the treatment by intravesical photographs and by radiograms, he came to the following conclusions: The high-frequency current is the method of choice for the treatment of vesical papillomata which are small, apparently benign in nature, and in patients who are not good subjects for an anaesthetic. It relieves the symptoms and checks haemorrhage from inoperable carcinomata of the bladder. It may be used with advantage as a preliminary to operation in patients anaemic from much bleeding. After operation it should be used to remove recurrent growths as soon as they can be seen with the cystoscope. He advocated the removal of villous tumours by operation and routine cystoscopic examination at intervals of a month for some years afterwards. It was irrational to wait for symptoms before making a diagnosis of recurrent growths, for papillomata may remain in the bladder for long periods without producing haemorrhage. Remarks were made by the PRESIDENT, Mr. PRINGLE, Mr. C. A. BALL, Dr. CROFTON, and Mr. BLAYNEY; and Mr. MCCONNELL replied.

SECTION OF PATHOLOGY.

AT a meeting on January 22nd, Dr. J. B. COLEMAN, President, in the chair, Dr. EUPHAN MAXWELL showed a girl aged 3½ years, the subject of *Lymphangeioma of the conjunctiva*. She had previously referred to another case in a girl of the same age, who could not be shown as she had got scarlatina. In that case the lower half of the conjunctiva was raised, and when touched with a probe had a boggy feeling. A piece of the growth was removed for examination, and the whole tissue then became diffused with blood, and remained bright red for some days. The section showed several spaces lined with endo-epithelial and a few round cells. The child, who had been taken away by the parents, was brought back to hospital with a purulent discharge from the conjunctiva. The growth had increased, and now not only involved the lower half of the conjunctiva but the inner half as well. A bogginess also appeared above the right eyebrow, but there seemed to be no communication between it and the conjunctival growth. Treatment by electrolysis was commenced, but was interrupted by the development of scarlatina. In the case shown the appearance was somewhat similar to that in the one described, but the growth seemed to involve the orbit. The orbit was explored under an anaesthetic, but nothing could be seen or felt from the outer side. The conjunctival growth appeared to go backwards indefinitely. The treatment adopted in this case also was electrolysis. The proptosis had lessened by 1 mm., the original amount of proptosis being 3 mm., and the conjunctiva had shown considerable improvement. The proptometer was shown and its use demonstrated. Lymphangeioma of the conjunctiva was extremely uncommon in the orbit; according to Parsons there are only five such cases recorded. In reply to the PRESIDENT, Dr. MAXWELL said the method of applying electrolysis was as follows: A needle was attached to the negative pole and inserted for about half a minute into the tumour, and this was repeated every ten days. The patient was put under an anaesthetic. She could not say how long the treatment would require to be carried on, but she presumed that this would depend on how the patient reacted. Dr. A. R. PARSONS said that in Sir Patrick Dun's Hospital he had met with five cases of *Enlarged thymus* in children, aged from 2 to 5 years, in which death occurred suddenly, and on examining them he was struck by the size of the solitary follicles of the intestine and the mesenteric glands. The specimen now shown was taken from a child aged 9, who was admitted to hospital at 2 o'clock on Christmas Day. It was well until 5 p.m. on the previous day, when it became delirious. It was found impossible to make a satisfactory examination on admission. He was extremely emaciated, and the pulse was uncountable. The first impression was that it was meningitis. It was impossible to obtain a specimen of the urine. The child died five hours after admission. At the autopsy some of the urine was obtained, and, except for a slight trace of albumin, was normal. Enlargement of the thymus gland was the only thing found. Dr. Parsons related also a case of *Acidosis in typhoid fever*. The patient was a boy, aged 11 years, who was rickety almost from his birth. He was admitted to hospital as probably a case of Friedreich's ataxia. He had difficulty in walking, and swayed from side to side. There was no nystagmus, and the knee-jerks were only slightly exaggerated. The third morning after admission a marked change was noticeable. He was stupid, cold, and his hands were bluish, and he vomited. It was thought that he was suffering from acidosis, and on examination of the urine an amount of acetic acid and acetone was discovered. Next evening his respirations were laboured, and the clinical picture was like that of a boy in diabetic coma. The fundus was examined and found to be perfectly normal. On the following morning some members of the class noticed a sweet odour from the breath. On free administration of alkali by the mouth the lad gradually recovered, and after some days the acetic acid and acetone disappeared from the urine. An attempt was made to get him to walk, but he was very weak in the legs. After three or four weeks in hospital, the temperature, which was previously normal, rapidly rose, and he died. In the same ward there had been three cases which developed typhoid fever, and when the *post-mortem* examination was made, evidence of typhoid was found. Dr. Parsons showed also a specimen of *Malignant disease of the stomach* which was removed from a man, aged 45, who was admitted last September complaining of abdominal pain and weakness. He weighed only 5 st. 12 lb. During his time in hospital he took a fair amount of food, but had no desire for meat. He was practically free from vomiting. Physical examination revealed only slight crepitus in the lungs. The upper part of the abdomen was a little resistant, but no tumour could be felt. He was given a test meal, and a very small quantity of fluid was obtained and a small clot of blood. The fluid was acid in reaction, but contained no free hydrochloric acid. It was suspected that he was suffering from cancer of the pancreas or growth on the anterior wall of the stomach. He was under observation three months, and died a fortnight before the date of the meeting. On *post-mortem* examination the liver was normal, but in the stomach was found a mass all matted together. The omentum was infiltrated with malignant disease, and along the greater curvature of the stomach there were glands. On opening the stomach a malignant growth was found at the point of entrance of the œsophagus. On examining the thorax a hard mass was found in the lungs which were found to be tuberculous. The heart was very small, and was the best specimen of brown atrophy the speaker had seen. Remarks were made by the PRESIDENT, Dr. WIGHAM, and Dr. STOKES, and Dr. PARSONS replied. Dr. W. BOXWELL showed a *Brain from a case of hemiplegia*. It was removed from a woman, aged 50, who had suffered for years from mitral disease and a certain amount of stenosis, as well as mitral regurgitation. She died suddenly, and when the brain was taken out it was expected that a specimen of hemiplegia due to embolism would be obtained, and that a lesion would have been encapsuled. The only lesion, however, to be seen was a small haemorrhage on the frontal lobe and here and there small spots. The patient had only had one attack with cerebral symptoms, and in that she had complete hemiplegia. About a week elapsed between the onset of hemiplegia and death. He had looked for embolism but found none. Dr. W. G. HARVEY showed a *Pituitary tumour* removed from a woman, aged about 60, who was admitted to the Adelaide Hospital complaining of a severe headache and giddiness, but never vomited. Shortly after admission she suddenly became unconscious. There were no signs of acromegaly. The autopsy revealed a tumour of the pituitary body about the size of a walnut. He considered

it difficult to say whether it was malignant or not. It seemed to be a pedunculated tumour, not infiltrating the surrounding parts.

HARVEIAN SOCIETY OF LONDON.

AT a meeting on March 11th, Dr. EDGAR G. BULLEID, President, being in the chair, Sir STCLAIR THOMSON delivered the Harveian Lecture, taking for his subject *Modern methods in rhino-laryngology*. He said it was difficult to define exactly what was "modern" in a speciality which was just sixty years old. This period could conveniently be divided into three stages. The first dated from the publication in 1855 of Garcia's discovery of the laryngoscope up to the year 1881. It was chiefly devoted to the study, by inspection, of diseases of the nose and throat and their treatment by topical or internal medication. The discovery of cocaine in 1881, which initiated the second stage, at once facilitated laryngoscopy and rendered possible a large number of operations, and the rapid surgical development in rhino-laryngology during the following twenty years was further helped by the discovery of the haemostatic action of the extract of the suprarenal capsule. The inception of the third stage, which dated from the beginning of the present century, was marked by the perfecting of these endoscopic methods, for which they were principally indebted to Gustav Killian. This stage had shared in the great advance of modern medicine and surgery, and it was chiefly the progress of these fifteen years that the speaker proceeded to summarize. With the aid of 150 lantern slides a demonstration of the following methods was given: The cosmetic surgery of the external nose; resection of the septum; nasal route to the pituitary body; intranasal dacryocystostomy; lateral rhinotomy, or Moure's operation; relations of the nose and accessory sinuses to the eye and orbit; surgery of the accessory nasal sinuses; the ethmoid; endo-nasal operation on the frontal sinus; enucleation of the tonsil; temporary laryngotomy; laryngofissure; endoscopy (bronchoscopy and oesophagoscopy).

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on March 9th, Dr. JANE WALKER presiding, Dr. JESSIE CAMPBELL, in opening a discussion on *Tuberculosis in children*, said it was a matter of great difficulty to distinguish between latent and active tuberculosis. Notification carried with it much in favour of the child and much against it. The official of the Public Health Department, in visiting the notified case, insisted on the child sleeping alone, having extra milk and food, and so forth, and as a result the rest of the family were frequently overcrowded and lived on short rations, while the child was given special treatment as a "consumptive," and was given its own way in many things, much to its own detriment, the family understanding the diagnosis of "tuberculosis" to imply early death. Cases of latent or suspected tuberculosis were better unnotified, though kept under observation, until the diagnosis was surely established. In school children the amount of notifiable pulmonary tuberculosis varied in the hands of different observers from ½ per cent. to 30 per cent. Statistics from *post-mortem* work and specific tests showed a high degree of infection by the tubercle bacillus in early childhood. At the age of 14 von Pirquet's test gave a positive result in 94 per cent. of school children. In 1913, in the Woolwich Tuberculosis Dispensary, out of 1,090 children under 15 years of age, 160 showed definite signs of pulmonary tuberculosis, 200 were regarded as suspects and were kept under observation, so that 14.5 per cent. were definitely notifiable. Goodhart and Still had stated that the breathing in normal children was irregular and asymmetrical, and the failure to recognize this fact led observers to place normal children in the suspect group. At Woolwich these children were treated for nasal obstruction when necessary and were given a course of breathing exercises, and the results were very satisfactory. Sputum could be obtained from young children by Holt's method, by exciting a cough and catching the sputum on a swab placed in the pharynx; in the babies' hospital in New York he had thus found tubercle bacilli in 80 per cent. of cases. In tuberculosis of the bronchial glands and hilus tuberculosis there was generally an indefinite and progressive condition of ill health, associated with much anaemia and lassitude; but the child might appear quite well-nourished though flabby. There was troublesome paroxysmal cough, poor appetite, night sweats, and slight fever. The presence of an impaired note in the interscapular region with weakened breath sounds was very suggestive of this condition. Dr. ESTHER CARLING said many children notified as tuberculous showed no symptoms of the disease, and under sanatorium treatment improved very rapidly. Too much money was spent on expensive sanatorium schools, and the child soon relapsed on returning to home conditions. Dr. MARGARET MACDONALD HOGARTH said children were only excluded from the London schools for open tuberculosis. The school doctor was the connecting link between the tuberculous child and its treatment, for which tuberculosis dispensaries were invaluable. There were at present 115 sanatorium beds available for London school children, and next year there would be 400. Advanced cases could now only remain at home or go to the workhouse infirmary. Dr. MAUDE RICHARDS said that operative treatment had become more conservative during the last few years, except in disease of the spine, for which two operations had recently been tried in suitable cases. Hibbs's operation aimed at producing fusion of the posterior aspect of the vertebrae, in order to prevent movement at the vertebral articulations over the diseased area, and thus to relieve pressure over the involved bodies, thereby hastening cure and preventing deformity. In Albee's operation an attempt was made to fix the diseased vertebrae with transplanted bone. It was claimed that these operations reduced the length of time necessary for cure, that nursing was simpler and the children could be taken about more easily, while a certain amount of deformity could be corrected. In hip-joint disease operation was now usually undertaken only for the correction of bony deformity or for the treatment of abscesses. Excision of the joint was now considered an unjustifiable operation by most surgeons, and Bowlby had stated that out of 900 cases 96 per cent. had recovered without excision. Remarks were also made by Dr. LETITIA FAIRFIELD, Dr. ELSIE CHUBB, and Dr. JANE WALKER.

Rebiews.

PROFESSOR EHRLICH.

PROFESSOR EHRLICH celebrated his 60th birthday just over a year ago—on March 14th, 1914—and his friends and pupils commemorated the occasion in a *Festschrift*,[1] issued shortly afterwards. The publication of such volumes is a German custom, and a good one. The volume reached us shortly before the ruling class of Germany precipitated the war it had long had in preparation. Those in this country who know and admire Ehrlich's scientific work must deeply regret that his name should have been one of the ninety-three subscribed to the recent declaration of German men of science, and conclude that only a mistaken patriotism can have made him thus false to the ideals of his life. It has been a laborious life, fruitful in useful and stimulating work. It may be divided into four main periods, each with its characteristic impress. During the first period, ending with his installation in Koch's new institute as Extraordinary Professor in Berlin University in 1890, he was occupied with researches into the staining reactions of dead and living tissues, and with questions relating to the oxygen consumption of the tissues. In these researches he pushed inquiry into the chemical constitution of the animal and vegetable cell along new and most productive paths, and opened up novel methods of investigating the chemical composition of protoplasm. In the second period his scientific activities were devoted to the investigation of toxins and antitoxins, both bacterial and vegetable, and immunity: the development of his well-known side-chain theory in 1897 was the logical outcome of this work. In 1899, working with Morgenroth, he began the studies in the mechanism of haemolysis that determined

[1] *Paul Ehrlich, eine Darstellung seines wissenschaftlichen Wirkens. Festschrift zum 60. Geburtstag des Forschers.* Jena: G. Fischer. 1914. (Roy. 8vo. pp. 668; 1 photograph. Unbound, Mk. 16; bound, Mk. 17.)

the character of his third period of work—a period devoted to the investigation of immunity, serum reactions, and malignant new growths in rats and mice. The fourth and present period of his scientific activity began in 1906, when, thanks to the liberality of the widow of Georg Speyer, he was able to devote himself to the advancement of experimental chemiotherapy, a new and promising branch of science that owes much to his initiative and originality. The most conspicuous result of his work in this direction has been the introduction of salvarsan, to the discovery of which he was led by theoretical consideration. This work has been much applauded in all countries, in this and in others. We regretted at the time that he permitted the drug to be patented, and did not think the excuses made for taking this course good. We now know also that its efficacy is strictly limited. Yet we recognize that a drug which has so striking an effect on the infecting organism cannot but have a profound influence on the course of the disease, must contribute to its efficient treatment, and may possibly arrest it in its earliest stage.

Ehrlich is a speculative man of science, anxious to afford mechanical or chemical explanations of vital phenomena that appear by their complexity to open up questions difficult of solution. But his gift for speculation is controlled by sound common sense, and a conviction that theory, while it may direct, should not outrun experiment. So it is that his speculations and theories have led to a vast amount of practical work in the diagnosis and treatment of disease, a quality that is bound to commend them to the practical temperament of the British physician.

A bibliography at the end of the *Festschrift* enumerates no less than two hundred and twelve papers and books Ehrlich has contributed to the literature of science between 1877 and 1914. In addition, it details four hundred more that have been published by workers in his laboratories or have been inspired by him, for the most part during the last ten years.

THE CEREBRAL ORGAN.

IN his elaborate essay on *The Brain in Health and Disease*[2] Dr. BOLTON has returned once more to those vexed problems, the structure and function of the brain and their correlation. As he points out in his preface, most of the recent researches have busied themselves with the speculative or theoretical side of these questions, with the symptomatology of mental disease, for example, or with applied psychology, even with the so-called Freudian psycho-analysis, with the result that the sound foundations furnished by histological and anatomical research have been unduly neglected. Dr. Bolton has gone back to these safe but old-fashioned methods, being very rightly convinced of their value. His book is based on the systematic researches of eighteen years, and is intended as a treatise on the general physiology and pathology of the brain rather than an account of mental disease.

The first quarter of the volume deals with cerebral function in the normal brain, the remainder with the same function in mental disease. The author divides all mental patients into two clinical categories, recognizing, first, aments, who suffer from deficient neuronic development; and, secondly, dements, who suffer from a permanent psychic disability due to neuronic degeneration following insufficient durability—or, in other words, from a more or less marked grade of involution or dissolution of the cerebrum. His histological method consists in the preparation and staining of microscopical sections from numerous definite areas of the cerebral cortex and their micrometric study and comparison; he details the precautions taken to ensure the greatest possible uniformity in the conditions in which these microscopical measurements are made. The cerebral cortex peculiar to the mammalia, termed the "neopallium" by Elliot Smith, consists of three primary cell-laminae. Bolton regards it as proved that the outer of these, the pyramidal cell-lamina, serves the associative, psychic, or educative functions of the brain, while the middle or granule cell-lamina has receptive functions, and the inner or polymorphic cell-lamina serves the organic and instinctive functions of the cerebrum. In different animals and in various portions of the brain these three primary layers undergo different degrees of development or suppression. As a result, Bolton distinguishes in man five cortical laminae, namely, (1) the outer fibre lamina, or superficial layer; (2) the outer cell-lamina, or pyramidal layer; (3) the middle cell-lamina, or granule layer; (4) the inner fibre-lamina, or inner line of Baillarger, which in certain regions contains such bodies as the Betz cells and the solitary cells of Meynert; and (5) the inner cell-lamina or polymorphic layer. He is able to distinguish these five laminae in all parts of the neopallium, as, indeed, is shown by a number of excellent photomicrographs in the early part of his book. He argues that it is fair to draw certain conclusions as to the function of these layers from the study of their development in different cortical areas and in persons with different types of mentality. His facts and measurements are based on the careful examination of 54 regions in 38 hemispheres, obtained from 37 cases of various types—fetuses, infants, normal persons, aments, and dements. To put the matter briefly, his endeavour is to establish a physical basis for the functions of the brain, to elucidate some part of the cerebral mechanism.

The three last quarters of the book deal with observations, mainly clinical, on the cerebral functions in mental disease as exhibited by aments and dements in asylum practice. The author gives a classification of the various forms of insanity, and, to illustrate his contentions, adds brief accounts of a large number of cases, with records of typical conversations or remarks. An interesting point upon which he lays particular stress is the importance in the pathology of dementia of an excess of intracranial fluid. Though often apparently neglected, this excess is of great value as an index of the degree of cerebral wasting present, and no doubt predisposes to the development of chronic degeneration in the dura mater and pia arachnoid. He employs the term "mental confusion" to indicate the mental state preceding dementia, yet in fortunate cases capable of recovery. Here, too, a subnormal durability of the higher neurones of the cerebral cortex is postulated as the most frequent cause of breakdown, rather than any direct or indirect action of toxins.

To give any sort of summary of the contents of such a volume as this, packed as it is with observations, deductions, and arguments, is a well-nigh impossible task. Dr. Bolton writes clearly, and it is obvious that his book is the outcome of a vast amount of work. It should be in the hands of every alienist, psychologist, and physiologist, for it contains a great quantity of stimulating and suggestive reading that cannot fail to interest those who study the general physiology and pathology of the human brain.

BURDETT'S "HOSPITALS AND CHARITIES."

THE twenty-sixth issue of Sir HENRY BURDETT'S *Hospitals and Charities*[3] contains, like its predecessors, some interesting comments by the editor on the subjects that have come into special prominence during the past year. Foremost amongst these we note some very severe remarks upon the lack of interest on the part of politicians in general in the burning questions of hospital treatment for insured persons. The future of the hospitals is discussed, with especial reference to political apathy and the results of the war. Sir Henry Burdett's views on the subject of patients' payments are well known, and, in relation to insured patients, he believes in the institution of a system of contracts between those public bodies who are charged with the working of the Insurance Act and the authorities of voluntary hospitals by which payment should be made to the hospitals for the treatment of insured persons. He is of opinion that the voluntary system has become so deeply rooted in the public mind that it would not be disturbed by the introduction of the financial methods he advocates. His firmly established admiration for the American and German pay systems does not appear to him to be incompatible with the voluntary maintenance and management of British institutions.

Large grants from Insurance Committees, municipal councils, and the Local Government Board would doubtless be welcomed, if unhampered by conditions. But

[2] *The Brain in Health and Disease.* By J. Shaw Bolton, M.D., D.Sc.Lond., F.R.C.P.Lond. London: E. Arnold. 1914. (Med. 8vo, pp. 493; 99 figures. 18s. net.)

[3] *Burdett's Hospitals and Charities, 1915. Being the Yearbook of Philanthropy and the Hospital Annual.* By Sir H. Burdett, K.C.B., K.C.V.O. Twenty-sixth year. London: The Scientific Press, Ltd. 1915. (Cr. 8vo, pp. 988. 10s. 6d. net.)

public aid is not usually given without some form of public control, the introduction of which might do more to break down the voluntary spirit and to limit the inflow of subscriptions than has as yet been the case as a result of the introduction of national insurance. So long as the voluntary system of maintaining and governing hospitals and charities continues to deserve and obtain the support of all classes of the community, there seems to be no adequate reason for the intervention of politicans, although there are many points in which legislative reform of taxation appears to be desirable.

An interesting chapter on the nursing departments of hospitals is of particular value at the present time, owing to the high proportion of untrained nurses who are being employed in the place of those who have been called to military service. Hence the observance of strict rules and methods is of more than ordinary importance to prevent waste and extravagance, arising from want of knowledge and experience.

With every year the labour of compiling such a vast amount of information, relating to some 6,000 institutions, becomes heavier, and we regret to note that the editor desires to be relieved of some of it. The book has attained to its present size and usefulness under his personal supervision, and so important a work can only be carried on satisfactorily by direct succession. That a competent successor may speedily be found will be the wish of all those to whom *Burdett* has been as a household word for so many years past.

NOTES ON BOOKS.

DR. KASSEL[4] has ransacked literature from the Egyptian papyri down to the eighteenth century for references to diseases of the nose and their treatment. The results are garnered in a substantial book, of which we have only the first volume before us. It is a monument of industry, but it seems to us doubtful whether it was worth while to spend so much time and labour on a subject which can appeal only to a very small number of specialists. To them, however, it will be very valuable as a kind of Ordnance Survey of the field of medical science which they cultivate. The bibliography will be useful to compilers, while the quotations from writers of all sorts and conditions will help orators and speakers in discussions to illuminate their remarks with interesting facts and amusing theories. Dr. Karl Kassel should be hailed as a benefactor by rhinologists who may wish to indulge in a display of learning not easily accessible.

In a previous volume, entitled *The Vicious Circles in Disease*, published in 1911, Dr. J. B. HURRY discussed the manner in which many morbid conditions may produce symptoms which in turn may tend to increase the disease which has given rise to them. He has supplemented that work by another,[5] dealing with the *Vicious Circles of Neurasthenia* and their treatment. His method is largely that of quotation from the writings of others, and he has arranged his chapters in systemic order, the neuroses peculiar to the various groups of organs and the manner in which they react upon function so as to stimulate the causes by which they were produced, being described in series. Neurasthenia is defined by the writer as a chronic functional disorder due to exhaustion of the neurons, usually associated with impaired ideation. Many German writers have made positive assertions as to the pathological conditions by which the symptoms of neurasthenia may be produced, but it is obvious that most of them rest upon a purely imaginative basis, and that no real advance in knowledge has been made. All the functions of the human organism are liable to temporary disorder, and many such variations may be produced by sympathetic action or want of mental control. A self-conscious woman is apt to blush, and the more she blushes the more self-conscious she becomes. In many more serious organic disorders the neurasthenia induced by the illness is prone to aggravate the progress of the morbid condition. Illustrations of these circles are not difficult to find. Their collection into a single volume, well printed and handsomely bound, will be found of interest by those who are not already familiar with the phenomena referred to.

[4] *Geschichte der Nasenheilkunde von ihren Anfängen bis zum 18 Jahrhundert.* Von Dr. med. Karl Kassel. Posen: 1. Band. Würzburg: Verlag von Curt Kabitzsch. 1914. (Sup. roy. 8vo; pp. 476. Unbound, Mk. 10; bound, Mk 12.)

[5] *The Vicious Circles of Neurasthenia and Their Treatment.* By J. B. Hurry, M.A., M D.Cantab. London: J. and A. Churchill. 1915. (Demy 8vo, pp. 105; 5 plates. 3s. 6d.)

INTERNATIONAL AMENITIES IN THE MEDICAL PROFESSION.

A SHORT time ago we published a note containing certain criticisms made to us by a distinguished Scandinavian doctor on the reception commonly accorded to medical visitors to this country, and of the failure of English publishers to make any attempt to interest the medical profession of the Scandinavian countries in British publications by sending copies for review. The nature of the second criticism led us to call the attention of several of the leading publishers of medical books to it. Among the replies we have received is the following interesting letter from Mr. John Murray, which touches both of the criticisms set out in the paragraph.

Sir,—You ask for my comments on the latter part of your article on International Amenities in the Medical Profession.

As I understand this, it is a friendly hint to English publishers to try and "capture" the book trade in Scandinavia from the Germans, who have hitherto almost monopolized it. The writer adds that this applies especially to medical books, and seems to imply that the smallness of English trade is in a great measure due to the fact that very few copies are sent to Scandinavian papers for review.

If I am correct in this interpretation, I think that it is a case of putting the cart before the horse. My experience is that few review copies are sent to Norway and Sweden because the demand for English books is comparatively so small.

I know what good linguists the Scandinavians are, but I have always supposed that they had a leaning towards the German in preference to the English language, especially in scientific subjects. If there were any encouraging demand for English books, the increase of review copies would necessarily follow, but we could hardly hope to change a national linguistic tendency by sending books to newspapers. The Swedish booksellers want copies on "sale or return," and unless there is a steady and continuous demand this practice invariably spells loss for the publisher.

The first part of your article was not referred to me, but interests me much. May I add a few words in regard to it?

It surprises me greatly to learn that Scandinavian doctors and surgeons should complain that they have not met with hospitable courtesy at London hospitals. I have been Vice-Chairman of the Hospital for Sick Children in Great Ormond Street for over twenty years, and I know that whenever we have had notice of visits from foreign professional men, whether in congresses or individually, every effort has been made to welcome them and show them everything, and from members of our staff I have been definitely assured that this has been their invariable experience at other hospitals.—I am, Sir, your obedient servant,

50, Albemarle Street, London, W., March 8th. JOHN MURRAY.

We have also received a reply from Messrs. Macmillan and Co., who inform us that they are much interested in the suggestion and propose to act upon it in the future. Messrs. Baillière, Tindall, and Cox give us to understand that the main reason why British publishers do not send their medical books to Scandinavian medical journals for review is that such journals are not known in this country, but they add that the results of their experience of attempting to introduce British books into Scandinavian countries some years ago were so meagre that they were not continued. They tell us also that they do not remember ever having been asked for a book from Scandinavian countries, notwithstanding the fact that many of the works published by them have been translated into various languages, including Czech, Hindustani, Chinese, and Arabic. Messrs. John Wright and Sons, Ltd., of Bristol, are rather disposed to blame the editors of Scandinavian medical periodicals. They state that whereas plenty of German, French, Russian, and Italian journals reach the firm, they very rarely receive any Scandinavian periodicals, and "out of sight is very apt to be out of mind." Messrs. Longmans, Green and Co. state that they have not overlooked the possibility of the demand for medical works in the English language in Scandinavia, and have not infrequently sent copies of suitable works to professors in those countries.

MILITARY HYGIENE AND THE EFFICIENCY OF THE SOLDIER.

WATER AND WATER SUPPLIES.

MAJOR LELEAN, in his eighth lecture, contrasted the high state of efficiency of the water supplies of the civilian population with the improvised methods alone available on active service, and gave some illustrations from actual conditions of the difficulties military sanitary officers encountered in rendering potable unsatisfactory supplies.

Daily Water Requirements.

The quantity of water required daily for each man was: In barracks 20 gallons, in standing camp 5 gallons, in ordinary camp 3 gallons, and in bivouac 1 gallon. One gallon a head a day was the minimum quantity for drinking and cooking. In standing camps more than 5 gallons a man should never be allowed, as useless excess merely increased the already great difficulty in disposal of waste water. Horses and cattle needed 8 gallons and mules 6 gallons a day.

JUDGING POSITION AND YIELD OF SUPPLIES.

Wells.

To calculate the yield of a well, the level of the water should be lowered one or two feet by rapid pumping and the time taken in refilling noted. Three-quarters of the square of the diameter of the well mouth gave the surface of the well area, which, multiplied by the depth in feet to which the water had been sunk, gave the number of cubic feet. The number of cubic feet multiplied by $6\frac{1}{4}$ gave the number of gallons yielded in the time occupied in refilling. When making borings to strike water the place chosen in hilly country should be the junction of two hills and at the base of the steeper hill; on the plain the point where the vegetation was greenest, where the morning mist settled and the largest number of midges was seen. This point usually coincided with the lowest area.

As regards the zone of safety necessary around a surface well, there should be no obvious contaminating source within a circle around the well mouth of four times the depth of the well. A more satisfactory means of estimation was that there should be no contaminating source within 150 times the depth of the depression of the water level on pumping. A well should be covered to keep surface water from running into it; it should be lined with impervious material, and the pump chamber should not communicate directly with the well.

Natural Springs.

Land springs were fed by subsoil water; these were apt to dry up in summer, and obviously were liable to contamination. A main spring was brought to the surface by the impermeable stratum, and, having a huge reservoir behind it, afforded a source of supply generally free, which long percolation rendered pure. It should be noted, however, that in limestones and chalks fissures allowed unpurified water to pass for great distances.

Natural Purification of Streams.

In calculating the discharge of streams, four-fifths of the mid-surface flow—as estimated by the time a floating body took to pass a measured length in feet—should be multiplied by the sectional area of the stream in feet. By taking the depth at three or four places the cross-section of the stream could be estimated. The number of cubic feet multiplied by $6\frac{1}{4}$ gave the yield in gallons in the measured time.

The natural purification in streams was very great. By sedimentation and oxidation a stream rapidly purified itself, though, as the rate depended on the bulk of the sewage in relation to the bulk of the river water, and upon many other variable factors, no limit could be stated within which a stream would purify itself. All rivers liable to contamination by human beings on their banks were, therefore, regarded as unsafe sources of supply. Up to a certain degree, the more organic pollution present in streams the more appetizing the water became.

Bacterial Examination.

One of the mobile laboratories at the front was devoted solely to water examination. Major Lelean exhibited a portable field box, capable of being carried by one man, and containing everything necessary for collection of samples at the well mouth, and bacterial examination regarding the total number of organisms present, and the minimal amount of water containing the highly suspicious lactose factors, capable of growing in MacConkey's bile salt medium. He said that it was considered that valuable indications could be obtained from these two simple measures within twenty-four hours. This was illustrated by extracts from actual results obtained in the field. These methods could only be applied on the lines of communication and in billet towns; at the front they were impracticable.

WATER PURIFICATION.

Boiling.

Boiling was one of the oldest and most effective methods of purifying water, but on active service the difficulty was the supply of fuel. The Flanders kettle was useful in fixed camps; means for protecting the water from dust while cooling should be provided. Boiling did not remove mica and silicates which might be present and were irritating and set up diarrhoea. Major Lelean described the Griffith apparatus for boiling water; its principal feature was that the water that had been sterilized gave up its heat to the incoming water, and so economy in working was thus effected. Nevertheless, the apparatus used a considerable amount of fuel, and so taxed the supply department.

Filtration.

The difficulties in regard to filtration were, that dry sand would allow enteric organisms to pass through a layer 15 ft. in depth. The sand needed to be sterilized and its surface coated by zoogloea or alum. A sand filter was not portable, because the filter layer must not be disturbed. The syphon necessary for admitting water to an improvised filtering chamber containing sand must be upturned at the point of delivery.

In discussing the Berkefeld filter, in which water was forced through cylinders of porous clay, Major Lelean said that the defects of the method were that it was difficult to get the material uniform, the joints were liable to leak, constant cleaning was necessary, enteric organisms would grow through, and the apparatus was fragile.

Physical Methods.

The method of submitting water to ultra-violet rays was satisfactory if perfectly clear water could be obtained, but this was generally impossible on active service. Moreover, the apparatus could only be worked by an expert, and was not only heavy but fragile.

Precipitation.

In clarification by precipitation alum was used in the proportion of 5 grains per gallon. Emphasis was laid on the fact that the gelatinous precipitate of aluminium hydrate, which carried suspended impurities down with it as it fell, would not form unless alkali were present, while it was soluble in excess of fixed alkali.

CHEMICAL METHODS OF STERILIZATION.

In his ninth lecture Major Lelean said that the army had been forced, to a great extent, to adopt chemical methods of sterilization, because of the difficulty of taking elaborate plant into the field. One of the oldest methods was the use of potassium permanganate, which, on the addition of acid, liberated about 15 per cent. of its weight of oxygen, which tended to sterilize the water. There were many objections to the use of potassium permanganate for sterilizing water in wells—notably its cost, for 60 grains per gallon was required; the appearance and taste of the water were against the method and the action of the permanganate was weak save against the spirillum of cholera.

Sodium bisulphate dissolved in water liberated 40 per cent. of its weight of free sulphuric acid and 2 grams added to the contents of a water bottle was a solution sufficiently powerful to sterilize in half an hour. The method was useful for cavalry; each man put two tablets into his water bottle when refilling it. Major Lelean described other chemical methods, and mentioned one especially in which three tablets had to be added to the water in a certain order by the individual soldier. He said that a plan which left the responsibility for sterilization to the individual was undesirable.

Chlorination.

The use of bleaching powder had proved to be the practical line of modern success. The precise structure of the powder was indeterminate; it consisted of calcium chlorine and oxygen variously combined and mixed with certain other chemical substances which were inert. Practically the essential constituent element—chlorine—formed from 30 to 35 per cent. of the weight of the powder. Major Lelean described two chemical methods of estimating the qualities of samples of bleaching powder proposed to be used for sterilizing purposes. The organisms emulsified in pure water were found to be killed in five minutes by one part in a million of free chlorine. Allowance must be made, however, for the absorption of chlorine by impurities in the water. These impurities might deviate chlorine from its duty of first attacking the organisms. In tea containing an excess the chlorine could not be detected, nor could it in drinking water containing a considerable excess. Each water cart was provided with a measure which would give the necessary amount of bleaching powder, with a slight excess for contingencies.

Water Supplies in France and Belgium.

In conclusion, Major Lelean gave a brief survey of the geological strata of North-Eastern France and Belgium, based on information supplied by Dr. Strahan of the Geological Survey. Where municipal supplies in France were taken from deep borings in the chalk, they generally gave a very pure product, but municipalities which could not afford the expense of pumping from deep borings used river water containing much effluent from cesspits. In villages very impure water was derived from wells adjoining cesspits, neither being imperviously lined. In Belgium the conditions generally were even worse than in many parts of rural France. The reason was that municipalities had postponed improvement of existing supplies because a huge scheme was in progress for bringing water from the Ardennes to most of the big cities of Belgium. Large underground aqueducts were being built, but the outbreak of war had prevented progress being made with the scheme.

VOTE OF THANKS.

The course of lectures having concluded, a vote of thanks to Major Lelean was carried by acclamation. The mover and seconder complimented him on the mastery he had shown of the subject, and the vast amount of valuable practical information he had given in an intensely interesting and instructive course of lectures.*

CREMATION SOCIETY OF ENGLAND.

THE annual meeting of subscribers to the Cremation Society of England was held at the Royal Sanitary Institute on March 17th, Sir CHARLES CAMERON, Bt., President, in the chair.

Report of Council.

The report of council stated that the number of cremations at Woking was 124, as compared with 128 in the previous year, while the figures for Golder's Green were 671 and 602 respectively. Thus the total cremations in 1914 amounted to 795, as against 730 during 1913—an increase of 9 per cent. The corresponding statistics for Great Britain were 1,189 and 1,279, showing an increased percentage of 8.9. Amongst deceased persons whose remains had been cremated during 1914 were Viscount Knutsford, Sir John Tenniel, Surgeon-General Sir A. C. De Renzy, K.C.B., Surgeon-General Sir John Cole Read, Sir Douglas Straight, and Madame Lilian Nordica.

Cremations in Great Britain since 1885.

The following figures show the number of incinerations carried out in Great Britain since 1885: Woking (opened in 1885), 3,817; Manchester (1892), 2,091; Glasgow (1895), 540; Liverpool (1896), 717; Hull (1901), 293; Darlington (1901), 109; Golder's Green (1902), 4,829; Leicester (1902), 148; Birmingham (1903), 382; Leeds (1905), 187; Ilford (1905), 230; Bradford (1905), 116; Sheffield (1905), 126. This makes a grand total of 13,585.

*We are informed that the lectures will be published in full by Messrs. J. and A. Churchill in a volume now in preparation.

President's Address.

Sir CHARLES CAMERON, in moving the adoption of the report, recalled the history of the initiation of the cremation movement by Sir Henry Thompson, Sir Spencer Wells, and others. The prejudice which at first existed against it had to a considerable extent been overcome, but, in view of the fact that the total number of cremations in this island scarcely amounted to 14,000 since 1885, while during the same time some eighteen million bodies had been buried, it was obvious that there was a very great deal to be done before any practical advantage or economic result could be obtained. By way of contrast he quoted some figures from the last annual report of the Cremation Society of Geneva. The population of Geneva was less than four millions—say about a tenth of that of England and Scotland—but the number of crematoriums there was fourteen, one more than the total number in Great Britain. The most important of them was that at Geneva, a city whose population was barely one fiftieth of that of London, yet the number of cremations carried out there in 1914 was 242, or between half and one third the number in London in the same year. The motion was seconded by Sir HERBERT THOMSON, and carried, and the proceedings terminated by the adoption of a vote of thanks to the Chairman.

BOARD OF EDUCATION.

SIXTH ANNUAL REPORT OF THE MEDICAL OFFICER.

(Continued from p. 507.)

THE PHYSICAL CONDITION OF SCHOOL CHILDREN.

THERE are now some 6 million children on the public elementary school registers, representing an average attendance of 5¼ million. The report indicates the desire for more constructive work in the school service. The amelioration of individual defects is not only to be aimed at, there must be the systematic study of these individual conditions so as to show (1) the presence of and distribution of disease in childhood; (2) its causes and the conditions favourable to its production; (3) the effects and sequelae of such disease and defect; (4) the means of treatment and their results; and (5) the means and methods of prevention. The State requires the systematic study of the individual statistics to these ends. By way of illlustration of this desideratum, the author of the report takes into consideration the figures he has obtained from the reports of the local authorities of the country, and groups them so as to throw light upon three conditions—(*a*) the influence of age, (*b*) the influence of sex, (*c*) the influence of urban and rural conditions.

(*a*) *The Influence of Age ("Entrants" and "Leavers.")*

Figures are given from London districts. Entrant boys showed 10.8, and entrant girls 9.8, per cent. of poor and bad nutrition; while of leavers, 14.7 boys and 14.3 girls show the same conditions. Taking London as a whole, leavers are relatively more deficient as regards nutrition than entrants, due apparently to serious deterioration in certain poor areas between the ages of admission and of leaving school. Bethnal Green, Bermondsey, Finsbury, and Southwark are particularly sinners in this respect. It is added that areas showing the worst nutritional deterioration are precisely those which show excessive death-rates from phthisis as well as excessive infant mortality. Of other and particular physical conditions, the London returns show the following: There is diminished incidence of diseases of the nose and throat, of the lungs, of rickets, and of the eye in the leavers as compared with the entrants; but nervous affections and disorders of the teeth are increased in the leavers.

(*b*) *The Influence of Sex.*

It appears that the girls are almost invariably better off as regards nutrition than the boys. In London, as a whole, 10.8 per cent. of entrant boys and 14.7 per cent. of leaver boys were reported deficient in nutrition, as compared with 9.8 per cent. of entrant and 14.3 per cent. of leaver girls. In Cambridge 16.7 per cent. of boys were noted as defective in nutrition, as compared with 13.8 per cent. of girls. The reasons are not easy to seek apart from the general faster rate of growth among leaving girls, but the difference may be attributable in some degree to the fact that for various reasons the defective nutrition of girls

is less obvious, also to the fact that boys engage more freely in physical movements at all ages, and therefore are less liable to the deposit of cutaneous fat. Employment out of school hours may also have some effects. By way of explanation of the lack of nutrition of the leavers, as compared with the entrants, there is the statement of Dr. Stork of Bury St. Edmunds: "It would appear as if it were the rule among our urban industrial classes for the elder children to suffer for the benefit of the younger ones."

Dirt affects the girls much more than the boys. The percentage of verminous heads is still fearfully high in some districts. Wolverhampton reports no less than 83 for the girls; if such be the condition after two years of supervision, what must it have been before this began? In no circumstance is the benefit of school medical inspection more apparent than in this; the children are themselves becoming more sensitive to the presence of this defect, and the *esprit de corps* engendered in the schools by the teaching staffs, as well as among the children themselves, is bearing good fruit.

In vision there is, again, an extra degree of defect in the girls, whether the figures be taken in the towns or the country. It has been asserted by some that this is due to the difference in curriculum, such as the fine needlework of the girls. Whether this be so, or whether there be a real sexual factor, cannot be determined as yet.

(c) Influence of Urban and Rural Conditions.

The returns for this comparison are in the main based on the work of Dr. Fremantle of the County of Herts. It is found that as regards height and weight, nutrition, clothing and footgear, and cleanliness, the town children are at a disadvantage with the country children. The country children suffer more from disorders of the tonsils and adenoids by almost 2 to 1. Visual defects are, however, more frequent amongst the town children, in the proportion of 3 to 2. Reports from all parts show that in districts of good houses the children are clean and well cared for; where the housing leaves much to be desired they are often dirty. Some of the worst of the districts are just on the skirts of the great towns. There the inhabitants are of the shifting type and composed of the worst elements of the population. When the pressure of the sanitary authorities becomes too great for them in one place they flee to another. One reason for the defect of the nutrition of the town children as compared with the country children is the lack of open playing spaces in towns; where these are deficient, and parents do not allow their children to play in the streets, the children suffer from insufficient play and exercise.

Appended to this section there is a study of the incidence of heart disease in children. In London "valvular lesions and other defects of the heart" were reported in 4,336 cases (2.2 per cent.) of the children examined. The incidence rose from 1.5 per cent. among entrants to 3 per cent. among leavers, girls being more frequently attacked than boys.

Tuberculosis in School Children.

The table prepared by the Registrar-General's office shows that the mortality from tuberculosis amongst children and young people continues to decrease. It is highest in towns and urban districts. "In early childhood lymphatic tissue, bones, and joints are more frequently invaded than the lungs, and although infection of the lungs appears to become increasingly common as the child grows older, it comparatively seldom presents a similar picture to the well known pulmonary tuberculosis of adult life. If the disease is early recognized and suitable means are available, the treatment of tuberculosis among children may be undertaken, with an excellent prospect of securing satisfactory results. It is important that the authority responsible for the physical welfare of the school child should recognize the fact that the disease is more amenable to treatment in childhood than in later life, and that a relatively small outlay in money in preventive and medical measures during this period may effect a correspondingly large reduction in sickness and ill-health during early adult life. Money wisely spent on the amelioration of tuberculosis in the child will be more than repaid to the community by the increased economic and industrial value of the grown man or woman." In the matter of prevention stress is laid—on securing fresh air for the children, whether they be tuberculous or not; on the dangerous effects of malnutrition, whether from insufficient food or from bad food; on the dangers of neglect of throat and nose diseases; on the evil effects of chronic bronchitis. "Keeping the feet dry would go far to diminish the frequency of colds and bronchitis, and so indirectly to prevent the occurrence of tuberculosis."

The growth of what might be called hospital schools is commented upon. Apart from their ultimate results the lessons are welcomed by the hospital staff as they serve to keep the children quiet and occupied, and are enjoyed by the children themselves as a happy alternative to aimless play. Such teaching is of particular value in the surgical cases. Reports are given of the recently recognized residential sanatorium schools for children in various counties, with photographs of the school premises. Similarly new day open air schools are dealt with.

In the concluding paragraph on this section there is written: "The practice of excluding from school children suffering from early pulmonary tuberculosis is to be deprecated. Such children are seldom, if ever, dangerous to their fellows, and, unless they are considered actually to be capable of spreading infection, they are usually far better in attendance at school, where they spend a part of the day under reasonably good conditions and are subject to discipline, than at home where the conditions are often unsatisfactory. If excluded it is difficult to maintain supervision over their mode of life, unless they are really ill, and they tend either to loaf aimlessly about the house or streets, or they are made to do household drudgery or other unsuitable work."

Stammering.

The returns of a number of counties show that somewhat under 1 per cent. of the children suffer from this functional defect. The younger children suffer more than the elder, boys more than girls Dr. Young, of Middlesex County, shows that whereas the normal incidence in his district of enlarged tonsils and adenoids was 10 per cent., amongst the stammerers it was as high as 21 per cent. The defect is associated with deficient respiratory effort and a false usage of the larynx. Defects of the oro-nasal mechanism, on the other hand, affect the formation of sounds and articulation. A most excellent chapter is devoted to the treatment of these cases. In many districts special classes have been arranged for small numbers of children, and the results obtained have been very good. All experience shows the primary necessity for obtaining the co-operation of the parent and the home if a satisfactory and lasting result is to obtained in many cases. A good deal of help can be given by the teachers, more particularly at the early onset of the disease. Steps must be taken, also, to prevent the child being subjected to ridicule at school.

(To be continued.)

THE DEVELOPMENT OF THE PRESSURE FORCEPS

(WEBBER'S—KOEBERLÉ'S—PÉAN'S—WELLS'S).

In Chronological Order from the Original Reports.

By ALBAN H. G. DORAN, F.R.C.S.,
Consulting Surgeon, Samaritan Free Hospital.

THE disputed question of the development and the developers of the pressure forceps, "Wells's forceps" as it is usually called in this country, has recently been forced upon my attention as I have undertaken the arrangement of the collection of obstetrical and gynaecological instruments in the Museum of the Royal College of Surgeons of England. The following list of original references may be of assistance to those who are interested in the subject. I witnessed, when a student, the incident recorded under the date 1869. Koeberlé's work, freely quoted below, gives an admirable summary of the history of haemostasis down to the establishment of the pressure forceps. He alone, of all the more or less distinguished men mentioned below, survives, and his colleagues were preparing last summer to celebrate his long services as Professor at the University of Strassburg, when the war put a stop to the intended proceedings. We sincerely trust that events may allow the veteran ovariotomist, whose eighty-seventh birthday fell on January 4th, to enjoy

the postponed celebration after all, for his forceps has proved of the highest value in military as well as in civil surgery.

1853.

Webber, in a letter published in the *Medical Circular*, January 5th, 1859, p. 10, writes about "The antiligature forceps which I, reasoning on the experiments of instinctive nature, invented in 1853 for the purpose of arresting the flow of blood from incised vessels."

Webber, "about 1856 to 1858, made many efforts to introduce into practice in the Metropolitan Hospitals what he called 'antiligature forceps.'" (Spencer Wells's Remarks on Forcipressure, BRITISH MEDICAL JOURNAL, i, 1879, p. 926, which include drawings of "four specimens of the different kind of teeth used in the forceps of Mr. Webber," and of Koeberlé's and Péan's forceps.)

1855.

Spencer Wells took out a number of "bulldogs" (Dieffenbach's forceps) to the Crimea. (Loc. cit.)

1858.

Charrière submitted to the Académie de Médecine in May his "pinces à pansement et à pression continue à anneaux avec les points d'arrêt à crémaillère transversale et à clou"; the well-known dressing forceps which suggested to Koeberlé the pressure forceps. (Koeberlé, *De l'hémostase définitive par compression excessive*, 1877, pp. 19 and 25.)

Spencer Wells's first ovariotomy. He used bulldog forceps in all his earlier cases of ovariotomy for stopping any vessel which bled in the abdominal wall divided in the first incision. (Remarks on Forcipressure, BRITISH MEDICAL JOURNAL, vol. i, 1879, p. 926.)

"A Haemostatic to supersede Ligatures!" the earliest published account of Webber's antiligature forceps, appeared in the *Medical Circular*, December 29th, 1858, p. 302.

1859.

Letter from Webber appeared in *Medical Circular*, January 5th, p. 10 (see 1853). Holmes Coote witnessed an amputation of the breast by Webber this year or in 1858, and the antiligature forceps proved very satisfactory. (See 1869.)

1862.

Webber's antiligature forceps demonstrated by Sir W. Lawrence in the operating theatre, St. Bartholomew's Hospital. (*Lancet*, vol. ii, 1862, p. 328.)

During an ovariotomy Koeberlé stopped the bleeding of an ovarian artery, lying deep in the abdomen, by means of a Charrière's forceps (see 1858). It came away spontaneously on the sixth day. (*De l'hémostase*, p. 15.)

1863.

Spencer Wells began to increase the size of the "bulldog" forceps, and to attach silver or iron wire to it lest it should be forgotten and left in the abdominal cavity. (Remarks on Forcipressure, BRITISH MEDICAL JOURNAL, vol. i, 1879, p. 926.)

1865.

Verneuil cut through the pedicle of a fibroid uterine polypus with scissors; the stump bled freely, and he applied his own polypus forceps, tied the shanks above the handles, and left the instrument in place until the second day. ("De la forcipressure," *Bull. et mém. de la Société de Chirurgie de Paris*, vol. i, 1875, p. 18.) He adopted this practice with success for ten years, publishing his results. The forceps was sometimes left for many days on the vessel.

In December, 1865, Elser, a manufacturer, supplied Koeberlé with the first dozen of the forceps of that surgeon's design, which he called successively "pinces à cliquet, pinces à pression," and lastly, in 1868, "pinces hémostatiques." They were made after the pattern of Charrière's dressing forceps. (See 1858.) (*De l'hémostase*, p. 16.) Koeberlé only used them temporarily, instead of *serres-fortes*, till 1867. (Loc. cit., p. 5.)

1867.

Koeberlé performed an ovariotomy on October 28th; many vessels bled. He applied his forceps (see 1865) freely and found that when he took them off there was no bleeding, so that no ligatures were needed, except for one point on the omentum. The patient recovered. (*Gazette des hôpitaux*, 1868, p. 419.)

1868.

Guéride made for Péan "Un modèle spécial de pince à anneaux et à arrêt" the "Péan's forceps" (with Charrière's lock), well known to surgeons. (Deny et Exchaquet, *De la forcipressure*, p. 16.)

1869.

On December 10th Holmes Coote amputated a breast at St. Bartholomew's Hospital. Webber was present and suggested the use of his antiligature forceps. As Coote had seen the instrument employed ten years before (see 1859) with success, he made use of it on this occasion, with excellent results. (Letter signed "A Pupil," *Medical Times and Gazette*, vol. i, 1870, p. 76.)

1872.

Spencer Wells's pressure forceps, original pattern, with a space between the shanks when closed, first made early this year by Krohne and Sesemann. (Remarks on Forcipressure, BRITISH MEDICAL JOURNAL, vol. i, 1879, p. 926.)

1874.

In the "Reports from the Metropolitan Hospitals on the Use of Torsion" in the BRITISH MEDICAL JOURNAL, vol. i, 1874, p. 47, it is stated that "Mr. Spencer Wells (Samaritan Hospital) has introduced a kind of artery torsion forceps which very conveniently replace the old spring artery forceps of Liston and the bulldogs used for the temporary stoppage of bleeding vessels during operations, while they are the most readily applied of any of the varieties of torsion met with in the shops." The instrument is figured in this report.

1879.

Wells, finding that the open space between the shanks in his forceps of 1872, and in Koeberlé's and Péan's instruments of the same type, involved danger of injury to omentum, etc., caused a new pattern to be made by Mr. Hawksley, with the shanks superimposed, and two catches, the compressive power being stronger than in any previously invented forceps. (Remarks on Forcipressure, BRITISH MEDICAL JOURNAL, vol. i, 1879, p. 926.) This "Wells's forceps," as now recognized, had a screw lock with a block on the blade side, the older type having a box lock, with a block on the blade side and the shank side; this arrangement was as dangerous as the space between the shanks, and very difficult to clean after use, as those who had the honour of working with Sir Spencer Wells were not slow to discover. Improvements have since been made—"Péan's joint," properly Charrière's "take off joint," and other devices being adopted, and the teeth cut in the blades in different ways. Lawson Tait, Greig Smith, Bryant, and others have modified the pressure forceps yet more distinctly, but in principle it remains the instrument developed by Charrière, Webber, Koeberlé, Péan, and Wells in the chronological order above displayed.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE thirty-eighth annual meeting of the above association was held at Pagani's Restaurant on March 17th (St. Patrick's Day). The presidential chair was resigned to Sir JOHN LENTAIGNE, F.R.C.S.I., by Surgeon-General Sir Havelock Charles, G.C.V.O. The annual report showed that the association, which now has 640 members, is flourishing financially, and has contributed during the year largely to the Indian Soldiers' Fund, the Fund for the Relief of Belgian Medical Men, and other funds for similar patriotic purposes. There had been some serious losses by death during the year. The one felt most was that of Dr. T. Hobbs Crampton, formerly the indefatigable honorary secretary and subsequently chairman of council, to whom was due, to a great extent, the present flourishing condition of the association. The council drew attention to the large number of members who had responded to the invitation of their ex-president, Sir Alfred Keogh, K.C.B., to take service during the war. Many had already gone to the front, among whom were mentioned the metropolitan honorary secretary, Dr. Gordon Holmes, Dr. T. Crean, V.C., and Dr. William F. Roe. Regret was especially recorded at the loss of the first recipient of the Arnott Gold Medal of the association, Lieutenant-Colonel Charles Dalton, R.A.M.C., whose distinguished services have already been recorded in the JOURNAL. Reference was also made in the report to the deaths during the year of Dr. Anthony Traill, Provost of Trinity College, Dublin, Dr. Irvine Scott of Brighton (ex-president of the association), Dr. Ernest Wilson Stoker, and Professor Anderson, Galway University College.

On account of the war there was no public banquet such as in previous years had always taken place on St. Patrick's Day. Some of the members, however, and their guests, to the number of seventy-nine, dined together in an informal way in the evening. Among the guests were Sir Frederic Hewitt and a large number of ladies. Opportunity was taken at the dinner to present to Lieutenant Thomas J. Kelly, R.A.M.C. (now on leave from the front on account of wounds), the Arnott Gold Medal for the year 1915, which had been awarded by the council for an "act of heroism" and devotion to duty on the occasion of the Church Street disaster in Dublin on September 2nd, 1914. Sir Launcelot Gubbins, in reply to the toast of "Our Defenders," said that he was proud of the fact that so many of his countrymen had, like Dr. Kelly, responded to the call for surgeons to do duty at the front, and he rejoiced to see the khaki uniform so conspicuous that evening among the members present. He concluded by quoting a stanza from some verses composed for the occasion by their old friend, Dr. Macnaughton Jones:

> We'll ne'er forget our hero sons,
> Than whom live none more brave,
> Who fight for Freedom and for King,
> And Ireland's honour save.

THE BACTERIAL CONTENTS OF DRIED AND CONDENSED MILKS.

A RECENT report issued by the Medical Department of the Local Government Board deals with an investigation by Professor Sheridan Delépine[1] into the effects of certain condensing and drying processes used in the preservation of milk upon its bacterial contents, and the results arrived at are both interesting and important. The methods of preservation which were investigated at four factories situated in England were three in number, and comprised those principally in use. The first was the preparation of sweetened condensed milk; the second was the preparation of dried milk by the use of heated revolving cylinders, and the third the preparation of dried milk by the formation of a spray of the milk in a current of hot air. The general outline of the processes used is as follows:

METHOD A.—*Preparation of Sweetened Condensed Milk.*

The milk on arrival from the farms is strained and bulked; it is then submitted to pasteurization by heating to a temperature of from 75° to 80° C., this heating occupying from twenty to twenty-five minutes. It is then further heated to 92° C., this taking a further six minutes, and is next mixed with a strong sugar solution which has been boiled. The mixture is then evaporated *in vacuo*, the temperature during evaporation being 40° to 45° C.; the condensed milk is then run into cooling cylinders, in which it is stirred for two to three hours. The product is passed through a copper gauze strainer, and is filled into the tins by an automatic filler, the tins being new and clean, but not sterilized; they are then closed mechanically.

METHOD B.—*Production of Dried Milk by Heated Revolving Cylinders.*

This process was carried out in the factories visited as follows: The drying apparatus consists of two large steam-heated cylinders placed very close together, and revolving towards one another. The temperature of these is about 140° C. when whole milk is to be treated, and a few degrees lower for the treatment of separated milk. The milk when it arrives is poured into a tank above the cylinders, and from this it runs in a regulated stream on to their upper surfaces. The two contiguous faces of the cylinders form a sort of gutter, the bottom of which is the space between the cylinders, which is not more than 2 mm. wide. In this gutter the milk passes into a state of ebullition, and Dr. Delépine found the temperature of the liquid here to be from 98.5° to 99° C. As the cylinders travel round a thin layer of milk remains on the surface of each, and this dries rapidly in the form of a thin pellicle, which is removed from the surface after the cylinder has made about two-thirds of a revolution. The dry milk, now in the form of scales, is transferred to barrels, where it is allowed to cool, and it is then reduced to powder by being rubbed over a fine metallic gauze screen by means of a brush, and the powder is then packed into receptacles for sale. One machine is capable of drying about 65 gallons of milk per hour.

METHOD C.—*Production of Dried Milk by Spraying into a Current of Hot Air.*

In this process the strained milk is bulked in a large tank; it is then warmed and passed into a separator. When dried whole milk is required, the separated milk and cream are brought together again before proceeding to the next stage of the process, which consists of treatment in a pasteurizing apparatus where the temperature is raised to from 70° to 75° C., or slightly higher for separated milk. The milk is then concentrated *in vacuo* at about 58° C. to a little less than half its original bulk; its temperature is then rapidly raised to 95° and again lowered. It is next pumped at high pressure through a spraying apparatus, by which a cone of finely sprayed milk is ejected from the end of a small pipe; this pipe is surrounded by a larger one carrying a current of dry air heated to 115° C. The spray and current of air pass into a chamber, in which the dried milk falls to the floor as a powder. It is removed from this chamber, and sifted and then packed into containers for sale.

[1] Report to the Local Government Board upon the effects of certain condensing and drying processes used in the preservation of milk upon its bacterial contents. By Dr. S. Delépine. Food Reports, No. 21; being No. 97 of the New Series of Reports to the Local Government Board on Public Health and Medical Subjects. London. 1914. Eyre and Spottiswoode. Wyman and Sons. H.M. Stationery Office (Scottish Branch), 23, Forth Street, Edinburgh. E. Ponsonby, Ltd., 116, Grafton Street, Dublin. (Price 6d.)

In the investigation of all the processes samples of the milk were taken on arrival and at each of the stages of treatment, and all these samples were submitted to very thorough bacteriological examination by means of cultures. In the investigation of the first two processes milk which had been previously infected with tubercle bacillus was also treated, and samples taken at the conclusion of the various stages, and also of the finished products. The infected milk used was a mixture of ordinary sound milk with milk from a cow with a tuberculous udder, and also with cultures of tubercle bacillus grown in the laboratory. The product in both cases was examined by laboratory methods, and was also used for injection into guinea-pigs, and for feeding experiments on rabbits. The results are best summarized in Dr. Delépine's own words:

1. The total number of bacteria present in mixed cow's milk, such as is usually supplied to town consumers, has been found to be considerably reduced by treatment according to each of the three methods investigated. The reduction was greatest in the case of Method A (manufacture of sweetened condensed milk), and least in the case of Method C (drying of milk sprayed in a current of hot air). Method B (drying of milk over heated revolving cylinders) occupied an intermediate place.

2. In each of the three methods of treatment there was a stage at which the reduction in the total number of bacteria was much greater than that observed in the finished article ready for sale.

3. The increase in the number of bacteria observed during the final stages is due to recontamination. By recontamination I mean the results of the exposure of a product partly or completely sterilized, to sources from which some of the bacteria removed by sterilization are reintroduced.

4. The reduction in the total number of bacteria was almost entirely due to the death of streptococci, staphylococci, sarcinae, bacilli of the *B. coli* type, streptothrices, yeasts, etc.

5. At none of the stages of preparation was the milk ever found completely sterile. The amount of heat to which the milk was submitted was insufficient to bring about the death of several saprophytic and of some pathogenic bacteria.

6. Among the saprophytic bacteria, where were invariably found to resist pasteurization, those most commonly detected were sporing bacilli of the types included under the term *Bacillus mesentericus*. Some streptothrices appeared in some cases to have survived, but the evidence on that point was not conclusive.

7. Of the pathogenic bacteria, the tubercle bacillus was the only one the fate of which was investigated. Some living tubercle bacilli of bovine origin were found to have survived treatment according to Method B. It may be safely assumed that Method C, which yields a product giving a higher total bacterial count than Method B, has even less effect upon tubercle bacilli. The same bacilli resisted the process of pasteurization which forms part of Method A.

8. The tubercle bacilli which had survived pasteurization in Method A and drying by heat in Method B, were still capable of producing progressive tuberculosis in guinea-pigs inoculated subcutaneously with milk containing these bacilli, but the course of the disease produced by these bacilli was very much slower than that of the disease produced in guinea-pigs inoculated with the same amount of untreated tuberculous milk. The tuberculosis produced by the heated bacilli was *latent* or *occult* for some four weeks. Young rabbits fed with milk containing these modified bacilli did not contract tuberculosis.

The state of things thus revealed must be regarded as on the whole fairly satisfactory, but there is evidently room for improvement in the way these processes of preservation are carried out commercially so as to avoid the recontamination of the product to which Dr. Delépine draws attention. It is somewhat surprising that the results by Method C were found inferior to those by Method B, as the sole bacteria-destroying treatment in Method B appears to be the exposure for an extremely short time to a temperature somewhat above boiling point. Dr. Delépine, moreover, is of opinion that the milk itself does not reach the temperature of the cylinders, being probably protected from actual contact by the formation of steam between the film and the cylinder; further, it is only on the cylinders for from 2.8 to 6.6 seconds. On the other hand, in Method C the milk is pasteurized, heated to 95° C., and brought into intimate contact with air at 115° C., and it might have been expected, therefore, that the destruction of bacteria would have been more thorough.

A further important matter on which information is required before dried milks can be recommended as satisfactory, and which is not touched on by Dr. Delépine in this report, is the question of how far they retain their vitamines or active enzymes, which play such an important, though imperfectly understood, part in nutrition.

It is claimed by certain makers of dried milk by Method C that these important bodies are not destroyed by the treatment, but we are not aware of any experimental evidence for this statement, which appears of doubtful probability. It is to be hoped that careful feeding experiments to settle this question may be made in the near future.

HEALTH OF THE NAVY.

THE *Statistical Report of the Health of the Navy* for the year 1913, which has recently been issued,[1] states that the total force, corrected for time, in the year 1913, was 126,830, and the total number of cases of disease and injury entered on the sick list was 77,438, which gives a ratio of 610.56 per 1,000. This is a decrease of 46.09, as compared with the average ratio for the preceding five years. The average number of men sick daily was 3,018.17, giving a ratio of 23.79 per 1,000, a decrease of 3.18 in comparison with the previous five years. The total number of days' sickness on board and in hospital was 1,101,633, which represents an average loss of service for each person of 8.68 days, a decrease of 1.16 as compared with the average for the preceding five years.

Invalidings.

The total number invalided was 1,925,[2] which gives a ratio of 15.17 per 1,000, a decrease of 3.22 in comparison with the average ratio for the preceding five years. The total number of men *finally* invalided was 1,717, of whom 75 were invalided after refusing operative treatment. The ratio per 1,000 of *final* invalidings was 13.53, a decrease of 2.7 as compared with the average for the previous five years. Of the 1,925 invalidings, 1,795, or 14.15 per 1,000, were for disease, and 130, or 1.02 per 1,000, for injury.

Deaths.

The total number of deaths was 412, giving a ratio of 3.24 per 1,000, an increase of 0.01 in comparison with the average ratio for the preceding five years. Of this number, 262, or 2.06 per 1,000, were for disease; and 150, or 1.18 per 1,000, for injury.

GENERAL DISEASES.

The following is a summary of the returns under the head of general diseases:

Small-pox, 5 cases; *Cow-pox*, 820 cases; *Chicken-pox*, 17 cases; *Measles*, 383 cases; *Rubella*, 438 cases; *Scarlet Fever*, 414 cases; *Dengue Fever*, 41 cases; *Mumps*, 754 cases.

Other Infective Diseases, 2,877 cases (including all the preceding cases). The total includes 4 cases of septicaemia, 2 of osteo-myelitis, and 1 each of typhus fever, human glanders, tetanus, and malignant endocarditis.

Influenza.—1,324 cases, with 1 death. The majority of the cases were of a very mild type.

Diphtheria.—123 cases, with 5 deaths.

Cerebro-spinal Fever.—8 cases.

Enteric Fever.—123 cases, with 2 final invalidings and 31 deaths.

Mediterranean Fever.—4 cases.

Pyrexia.—308 cases.

Dysentery.—62 cases, with 2 final invalidings.

Pneumonia.—595 cases, with 5 final invalidings and 38 deaths.

Malaria.—445 cases with 2 deaths. Of the total number, and especially amongst those which are reported by the Home Fleet and Home Station, many were recurrences of infection previously contracted in China or the East Indies, and a considerable proportion of individuals were affected for short periods two or three times during the year.

Septic Diseases.—28 cases of erysipelas are recorded under this heading.

Tuberculosis.—245 cases, with 209 final invalidings and 34 deaths. Of the whole number pulmonary tuberculosis contributed 191 cases; joints, 13; testicle, 8; glands, 8; bone, 5; spine, 5; meninges, 4; intestine, 3; kidney, 2; peritoneum, 1; larynx, 1. There were 4 cases of miliary tuberculosis.

Venereal Diseases.—The total number of cases recorded is 11,821, with 105 final invalidings and 4 deaths. This gives a decrease of 22.85 per 1,000 in the case ratio, as compared with the average for the previous five years. The average number of men sick daily was 661.38, a ratio per 1,000 of 5.19, and a decrease of 2.22 as compared with the average for the preceding five years. This means that, in a force of 126,000, there has been a reduction of 280 men in the number sick daily. The total number of days lost to the service was 241,410. Though the average strength of the total force has increased considerably, the latter figure compares very favourably with either of the two previous years, being less than that of 1912 by 27,800 days and less than that of 1911 by 67,507 days. This reduction in days' sickness is chiefly apparent under secondary syphilis, the total days' sickness from this disease showing a fall of 18,474 days as compared with the previous year. The cases include 1,977 chancroid, 719 primary and 2,133 secondary syphilis, 5,876 gonorrhoea, and 1,116 sequelae of gonorrhoea. Two deaths and 52 invalidings were due to constitutional syphilis, and 2 deaths and 53 invalidings to gonorrhoea or its sequelae.

Rheumatic Fever.—891 cases, with 5 final invalidings. The number of invalidings does not represent the total wastage due to this disease, 62 persons being invalided under the heading of organic heart disease, who either developed the cardiac condition during the course or as a result of rheumatic fever.

Parasitic Diseases.—3,602 cases, with 1 final invaliding and 1 death. Scabies accounted for 3,476 of the entries.

Alcoholism.—128 cases, with 7 final invalidings and 4 deaths.

Poisons.—109 cases, with 9 final invalidings.

Other General Diseases.—487 cases, with 20 final invalidings and 14 deaths. The cases include 195 of gout, 151 of non-malignant and 16 of malignant new growths, 9 of diabetes, and 116 classed as "other diseases." Among the latter are 75 of anaemia, 15 of beri-beri, 11 of "seven-day fever," 4 of osteo-arthritis, 2 of myxoedema, 2 of obesity, and single instances of splenic anaemia, pernicious anaemia, lymphadenoma, and purpura haemorrhagica. There were 5 deaths from malignant new growth, 4 from diabetes, 2 from beri-beri, and 1 each from lymphadenoma, purpura haemorrhagica, and pernicious anaemia.

LOCAL DISEASES.

Disease of the Nervous System.—888 cases, including 88 of mental disease, with 299 final invalidings and 13 deaths.

Diseases of the Eye.—963 cases, with 151 final invalidings, mostly errors of refraction.

Other Organs of Special Sense.—984 cases, with 135 final invalidings and 6 deaths. Diseases of the ear accounted for 862 of the cases, 131 invalidings, and all the deaths; diseases of the nose for 122 of the cases and 4 invalidings.

Diseases of the Circulatory System.—681 cases, with 283 final invalidings and 25 deaths. Organic heart disease accounted for 221 cases, with 244 invalidings and 21 deaths; functional heart disease, 189, with 19 invalidings; aneurysm, 12, with 7 invalidings and 3 deaths; diseases of the veins, 230, with 13 invalidings and 1 death; and 29 classed as "other diseases."

Diseases of the Respiratory System.—9,230 cases, with 52 invalidings and 8 deaths. Catarrh furnished 7,835 of the cases; the remainder included 186 of laryngitis, 738 of bronchitis, 314 of pleurisy, 71 of asthma, while 86 were classed as "other diseases."

Diseases of the Digestive System.—13,597 cases, with 163 final invalidings and 36 deaths. "Mouth and teeth" diseases accounted for 700 cases; sore throat, 2,259; tonsillitis, 4,737; diseases of the stomach, 1,152; diseases of the intestine, 3,457; hernia, 720; haemorrhoids, 409; hepatitis, 33; and 130 classed as other diseases of the liver, the bulk of which were catarrhal jaundice. Of the invalidings, 125 were for hernia, 46 of which were after refusal of operative treatment.

Diseases of the Lymphatic and Glandular Systems.—497 cases, with 2 final invalidings. Non-venereal bubo accounted for 373 of the total number.

Diseases of the Urinary and Generative Systems.—968 cases, with 72 final invalidings and 14 deaths. Renal diseases, chiefly various forms of nephritis, accounted for 190 cases, with all the deaths and the majority of invalidings.

Diseases of the Organs of Locomotion.—1,656 cases, with 66 final invalidings. The bulk of invalidings were due to flat foot, other deformities of the feet, and chronic rheumatism, but disease of bone and joints also accounted for a few.

Diseases of the Connective Tissue and Skin.—9,120 cases, with 14 invalidings and 1 death.

INJURIES.

(*a*) *General.*—238 cases, with 3 invalidings and 107 deaths. The deaths were due to: Drowning, 76, of which 13 occurred when a cutter belonging to the *Perseus* disappeared during bad weather in the Persian Gulf; multiple injury, 18; general burns and scalds, 7; heat-stroke, 5; and 1 to suffocation from vomited matter when in a state of inebriation.

(*b*) *Local.*—15,412 cases, with 110 invalidings and 28 deaths. Of the total, 1,261 were burns and scalds and 14,151 for injury.

(*c*) *In Action.*—Five wounds in action are recorded, with 1 death. All are returned by ships serving on the East Indies Station—the *Pelorus*, 3, and the *Philomel*, 2—and were bullet wounds sustained during a punitive expedition on the Tungistan coast.

SUICIDE.

Fourteen cases are returned under this heading—4 by hanging, 3 by drowning, 2 by shooting, 2 by cut throat, 1 by railway train, 1 by taking potassium cyanide, and 1 by drinking hydrochloric acid.

REMARKS.

The Appendix, which formerly contained original articles on professional subjects by medical officers, has been omitted owing to the publication of a quarterly naval medical journal. The remarks on the returns of the total force, the Home Fleet, and part of the Home Station, have been condensed as far as possible, owing to the general mobilization of the navy on August 1st, 1914, at which date these remarks were in course of compilation.

[1] London: Wyman and Sons, Limited (through any bookseller). 7½d.

[2] This number includes men temporarily invalided from foreign stations, many of whom are again able to join the active force. The number finally invalided represents the waste of the service during the year.

British Medical Journal.

SATURDAY, MARCH 27TH, 1915.

THE WAR AND THE SCARCITY OF SOME DRUGS.

It would probably be admitted by most students of political economy that the number of cases in which the price of commodities is not regulated merely by the "laws" of supply and demand and competition among producers, is much greater than was supposed by an earlier generation. Drugs certainly furnish a number of cases in which other influences come strongly into play; we referred recently to the case of iodine, the price of which is maintained at a level greatly in excess of that at which it could be produced, by an agreement among the principal manufacturers. But, whatever may be the facts in regard to prices in normal times, in time of war it is, of course, not to be expected that a great demand will necessarily evoke a corresponding supply, even when the great demand is shown in the form of the offer of very high prices. Fortunately, the number and variety of drugs at the disposal of the medical profession is so large that very few indeed can be regarded as irreplaceable, and for any one which it is difficult or impossible to obtain, several others can usually be employed as alternatives. Since the war began scarcity has prevailed in regard to a number of products, and very abnormal prices have been, and are, demanded for the limited supplies available of certain drugs. The difficulties of the situation have been materially lightened by the action of prescribers, who were notified at the beginning of the war by the authorities that certain drugs were scarce, and likely to be scarce for some time, and who have modified their prescribing accordingly. The actual list of drugs in regard to which economy is thus necessary is naturally not a constant one, the shortage of some being gradually diminished by supplies from new sources, while others are liable to come on the list from secondary causes not previously operative.

Probably the most serious shortage of all has been, and still is, in regard to phenol and the substances prepared from phenol, including in these salicylic acid and its derivatives. The prime cause of the shortage of carbolic acid is, of course, the greatly increased demand due to the war. Not only is carbolic acid, in common with other antiseptics, in demand for use in army hospitals, etc., but it is an essential constituent in the manufacture of the explosive lyddite, a particular form of trinitrophenol or picric acid. Salicylic acid, as usually employed, is almost entirely manufactured from phenol, the amount produced from the oils of wintergreen and sweet birch, and known as natural salicylic acid, being a very small fraction of the whole quantity used. Besides the simple salicylates, of which sodium salicylate and quinine salicylate are perhaps the most in use, there are the derivatives acetyl-salicylic acid and salol (salicylate of phenol), the latter requiring phenol as a source of both parts of its molecule. At the time the war broke out no salicylic acid was made in this country; at present at least one British firm is making and selling salicylic acid and all its derivatives; but, in view of the size of the demand, the output of one firm within a few months of commencing the manufacture can have no appreciable effect on the situation. Some quantity of salicylic acid is made in France, and this is perhaps at the present moment the most reliable source of supply, although considerable quantities have up to now been obtained from Switzerland and other neutral countries.

With regard to carbolic acid itself, so many other antiseptics are available that the shortage is not very serious. Among the other substances which can be suggested for use in place of it are solution of cresol with soap, mercury perchloride, mercury biniodide, tincture of iodine, and hydrogen peroxide, and this list might easily be extended. Cresol itself, which commercially is a mixture of the three isomers, ortho-, meta-, and para-cresol, is very closely related to phenol, being the next member of the homologous series of hydroxy-benzene compounds. Unlike phenol, it is a liquid at ordinary temperatures, but in other respects it resembles it, and it has been shown to have a markedly stronger bactericidal action. Cresol is soluble in water to the extent of 2 per cent., and a watery solution may very well be employed for many purposes in place of carbolic acid lotion. The most useful combination of cresol, however, is the liquor cresol saponatus, or solution of cresol with soap, which has recently been made official in the *British Pharmacopœia*. This contains 50 per cent. of cresol with sufficient soap to make it mix freely with water in any proportion. Under the name "lysol" a similar solution has come into very wide use on account of its great convenience and germicidal effect; the word "lysol" being no longer a registered trade mark, the preparation is widely made under this name, and many other proprietary antiseptics sold under different names have essentially the same composition. The official name, however, is practically the same as that by which the solution has for a long time appeared in the *British Pharmaceutical Codex*, and is the most suitable for use in prescriptions.

With regard to salicylic acid and acetyl-salicylic acid and their salts, it is by no means easy to suggest suitable substitutes. It may be suggested that for the present these drugs should be reserved for the treatment of acute rheumatism and its complications only, and that for other diseases—including influenza, neuralgias, and many other conditions loosely termed rheumatic—other drugs and methods should be employed. Salol, also, by virtue of its insolubility in acid fluids and its easy decomposition in alkaline media, is an intestinal antiseptic which is not very easily replaced; several other excellent antiseptics, however, are quite suitable for employment when their effect in the intestines is required. Among these may be mentioned beta-naphthol, ichthyol, eugenol, and creosote. It may occasion some surprise that the manufacture of the important salicylic group of drugs has not been taken up on an extensive scale in this country. The process by which salicylic acid is made from phenol was originally devised in Germany; before the war it would have been very difficult to produce the salicylates here at prices which could compete with those at which Germany was able to offer them. Since the war began British chemical and pharmaceutical manufacturers have been very busy and at the same time have been seriously short-handed owing to a considerable proportion of their men having joined the new armies, and this appears to explain why, in many cases, the manufacture of new products has not been taken up.

For some time after the commencement of the war the normal supply of bromides was seriously diminished. Bromine is obtained principally from two sources, one being the deposits at Stassfurt in Germany, in which bromide is obtained from the mother liquor of the crystallization of potassium chloride; the other part of the world's supply has come chiefly from America, where bromide is obtained as a by-product in the working of rock salt. Naturally all supplies direct from Germany are now cut off, although, no doubt, a good deal of bromide of German manufacture has continued to reach us through neutral countries. The supplies of American bromide have meanwhile increased until a point has now been reached at which it is no longer necessary to restrict the use of bromide in medicine. The case is somewhat similar in regard to potassium compounds; the immense quantities of these obtained from the Stassfurt mines had reduced the supply from all other sources to negligible dimensions, but several other sources can be made available. In the United States, which has hitherto obtained its potash from Germany, a process for its production from felspar has been worked out, although it does not appear that any potassium salts from this source are as yet on the market. The Board of Agriculture for Scotland has had experiments conducted on the commercial production of potash salts from forest produce on a considerable scale, the results showing that there is a possibility of considerable quantities being prepared in this way. In Italy it is proposed to utilize the potash which exists in large quantities in the residual liquids from the production of sugar and also from the residues of the extraction of olive oil. It is estimated that in this way at least 15,000 tons of potash a year can be produced. Of the total consumption in this country of potassium compounds it now appears that the use of potassium salts in medicine forms such a small part that any particular restriction of their employment for medicinal purposes appears to be unnecessary.

One of the most important alkaloids of which the supply is very limited at present is atropine. This, as we noted recently, has been almost entirely of German manufacture, in spite of the fact that one of the principal plants from which it is obtained, *Hyoscyamus muticus*, is grown in Egypt, and should, therefore, be very readily obtainable by British manufacturers. Economy in the use of this important substance appears to be essential, as there is no substitute except, to a limited extent, such related alkaloids as are in a similar case with it as regards supply. It may confidently be expected that supplies of non-German manufacture will appear on the market in due course, but some considerable time must necessarily elapse before this can happen. Certain artificial alkaloids, notably the local anaesthetics novocaine and eucaine, are also very scarce, in spite of the fact that novocaine is stated to be now manufactured in this country. In regard to this point it should be borne in mind that a substance may be correctly stated to be made in England if some considerable part, and especially the final part, of the manufacturing process is carried out here; but in the production of a complex substance like novocaine the building up of the molecule is a process of many steps, and it may quite well happen that the earlier stages of the process are not carried out in the same factory as the later stages, and the production of the alkaloid in this country may therefore be temporarily rendered impossible by the failure of the supply of some one or more of the products necessary to its building up. Most of the local anaesthetics produced artificially which have come into use in recent years have been of German origin, and the production of cocaine itself, as we have already noted, has also been almost entirely in German hands. A certain limited quantity of cocaine, however, of British make is now available; meanwhile one of the most recently introduced local anaesthetics—the hydrochloride of quinine and urea—is likely to find an extensive application in place of some of the substances not now obtainable, and from the results which have been recorded it may be expected that this compound will prove capable of largely extended use, its principal distinguishing characters being that it is relatively non-toxic and that the anaesthesia which it produces lasts for a considerable time.

Thymol is in somewhat the same position as atropine, owing to the fact that it has hitherto been made in Germany from material grown in the British Empire. The source of thymol is oil of ajowan, obtained from the fruits of *Carum copticum;* thymol is also obtainable from the oil of thyme and from a number of other plants, while the closely allied substance carvacrol, which is capable of being used in place of thymol, is obtained from the origanum oil produced in Cyprus; it can also be obtained from some other plants. The manufacture of thymol has already been taken up in this country and it is being produced in commercial quantities; some time must necessarily elapse, however, before this new supply has a material effect in bringing down the price. Meanwhile, there are many other aromatic antiseptics, such as eugenol, which can be used in its place.

Another important substance which certainly could be produced without difficulty in very large quantities in Great Britain, but has hitherto come entirely from Germany, is adeps lanae, or lanolin. This, as is well known, is the purified fat of sheep's wool; enormous quantities of wool are woven in this country, and the preliminary treatment involves the removal of its fat. All that is necessary is the proper purification of this; it is not easy to see why the production of lanolin has hitherto remained in German hands. The process was originally covered by a patent taken out by a German, but this patent lapsed a good many years ago. Quite recently British-made lanolin has appeared on the market from two or more sources, and it may be assumed that this supply will increase in the future. In the meantime it is necessary that the use of lanolin should be restricted to such ointments as cannot be equally well made with other bases.

A considerable number of synthetic medicines are among those most affected by the present state of things; of hypnotics, that in respect of which the effect seems to be greatest is barbitone or malourea, formerly chiefly used under the trade name "veronal." The reputation of this drug has undoubtedly suffered from the considerable number of cases in which fatal results had followed an overdose, and it is very doubtful if it is as much used now as twelve months ago, quite apart from any difficulty in regard to the supplies. The number of other hypnotics which are available is very considerable; it is to be noted, however, that the supplies of paraldehyde appear to be very restricted, and it is desirable that this latter drug should only be used in those cases in which it has a decided advantage over alternative products.

Phenacetin has up to now only been produced in this country in very small quantity. At a recent meeting of the Society of Chemical Industry in London a specimen of British-made phenacetin was exhibited, but it does not appear that the amount

obtainable from this source is at present sufficient to have an appreciable effect on the situation. Phenazone is another substance somewhat similar in its applications to phenacetin, which has hitherto been entirely an imported product. Supplies of this have been coming lately from neutral countries, but both it and phenacetin remain very scarce. In so far as these bodies have been used as antipyretics, they can be replaced by many of the old-established drugs, such as quinine, alkali citrates and acetates, etc., while as analgesics butyl-chloral hydrate, chlorbutol, cannabis indica, and others may find more extensive application than in recent years.

Besides those referred to above, two other products at least are no longer in danger of serious shortage, owing to their manufacture having been taken up in this country, whereas supplies were previously obtained from Germany. These are hexamine (hexamethylenetetramine) and formaldehyde. The proceedings before the Board of Trade in regard to trade-marks have elicited the fact that hexamine is now being produced in this country in considerable quantity, and although the trade-mark rights in the word "urotropine" remain, the inclusion of the substance in the *British Pharmacopoeia* under the name "hexamine" will no doubt lead to the latter name superseding the many proprietary names under which it was formerly known, and the British-made article is therefore likely to be supplied. The production of formaldehyde from methyl alcohol has also been taken up by at least one firm in this country, and considerable quantities appear to have been obtained from America. With regard to both these drugs, therefore, it is no longer necessary to place any particular restrictions on their use.

THE WAR EMERGENCY.

A MEETING of the Special Committee, charged by the Council with making arrangements to meet the strain upon the medical profession caused by the demands of the army, will be held on Thursday next. The appeal of the Director-General of the Medical Service at the War Office, published in the JOURNAL of March 13th, p. 488, has caused many searchings of heart, and both the Medical Secretary and the Editor have received a number of inquiries which are by no means easy to answer, and a certain number of criticisms of the methods of the War Office which demand careful consideration.

The Committee consists of the chairmen of the Standing Committees of the Association. At its meeting on Thursday it will resume the consideration of methods by which the military authorities can be helped to economize the medical personnel, both civilian and military. It hopes to have the personal co-operation of Sir Alfred Keogh in considering the policy which should be adopted. The Medical Secretary will be glad to receive suggestions, accompanied by a full statement of facts within the writer's knowledge, which would be of assistance to the Committee, particularly facts which seem to show that medical men in military employment are not being used at the present time in the most economical way. Such communications should be sent in as early as possible, and in any case not later than Tuesday next, March 30th.

The medical profession, if the emergency is to be adequately met, must have the co-operation of the public, and in the SUPPLEMENT for this week will be found two appeals, the one by the Scottish Medical Service Emergency Committee and the other by the Newcastle-on-Tyne Division of the British Medical Association. In them some simple ways in which the public can help to prevent waste of time are stated. A great deal of time has been wasted under peace conditions, and that it is even still being wasted is only too clear. The appeals make the very commonsense request that patients and their friends should make a point of sending messages for the doctor as early as possible in the morning, so that he may arrange his daily round in the way most economical of time. It is also asked that calls in the evening or at night should be made only when there is real necessity, and that where a case is not urgent and a visit on the following day would suffice, this should be stated in the message. If members of the medical profession are to devote themselves to meeting the more urgent needs of the community it is necessary that their energies should be economized in such directions as these.

The Scottish appeal goes on to ask local education authorities to release entirely or in part those of their medical officers who are willing during this emergency to resume general medical work for the public. It is not questioned that regular medical inspection of school children is very important, but it is not so urgent as attendance on patients who are dangerously ill. The Scottish Committee adds that it has reason to anticipate that the proposal will not be received unsympathetically by the Scottish Education Department, and we hope that a similar suggestion will meet with similar sympathy on the part of the English Education Department. Appeal is also made in Scotland to the younger lecturers and assistants in the medical schools who just now are about to take a short holiday between the sessions; they are asked to substitute a change of work for the customary holiday by offering their help to country colleagues in difficulty, many of whom have been overworked for months.

Sir Alfred Keogh in his letter said that, while the War Office did not wish to denude the country of civil practitioners, it asked that every man who could arrange for his work to be done at home should come forward as early as possible, and that although, except in special cases, it is not intended to send men over 40 overseas, older men will gladly be accepted for home service. The way in which response may best be made to this request will require a good deal of consideration and organization. As we ventured to point out last week, the whole situation, and this part of it in particular, can only be met satisfactorily by close co-operation and consultation between the army authorities and the civil profession. We hope that the meeting next Thursday, when all the difficulties can be discussed in consultation with the Director-General, will result in showing the way to attain the desired end, and in particular to utilize the part-time services of men in civil practice who are above 40 years of age or who cannot be spared from the civil work in the districts in which they practise.

THE WAR AND MEDICAL LITERATURE.

AMONG the results of the war has been the disorganization of the exchanges between the medical journals of belligerent and even neutral countries. Libraries have suffered from the same cause. In the *Annual Report of the Library Committee of the College of Physicians of Philadelphia for the Year 1914* it is stated that the war has affected the library to some extent in the number of new publications added during the year and in the regular receipt of current periodicals. "Some 300 subscriptions were interrupted, the majority of which (206) were

German; these are coming with more regularity at this time. From the present outlook it seems probable that we will feel the effects of this great disturbance more seriously during the ensuing year. Our agents have been able to give but little information; it seems that no decision has been reached by the foreign publishers, and no statement has been made whether they will allow credit for numbers of periodicals not published on which subscriptions have been paid in advance, or whether they will extend the subscriptions. While the publication of both French and German journals has been more or less interfered with, at this writing the French seem the more seriously affected. It seems practically certain that a majority of the schools of medicine, with which we exchange publications, will not distribute their theses or dissertations in the near future. Naturally, fewer medical books will be issued, which may be considered a blessing or a calamity, as one views the subject; but, in either case, this stoppage in the accustomed issue of books and journals will lower the report of the number of volumes added to the library during 1915." The leading German medical journals seem to be appearing regularly, but several French periodicals, owing to the mobilization of the editorial staff and most of the contributors, suspended publication at the very beginning of the war. Among them were the *Semaine Médicale*, the *Progrès Médical*, the *Revue de Médecine* and the *Revue de Chirurgie*. The *Journal de Médecine et de Chirurgie Pratiques*, associated with the honoured name of the late Just Lucas-Championnière from 1870 to 1913, and now conducted by his sons also, continues to appear, as do the *Presse Médicale* and the *Journal des Praticiens*. The *Paris Médical*, which, formerly a weekly, became a fortnightly at the outbreak of the war, is now appearing three times a month. The *Archives Provinciales de Chirurgie*, which was in a state of suspended animation during August, 1914, came to life again in September; the *Annales de Médecine* published the issue which was in the press in August on January 31st, and the publishers promise that the other numbers for 1914 shall be published in the course of 1915. The *Chronique Médicale*, which had ceased to appear in August, was resuscitated in December, and made up for lost time by the quality of its contents. The number is a record of the misdeeds of German soldiers, collected from all sources, which it is sickening to read. Whether the reduction in the output of medical literature in the shape of books is an unmitigated evil is a question that may be debated. But the exchange between medical journals is a necessary condition of progress, as without it doctors cannot learn what is being done in other countries, but it will probably be long before the normal state of things is re-established. In the meantime we are glad to be able to state that the Library of the British Medical Association, more fortunate than that of the Philadelphia College of Physicians, continues to receive the *Thèses de Paris*.

A NEW ZEALAND MEDICAL ACT.

AN amending Act, virtually a complete new Act, which comes into force this month, has been passed by the New Zealand Legislature. It presents some peculiar features, and neither receives nor deserves a very cordial welcome by the profession, but it was the best they could succeed in getting passed. It is lengthy and, we should imagine from internal evidence, has been a good deal pulled about in its passage through Parliament. The main provision is of a less satisfactory nature than that to be found in other recent Colonial Acts, inasmuch as it does not prohibit practice by unqualified persons but stops short at the prohibition of the use of certain "styles or titles" or names, titles, additions, or descriptions implying the possession of diplomas or degrees, or that the person is "specially qualified to practise medicine or surgery." The later part of the section leaves a wide loophole, and we know from recent legal decisions how little use it is as interpreted by the higher courts. Registration upon the British *Medical Register*, graduation at the University of New Zealand, or the possession of a foreign diploma approved by the Board entitle a person to be registered; there is a good proviso as regards the recognition of foreign diplomas, for it is enacted that such a diploma must have been obtained after not less than five years' study, and that reciprocal recognition of the degrees of the University of New Zealand must be accorded by the country where the foreign diploma was obtained. A safeguard against persons improperly obtaining registration is afforded by the rule that any person applying must publish his intention a month in advance in the official *Gazette*, and also in a newspaper circulating in his district, and must lodge his diploma for verification a month beforehand. Persons knowing of any objection to the registration of an individual are invited to communicate with the Registrar. The Registrar has to submit all applications to the Board, and cannot register a person on its own responsibility. The Board is also given power to examine witnesses on oath. The Board, however, is not given the power to remove a name from the *Register* on the ground of the practitioner having been guilty of any grave impropriety, or of infamous conduct in any professional respect, or for conviction of an indictable offence (such offence being punishable by imprisonment with hard labour for two years or more), but may, with the leave of the Attorney-General, apply to the Supreme Court for an order for the removal of the name. In the event of the Supreme Court making such an order, it may fix a time after which the person may apply for re-registration. From these and other provisions it would seem that the promoters of the Act had studied the working of the penal business of the General Medical Council at home. The provision that no one shall hold a public appointment or an appointment to any friendly or mutual society unless registered under the Act is a good one. There is a curious section prohibiting, under a fine not exceeding £20, any practitioner from accepting commissions, direct or indirect, from registered chemists. This, coupled with the fact that the conference of friendly societies opposed the bill, although the only way in which the societies were affected by it was that it required them to employ qualified practitioners, looks as though things had not been quite as they should be in the colony. We hope that the new Act may be efficacious in mending any such evils. An article in the *New Zealand Medical Journal* indicates some of the difficulties encountered in the passage of the bill, and quotes some of the amenities of the debate, from which it is pretty clear that no more stringent measure would have had any chance of getting through in the present temper of Parliament. Though the Act is not all that could be desired, it is satisfactory that so much has been secured.

WINES AND WINES.

ON February 27th, in a paragraph under this title, we made reference to communications recently addressed by the proprietors of Winox to members of the medical profession. We have recently received from Mr. L. Campbell-Johnston—who is, we understand, chairman of Winox, Ltd.—a note, in the course of which he says: "There seems a general idea that if you take a glass of port and add beef extract you have a 'tonic wine'; but if any of your readers will try the experiment and leave the mixture for twenty-four hours, a nasty muddy mess will result quite unlike the 'tonic wines' sold to the public. The reason of this is that the tannic acid in the port coagulates the fibrin in the meat extract, and forms an insoluble clot. To avoid this trouble some manufacturers detannate their wine, whilst others use a vegetable fibrin derived from grain instead of real meat extract. Thus 'tonic wines' may be roughly divided into those which contain genuine beef and those which do not. . . . I can only judge this from the percentage of proteids present, knowing of no other test, and allow it is difficult

to otherwise discriminate between animal and vegetable fibrin by analysis. In the absence of precautions, the beef may also have become coagulated and lost in the lees, in which case it does not reach the analyst or the patient." Mr. Campbell-Johnston then enters on pharmacological and therapeutic speculations into which it does not seem necessary to follow him, and in conclusion he expresses his opinion that "tonic wines" (by which we understand him to mean wines containing meat with or without malt extract or concentrated grape juice, either or both) would, if properly made, "seem superior to natural wines in cases of anaemia and trouble due to this cause." We think our correspondent does not touch the real objection which the medical profession has to so-called tonic wines of all sorts. Members of the medical profession very frequently sanction the use of wine, but do not prescribe it, especially the stronger sort, as often as they did, partly because they are not satisfied that wine possesses the therapeutic virtues once attributed to it, and partly because they know "doctor's orders" are often assigned by alcoholics as the excuse for their excesses. Medical practitioners know that some of the so-called tonic wines contain drugs which may be injurious, and are not satisfied that others, whose chief claim to be "tonic" is that they contain something derived from meat, possess special virtues. Practically all that the profession knows about so-called tonic wines of the meaty variety is that usually they are strong in alcohol and contain a larger amount of protein than natural wines. This protein, Mr. Campbell-Johnston tells us, is not in all instances derived from meat. We do not know, but we do not think that it matters very much. The medical criticism is directed to the relatively large proportion of alcohol they contain and the risk that the use of wines of such strength entails of setting up the alcoholic habit. Mr. Campbell-Johnston says that certain wines are good for anaemic persons, anaemic women in particular. He is quite entitled to his opinion as a member of the public, but to recommend the use of wine for this purpose, and as a tonic, by advertisement addressed to anybody and everybody, is to go a good deal further, and in our judgement to incur a very serious responsibility.

"ISOTOPES."

THE word "isotope" aroused a good deal of discussion at a recent meeting of the Röntgen Society, when Mr. Alexander Fleck, B.Sc., of Glasgow University, read a paper on the chemistry of the radio-elements. Isotope is a term applied by Professor Soddy to denominate bodies which are chemically identical, although they may differ slightly in atomic weight. The process of radium disintegration, starting from uranium, may proceed through a whole series of elements and arrive finally at the end-product, which is isotopic with lead—that is, which is lead in respect to all its chemical and other properties, but differs slightly from lead in atomic weight. According to the latest determinations, pitchblende lead, the final product of radium, has an atomic weight slightly different from that of ordinary lead, and this difference is not accidental. But the word "isotope" involves the whole theory of the construction of the atom. Rutherford's conception of the atom, said Mr. Fleck, was the only one which recommended itself to the mind of the chemist. It postulated a perfect system within the atom, consisting of an internal nucleus surrounded by a ring of electrons, and it was the positive charge in this atom, together with the structure of the nucleus, which determined the properties of a given element, and its place in the periodic table. In any two isotopic elements, therefore, there would be the same nuclear charge inside the atom of each, and presumably a system of electrons arranged in the same manner. In the course of the discussion Professor Nicholson said that if the chemists were prepared to accept the theory of isotopes, no serious criticism was likely to be forthcoming from the physicists. The point which puzzled him, however, was whether, theoretically, the spectra of a pair of isotopes ought to be identical. The answer depended upon the point of view taken as to the origin of spectra. Some writers contended that they were of dynamical origin; others, including Lord Rayleigh, that their origin was kinematical; and, on the latter presumption, a difference in atomic weight, however small, would be expected to produce a difference in the spectrum. Professor A. W. Porter, who considered that the arrangement of the radio-elements in this orderly sequence was the most important generalization made since Mendeléeff, confessed that he preferred the term "isotope" to the more rigid English of the term "chemical identity," because the former was less definite, and might be stretched a little as time went on and the need for some rearrangement of ideas became manifest. Mr. Fleck assured the meeting, however, that when Professor Soddy applied the term "isotope" to these products of radio-disintegration he never thought of using it merely in the sense of strong similarity. Chemical identity—as, for example, between the end-product of radium and lead—did not include physical identity, and the atomic weight, being a physical rather than a chemical determination, might vary within considerable limits. It was the positive charge and the nucleus of the atom which determined the properties of a body.

THE MEGALOMANIA OF GERMAN "INTELLECTUALS."

THE biggest piece of "bluff" which the war has produced—and that is saying much—is beyond all question the manifesto in which the ninety-three representatives of German learning and science proclaimed with dogmatic arrogance the superiority of Germany to other countries, and by implication to the common law which governs the relations of civilized mankind. We have more than once referred to this enlightening document, which has taught us how to appreciate German "intellectualism" at its true value. The world received it with unanimous condemnation not unmixed with ridicule. We have given the purport of replies by representatives of British, French, and American universities and societies. It may be interesting to add to these the gist of replies by the intellectual leaders of Russia, Portugal, and Roumania. The Russian protest states that there is no law of civilized warfare which has not been violated by Germany and Austria. "Having begun the campaign by the unspeakable violation of the neutrality of Belgium and Luxemburg the two allied empires have trodden underfoot the common law consecrated by centuries and international conventions bearing their own signatures. Profanations of Christian relics, bombardment of the Red Cross, the use of dum-dum bullets, the abuse of the white flag and of the colours of their enemies; atrocities perpetrated on the wounded, on prisoners, and on civilians; the destruction of artistic and scientific treasures, thefts, pillage—such are the deeds of our enemies, which unhappily the German scientific men and intellectuals, who ought to blame them, approve and justify, thus associating themselves with armed brigandage, and with the fifty years' worship of the mailed fist, which had made Germany lose the memory of Goethe, Schiller, Kant, and Richter. We are persuaded that our valiant armies and those of our Allies, will be able to punish the criminals, and while waiting for that hour of vengeance we protest loudly in the name of civilization." Appended to this protest are 361 signatures. The protest of the Lisbon Academy of Sciences contains the following passage: "There only remains to the academies and universities of the whole world one thing to do—to decline all intercourse with German scientific and artistic bodies whose miserable and noxious spirit is so clearly shown by the document quoted." Anatole France, on receiving a copy of this reply, wrote to Senhor Teofilo Braga, President of the Portuguese Academy of Science, and formerly President of the Republic, expressing

the joy which he had felt in reading the manifesto. He describes it as "the most vigorous protest against Teutonic vandalism, and against the monstrous defence of it which the German intellectuals have dared to make." He approves of the denunciation of "Germanic madness." The Roumanian professors strongly condemn the secret aggressions of Germany, especially against France, which, they say, should "provoke indignant protest on the part of whoever sees in the destiny of civilized communities anything else than a brutal and permanent victory of force and arbitrary rule over law and reason, whether the right of private persons or that of nationalities is concerned." They go on to denounce the "spiteful destruction of historical and artistic monuments, which are a part of the intangible treasure of universal culture." The document bears the signatures of ninety-six professors of the Universities of Bucharest and Jassy. Among the men whose signatures were appended to the German manifesto were many whose names were previously held in esteem by the medical world, and it is sad to think that they should have deserved such scathing censure from their own profession as is conveyed by a resolution passed at a recent meeting of the Association Générale des Médecins de France, which represents the bulk of the French profession. This registered an energetic protest against the manifesto of the German intellectuals, which is tersely described as "a tissue of lies and impudence." At a recent meeting of the Paris Academy of Medicine, Professor Pozzi read a document which had reached him through M. Delcassé, the French Minister of Foreign Affairs. It was an address bearing 132 signatures, representing the medical profession of Sao Paulo, one of the most populous and important States of the Republic of Brazil. The address strongly expressed the sympathy of the Brazilian doctors with their French brethren, and expressed their ardent hopes for the victory of France over Germany.

THE HOUSE OF THE GENERAL MEDICAL COUNCIL.

WE understand that the General Medical Council has sold its premises in Oxford Street, where the business of medical registration has been carried on for so many years. A site has been acquired on the Howard de Walden estate in Hallam Street, upon which a new and probably much more convenient building is in course of erection, and will be finished within this year. Hallam Street lies between and parallel with Portland Place and Great Portland Street. In the past it has not been a street of much distinction, but all the leases are now falling in, and within the next few years it will be entirely rebuilt with a totally different class of houses, in accordance with the requirements of the Howard de Walden estate. The new offices of the Council will be near the new St. James's Hall and not far from the Langham Hotel. It appears to have been in February, 1874, that the Council obtained from the Treasury a repairing lease of "the dismantled College of Chemistry in Oxford Street." In 1895 the Council acquired the freehold of the premises in Oxford Street, together with that of the house in Hanover Square immediately adjoining the southern boundary. The General Council having no funds of its own, the purchase money was obtained to the amount of £20,000 from the English Branch Council, secured by a mortgage on the buildings. The premises were subsequently altered on more than one occasion, the most important change being the remodelling of the Council chamber. The existing rather insignificant front to Oxford Street is the original front of the College of Chemistry. The building was described by the then President, Sir George Paget, as "a mere shell, fit for no purpose whatever," and the Treasury consented to expend £1,500 in rendering it fit for occupation. The Council at that time had its offices in Soho Square, but was under an obligation to vacate them at the end of the year.

RADIUM THERAPY IN MALIGNANT DISEASE.

THE metal radium was discovered in 1898. Its action on the human tissues was discovered by accident in 1901, when Professor Becquerel of Paris, after carrying a radium tube in his waistcoat pocket, exhibited a fortnight later a severe burn as the result. Systematic study of its action on the body was begun in 1905, with the foundation of the Paris Radium Institute. During the last ten years radium has been more and more employed therapeutically, as, indeed, is shown in the issue of the BRITISH MEDICAL JOURNAL of February 27th. In Canada, Dr. Aikins[1] has been using it for some years, and has treated 387 cases—271 of malignant disease, 116 of papilloma, angioma, naevus, keloid, eczema, psoriasis, lupus, and so forth. On papillomata, he says, it acts like a charm, and it removes port-wine stains and angiomas. In 16 patients with goitre the results were good in 11; seven out of 10 exophthalmic cases gave gratifying improvement. Rodent ulcers, of which Aikins has had 116, are treated with the greatest success if the disease has not extended down to cartilage or bone, and is not so extensive that satisfactory epithelialization cannot occur. Cutaneous epithelioma responds equally well to radium treatment, so long as the disease has not spread down to the underlying muscle or bone, and if the tissues have not been devitalized by a previous course of *x*-ray treatment. Sixty-seven cases of carcinoma and 20 of sarcoma gave results that were often very satisfactory from the point of view of palliating pain or preventing recurrence. The radium therapy, he says, must be applied in heavy doses, and it should be reserved for cases in which operation is impossible. In these it offers a very good prospect of retarding the development of the malignant process, ameliorating the symptoms, and prolonging life in a condition of comparative comfort. The histological changes to which it gives rise have been studied in an adeno-carcinoma of the breast and a mixed-celled sarcoma of the tibia, by Aikins and Simon.[1] These authors find that sarcomatous tissue is transformed by radium into a tissue analogous to that of a fibroma with myxomatous change, as seen under the microscope. With epithelioma and carcinoma, however, the picture is a little different. Exposure to radium causes the malignant cells to diminish in size and staining properties, and to undergo keratinization or absorption, while vascular connective tissue becomes organized. Great importance is attached to the cellular infiltration of the neoplasms that radium therapy excites. At first this infiltration is leucocytic, later the leucocytes are replaced by small round cells. These infiltrations, it is said, have always been noted in all cases of experimental transplantation of malignant cells, and are always seen in cases in which the animal becomes immune and the transplanted tumour disintegrates.

ADVERTISING BY DOCTORS.

A CORRESPONDENT has sent us an advertisement by a native "late Sub. Asst. Surgeon" as a sample of the fantasias which our Oriental brother can execute on his own trumpet. He informs all whom it may concern that he is a very experienced doctor and that, "serving at various places, he acquired many certificates from Rajas, Maharajas, and other European officers (*sic*)." The pleasure of his company at a garden party had been requested by the Lieutenant-Governor of the Punjab. Now, "on account of the welfare of the public he has started his business as a chemist and druggist on a large scale" in his native place. His modest claims are set forth as follows: "Every kind of fatal and chronic diseases are treated here with great tact, sympathy, and cleverness. We assure that any patient deprived of health, after being treated by many physicians,

[1] W. H. B. Aikins, *The Canadian Practitioner and Review*, September, 1914

can acquire wonderful success by the miraculous treatment of the doctor." Although the publication of an advertisement of this kind by a member of the medical profession in this country at the present day would draw down upon him the thunders of the General Medical Council, we need not be too pharisaic in our self-righteousness. There is still a good deal of subtler advertising even in high places. Thus when it is announced that the Duchess of Dampshire has been successfully operated on by the eminent specialist, Dr. Heavyfee, one wonders, with Mr. Crummles, how these things got into the papers. There are also the innocent-looking paragraphs telling of the prowess of Mr. Hackemwell as a sportsman, or the fine collection of antiquities made by Dr. Curio. It is true the conception of medical ethics has greatly developed during the past century. It is unthinkable that a man like John Abernethy should now sell a book over his own counter, or that a surgeon of the standing of Dupuytren should allow a secret remedy to be called by his name. But it is well, when we see such an advertisement as that of "the late Sub. Asst. Surgeon" proclaiming the wonderful success of his "miraculous treatment," to remember that we are hardly yet in a position to give thanks that we are not even as this publican.

RELIEF FUND FOR RED CROSS NURSES.

A War Nurses Relief Fund has been formed under the auspices of the Order of St. John of Jerusalem and the British Red Cross Society, with Queen Mary and Queen Alexandra as patronesses. Sir Everard Hambro, Chairman of Council of the Royal National Pension Fund for Nurses, is chairman of the committee, and among the members are the Matron-in-Chief of the Joint Committee of the Order of St. John and the British Red Cross, and the Matrons of Guy's, St. Mary's, St. Thomas's, and the Middlesex Hospitals, and of the Royal Infirmary, Leicester, as well as the Chancellor of the Order of St. John, the chairman of the Executive Committee of the British Red Cross Society, and the Deputy-Chairman and the Secretary of the Royal National Pension Fund for Nurses. The object of the fund is to help those nurses who have suffered—mentally, physically, or pecuniarily—from, or in consequence of, attendance upon the sick and wounded during the war. The fund is not intended to apply to nurses on the staff of the Army and Navy, Army and Navy Reserve, Territorial Force, or Territorial Force Reserve, as they are already provided for. It is formed for the benefit of those nurses—of whom there are at present nearly fifteen hundred—employed during the war by the British Red Cross Society, the Order of St. John, or the joint committee of these bodies. The Chairman announced the receipt of promises of £1,000 each from the British Red Cross Society and from the Order of St. John of Jerusalem, and appeals for further contributions. Cheques may be made payable to Sir Everard Hambro (crossed Bank of England), or sent to the Bank of England, to be placed to the credit of the fund. Communications may be addressed to the Honorary Secretary, War Nurses Relief Fund, 15, Buckingham Street, Strand, W.C.

"OMENTAL INTELLIGENCE" IN APPENDICITIS.

COLLIN[1] attributes the wandering pain in the early stage of appendicitis to movements of the omentum. He has studied the notes of over 200 cases of appendicitis, in about 180 of which an operation was performed. In many of these the pain began in the left upper abdomen, and shifted thence downwards and to the right, becoming stationary at McBurney's point. This migration of pain coincides with the migration of the omentum, which has been experimentally and clinically proven. When, for example, necrosis of the spleen is induced by the ligature of the splenic vessels, the omentum is shortly afterwards found closely applied to the spleen. Again, in appendicitis, the omentum is often found deflected to the right and involved in adhesions in the neighbourhood of the appendix. The author supports his hypothesis that this migration of the omentum is a painful process, and is responsible for the wandering pain in the early stages of appendicitis, by the following considerations: When he has performed laparotomy under local anaesthesia he has occasionally tucked one finger into the omentum, and, by pressing and rubbing it against the parietal peritoneum of the anterior abdominal wall, he has induced both dull and sharp pain between the umbilicus and the left curvature of the stomach, and this is the position in which the pain of early appendicitis is often first observed. On the other hand, pain about the umbilicus is a rare early symptom when there have been previous attacks of appendicitis, and when, it may be assumed, the omentum has already become adherent in the right side of the abdomen. Pain about the umbilicus during the early stages of an attack is twice as common in those cases in which an operation shows the omentum to be free, or attached to the appendix by only recent adhesions, as it is in other cases. In other words, when the omentum is presumably in its normal position and free, pain beginning near the umbilicus and wandering thence to McBurney's point is twice as common as when a previous attack has sealed the omentum to some part of the abdomen. Though he has no statistics to prove his point, Collin has learnt to associate severe and shifting pain with extreme virulence of infection, and he therefore regards severe pain, migrating from the left to the right abdomen, as an additional indication for early operation. In the intermediate and late stages of appendicitis associated with peritonitis he regards pain in the left abdomen as an alarming symptom, and as indicating an operation more urgently than pain in the right abdomen. He records cases to support these opinions.

[1] *Hospitalstidende*, December 9th, 1914.

COLONEL SIR ALMROTH WRIGHT, consulting physician with the British Field Force in France, will deliver a lecture on septic infection of wounds at the Royal Society of Medicine on Tuesday next, at 5 p.m.

IT is desired that any members of the Medical Defence Union who are shareholders in or have placed accounts for collection in the hands of "The Medical Enterprise Society, Limited," of No. 25, Palace Chambers, 9, Bridge Street, Westminster, S.W., should communicate with Messrs. Hempson, of 33, Henrietta Street, Strand, W.C., the solicitors to the Union.

Medical Notes in Parliament.

Antityphoid Inoculation.—Before Parliament adjourned several further questions were addressed to the Under Secretary of State for War by Mr. Yeo and Mr. Chancellor in regard to the views of the War Office as to the value of antityphoid inoculation and the measures taken to encourage it. Mr. Tennant said that the inoculated men receiving leave would, as a rule, be those going to the front, and as they were going to face the risks of being killed or wounded it was right that they should have every facility for seeing their families before they went. It was the policy of the War Office to encourage recruiting by protecting the health of officers and men against enteric fever by means of inoculation. The instructions issued by the War Office were that as many men should be inoculated as could be. The War Office had never disguised its opinion that it was in the interests of the troops that they should be inoculated in as large numbers as possible, and if occasional pressure was brought to bear it was *ultra vires* and was much to be regretted, but the House would understand meanwhile that it was due to the zeal of the commanding officer and his desire to safeguard the health of the troops.

Cerebro-spinal Fever.—Mr. Charles Bathurst asked whether the warning lately officially expressed by Dr. Newsholme, medical officer to the Local Government Board, to the effect that cerebro-spinal fever was generally associated with overcrowding, insufficient ventilation, and uncleanliness, would be published in orders for the information of military units. Mr. Tennant said, in reply, that special instructions had already been issued to all commands in connexion with this disease to ensure that the troops were not overcrowded or accommodated in buildings or houses which were insanitary, and to consult with the medical officers of health and the military sanitary officers as to the necessary measures to be taken.

Research Work and Duty-free Alcohol.—Mr. Beck, Lord of the Treasury, stated, in reply to Mr. Boland, that it was already the practice to allow public institutions to use duty-free alcohol in their laboratories for research purposes.

Unhealthy Food Supplies.—The Financial Secretary to the War Office stated, in reply to Mr. W. Thorne, that he had no doubt that the full power of the law would be used in any proper case in which any Government contractor was found supplying unhealthy food to soldiers and sailors.

Indian Medical Service.—Mr. O'Grady asked the Under Secretary of State for India whether Indians acting as assistant surgeons (military) while on service in India were paid an allowance of Rs. 30 and Rs. 50 per month, and whether in the present war these men at the front were deprived of this allowance. The Under Secretary of State for India (Mr. Charles Roberts) said that he presumed the question referred to the general field allowance of Rs. 30 a month, and the special charge allowances of varying rates granted for special duties. All military assistant surgeons at the front received the former allowance and all those who were eligible received the latter. A few claims in respect of special allowances were being held over pending verification. Mr. O'Grady also asked whether Indians acting as assistant surgeons at the front who had obtained certificates through examinations in India would be promoted to commissioned rank. Mr. C. Roberts replied that vacancies occurring at the present time in the commissioned ranks of the Indian Medical Service were being made good by the grant of temporary commissions to medical men, Indians and others, having a professional qualification that was registrable in the United Kingdom. It was not considered desirable or necessary to lower the standard of admission.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

THE demands on the Fund made by the needs of refugee doctors and pharmacists and their families and dependants have been a little heavier of late, one reason being that the need for clothes is growing with the length of exile.

It has been possible to find occupation for a certain number of Belgian doctors in British civilian practice, when the Fund has defrayed the expenses of registration; but the total of refugee doctors has been decreased by the absorption of a certain number of them into the Belgian army, where it is understood there is still need of men to take medico-military commissions. Those Belgian medical men whose age, health, or personal engagement prevent them from serving their cause in this way would find it much easier to obtain posts in this country if they could speak a little English, and some surprise has been expressed that so few of them have as yet taken advantage of the facilities which have been offered in this direction.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited. £8,000 had passed into the Treasurer's hands by Tuesday last, the sum not including the Scottish and Irish and several large local funds.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by certain local funds, and the Scottish and Irish Funds, are as follows:

Eighteenth List.

	£	s.	d.
Shropshire and Mid-Wales Branch, B.M.A. (sixth donation; total, £45 2s. 6d.)—			
Dr. L. E. Dickson ...	0	10	6
"J. M."...	25	0	0
Dr. Wm. B. Jack ...	1	1	0
Kesteven Division, B.M.A. (per Dr. C. H. D. Robbs, Hon. Sec.)—			
Dr. T. T. Kelly ...	1	1	0
Dr. J. D. Campbell ...	1	1	0
Dr. F. de Havilland Hall (third donation; total, £7 3s.)	2	0	0
Société Belge de Médecine en Angleterre (per Dr. Clément Philippe, Président)—			
Dr. Linossier, Dr. Jardet (Vichy), Dr. Langenhayen (Mentone)	49	2	6
Brussels Medical Graduates' Association (sixth donation; total, £124 12s. 6d.), (per Dr. Major Greenwood, Hon. Treas.)	2	0	0
South-West Wales Division, B.M.A. (per Dr. D. R. Price, Hon. Sec.)—			
Anon.	0	10	0
Norwich Division, B.M.A. (third donation; total, £51 3s.). (per Dr. G. P. C. Claridge, Hon. Sec.)—			
Mr. F. P. Bush ...	3	3	0
Mr. E. W. Everett ...	2	2	0
Mr. B. K. Nutman ...	2	2	0
Mr. F. Preston ...	2	2	0
Dr. Henry Watson ...	5	5	0
Birmingham Local Committee, twelfth donation, total £328 1s. 3d. (per Dr. R. Saundby)—			
Dr. F. Bonner Feast (proceeds of whist party)	7	7	6
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund, fourth donation; total £259 18s. (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.)—			
Dr. J. S. McCracken ...	3	3	0
Dr. C. F. D. Hammond	0	10	6
Dr L. G. Dillon ...	2	2	0
Dr. Jas. Hudson ...	5	5	0
Dr. J. MacFadyen ...	1	1	0
Dr. and Mrs. D. Wells Patterson	2	2	0
Dr. J. R. Lownds ...	2	2	0
Dr. H. Brunton Angus	5	5	0
Dr. J. Allan Brand (part proceeds of sale of motor car) ...	20	14	0
Dr. R. Dagger... ...	2	2	0
Dr. A. M. Martin ...	3	3	0
Dr. Chas. J. Gibb ...	2	2	0
Dr. H Paige	1	1	0
Dr. Neil Maclay ...	5	5	0
Dr. Ed. Prall	1	0	0
Dr. Moffat Young ...	1	1	0
Dr. J. W. Smith and Son	5	5	0
Dr. L. A. H. Bulkley ...	1	1	0
Dr Wm. Robinson ...	3	3	0
Dr. Robert Forsyth ...	2	2	0
Dr. A. Dougall ...	1	1	0
Dr. Chas. Stuart ...	1	1	0
Dr. W. S. Dickie ...	2	2	0
Dr. S. G. Mostyn ...	1	1	0
Dr. J. J. French ...	1	1	0
Dr. H. Kershaw ...	3	3	0
Dr. G. F. Longbotham	2	2	0
Dr. P. J. Sheedy ...	2	2	0
Dr. A. Paget Steavenson	2	2	0
Dr. A. Bruce Low ...	1	1	0
Dr. Geo. J. Williams ...	1	1	0
Mrs. Priestman ...	0	10	6
Dr. J. McBain ...	1	1	0
Dr. John Galloway ...	1	1	0
Dr J. A. Naismith ...	2	2	0
Dr. R. J. Weiduer ...	2	2	0
Dr. Adam Wilson ...	3	3	0
Dr. R. A. Bolam ...	3	3	0
Dr. M. Caldwell ...	1	1	0
Dr. G. Y. Caldwell ...	2	2	0
Dr. A. Hay Bower ...	1	1	0
Dr. Wm. Bower ...	1	1	0
Dr A. D. Kelly ...	1	1	0
Dr. Angus Campbell ...	1	1	0
Dr. John Waldy ...	2	2	0
Dr. H. P. Bennett ...	1	1	0
Dr. H. St. J. Boswell ...	1	1	0
Dr. D. W. Inglis ...	1	1	0
Dr. Wm. Jaques ...	1	1	0
Dr. Andrew Smith ...	2	2	0
Oxford and District Chemists' Association (per Mr. H. C. Goodall)	2	2	0
Mr. J. A. South	1	1	0
Gateshead Pharmacists' Association, collected by (per Mr. A. D. Wyllie)—			
Mr. A. B. Beatton ...	0	10	0
Mr. Jas. Chapman ...	1	1	0
Bradford Pharmacists' Association (per Mr. W. I. Jolly)	10	0	0
Mr. G. E. M. Knight ...	1	1	0
Mr. F. G. Knight ...	1	1	0
Mr. J. Evans (proceeds of Dependants' Prescriptions)	0	5	0
Mr. J. A. Rees	1	1	0
Mr. G. V. Musson ...	0	5	0

. An acknowledgment in the subscription list published last week as follows: Messrs. Benger, Ltd., £26 5s., should read, Messrs. Benger's *Food*, Ltd., £26 5s.

MANCHESTER AND DISTRICT.

Dr. E. M. Brockbank announces that £473 6s. 6d. had been received from medical men and the general public in Manchester and the district up to March 21st, and £10 4s. 11d. from the pharmacists. This local list will now close, and Dr. Brockbank, the secretary (Northern Assurance Buildings, Albert Square, Manchester), will be glad to receive any subscriptions immediately, and to hear if any of the contributions have not been acknowledged in the journals. The following additional subscriptions have been received:

	£	s.	d.
Dr. J. B. Dalton, Dr. A. E. Finney, Mr. J. Gilmour, Mr. J. H. Hacking, and Mr. J. N. Platt	4	4	0
Dr. W. White	2	2	0
Dr. P. L. Pearce ...	1	1	0
Dr. O. H. Woodcock ...	1	1	0
Mr. H. L. Whitestone ...	1	1	0
Dr. G. R. Gordon ...	1	1	0
Mr. W. P. Lynn... ...	1	1	0
Dr. J. H. Godson ...	1	1	0
Dr. C. Hawkins Craig ...	1	1	0
Dr. H. Mackenzie ...	1	1	0
Dr. F. C. Scotson ...	1	1	0
C. N.	0	7	0

INSTRUMENTS.

The Master of the Society of Apothecaries acknowledges the receipt of surgical instruments contributed by the following gentlemen since the publication of the last list:

Dr. Ick Hewins, Tokomaru Bay, New Zealand.
Dr. James Hudson, Newcastle-on-Tyne.
Dr. C. E. Hardyman, Bramerton.
The Library of the Manchester Medical Society, per Dr. Brockbank.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

THE CIVILIAN INFECTIOUS HOSPITAL, MALLASSISE.

THE work being done at Mallassise is much more interesting than I thought. As stated at the time, the information on which my previous note on it was founded was not first hand. I have since had an opportunity of seeing the place myself, and in all my experience of kindred visits do not remember feeling more impressed. Alike as an example of sound organization, tactful administration, practical philanthropy, and educational prophylaxis it seemed to me equally notable. This is a strong statement, but each part of it can without difficulty be justified.

Typhoid among Civilians and Refugees.

The primary object of the institution is sanitary and utilitarian, and it is designed to deal with the prevalence of enteric fever among the refugee and other inhabitants of the villages in the neighbourhood of Poperinghe and Ypres. In short, the hospital at Mallassise represents the solution that the army medical authorities adopted for the grave problem which presented itself when the time came for the British troops to return to the Ypres-Poperinghe section of the allied front. It was then found that in many of the habitations which ought to serve as billets for the troops there were men, women, and children suffering from enteric fever. Obviously it was very undesirable that British troops should be quartered in typhoid-infected dwellings, but from a military point of view there was no help for it. It was essential that the villages should be occupied, and it did not seem feasible to clear them of their inhabitants, most of whom were poor and many of them refugees. Furthermore, the civil authorities could not well be pressed to improve their sanitation by removing all case of enteric to their hospitals, for the civil hospitals both in Ypres and Poperinghe were already full. Consequently the Director-General decided to cut the Gordian knot by providing a hospital elsewhere. This was the origin of the institution at Mallassise. It plays towards the civil hospitals at Ypres and Poperinghe much the same part that a general hospital at a military base does to those at the railhead, and in its turn has an institution to which it can transfer its patients so soon as these are convalescent, and have been proved to be no longer typhoid carriers. They are then drafted off to a very large home for refugees established at Montreuil to work in connexion with Mallassise. Meantime a constant watch is kept for the occurrence of fresh cases in the villages among those left behind, and when found they are at once removed for treatment and suitable measures in regard to their habitations are adopted.

The fact that the primary object of the whole undertaking is utilitarian and military does not deprive it of its philanthropic quality. Any student of social economy will admit a utilitarian quality to be an essential constituent of any kind of applied philanthropy, and those efforts which are of most value to society generally involve the physical benefit of individuals, whatever their primary object may be. In the present case the physical benefits conferred are immense. Apart from being sufferers from typhoid fever, all the patients in this hospital are persons who have lived for months in an environment of war, and a large proportion of them are refugees who have supped its horrors to the full. At Mallassise they find themselves, for the first time for months, far from the sound of the guns; in quiet, airy rooms; in clean, white-sheeted beds; supplied with plenty of food, suitable to their condition; in receipt of attention from doctors and nurses; in a condition of comfort rarely to be found in village dwellings or in small provincial hospitals at the best of times, and quite unattainable in either when the former are overcrowded and the latter thronged by numbers of patients far beyond their effective capacity. The patients that I saw ranged in age from a baby of 6 months old, which had been admitted with its typhoid-stricken mother, to a man who looked about 80. Indeed, the predominance of patients at the two extremes of life seemed one of the features of the place; there were wards full of young children of both sexes, wards of girls and women, wards of boys between 10 and 20 mixed with men well advanced in years.

Administration.

The justification for the term "tactful administration" is partly inferential. The wards were as orderly as those of any English hospital, and the patients were obviously under good discipline, but it was equally obvious that they were happy and that excellent relations existed between them and their doctors and nurses. This orderliness, spotless cleanliness, and discipline was a feature by which any one acquainted with hospital work in the smaller provincial towns on the Continent could not fail to be struck; for though good results are often obtained in the latter, their general atmosphere and appearance of their wards are usually much more domestic and casual than those of the wards of English institutions. One also learnt that by way of keeping the patients in touch with their friends, arrangements had been made for their being frequently and regularly visited by clerics from their own neighbourhood, motor cars or ambulances being used to bring them over.

The Installation.

With regard to organization, though the place had been open only just four weeks on the day I visited it, there was little to suggest that it had not been at work for years. It is not intended to imply that it looked like a modern hospital; except for the iron bedsteads and their bright coverings, it looked more like an old institution which was being brought up to date in the matter of internal equipment, sanitary arrangements, and the like. While I was there a number of ambulances arrived with a fresh consignment of patients, and I learnt that this was a daily occurrence, the ambulance convoys going to Ypres and Poperinghe every night and returning charged the next day with patients deemed fit for transfer. It would be possible to bring the patients straight from their own homes, but it is part of the organization that the civil hospitals should act as clearing hospitals in regard to these patients. It is thought that if on their first removal from their homes they are taken to a hospital with which they are already more or less familiar by name and where the whole atmosphere is, like themselves, Flemish, the psychic effect will be better than would be that of bringing them forthwith across the frontier and placing them in a totally novel or thoroughly British environment at a long distance from their friends.

The building used is in normal times a seminary; it is very large, but as it is not desired to displace its usual inhabitants altogether, only one-third is used for hospital purposes. The rest of the accommodation acquired has been provided by tents of the ordinary British army hospital pattern, erected in a field adjoining the main building and used for male patients. Eventually it is intended to reserve the building entirely for women and children, and to treat all the male patients over 10 years of age in the tent section. At present there is accommodation for about 500 patients; it will be raised to 1,000 beds should so large an increase prove necessary.

The tent section of the hospital and the main building section each has its own sanitary arrangements, the system on which these are worked being closely akin to that described in connexion with No. 14 Stationary Hospital at Wimereux. A leading feature of this system is that all bedpans and urinals, etc., are in charge of a sanitary squad, which receives them from the nurses, destroys the contents by heat, and returns them to the wards in a sterile condition; it deals also with soiled linen. This sanitary squad, as also the whole of the subordinate personnel, is drawn from the Royal Army Medical Corps. The nurses are supplied by the British Red Cross Society, but are paid out of army funds and do their work under a matron belonging to Q.A.I.M.N.S. Some of the medical officers, I understand, are also Red Cross workers, but the majority are temporary lieutenants in the R.A.M.C., and the officer in command and his chief assistants are both regulars, one being a colonel the other a major. Attached to the nursing staff are two or three Belgian ladies who understand Flemish and have received some training in nursing, and some members of the V.A.D., while attached to the medical staff are two Belgian doctors who act as interpreters. For lighting dependence has to be placed on

oil lamps, and one among the various straws which showed which way the wind blew in the matter of careful organization was the presence outside each ward of a row of buckets alternately filled with sand and with water. I also observed some notices in a language which I was told was the Flamande spoken in the area from which the patients are drawn.

Further Improvements.

In both sections of the institution there was a certain amount of building going on, the aim being to replace the temporary kitchens, and the temporary incinerators, and urine and stool destructors by permanent constructions. One destructor nearly completed seemed to be specially well designed; it had three grids distant 18 in. from one another, and was filled from the top, the material to be incinerated gradually sinking from one grid to another, as the process of destruction advanced. As everyone on duty at the institution is inoculated on arrival against typhoid fever, and as the hospital itself stands at a considerable distance from any village, and has no public water supply in its vicinity, I did not at first understand why the arrangements for avoiding all possible sources of infection should be so very complete, but I gathered that it was thought well that they should be so partly on general principles, partly in the hope that work done in the institution would prove educational. This may well be the case, since a large number of young priests are in residence in the part of the building not used for hospital purposes, and care is taken that they should be informed as to the why and the wherefore of all that is being done. The arrangements include also a laboratory and an operating theatre. The provision of the latter at an enteric fever hospital seems at first sight a little curious, but it is by no means superfluous. It appears to be not uncommon for the patients to suffer from injuries received during bombardments as well as from enteric fever, and surgical sequelae of typhoid fever seem also to occur with some frequency. On the day of my visit, for instance, there had been an operation for suppurating ovarian cyst, in which the *B. typhosus* was found, and also for typhoid abscess in the groin. Much more could be said about this institution, but the details given, it is hoped, will show that the general statement made concerning it at the beginning of this note is well justified.

BRAIN SURGERY IN WAR.

Long before this war began there appear to have been surgeons who anticipated that in the next great European war gunshot wounds in the head would figure much more conspicuously in the returns than previously, and their expectations have not been falsified. As was pointed out in one of these notes about two months ago, the general total of casualties decreased when the trenches of the combatants began to approach one another so closely as partly to stop the artillery of either side shelling the advanced trenches of the enemy, but the number of head wounds increased. This statement relates to cases reaching the base hospitals, and in all probability the number of such cases bears a small ratio to the total number in which the wound received is a wound of the head. As to this I have no precise information, but statistics relating to previous wars suggest that some 60 per cent. of all head wounds must prove instantly fatal, and that in about 25 per cent. of the remainder the patients probably die within twenty-four hours of the time of their arrival at an ambulance or clearing hospital.

Up to the present no very considerable degree of unanimity of opinion would appear to have been reached in respect of the treatment of these cases. In the first place there is very great variety in the character of the lesions themselves, and this remark applies even to apparently identical cases, namely, those in which a bullet has passed right through the head and has almost certainly traversed corresponding areas of the brain. It seems to be held that the injury suffered by the tissues through which a bullet passes depends largely on its velocity at the moment of impact, and since it has been shown, I believe, that a bullet from a modern rifle will pass right through the human skull when fired from a range as great as 2,000 yards, it is obvious that there is plenty of room for difference in the effects due to what has been called the hydrodynamic action of high velocity missiles.

A second stumbling-block in the path towards unanimity is the difference in the circumstances in which these cases are seen. Some surgeons see head cases mainly within a few hours of the receipt of the injury, and do not, as a rule, have an opportunity of watching for more than a few days the progress of those who survive. The experience of others is acquired chiefly by the observation of cases which have not come into their hands until several days after they were wounded.

In the early stages of the war almost all surgeons at the front belonged to one or other of what may be described as two distinct schools of thought on the subject of brain surgery; the one under the influence of the teaching of the average textbook on the subject of fractures of the skull, the other under that of the limited number of men who may be described as brain tumour surgeons. The first school, having in mind the danger of brain irritation arising from portions of the inner table of the skull being driven into the brain, favoured immediate operation in every case in which it was reasonable to suppose that the skull had been fractured; but holding the brain in profound respect, it restricted itself to making a trephine opening just big enough to allow of the removal of any obvious spiculae. The other school, having had much experience of the unhappy results of the increased intradural pressure due to cerebral tumours, and remembering that cerebral oedema was likely to arise from any injury to the brain, favoured immediate interference, but counselled bold operations in the nature of decompression procedures.

Mr. Percy Sargent and Dr. Gordon Holmes, who have sent a paper to the JOURNAL, began work in France early in October. They have had an opportunity of making a full study of a very large number of cases, and of the effect of difference of technique in various special operations. It is in the field ambulances and clearing hospitals—which together may roughly be written down as numbering dozens—that the cases first come under treatment, and to be asked to formulate general rules founded on the experience gained during the last six months may seem rather a difficult task, but it would certainly be useful, if only by way of furnishing a skeleton to which to attach a series of subsequent amendments. The personnel of field ambulances and clearing hospitals cannot be constant, and besides this it seems not improbable that before long there will be a good many new field ambulances and clearing hospitals at work.

A rough classification of different types of brain injury would be valuable, because the present lack of unanimity as to treatment would seem partly to be due to failure to distinguish between various classes of case when the respective value of alternative treatment is under discussion. Such a classification would have the advantage that it would check any tendency towards generalizations not perhaps calculated to foster sound progress in a field of surgery which is comparatively new. There is a certain risk that men who have not had much experience of these cases may be induced to believe that a large operation should be the rule. As to whether such a generalization would be sound or unsound I express no opinion, but it may be noted that the doctrine would seem to be opposed to the teaching of more than one Continental surgeon who could not be written down as old-fashioned. Apart from Delorme, there is amongst others Professor Billet, who has published a study of the subject which both in Belgium and in France is attracting much attention. He makes it clear that in his opinion there are many cases of compound fracture of the skull in which primary operative interference should not be advised. It is held that if Billet's views, and those of others who think like him, be well founded, it must quite frequently be the duty of surgeons at the advanced medical units to restrict themselves to surgical cleansing of cases of compound fracture of the skull, and then to send the patients to a base hospital, in the expectation that an operation will, if then deemed necessary, be undertaken as soon as the initial shock to the brain tissue and resulting oedema have subsided and the risk of extending the area of infection has ceased, and that in others no operations will be performed at all unless specific indications arise.

DYSENTERY IN THE GERMAN ARMY.

THE German army in Lorraine seems to have suffered from an extensive outbreak of dysentery. From an account given by Dr. Soldin, in the *Deutsche medizinische Wochenschrift* for January 14th, the first cases, which occurred in the middle of August, were few in number. Early in September there was a sudden rise in the number, but that dwindled again towards the end of the month. The military authorities converted an old gymnasium, built in 1856, into an isolation hospital, where Dr. Soldin attended the sick for about six weeks.

On the whole the disease ran a mild course, and the mortality was only 1.25 per cent. The earlier the patients were admitted to hospital the sooner did they recover. In the majority of cases the stools began to be less frequent and to be free from blood on the fourth day, when the appetite returned, the fever fell, and on a suitable diet a rapid recovery ensued. It was common for the patient to leave his bed between the ninth and twelfth days, and to leave hospital between the twelfth and fourteenth days. When, however, the disease had been neglected for several days, the temperature chart showed a much slower progress. Such a patient was admitted to hospital in a miserable condition on the eighteenth day of the disease. He passed thirty blood-stained stools a day. Blood continued to be passed for six days, and it was not till the tenth day that the stools became normal. In many cases the patients were no longer febrile on admission to hospital, although they still suffered from haemorrhagic diarrhoea and other symptoms of dysentery. Most had evidently suffered from fever in the field, having complained of feeling hot and cold; but in a few cases there had been no symptoms of fever. Indeed, so slight were the manifestations in many cases that the patients remained at work and took no dietetic precautions. The disease ran a less favourable course in elderly persons, who remained febrile longer and regained their strength more slowly. It seemed as if patients already subject to haemorrhoids were particularly liable to develop tenesmus and severe pain in the anus, which did not diminish till the end of the third week. Relapses were frequent, particularly when ravenous hunger led to dietetic indiscretions. These relapses were never serious when they occurred in hospital; they lasted only three or four days, and then an uneventful recovery was made.

At first there was neither time nor opportunity for systematic serological and bacteriological examination of every case, and laboratory methods of diagnosis were confined to distinguishing between typhoid fever and dysentery. Subsequently Widal's reaction was also used in the diagnosis of dysentery. The reaction was positive for bacterial dysentery in only a few cases; it was positive for Y-dysentery in many more cases. In these the symptoms were much less severe than in bacterial dysentery. Though the majority of cases were slight, there was a small, well-defined class (13 cases) in which the disease was serious from the beginning and invariably ended fatally. The patients were obviously moribund, even on admission to hospital; the skin was dry, cold, and yellowish-white, and it could be easily picked up, and the tissues under the skin were so dry that the fold remained raised till flattened by pressure. The eyes and cheeks were hollow, the nose was prominent, the lips dry, the tongue dry, red, or greyish-yellow, and the whole body much emaciated. The most prominent symptom was the profuse mucous, blood-stained, and very offensive diarrhoea, which was unaffected by large doses of opium. The blood did not disappear from the stools till about two days before death; the abdomen was contracted and tender everywhere, particularly over the colon; the liver and spleen were never enlarged, but from the first the pulse was scarcely palpable, and improved but slightly when camphor, caffein, digitalis, or alcohol was given. The respiration was deep and heavy, and, owing to the great loss of fluid through the intestine, the urine was scanty. It frequently contained albumin. The temperature followed no typical course, and usually ranged from 37.5° C. to 38.5° C. It exceeded this level only when complications, such as pneumonia and meningitis, supervened. In spite of the severity of the symptoms, the patient's mind usually remained perfectly clear to the last, except in cases complicated by pneumonia or meningitis. So distinct were these cases from the rest that they were held to deserve the special title of "dysenteria gravissima," the difference being as great as that between scarlatina gravissima and ordinary scarlatina. In these severe cases the symptoms had appeared only a few days before the patients were admitted to hospital, and death usually occurred between the ninth and seventeenth days. In no case did the disease run a mild course and subsequently develop the alarming features of dysenteria gravissima. This seems to indicate a fundamental difference between the two manifestations of the disease.

Only in the last of these fatal cases was Widal's reaction employed. It was negative, and the bacteriological examination of the stools for both dysentery and typhoid fever was also negative. This failure was probably due to the stools being examined at a late stage of the disease. In one of these cases Widal's reaction was positive for typhoid fever, and it may be that this was a case of double infection. The necropsies showed old and new ulcers of the large intestine and of the small intestine for about a half to three-quarters of a metre above the ileo-caecal valve. The ulceration was characteristic of dysentery.

In one class of case, represented chiefly by elderly persons, the disease assumed a chronic, relapsing character. The frequency of the stools continued till the third or fourth week, and slight improvement was regularly followed by relapses associated with a rise of temperature suggestive of typhoid fever. These patients steadily lost weight and appetite, but the action of the heart remained vigorous, and the clinical picture was therefore totally distinct from that of dysenteria gravissima. In all these cases Widal's reaction was positive for bacterial dysentery and negative for typhoid fever. The fever in these cases, which represented 2 per cent. of all the cases of dysentery, seldom abated till the fourth or fifth week, and even after this period the pale and emaciated patients were faced by the prospect of a protracted convalescence. Indeed, it is probable that the extensive ulceration and cicatrization of the intestine in many of these cases may lead to permanent disablement. Otherwise the prognosis was good, and only one case ended fatally.

Considerable difficulty was experienced in distinguishing between dysentery and typhoid fever, many cases of which were admitted to the dysentery wards. The greatest difficulty was experienced when there were no clinical symptoms of typhoid fever, and the course of the temperature was characteristic of neither typhoid fever nor dysentery. In such cases the differential diagnosis was not made for weeks, and the existence of typhoid fever was not established till Widal's reaction was found to be positive, or the bacillus of typhoid fever was cultivated from the blood. In some cases patients were admitted with every symptom of dysentery. They had improved much at the end of a week, when they developed typhoid fever, Widal's reaction being positive for both diseases.

The treatment was simple. In the severe cases nothing helped; injections of saline solution and the most powerful cardiac tonics were useless. In all the other cases the treatment was dietetic only. When violent hunger was accompanied by general improvement even as early as the second day, extensive use was made of white cheese, which was given on the principle adopted by Finkelstein in the treatment of infantile diarrhoea. This white cheese was easily obtained from fresh milk by the addition of extract of rennet, or by warming to 40° two-day-old sour milk. Spread on rusks, this food was readily taken by the patients, and probably contributed much to the solidification of the stools.

VENEREAL DISEASE IN THE GERMAN ARMY.

FROM neutral sources it has for some time been made clear that the German army is suffering from extensive outbreaks of venereal disease. Even in hospital much trouble has thus been caused among convalescent soldiers, whose recovery is much delayed. Under the heading, "War, Prostitution, and Venereal Disease," Professor A. Neisser,[1] of Breslau, has recently discussed the methods best suited to minimize this danger. Venereal disease is, he says, far more prevalent in the German army now than it was during the war of 1870–71, in which, from the middle of July, 1870, to the end of June, 1871, the number of men treated

[1] *Deut. med. Woch.*, January 14th, 1915.

for venereal disease was 33,528. This figure represented 4.26 per cent. of the total force and 7.06 per cent. of the sick in hospital, not including the wounded. In the present war, wherever there are prostitutes, either at home or at the front, the incidence of venereal disease is so great that "every day many thousands, not to say tens of thousands, of otherwise able-bodied men are withdrawn from the service on this account." Not only is the efficiency of the army greatly reduced by these diseases, but the future health of the nation promises to be much impaired by the consequences, among which tabes, general paralysis, and aneurysms may be mentioned.

Professor Neisser suggests that a vigorous educative campaign should be instituted, and that the risks they run by a single connexion with a prostitute should be fully explained to the soldiers. Professor Neisser assumes that every prostitute in a town occupied by the Germans is diseased, or will shortly become so. He dismisses as impracticable any direct attempt to forbid the soldiers sexual intercourse, as such a step would lead to the concealment of infection and consequent lack of early treatment. More is to be expected from an appeal to the soldier's sense of honour and patriotism. The married men should be warned of the consequences to their wives and children of returning home diseased, and the fallacious view that abstinence is unhealthy should be combated.

Repressive measures, such as isolation and internment of infected prostitutes, are, he considers, very effective, but the total suppression of prostitution would be a far more effective measure against the spread of venereal diseases, particularly gonorrhoea, than regulation of prostitution by medical supervision. Supervision, in the case of gonorrhoea, is practically useless, even if carried out daily. In the case of syphilis, however, Professor Neisser, believing it to be possible to reduce the infectiousness of prostitutes considerably, suggests that every prostitute should be treated with salvarsan, with or without mercury, and irrespective of conclusive evidence of syphilis. The non-syphilitic prostitute need not suffer from this treatment, which, although it would not necessarily be sufficient to cure a syphilitic subject, would certainly do much to reduce the risks of infection to other persons, and would thus be of direct benefit to the army.

Professor Neisser anticipates that the authorities may refuse to exercise the drastic measures he would like to see enforced on the ground that the suppression of prostitution might lead to violation of women and girls; and he argues that if prostitutes are allowed to be at large the authorities should equip the troops with condoms, which, in his opinion, are superior to all other contrivances against infection. He seems to think that the ethical and moral objections to this procedure are outweighed by the hygienic results to be expected from it. His advice—that under certain conditions venereal disease should be treated at the front so as to maintain the active force at the highest possible figure—has been severely criticized by Professor Karl Zieler of Würzburg,[2] who has had great military experience; he argues that radical treatment of venereal disease in its acute and infectious stages is impracticable on active service, and that expert ambulant treatment, even of syphilis, is, with a few exceptions, not feasible in the field. Professor Neisser, in reply, admits that gonorrhoea may not be as rapidly and effectively treated in the field as at home, but this drawback is outweighed by the maintenance in the fighting line of thousands of men who would otherwise be invalided. When these men are finally disbanded, their gonorrhoea can be subjected to careful expert treatment. In the majority of cases of acute gonorrhoea among men on active service it is desirable that a few days' leave should be granted, so that abortive treatment can be carried out by specialists, though this may not be possible for men in units actively marching or fighting. On the other hand, it is, he considers, unnecessary, in the absence of complications, to send the subjects of gonorrhoea to a fully-equipped hospital; it is sufficient for them to be given some hours of rest and no strenuous work.

Professor Neisser adheres to the opinion that troops can be treated for syphilis on the march. He points out that the systematic examination of soldiers known to be exposed to contact with prostitutes must lead to the early detection of the disease in almost every case. The immediate treatment of such cases would either at once abort the disease, or at any rate prevent the development of secondary phenomena, which are a serious source of extragenital infection to the patient's comrades. An expert would require only a few minutes for each case, and it would be easy to provide small ampullae containing neo-salvarsan, small bottles containing a preparation of mercury, and a litre of distilled water, which would be sufficient for at least fifty intravenous injections of neo-salvarsan. In the circumstances it does not much matter whether the injections are given every sixth, eighth, or tenth day, and no more than six such injections need be given altogether. When the proper technique and dosage of neo-salvarsan are observed, there are no subjective or objective disagreeable consequences, even when the treatment is supplemented with grey oil. In fact, Professor Neisser argues that the treatment should be practised just as inoculation against typhoid fever, with which constitutional disturbances are not infrequently associated. The danger of stomatitis is not great enough to warrant the invaliding of an otherwise healthy man. By judging each case on its merits the medical authorities would serve the needs of the army far better than by discharging cases of venereal disease wholesale from the army. Professor Neisser considers that the German army requires a large staff of surgeons who have specialized in venereal diseases. They should be under the control of a special organization, and should have qualified for their duties by passing a special examination in venereal diseases.

[2] *Deut. med. Woch.*, January 1st, 1915.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed.

LIEUTENANT WALTER T. MCCURRY.

Our Belfast Correspondent writes: The news of the death of Mr. Walter McCurry was received with deep regret and sorrow in Belfast. He was a promising and able student of the Queen's University of Belfast, and had practically completed his course when the war broke out; at the moment he was gaining new experience and instruction in the Dublin hospitals. Knowing he would have to wait till March of 1919 before he could enter for the degree of his own university, he promptly entered for the examination which was then just about to be held of the Apothecaries' Hall, passed, and was called to the colours on August 5th, 1914, and attached to the staff of the 15th Field Ambulance. He had been a member of the O.T.C. of the Queen's University, and had joined the special reserve of officers in connexion with the Royal Army Medical Corps. He saw a good deal of the heavy fighting at Mons, St. Quentin, Le Cateau, and the Marne, as well as around Ypres. He was only four days home at Christmas, and had been lately transferred to the Norfolk Regiment. Mr. McCurry was more than a favourite with both the teaching staff and with his fellow students. His quiet good humour, his ability and desire to help, and, above all, his straightforwardness and honourableness made him beloved even by those whom he met only in the wards or in the class rooms. It is idle to think what might have been, but one feels that he had already given evidence of possessing the spirit of those who earn the title "without fear and without reproach." Deep sympathy is felt with his father, mother, and family. At the meeting of the Ulster Medical Society on March 18th, this found expression in the words which the president used at the opening of the proceedings. He said that although not a member of the society, as he had offered himself immediately on passing his qualifying examination and had gone practically at once to the front, yet the members knew him, and sympathized deeply with his parents in their great loss. A vote of sympathy was passed in silence, all the members standing.

Lieutenant John Raymond Waddy, R.A.M.C., received his medical education at Cambridge and King's College, London, and took the M.R.C.S. and L.R.C.P.Lond. in 1912. He was in practice at Taunton, and received a temporary commission as Lieutenant on August 11th, 1914. A Brother Medical Officer writes: Lieutenant Waddy's loss was much felt by all who had seen service with him. He had a reputation for unfaltering bravery and devotion to duty; recently his services had been recognized by the

bestowal of the Military Cross. Most of us here will recall the fierce and fruitless attack on the German trenches on December 19th which cost us so dear. Lieutenant Waddy was seen walking about in the open among our fallen, turning his electric torch on to them to see if he could bring them help. Every time the light shone the bullets whistled about him, but he worked on unheeding, to fall three months later to a stray bullet on one of the quietest days we have known for some time. He lies at rest next to the officers of the Somersets who fell that day; his funeral was attended by General Wilson, the officers of the Somersets, some officers of the R.A.M.C., and the men who were not in the trenches. He was the M.O. to the 1st Battalion of the Somersets and the son of a former colonel of the same regiment.

Died of Wounds.

Lieutenant Derwent Christopher Turnbull, R.A.M.C., whose name was included in the list of wounded last week, died on March 14th of wounds received on March 10th while trying to convey a wounded officer into safety under heavy fire. He was 24 years old, and was the fifth son of Mr. William P. Turnbull of Church Stretton, late of Sheffield and Settle, inspector of schools, and was educated at Sheffield Grammar School, Giggleswick School, and Sheffield University. He received a temporary commission as Lieutenant in the R.A.M.C. on December 10th, 1914, and was attached to the 1st Battalion Cheshire Regiment.

Lieutenant Theodore Stewart Lukis, M.D.Lond., of the 13th (Kensington) Battalion of the London Regiment, died in the base hospital at Boulogne, on March 15th, of wounds received on March 13th. He was the elder son of Sir Charles Pardey Lukis, K.C.S.I., Director-General of the Indian Medical Service, and had a most distinguished career as a medical student at St. Bartholomew's, ending up by taking the M.D.Lond., gaining the gold medal, in 1912, and the M.R.C.P.Lond. in 1913. After qualifying, he filled the posts successively of Demonstrator of Physiology, House-Physician, and Ophthalmic House-Surgeon at St. Bartholomew's, and of House-Physician to the Great Ormond Street Hospital for Sick Children. Much of his leisure had been devoted to social work at Toynbee Hall and to the Boy Scout movement in Hoxton. When the war broke out he recruited over eighty youths to join the colours from that locality, and himself took a commission as Lieutenant from September 1st, 1914.

Wounded.

Captain F. O'D. Fawcett, I.M.S.
Captain J. Taylor, I.M.S.
Lieutenant F. C. Davidson, R.A.M.C.
Lieutenant A. G. Biggam, R.A.M.C.

A Cambridge Student.

Lieutenant Henry Colpoys Gloster, only son of Dr. and Mrs. Gloster, of Upper Phillimore Place, Kensington, was killed in action at Neuve Chapelle on March 12th. He entered Cambridge in June, 1913, and joined the O.T.C. He passed the first M.B. in the following October. In 1914, when the great call came, he applied for a commission on August 1st in the 6th Gordon Highlanders. He joined his regiment in Scotland, receiving his commission as Second Lieutenant on August 15th, and became Lieutenant on October 31st, 1914. After undergoing training at Bedford, he volunteered for the front, and left Bedford for France on November 9th, 1914. There he remained, doing trench work and other duties, until early in February, when he was granted a week's leave. He returned to the front on February 17th, and continued in active work until his death, which was caused instantaneously by a bursting shell on March 12th. He had been several times congratulated on the value of his duties in the trenches and elsewhere by the general of the division. The King and Queen sent a telegram of sympathy with Dr. and Mrs. Gloster. Lieutenant Gloster's tutor also wrote, stating that his death was a direct personal loss to him.

We are very pleased to be able to state that the announcement of the death from fever of Lieutenant Maurice Cameron Anderson, R.A.M.C.(T.F.) was incorrect. Lieutenant Anderson is at the present time in Scotland.

NOTES.

NEED OF THE ARMY FOR MORE MEDICAL MEN.

SIR,—I am quite sure the medical men of the country, and especially the younger men, do not yet realize the great shortage there is in the Territorial Force for medical officers to train the field ambulances, and also as medical officers to look after the different combatant units.

I should like to take this opportunity to impress upon them the very great urgency for more men to come forward and fill these vacancies. In many divisions, and this division especially, it is a very serious question whether the field ambulances can be properly trained so as to have them ready for either service abroad if wanted, or to supply drafts to the first line soon proceeding to the front, unless we obtain more officers. At the present moment the three ambulances in this division are from five to nine medical men short in each ambulance; of combatant units at least six or seven have no medical officer to look after them, and civilian practitioners have to be employed. The third line field ambulance now being formed have no officers at all, and until we do obtain a certain number cannot recruit beyond 30 per cent., therefore are now being held back for the want of officers.

I would ask all medical men who can possibly get away to come forward and try and do something for their country. It was never more urgently required than now. It is no use waiting to see whether their services will be wanted. They are wanted now at once, and every man with any love for his country cannot hang back at this most critical time. Remember it takes time to train men in all the branches of medical work and have them fit to take their places in a field ambulance at the front: and this cannot be done unless medical men come forward and help us now.

I shall be very pleased to give any information required to any gentleman who cares to write to me and help him to get a commission in this division.—I am, etc.,

H. G. FALKNER, Colonel,
A.D.M.S. Northumbrian 2nd Line Division.

6, Regent Terrace, Newcastle-on-Tyne,
March 20th.

MEDICAL OFFICERS WANTED.

2/3rd Home Counties Field Ambulance.

Lieutenant-Colonel S. A. Coad, Commanding 2/3rd Home Counties Field Ambulance, Woodlands, Englefield Green, Egham, asks us to state that he is in want of a senior medical man to join the R.A.M.C.(T.) as a lieutenant and to take up a hospital appointment at Gibraltar so as to release a younger man from there who wishes to go to the front. He further states that there are still several vacancies in his unit for officers who would take on Imperial service.

Welsh Hospital.

Two medical officers are required for the Welsh Hospital, Netley. Full particulars are published in the advertisement columns.

A NEW BASE HOSPITAL.

The War Office has accepted an offer by the St. John Ambulance Association to provide a base hospital of 520 beds in France, on a site yet to be selected. The hospital will be under the command of Colonel Sir James Clark, Bt., C.B., Chief Commissioner of the St. John Ambulance Brigade. Ward huts are now being constructed in this country, and all work which can be done at this stage, before the plan of the hospital can be definitely fixed, is being pressed forward. It is expected that the hospital will be opened in about two months. Liberal assistance towards the cost has already been received from the various divisions of the St. John Ambulance Brigade in this country, and in the Dominions and India.

BATH TREATMENT FOR SOLDIERS.

With reference to the paragraph under this heading published in the JOURNAL of January 23rd, p. 180, we are informed that free treatment for wounded and invalided officers and soldiers is provided by the Corporation of Harrogate, and that since October last several thousand cases have received treatment. The Corporation of Harrogate has also recently extended these advantages to officers and men of the Royal Navy Forces.

DEPUTY SURGEON-GENERAL GEORGE ALDER WATSON, late of the Indian Medical Service, left unsettled property to the value of £64,303.

Scotland.

THE MORISON LECTURES.

"*The New Psychiatry.*"

(*Continued from p. 525.*)

IN his second Morison Lecture, before the Royal College of Physicians, Edinburgh, Dr. W. H. B. Stoddart maintained that psycho-analysis was a method of obtaining a complete history of the patient's illness and an insight into his modes of thought. A detailed history of a mental disorder included an account, not only of the manifest disturbances of conduct, but also of the patient's thoughts in association therewith and of the various experiences and events which led up to it, together with their bearings on one another from the patient's point of view. It then became necessary to trace the patient's habits of thought back to their origin. Psycho-analysis achieved this result by reviving his memory for numerous incidents and events which he had forgotten, and by unearthing his hidden, repressed, and therefore unconscious complexes, especially those having relationship with his present illness. The true relationship was then discussed in such a way as to place these complexes in their true light. There was thus a sort of re-education, whereby the patient acquired self-realization and developed his character and personality.

Psycho-analysis could be practised with benefit upon the normal individual, and each psycho-analyst ought to be psycho-analysed or to psycho-analyse himself, else there would be the danger of his reading his own complexes into his patients. A knowledge of ancient mythology was useful to him, as was also a study of symbols. Psycho-analysis, however, was not an easy procedure; it took up a great deal of time, necessitating spending an hour a day five times a week with the patient, allowing a fortnight for getting a clear history and insight and at least three months for accomplishing a cure. All patients were not suitable for psycho-analysis; they must be intelligent, educated people, who willingly co-operated and they must take it seriously. The method was useless in young children and in persons who had passed middle age.

Cases of congenital mental defect—idiocy, imbecility, etc.—could not be psycho-analysed, and the organic insanities—for example, cerebral thrombosis, tumour, abscess, meningitis, general paralysis, Huntington's chorea—and chronic cortical atrophy—for example, insanities of involution and arteriopathic dementia—were unsuited because they could not be cured by the method. The method was useless in epilepsy of toxic origin, but was of great value in the psychogenic variety. The thyroigenous insanities—for example, myxoedema, exophthalmic goitre, cachexia strumipriva—were best treated with medicines. The confusional insanities were an unpromising field; in this group were exhaustion insanities from overwork, worry and mental shock, infection insanities, and toxic insanities, including those due to alcohol, belladonna, etc. Alcoholic intoxication and the tendency to drink excessively were two different things; when alcohol was taken as a refuge from mental conflict psycho-analysis would be indicated. The psychoses were not generally suitable for treatment. In maniacal depressive insanity no attempts at analysis should be made in the attacks, and it ought not to be pressed far in the intervals. Dementia praecox should not be attempted by a beginner, and paranoia offered small hopes of betterment. Two groups were left—the psychoneuroses (hysteria, the compulsion neurosis, obsessions, compulsions, and some morbid fears) and the neuroses (neurasthenia, the anxiety neurosis, some kinds of hypochondriasis)—and the diseases in the former class were those which the psycho-analyst was best qualified to deal with, the neuroses being usually amenable to other treatment. In hysteria other means should be tried first, but in the compulsion neurosis there was no other treatment than psycho-analysis.

The technique required to be carefully studied and carried out. It was essential that there should be the certainty that the treatment could be continued for a length of time and that the patient could afford the necessary fees. All physical defects (errors of refraction, carious teeth, etc.) had first to be put right. The patient was seated comfortably or lay on a couch, and quietness was secured. The physician then read out slowly to the patient a list of quite ordinary words, known as "stimulus words," and the patient was asked to state the first word which came into his mind in connexion with each of these stimulus words; these "reaction words" and the time taken before they came were noted. The whole list was then gone over a second time and the reactions again observed and any points of difference noted. The lists were next searched for "complex-indicators," such as unusual prolongation of reaction time, failure to react, strange and incoherent associations, perturbation of reactions, restlessness, blushing, increased frequency of pulse, etc. These complex-indicators were the result of intrapsychic resistances; some of them were between the preconscious and the conscious, and constituted resistance to a disclosure of the complex to the physician, whilst others were between the unconscious and the preconscious, and constituted a resistance to disclosing an unconscious complex to the patient's own consciousness, and incidentally to the physician. The "resistances" had to be overcome, and the plan was to take each of the associations which had revealed themselves as complex-indicators, and to get the patient to explain them. Some of them he could explain quite easily; others, especially those which were a puzzle to himself, were probably very important, and had to be followed up by "continuous association" or by "continuous" succeeded by "free association." In these ways the unconscious could now and again be tapped. There were many "resistances" to be overcome, and endless varieties of tactics to be pursued. The physician had to be careful not to tell the patient the nature of his complexes before he discovered them for himself; if he broke this rule, Freud called him a "wild psycho-analyst."

Freud had termed the interpretation of dreams the "royal road" to the unconscious. He distinguished between the "manifest" and the "latent content" in dreams, and stated that the latter was always the imagined fulfilment of an unconscious wish. Dreaming gratified unconscious desires which could obtain gratification in no other way. The mechanisms of distortion in dreams were described—displacement ("dream within a dream"), condensation, the egotistic element in dreams, emotional affect, symbolization, "somatic displacement," inversion or representation of the opposite, dramatization, and secondary elaboration being taken in turn. Other phenomena than dreams gave hints and clues as to what was going on in the unconscious, such as "symbolic actions," the forgetting of proper names, the mislaying of objects, and *lapsus linguae et calami*. Crystal gazing and hypnosis were described; they also were methods of penetrating the field of the unconscious. In bringing his lecture to a close Dr. Stoddart discussed "the transference" in treatment and the possible danger to the physician which might arise during the process by the patient suffering, say, from delusions of persecution coming to regard the psycho-analyst as his persecutor. In the next stage in treatment the dissolution of the transference relation, the same method, namely, psycho-analysis, had to be pursued, but it was the most difficult part of the process, for the resistances were stronger than ever.

(*To be continued.*)

DEACONESS HOSPITAL, EDINBURGH.

The twentieth annual meeting of contributors to the Church of Scotland Deaconess Hospital, Edinburgh, was held on March 9th. Lord Salvesen presided, and it was reported that during the past twelve months 711 patients had been admitted, that 399 surgical operations had been performed, and that the mortality of the total number of patients was slightly over 2 per cent. Seventy patients were received during August and September from the Territorial and Army reserve, and 108 wounded during November and December from the Expeditionary Force to France.

Ireland.

GIFT TO THE ULSTER MEDICAL SOCIETY BY SIR WILLIAM WHITLA, M.D.

AT the seventh meeting of the Ulster Medical Society for the session in the Medical Institute, Belfast, on March 18th, the President, Dr. J. S. Morrow, reported the receipt through the trustees of the institute of a statue of Galileo

from Sir William Whitla, and proposed that the best thanks of the society be given to him for this further example of his munificent generosity to the profession in Ulster. The statue, Dr. Morrow said, recalled to memory the early beginnings of the scientific method and the sufferings therewith connected. It would ever remain an ornament of the Medical Institute and still further increase the indebtedness of members to the generous donor. A vote of thanks was seconded by Professor Lindsay and supported by Dr. McKisack, President of the Ulster Branch of the British Medical Association, and passed with acclamation. The statue is placed in the entrance hall; it is more than life size and is on a heavy granite plinth. It is of Carrara marble and is considered a masterpiece of the Italian sculptor, Fio Pedi. Galileo was a medical student for two years. In the statue he is represented in the prison of the Inquisition, seated, with head bowed and supported on one hand in deep thought.

Board of Guardians Exceed their Powers.

The Local Government Board (Ireland) has written to the Dromore West guardians with reference to a resolution of the guardians requesting that Dr. Scott be asked to assist Dr. Clarke at the Fever Hospital to diagnose certain cases which were under his (Dr. Clarke's) treatment. Dr. Scott, it appears, stated that the guardians should first acquaint Dr. Clarke. The Local Government Board learnt from Dr. Clarke that he was not present at the guardians' meeting, and that the guardians adopted the resolution in question without his authority or advice, and without any complaint being laid before them. The Local Government Board informed the guardians that Dr. Clarke, the medical officer of the workhouse, is solely responsible for the care and treatment of the sick under his charge, and if he requires any professional assistance it devolves on him to requisition it in the usual way. In the absence of such a requisition the guardians have no power to call in another doctor, and their action in the present case was absolutely unwarranted.

Dublin Castle Red Cross Hospital.

At the monthly meeting of the Joint Committee of the Dublin Castle Red Cross Hospital, held on March 19th, the Chairman submitted the report of the Finance Committee, which stated that the cost of the alterations and equipment of the Castle, to make it suitable for hospital purposes, had amounted to £4,500. It was estimated the upkeep and maintenance of the hospital would be about £400 a month. The carrying on of this beneficent work will depend largely on contributions from the charitable public, which the Committee have no doubt will be forthcoming. A report from the Medical Committee stated that Drs. Hayes and Watson, *x*-ray specialists, who had been appointed at a fee of 100 guineas each per annum, had offered, in order to assist the finances, to act in an honorary capacity; this offer was much appreciated and gratefully accepted. It should also be noted that twenty-two prominent physicians and surgeons in Dublin are giving their professional services gratuitously to the Castle Hospital, and it is the same in other cities and provincial districts in Ireland where wounded soldiers are treated.

Registration of Wounded.

Owing to the great difficulties friends and dependants found in tracing wounded soldiers in the Dublin hospitals, an inquiry agent has been appointed by the Red Cross Society for the purpose of verifying the names and numbers of the various wounded, so that if friends wishing to obtain information respecting any of the wounded in any Dublin hospital will supply the name *in full* and full regimental number and rank, to the Secretary, Dublin branch of the Red Cross Society, Dawson Street, Dublin, every effort will be made to assist them.

A new psychological laboratory, equipped for practical and research work, has been established in the University of Oregon.

The annual report of the Library Committee of the Philadelphia College of Physicians for 1914 stated that the total number of volumes in the library, including 10,064 unbound series of *Reports* and *Transactions*, was 105,540. The number of unbound theses and dissertations was 12,889, and of unbound pamphlets 85,142. There were 5,002 duplicates not included in the above total.

Correspondence.

EARLY VACCINE TREATMENT OF PNEUMONIA.

Sir,—I venture to call the attention of the profession to the very great difficulty in drawing accurate conclusions from a comparatively small number of cases.

Some two years ago I happened to have admitted under my care in the London Hospital fifteen cases of pneumonia in a period of twenty-four hours. The temperature in all was above 103° F., and they appeared to be quite definite cases. I asked my house-physician to obtain some pneumococcic vaccine, and give an injection to every other case. The onset of the disease in each patient had happened quite shortly before admission, and I thought that we might be able to draw some conclusion as to the efficacy of the vaccine.

Three days later I was at the hospital, and inquired how the pneumonia cases had fared. My house-physician told me he had only injected one case with the vaccine, and when I asked him why this was so, he answered that he had taken twelve hours to obtain the vaccine, and then found that the crisis had occurred in thirteen cases. It was an interesting but pure coincidence that the case which received the vaccine developed empyema, and took longer to recover than any of the other cases. I do not attach the slightest importance to this, but only mention it as a fact. If the vaccine had been injected into the fifteen cases on the day when I first saw them, the uncritical might have concluded that the vaccine had led to the disease being shortened in at least thirteen.—I am, etc.,

London, W., March 19th. Otto Grünbaum.

Sir,—The opportunity has occurred during the last six months of treating many soldiers suffering from lobar pneumonia, the majority being seen in the earliest stages of the disease. Roughly, the number treated was between seventy and eighty. As the notes are in England, I am at present unable to give exact figures or cite individual cases of interest, but I hope at a future time to publish exact statistics.

The results obtained were similar to those obtained by Dr. Wynn, but I am unable to agree with him as regards dosage. It was found that less than 25 million cut short the fever in nearly every case, but, as Dr. Wynn himself states, a great deal depends on the vaccine.

I used a stock vaccine, the product of a well-known London firm; 10 million were given at the earliest possible moment, followed by a similar dose in twenty-four hours. In some cases 15 million were given, but the dose never exceeded 30 million in twenty-four hours. Along with this was given an expectorant, and fluid as eliminant.

The almost invariable result was a normal temperature (usually in six hours), normal pulse, and the absence of symptoms, but not, as Dr. Wynn states, normal respiration. The respirations were still frequent, but though quick were quiet and easy; nor could one expect normal respiration with consolidation.

Better and quicker results were got the earlier the treatment was begun. The majority of cases were got in the first twelve hours, but as far as can be judged from results there is no contraindication to its use in any case, provided there be no exhaustion or cardiac weakness.

Vaccine never aborts but accelerates consolidation. It lessens the severity and duration of the disease. It prevents many complications; in over seventy cases not a single case of empyema occurred. I have never seen cardiac exhaustion in a case treated early. It was found that the treatment justifies all Dr. Wynn claims for it. Further, I have treated cases of delayed resolution and interlobar empyema, and believe that the introduction of vaccine determined a successful issue.

As regards the mortality I cannot give figures, but feel safe in saying that it is less than half the mortality in cases treated in the ordinary way.—I am, etc.,

Alex. Wm. Hendley, M.B., Ch.B. Aberd.,
Lieutenant, R.A.M.C.

No. 16 General Hospital, France,
March 20th.

PETROLEUM AS AN HABITUAL LAXATIVE.

SIR,—May I ask to be permitted to raise a strong protest against the manner in which this truly blessed thing has had doubt cast on it in your columns? If one of us, having the standing of Dr. Jamieson, can produce unimpeachable facts showing danger in any practice, it becomes a duty to issue a warning. But apparently Dr. Jamieson is not certain of his facts; indeed, Dr. Ross meets him effectually in the JOURNAL of March 20th, while the fact that petroleum generally succeeds where plenteous irritation has failed discounts fear of danger in that direction.

The doubts of both Dr. Jamieson and Dr. Miller appear to be founded on some sort of analogy which cannot exist. One might just as well issue a warning against charcoal biscuits because chimney-sweepers in the old dirty days suffered from cancer. One feels somewhat warmly on this matter, as it is not nice to place in one's own bowels or those of patients anything which can be fatal possibly. I could tell a tale of much restoration of happiness and comfort from personal use of petroleum. But I will instance the case of a friend of my own, an intensely busy man doing much valuable work for his fellows. He was reduced by constipation to such a condition that his friends thought that he was done for, and might well have about him just the disease against which this warning has been given. This was rapidly put right by a short use of petroleum, after other measures had failed ignominiously, and he is doing as much work as ever. No doubt many such cases are known to us all. I venture to think that mere suspicion, unsupported by facts, should not be publicly uttered about things in general and successful use. Similar conjectures interfered with the use of tomatoes some years ago, and possibly some one may scent danger in the banana before long.—I am, etc.,

Ticehurst, Sussex, March 20th. H. HAYES NEWINGTON.

COLOUR VISION THEORIES.

SIR,—It is unnecessary to point out to Mr. Greenwood and to others who, like him, have studied the phenomena of colour vision, that an unbiassed account of the trichromatic theory will not be obtained from one who is so strenuously advocating his own theory.

Those who have read my letter of March 13th will remember that I compared the sensation induced by a spectral colour after exposing the eye to the complementary colour, to the sensation induced without this previous excitation. This refutes the objection raised in the first dozen lines of Dr. Edridge-Green's letter (March 20th). In my first communication of January 2nd I said, "To my mind every theory that has yet been proposed is inadequate to account for all the facts." I am not aware of any "physicists who state that the trichromatic theory is not a theory but a fact"; certainly neither Mr. Greenwood nor I make such a foolish assertion, so this part of his letter is irrelevant.

In justice to Mr. Shelford Bidwell, I am anxious to know the volume and page of the *Proceedings* of the Royal Society where it is alleged that he makes the astounding assertion that the red lines do not appear with the Benham top when it is illumined "with the simple yellow." Those of us who have spun the top when the illumination is only sodium light have found that an intensely vivid red line is seen.

As I said before, Dr. Edridge-Green has examined a very large number of cases of colour blindness, and no doubt knows a great deal about that special subject; but his theory, which covers some of the facts of colour blindness, does not cover all the facts of colour vision, and must therefore be dismissed. When a man makes statements which he himself has never verified, that are known to be incorrect by those who have experimented upon the subject, when he misrepresents an opponent's statements, when he disregards everything that is opposed to his theory, we know what to think of him. No scientific discussion is possible with those described in the following lines:

> Each states the law and fact and face of the thing
> Just as he'd have them, finds what he thinks fit,
> Is blind to what missuits him, just records
> What makes his case out, quite ignores the rest.

—I am, etc.,

Newcastle-on-Tyne, March 21st. A. S. PERCIVAL.

SIR,—Dr. Edridge-Green's enunciation of the trichromatic theory is, in my opinion, faulty. The general theory is stated by von Helmholtz at length in the second edition of his *Handbuch* (p. 341, etc.), and abstracts of his reasoning will be found in my elementary manual, *The Physiology of the Special Senses* (p. 177, etc.), or in Mr. Parsons's excellent treatise on *Colour Vision* (p. 213, etc.). The basis of fact upon which the theory reposes is the possibility of reproducing any stimulus value in terms of three chosen stimuli (the sense in which this statement must be interpreted was explained in my last letter and in that of Mr. Percival). Starting, then, from the fundamental equation of stimuli for normal vision,

$$F = x\,R + y\,G + z\,V,$$

where F is any stimulus value, and x, y, and z quantitative measures of the three standard stimuli, the theory asserts that three independent excitatory processes exist, quantitative variations of which are defined by the three functional relations—

$$x = f_1\,(A, B, C),\ y = f_2\,(A, B, C), \text{ and } z = f_3\,(A, B, C).$$

This is the general theory; it makes no suggestion either as to the nature of the fundamental processes or the exact form of the quantitative relationship. Obviously we have the choice of an infinite number of possible mathematical relations between x, y, and z on the one hand, and A, B, and C (quantitative values of the excitatory processes) on the other. It is open to any one to assert that the theory in its most general form is not very helpful, but it is very difficult to see how it can be disproved, and certainly the considerations adduced by Dr. Edridge-Green do not do so.

The well-known valency curves which some writers, including apparently Dr. Edridge-Green, have assumed to be an integral part of the theory, are in fact merely attempts to give it pictorial distinctness, as v. Helmholtz originally pointed out (op. cit., pp. 346–7). Indeed, v. Helmholtz himself stated so long ago as 1885 that colour-blindness could not be completely explained by supposing that one of the three normal excitatory processes of colour vision was wanting. (*See* Koenigsberger's *Life of Helmholtz*, English translation, p. 364.)

As a matter of historical accuracy, it is undesirable that v. Helmholtz's general theory should be misrepresented, and this must be my excuse for intervening in the present discussion.—I am, etc.,

Loughton, March 15th. M. GREENWOOD, jun.

BURSTING GOLF BALLS.

SIR,—I was interested to read in your issue of March 20th the article on bursting golf balls by Drs. Elliot and Inman. About four years ago I had a patient whose eye was injured in exactly the same way as in the cases described—namely, by the bursting of a "fluid core" golf ball which he was dissecting, and the injection of some of the contents into his eye. Fortunately in this case, although a most severe conjunctivitis resulted, there was no permanent injury.

These balls are certainly most dangerous to cut open, and the public should be warned of the risk they run in so doing. In my case the contents of the ball were of a soapy consistency and strongly alkaline.—I am, etc.,

Reading, March 21st. W. BERNARD SECRETAN.

THE RUM RATION.

SIR,—Dr. Astley Cooper considers that the opinion about the effect of alcohol, of a man who takes alcohol in strict moderation, is not influenced by the alcohol he takes; and he gives his own experience. Sir Victor Horsley gives us the reason that Dr. Astley Cooper cannot "see any difference in his psychology." This is the first time I have heard an opinion called a psychology, but it seems to be Sir Victor Horsley's privilege to call anything—or anybody—by any name he pleases.

Dr. Astley Cooper's experience was this: At one time he allowed himself a moderate ration of alcohol, and during this time he had a certain opinion, or psychology, about it. At another time he went without, and during this time he had the same pyschology about it. *Ergo*, he says, the alcohol made no difference in his opinion. "Of course not—" says Sir Victor Horsley.

"The first psychical change produced by alcohol is precisely inappreciation." That is to say, Dr. Astley Cooper really had changed his opinion—his psychology, I mean—about alcohol, but owing to the dire effects of the poison, he was unable to precisely appreciate that he had changed it. This seems conclusive proof of the shocking ravages that alcohol makes in our precisely appreciation of our psychologies, if not upon our psychologies themselves; but further consideration raises a comforting doubt. Reference to Dr. Astley Cooper's letter shows that the period of his moderate drinking preceded the period of his abstinence, so that the loss of his precisely appreciation must have been due, not to his taking alcohol, but to his leaving it off. Fortunately for him, he has only to resume it in order to recover his precisely appreciation, which it must be a dreadful thing to lose.

Sir Victor Horsley is of psychology that "until Dr. Astley Cooper employs accurate laboratory methods of investigation he will continue to overlook the real effects of small quantities of alcohol" upon his psychologies, or upon his precisely appreciation of them. I have a passion for accurate laboratory methods of investigation, but I see difficulties, which no doubt Sir Victor Horsley can remove, in their application to this case. Suppose we administer "small" doses of alcohol to a guinea-pig, and connect the guinea-pig electrically with some recording machine, how are we to discover the opinions, I mean the psychologies, of the guinea-pig about alcohol before and after the "small" doses are administered? and how are we to discover the guinea-pig's appreciation—his precisely appreciation—of his own opinion? I do not say that the proposal to apply accurate laboratory methods of investigation to the discovery of the opinions—I beg pardon, the psychologies—of guinea-pigs about alcohol is "obviously delirious nonsense." I trust I should never so far fail in self-respect as to use such an expression; but it does seem that the matter wants thinking out. Of course, if "accurate laboratory methods of investigation" means measuring the alcohol in c.cm.'s instead of in ounces, their application would be comparatively easy.

I trust it has not escaped the notice of my readers that I have followed Sir Victor Horsley's example in placing the adjective "small," in "small" doses of alcohol, in inverted commas. What Sir Victor Horsley's object may have been in putting the word between quotation marks I cannot surmise; but I will frankly confess the meaning that I intend to convey by this artifice. What I mean to convey is "Oh yes! you call them small doses, but to you, habitual drunkard as you are, a bottle of gin is a 'small' dose; in fact, you know very well that you are never sober enough to distinguish between what you call a 'small' dose and a large one." This is what I mean to convey.—I am, etc..

Parkestone, Dorset, March 20th. CHAS. A. MERCIER.

SIR,—I regret that, in referring to the condemnation of the rum ration by the professors of military hygiene at the Military College, I inadvertently included Colonel Melville. Though Colonel Melville, in his *Military Hygiene and Sanitation*, expresses views on the use of alcohol from which, for many reasons, I dissent, he condemns the present use of rum as cordially as I do. Thus he says, "It cannot be too strongly laid down that a daily issue of spirits is wrong."

That is my position. Again, on the unscientific use of the popular word "food" and the unjustifiable application of this term to alcohol by Major Lelean and others, Colonel Melville says, quite truly, in speaking of its oxidation in the body, that "in actual practice it cannot be used as a food, since in quantities sufficient to produce any substantial supply of energy the effect on the central nervous system would be so great as completely to neutralize any good effects so produced." That is my point.

But I need not pursue these points of agreement and difference between us. It is sufficient that I should apologize for having classified Colonel Melville with Parkes, Lane Notter, and Firth on this question.

I am unable to see the purport of Dr. Wilkinson's letter or his justification for writing it. This discussion seems to me to be proceeding on the usual lines of, for and against, the drinking of rum. He states that our splendid shots in the navy, our gunlayers, and petty officers, are all rum drinkers. But he gives no names of men or ships in support of this assertion, which, by the way, he elsewhere accidentally calls a "fact." My information is entirely opposed to his, but I shall be very glad to make inquiries if he will furnish me with the actual facts on which he bases his statements, and if he will inform me of any experimental evidence to show that alcohol *improves* shooting.

I quite agree with him that no cause is served by exaggeration, and would point out that the absence of it is the most attractive feature of teetotalism. There is no exaggeration possible in total abstinence; on the contrary, such human defects as exaggeration and bias are the early and common consequences of taking drugs such as alcohol, morphine, ether, etc.

I am sorry that Dr. Ogilvie should so completely misjudge both the scientific and national aspects of the rum ration issue and the consequent popularization of this deleterious spirit among the civilian population, which is rapidly extending. His assertion that I am "intolerant" is merely a discourtesy and not any argument in this discussion, and his last paragraph is a regrettable act of mental confusion.

The discussion on the treatment of delirium tremens has not been characterized, as he suggests, on the part of teetotalers by indifference to life, for our chief authority on "tapering off," Dr. Hare, who was one of the protagonists in that discussion, is a teetotaler. What was somewhat disturbing about that discussion was that it appeared as if physicians were inclined to divide themselves into two camps—namely, for "tapering off" or "cutting off" rather than for treating each case on its merits, just as a recent discussion has shown that some surgeons are inclined to disinfect all their septic wounds with some particular drug, no matter what the condition of the tissues may be.—I am, etc.,

London, W., March 23rd. VICTOR HORSLEY.

SIR,—The *Lancet* of October 10th, 1914, contained a letter of mine in which I defended the alcohol ration, using certain therapeutic arguments which, so far as I am aware, have not been refuted by Sir Victor Horsley nor by any other antialcohol crusader.

The first of these arguments was a statement made by Professor Besredka, of the Pasteur Institute, in a monograph contributed to the last International Medical Congress on the subject of anaphylaxis. He related experiments on animals which proved that alcohol prevented death from artificially induced anaphylaxis. Now this pathological state closely resembles rapid death from acute infectious diseases—for example, septic pneumonia.

The second argument consisted in a brief account of a research which I carried out in the research laboratories at St. Mary's Hospital on the effect of alcohol upon phagocytosis. It is a stock "scientific statement" of many teetotalers that "alcohol inhibits phagocytosis," which is true with regard to a few bacteria, and with many of them if very excessive doses be given (though we have good evidence to show that colossal doses of whisky taken at once may neutralize an otherwise fatal amount of snake venom).

My laboratory experiments appeared to prove that, with some exceptions (for example, staphylococci, tuberculosis bacillus), alcohol distinctly increased phagocytic action against some of the common pathogenic organisms (pneumococci, *B. coli*, *B. influenzae*, streptococci). This result was only obtained when the alcohol was present in the serum in a highly dilute proportion, and the ideal dilution worked out to an approximate equivalent of two ounces of alcohol to a 10-stone man. It is interesting to note that the emergency ration has been fixed at 2½ oz.!

If these laboratory deductions, which are supported by clinical observations of many sound observers, cannot be proved by further trustworthy researches to be unsound, then this tirade against the prophylactic use of the alcohol emergency ration which Sir Victor Horsley and his colleagues of the antialcohol fraternity are making is mistaken.

If his condemnation of alcohol as a remedy on "scientific grounds" is obscure, still more difficult to some of us is his logic. In one of his letters to the JOURNAL he makes the assertion that no one who uses alcohol is

capable of an unbiassed opinion on the subject of its action. Conversely, one who does not use it is not qualified to discuss its merits impartially. So we have the absurd deduction that the only competent judge must be one who neither uses alcohol nor abstains from it.

Total abstainers refuse to differentiate between use and abuse. From the horrors of alcoholism they have recoiled so violently that their balance and equilibrium have been badly disturbed. Whether that praiseworthy and perfectly natural recoil quite justifies the intemperance with which they attack those who hold more moderate views is questionable. "The vast amount of work which has been done on the subject" (Sir Victor Horsley) has only proved what we all admit—that a sane man is a sober man, usually even in his statements, but it has not proved that he is always a teetotaler!—I am, etc.,

London, W., March 20th. H. LYON SMITH.

THE PHTHISICAL SOLDIER AT THE FRONT.

SIR,—The letters that have appeared in your columns on this subject are of great interest to all those of us who are engaged in work on tuberculosis.

But I think a most important point has been ignored by the writers, namely, the very grave risk of infection to others from the presence of a case of tuberculosis amongst the troops who are so intimately associated with one another in barracks, camp, or trenches. Both the army and navy have always, I believe, discharged as medically unfit all cases of tuberculosis as soon as diagnosed, and surely this rule should be more rigorously enforced in war time.

Also, although some cases may appear to do well for a time, these are, I think, the exceptions, as very few tuberculous patients can stand the stress and strain of actual warfare. Here, in Wiltshire, many of my tuberculous patients have enlisted as recruits or rejoined the colours. None of them have done so with my approval, and many have only come to my knowledge on their return home, invalided after a few months' training. The following two cases seen recently are examples:

1. *Early Pulmonary Tuberculosis.*—Returned from sanatorium and, failing to find work, enlisted in 1913; sent to France in August, 1914; had haemoptysis during the retreat from Mons, sent home on temporary sick leave, developed tuberculous foot whilst in hospital, and has now been invalided permanently.

2. *Pulmonary Tuberculosis Moderately Advanced.*—Returned from sanatorium in 1913; called up as a reservist and rejoined the Marines in August, 1914; six weeks in the North Sea, volunteered for extra work in the stokehole, broke down and spent some weeks in hospital, and has now been permanently invalided (with an increased pension).

Whilst all honour is due to tuberculous recruits for their patriotism, I do not think it is right, either to the men themselves or to their companions, to pass for the Services any who have definite signs or history of tuberculosis. Sick men occupy the time of army and navy surgeons, and beds in hospitals, both of which are needed far more for the wounded.—I am, etc.,

March 18th. LEONARD CROSSLEY, M.D.,
County Tuberculosis Officer for Wiltshire.

THE EFFECT OF NECKWEAR ON THE HEART.

SIR,—In the BRITISH MEDICAL JOURNAL of April 20th, 1912, I related a cardiac case which greatly improved with no other treatment than thoroughly loose neckwear. The lady in question subsequently led a very active life for nearly four years; since then I have lost sight of her.

To test the accuracy of my remarks on the effect of neckwear on blood pressure a friend adjusted on himself a sphygmometer. The index showed 130 as his normal blood pressure. He then changed his collar for a smaller one, which on my advice he had recently discarded. In an hour and a half the pressure rose to 155, and finding his head very uncomfortable he stopped the experiment.

It would appear that to meet this extra pressure a robust heart gets hypertrophied, while a weaker one gives way and becomes dilated, and thus the pressure is much reduced.

In March, 1911, a lady of middle age consulted me about a weak heart. Her neckwear being decidedly tight I advised her to loosen it. She relaxed her things about half an inch, and at first got a little benefit, but as her neck rapidly extended to this limit and I could not persuade her to give it more freedom, she soon relapsed and sought other advice. But in December, 1913, her condition was getting serious. She had then in addition kidney mischief, as shown by immense oedema of the eyelids. The pulse was fairly regular but feeble. I then with some trouble persuaded her to completely relax her neckwear. She soon improved in every way, and in six months had quite regained her health, her activity, and her appearance. This improvement had been well maintained when I saw her a month ago.

A lady from Bournemouth came to see me last November. Her case was somewhat similar to the preceding, but there was not much puffiness about the eyes. However, there was very marked rheumatic arthritis in her fingers. She had suffered for over three years, had had every ordinary advice and treatment, and was much depressed by their total failure. I gave her the same advice as in the former case. A month later she wrote to me, "Since I saw you I have continued to improve. I am most thankful to feel so much better. I now wear my neck things much looser." In another month she wrote that not only was her heart better, but her hands were very much better.

I have known great improvement in other arthritic cases by the same means.

A medical friend, aged 28, had been anxious to enter the Indian Medical Service, and for this purpose had been three times examined as to his physical state by eminent men, and pronounced sound. Then he had a mild attack of enteric fever, when he was again examined by a well-known consultant, with the same result. I had often reproved him for his tight collars, and while recovering from the enteric I gave him a special hint as to the future, saying that unless he took my advice he would get cardiac hypertrophy. I had often noticed that a small illness which produced no emaciation was often the beginning of more serious trouble apparently because the neck, unfettered for three or four weeks, enlarged considerably; thus, when the convalescent returned to his previously tight neckwear, the neck pressure was much greater than before, and then something in the animal machinery must sooner or later go wrong. But my hints were ridiculed. Six months later my young friend applied for life insurance, but two medical referees found *then* that he had cardiac hypertrophy, the very thing I predicted; and now I am much the better man of the two in walking up a hill, though 43 years his senior!

But, in addition to its interference with the blood pressure, there is another factor to which I have alluded elsewhere, which seems till lately to have escaped notice as regards its influence in cardiac cases, and that is pressure on the vagus in the neck either by tight neckwear, or by a high collar pressed on to the vagus by the chin while reading or writing.

I have previously hinted that neck pressure was a probable cause of angina. I have had this idea much strengthened of late, and Sir Clifford Allbutt has kindly pointed out to me that this phenomenon by pressure on the vagus is explained in Wenkebach's *Unregelmässige Herzthätigkeit* (1914, p. 156). About four years ago, when in Italy, I found that medical men there had strongly taken up my ideas, and the principle they had laid down that neckwear should be loose enough to admit the whole hand is an excellent one.—I am, etc.,

London, N.W., Feb. 24th. WALTER G. WALFORD.

THE PREVENTION OF TETANUS.

SIR,—On January 2nd, 1915, Colonel Maynard (of Calcutta) wrote to you apparently misunderstanding my correction of Sir R. J. Godlee's erroneous statements about Lord Lister's use of pure carbolic acid, and misrepresenting my surgical methods of treating infected wounds. Thinking that his letter was only due to lack of information on his part, I replied on January 9th in your columns, p. 93.

To my extreme astonishment I see in your current issue a deliberate revival by Colonel Maynard of precisely the same misrepresentations.

What may be the object of Colonel Maynard's persistent attack I do not know, but it obliges me to again state that my surgical practice consists in the following *local* treatment of wounds:

A. *Clean Wounds.*—Aseptically as far as possible, but with free use of antiseptics in sterilizing skin, hands, gloves, dressings, etc.

B. *Infected Wounds.*—Antiseptically as far as possible—that is, on Lord Lister's principle of using antiseptics which shall not, if it can be avoided, produce further injury to already damaged tissue.

(Under any circumstance, every case is dealt with on its merits, and not according to any hard and fast routine.)

Colonel Maynard refers to the possibility of his son being wounded and requiring "antiseptic" treatment. As both of my sons have been wounded, I can, with gratitude to my R.A.M.C. colleagues, assure Colonel Maynard that if his son has a similar misfortune he will receive thorough anti-anaërobic treatment—that is, injection with anti-tetanic serum, disinfection of the wound with hydrogen peroxide, mercury, etc.—not pure carbolic acid—and unremitting attention.—I am, etc.,

London, W., March 23rd. VICTOR HORSLEY.

THE TREATMENT OF MALIGNANT DISEASES OF THE SKIN.

SIR,—In reply to Dr. Christopher Kempster's inquiry in the JOURNAL of March 20th, I have to state that it is a common practice to give massive doses of *x* rays, equivalent to eight or ten pastille doses, through a filter of 4 mm. aluminium. The doses are measured with the pastille on the proximal side of the filter, 7.5 cm. from the anode of the tube, and the same exposure is given to the whole area treated.

In a paper on Some Experiments with X-ray Filters (*Archives of the Roentgen Ray*, January, 1915) I mentioned a patient who had these massive doses repeated twice a week. Seven sittings were given in three and a half weeks—a total of seventy pastille doses—through a 4 mm. aluminium screen. The only effect on the skin was pigmentation, while two large sarcomatous masses in the flank and groin disappeared entirely. The patient has been well four months, and is able to do twenty-mile route marches with a volunteer corps.

Some deep-seated rodent ulcers and certain other tumours are frequently influenced by these massive doses of filtered rays, and in my experience these penetrating *x* rays are of greater service than radium in certain cases.—I am, etc.,

London, W., March 22nd. JAMES H. SEQUEIRA.

NEED OF THE ARMY FOR MORE MEDICAL MEN.

SIR,—I have read the letter of Sir Alfred Keogh in the issue of the BRITISH MEDICAL JOURNAL of March 13th, p. 488, and I think that a great many practitioners are in a similar position to myself—namely, in the prime of life (I am 44 and very fit), keen to serve but held back by big industrial practices, large families, no savings, and heavy expenses. I am also of opinion that many of us could be set free to serve by some arrangement by which "locums" would expect no higher fees than the army pay of the practitioners whose place they take. This would mean fees of from 5 to 7 guineas a week. The practice could then be carried on in the absence of the principal, and it is hoped enough would be earned to pay the expenses of that practice. Surely £300 a year, free of all expenses, should be enough remuneration at a time like this. The members of no trade or profession should take advantage of a national emergency to charge excessive rates for their services. Thus the financial loss to the "serving practitioner" would be his personal expenses only, and this, I feel sure, a great many of us would willingly bear.—I am, etc.,

March 16th. ANXIOUS.

THE annual meeting of the American Association of Immunologists will be held at Washington, D.C., on Monday, May 10th, 1915. The President is Dr. Gerald B. Webb, of Colorado Springs; the Vice-President, Dr. George W. Ross, of Toronto; the Secretary, Dr. Martin J. Synnott, of Montclair, New Jersey. The association was formed in June, 1913, at Minneapolis, Minn. Its objects are to unite the physicians of the United States and Canada who are engaged in the scientific study of immunity and bacterial therapy; to study the problems of immunology, and to promote, by its concerted efforts, scientific research in this department; to spread a correct knowledge of vaccine therapy and immunology among general practitioners.

Obituary.

WILLIAM FREW, M.D.,

KILMARNOCK.

KILMARNOCK has just lost the doyen of its medical faculty by the death of Dr. William Frew, one of the ablest and most highly respected practitioners in the West of Scotland. He was born in Ayrshire sixty-seven years ago. He studied at the Universities of Glasgow and Edinburgh, and took the degree of M.D. at the latter. After practising successively at Troon, Newmilns, and Galston, he settled in Kilmarnock in 1887, where his ability and courteous and dignified demeanour enabled him to gather together one of the largest and best class practices in the county. Of rich experience, a keen observer, of a frank and genial disposition, and of a kindly nature, Dr. Frew was beloved and trusted by his patients, and was held in the utmost respect and esteem alike by his professional brethren and by the public generally. For many years he was one of the physicians to Kilmarnock Infirmary, and there his freshness of mind was manifested by the range of his prescribing and the regular introduction and testing of the newer remedies. He rendered splendid service to the infirmary, and his disinterested labours on behalf of the institution will long be remembered by a grateful public. Dr. Frew was an acknowledged authority on cerebro-spinal fever. This disease was new to Scotland until some eight or nine cases occurred in Galston while he was in practice there, and he described its symptoms and effects in a series of valuable articles which he contributed to this and other medical journals. He was a medical referee for Ayrshire under the Workmen's Compensation Acts, and frequently sat with the Sheriff in claims that came before the court. He took a deep interest in the work of the British Medical Association, and for many years was seldom absent from any of its regular meetings. He had been President of the Glasgow and West of Scotland Branch of the Association, and in that capacity his addresses to the members were much appreciated, and proved of great professional value. Of Dr. Frew it can be truly said that he was an energetic and painstaking physician, ever eager to increase his knowledge and keep himself abreast of the progress and development of his profession. With that view he attended the International Medical Congresses in most of the capitals of Europe—Paris, Berlin, Moscow, Rome, Vienna, Budapest, etc. He was a constant, hard, and untiring worker, devoted to his profession, and ever ready to respond to its demands, and while he had little leisure to give to public work his kindliness of heart prompted him to take a keen interest in the Society for the Prevention of Cruelty to Children, and was one of the founders of its local branch, of which he was for many years the president. He was also an enthusiast in the old volunteer movement, in which he held the rank of Surgeon-Lieutenant-Colonel. He was a justice of peace of the County of Ayr.

Dr. Frew met with a rather serious accident ten years ago, and although he recovered from the resulting illness he never entirely regained his wonted health and strength. Three years ago he made over his practice to his son, Dr. Douglas Frew, and sought rest and retirement in the quiet seaside village of Barassie. Of late his health had greatly improved, but in the end of February he was again seized with an illness which terminated fatally on March 2nd. His remains were brought to his old home in Kilmarnock, and were on March 4th conveyed to the new cemetery for interment.

Dr. Frew is survived by his widow and four sons and four daughters, two of the former being members of the medical profession.

WILLIAM GILBERT DICKINSON, M.D.DUNELM., L.R.C.P.LOND., D.P.H.ENG., M.R.C.S.ENG.

A STRENUOUS life reached its termination on March 19th, at Clifton, Bristol, where Dr. Dickinson had been living for a year or so since he retired from practice at Portishead, in Somersetshire.

He received his medical education at St. Thomas's Hospital, where he was a contemporary of Sir George

Makins, recently a vice president of the Royal College of Surgeons of England.

From 1875, when he received the diploma of M.R.C.S. Eng., Dr. Dickinson took great interest in the administration of college affairs. He belonged to the Association of Members, founded in 1884, and was largely instrumental in founding the Society of Members, and acted as its honorary secretary for fifteen years, only resigning in 1909, when he severed a connexion of many years at Putney, and sought a less exacting practice at Portishead. For this long period he was the leading champion of the rights of Members, and conducted the campaign with a thoroughness and enthusiasm few can hope to imitate. Yet, withal, Dr. Dickinson remained *persona grata* at the College, for he was ever a courteous adversary.

Any and every movement for the advantage of his fellow practitioners met with his hearty support. He was therefore found to be concerned in the management of the Medical Sickness Society and of the London and Counties Medical Protection Society. He was the author of many papers on the reform of the Royal College of Surgeons of England and on the better organization of the profession.

He had attended every annual meeting of the Fellows and Members at the College of Surgeons. At the last meeting he was able to attend—that which took place on November 20th, 1913—he had placed the following resolution, typical of his views, on the agenda:

> That this meeting, in view of the unsatisfactory nature of the regulations governing the conduct of the annual meetings, and of the small attention given to the resolutions agreed to, calls upon the Council to summon a statutory meeting of the Corporation within the next six months, in order to consider whether the annual meetings shall be continued under present conditions.

But his physical powers were then failing, and aphasia prevented his putting it forward.

THE LATE SIR GEORGE TURNER.—Dr. J. Ward Cousins (Southsea) writes: "Sir George Turner was a native of Portsmouth and a member of a well-known family in that locality. He obtained the diploma of M.R.C.S. and L.R.C.P. in 1872, and soon afterwards was appointed medical officer of health for Portsmouth and pathologist at the Royal Portsmouth Hospital. Not long after his return to England, in 1908, he wrote to me, stating that he feared that indications of leprosy were threatening him in his hands. Our old and distinguished friend was, indeed, worthy of the honour of knighthood for his life devotion to science, and to day it is the great regret of all his old friends that he has been spared so short a time to enjoy his well-earned honour." There seems to be some doubt as to the age of the late Sir George Turner. He himself told us in 1913 that he was nearly 50 when he entered the service of the Cape Colony as medical officer of health in 1895. Dr. James Stowers informs us that he was 67, and this is confirmed by the announcement of the death in the *Times* of March 17th. It would appear that he was born on February 10th, 1848.

THE LATE DR. E. D. WHITTLE.—Captain H. S. Hollis, R.A.M.C.(T.), who is serving in France, writes: The news that Edward Denis Whittle, L.R.C.P., M.R.C.S., had been killed in the Singapore riot came as a great shock to me. Whittle was always one who courted danger. During his school days he daily took the high dive in all weathers from the minute platform at the top of the ladder raised many feet above the deck of West Pier, Brighton, and cultivated a "garden" on the extreme edge of the roof of the house in Regency Square in which he lived. On one occasion he leaped sideways from one first floor window ledge to the next in line with it along the outside of the wall of the Grammar School in Buckingham Road. He was three times captain of the Serpentine Swimming Club by each time winning a scratch mile race. After being house-surgeon at University College Hospital he entered the Colonial Medical Service in 1908.

DR. FRANCIS HOLLINSHEAD, of Selly Oak, Birmingham, who died recently, was one of the oldest members of the British Medical Association. He studied medicine at the Sydenham and Queen's Colleges, Birmingham. He won the Sands-Cox Prize as the best student of his year at Queen's College in 1870. He took the diploma of M.R.C.S. in 1870, and that of L.S.A. in the following year. In 1891 he obtained the degree of M.D. from the University of St. Andrews. For over thirty years he was M.O.H. and Public Vaccinator of the First District and of the Workhouse Birmingham Union. He had a large practice, particularly in midwifery, and had attended three generations of women in their hour of travail. He was universally popular, and he was described by the local papers as "Selly Oak's most familiar figure." A meeting was held as a mark of respect for his memory, and a message of sympathy was sent to his widow. The Birmingham Guardians passed the following resolution: "That the Clerk convey to the family their deep regret at his death and their great appreciation of his forty-four years' service." The funeral, which took place on March 1st, was largely attended, although the weather was unfavourable. Among the mourners were the Chairman of the Birmingham Board of Guardians, the Clerk to the Guardians, the Steward of Selly Oak Infirmary, the Master of Selly Oak House, and several of Dr. Hollinshead's professional brethren.

WE regret to announce the death of Dr. JOHN VINRACE, one of the oldest practitioners of Birmingham. He was born at Ashby-de-la-Zouch, and was 81 years of age at the time of his death. He began the study of medicine at Sydenham College, Birmingham, in 1851, and was admitted M.R.C.S.Eng. in 1855. In 1857 he became L.S.A., and in the same year he obtained the M.D. degree of St. Andrews. Dr. Vinrace originally started practice in Moseley, but he soon became a member of the firm of Cartwright and Wright, which was at that time the only medical partnership in Birmingham. For many years he practised at Hockley Hill and Bromsgrove House, Birchfield Road, and some fifteen years ago he removed to Oxford Road, Moseley, where he died. In 1854 he married Emelin, the daughter of Mr. John Mappin, by whom he had five sons and one daughter. Four of the sons became medical men. Dr. Vinrace was a man of great judgement, and had a sound practical knowledge of his profession. He attended many of the oldest Birmingham families, and was held in the highest esteem both by the public and his medical brethren.

DR. KENNETH C. C. GRAY, youngest son of Professor Andrew Gray, of Glasgow University, has died from pneumonia during a short visit to London. He was educated at the High School and University of Glasgow, and graduated M.B., Ch.B. in 1909. He was house-surgeon in the wards of the late Professor Samson Gemmell in the Western Infirmary. He was afterwards indoor house-surgeon in the obstetrical department of the Glasgow Maternity and Women's Hospital. He had settled in practice in the Broomhill district, and leaves a wife and one child.

DR. CAYETANO DEL FORO, who died recently, was best known as a prominent figure in Spanish politics. He was the author of several medical works, the most important among them being a treatise on diseases of the eye. He also was for twelve years the editor of the first journal of ophthalmology in Spain. He was several times Alcalde of his native city, Cadiz, and was a Knight of the Grand Cross of Carlos III, of that of Alfonso XII, and of that of military merit. It is proposed to erect a monument in memory of him.

WE regret to announce the death of Dr. GIUSEPPINA CATTANI, lecturer on general pathology, first in the University of Turin, later in that of Bologna. Her name is associated with that of Tizzoni in the investigation of tetanus. She was also the author of several memoirs embodying the results of independent research. The state of her health made it impossible for her to continue her labours as a university teacher, but she continued to direct the laboratories of the civil hospitals and the observation asylum of her native town, Imola.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association, being anxious to assist in facilitating exchanges between medical officers of the Territorial Force in accordance with the War Office letter of December 10th (BRITISH MEDICAL JOURNAL, February 27th, p. 402), is prepared to publish in the JOURNAL applications for exchange. In all cases officers desiring exchange should furnish information on the following points:

1. Rank and name .....
2. Regiment *or* medical unit .....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally .....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Present address and date .....

Surgeon-Captain James W. Cook, M.B., of the 2/5th Battalion of the Lancashire Fusiliers, stationed at Southport, desires to exchange. The unit is expected to move to near Malvern in the middle of April as part of the East Lancashire Division, T.F. Surgeon-Captain Cook resides at Bury, Lancs. A junior medical officer with a temporary commission for the period of the war would be accepted; he should engage for general service. The work consists of medical attendance on the sick, training stretcher bearers, supervision of sanitary squad, and the usual duties of a regimental medical officer. Allowances, while in billets, 4s. 9d.; in camp, field and ration allowances will be allowed. Surgeon-Captain Cook would be willing to make up any mess expenses other than beverages over and above allowances, or would consider any other terms in reason.

ROYAL NAVY.

DEPUTY INSPECTOR-GENERAL JAMES L. SWEETNAM has been awarded a Greenwich Hospital pension of £50 a year in the vacancy caused by the death of Deputy Inspector-General W. G. Ridings.

Universities and Colleges.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

SECOND M.B. (*Anatomy and Physiology*).—*E. G. Anderson, *J. A. Berry, J. S. Clark, L. W. Hearn, G. M. Kerry, W. McD. Pettigrew, W. A. Tweddle.

* Honours, second class.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examination indicated:

SECOND M.B., CH.B.—Annie Clark, W. Collins, Ethel Mary Mathews, *Winifred Hannah Wells.

* With distinction in Anatomy and Physiology.

UNIVERSITY OF BRISTOL.

MR. F. P. MACKIE has taken the degree of M.D. with honours.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*†J. R. Crolius, *†S. C. Dyke, *†L. A. J. Graham, *†R. A. Holmes, *†S. B. King, †N. W. Rawlings, *†H. B. Taylor, †A. K. S. Wyborn.

MEDICINE.—*†C. D. Banes, *†A. U. L. Bennet, *†S. C. Dyke, *†J. D. Ferguson, *†R. A. Holmes, *†S. B. King, *†H. B. Padwick, *†R. Quesada-Jiménez, †N. W. Rawlings, †W. H. Rhys-Jones, *†H. B. Taylor.

FORENSIC MEDICINE.—B. A. Bull, J. E. Cheesman, S. C. Dyke, J. L. Hamilton, S. B. King, H. B. Padwick, R. Quesada-Jiménez, W. H. Rhys-Jones, H. B. Taylor.

MIDWIFERY.—B. A. Bull, S. C. Dyke, H. B. Taylor.

* Section I. † Section II.

The diploma of the society was granted to Messrs. J. R. Crolius, S. C. Dyke, R. A. Holmes, S. B. King, N. W. Rawlings, H. B. Taylor, and A. K. S. Wyborn.

THE Royal Dental Hospital, Leicester Square, has received a donation of £100 from the Worshipful Company of Grocers.

Medical News.

THE library and offices of the Royal Society of Medicine will be closed for the Easter holidays from Thursday, April 1st, to Tuesday, April 6th, both days inclusive. The meeting of the Section of Pathology announced for March 30th will not be held.

THE Italian Red Cross Society has decided to build several two-story houses in the regions lately devastated by earthquake for the accommodation of *medici condotti*, who correspond to our Poor Law medical officers. Funds to the amount of nearly £5,000 have already been subscribed for the purpose.

DR. A. G. SOUTHCOMBE, a Representative of the City Division, and one of the party who after the annual meeting at Aberdeen accepted the invitation of Captain George Smith to visit his residence, Pittodrie House, and afterwards climbed the hill of Bennachie to see the prehistoric vitrified fort at the summit, writes to express the grief with which he has read that Captain Smith was killed during the recent operations at Neuve Chapelle.

DR. F. J. WALDO, H.M. Coroner for the City of London, was elected President of the Coroners' Society of England and Wales at the annual meeting of the society on March 23rd. In thanking the society for his election, Dr. Waldo said that the founder and first president (for twenty-six years) was Mr. Serjeant Payne, who introduced many reforms, and the first secretary was Mr. Langham, both predecessors of his as coroner for the City. Succeeding presidents were Sir John Humphreys and Dr. Danford Thomas, coroners for Middlesex. The object of the society was to encourage co-operation among coroners with a view to the effective discharge of their duties, and the maintenance of the privileges and rights of the coroner.

A BILL dealing with quack medicines and doctors who lend their names and influence to the sale of such remedies, as well as those who unduly advertise themselves, has, says the *New York Medical Journal*, been introduced in the New York State Senate by Senator George H. Whitney, of Saratoga, at the instance of the State Department of Education. The bill defines as "unprofessional conduct" the advertising of services or remedies in any manner previously challenged by the State Board of Medical Examiners and disapproved by vote of the Regents. It also declares it "unprofessional" for a practitioner to continue in the employ of any person, firm, or corporation whose advertising has been similarly challenged, or to make a practice of writing letters or sending out circulars or employing touts to get patients. The wilful betrayal of professional secrets, habitual drunkenness or addiction to drugs, or the division or promise to divide a fee with another doctor, or accepting a divided fee without the knowledge of the person paying such fee, are also to be declared "unprofessional."

SOME useful recipes of dishes for infants and children under school age were given by Miss Florence Petty in a lecture delivered under the auspices of the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, at the Royal Society of Medicine, Wimpole Street, on March 22nd. With regard to cooking of food intended for children, one important point was, she said, to teach them to masticate. For this purpose, pulled bread was excellent, and had the additional advantage of being very easily made. Eggs, also, could be made to answer the same purpose. They were usually one of the first solid foods to be given to children, and in most cases were so soft that they were swallowed without any attempt at mastication. To avoid this, the egg, instead of being lightly boiled, should be put for a few moments into a saucepan of boiling water, the heat of which would quickly coagulate the outside. The saucepan should then be covered with a lid and drawn to the side of the fire, where the egg should be allowed to cook slowly for ten or fifteen minutes. Eggs cooked in this fashion were more difficult to swallow in large pieces than the ordinary soft-boiled egg, and his efforts to deal with its unexpected resistance would teach the child the elements of mastication. Vegetables should be cooked in a very small quantity of water, and any water remaining should be kept for stock, or even for drinking. More than one working-class mother, said Miss Petty, had found this water an excellent substitute for tea at the evening meal, and it possessed, in addition, very useful medicinal properties. Two great rules that should be observed in cooking were to waste nothing and to cook slowly.

Letters, Notes, and Answers.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

QUERIES.

INCOME TAX.

A CORRESPONDENT who has entered into partnership with another local practitioner inquires as to the correct basis of assessment.

*** The legal position is that the new firm has succeeded to the two practices formerly carried on separately, and the case accordingly appears to fall within the rule known as the 4th Rule of Cases 1 and 2, Sch. D., which provides for assessment on the average of the three previous years' profits notwithstanding the succession. If, however, it be found, at the end of the firm's first year, that the profits have fallen short owing to some specific cause, the rule referred to above authorises an adjustment of the assessment—presumably by way of repayment.

J. L. S. T. inquires as to the allowance of travelling expenses incurred in visiting an isolation hospital, the surveyor of taxes having refused to make the deduction.

*** If the income from the appointment is assessed under Sch. E. the surveyor is correct in his contention. It has been held in the Courts that the expense of travelling to the place of employment is distinct in nature from the expense of travelling in the course of exercising the duties of the employment (see Cook *v.* Knott, 4 T.L.R., 164). It will be well for our correspondent next year to apply to have the profit of the employment assessed in one sum under Sch. D. with the profits of his general practice, a course now permitted by the Board of Inland Revenue, and adopted, we believe, in a large number of such cases.

ANSWERS.

FRENCH MILITARY SURGERY.

FLEET SURGEON.—*Le Caducée* (15, rue de Verneuil, Paris) is a journal devoted to military medicine and surgery. It is, we believe, appearing regularly, and could no doubt be got through Williams and Norgate, 14, Henrietta Street, Covent Garden, W.C. The *Bulletins et mémoires de la Société de Paris*, published weekly by Masson et Cie., 120, Boulevard Saint-Germain, Paris, is at present almost wholly given up to military surgery.

LETTERS, NOTES, ETC.

A WARNING.

MESSRS. E. AND S. LIVINGSTONE, publishers and booksellers, 15, 16 and 17, Teviot Place, Edinburgh, desire it to be known that they do not emply canvassers, and do not publish a book with the title *International Medicine* or *International Clinics*. They are informed that medical men in Kent and Surrey have been induced to give orders to a man, described as tall, thin, fair, with moustache, about 45 or 50 years of age, who carried a bag from which he produced pages from medical works, purporting to be samples.

THERAPEUTIC USES OF TURPENTINE.

DR. GEORGE FOY (Dublin) writes: I ask space in your columns to remind my medical brethren, especially of the R.A.M.C., that one of our most valuable styptics, antiseptics, and stimulants—turpentine—is being neglected in this war. Recommended by Dioscorides, Galen, and the younger Pliny, it comes with splendid testimonials to us. Coming to modern history, we find the oil approved of by Lanfranc, *Petite Chirurgie*, 1280, and by Francis Payre Porcher, whose book was published by order of the Surgeon-General of the Confederate States Army. Both Lanfranc and Porcher knew of the styptic properties of the oil; the former from his experience as a military surgeon in the Lombardo-Venetian wars, and the latter as a Confederate surgeon of high rank.

Until the last decade the chemistry of oil of turpentine was not fully investigated. We now know that the oil is a hydrocarbon with the formula $C_{10}H_{16}$, and consists chiefly of pinene, which is also found in oil of eucalyptus and oil of juniper. Pinene has marked antiseptic properties and absorbs oxygen readily. The unpleasant taste of the oil is greatly lessened by the production of terpine and terpinol, both of which preserve the antiseptic properties of turpentine, of which products M. H. Bocquillon-Limousin published in 1894 an account of their preparation.

The opposition to the use of turpentine is based on the fact that the oil injuriously affects the kidneys and that it inflames healthy skin and other tissue. During thirty years I have prescribed turpentine freely, both for external and internal use. For tape-worm I gave 1 oz. doses of the oil with castor oil, and I have never had a single case of kidney trouble from it. I have found it the most useful drug in the meteorism of typhoid fever. For centuries it has been used as a domestic remedy for cuts and bruises to prevent inflammation. As a boy I have seen the scars of wounds of pensioners who fought in the Peninsular war and learnt from them that each man carried into battle a small package of oakum and that with this the wound was plugged, and when possible some oil of turpentine was poured into the wound.

G. Wallach (*Jour. Ch. Soc.*, 1891) enumerates nine terpenes ($C_{10}H_{16}$), of which the principal are pinene, camphine, and sylvestrene. And he tell us that pinene is the main constituent of oil of turpentine. Pinene is a powerful antiseptic, a good heart stimulant, and is freely eliminated by the lungs. Soldiers physically weak from exertion in battlefields or trenches and exhausted from loss of blood from wounds are notoriously prone to typhoid fever. Such cases seem particularly suited for turpentine treatment; it is a styptic, an antiseptic, and a stimulant, and being eliminated by the lungs, is a prophylactic to septic pneumonia.

Our chief sources of supply are France, Russia, and the United States of America. The oil is not an expensive remedy, and there is no reason why our soldiers on duty in the front should not be provided with 2 oz. of sterilized oakum and an ounce bottle of oil of turpentine. And last, and not least, of its good qualities is the fact that the smell of the oil keeps beds and clothing free of vermin.

FREEDOM OF THE WILL.

DR. JOHN HADDON (Denholm, Hawick) writes: I have read with interest the review of Professor Kern's lectures, which appears in the JOURNAL of February 20th, p. 337, on the freedom of the will. That has been a subject much discussed since the earliest days of philosophy; but no one who has not an intimate knowledge of the nervous system is capable of understanding any mental process, and I believe it will be found that only those whose mental functions are failing can with any hope of success express any opinion as to the will. Having suffered from what is called neurasthenia, I feel sure that all who have similarly suffered—and I know there are many members of the British Medical Association who have suffered, and are still suffering, and will, I have no doubt, continue to suffer, unless they not only learn the cause, but acquire will power, or are compelled to remove it—who will admit that the *will* is that faculty of what we call mind which is affected. It is in fact paralysed, just as an arm or leg may be paralysed. We have some idea as to the cause of paralysis in different parts of the body, but, so far, the seat of mind has not been located, so that when paralysis of the *will*, which is, I fancy, the most important factor in *mind*, takes place, we know not where to look for its cause. But a study of my own mental state has led me to the conclusion that the Ego of the philosopher is a mere myth. If my will can be paralysed through failure of the nervous system, just as my hand can, and if the will is a part of my mind, the whole of my mind may be paralysed as well as the whole of my body. The mind and the body seem to me to vary inversely; what is good, as we think, for the body, being bad for the mind. Thus feeding up, which our asylum doctors advocate, may improve the mind, but it is dangerous to the life of the body; whereas less food, or even a good long fast, would improve both; for it is curious that in medicine one can reach the same goal by treatments quite opposite to each other. Professor Bosanquet, in his Giffard lectures in Edinburgh, spoke of the "miracle of will," so that philosophers are beginning to discover that there are some things in connexion with mind that they cannot explain. On the whole, it appears to me that in the future the body will take the place of the soul, and the doctor will take the place of the divine, who will no longer be required. A body-conscience will be evolved as our knowledge of the physiological action of foods increases, which will make us think it as great a sin to take anything that will injure the body as to lie or steal. The body will then receive that attention, which, as the temple of the Living God, it ought long ago to have received; and in a sound body we will have a sound mind.

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ACUTE APPENDICULAR OBSTRUCTION:

*THE THIRD DAY IN ACUTE DISEASES OF THE APPENDIX.**

BY

S. T. IRWIN, M.B., M.Ch.Belf., F.R.C.S.Edin.,

ASSISTANT TO THE PROFESSOR OF SURGERY, QUEEN'S UNIVERSITY; SURGEON, ULSTER HOSPITAL FOR CHILDREN AND WOMEN; SURGICAL REGISTRAR, ROYAL VICTORIA HOSPITAL, BELFAST.

A DISEASE which annually kills in England and Wales upwards of 1,500 people, and whose mortality under modern scientific treatment still runs to from 5 to 25 per cent., according to its type, demands vigorous investigation. Few of the numerous writers on the subject base their views about diagnosis, prognosis, or treatment, on the pathological findings of the operation room. In Sir Berkeley Moynihan's picturesque words, "the pathology of the living" has failed to receive due consideration, and no satisfactory classification or differentiation of cases has hitherto existed. All acute diseases of the appendix have been included under the general term "appendicitis," whether the ordinary and classical signs of inflammation were present or not, or whether these signs, when present, were primary or secondary in point of cause. Some four years ago Mr. Robert Campbell made the observation that many of these cases were not due to inflammatory causes at all, but to obstruction of the appendix, and in a short paper published in the *Transactions* of the Ulster Medical Society for 1912–13, he showed from his own experience that out of twenty-two consecutive cases of acute diseases of the appendix no fewer than eighteen were obstructive in type, and he made this further statement, that all the really anxious cases belonged to the latter class.

Mr. Campbell's views are supported by the results of a series of experiments on cats, carried out by Mr. Wilkie of Edinburgh, to determine the effect of obstruction in a piece of intestine in which complete occlusion of the lumen of the gut had been produced without interference with its blood supply. His observations were published in the BRITISH MEDICAL JOURNAL of December 5th, 1914. The results of Mr. Wilkie's experiments prove that the presence of caecal content in such an obstructed loop of bowel leads to distension of the loop with purulent fluid, followed by gangrene and perforation. In Mr. Wilkie's words:

> Apparently the two factors determining the degree and the rapidity of the morbid changes in the isolated loop are (1) the amount of faecal matter, and (2) its nature, as determined by the previous feeding of the animal. If the loop be completely filled with faecal matter at the moment of obstruction, rapid changes, culminating in gangrene, are apt to result, no matter what be the nature of the content, though they are more rapid and striking after protein feeding.

In the light of these facts, let us now turn for a moment to the appended series of cases operated on at the earliest possible moment after being seen; they are arranged according to the interval between onset of symptoms and operation. These are all the cases seen by me in which acute disease of the appendix was diagnosed, with the exception of two, upon whom, for non-medical reasons, no operation was performed. The cases have been classified in the accompanying table.

Acute Appendicitis.

There were 13 cases of true acute appendicitis, of which the following are examples:

No. 9 in the list—N. M'C., 24 years of age, an otherwise healthy young bricklayer—was seen with Dr. G. F. Campbell on July 17th, 1913. He had taken ill about eight days before, with a feeling of sickness, especially after meals. There was no actual vomiting, but nausea had been persistent and distressing. The bowels became sluggish. He had a varying amount of pain, which was worst in the evening and at night, and sometimes had to be relieved by poulticing. He had suffered from indigestion for some years. His pulse was 100, his temperature 99°. There was a tender point just internal to the anterior superior spine on the right side and a small phlegmon was present. I operated through the right rectus incision and found the appendix inflamed, with thickened walls, lying external to and buried in plastic lymph, on the outer side of the caecum. There was no pus, and the abdomen was therefore closed in layers without drainage.

* Read before the North of Ireland Branch of the British Medical Association.

	Case No.	Sex.	Age.	Day of Illness.	Pulse.	Temp.	Condition of Appendix.	Distribution of Pus.	Result.
Cases of True Appendicitis.	1	M.	10	1	100	100.8°	Inflamed	None	R.
	2	F.	39	1	115	101°	Inflamed	None	R.
	3	F.	25	1	100	99.8°	Perforated	Localized	R.
	4	F.	20	3	108	102.2°	Inflamed	None	R.
	5	F.	14	3	120	99°	Inflamed	Localized	R.
	6	F.	17	4	—	—	Inflamed	None	R.
	7	F.	16	6	110	102°	—	Localized	R.
	8	M.	10	6	96	99°	Inflamed	None	R.
	9	M.	24	8	100	99°	Inflamed	None	R.
	10	M.	17	10	90	100.8°	—	Localized	R.
	11	M.	20	14	120	100.8°	—	Localized	R.
	12	M.	25	21	104	98.4°	—	Localized	R.
	13	M.	21	21	106	101°	Inflamed	None	R.
Indeterminate Cases.	14	F.	18	6	120	102°	Perforated	Localized	R.
	15	M.	13	7	100	98.4°	—	Localized	R.
	16	M.	18	7	115	102°	—	Localized	R.
	17	F.	58	7	140	97°	Perforated	General	D.
	18	F.	11	7	—	—	Perforated	Localized	R.
	19	M.	10	12	—	—	—	Localized	R.
	20	F.	20	21	120	104.6°	—	Localized	D.
Cases of Appendicular Obstruction.	21	M.	15	1	84	98.4°	Obstructed	None	R.
	22	M.	26	1	115	99.6°	Perforated	Localized	R.
	23	F.	17	1	120	98°	Perforated	General	R.
	24	M.	66	2	80	98.4°	Gangrenous	None	R.
	25	M.	52	2	132	100.2°	Gangrenous (patch) by band	None	R.
	26	M.	38	2	100	101.2°	Perforated	Localized	R.
	27	F.	50	2	112	101°	Perforated	General	R.
	28	M.	8	2	142	102.4°	Obstructed	None	R.
	29	F.	18	3	120	101.5°	Perforated	Localized	R.
	30	F.	19	3	112	99.8°	Perforated	Localized	R.
	31	M.	4	3	110	100.4°	Perforated	Localized	R.
	32	F.	7½	3	125	99.8°	—	Localized	R.
	33	M.	11	3	126	100.6°	Perforated	Localized	D.
	34	F.	14	3	132	97°	Perforated	General	R.
	35	F.	12	3	164	100°	Perforated	General	D.
	36	F.	35	3	112	101.2°	Perforated	Localized	R.
	37	M.	19	3	100	99°	Perforated	Localized	R.
	38	M.	10	3	122	98°	—	Localized	R.
	39	F.	38	3	98	97°	Perforated	General	R.
	40	F.	2½	3	142	100°	Perforated	General	D.
	41	M.	56	5	64	99°	Perforated	Localized	R.
	42	M.	34	5	120	102°	Perforated	General	D.
	43	M.	56	7	100	99.4°	Perforated	General	R.
	44	M.	4	7	138	100.8°	Perforated	Localized	R.
	45	M.	13	7	124	97.4°	Perforated	Localized	R.

R. = recovery; D. = death.

I would specially direct attention to the indefinite onset, to the absence of any great pain as the initial symptom, and to the absence of troublesome constipation.

No. 2, A. R., a single lady, aged 39, seen with the late Dr. Gorman on August 6th, 1913. For fifteen years she had been subject to dyspepsia, and this was the third attack of appendicitis during which she had been under Dr. Gorman's observation. She had taken ill the previous night with pain in the right side of the abdomen. The temperature was 101° and the pulse 115. I was asked to see the patient next day, and operation was decided on. This was done through an oblique incision. A long appendix with thickened walls, which were adherent to the surrounding structures, was found. The removal of the appendix was comparatively easy, and the

wound was closed without drainage. Recovery was uninterrupted, the patient's temperature never reaching higher than 99°.

Many of these cases, however, go on to suppuration. The following is an example:

No. 5, I. S., a girl aged 14, seen with Dr. F. C. Mann on November 8th, 1913. She had taken ill on the 5th with pain in the abdomen, which gradually settled down towards the right side. The temperature at the onset was 101° and the pulse 110. The temperature and pulse varied little till the evening of the 7th, when the temperature rose to 102°, and the patient began to perspire freely. A probable diagnosis of suppurative appendicitis was made, and Dr. Mann advised operation. The patient had had several similar attacks, but they had always passed off in a few days. When seen on the 8th, the temperature was 99° and the pulse 120. An easily palpable phlegmon was discovered on the right side, just above Poupart's ligament. On opening the abdomen a swelling lay on the outer side of and below the caecum. This consisted of the appendix, buried in a mass of coagulum, and bent at an acute angle, with a small perforation and a small amount of pus—about a teaspoonful. The walls of the appendix were very much thickened, but there was no distension of the lumen. The removal of the appendix gave little trouble; the wound was drained, and the patient had an uneventful convalescence.

These are examples of acute appendicitis in which, from the onset, the temperature and pulse are elevated, and in which pain, though present, is not of such a severe type as in the cases about to be quoted, and even from its first beginnings is definitely localized to the right iliac fossa. In these cases, too, vomiting and constipation are not troublesome, and if pus be present it is small in amount, and well walled off by the surrounding organs, which are adherent to the appendix and the caecum. The walls of the appendix are thick and fleshy, and there is no distension of its cavity. Judging from the history of these cases of true acute appendicitis, it would seem to be capable of argument that they do not constitute a very fatal form of illness, even when operated upon in the later stages of the attack. And this is probably so. Symptoms, signs, and pathological changes keep close company. Pus formation, when it occurs, is usually not unannounced. It is safely limited in its extravasation, and can readily be dealt with surgically. But can we, for these reasons, delay or postpone operation? I think not, and for the following considerations:

In the first place, in an early operation it is practically always possible to remove the appendix. Secondly, in an early operation we are less likely to encounter pus, and therefore drainage, with all its disastrous sequelae of discomfort, delay, and subsequent hernia, will be avoided, for with modern methods of closing the abdominal wall in layers, there is little risk of bulging apart from drainage. Thirdly, serious complications, such as general peritonitis, subphrenic abscess, portal pyaemia, etc., increase in frequency and gravity with delay in operation.

Acute Appendicular Obstruction.

I have come across 25 cases of acute appendicular obstruction. Three were seen during the first twelve hours, 5 others within the first forty-eight hours, 12 were seen on the third day, and the remainder at a later date. A typical case from this series is as follows:

No. 37, W. P., a youth aged 19, was taken suddenly ill on December 28th with a very severe pain in his stomach, and he vomited three times that evening. His bowels, up till then regular, became constipated. He was seen next morning by Dr. Boyd, who found that he complained of pain in the left hypochondriac region. His pulse and temperature were normal. There was a slight rigidity over the right rectus below. His breath was foul, and his tongue thickly coated, but otherwise he looked well. The next day, however, he was again seized with a sudden severe pain, now localized to the right lower abdomen. His temperature had risen to 99°, his pulse to 100. I was asked by Dr. Boyd to see him, and having come to the conclusion that he was suffering from a perforated gangrenous appendix, had him removed to the Royal Victoria Hospital, where, through the kindness of Mr. A. B. Mitchell, I was allowed to operate upon him. The operation was carried out under open ether anaesthesia, and through the right rectus incision. The appendix was found to be gangrenous for about 2 in. from the tip; to have a large perforation, the size of a sixpence; and to be lying in an abscess cavity containing about an ounce of pus. The appendix was removed, the cavity drained, and the boy made a good recovery.

Sir Berkeley Moynihan has pointed out the injurious effects of administering purgatives to patients of this type, and that the abscess in the foregoing case remained localized in spite of the large perforation was possibly due to the fact that on the advice of Dr. Boyd, the mother, a trained maternity nurse, had done considerable violence to her feelings, and had refrained from her first impulse, which was to administer a dose of castor oil.

The foregoing is a type representative of a very large percentage of the critical cases which a surgeon is called upon to see. They are, so far as my experience goes, the most fatal of all the common emergencies in abdominal surgery. And let us consider for a moment what the pathology of this case was. Judging by Wilkie's experiments, and by our own experience of the morbid anatomy of cases seen in the earlier stages and by the appearances found at the operation, we should say at once that this boy had an obstruction near the base of his appendix; that there was present within the appendix a certain amount of faeculent matter; that this obstruction led to gangrene of the appendix; and that, following the gangrene, perforation had supervened, If, then, this be the pathology, and if the appalling mortality in acute diseases of the appendix be due to this type of case, then obviously the remedy lies in diagnosing the condition before perforation occurs; in other words, had one been able to foresee that, in spite of this boy's normal temperature and normal pulse, there lay interned within his abdominal cavity a sloughing appendix, then no excuse would have justified us in allowing perforation to take place. That this is no unusual type of case, and that it is no unusual thing for symptoms and signs to be unalarming on the second day, numerous arguments and examples go to prove. Here is another:

No. 38. On December 8th, 1914, at the Royal Victoria Hospital, I was asked by Mr. Fullerton to operate upon a boy—W. H., aged 10—who had just been admitted to hospital. He had taken ill on December 6th, so that the operation was called for on the third day of the illness. He had been seen on the second day by his own doctor, who was present at the operation, and who told me that the boy had suffered considerable pain on December 6th, but that when he saw him on December 7th he was so much better that he thought, and told the relatives, that he might be able to do without operation. On the night of December 7th, however, he was again attacked by acute pain, and when the doctor saw him the next morning he sent him straight into hospital. On admission the temperature was 98°, and the pulse 122. A large area of dullness was present on the right lower abdomen. He was operated on by the grid-iron incision, the pus released, and a tube placed in the abscess cavity.

The boy's condition precluded the removal of the appendix, but there can be no reasonable doubt that this case was identical with the one already quoted. Now let us examine one or two cases which showed similar symptoms at the beginning, but which were not allowed to go on to perforation.

No. 21, P. B., a youth aged 15, was taken suddenly ill on January 13th, 1915, at 6 p.m. He was seen immediately, and sent into hospital. The pulse was 84, and the temperature 98.4°. The history was that he had been suddenly seized with a violent pain about the region of the umbilicus, gradually moving towards the right side of the abdomen below. He stated that he had had a similar pain at Christmas, but that the pain had then gradually subsided. Operation was advised, and carried out six hours after the initial symptoms. On opening the abdomen through the oblique incision, considerable difficulty in drawing out the caecum was observed, and this was found to be due to intussusception of the caput caeci. It was found, as well, that the base of the appendix was obstructed by a very tight peritoneal band, which ran from the outer side of the caecum across the base of the appendix, and was inserted into the edge of the peritoneum, near the origin of Lane's band. The body and tip of the appendix were adherent in the iliac fossa, purple in colour, greatly distended, and containing a brownish fluid. The mucous membrane lining the appendix showed recent haemorrhages. Removal of the appendix and reduction of the intussusception were easy.

This was a case where abnormal peristalsis of the appendix in the effort to overcome the obstruction by a band was conducted to the musculature of the caecum, and gave rise to an intussusception, and it seems to me that this was a case of appendicular obstruction in the very earliest stage, before gangrene had had time to take place.

Here is another case operated on within twelve hours, also at the Royal Victoria Hospital:

No. 23, B. F., a young woman aged 17, was taken ill on January 14th, at 7 p.m., with pain in the lower abdomen. She was brought to hospital at 1 a.m., and at that time complained of pain extending over the whole of the lower abdomen, and more especially over the appendix region. The temperature was 98°, the pulse 120. On examination it was found that there was no abdominal movement on respiration. Dullness and tenderness

extended from the right kidney region in a crescentic manner across the abdomen beneath the umbilicus to the left anterior superior spine. The patient kept her knees drawn up, and screamed when the hand was laid upon the abdomen. Even the lightest pressure caused great agony. The diagnosis of a perforation of the appendix with consequent spreading peritonitis was made, but no explanation of its sudden character was forthcoming. The abdomen was therefore opened immediately through the right rectus, ten hours after the onset of the pain. The appendix and caecum presented easily into the wound, and it was then found that the appendix was constricted at the base. It was kinked about an inch from the tip at an acute angle, and in this kink a perforation was found. The lumen of the appendix contained some bloodstained fluid.

There was no congestion and no discoloration, and the explanation, to my mind, was this: that the kink had produced a weak part in the appendicular wall; that almost as soon as obstruction developed this weak part yielded; and so the contents of the appendix were shed immediately into the general peritoneal cavity. Probably in this case no gangrene would ever have occurred, because the perforation had allowed the faeculent matter to escape, and so relieved pressure. And here is another example of a similar condition:

No. 22. On February 4th, 1914, I was asked by Dr. T. Kennedy to see a young man, aged 26. He had always been subject to slight attacks of abdominal pain, but was apparently quite well up to 6 o'clock, when he was suddenly seized with an acute pain in the epigastrium. He called at a chemist's on his way home from his work, and asked for a dose of laudanum, which he took, and promptly vomited. On arrival at home he went to bed. About 10 p.m., after the pain had subsided, he was again seized with a more severe attack, and looked so ill that his friends at once sent for Dr. Kennedy, who found the patient's temperature normal, but the pulse was 100, the face pale and drawn, and the whole right side of the abdomen rigid. Dr. Kennedy felt sure that a perforation either of the appendix or of the duodenum had taken place. I saw the man about midnight. I was told on arrival that he was so much better it was a pity I had come. However, Dr. Kennedy insisted upon my seeing him. We found that his condition, speaking generally, had improved, but that the temperature had gone up to 99.4 and the pulse to 115. Rigidity was still present, but only over the lower part of the right rectus. This seemed to suggest to us the diagnosis of perforation of the appendix rather than of the duodenum, and—chiefly on account of Dr. Kennedy's history—we came to the conclusion that it was not safe to leave the future course of events to Nature. He was therefore removed to hospital, and at the request of Professor Sinclair I opened the abdomen, eight hours after the first attack of pain and four hours after the second. The right rectus incision was adopted. The appendix was found lying free without adhesions. It contained a small seed resembling that of a grape, and near the tip was found a perforation admitting a fine probe. The lumen, contracted at the base, was greatly dilated from the middle to the tip; a small amount of pus was free within the abdomen. The appendix was removed, drainage carried out by means of a narrow tube, and the abdomen closed. This patient subsequently developed a pelvic abscess, which was drained per rectum, but otherwise made a not unusual convalescence.

This seems to me a case similar in type to the preceding—a weak part of the appendix wall had yielded as the result of the obstruction and increased pressure, and had allowed the contents of the appendix to escape in a stream into the peritoneal cavity.

The following case also was seen within twelve hours and operated on within twenty-four hours of the commencement of the attack:

No. 24, S. P., aged 66, was taken suddenly ill at 2 o'clock a.m. on the night of May 14th, 1912. I was asked to see him in the morning. He was complaining greatly of pain—referred to the epigastric region, of persistent vomiting, and of unrelievable constipation. His temperature was 97.6° and his pulse 80. I examined him thoroughly, but could find very little sign of disease. I ordered him enemata of soap and water and olive oil. These were used several times without effect, and when I saw him again some hours later he was still vomiting when he took either food or drink. The pain, not severe, was gradually localizing itself to the right side of the abdomen. The abdomen was not rigid, and there was only slight tenderness over McBurney's point. The temperature had risen to 98.4° and the pulse to 88. The man was brought to hospital, and, with the assistance of Mr. Mitchell, I opened the abdomen through the right rectus. The appendix, 5 in. long, was distended, and its terminal inch or so was gangrenous, but no perforation had occurred.

In this case a previously healthy and sound organ yielded nowhere to the increased tension, and therefore gangrene of the whole appendix was the result. This, too, is an example of appendicular obstruction in which the symptoms were so suggestive of acute intestinal obstruction that the latter diagnosis was provisionally made. In this case there can be no doubt that had the patient been left for a few hours longer rupture of the gangrenous appendix would have occurred, and a case identical in all respects with other third day cases would have resulted.

And here allow me to refer to a case not given in the printed list. About six weeks ago, at 6 p.m., I was sent for to see a medical student. He had taken suddenly ill through the night with a violent pain about the umbilicus. He vomited several times, and the pain continued with intermissions until the morning. The man then prescribed himself an alkaline mixture to settle the stomach, as he imagined, but this he vomited too. Through the day the violent attacks of pain were replaced by soreness in the right iliac fossa, and when I arrived at his rooms he was ready with the diagnosis of appendicitis. I asked Mr. Mitchell to see him with me, and, in spite of a pulse of 68 and a temperature of 98.2°, an operation was decided upon. The appendix was swollen, purple in colour, tightly kinked about an inch from the base, and suggestive of imminent thrombosis of the vessels. Here was a case with symptoms almost identical with those of the previous case, and I think it is reasonable to assume that if left without surgical aid the appendix would have gone on to gangrene.

Diagnosis.

I will now consider more fully this great class of cases in which the demand for surgical interference is first made on the third day of the illness. With some slight variation in time, due, according to Wilkie, to (1) the diet of the patient, and (2) the fullness of the appendicular apartment, and—in my opinion—(3) the soundness of the walls of the appendix, these cases show an almost identical history. There is a sudden severe attack of abdominal pain, referred at first to the umbilical region, lasting in spasmodic fashion for some hours, and then gradually disappearing. Not infrequently the pain begins during the night, and the next day if and when the doctor is called in the patient seems well, but a complaint of cramps in the night is made, and the patient has a distaste for food, his tongue feels sticky, his breath is foul, and bowels constipated. He feels some uneasiness on the right side of the abdomen. His pulse and temperature, if not quite normal, are so little elevated as to excite no suspicion. On examination of the abdomen it is soft everywhere, with the exception of some rigidity in the vicinity of McBurney's point. This may be slight, and if marked the appendix will be found near, if not adherent to, the anterior abdominal wall. After a review of the meagre signs and symptoms, the patient is probably told that he has just escaped an attack of acute appendicitis, but the crisis in the case is not long delayed, for between twenty and forty-eight hours of the onset a fresh attack of pain, even more violent and severe than at first, but now definitely localized to the right iliac fossa, ushers in acute perforative peritonitis. The determination of the perforation is often greatly accelerated by the administration of a purgative, and the movements consequent on purgation do much to prevent limitation of the infective material. There is no longer any doubt of the urgency of the symptoms, of the grave peril of the patient, or of the supreme need of active surgical assistance.

Let us now reconstruct the progress and pathology of our typical case. In the first stage we shall find violent intermittent pain, due to irregular and exaggerated peristalsis of the appendix in its endeavour to overcome the resistance, whether that resistance be stricture, concretion, foreign body, or band. In the second there is disappearance of the pain, due to commencing gangrene of the appendix, analogous to the relief so characteristic of the onset of gangrene in a case of strangulated hernia. In the third stage rupture of the appendix occurs with onset of the pain of perforation and its attendant signs of shock and oncoming peritonitis.

As regards the duration of each of these stages, some variation must naturally be looked for, but it is a point not without significance that so many cases in this small series should have called for surgical intervention on the third day. And here I should like to put in a plea on behalf of the operator. Perforation of the stomach, or of the duodenum, to-day receives the promptness which its urgency and its serious consequences deserve, so that a man will move heaven and earth to have his perforated

gastric ulcer operated upon at the earliest possible moment. Not so in perforation of the appendix, where the infectivity of the extravasating fluid is of tenfold virulence. Cases are frequently seen perforated eight, ten, and twelve hours after operation is arranged for. The profession as a whole has yet to grasp the importance of this aspect of acute disease of the appendix, and if such urgency is demanded in adults, it is the *sine qua non* for successful treatment in children, for here the margin of safety narrows down almost to the vanishing point. Here is a case of a child from the records of the Ulster Hospital, in which, in spite of the rapidity with which operation was carried out after the patient had been seen, at the operation, and at the subsequent *post-mortem* examination, pints and pints of purulent fluid were found within the peritoneum:

No. 35, M. B., aged 12, on being seen by Dr. Martin was sent straight to hospital on the third day of the illness, after having been perforated apparently about twelve hours. There was a typical history of acute appendicular obstruction. Operation was immediately carried out—Dr. Elizabeth Robb administering open ether. On opening the abdomen a very large escape of purulent contents took place. A tube was quickly placed in the iliac fossa, and a second tube in Douglas's pouch, and the abdomen closed. The patient died about eighteen hours later. A *post-mortem* examination was kindly undertaken for me by Dr. Robb. In spite of the enormous quantities of pus which had escaped at the time of the operation, Dr. Robb told me that pints of pus seemed to escape on the *post-mortem* table. The appendix itself was gangrenous, and showed a very large, ragged perforation.

If no time should be lost after the onset of peritonitis how much more valuable will it be to operate before perforation! All arguments in favour of early operation in cases of true acute appendicitis are applicable to cases of acute appendicular obstruction, with this difference—that delay until perforation occurs, in the latter case often spells death. Therefore, the question now arises, Is it possible to diagnose these cases during the second day? I cannot help inserting here a statement made by Mr. Arthur Burgess in a paper he published in 1908, in which he reviewed the result of 500 consecutive cases of appendicitis. He says:

I feel strongly that fewer cases would pass unrecognized in their earlier stages were it to become the univers l rule never to take a temperature nor count a pulse in a suspected case of acute appendicitis. They are only too apt to mislead.

What, then, are the points that we depend upon for our diagnosis on the second day? (1) The history of a sudden severe intermittent pain referred to the region of the umbilicus; (2) vomiting, rarely persistent and never faecal; (3) constipation; (4) some muscular rigidity on the right side; (5) dirty tongue and fetid breath. These occurring during the day after the onset of the pain are strongly suggestive of a gangrenous appendix, and therefore of the need for immediate operation. Endless almost are the arguments in favour of operating in the absence of pus, but I would mention the following:

Out of a series of 500 consecutive cases operated upon by the several members of the staff of the Royal Victoria Hospital and reported by Mr. A. B. Mitchell, although there was a total mortality of 15 per cent., there was not a single death in a non-purulent case, and this is my own experience in some 80 appendicectomies.

Prognosis.

As to the prognosis of these obstructive cases, they include, as Mr. Campbell has stated, all the rapidly fatal cases. The mortality-rate, therefore, cannot but be high if perforation be allowed to occur, but it will depend upon the following factors: First, and most important of all, the *time* of the operation. Let us get these cases before perforation occurs, and therefore before pus develops, and we shall be rid for ever of our ghastly figures for appendix operations. It will, from what I have said, be readily agreed that the ideal time for operation will probably be on the second day, though one could have no objection to operating earlier. These cases do not fall like thunderbolts—there is a margin of safety, but it is limited to the first twenty four hours. By no other precautionary measures that I am aware of can we attain our ideal in the treatment of this disease. Looking at the list in your hands, it is very striking how the fatal cases occur at the foot of each series. With operation on the second day I see no reason why the mortality-rate should be other than infinitesimal. After perforation many other factors will influence the prognosis—such as the type of the disease, the presence of adhesions, the size of the perforation, the diet of the patient, the age of the patient, the amount of disturbance to which the patient has submitted after perforation has occurred, the skill, speed, and technique of the operator, the judicious use of the drainage tube, the employment of open ether only as the anaesthetic, the subsequent management of the case by the adoption of the Fowler position, with protoclysis, and, if necessary, the hypodermic injection of pituitrin.

Conclusion.

In conclusion: (1) Acute diseases of the appendix may be divided into two classes—acute appendicitis and acute appendicular obstruction. (2) To the latter class belong most of the tragedies of abdominal surgery. (3) Safety only lies in the way of early operation—that is, before perforative peritonitis has supervened upon distension and gangrene of the appendix. Lastly, what of the third day in acute diseases of the appendix? Let us blot it out altogether, and rename it the first day—after operation!

AUTOGENOUS LIVING VACCINE IN THE TREATMENT OF ENTERIC FEVER.

WITH NOTES OF SIX CASES.

(PRELIMINARY OBSERVATIONS.)

BY

E. A. BOURKE, MAJOR, R.A.M.C.,

IDRIS D. EVANS, LIEUTENANT, R.A.M.C.,

AND

SYDNEY ROWLAND,

LISTER INSTITUTE; ATTACHED R.A.M.C.

HAVING recently treated cases of enteric fever with vaccine and obtained satisfactory results, it occurred to one of us (S. R.) that better results might be obtained by employing autogenous living vaccine for each case. The clinical notes and temperature charts of our first successive cases treated by this method and the satisfactory results obtained will, we hope, lead to this method being given a more extensive trial. Our cases have demonstrated that this method of injecting living bacilli in suitable doses is perfectly safe. The vaccine was injected subcutaneously—as a rule in the pectoral region—and was followed by very slight local reaction, but marked general reaction. No local or general complications were observed. The injection, as a rule, was followed by a rise in temperature within the first few hours, followed by a marked fall within twenty-four hours of inoculation. Careful notes were made, and in our minds there is no doubt that this treatment had a beneficial effect and tended to cut short the duration of the disease. It promotes perspiration, the aspect of the patient undoubtedly becomes brighter after injection, and the tongue becomes much cleaner.

The diagnosis was verified in all cases by blood culture. Several of the cases on admission to hospital gave the impression that the attack would be severe; in this opinion our consulting physician, Sir Wilmot Herringham, agreed. To him, also, we are indebted for valuable suggestions as to dosage, and frequency of administration of the vaccine.

Preparation of the Vaccine.

The disease was in each case diagnosed by means of blood culture. For this purpose 5 c.cm. of blood was drawn from the arm and immediately transferred to 1 per cent. sodium taurocholate. From this a broth culture was prepared, and the purity and identity of the growth verified by agglutination and sugar fermentation tests. The broth culture was reinoculated into fresh broth every day and itself constituted the vaccine. No further preparation whatever was employed. The age of the culture used was generally eighteen hours, and the number of bacilli contained in it was obtained by a direct method of counting which has been previously described by one of

us. The average number of organisms ranged from 60 million to 300 million.

Effects of Inoculation.

The local reaction following the injections was surprisingly small, and was far less than is commonly seen after a prophylactic inoculation, using a killed vaccine. The general reaction on the patient was, on the other hand, very marked. A sharp rise of temperature was always observed. Frequently this was accompanied by profuse perspiration.

These preliminary observations have demonstrated that a living culture of the typhoid bacillus can be injected subcutaneously into enteric patients, not only without any deleterious effects whatever; but, as far as the few cases show, with decided favourable influence on the course of the disease.

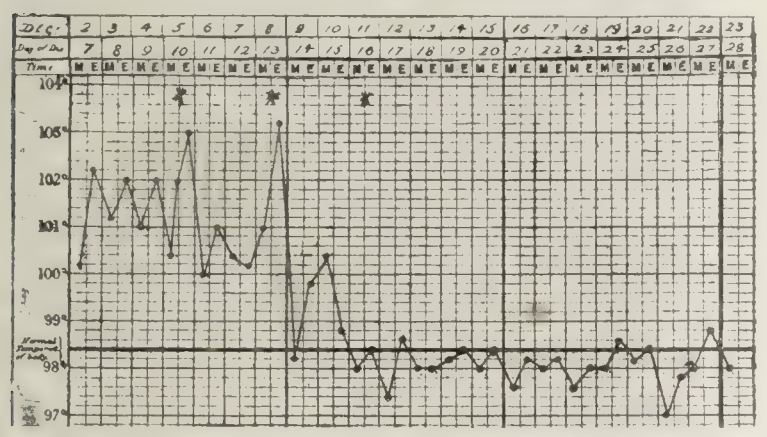
Much remains to be worked out. The dose and spacing of the dose will require many further cases to determine. In conclusion, it is desired to draw attention to the point of view that has dominated these experiments. The vaccine treatment of enteric has many advocates. It is the common experience of bacteriologists that all antigens are very delicate substances, and any physical agency employed to kill the enveloping bacillus acts deleteriously on the contained antigen. If, therefore, the vaccine treatment of enteric is of use when employing a killed vaccine, it should be of still greater use when a living vaccine is used. More especially will this be the case if the vaccine is autogenous. It has been the work of one of us during the last few years to investigate the antigens of the plague bacillus. In the case of this organism it has been found that the strain of organism used for the preparation of an antigen is most important. In the cases related, the strain used was in each case the strain isolated from the patient. It is hoped that these investigations will be continued by others.

CASES.

Case 1.—Private G. M., Royal Welsh Fusiliers, 23 years. Never been inoculated for enteric.

November 27th. Headache and feeling out of sorts.

November 29th. Had to fall out on parade and report sick.



Case 1.—*Autogenous vaccine injected.

December 2nd. Admitted to hospital. On examination patient tired and listless, pupils large, tongue dry, glazed, brown fur, tremors; considerable cough. Slight expectoration; breath fetid. Abdomen, no tumidity or tenderness; reflexes dim. A few spots. Marked diarrhoea, with occasional vomiting after milk. Spleen enlarged; knee-jerks exaggerated; chest breathing, harsh moist râles, no dullness. Promised to be a moderately severe case.

December 3rd. Blood culture positive.

December 5th. Abdomen more tumid, spots gone; 12 (noon), 0.25 c.cm. vaccine; evening temperature 103°.

December 6th. Slight local reaction, now almost gone. Temperature 100° F., looks flushed, complains of headache; abdomen tender, more spots.

December 8th. Feeling better, sleeps well; vaccine 0.25 c.cm.

December 11th. 8 a.m.: Temperature 98°, 0.25 c.cm. vaccine. 6 p.m.: Temperature normal.

December 12th. Considerable local reaction; temperature 97.4°. General condition excellent; was able to read newspapers.

December 18th. Temperature normal; general condition excellent. Got up for two hours. Was a bit weak on his legs. Convalescent.

Case 2.—Sergeant C., 2nd Royal Irish, 25 years. Never been inoculated.

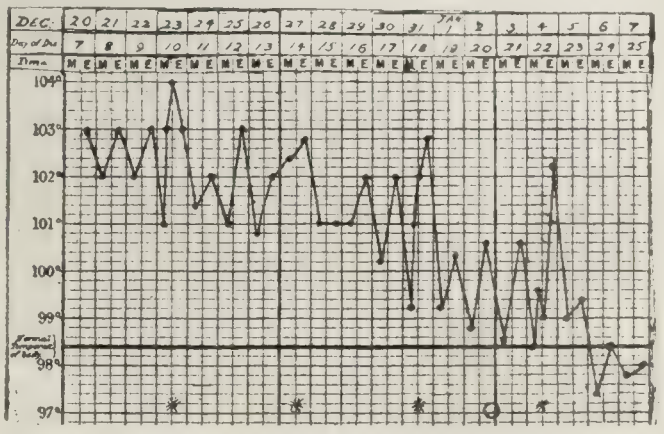
December 20th. Admitted to hospital. Headache and general malaise. No definite symptoms. Drowsy, face flushed, tongue moist, light brown fur, abdomen slightly distended and tympanitic, numerous rose spots.

December 23rd. Blood culture positive. Spleen enlarged. Slight local reaction from auto-vaccine. Patient drowsy, and does not feel so well. Vaccine 0.25 c.cm.

December 24th. Patient feels very well, and is much brighter. During the night has perspired freely.

December 27th. 0.25 c.cm. vaccine; 5 p.m., complains of severe pain in left iliac fossa, which he states has been coming on ever since he was inoculated. No signs suggesting any complications. Same night, 1 c.cm. omnopon.

December 28th. Patient had had a good night. Abdominal pain all gone. Feels well. New patch of rose spots. Tongue still coated and tremulous.



Case 2.—*Autogenous vaccine injected.

December 31st. Vaccine 0.25 c.cm.

January 1st. Moderate local reaction. Temperature dropped considerably. Patient had a good night, and is in good spirits. Perspired freely.

January 4th. Vaccine 0.25 c.cm.

January 5th. More local reaction than usual, but not as much as is usual after a prophylactic dose of Wright. Did not sleep so well and perspired freely. Seems better this morning. Says he feels very well, tongue clean, no abdominal signs or symptoms.

From this date convalescent. Discharged to base, January 7th, 1915.

Case 3.—Sergeant A., A.S.C., 30 years.

December 7th. Sudden attack of cold shivering and malaise. Pains in back and headache.

Admitted to hospital on December 14th. Temperature 101.4°. Tongue, thick white fur, turning brown. The patient is bright and talks well. Chest, increased resonance and vocal fremitus over middle lobe of right lung. Heart, increased second aortic. Abdomen, no pain or gurgling. Rose spots. Constipated.

December 15th. Blood culture positive.

December 17th. 8 a.m.: Temperature 101°. Autogenous vaccine, 0.5 c.cm. 6 p.m.: Temperature 103.8°.

December 18th. 8 a.m.: Temperature 101°. One more spot.

December 21st. Temperature has continued about 102°. Patient seems bright. Vaccine 0.5 c.cm.

December 22nd. No local reaction, slight general reaction. Temperature and restlessness.

December 24th. Fairly comfortable. Tongue clearing up. Since vaccination has perspired very freely.

December 25th. Vaccine 0.25 c.cm.

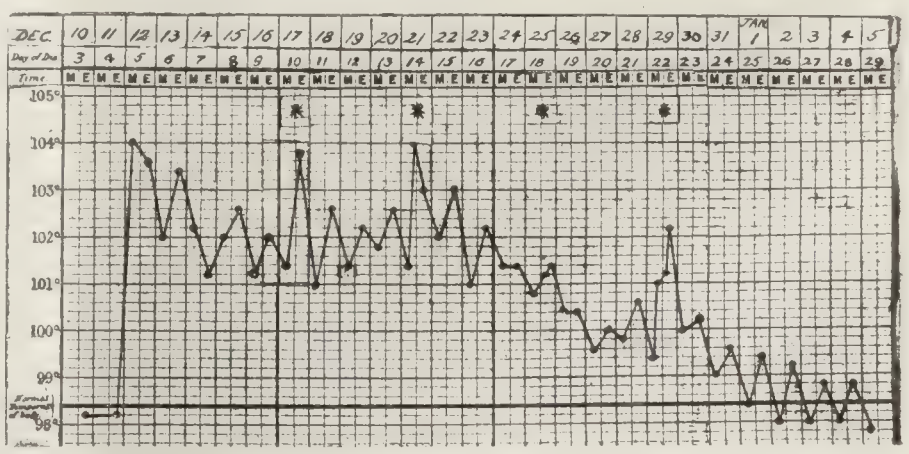
December 26th. No local reaction, patient cheerful, and says he feels better.

December 29th. Vaccine 0.25 c.cm.

December 30th. Had an excellent night. Very slight local reaction, tongue moist and clean, wants to get up.

January 1st. Patient feels perfectly fit. Temperature normal, tongue clean, no abdominal symptoms.

January 2nd. Convalescent.



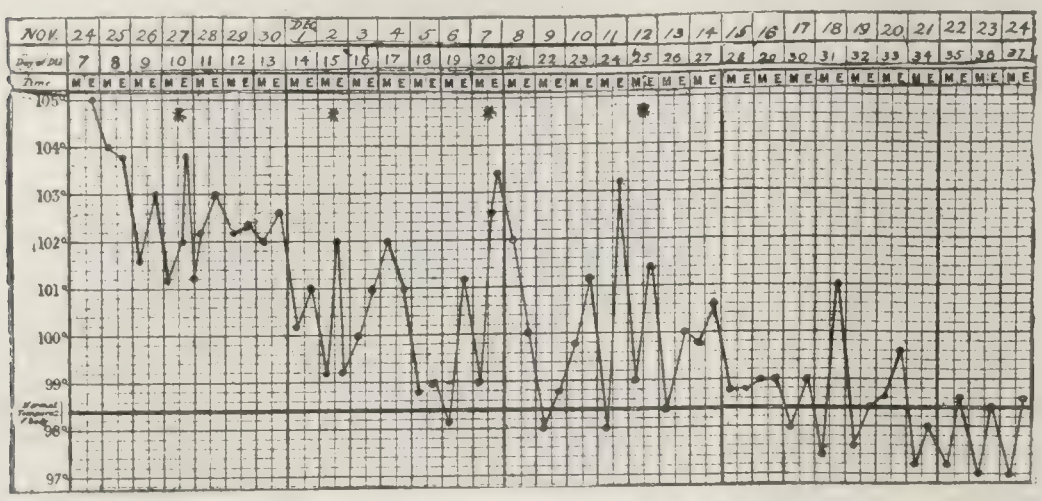
Case 3.—*Autogenous vaccine injected.

Case 4.—Driver F. B., A.S.C., 30 years.

November 22nd. Began to feel out of sorts. Headache and malaise.

November 25th. Admitted to hospital; was flushed, tired, and

restless. Severe headache and pain in back and legs. Appearance of being a severe case with coexistent bronchitis. Spat up a little blood, perspires freely, and complains of thirst. Eyes sunken, tongue tremulous, breath fetid. Tongue coated with dry white fur; has not vomited or bled from nose. Rest-



Case 4.—*Autogenous vaccine injected.

less, with a tendency to delirium and sleeplessness. Heart sounds normal pulse 108 and soft, temperature 105°. Spleen not enlarged No pain or distension in abdomen or caecal gurgling. No rose spots Blood culture positive.

November 27th. Temperature falling (102° at 6 p.m.). Diarrhoea had commenced 7 a.m.; 0.5 c.cm. autogenous vaccine into left arm. 8 p.m.: Temperature 103.8°, pulse 94. 12 (midnight): Temperature 101.2°, pulse 104.

November 28th. 7 a.m.: Temperature 102.2°, pulse 104. 8 a.m.: Temperature 103°, pulse 92, condition much the same, very slight local reaction.

November 29th. Did not sleep, some delirium, does not seem so well, urinary incontinence.

November 30th. Temperature same, feeling brighter, and had a good night.

December 2nd. Temperature falling to 99.2°, condition improved. 12 (noon): 0.5 c.cm. vaccine. 2 p.m.: Temperature 102°. 6 p.m.: Temperature 99.2°.

December 3rd. Slight local reaction, condition improved, still rather thick in the head.

December 4th. Very heavy and dull. Tongue tremulous; still has a bad cough.

December 6th. 8 a.m.: Temperature normal, greatly improved, tongue cleaner and less tremulous, no further involuntary passage of water or stools.

December 7th. 8 a.m.: Temperature 99°; has not passed water since last night; pain over bladder, which is distended; hot fomentations no effect; catheter passed; 2.5 pints urine drawn off. 3 p.m.: Temperature 102.6°, 0.75 c.cm. vaccine. 6 p.m.: Temperature 103.8.

December 8th. Temperature 102°, marked reaction after vaccine, no local reaction. Though temperature went up, pulse remained the same. He had a restless night, but has not wandered in mind.

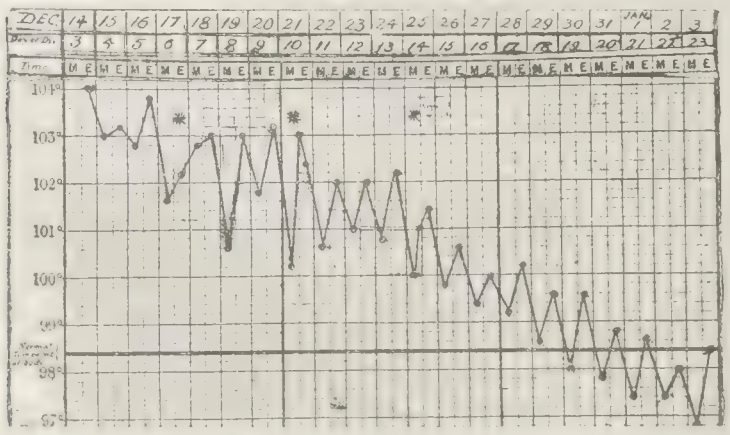
December 9th. 8 a.m.: Temperature normal, slept well and marked improvement, bowels open naturally, still being catheterized. Has an old stricture, which always gives trouble when he is ill.

December 10th. Seems tired, but sleeps well.

December 11th. Feeling better. Tongue steady, urine clear, no signs of cystitis. 8 p.m.: Temperature 103°.

December 12th. 8 a.m.: Temperature 99°; 0.75 c.cm. vaccine. No symptoms to account for temperature. Complained of feeling cold, but had no rigor. 6 p.m.: Temperature 101.2°.

December 13th. 8 a.m.: Temperature normal; feels distinctly brighter and talks; still unable to pass water. Since this his temperature has remained about normal, with the exception of a rise on the 18th, after some solid food.



Case 5.—*Autogenous vaccine injected.

Case 5.—Private D., A.S.C., 25 years.

December 10th. Felt ill with headache, pains in shoulders and back. Reported sick December 12th. Pains gone. Pain now in stomach.

December 14th. Admitted to hospital. Temperature 104°. Looks dull and listless, tongue dry, brown fur, tremulous. Slight bronchial catarrh. Promises to be a severe case, with marked chest symptoms.

December 15th. Blood culture positive.

December 17th. 8 a.m.: Temperature 102°; 0.5 c.cm. autogenous vaccine. 6 p.m.: Temperature 102.4°.

December 18th. Temperature 102.8°.

December 21st. Temperature 100.4°; 0.5 c.cm. vaccine Bright and cheerful. Still has some chest symptoms.

December 22nd. Had a good night, feels very well this morning. Slight local reaction.

December 25th. Vaccine 0.5 c.cm. Slight local reaction.

December 30th. Feels perfectly well, and is clamouring for food; wants to get up. Temperature normal. Tongue moist and quite clean, no abdominal symptoms.

December 31st. Convalescent.

NOTE.—In the above cases 1 c.cm. vaccine contains 400 million bacilli.

Case 6.—Private A. S., 1st Lincolns, 19 years.

December 23rd. Reported sick, with bad headache, pain in stomach, and diarrhoea. Diarrhoea has already lasted a week.

December 26th. Complains of headache, diarrhoea, and malaise. Tongue moist and covered with white fur. Breath fetid. Vomited a few times before admission.

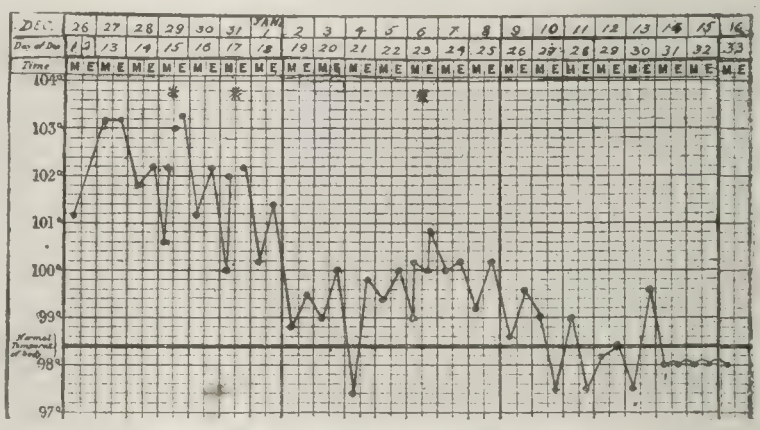
December 27th. Very drowsy and listless, unable to sleep, no appetite, abdomen distended and tympanitic. Tenderness over left iliac region, and tenderness and distension over splenic area. Splenic dullness not enlarged. Few rose spots. Blood culture positive; paratyphosus B.

December 28th. Had a restless night, still drowsy, and cannot be persuaded to take an interest in anything; one fresh spot.

December 29th. Seems a little better. Still restless, and sleeps badly. Given 0.1 c.cm. autogenous vaccine (60 million). Blood count, 8,000. Considerable local reaction. Had a better night.

December 30th. Distinctly brighter. Tongue quite clean, and not tremulous; still some local reaction. Typical enteric stools.

December 31st. 11 a.m.: Autogenous vaccine, 0.1 c.cm. By 6 p.m. some local reaction.



Case 6.—*Autogenous vaccine injected.

January 1st. Patient feels a little better. There is still some abdominal tenderness and a fresh crop of rose spots has appeared. Diarrhoea has ceased.

January 4th. Patient looks well, and feels much better. Abdominal tenderness and distension has disappeared. Tongue cleaner, and not tremulous.

January 6th. Temperature down, but unsteady; 0.1 c.cm. vaccine given.

January 7th. Patient has had a poor night. Considerable local reaction, but he seems bright this morning.

January 8th. Patient much improved. Tongue almost clean. No abdominal symptoms. Temperature dropping.

January 9th. Temperature normal. From this date patient convalesced rapidly.

THE Paris Société de Médecine has decided to expel all German and Austro-Hungarian members who have not expressly repudiated the manifesto of the German professors.

THE first Friday evening discourse at the Royal Institution of Great Britain after Easter will be given by Mr. Stephen Graham on April 16th; his subject will be "The Russian Idea." On April 23rd Major P. S. Lelean, R.A.M.C., will speak on military hygiene at the war; on April 30th Professor Donnan, F.R.S., will give an experimental lecture on emulsion and emulsification; on May 7th Professor O. W. Richardson, F.R.S., will give a similar lecture on electrons and heat; on May 21st Mr. Edward Heron-Allen will lecture on beauty, design, and purpose in the foraminifera, and on June 4th Professor Sir Ernest Rutherford will discourse on radiations from exploding atoms.

NOTES ON A MODIFICATION OF THE WASSERMANN REACTION.*

WITH A PRELIMINARY EXAMINATION OF 102 CASES AT THE NORTHCOTE POLICE HOSPITAL, BOMBAY.

BY

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HONORARY PATHOLOGIST, NORTHCOTE POLICE HOSPITAL, BOMBAY.

AFTER a preliminary account of the early experiments on immunity, including the biological test for human blood worked out by Tristchowitch, Nuttall, and others, Dr. Bana described complement deviation phenomenon in syphilis as follows:

Complement Fixation.

In 1901–2 Bordet and Gengou, working at the Pasteur Institute, Paris, made known an advance in practical immunity, now known as the "Bordet-Gengou phenomenon," which forms the basis of many immunity observations at present. They showed that if typhoid bacilli were injected into a rabbit at suitable intervals and in suitable doses, the animal developed in its blood serum a body capable *in vitro* of breaking down *Bacillus typhosus*. The antibody so produced is called "bacteriolysin," and is specific. It consists of two substances—a thermostabile substance resisting heat at 56° C. for half an hour, called the amboceptor or immune body, and a thermolabile substance destroyed by heat at 56° C. for half an hour, and called the complement. They showed that to bring about bacteriolysis of *B. typhosus*, antityphoid body, and complement, all three must be present in the mixture, and that the fresh antiserum contained the complement, which can be destroyed by heat or prolonged keeping, but can be restored by addition of some fresh serum of normal guinea-pigs. They applied this same phenomenon to organized cells, that is, red blood cells of different animals, such as the rabbit, sheep, etc., and found that on injection of red blood corpuscles of the sheep into a rabbit, a specific haemolysin developed which in presence of complement can produce haemolysis of the cells *in vitro*. They showed further that during this reaction the complement gets used up or disappears, and can no longer be demonstrated on adding more blood cells and complement-free amboceptor. This, then, was a proof of the action of body, antibody, and complement. The complement being no longer free was said to be fixed, and the reaction a "complement fixation." This fixation is a specific phenomenon, and strictly speaking should be applied to known body, antibody combinations such as *B. typhosus* and antityphoid serum, *B. tuberculosis* and tuberculous antiserum, etc.

Complement Deviation.

This can be merely a deviation in case of syphilis, in which Noguchi[1] has proved that fixation does not occur with syphilitic serums in presence of pure extracts of spirochaetes, but that the so-called "fixation" occurs with suitable aqueous, alcoholic, or acetone-insoluble lipoidal extracts of normal organs. The antibodies occurring in syphilitic persons are not, at any rate partially, of immune nature, that is, body antibody, and so long as the reaction is positive, unlike immunity produced during an attack of typhoid fever or pneumonia and after recovering, the patient is still in a state of infectivity. The Wassermann reaction is only a side issue, showing the degree of action and interaction of the syphilitic virus and tissues of the body, the degradation or the tissue-reaction products which can be shown by the complement being deviated by suitable organ extracts.[2]

In the light of modern research it is possible to show that spirochaete extracts can be made to "fix" complement in cases of syphilis possessing enough immune antibodies, thus showing that the patient has really recovered. But the sense in which the present Wassermann reaction is carried out is meant to show and to detect the evidence and presence of active infection of the patient's system.

In a patient clinically syphilitic, the antibody contents may be so small and the reaction so feeble as to be almost negative (especially if a feeble antigen and a strong haemolytic system are used), showing that the complement, subject to the action of the two antibodies—(*a*) the syphilitic antibody ("reagin" of McDonagh[3]) and (*b*) the amboceptor for the red cells—will be drawn to the one or the other, according as the one or the other is the stronger. In these circumstances the Wassermann reaction, in its present form, cannot be called a fixation, but merely a deviation phenomenon.

The Original Wassermann Reaction.

In 1906 Wassermann applied the Bordet-Gengou phenomenon to syphilis. Using as antigen an extract of syphilitic fetal liver, he demonstrated that on addition of fresh guinea-pig's serum to the mixture of such an extract and a known syphilitic patient's serum, the subsequent addition of a complement-free haemolytic system (sheep's red blood corpuscles and antisheep amboceptor) did not produce haemolysis. Neisser, Bruck, and Detre, working independently, arrived at the same conclusions.

Since then the reaction has been modified at various times by various authorities. As regards the antigen, aqueous extracts of syphilitic liver used by Wassermann, Neisser, Bruck, Bauer, and Stern, were replaced by alcoholic ones at first of syphilitic, then of normal organs. For a long time the composition and the nature of the action of antigen was the subject of hot debate, and further research showed that, provided a proper "autolysis"[4] of the organs to be extracted has been allowed to take place, a good reliable antigen can be obtained after treatment with alcohol, ether, and acetone. That such an extract as used in my reactions is truly antigenic, not haemolytic nor anticomplementary, can be proved in the following way:

The Antigenic Titre.

Seventeen tubes are taken. To these add the following, making the total at the end up to 1 c.cm. (using sheep's red cells; 1½ unit of amboceptor, and 1½ unit of complement, for the determination of which see later).†

Antigenic Titre.

Tube.	1 in 10 Antigen.	Reagents.	Result.
1	500 c.mm.	+ 100 c.mm. of red cells	I.
2	400 ,,	+ 50 c.mm. complement; mix well; incubate at 37° C. for 1 hour (water bath), then add 100 c.mm. red cells and 50 c.mm. amboceptor; mix; incubate at 37° C. for half an hour	C. H.
3	300 ,,		C. H.
4	200 ,,		C. H.
5	100 ,,		C. H.
6	100 ,,		C. I.
7	80 ,,		C. I.
8	60 ,,		C. I.
9	40 ,,		C. I.
10	20 ,,	+ 50 c.mm. complement and 100 c.mm. of 50 per cent. known syphilitic inactivated serum; incubate at 37° C. for 1 hour, then add 50 c.mm. amboceptor and 100 c.mm. red cells; incubate at 37° C. for half an hour (water bath)	C. I.
	1 in 100 Antigen.		
11	100 c.mm.		C. I.
12	80 ,,		C. I.
13	60 ,,		C. I.
14	40 ,,		C. I.
15	20 ,,		S. H.
16	10 ,,		D. H.
17	Nil	+ 50 c.mm. complement, red cells and amboceptor as above	C. H.

I.=Inhibition; C. H.=complete haemolysis; C. I.=complete inhibition; S. H.=slight haemolysis; D. H.=distinct haemolysis.

Thus the antigen is not haemolytic at least in 500 c.mm. nor anticomplementary in four times its usual volume, but completely antigenic in 0.0004 c.cm.

The modification followed here is that in which all the following variable but known factors are used as follows. The reagents are:

The Antigen.[4]—It is titrated as above, the acetone insoluble product containing the N_1P_1 fraction utilized; 100 c.mm. of 10 per cent. is used for each reaction.

* A paper read at the Bombay Branch of the British Medical Association (modified).

† The units of complement and amboceptor vary a little from time to time and require to be estimated before each reaction. The complement more often varies than the amboceptor.

Patient's Serum.—About 5 c.cm. of blood is drawn from the patient's median basilic or cephalic vein by a sterile platinum needle. The blood is allowed to clot, serum collected and inactivated at 56° C. for half an hour; 100 c.mm. of 50 per cent. solution, less or more in special modification, is used for a test.

Complement.—Blood is obtained from guinea-pigs, allowed to clot, serum centrifuged, and the unit enabling a unit of amboceptor to haemolyze 100 c.mm. of 10 per cent. sheep's red cells is determined; 1¼ unit is used in each test. The unit varies a little from time to time and is determined as shown below.

Amboceptor.—Rabbits are inoculated with increasing quantities of washed sheep's cells till a titre of 0.0004 to 0.0001 is obtained; 1 per cent. dilution is used to determine the unit; 1¼ units are used for each test.

Red Cells.—Sheep's red cells are obtained by collecting blood from the ear in saline containing 2 per cent. citrate, centrifuged and washed three times in saline; 100 c.mm. of 10 per cent. suspension is the standard taken.

Simultaneous Estimation of Amboceptor and Complement.

Five series of tubes are taken; each series contains five tubes. In the first series (1–5) put 100 c.mm. of $\frac{1}{1000}$ amboceptor, in the second (6–10) 80 c.mm., in the third (11–15) 60 c mm., in the fourth (16 20) 40 c.mm., in the fifth (21 25) 20 c.mm. of amboceptor.

To each first tube (tubes 1, 6, 11, 16, 21) add 50 c.mm. of 50 per cent. complement.
To each second tube (tubes 2, 7, 12, 17, 22) add 40 c.mm. complement.
To each third tube (tubes 3, 8, 13, 18, 23) add 30 c.mm. complement.
To each fourth tube (tubes 4, 9, 14, 19, 24) add 20 c.mm. complement.
To each fifth tube (tubes 5, 10, 15, 20, 25) add 10 c.mm. complement.

Add 100 c.mm. red cells; mix well. Make up total volume to 1 c.cm.: incubate at 37° C. for half an hour (water bath); read results. That tube containing the least amount of complement and amboceptor causing complete haemolysis is the unit of complement and amboceptor. Use 1¼ units for each test.

The Reaction.—One takes two series of tubes and numbers them 1, 2, 3, 4, 5, etc. In the front row is now placed 100 c.mm. of 1 in 10 solution of antigen. Excepting tubes No. 1, put 1¼ units of complement in all the tubes. In tubes No. 2, front and back rows, put 100 c.mm. of known non-syphilitic serum; in tubes No. 3 known syphilitic serum same amount; in the other tubes, Nos. 4, 5, and the rest, the serums to be tested. Mix well after each addition. Put 100 c.mm. of 10 per cent. red cells in tubes Nos. 1. Incubate at 37° C. for one hour, then add 1¼ units amboceptor previously determined and 100 c mm. of red cells, in all the tubes except No. 1; incubate at 37° C. for half an hour after careful mixing. Read results an hour after, or immediately on centrifuging. The results are as follows: No haemolysis in tubes 1 back and front, as there are only saline and antigen with corpuscles, both non-haemolytic. In tubes No. 2 complete haemolysis should occur in absence of antibody to deviate the complement which is free to produce haemolysis. In tube No. 3, front row, there is inhibition or no haemolysis, as the syphilitic antibody deviates the complement in presence of antigen in the front tube, and not in back (where there is no antigen), showing haemolysis. In the rest of the tubes—4, 5, etc.—the results will be complete haemolysis or no inhibition to slight inhibition, moderate inhibition to complete inhibition, as the case is negative, feebly, fairly and strongly positive.

Special Modification.—In cases of doubt, as in feeble reactions and in cases under treatment where the quantitative reaction is to be followed (to ascertain the units of syphilitic antibody, as done by Noguchi[1] in following a case), one employs three or more rows of tubes, a third, etc., in front of the second. In this last row one puts 200 c.mm. of inactivated serum, and the results are then expressed as follows:

Strongly Positive:
++++ when both front tubes show complete inhibition.
+++ when the third front row shows complete, and second front row incomplete inhibition or slight haemolysis.

Feeble or Weak:
++ when the third front row shows good inhibition, and second front row only slight inhibition.
+ when the third front row shows good inhibition, and second front row *nil*.

The Results.

The following is a summary of results obtained by me in 102 cases in which blood serum, and cerebro-spinal, pericardial, and hydrocele fluids were examined at the Northcote Police Hospital, including a series of 14 reactions taken in persons under observation prior to certification as to their state of mind at the Northcote Police Hospital observation cells, by special request of Dr. A. Powell, Police Surgeon, Bombay.

Control Cases.—Blood serum was examined in 6 cases from amongst the laboratory and the hospital staff. Negative results were obtained in all cases—all normal.

Diseases other than Syphilis.—Forty-nine cases were examined in which conditions other than syphilis prevailed (a list of these cases is appended); 46 cases, or nearly 94 per cent., gave negative results. Of the 3 positive, 1 was of nodulo-anaesthetic leprosy, 1 rat-bite fever, and 1 of mixed infection, which subsequently turned out to be syphilitic. In the latter the earliest in which the reaction was found positive seven days after the appearance of the papule. Noguchi gives the fifth day as the earliest. The results on the negative side compare favourably with the claim of the Wassermann reaction as excluding conditions and diseases other than syphilis.

Diseases other than Syphilis.

Diseases.	No. of Cases Examined.	Results.	
		Positive.	Negative.
*Malaria	5†	0	5
Glandular enlargement (elbow) ...	1‡	0	1
Neuritis	1	0	1
‡‡Pericardial fluid	2	0	2
Tubercle	3§	0	3
Epididymitis (gonorrhoea) ...	1	0	1
Gonorrhoea and soft sore ...	2	0	2
Dysentery and soft sore	1	0	1
"Brown rash all over body 2 years" (Dr. D.'s case)	1	0	1
Leprosy	2¶	1	1
**Rat-bite fever	1	1	0
Corneal ulcer	2	0	2
Traumatic ulcer, foot (shoe-bite)...	1	0	1
Traumatic ulcer, heel	1	0	1
Ulcerative stomatitis	1	0	1
Small-pox	1	0	1
Typhoid fever	2	0	2
Diarrhoea (amoebae not found) ...	1	0	1
Malingering	3	0	3
Soft sores, multiple sores, bubo groin	9	1	8
‡‡Hydrocele fluid	1	0	1
Guinea worm (eosinophilia 32 per cent.)	1	0	1
Catarrhal jaundice	1	0	1
Asthma	1	0	1
Convalescent pneumonia... ...	1	0	1
Pyorrhoea alveolaris	1	0	1
§§Kala-azar (by special request of Dr. Row)	1	0	1
Testicular enlargement 3 years (by special request of Lieutenant-Colonel Street, I.M.S.)	1	0	1
Total	49	3	46

* In all cases the malarial parasites were demonstrated in smears, a routine examination of all fever cases admitted being made. The results are in accord with the findings of Flatcher (On the Wassermann Reaction in Malaria at Kuala Lumpur, *Lancet*, June 13th, 1914). All cases of true malaria, unless complicated with syphilis, yield negative results.

† Four benign (parasites in blood) tertian; one malignant tertian.

‡ No filaria in blood.

§ One C.S.F., tubercle in lung; one paraplegia, tubercle in spine; one tubercle in left apex.

¶ One nodulo-anaesthetic, positive reaction; one anaesthetic (*B. leprae* in smear from patch), negative reaction.

** By kind permission of Captain Jones, M.D., I.M.S. No signs nor symptoms nor history of syphilis.

†† Complement fixation with tubercle (kindly lent by Dr. Row) also negative.

‡‡ Fluid obtained *post mortem* from control accident cases (otherwise healthy).

§§ Complement fixation with the patient's serum and kala-azar antigen was done by the writer by special request of Dr. Row, who describes the test elsewhere in detail.

Now as to *luetic cases:* 31, including manifest, latent, and doubtful cases of syphilis, were examined. Of these, 24 gave a positive reaction.

Out of a total of 14 cases with sores (5 clinically Hunterian), 4 yielded positive results. One negative case

with a receding papule had two injections of neo-salvarsan before the test. In a positive case with mixed infection the reaction was obtained on the seventh day. The percentage of findings is rather large, as all the cases came directly under observation without previous treatment. I do not consider the reaction as essential at this stage, though it may help to differentiate chancroidal conditions and urethral chancres.[1] The finding of *Spirochaeta pallida* at this stage is more easy and equally reliable, according to Major Harrison. Of the other 9 cases of multiple sores, buboes, and gonorrhoea, 8 gave negative results. Of 17 cases of secondary syphilis (including 2 latent cases with positive reactions), 14 yielded positive results, or 87 per cent.; 8 cases of tertiary syphilis were examined, 4, or 50 per cent., gave positive results, 4 negative; of the latter, 1 was a chronic alcoholic, had one injection of salvarsan and took mercury; 2 had been under mercury for a long time, more than four years. Thus the results depend on the stage in which the patient is and the treatment the patient has had.

Persons under observation at the Northcote Police Hospital Cells.

Diseases.	No. of Cases Examined.	Results.	
		Positive.	Negative.
Cerebral syphilis	1	1	0
Tabo-paresis	1	1	0
Uncertifiable (no signs of syphilis) ...	1	1	0
Melancholia	1	1	0
Delusional insanity	1	1	0
Senile dementia	2	0	2
Toxic insanity (Ganja)	3	0	3
Acute mania	1	0	1
Malingering	2	0	2
Homicide	1	0	1
Total	14	5	9

Out of 14 cases examined amongst persons under observation at the Northcote Hospital cells prior to the certification of their mental condition, 5 gave positive reactions—that is, 35.7 per cent. One positive case showed early signs of cerebral syphilis, loss of memory and incoordinate speech. There was a history of syphilis contracted five years ago. Of the remaining 4 positive cases, 1 was a tabo-paretic with perforation of the septum and Romberg's sign and Argyll Robertson pupil and delusions; the other 3 presented evidences, such as general glandular enlargement, scar on the penis. This shows that the prevalence of syphilis is large amongst the class of people who eventually become residents of asylums or gaols. The writer hopes to pursue his observations on this class of patients.

Lastly, I may mention a case sent by Dr. D. for an opinion, as the patient wanted to marry:

A. S., aged 22, a Jew, gave the following history: Had primary sore October, 1912; secondaries, March, 1913. Had three injections of salvarsan—0.4, 0.6, 0.6 gram—under the late Dr. Jan Mohamad, M.D.Lond., at intervals of fifteen days. He continued mercury after this from May, 1913, to a month prior to the examination, when he presented no signs or symptoms. He gave a negative reaction.

The case in question demonstrates the importance of the Wassermann reaction, not only for diagnosis but for the more important point of prognosis in syphilis.

I thank Dr. A. Powell, Police Surgeon, Bombay, and during his temporary absence on leave his successors, Captain D. Jones, I.M.S., and Major Murison, I.M.S., for kindly placing at my disposal clinical material at the Northcote Hospital, Bombay, during the six months over which the observations extend.

REFERENCES.

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INSECTS AND WAR:

XIII.—*THE MOSQUITO (Anopheles maculipennis).*

BY

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MASTER OF CHRIST'S COLLEGE, CAMBRIDGE.

(*Continued from p. 331.*)

> Gnats are unnoted wheresoe'r they fly,
> But eagles gaz'd upon with every eye.
> SHAKESPEARE, *Rape of Lucrece.*

The Egg.

THE eggs of the mosquito are deposited in fresh water, and at first they are white, but they very rapidly darken until they assume a polished black appearance. Each egg is 0.72 mm. in length and its greatest breadth, which is somewhere about its middle, is 0.16 mm. The egg is boat-shaped and one end, as is usual in boats, is slightly deeper and fuller than the other. The under surface is fluted and is marked by a minute network. The upper surface has a coarser reticulation which divides the surface into nearly equal hexagonal areas. The rim of the "boat" is thickened, and these thickenings are regularly ribbed: they extend over about the median third of the egg and recall the rounded float which runs along the edge of a lifeboat, and indeed they serve the same purpose, for they are composed of air cells, and their function is to keep the boat-shaped eggs right side upward. Soon after the egg has been laid it is of a greyish-black colour, but after a certain amount of attrition an outer membrane splits off—the membrane which has given the egg its reticulated appearance. This membrane scales off in fragments, and is of a grey colour. The egg beneath it is glistening black, as shiny and as black as patent leather.

One curious fact that Professor Nuttall and I noticed in the life-history of the egg is that when it is drawn by capillary action a little way out of the water on to the leaf of a water plant or some other half-submerged object, the blunt end always points downwards. Now the blunt end is the head end, and thus, should hatching take place whilst the egg is suspended half in the water and half in the air, the larva will emerge into its proper element and not into the atmosphere.

Like other objects floating on the surface, the mosquito egg slightly indents the surface. The number of eggs seems to vary. According to Grassi, each female deposits about one hundred eggs, whilst Howard puts the number as varying from forty to one hundred. According to the former writer, the eggs of *A. maculipennis* lie side by side like the bridges of boats which span the Rhine, whilst those of *A. bifurcatus* arrange themselves with their ends in contact, forming star-like patterns. Unlike the eggs of the gnat (*Culex*), the eggs of *Anopheles* do not adhere together, and the result is they are very readily scattered by the wind. But in sheltered places, like a laboratory aquarium, if undisturbed, Grassi found that they tended to congregate together, as indeed do most minute objects floating on the surface of the water. Our observations did not entirely confirm those of Grassi. In Cambridge, at any rate, we found the eggs in our aquaria always scattered. Very frequently empty eggshells were met with, but they too were scattered. As a rule, the ova are deposited in water rich with algae or other vegetable life, and are more frequently in shallow than in deep water, the temperature of shallow water being naturally somewhat higher.

On the second or third day after oviposition (and this depends upon the temperature), the young larva leaves the egg and begins to swim in the water. The egg hatches by the detachment of a cap-like portion of the anterior end of the eggshell. There is no visible ring indicating the limits of this operculum, but the cap is usually more or less of the same size. Opinions differ as to how far desiccation interferes with development of the larva in the eggshell. They do not seem to be able to stand more than forty-eight hours of drought. There is no evidence that they can survive throughout the winter period. Everything that we know indicates that the egg must pass this period within the mother's body, and that they only attain maturity in early spring, when the weather becomes warmer.

The Larva.

The larva of the mosquito is one of the most fascinating objects one can watch under the microscope. It is very complex, and consists of the usual arthropod regions of (1) the head, (2) the thorax, and (3) the abdomen.

Without going into the question of how many typical somites make up the head, we must state that the thorax has the typical number of three, much fused together, and the abdomen nine. The first seven of these are very much

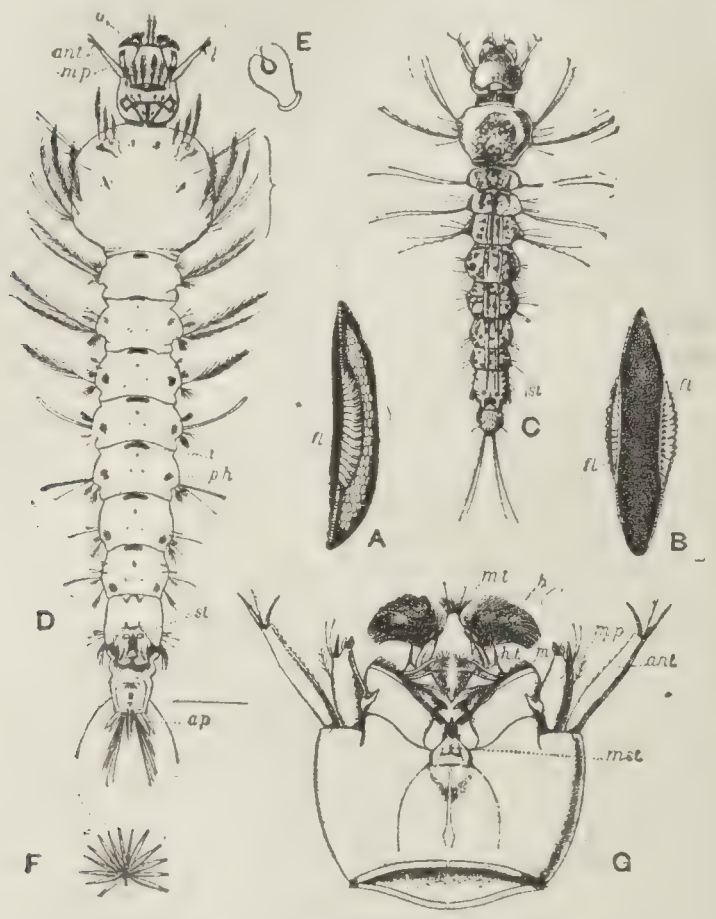


Fig. 1.—Larva and eggs of *Anopheles*. A, Egg seen from the side × 60; *fl*. the float. B, Egg seen from the upper surface × 60; *fl*. ridge of air chambers which acts as a float. C, Very young larval stage × 60; *st*. stigma. D, Fully-grown larva × 6; *b*. brush; *ant*. antenna, *mp*. palp of maxilla, *th*. thorax, *st*. stigma, *t*. tergum, *ap*. anal papillae. E, Flabellum or flap, which overhangs the base of certain thoracic hairs. F, A palmate hair, highly magnified. G, Ventral view of head of a fully grown larva; *mt*. median tuft of hairs, *b*. brush, *h*. stout hairs of mandible, which arrange the brush; *t*. teeth of mandible; *m*. hooked hairs at edge of maxilla; *mp*. palp of maxilla, *ant*. antenna, *mst*. the "underlip" of Meinert or metastoma.

alike; the eighth, however, bears the large stigmata or orifices of the breathing system, and the ninth a number of beautifully arranged hairs, by means of which the larva to a great extent steers itself. The head resembles two-thirds of a sphere, and is covered with a complete and clearly defined brown chitinous case. The eyes are lateral, and on each side we have both a simple and a compound eye. In front of each eye is a little protuberance, which carries the antennae, and between these two eminences a band of pigment runs across the head, from which six symmetrically placed immovable feathered hairs project, wreathing the head, as it were, with a halo. There are many other hairs on the head, whose number and shape are of great systemic importance. The anterior edge of the head carries on its under and on both sides a conspicuous brush, very like a shaving brush, the constituent hairs of which are arranged in a spiral, and it is these brushes which sweep the food into the mouth of the young and voracious larva. The base of this brush is so arranged that when depressed and bent towards the mouth the two brushes approximate, but each brush can move independently, and often does so; one might be depressed towards the mouth, whilst the other remains erect.

The larva passes its life hanging on to the under surface of the surface-film of the water, its dorsal surface being uppermost. In fact, as Sidney Smith pointed out about the sloth, "it passes its life in a state of suspense, like a young curate distantly related to a bishop." But, since these larvae feed on any kind of organic débris that floats up to the top and is there arrested by the surface-film, it is obviously important that the brushes which sweep together these organic particles should be next the surface, and to effect this the head must rotate through an angle of 180 degrees; and the head does turn on the neck so sharply and accurately that as it comes into position you almost think you hear a click, just as you do when you rotate the diaphragm of a microscope. The mouth parts now begin to vibrate upward and forward, and the brushes are bent downwards, backwards, and inwards. Round the mouth is a small space, the walls of which are completed by the mandibles, and into this space the brushes are suddenly bent back, at the same time the mandibles and maxillae move forward to meet them. This movement may take place as many as 180 times a minute, and it produces a current converging in concentric curves towards the above-mentioned chamber. The water filters out between the sides, and any particle of food is retained by the hairs or by the mouth appendages; from time to time the mandibles are brought together, and their stiff hairs are run through the brushes like one's fingers run through a beard; at other times the brushes disappear far into the mouth, and then are slowly withdrawn, passing through the comb-like bristles on the mandibles. The brushes are frequently swallowed, and are withdrawn in little jerks, so that the maxillae have every opportunity of combing any nutritive particles out of them. The whole operation is a most fascinating one to watch.

As far as one can judge, the current set in motion by the action of all these forces extend in an area equal to twice the length of the larva, or even more. The currents are in the plane just below the surface-film, and any organic matter lighter than water is swept towards the mouth. In fact the larva sweeps the lower side of the surface-film of the pond or puddle just as you might sweep spiders and flies off a ceiling with a hand-brush.

The principal food supply of the larva are the spores of fresh-water algae, diatoms, particles of *Spirogyra*, and any other organisms which do not penetrate the surface-film. Occasionally the larvae devour the decaying leaves of *Lemna*, and sometimes they attack their dead fellows.

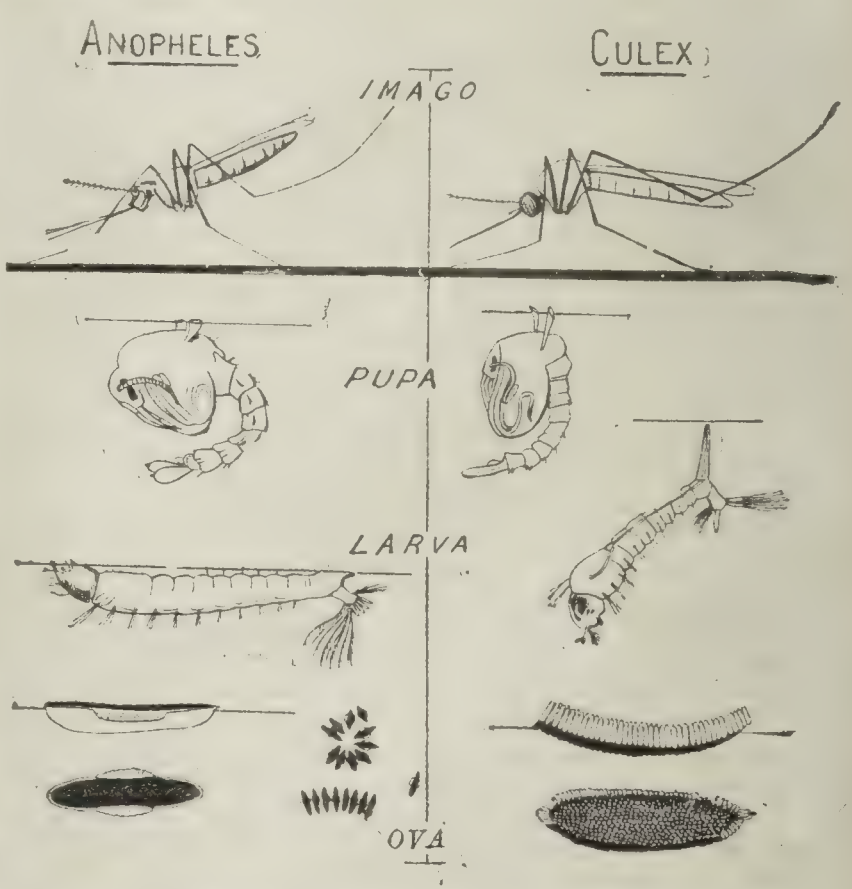


Fig. 2.—A comparison between the various stages in the life-history of the mosquito (*Anopheles*), on the left, and the gnat (*Culex*), on the right.

Grassi found the intestine of the larva to contain protozoa, unicellular algae, and other organic detritus. In course of time some object too big for the larva to swallow is brought to its mouth by the currents, and after a very short struggle this is rejected. The minuter particles accumulate in the chamber for a certain time, and then are swallowed by a gulp-like motion and thus pass into the oesophagus.

GENERAL ANAESTHESIA FOR EYE OPERATIONS.

BY T. HARRISON BUTLER, M.D.OXON.,

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DURING last autumn several letters appeared in the BRITISH MEDICAL JOURNAL upon the subject of general anaesthetics in eye work. Most of the writers seemed to think that the dangers of chloroform were exaggerated, and that this drug, either alone or in combination with ether, was the most suitable for operations upon the eye which demanded a general anaesthetic.

As the subject was obviously one of considerable interest, I introduced a discussion upon the whole question at a meeting of the Midland Ophthalmological Society, held at the Birmingham Eye Hospital on December 1st, 1914. The discussion showed that all the members recognized the dangers of chloroform, and preferred to use ether, either alone or in combination. There was a general agreement that chloroform was too dangerous to use alone, and that the risk of the A.E. mixture was intermediate between chloroform and ether, but that in some cases it was more convenient than the latter. The following remarks contain the substance of my introductory paper, with the addition of the views expressed by some of the surgeons present.

In spite of the peculiar advantages which the eye offers for the action of local anaesthetics, and of the variety of drugs which we now have at our command for rendering the globe insensible to pain, there are still many operations which call for general anaesthesia, and some patients who are unsuitable subjects for local anaesthesia alone. Our operations are usually of such short duration that the problem of general anaesthesia in eye work is not exactly the same as that presented to the general surgeon, and merits special consideration.

Cases requiring General Anaesthesia.

The discussion of the subject falls naturally under three heads: Under what conditions is general anaesthesia necessary or advisable? What is the best agent to employ? and Which is the most suitable method of induction?

A general anaesthetic must be used when the operation is of such a nature that pain cannot be adequately abolished by a local analgesic; when, owing to tender age or diseased mentality, the patient does not possess the necessary self-control; and, finally, when the physical effect of the operation, even when it can be performed more or less painlessly, is liable to affect the patient adversely.

It is a matter of experience that cocaine and other local analgesics do not exert their full influence upon an inflamed eye, and when it is necessary to operate in the presence of inflammation general anaesthesia is called for. During my visit to Paris two years ago I saw two operations performed upon eyes which had been injured and were in an inflamed state. Local anaesthesia was employed, and in each instance the attempt was a failure. General anaesthesia is indicated for iridectomy in acute glaucoma and for operations during acute irido-cyclitis. It is not necessary when iridectomy is performed in cases of seclusio-pupillae with iris *bombé*, and as a prophylactic against recurrent iritis. In the presence of marked ciliary injection a general anaesthetic should be employed for an iridectomy. Paracentesis or a Saemisch's section is apt to be exceedingly painful if the eye be inflamed, and local analgesics will probably fail. It is far better to employ gas for both these operations than to risk failure by trusting to cocaine. My rule in such cases is always to use gas, or gas and ether, if there be any doubt as to whether a local agent will completely abolish pain. On the Continent, and especially in Germany, there seems to be a strong disinclination to employ general anaesthetics, but my observations in various foreign clinics have led me to the conclusion that the administration of general anaesthetics is in a very backward state upon the Continent, and that fatalities are more numerous than they are in the British Islands and in North America. To the best of my knowledge professional anaesthetists do not exist in these countries.

Excision of the lacrymal sac practically never demands a general anaesthetic. The expert use of codrenine gives a painless and almost bloodless operation.

I have rarely found that operations upon the tarsus are painless under local analgesia, but MacCallum and others state that most trichiasis operations can be performed in this way. Plastic operations upon the lids are best carried out under general anaesthesia. In addition to the fact that it is difficult to obtain analgesia, I believe that extensive infiltration with local anaesthetics diminishes the vitality of the flaps.

Many children are perfectly docile, and tolerate operations under local analgesia as well as adults. I have performed advancement upon children, aged 6 years, with cocaine and adrenalin; but generally we may say that children under 8 years of age require a general anaesthetic for advancement. During the past two years, in addition to instilling a solution of cocaine 5 per cent., I have injected a few drops of codrenine under the conjunctiva round the lateral recti, and find that advancement and tenotomy is painless and that quite young children make no objection to the operation. It is rather a question of temperament and home training than of years.

Certain adults have no self control whatever, and they must be anaesthetized for operations. It is exceedingly difficult, and even dangerous, to remove a cataract under general anaesthesia, but if the patient possess no self-control, extraction under cocaine is still more dangerous, for extensive loss of vitreous is almost certain to occur.

In Germany it is quite a common practice to excise the eyeball after deep injection of local anaesthetics in the region of the ciliary ganglion. Pooley of Sheffield, at the Oxford Ophthalmological Congress (July, 1914), recommended this procedure, which he has undertaken several times with success. Priestley Smith, sen., told the meeting during the discussion upon this paper that he and his son had excised the globe under novocain anaesthesia in the case of a feeble old man who was held to be an unsuitable subject for a general anaesthetic, and the operation was completed without pain. Mr. Coulter of Newport stated that he had removed several eyes after deep injection of novocain with satisfaction to himself and his patient.

It seems, however, undesirable that a patient should be conscious during what must be to him a ghastly experience, and therefore, on psychical considerations, I should generally use ether for enucleation.

The Choice of an Anaesthetic.

In a letter, recently published in the BRITISH MEDICAL JOURNAL, Mr. Whiting said that upon this subject I hold views which he characterizes as "extreme, not to say immoderate." He is perfectly correct, but I hope to prove that I have some grounds for my uncompromising antagonism to the use of chloroform.

The anaesthetic agents at our command are: Gas; ether, used alone or in combination with gas or ethyl chloride; ethyl chloride; and chloroform, alone or in combination with ether.

I have found gas useful for paracentesis or for Saemisch's section. I have performed iridectomy for acute glaucoma under gas, in a case in which the anterior chamber was deep and the operation promised to be easy, but on the whole I prefer to add a little ether for these operations. Ethyl chloride is a suitable anaesthetic in such cases, but I do not use it because there have been several fatalities under this anaesthetic in the case of more robust individuals than the usual subjects of glaucoma and hypopyon ulcers.

Chloroform, either alone or mixed with ether or with ether and alcohol, is the anaesthetic most commonly used by ophthalmic surgeons. In many respects it is the most suitable. It is easy to administer from the mechanical standpoint, it is pleasant to inhale, and gives a quiet and deep anaesthesia. It is, however, now fully recognized that it is the most dangerous anaesthetic in common use. The patient is apt to die upon the table from sudden cardiac failure, and he may succumb later on to acidosis. The addition of ether slightly diminishes the danger.

The death-rate from chloroform is about 1 in every 2,000 administrations. The statistics of the Registrar-General show that the number of deaths from chloroform, *and mixtures containing chloroform*, vary from 83 to 90 per cent. of the annual total of deaths under anaesthetics. In the year 1911, 276 persons died from general anaesthesia—that is to say, that two patients die from chloroform

every three days! The number shows no tendency to diminish, but rather the opposite. Levy has analysed 109 fatal cases.[1] In no instance was there any evidence of over-dosage, and in 87 per cent. of them there is evidence that the patient was in a state of light anaesthesia. He develops the view that the exact cause of death is delirium cordis, ventricular fibrillation, and supports his theory by a series of very convincing experiments upon cats. Levy believes that under light chloroform anaesthesia the heart is in a condition which is peculiarly liable to fibrillation. In this stage a variety of stimuli may precipitate fibrillation. The injection of adrenalin is a most potent stimulus, and rarely failed to kill a cat under light chloroform narcosis. It is now recognized by rhinologists that adrenalin cannot safely be used in conjunction with chloroform, unless injected before the administration begins. I have been fortunate in escaping a chloroform fatality in my own practice, but I have had two or three very narrow escapes. I have, however, personal knowledge of several catastrophes. During the past year there has been a chloroform death in this hospital, and only last week one of the surgeons had an alarming experience, which nearly resulted in a chloroform fatality. Two years ago, in the Warneford Hospital, an apparently healthy young girl died under chloroform during the induction stage, and we have had at least two deaths during the past eight years at the Coventry Hospital. I know of other chloroform accidents, but during the whole of my medical life I have heard of no case of death from ether, either on the table or afterwards. Bernard Cridland told the meeting that there had been two deaths from chloroform recently at Wolverhampton, and he was always nervous when a new house-surgeon was administering it. Dr. Haynes, anaesthetist to the General Hospital, Birmingham, said that although trained in Edinburgh to use chloroform by the towel method, he now rarely administered it, because he regarded it as very dangerous. The C.E. mixture was safer, but ether was incomparably the safest of all. Beatson Hird said that he would never use chloroform unless the administrator took the full responsibility. He regarded the A.E. mixture as the best anaesthetic for eye work. It must, however, be remembered that, as we have already said, fully 85 per cent. of all deaths from anaesthetics have been caused by chloroform.

The facts and opinions speak for themselves, and they have fully determined me never to employ chloroform, either alone or with ether, to anaesthetize my patients. I have forbidden all my house surgeons to use it for any patient under my charge.

Ether has certain disadvantages in general surgery, but they are not so marked in the short anaesthesia demanded in our work as during longer operations. It is a very disagreeable drug to breathe, but the use of nitrous oxide gas during the period of induction completely overcomes this objection. There is in some patients a tendency to congestion and to the excessive secretion of mucus in the respiratory passages; but in most cases these phenomena do not arise during the early stages of anaesthesia, and a short eye operation will be completed before the secretion of mucus becomes troublesome.

It has been suggested that the apparatus used for inducing ether anaesthesia is apt to incommode the operator. This is by no means the case. If such a machine as Clover's inhaler be employed, it is perfectly easy to remove it when the operation is being performed. If the procedure be a long one, the inhaler can be replaced by a piece of lint or gauze, and ether can be given by the open method, or the open method may be adopted from the first. I have, however, without inconvenience, carried out hundreds, I think I may say thousands, of operations upon the eyelids, at the British Ophthalmic Hospital, Jerusalem, while ether was administered from a Clover's inhaler by an Arab boy. I have in more recent times performed several squint operations in the same manner, and the inhaler did not worry me in the very slightest degree. The absolute freedom from any anxiety as to the safety of the patient enables one to concentrate one's whole attention upon the details of the operation.

Its opponents state that ether is liable to cause pneumonia and bronchitis. I have had no experience of these complications either after ether or chloroform. As a matter of fact, statistics show that lung complications are enormously more frequent after chloroform than after open ether anaesthesia. The following figures were given by Dr. Rood at the Liverpool meeting of the British Medical Association.[2] Korte had 7.2 per cent. of lung complications in 3,909 laparotomies under chloroform; Czerny had 3.9 per cent. in 1,302; Kummel 2.5 per cent. in 1,754; and Trendelenburg 5.4 per cent. in 1,829. With open ether anaesthesia Krönlein only had 0.56 per cent. in 1,409 cases. The average for chloroform is 4.75 per cent. against 0.56 per cent. for open ether. In other words, chloroform is in this respect eight times more dangerous than ether. Ether is also far less likely to produce degenerative changes in the liver and kidneys than chloroform. Leedham-Green, in a paper read at the same meeting,[3] said: "There is no doubt that chloroform is six or seven times as dangerous as ether, and, as at present administered in most of our large hospitals, is attended by very serious risk to life—so serious that a very grave responsibility rests upon those who use it as a routine anaesthetic." My experience fully corroborates this view, and I think that any one who has a death from chloroform when ether could have been used is morally responsible for the loss of his patient.

I shall not consider the methods of giving chloroform: they are all dangerous. The most recent Harcourt type of apparatus, which gives a 2 per cent. vapour at will, has proved no less dangerous than the simple towel or lint mask.

Ether may be given either by the open method or by a Clover type of apparatus. I prefer to induce with gas and ether mixed, and then for long operations to continue with the open method. It is most essential to keep the jaw well forward, the lower teeth must be kept well in front of the upper. I find it most difficult to get this done, and in consequence patients become cyanosed. It is rarely necessary to move the index beyond the quarter sign; most young administrators use far too much ether, and then when faced with difficulties blame the ether.

In conclusion, I would ask that ether should be given a fair trial, but that it be correctly administered. A cataract extraction is the final test of an anaesthetic; I have performed one with perfect ease under ether, but I arranged to have a first class administrator.

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[2] BRITISH MEDICAL JOURNAL, September 14th, 1912. [3] Loc. cit.

MYELOID SARCOMA OF THE FEMUR, WITH PATHOLOGICAL FRACTURE.

BY

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THE following case raises certain interesting points affecting diagnosis of pathological fracture:

Miss G., aged 28, a children's nurse, who had suffered from no previous diseases of importance, except that she had had haematemesis on several occasions (the last during February, 1914), came under treatment with the following history:

Towards the end of December, 1913, she was carrying a pail of water down some stone steps, when she slipped and struck the inner side of her knee against one of the steps. She experienced a sickening pain, and had to sit down for a few moments. A day later a bruise appeared, but the pain soon ceased, and she forgot all about the accident until March, 1914, when she was troubled by aching in the muscles behind the knee.

On March 21st, as she was stepping off a bus (which was not moving at the time), her knee suddenly gave way under her, and she fell. She was in great pain, was unable to rise, and could not straighten the limb. On examination at home soon afterwards the knee was seen to be slightly flexed and externally rotated. Any attempt at passive movement caused great pain. Dr. George diagnosed laceration of the internal semilunar cartilage, manipulated the leg as well as possible, and bandaged it up. As the position was still not perfect, however, the patient was transferred to hospital, and a general anaesthetic was administered. The leg was then easily put straight, and went back with a click strongly suggestive of the reduction of a dislocated semilunar fibro-cartilage. On

repeating the manipulation, the cartilage could apparently be felt, slipping in and out of position.

For a time the patient was much relieved. At first there was much fluid in the joint, but this disappeared under massage and passive movement. She was able to walk, although there was a little tenderness on pressure over the internal condyle. The only movement that caused real pain was full flexion, which always gave rise to aching at the back of the joint. Full extension (which would tighten up the posterior ligament of the joint, and press upon the cartilage if it were still displaced) could be quite painlessly performed. The pain persisted, and it was found that the knee was still an inch larger in diameter than the opposite one, even though no fluid could be demonstrated. Tuberculosis or osteo-arthritis was then suspected, and a skiagram was taken. It showed a clear, well-defined cavity in the interior of the internal condyle of the femur, which was somewhat expanded; the wall of the cavity was thinned out and quite even in outline. There was no blurring of the definition of the parts around, nor any of the "fuzziness" that is so characteristic of tuberculosis. On careful examination the plate also showed a fracture of the internal condyle, involving the knee-joint, but this was missed by everybody at the time. Had it been observed, it might have led to a more detailed diagnosis being made before operation.

It was decided that the case was one of endosteal sarcoma following the injury of December, 1913. Mr. R. P. Rowlands, who saw the patient in consultation, concurred in this suggestion, and advised that the limb should be amputated, inasmuch as it was not possible to perform any conservative operation that would not entail much subsequent deformity and disability.

On May 2nd, the patient was anaesthetized with Barker's stovaine-glucose solution by spinal injection, and rendered just unconscious with a minimal amount of ether, given by the drop method. She had also had morphine, gr. $\frac{1}{3}$, and atropine sulph., gr. $\frac{1}{100}$, an hour previously. Axillary saline infusion was also administered, and Dr. George, assisted by Dr. E. C. Andrews, amputated the limb through the thigh by means of unequal anterior and posterior flaps. At the conclusion of the operation the patient's pulse was strong and regular (70), the colour was good, and there were no signs of shock. Within half an hour of leaving the theatre the patient was talking comfortably to her nurse. The after-history was uneventful, and up to the present time no recurrence has taken place.

On examination of the part removed, it was found that the internal condyle of the femur was occupied by a cyst containing fluid blood, not under pressure; the cyst-wall was composed of dark, soft, maroon-coloured membrane, which could easily be stripped off and showed, on histological examination, the characteristic structure of a spindle-celled sarcoma, intermixed with a number of giant cells. The bony wall was so thin that it could easily be indented with the finger in several places, and there was a supracondylar fracture which had involved the knee-joint. A thin membrane stretched across the line of fracture, showing that union was at any rate tending to occur. The structures outside the internal condyle, in its immediate vicinity, were involved in an extension of the growth, as was demonstrated by the microscope as well as by the naked-eye appearances, but there was no extension towards the popliteal space, or up the thigh.

Looking back upon the case, one realizes that more importance should have been attached to the persistence of localized tenderness upon pressure over the internal condyle—a very valuable sign of a fracture in many cases. Such tenderness, moreover, is often seen in cases of endosteal sarcoma. Local tenderness betokens a local lesion. If the case had been one of tuberculosis, it is extremely improbable that it would have remained localized to one part of the joint for any length of time; it would have involved the whole cavity, and flexion, pain on movement, or pyrexia would have ensued. Possibly, also, on very detailed examination under the anaesthetic, the isolated movement of the internal femoral condyle might have been observed, if the idea of fracture had occurred. A skiagram taken then would have led to an earlier diagnosis of the existence of the growth. For it seems probable that it was the initial injury, the striking of the knee against the stone step, that gave rise to the sarcoma, and that the second trivial accident caused a pathological fracture. On reflection, it seems hardly possible that a mere step from a stationary bus to the ground could have caused such severe symptoms as were present in this case, unless some major injury had occurred, and perhaps the diagnosis of pathological fracture should at once have been discussed. At any rate the case is very instructive, though it is easy to be wise after the event.

As regards the technique of the operation, it is only necessary to comment upon the importance of the measures that were employed to abolish shock. Anxiety beforehand, and pain afterwards, were alike avoided by the use of morphine, and unconsciousness was induced and maintained throughout a fairly lengthy operation by the use of only two ounces of ether, even though given by the open method. The conjunctival reflex was brisk throughout, and the anaesthesia was so light that the patient was constantly moving her head and fingers; nevertheless, the relaxation of the lower limbs was absolutely perfect, she was receiving no painful stimuli whatsoever, as the nerve-blocking by the stovaine interrupted them, and therefore her pulse never exceeded 70, and shock was entirely absent. The combination of spinal analgesia with the lightest possible general narcosis is the ideal anaesthesia for these high amputations.

TREATMENT OF DRY PLEURISY BY TEMPORARY PARTIAL ARTIFICIAL PNEUMOTHORAX.

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THE following case well illustrates the benefit which may be derived from temporary separation of the two inflamed surfaces of pleura in a case of long-standing dry pleurisy by a layer of nitrogen, which in this way acts as a pneumatic splint, by means of which the inflamed parietal and visceral pleura may be put at complete rest, and conditions are produced under which repair and recuperation may be brought about—a condition which is not allowed them by Nature whilst they are in actual apposition. The length of time for which the so-called splint may be applied may be regulated by the requirements of the case.

My object in publishing this case is not by any means to advocate this method of treatment for every case of dry pleurisy, it is intended merely as a suggestion that the method might be well worth trying in similar cases of obstinate and long-standing dry pleurisy, where more recognized and better known means of treatment have failed.

A lady, aged 50, was sent to this sanatorium on May 7th, 1914. The recent medical history bearing on her present illness was that the right kidney had been removed for tuberculous disease in 1911. She had a sharp attack of dry pleurisy in September, 1913, the pain from which had continued ever since.

In January, 1914, four small haemoptyses occurred, for which the patient was confined to bed for a month. There was a further small haemoptysis in the beginning of March, and since then the patient had been living quietly at a South Coast watering-place.

Examination of the chest on admission revealed a healed tuberculous lesion at the left apex. There were signs of much dry pleurisy over the middle and lower lobes on the right side, a coarse leathery rub being audible from the fourth rib in front and the sixth dorsal vertebra behind, downwards to the base of the lung. Acute pain was complained of over this site. The patient was kept at rest in bed, and the usual palliative methods of treatment adopted, without bringing about any amelioration of the symptoms. Throughout this period the temperature and pulse-rate were normal.

After a lapse of ten weeks—no improvement being apparent—it was thought that gentle exercise might prove beneficial, and walking exercise, in gradually increasing distances, was commenced until a distance of two miles was reached. Still the pain proved most persistent, and as it was materially interfering with the patient's rest at night, she expressed her anxiety that something "radical" might be done to improve matters for her. The possibility of producing a partial temporary artificial pneumothorax was suggested, and the pros and cons were put impartially before her; after some consideration and consultation with her relatives, she requested that this treatment might be attempted.

On October 11th, 1914, under the influence of 0.5 c.cm. of omnopon-scopolamine, given half an hour previously, and a local injection of novocain, a Saugmann's needle was introduced into the sixth right intercostal space in the posterior axillary line. No difficulty was experienced in finding the interval between the parietal and visceral layers of the pleura, and 200 c.cm. of nitrogen were introduced. On the following day the patient still complained of pain, and on October 13th a further injection of 300 c.cm. of nitrogen was given at the same site. On the day following, auscultation showed the breath sounds over the right base

to be distant and no pleural rub was audible. Pain was distinctly relieved, though still present at the end of a very deep inspiration. On October 18th a further quantity of 300 c.cm. of nitrogen was introduced, which had the effect of entirely abolishing the pain, even at the end of deep inspiration. On November 1st a final injection of 400 c.cm. of nitrogen was given, after which the manometric readings of the intrapleural pressures were 0 and −3 cm. of water.

At no time during the periods of injection of nitrogen were there any signs of intrapleural fluid, nor was there any disturbance of the temperature or pulse-rate.

The after-history of the case was uneventful; there was no return of pain, and the patient was able to leave on February 8th, more than three months after the last injection, entirely free from symptoms. The physical signs at this time were those of slightly thickened pleura. The breath sounds were normal. The nitrogen had evidently become absorbed and the pleural surfaces were presumably in apposition again.

NOTES ON TWO CASES OF ANGIO-NEUROTIC OEDEMA.

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ON the morning of August 21st, 1914, I was called to see X., a clergyman, aged 49.

He told me that his throat had given him trouble during the night. The right tonsil and adjacent parts were somewhat swollen and congested. I prescribed a gargle of tannic acid and alum, advising him to rest his voice and to remain indoors. He then drew my attention to his hands and fingers, which, he said, were burning and pricking, and felt stiff and swollen. Some of the fingers certainly appeared a little swollen and reddened, but I suspected that the patient had probably scratched them in the endeavour to allay the itching, and I ordered an ointment of hazeline. Next morning I found the patient in his bedroom not feeling well enough to get up. The throat appearances were quite normal, but he had passed a wretched night owing to intense irritation of the hands and feet. All the fingers and both hands as far as the wrists, and all the toes and both feet as far as the ankles, were considerably swollen, reddened, and oedematous, especially over the dorsal surfaces. The patient could not refrain from rubbing and scratching them. I now recognized the nature of the affection. For local application I ordered a calamine and zinc lotion. Internally I gave an aperient and a mixture of sodium bicarbonate and rhubarb. By the next morning, the swelling and irritation of the hands and feet had very considerably subsided, but the penis and scrotum were enormously swollen and oedematous, the skin and subcutaneous tissue being so pale and translucent as to look like a bladder. The patient said that the swelling had been even greater. I ordered the same lotion and continued the medicine. On the morning of August 24th the hands, feet, penis, and scrotum appeared practically normal, though there still remained a feeling of tightness in the fingers and toes on movement. But the lower lip had now become enormously swollen; it was very tense and hard, and the patient said that it felt as if it were going to burst. I now ordered calcium chloride, gr. xv, t.d.s., and aspirin, gr. v, every four hours. By the evening the lip had returned almost to its normal condition. On August 25th and 26th the patient complained of some slight sensation of irritation about the feet and knees. I detected, however, a distinct puffy swelling on the right side of the neck, about 3 in. long and 2 in. wide, commencing at the lobule of the ear and extending vertically downwards. This swelling was not the seat of any pain or irritation, so that the patient had been unaware of its existence. On the morning of August 27th the upper lip commenced to swell and in a few hours reached a condition exactly similar to that of the lower lip on August 24th, yet by the evening the lip had almost regained its normal appearance. The swelling noticed in the neck the previous day had entirely disappeared. I ordered a diet of milk, farinaceous foods, and white meats, and advised him to avoid tea, coffee, and eggs. At 6.30 a.m. on August 28th I received an urgent message and asked Dr. Harrison, the principal medical officer, and Dr. Cassel, the assistant colonial surgeon, to accompany me. At 8.30 a.m. we found the patient with a general enlargement of the tongue, which could with difficulty be protruded. It had begun about 2 a.m., and there was for a time the greatest difficulty in swallowing, while speech was impossible. Nevertheless, the swelling had subsided considerably, although we noticed that speech was indistinct and heavy. Menthol, gr. ½, in pill t.d.s., and sodium sulphate and sodium sulphocarbolate in mixture were prescribed. During the whole illness the temperature varied from 99° F. to 100° F., and the pulse from 90 to 100. The urine was examined several times and always found to be normal. Dr. Cassel very kindly examined a blood slide and found nothing abnormal. There was never any abdominal pain or vomiting, but the patient suffered from attacks of nausea at times, and remained listless and disinclined for physical exertion. The heart and other organs appeared quite healthy. As the sodium sulphate mixture was causing much relaxation of the bowels, I prescribed, after a couple of days, a colchicum mixture and a tonic of iron and quinine with a saline aperient each morning. On September 4th his condition was unaltered. He felt disinclined for exertion, though he slept well and ate fairly well. Temperature 100° F. I advised a return to his usual diet. At about 3 a.m. on September 10th the patient awoke and found his tongue swollen; I saw him at 8.30 a.m., and found the left half of the tongue considerably enlarged, whilst the right half looked almost normal. The swelling, he said, had already subsided very considerably, and by the evening it was gone. On September 14th the patient left Belize for a sea voyage. On October 3rd, 1914, Dr. J. Edward Austin of Porto Cortez, Republic of Honduras, wrote saying that, "On September 18th I was called to attend X. He presented one of the most typical cases of Quincke's disease—angio-neurotic oedema—that has ever come under my observation, the gastric crises being especially severe. I have always found that calcium lactate controlled the manifestations better than any other remedy." This was the first and sole occasion that the typical abdominal pains were experienced. In a later communication Dr. Austin, who had practised for many years in Porto Cortez, stated, "I have seen in practice probably nine or ten cases, most of which were adult men." The patient returned to Belize on October 25th, and I saw him the next day. Dr. Austin administered calcium lactate with some benefit, although the swellings still appeared on the tongue at intervals of a few days. On the day he landed in Belize he had a similar attack affecting the tongue only. When he reached Bluefields, Nicaragua, as there was no calcium lactate in the town, a doctor put up a mixture containing calcium glycero-phosphate, and as the patient thought that this preparation had more effect in controlling the symptoms I advised him to keep on with it. Two weeks before the present illness, when in Corozal, a small coast town in the north of the colony, he awoke at 4 a.m. to find his tongue so swollen as to make it impossible for him to speak or to swallow. The previous evening he had gone to bed feeling perfectly well. He got some lotion from a chemist and by noon the swelling had subsided. About two months previous to the attack at Corozal the tongue was affected in precisely a similar way. The patient was born in British Guiana. From the age of 18 to 23 he remained in England, and after that, until the present illness, he had lived in the West Indies, but had made periodical visits to England, the time so spent amounting in all to about seven years. There is no history of any illness at all resembling this complaint in any member of his family, either on the maternal or paternal side; neither had the patient himself ever had an attack previous to his arrival in this colony some two years ago. He tells me that he has always been of a nervous and sensitive nature, but in general appearance is strong and healthy. His daughter, aged 23 years, has suffered for many years from very severe asthmatic attacks. The only illness he himself remembers to have had was an attack of dysentery in 1883, which became chronic and continued for about one year. Four years ago, when boarding a steamer in a storm, he received a severe blow on his back, followed by lameness and shrinking of the muscles of the right leg. This condition lasted for about one year, during which period he was not confined to bed. The leg is now strong and well.

The special features in the case were: (1) The rapid onset of the swellings, the speed with which they attained their maximum development, and their rapid subsidence. The duration of these swellings in the case under review was from six to ten hours. (2) The time of appearance of the swellings, almost invariably during the small hours of the morning. (3) The orderly progress of the swellings. The right tonsil and side of the throat were first affected, till the general march of the swellings was from the feet upwards, the last part affected being the tongue. (4) The muscular weakness which the patient experienced, not only during the attack, but after the acute symptoms had passed off. (5) Those parts which had been the seat of swellings were never attacked a second time, with the single exception of the tongue, and it would seem that this organ is peculiarly liable to suffer, in view of the fact that on two previous separate and distinct occasions it was affected and during the present illness it was attacked over and over again.

The above is an almost exact clinical picture of the disease as it affected the writer of this article in September and October, 1913, on his return to Belize after three weeks' camping out in the forest.

I was engaged in entomological research in the extreme south of the Colony on the banks of the Sarstoon River, and experienced, as was to be expected, many discomforts. The weather was very bad, torrents of rain fell every day, making the forest tracts almost impassable; the shelter I occupied leaked badly through roof and sides, and of course mosquitos played their part and bit viciously by day as well as by night. The food consisted of tinned

provisions only, for the Indians in the vicinity had long since killed or driven away all bush game. One night was spent in a hammock in an Indian's hut, and here I was attacked by large numbers of bed-bugs which caused me intolerable distress. The attack of angio-neurotic oedema commenced in the feet and terminated by attacking the tongue; other parts affected were the genitals, hands, upper and lower lips, and throat. It was accompanied by a very severe and abundant pustular eruption, resembling impetigo, most pronounced on the trunk and extremities; this set up a great deal of constitutional disturbance with pyrexia. In contrast to the case of X., there has been no return of the swellings. Dr. Byrom Bramwell, in his *Clinical Studies*, vol. v, p. 375, says:

> The characteristic features of the disease are: (1) The occurrence at irregular intervals, usually without any obvious exciting cause, of (*a*) oedematous swellings in various parts of the body, and (*b*) of attacks of abdominal pain and vomiting; and (2) the fact that the disease is hereditary.

I know of no evidence of this complaint in any member of my family, neither did I suffer from the severe visceral phenomena said to be so characteristic of this somewhat rare affection.

Dr. Byrom Bramwell also says (p. 396):

> The disase is often fatal and usually (? always) kills by implicating the throat (the production of oedema glottidis). So far as I know, no treatment hitherto has been successful.

In conclusion, I would like to draw attention to the fact that in this country the months of August and September are always particularly hot and trying. I wish very much to thank Dr. Harrison and Dr. Cassel for the assistance they have so kindly given me, and also Dr. Austin for the use of his valuable notes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INFECTION FROM CLOTHES IN ENTERIC FEVER AND OTHER COMMUNICABLE DISEASES.

FORTUNATELY inoculation is so successful against enteric fever that there is not the same fear of the spread of the disease as formerly; but there are other contagious and infectious diseases against which at present we have no means of rendering men immune. It is to call attention to a possible cause of the spreading of infectious diseases, a cause forgotten or not thought of in the hurry of preparations for war, that I write to remind medical officers with troops of a practice which prevailed in the early part of the Boer war, and, perhaps, occasionally now—that is, the returning to men leaving hospital of their clothes from the pack store unsterilized. On the occasion of an outbreak of enteric fever in a rest camp I found the clothes, great-coats, etc., of men who had returned from hospital convalescent after suffering from enteric fever on shelves in the hut alongside the remains of food, hidden away, such as bread, butter, jam, etc. I found that these clothes had been worn by the men whilst they were being taken to the hospital. On arrival at the hospital the clothes were rolled up and placed in the pack store. On the men leaving the hospital convalescent, the clothes were given back to them just as they had been placed in the pack store. The result of my report was that an order was issued for the sterilization of all clothes before being returned to the men from the pack store. Some time after I investigated another epidemic of enteric arising in a rest camp. In this case I found that a man had come from an out-of-the-way hospital, where there was no means of sterilizing clothes. He had suffered from enteric; his clothes had been taken from him on arrival at the hospital and returned to him without sterilization. He came to the rest camp; the result was several cases of enteric in the rest camp.

At the time I reported these cases the spread of enteric by any means except water and milk was doubted, but the experiments of Majors Firth and Horrocks, made later, as well as the fact that epidemics of enteric fever have arisen from infected clothes and blankets, have removed all doubts. and it is now admitted that enteric fever may be spread by infected clothes and flies as well as by water and milk.

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NOTE ON THE AGGLUTINATION OF THE MENINGOCOCCUS.

(*From Mobile Laboratory No. 1, G.H.Q.*)

IT is the experience of all bacteriologists who have worked with the meningococcus that it exhibits very variable agglutination reactions, even to the extent of refusing to agglutinate with an anti-serum prepared from the same strain. Our experience with a rabbit that was immunized with known strains isolated direct from the cerebro-spinal fluid is that the strains that were used to inoculate a rabbit sometimes fail to be agglutinated by the serum of the same rabbit. The ability to use the direct agglutination method when searching for the organism on serum agar plates grown from the throats of contacts is so valuable, and saves so much time and labour, that it is of the first importance to be able to place reliance on the constancy of the reaction.

The explanation of the inconstancy of the agglutination reaction that we offer is as follows: The meningococcus is an organism that very quickly shows involution forms in culture. Indeed, the presence of these forms, shown by irregularity of staining, is of the greatest aid in the identification of the organism. It is probable that these involution forms are due to autolysis by an intracellular proteolytic enzyme. Whatever the origin of these forms, their presence in a culture has been found by us largely to upset the agglutination process.

The following experiment is given in support of the statement that irregularities in agglutinating are very prone to occur in old cultures, and that these irregularities disappear when a young culture of the same organism is employed:

Agglutination in Serum Diluted 1 in 50.

	Read after 2½ Hours.	Read after 6 Hours.
Strain.	14 Hours' Growth.	48 Hours' Growth.
Price. ...	Good	Negative.
Coll.	Slight	Negative.
Hien.... ...	Fair	Slight.
Bak.	Complete	Very little.
Jahn. ...	Slight	Slight.
Harr. ...	Good	Negative.
Buch. ...	Good	Negative.
Hep.	Complete	Negative.
Pay.	Complete	Negative.
Gar.	Good	Negative.

The cultures had been in subculture for very nearly the same period, all having been isolated about ten days.

Controls with normal rabbit serum diluted 1 in 10 were uniformly negative.

SYDNEY ROWLAND,
ADRIAN STOKES.

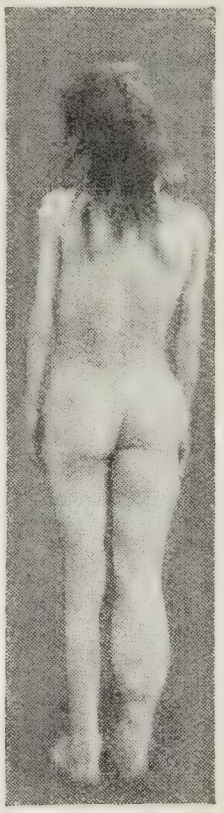
MULTIPLE LIPOMATA AND ELEPHANTIASIS IN A COUNTRY SCHOOLGIRL.

L. W., aged 12, was healthy at birth, and was breast-fed. When she was about four months old the mother noticed a swelling in the right mammary region. A swelling immediately below this, and another above and to the right of the umbilicus, appeared soon after. The child talked before she was a year old, but did not walk until she was two years old. The mother then noticed that the left leg was thin. She does not know when the swelling of the right leg and thigh appeared, as she considered the left the bad leg. The general health has been good. The father, a miner, and the mother were healthy; of their four children the two brothers and one sister were healthy, but the youngest girl, aged 10, was feeble-minded.

The child was anaemic and thin, and presented large

swellings in the right mammary region, and above and to the right of the umbilicus. There was a similar small swelling, about the size of a marble, on the sole of the right foot. These swellings were lobulated, fluctuating, and freely movable. The right leg and thigh showed a uniform firm enlargement, and the superficial veins were prominent. The swelling did not pit on pressure. A supernumerary toe was attached to the third right toe. The chest was thin, with supra- and intraclavicular hollowing. The breathing at the right apex was faint, but vesicular in all areas. There was a curvature of the spine in the lower dorsal region convex to the right. The child walked well. A blood film showed some poikilocytosis, slight polymorphonuclear leucocytosis, and some mast cells. The urine, specific gravity 1010, was pale straw colour, neutral in reaction, and showed no abnormal constituents. The teeth and digestion were good. The heart was not enlarged, and the sounds were closed and clear.





The child walks to school every day a distance of over a mile, and is considered very intelligent by her teacher. She drills with the other children, and has no pain in the right leg. The swelling does not increase during the day. The tumours have the characteristics of lipomata, but it is difficult to account for the associated condition of the leg.

MARION H. ARCHIBALD, M.D., M.A., D.P.H.,
Assistant School Medical Officer, Derbyshire County Council.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

AT a meeting on March 5th, Dr. W. G. SMITH in the chair, Dr. C. M. O'BRIEN showed a boy, aged 13, who had suffered from a very pronounced form of *Lupus non-exedens* for the last nine years. Although it was very widespread, the face of the patient was practically free; the mucous membranes were also unaffected. When admitted on October 8th, 1914, the weight was 6 st. 4 lb.; he was now 11 lb. heavier. The patient was under treatment at the London Hospital for almost three years, getting one hour's exposure of Finsen light on five days of the week. Since October 8th he had had three sittings per week of seventy minutes each. The most that could be claimed for the treatment was that it stopped the spread. Dr. E. J. WATSON read a paper on the *X-ray treatment of ringworm*. The CHAIRMAN said he thought the whole point of *x*-ray treatment was that this method had reduced to weeks a period of treatment which was formerly measured in months. Dr. HARVEY could support Dr. Watson's statement that occasionally cures occurred without epilation being complete. Dr. C. M. O'BRIEN regretted that Dr. Watson did not refer to his experience of children at the age of 3, as he considered it a great crux as to whether they should be treated or not, and if they were treated how it should be done. He himself had made it a *sine qua non* before treating a child under the age of 3 to get the consent of the parents in writing. He adopted this procedure as it had been suggested in some cases treated in London that the exposure to *x* rays had some effect on the brains of a child. Dr. M. J. HAYES said he was always cautious in the use of old tubes in the treatment of ringworm, as one could not be sure of their vagaries. Tubes which had been used for many hours in a period of months would give off rays greater than one would expect. This he could not explain, but he had experienced it on one or two occasions. He had used cataphoresis with copper sulphate ions, but this was somewhat troublesome, and was more painful. Dr. E. J. WATSON replied. Dr. W. M. CROFTON read a paper on the *Prophylactic inoculation against tuberculosis*. He said that practically every one who attained to adult years got infected with tuberculosis, but only a proportion of those infected developed the disease to a serious extent. The recovery of the majority was due to a normal resistance; therefore, the problem would be solved if the resistance of the minority could be made and kept normal. The only method was to render the soil unsuitable by prophylactic inoculation. T.R. was used, dissolved in liquid paraffin containing 2 per cent. benzoyl chloride. The doses are given at intervals of a week, increasing ten times each administration. They began at one-millionth of a milligram, and rose to one-thousandth for infants. Ten times these doses might be given to older children, and for adults an extra dose of one-tenth milligram might be given. The test of success would be the reduction of case incidence and of mortality. The experiment was innocuous, cheap, and easily carried out. Dr. MOORHEAD said that he had come to the conclusion that tuberculin as a prophylactic remedy against tuberculosis was not of much value. Professor COLLINGWOOD pointed out that one attack of tuberculosis did not produce immunity against another, but rather predisposed to it; therefore, one could not argue that a dose of tuberculin could produce immunity. The debate was continued by the CHAIRMAN and Dr. LAW.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

AT a meeting on March 12th, Dr. HERBERT JONES, President, in the chair, a paper on the *Etiology of diphtheria* was read by Dr. W. G. WILLOUGHBY, in which he dealt with the incidence of the disease on different soils. As with other diseases, though an individual could not have the disease without the bacillus, many individuals harboured the bacillus without suffering from the specific disease; until the other conditions besides the bacillus of diphtheria were necessary for the production of the disease or what caused the bacillus to become pathogenetic were ascertained, the disease would not be stamped out. Dr. Hugh Snell had given statistics which seemed to show that those districts were better off both as to prevalence and fatality that did not take diphtheria cases into hospitals. Dr. Willoughby considered that the true explanation was district immunity and that diphtheria was of such varied incidence according to locality that one district could not fairly be compared with another. He gave comparative figures of the relative incidence of over 1,000 cases of diphtheria occurring during the past twenty years in houses of the same class occupied by persons of the same social position and situated respectively on alluvium, on the beach, and on the chalk. Among the houses on the alluvium 46 per cent. were affected and 56 per cent. of the cases occurred; among those on the beach 24 per cent. of the houses were affected and 21 per cent. of the cases occurred, and among the houses on the chalk 30 per cent. of the houses were affected and 23 per cent. of the cases occurred. Dr. J. T. C. NASH considered that second attacks with no clinical symptoms might account for epidemics. Dr. J. J. PATERSON said it was not enough to have a throat and the specific organism; there must also be an activating factor. He quoted a case in which the diphtheria organism was carried for two months in spite of local treatment and without the slightest disturbance of health, but at the end of that time clinical symptoms developed. Dr. CHARLES PORTER and the PRESIDENT were of opinion that the methodical practice of swabbing was not of such importance as was generally considered, and Dr. T. W. N. BARLOW said that in Wallasey, where there was no swabbing in hospital, there were few return cases. Dr. C. SANDERS, Dr. CATES, Dr. SIDNEY LAWRENCE, and Dr. H. N. HARDING also took part in the discussion.

HUNTERIAN SOCIETY.

AT a "Clinical Afternoon" on March 10th, held at the Royal Hospital for Diseases of the Chest, City Road, full use was made of the resources of the hospital, not only in clinical and pathological material, but also in the great additional facilities for demonstration afforded by the recently-built out-patient building, with museum and lecture room, the latter fitted up with platform and epidiascope, well-equipped pathological laboratories, radiology room, and cardiology room. Dr. ALFRED C. JORDAN gave a *Fluorescent screen demonstration*, illustrating the examination of lungs, heart, aorta, posterior mediastinum, oesophagus and stomach. Dr. STOTT gave a *Cardiograph demonstration*, showing the electro-cardiograph, and tracings from cases of "heart-block," etc. Dr. CARNEGIE DICKSON showed, in the pathological department, recent specimens from a case of *Thoracic aneurysm* and a case of *Sarcoma of the left chest*, spreading from the glands at the left root. The wall of the left auricle of the heart had been destroyed on one side by the growth, which had thus come to form part of the wall of the auricle. The specimen in each case was compared with the skiagrams taken during life. Microscopic preparations were shown illustrating cerebro-spinal meningitis, both the meningococcus and the meningeal leptothrix being shown. Afterwards Dr. CARNEGIE DICKSON demonstrated the *Technique of the Wassermann reaction*. In the lecture room the *Epidiascope* was used by Dr. A. C. JORDAN, first to exhibit a series of war injuries, and subsequently some illustrations from Professor Ghön's book by Dr. D. BARTY KING, who has just completed his translation of the book. Dr. Barty King also showed a skiagram to explain a form of *Recurring local broncho-pneumonia in children* difficult to distinguish clinically from chronic pulmonary tuberculosis. The meeting concluded by a visit to the wards, where cardiac cases were shown by Dr. A. T. DAVIES and Dr. R. MURRAY LESLIE. In two cases of *Paroxysmal tachycardia* shown by Dr. MURRAY LESLIE, marked benefit had followed specific treatment, instituted in each case after a strongly positive Wassermann reaction had been obtained. Dr. LESLIE showed a man who suffered from attacks of true *Angina pectoris*, two or three daily—a disease scarcely ever encountered in hospital practice. Dr. A. T. DAVIES showed two cases of complete *Heart-block*, the auricles and the ventricles beating with independent rhythm. In both cases the rate of beat of auricle and ventricle was obtained in three different ways—by counting in the *x*-ray room, by the polygraph, and by the electrocardiograph. The results agreed very closely.

Reviews.

A PIONEER IN AMERICAN MEDICINE.

NATHAN SMITH may with literal truth be called one of the "Fathers" of American medicine, for he took an active part in the foundation of four medical schools—those of Dartmouth, Yale, Bowdoin, and the University of Vermont—and trained several generations of medical students. He was also a busy practitioner, "bandied," as he says, "from one part of the country to the other," treating fevers and all manner of diseases, couching for cataract, cutting for stone, excising tumours, and amputating limbs, and finding time to write on typhus or typhoid fever and necrosis treatises which show that he was a sound and original observer. He even performed ovariotomy some years, it is true, after Ephraim McDowell, but without knowledge of what had been done by the famous pioneer of Kentucky. Smith's first ovariotomy was done at Norwich, in Vermont, on July 5th, 1821.

Nathan Smith, who was born in 1762, was the descendant of Henry Smith of Hargham Hall, in the county of Norfolk, who emigrated in 1638. His youth was spent on his father's farm in the district of Chester, Vermont, and in the rough frontier life he acquired the self-reliance and strength of character that enabled him to overcome the many difficulties he had to meet in his professional career. At the close of the Revolutionary war he served with the Vermont Militia to protect the inhabitants against the Indians, and at the age of 18 he was promoted from the ranks to a captaincy in his regiment. Later he was a teacher in a district school. His call to the medical profession came to him when he was watching the amputation of a leg. The only way of learning the art open to him at the time lay in apprenticeship, and he spent three years assisting a doctor, who in return gave him a home and tuition. In 1787 he began the practice of medicine at Cornish, New Haven, without a degree. This was customary at that time. After two years of practice at Cornish he went to Cambridge, where he attended lectures and worked to such good purpose that at the Harvard Commencement in 1790 he took the degree of M.D. He then returned to Cornish, and, being the only qualified doctor in the neighbourhood, he soon got a large practice. But he was not content to remain a country practitioner, and he had strong views as to the need of training young men in medicine. He therefore submitted to the trustees of Dartmouth College at their annual meeting in 1796 a plan for the establishment of a professorship of the theory and practice of medicine. The only three schools where medicine was taught then existing in the United States were the University of Pennsylvania, the medical school of Columbia, and that of Harvard. The plan was approved, but final action was postponed for a year, and, while the trustees were making up their minds, Smith went to Europe to complete his medical education. He attended lectures at Edinburgh and spent some months in "walking the hospitals" in London. On his return to America he was in 1798 appointed professor at Dartmouth, his duty being "to deliver public lectures upon anatomy, surgery, chemistry, and the theory and practice of physic." As Oliver Wendell Holmes says, he filled not a chair, but a whole "settee of professorships." Students came in numbers, but the fees they paid were small; he received no salary from the college, his practice though extensive was not lucrative, and the accommodation for the medical department was small and inadequate. But nothing could damp Smith's enthusiasm. Further accommodation was provided, and in 1804 he was voted a salary of 200 dols. and became "passing rich on £40 a year"! The interest excited in the new department is shown by a story told by one who was then an undergraduate in the college:

> President Wheelock came from Dr. Smith's lecture room to evening prayers in the old chapel and gave thanks in substance as follows: "Oh, Lord, we thank Thee for the oxygen gas, we thank Thee for the hydrogen gas, and for all the gases. We thank Thee for the cerebrum, we thank Thee for the cerebellum, and the medulla oblongata."

Among his difficulties in the work of the school was the want of apparatus and appliances and the difficulty and expense of procuring them. There was also trouble in getting the school properly housed, and when the Legislature of New Hampshire was at last moved to make an appropriation for the purpose, the grant was burdened with the condition that Smith himself should give a site for the building. So severe was the struggle that he was at one time, after he had been battling for twelve years with poverty and ill-health and opposition of all kinds, tempted to give it up. But presently things became easier. He was elected president of the State Medical Society in 1811; at the same time he was gaining a great reputation as a surgeon, especially as an operator for cataract.

In 1812 it was decided to establish a medical department at Yale College, and Smith was invited by the trustees to help and to become professor of the theory and practice of physic, surgery, and obstetrics in the new institution. Here again Smith had to contend with popular prejudices against dissection and other difficulties, but these were overcome by his indomitable perseverance. In 1820 the first Legislature of the New State of Maine passed an Act establishing and endowing a medical school of Bowdoin at Brunswick, and Smith was placed at the head of it and delivered all the lectures except those on chemistry. Much of the success of the school was due to Smith's reputation and experience. The summer courses of lectures at Bowdoin did not clash with his regular work at New Haven, and the school at Yale continued to grow in reputation and numbers. It was only indirectly that Nathan Smith assisted in the establishment of the medical school at Vermont, which was founded a few years after Bowdoin. His son, Dr. Nathan Ryno Smith, was called to the professorship of surgery and anatomy, and his father

gave him valuable help. He also had a good deal to do with the foundation of the Jefferson School of Philadelphia in 1825 by his son Ryno and George McClellan. Among its first students were Samuel D. Gross and Washington L. Atlee.

Nathan Smith died in 1829, in the 67th year of his age, of paralysis following influenza. He was a man of the highest integrity of character, and although to the end of his life he had to struggle with money difficulties, he was extremely generous in his dealings with patients. But he achieved a far higher success than the accumulation of wealth. He trained large numbers of young men for the practice of medicine, and ever strove after the highest attainable standard of medical education in the face of difficulties that would have broken a weaker man. Mrs. EMILY SMITH'S book[1] is a readable account of a very notable career. Dr. William H. Welch contributes an interesting introduction. Several of Nathan Smith's descendants became distinguished in medicine.

REMEDIAL EXERCISES FOR SCHOOL CHILDREN.

CROOKED backs and lopsided shoulders are a deformity that present a handicap to the unfortunate possessor throughout life, and not infrequently embitter the mind of an otherwise valuable citizen. Such cases are rarer now than formerly, because of the spread of school gymnastics and trained instructors, and for these the paper of Mr. R. C. ELMSLIE on *Remedial Exercises in Schools and School Clinics*[2] will be of the utmost value. The children for whom special attention is necessary are those who in comparison with ordinary children (1) are unable to hold themselves habitually in a proper and symmetrical attitude, (2) are unable to carry out all movements to their normal extent, (3) have not a reasonable degree of strength and quickness, or (4) lack proper power of control and co-ordination of their movements. The condition may arise from an original congenital defect; from want of previous exercise of normal character; or from actual disease caused by inflammation, results of paralysis, and the like. The author expounds the principles upon which all exercises must be based to attain any real success. The movements to be effective must be performed of the free will of the patient; it is altogether insufficient to cause a passive movement to correct a deformity; there must be an active participation. On these lines he discusses in some detail the treatment of the common disorder of kyphosis and the measures for correcting the defect without producing other defects which only mask it. Similarly the defects of lateral curvatures and antero-posterior curvatures are dealt with. Lordosis the author considers a secondary deformity due to an adjustment of balance; its cure must depend upon the improvement of the primary condition, the discovery of which is the first step.

He points out that for the correct working of any clinic for the treatment of these cases a considerable knowledge of anatomy and the physiology of movement are required, as well as experience of the methods of teaching exercises and of their difficulties. It is not easy to find instructors who combine all these excellences, and he concludes that the best results are to be obtained by encouraging consultations between the medical man who has a knowledge of the requisite training and the physical instructor who is to undertake the work.

For most postural defects the children may be taken in small classes of from ten to a dozen. More severe cases will require the undivided attention of the instructor. Cases with fixed deformities, however, should only be treated by the orthopaedic surgeon himself.

The fitting of a sufficient gymnasium is not a formidable matter. For a special clinic a comparatively small room is required, and a ribstool, small boom with saddle, two plinth stools, and reversible bench comprise the only necessary apparatus.

Dealing with the prevention of these defects, Mr. Elmslie writes: "The simplest way to economize upon remedial treatment will be to improve the system of educational gymnastics." The work is one for which women are well fitted, and there is sufficient work for a whole-time teacher in any large school.

MATERIA MEDICA AND PRESCRIBING.

DR. HALE WHITE'S *Materia Medica*[3] has been used by many generations of medical students, and is well known as an excellent textbook of the subject. In the fourteenth edition the alterations, omissions, and deletions in the new *British Pharmacopoeia* are summarized in the preface, and the necessary changes have been made in the body of the book. As the work is intended for medical students, naturally most attention is given to the therapeutical side of the subject, and the pharmacognosy is dealt with much more briefly than would be the case in a work intended for pharmaceutical students. The short opening section on pharmacy contains a few statements to which exception might be taken; for example, alkaloids are defined as bodies having certain characteristics, one of which is stated to be "the solutions are intensely bitter," whereas certain of the alkaloids mentioned almost immediately afterwards are not at all bitter. Extract of strophanthus is mentioned under ethereal extracts, whereas ether is merely used to remove fat from the seeds, and this is rejected before preparing the extract by means of alcohol. It is somewhat surprising, too, to find a class of chloroform extracts mentioned in which the drug is extracted with chloroform water, as this appears to imply that the chloroform is used as a solvent instead of merely as a preservative during the process of extraction. These, however, are small flaws, and are principally to be noted in the first part of the book. In the main part the organic and inorganic drugs in general use, whether official or otherwise, are discussed in detail; they are divided into groups according to the nature of their action, and after a short description of the principal features of the drug a good deal of space is devoted to the pharmacology and therapeutics. Under this last heading many useful hints on the best methods of administration and prescribing are given, and the hand of the experienced physician can easily be recognized. Dr. Hale White's book is likely to continue to enjoy the wide vogue it has already attained.

LUCAS'S *Book of Prescriptions*[4] is intended particularly for the use of senior medical students in their work at the hospital, to assist in the acquisition of a knowledge of practical prescribing. The drugs and chemicals in therapeutic use are briefly described, with notes on their uses, and the distinctive feature of the book is that under each drug there are given a number of typical prescriptions in which it is ordered in suitable combinations. The use of such a book at the proper stage of medical education should do much to put an end to the prescribing of the factory-made combinations of more or less secret composition which are so assiduously pressed on the notice of the medical profession. In the present edition of the book particulars have been included of various remedies of recent introduction, while others which have become obsolete or redundant have been omitted. It is unfortunate that the new *British Pharmacopoeia* has not been consistently referred to in the revision; some drugs newly made official, such as hexamine and barbitone, are given under their new names, but in the case of some preparations which have been altered in strength the old doses are given, and this is not without some risk of causing dangerous errors. For example, the dose of tincture of strophanthus (which has been increased to four times its previous strength), is still given as 5 to 15 minims, instead of 2 to 5; that of vinegar of squill (which has been doubled in strength) is given as 10 to 30 minims, instead of 5 to 15. Other imperfections in the revision may also be noted; thus under preparations of hexamine, a paragraph is given to formamol, which is described as hexamethylene-

[1] *The Life and Letters of Nathan Smith, M.B., M.D.* By Emily A. Smith. With an introduction by W. H. Welch, M.D., LL.D. New Haven: Yale University Press. London: Oxford University Press (H. Milford). 1914. (Demy 8vo, pp. 199; 27 illustrations. 10s. net.)

[2] *Remedial Exercises in Schools and School Clinics.* By R. C. Elmslie, M.S., F.R.C.S. Issued by the Medical Officers of Schools Association. London: J. and A. Churchill. 1914. (Roy. 8vo, pp. 19; 17 figures. 1s. net.)

[3] *Materia Medica, Pharmacy, Pharmacology, and Therapeutics.* By W. Hale White, M.D.Lond., M.D. Dubl. (Hon.). Fourteenth edition. London: J. and A. Churchill. 1915. (16mo, pp. 721. 6s. 6d. net.)

[4] *The Book of Prescriptions, with Notes on the Pharmacology and Therapeutics of the more important Drugs and an Index of Diseases and Remedies.* By E. W. Lucas, F.I.C., F.C.S. With an introduction by Arthur Latham, M.A., M.D., F.R.C.P. Tenth edition. London: J. and A. Churchill. 1915. (16mo, pp. 383. 6s. 6d. net.)

tetramine-anhydro-methylene citrate, soluble in water 1 in 5, dose 7 to 15 grains; separated from this by several paragraphs appears helmitol, said to be anhydromethylene citrate of hexamethylene-tetramine, soluble 1 in 7 of water, dose 15 grains. This would naturally lead to the supposition that these were two different articles, whereas formamol is merely the non-proprietary short name for the proprietary article helmitol. The evil of one substance being prescribed under more than one name, and in the belief that the names represent different substances, may thus be promoted.

The seventh edition of *The Throat Hospital Pharmacopoeia*,[5] which contains about 200 formulae, represents the result of fifty years' evolution of the therapeutics of throat, nose, and ear in that institution. Certain of the preparations, such as most of the mixtures and pills, might find a place in the pharmacopoeia of any hospital; but most of the formulae for nasal washes, sprays, gargles, insufflations, lozenges, etc., are of a more specialized character, and will no doubt be of interest and use to many practitioners outside the hospital in which they have been devised or adopted. The book is edited by Messrs. C. A. PARKER and T. JEFFERSON FAULDER, two of the surgeons to the hospital.

The Book of Pharmacopoeias,[6] by E. W. LUCAS and H. B. STEVENS, is a comparative compilation of the galenical formulae of the British, American, and several European pharmacopoeias together with those of certain unofficial formularies such as the *British Pharmaceutical Codex*. The method adopted is that of parallel columns; each preparation appears under the name most generally employed for it, followed by the principal synonyms; where the same preparation is of different composition in different pharmacopoeias or formularies, the formulae are then all set out in such a way that the differences, and the exact composition according to any given authority, can be seen at a glance. Certain differences, however, are not always apparent at once, as the name of a given ingredient may indicate somewhat different substances in different countries; attention is drawn to this point in a note in the preface. Directions for compounding are not given, but about twenty-five standard processes for the exhaustion of drugs are briefly described in a chapter at the end; these processes are distinguished by the letters A, B, C, etc., and in cases where it would otherwise be doubtful reference to the process to be employed is given in the formula. The quotations from the *British Pharmacopoeia* are taken from the *B.P.* 1914. The volume will doubtless prove very useful and convenient, especially to dispensing and manufacturing pharmacists who may be called on to supply galenical preparations ordered in various countries

NOTES ON BOOKS.

DR. D. H. BERGY'S *Principles of Hygiene*,[7] a third edition of which was noticed in the JOURNAL of August 27th, 1910, has now reached a fifth edition. The author admits that the great progress which has been made in various directions renders it not an easy task to keep in touch with all that has been done in the various fields of investigation and administration, but he has achieved a large measure of success. The book is thoroughly practical, and though big is not wordy. Sanitary law and administration are not dealt with, so that the differences between British and American practice in this respect are not brought into prominence.

The fifth edition of Dr. BRADEN KYLE'S *Textbook of Diseases of the Nose and Throat*[8] does not differ in general plan and arrangement from the fourth edition, which was reviewed in our columns of January, 1909. The book has been revised throughout and new articles have been added on various subjects, including vaccine therapy, negative air-pressure in accessory sinus disease, and sphenopalatine ganglia neuralgia. The chapter on the tonsils has been rewritten, and many alterations have been made in other chapters. Some of the illustrations have been replaced by new ones, and others added. As we pointed out on a previous occasion, the aim the author has had in view is to lay stress on etiology and pathology. The book is a valuable contribution to medical literature, and has already exercised considerable influence on practice.

One of the charges often brought against the writers of cookery books, particularly those concerned with the preparation of invalid dishes, is that their recipes are usually either too elaborate or too extravagant for the average middle-class household. This objection, however, cannot be brought against Miss MABEL BAKER'S *Sick-room Cookery Simplified*.[9] Her instructions are admirably clear and concise, and there is hardly a dish in her book which could not be prepared by any one with an elementary knowledge of cooking. Moreover, her recipes, which will probably prove as popular in the dining-room as in the sick-room, are as economical as they are attractive, and offer a wide variety of choice to the nurse or housekeeper. With this guide it should be possible to vary the monotony of the invalid's diet, and to present him day by day with a fresh menu in place of the beef-tea and milk puddings still considered by many to be the only food suitable for the sick.

MEDICAL AND SURGICAL APPLIANCES.

Antiseptic First Field Dressings.

DR. CAMPBELL HIGHET, M.O., Voluntary Aid Detachment, Worcester 3, who in the JOURNAL of December 26th suggested that an antiseptic solution should be carried in a small glass capsule, now sends us a specimen of such a capsule containing an emergency antiseptic wound swab. He describes it as follows: It consists of a thin glass ampoule containing Mr. G. Lenthal Cheatle's solution (1 in 20 carbolic acid, and 1 in 500 mercury perchloride in absolute alcohol, coloured with rosaline, which acts as a mordant). This is wrapped in gauze of eight to sixteen layers, to cover the bulb only. The whole is then wrapped in guttapercha tissue or impervious paper tied round the thin portion of the neck of the ampoule. For use, the ampoule is broken by a sharp tap of a knife, the guttapercha tissue opened, and the wound smeared with the gauze now impregnated with the antiseptic solution. These swabs have been made for me by Messrs. J. Richardson and Co., of Leicester, who state, in reply to my request for thinner glass and smaller bulk, that they hope to obtain such from our home manufacturers shortly. At present the only stock in use is of German make. The complete swab (cost, 2½d. each) can be carried separately by the R.A.M.C. orderlies and regimental stretcher bearers, or placed inside the first field dressing with very little increase of bulk.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee twenty-eight cases were considered and grants amounting to £252 voted to twenty-two of the applicants. An annuity of £26 was also voted to one applicant. The following is a summary of the cases relieved:

Daughter, aged 54, of M.R.C.S.Eng. who died in 1898 and practised at Manchester. Was able to earn her living as a clerk until her health broke down. Only income a pension of £15 per annum from her old employers. The Manchester branch of the Guild has assisted with clothes. Voted £14 in thirteen instalments.

Widow, aged 55, of L.R.C.S.Edin. who practised at Dulwich. Husband's long illness absorbed all savings; one daughter, who is being educated by a relative. Applicant suffers from varicose veins and quite unable to work. Voted £10 and referred to the Guild.

L.R.C.P.and S., aged 65, who practised at Walthamstow, suffering from aphasia and quite unable to do anything. Until recently acted as locumtenent. Married, no children. Voted £18 in twelve instalments.

Widow, aged 61, of M.D.McGill Univ. who practised at Waterloo, Liverpool, and had a very long illness. Five children

[5] *The Pharmacopoeia of the Hospital for Diseases of the Throat, Nose, and Ear (Golden Square).* Edited by Charles A. Parker, F.R.C.S.Edin., and T. Jefferson Faulder, M.B., B.C. antab., F.R.C.S. Seventh edition. London: J. and A. Churchill. 1914. (16mo, pp. 75. 2s. 6d. net.)

[6] *The Book of Pharmacopoeias and Unofficial Formularies.* By E. W. Lucas, F.I.C., F.C.S., and H. B. Stevens, F.I.C., F.C.S. London: J. and A. Churchill. 1915. (Cr 8vo. pp. 530. 7s. 6d net).

[7] *Principles of Hygiene: a Practical Manual for Students, Physicians, and Health Officers.* By D. H. Bergy, A.M., M.D. Fifth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co. 1914. (Roy. 8vo, pp. 531; 63 figures. 13s. net.)

[8] *A Textbook of Diseases of the Nose and Throat.* By D. Braden Kyle, A.M., M.D. Fifth edition, thoroughly revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1914. (Roy. 8vo, pp. 856; 258 figures. 20s. net.)

[9] *Sick-room Cookery Simplified; with Suggestions for Diet.* By Mabel Baker. London: G. Bell and Sons, Ltd. 1914. (Cr. 8vo. pp. 158. 1s. 6d. net.)

aged from 30 to 38. Two sons away from home unable to help, and only income from a daughter who is a clerk earning 30s. a week. Other two daughters invalids and require constant nursing. Voted £18 in twelve instalments and referred to the Guild.

Daughter, aged 49, of M.D.Glasg. who practised at Bawtry. Has managed to earn a bare living by taking boarders, but has had none since last autumn owing to the war, and is now in great distress. Voted £10 in two instalments and recommended to apply to the local War Relief Fund.

M.B., C.M.Edin., who practised at King's Heath, Birmingham. Is married, with one daughter, aged 15. Applicant's health and his wife's very unsatisfactory. Has lost nearly all his ordinary and panel patients since the war, and is in great financial straits. Voted £10 in one instalment and recommended to apply to the local branch of the Prince of Wales's Fund.

Daughter, aged 38, of M.R.C.S.Eng. who practised in London. Has earned her own living as governess until health broke down and an operation was necessary a few months ago. Hopes, when strong again, to resume her work. Voted £5 to take a holiday.

Widow, aged 46, of M.B., C.M.Edin. who practised at Glasgow. Has seven children, aged 6 to 26. Husband was ill for two years before his death and was unable to provide for his family. Son who used to help to keep the home recently disappeared. Earns a little by taking in lodgers, and has £12 a year from another charity. Previous relief £52. Voted £20 in twelve instalments.

Widow, aged 60, of L.R.C.P.Edin. who practised at Dumfries. Has two sons, both of whom have joined the army, and two daughters whose total earnings are 18s. per week. Previous help, six times, £56. Voted £12 in twelve instalments.

Widow, aged 42, of M.D.Aberd. who practised in South Africa. Applicant is suffering from abdominal tuberculosis. Has an annuity of £15 from a charity for incurables; total income only £18. Has two children, aged 14 and 15, both of whom are kept by relatives. Relieved three times, £57. Voted £12 in twelve instalments.

Daughter, aged 66, of M.R.C.S.Eng. who practised at Tonbridge. Only income derived from one boarder and £10 per year from a friend, and finds it impossible to make ends meet. Previous relief, eight times, £96. Voted £12 in twelve instalments.

L.S.A.Lond., aged 82, who practised at West Kensington, and is now blind, and son who lives with him also nearly blind. Other son only able to help slightly. Has a pension of £20 from another charity, also old age pension. Previous relief three times, £20. Voted £12 in twelve instalments.

Daughter, aged 37, of L.R.C.P.Edin. who practised in co. Cavan. Earned her living and was able to assist her mother and invalid sister until she recently had to undergo an abdominal operation. Previous relief, some years ago, £10. Voted £10 in one instalment for her convalescence.

Daughter, aged 63, of M.R.C.S.Eng. who practised at Bath. Health very bad, and the little capital left by her father spent in endeavouring to get well. Only income an annuity of £31. Relieved four times, £42. Voted £6 in one instalment.

Daughter, aged 51, of M.R.C.S.Eng. who practised at Holland Park. Health very bad and unable to work. Income only £15 per year and a little assistance from friends. Relieved four times, £37. Voted £12 in twelve instalments.

Daughter, aged 64, of M.R.C.S.Eng. who practised at Great Malvern. Has been able to earn a living as a teacher of elocution, but owing to the war has lost practically all her pupils. Hopes to obtain a paying guest shortly, which will greatly help her. Previous relief twice, £22. Voted £10 in one instalment.

Daughter, aged 49, of F.R.C.S.Eng. who practised at Biggleswade. Suffering from epilepsy and has a chronic gastric ulcer. Only income £21 per year from another charity. Relieved sixteen times, £141. Voted £12 in twelve instalments.

Widow, aged 77, of M.D.Glasg. who practised at Bournemouth. Lives in own house, but daughter, who is a musician and helped to keep the home, unable to obtain engagements since the war, and two sons, artists, unable to help. Previous relief eleven times, £62. Voted £5 and recommended for an annuity.

Widow, aged 76, of M.R.C.S.Eng. who practised at Islington. Health bad and failing eyesight. Only income old age pension. One son, a commercial traveller, married with family, unable to help. Relieved once, £18. Voted £18 in twelve instalments.

Widow, aged 57, of M.D.Edin. who practised at Wetherall. Tries to earn a little by taking boarders, but has not been successful of late. Suffering from chronic rheumatism. Only son abroad and only able to help slightly. Previous help eight times, £96. Voted £12 in twelve instalments.

Widow, aged 67, of M.R.C.S. who practised in London. Suffering from malignant growth in left breast and unable to do anything. Five children, but only three of the daughters able to help very slightly. Previous relief sixteen times, £183. Voted £12 in two instalments.

Contributions may be sent to the Honorary Treasurer, 11, Chandos Street, Cavendish Square, London, W.

The Royal Medical Benevolent Fund Guild appeals for gifts of secondhand clothing, boots, and shoes in good condition, also household linen. The gifts should be sent to the Secretary, Royal Medical Benevolent Fund Guild, 43, Bolsover Street, W.

THE MEDICAL INSURANCE AGENCY.

THE Committee of the Medical Insurance Agency was able at its meeting last week to devote further sums, amounting to £200, to medical benevolence. The money was distributed as follows: To the Royal Medical Benevolent Fund £75, to the Royal Medical Benevolent Fund Guild £50, to the Epsom Benevolent Fund £50, and to the Royal Army Medical Corps Benevolent Fund £25. The Committee had before it information showing that the calls on all these funds have been much increased by the war, which not only has had a direct effect in many struggling homes, but also, as most of us have had experience, produces remote results often in a curiously roundabout way. With the money now voted, the grants the agency has been able to make for medical benevolent purposes within the last six months amount to over £500. This money has accrued after paying all the expenses of the agency, and after giving very substantial pecuniary advantages to policy holders which they could not otherwise have obtained. These advantages are fully appreciated by all the policy holders, and only need to be more widely known. Considering that the Agency has never spent any money on advertising, and has depended solely on the merits of the work it does for the profession, its success has been remarkable. It is only just to say that this is in large measure due to the constant care and attention given to its affairs by Dr. G. E. Haslip, Chairman of the Committee, and to the ability with which its business is conducted by the Agent, Mr. Guy Elliston. A debt of gratitude is due also to Sir Frederic Hewitt, who has shown great interest in the work from a very early stage. Dr. H. A. Latimer (formerly of Swansea), Direct Representative of the profession on the General Medical Council, and Mr. Betham Robinson, Surgeon to St. Thomas's Hospital, have joined the Committee, among the other members of which are the Editors of the *Lancet* and of the BRITISH MEDICAL JOURNAL.

The primary object with which the Agency was established was to get the best terms possible for its clients, and to advise them as to the adjustment of policies to meet the particular needs of the individual insurer. The recognition of the importance of this second object has steadily increased. There is, perhaps, some tendency to confuse providence with benevolence. The work of an insurance company may be beneficent, but it is never benevolent. The companies must think of their own interests first. This has been realized by a good many holders of life policies who since the war began have joined the military forces and volunteered for service abroad or at sea. They have found that their policies imposed restrictions as to place and occupation, and that to keep them in force they would have to pay heavy extra premiums; at the same time they have learnt that others insured with the same or similar offices held policies free from such restrictions. Those now called upon to pay extra premiums no doubt took out restricted policies owing to lack of expert advice. The Medical Insurance Agency has made it a rule never to advise a client to accept a restricted policy, and has been able to give expert advice as to the terms of a policy.

Owing to various causes—chiefly to keen competition for business among the offices, but partly to a more critical spirit in the public—it is now possible to obtain policies adapted to every conceivable condition, and to insure against every sort of personal and pecuniary risk.

The original idea of life assurance was that the insurer should provide for the payment of a sum of money on his death to his executors, and the first variation we remember was a widow's policy; under it, if a man's wife died before him the amount paid in premiums was lost, but if she survived him she received a much larger sum than his executors would have received on an ordinary life policy payable in any event. In these days the number of variations is legion. One form which is, perhaps, particularly adapted to the conditions of medical life is that which combines a sinking fund or pension with protection of dependants in the event of premature death. Such a contract safeguards the more important contingencies that an average man may expect to meet, and at the same time entitles him to a welcome rebate of income tax, the importance of which in these days should not be overlooked.

We gave an instance of such a contract only the other day:

If the case of a man, aged 30 next birthday, be taken, the payment of an annual sum of £46 13s. 4d., on which an allowance of income tax may be claimed, secures at the age of 65 a guaranteed sum of £2,000. This can be invested to produce under existing conditions certainly a full £80 a year, the capital remaining intact, to be disposed of as he may desire; or if there are no dependants the capital could be used to purchase an annuity of £209, or if his wife be alive an annuity of £139, payable so long as either shall live, assuming that the wife is not more than five years his junior. If the assured did not reach the age of 65, his executors would receive £2,000 in cash, and as to the disposition of this sum, he could give directions in his will. If invested for the benefit of his widow it would produce £80 per annum, or would provide her with a pension of £124 if aged 50, or £157 if aged 60.

We have referred especially to life insurance, but there are many other contingencies against which a prudent man insures—among others employer's liability, personal accident, and children's education. Owing to the enormous increase in the use of motor cars by medical men, insurance against the risks attending their use is becoming of great consequence. The importance of insuring against the risks attaching to the use of motor cars is also reflected in the steady increase of the business of the Medical Insurance Agency in this direction. The fact that those who insure through the Agency continue their policies from year to year is satisfactory evidence that the company with whom the risks are placed deals with claims in an equitable manner. Here again it is, we think, a mistake for a man not to get the most comprehensive policy possible. The Agency is in a position to arrange policies of the most comprehensive kind, and on the most favourable terms to the insured. Full particulars with regard to policies of all kinds can be obtained on application to the Medical Insurance Agency, 429, Strand, London, W.C.

INTERNATIONAL AMENITIES IN THE MEDICAL PROFESSION.

WE were able to publish last week the opinion of some representative English publishers on the reproaches addressed to us some time ago by a Scandinavian colleague, who commented on the failure of British publishers to make any attempt to interest the medical profession of the Scandinavian countries in British books by sending copies for review. The general effect of the replies was to produce the impression that efforts hitherto made to interest Scandinavian medical periodicals and booksellers in British publications had met with no large measure of success, and Mr. Murray told us that he was under the impression that Scandinavians, good linguists as they were, had a leaning towards the German in preference to the English language, especially in scientific subjects. Several of the replies showed, however, that leading firms were willing to look into the matter again, and to help towards this we publish below a list which we believe contains all the principal medical journals published in Scandinavian countries. The list may also be of interest to authors of papers who have reprints for distribution.

Sweden.

Hygiea. Editor, Professor Dr. Carl Sundberg, Stockholm. (This is the journal of the Swedish Medical Society.)

Norway.

Tidsskrift for Den Norske Laegeforening. Editors, Drs. Aaser and Hansson, Christiania. (This is the journal of the Norwegian Medical Society.) *Norsk Magazin for Laegevidenskaben.* Editor, Dr. Gade, Christiania. (This is the journal of the Medical Society of Christiania.)

Denmark.

Ugeskrift for Laeger. Editors, Drs. Valdemar Bie and Victor Scheel, Copenhagen. (This is the journal of the Danish Medical Society.) *Hospitalstidende.* Editor, Professor Rovsing, Copenhagen. (This is an independent journal.)

Finland.

Finska Lackaresällskapets Handlingar. Editor, Dr. Richard Sievers, Helsingfors. (This is the journal of the Finnish Medical Society.)

We trust that it is not too sanguine to hope that booksellers in the Scandinavian countries will take an interest in the matter and endeavour to facilitate the exchange of information.

As to the other matter to which our Scandinavian colleague referred, the facilities given to medical visitors to see the work of British medical institutions, we believe that Mr. Murray is quite right when he says that individual members of the staffs of such institutions are always willing to receive individual visitors in the most friendly spirit. At the same time, the visitor on his part should have a definite notion of what he wants to see; as it is, if he is interested in a speciality he will not meet with any difficulty, except that of language, and it is to be feared that he must overcome this for himself. Any regular organization can hardly be attempted until after the war, but at the present time the military hospitals here afford many interesting opportunities to surgeons, and help is wanted. We believe that there are no nations for which the British nations feel so much sympathy and respect as for the Scandinavian. We admire their pluck and their enterprise, and their high standard of honour and conduct; in these matters we think we understand and hope to rival them.

"PATENT MEDICINES" IN NEW YORK.

A REGULATION has been made in New York providing that every proprietary medicine shall bear a label describing the ingredients or that a statement of the ingredients shall be filed in the office of the Board of Health. The regulation is in the following terms:

The names of the ingredients of every such medicine shall be registered in the Department of Health. The expression "proprietary or patent medicine," for the purpose of this section, shall be taken to mean and include every medicine or medicinal compound, manufactures, prepared or intended for internal human use, the name, composition, or definition of which is not to be found in the United States *Pharmacopoeia* or *National Formulary*, or which does not bear the name of each ingredient conspicuously, clearly, and legibly set forth, in English, on the outside of each bottle, box, or package in which the said medicine or medicinal compound is held, offered for sale, sold or given away. [After a proviso excepting a medicine or medicinal compound, sold or given away upon the written prescription of a duly licensed physician, the regulation proceeds as follows:] The names of the ingredients of proprietary and patent medicines, registered in accordance with the terms of this section, and all information relating thereto or connected therewith, shall be regarded as confidential, and shall not be open to inspection by the public or any person other than the official custodian of such records in the Department of Health, such persons as may be authorized by law to inspect such records, and those duly authorized to prosecute or enforce the Federal Statutes, the Laws of the State of New York, both criminal and civil, and the Ordinances of the City of New York, but only for the purpose of such prosecution or enforcement. This section shall take effect December 31st, 1915.

The Corporation counsel had vouched for the legality of the ordinance, and objections on this score were ruled out of order at the hearing before the Board of Health. It appears that a meeting of protest was held at the City Hall by the druggists. The *New York Evening Sun*, in commenting on the matter, expressed regret that Mr. John B. Stanchfield was not allowed to speak at the meeting at the City Hall, for, if the druggists "had a valid case against the new sanitary ordinance, it must rest on legal grounds." Mr. Stanchfield was apparently not heard at the meeting because of the decision of the Corporation counsel, but the *Sun* observed that "it does not follow that Mr. Stanchfield might not have used some very telling arguments," and continued as follows:

It is reasonable to allow the objectors the benefit of the doubt, for it cannot be said that the objections actually set forth were in any way impressive. The new regulation provides that every proprietary medicine shall bear a label describing the ingredients, or that a statement of the ingredients be filed in the office of the Board of Health. The chief objection against this innovation seems to be that it will drive many manufacturers out of town. We may set aside all the rhetoric about the Doctors' Trust. It means nothing. We may likewise set aside the argument that the poor will suffer, for it is absurd to pretend that a knowledge of what is offered them can injure them in any way. Those who will suffer are the dealers in secret preparations, not a few of whom make prodigious profits by dispensing cheap trash under fanciful names. It would hurt them, of course, for as one of the spokesmen said, secrecy is the only way to protect one who deals in what cannot be patented.

Many manufacturers have excellent reason to object to the ordinance on the score of self-interest. But it is idle to rail against the Doctors' Trust or to attempt to confound the poor with those who prey on them.

The *Weekly Bulletin* of the Department of Health for the City of New York for January 23rd contains the

following article. It deals with a point to which attention has frequently been called in this JOURNAL, and one to which the Select Committee on Patent Medicines devoted a special paragraph in its report.

What's the Constitution to Patent Medicine Manufacturers?*

One of the grave evils associated with the present unregulated sale of patent medicines consists in the absence of any guarantee whatsoever to the consumer, as to the uniformity of the preparation he purchases. Though the manufacturer continues to sell a nostrum under exactly the same name, he often makes very material changes in the composition of the preparation, and these changes are dictated, not by a desire to improve the product, but almost invariably in order to evade laws made to protect the public health. To mention a glaring example:

According to published analyses, antikamnia, when originally marketed, consisted mainly of acetanilid. Legislation was enacted requiring a declaration of the presence of acetanilid on the label. Result: Without any notification to the consumer, antikamnia thereafter becomes a preparation warranted to be free from acetanilid. The manufacturer has secretly substituted phenacetin for the acetanilid originally used, the name of the product, meanwhile, remaining unchanged.

Among the various combinations of antikamnia sold by the manufacturer at that time, antikamnia and codeine tablets enjoyed a large sale. Each tablet contained approximately one-fifth of a grain of codeine sulphate—that is, 18 grains per oz.

Legislation is enacted in New York State (Boylan Law), prohibiting the sale, except on physicians' prescriptions, of preparations containing more than 2 grains of codeine per ounce. Result: Without any adequate notification to the consumer, antikamnia and codeine tablets are marketed containing $\frac{1}{8}$ grain codeine sulphate per ounce—that is, less than $\frac{1}{700}$ grain per tablet.

We leave it to our readers to decide whether this is or is not an impudent fraud.

We have recently made comparisons of the composition of various patent medicines, as stated on the labels in 1911 and in 1915. It is interesting to observe how lightly many of the manufacturers regard the formula of their preparations, formulas concerning the exceptional virtue of which we hear so much drivel. Here are a few examples:

	Label in 1911.	Label in 1915.
Ayers' cherry pectoral =	1/6 gr. heroin per ounce	1 gr. terpine hydrate per ounce.
Albert's remedy for gout and rheumatism..... =	2 gr. opium per ounce	2 gr. cannabis indica per ounce
Allenbury's pastilles =	1/20 gr. cocaine in each	No cocaine.
Bolton's acidulated cherry juice .....=	1/4 gr. heroin per ounce	No heroin.
Dr. A. Boschee's German syrup .....=	1/4 gr. opium per ounce	0.24 gr. morph. sulph. per ounce.
Freligh remedy for gout... .....=	1-6/10 gr. morphine per ounce	1/3 gr. cannabis indica and 1/60 gr. morph. sulph. per ounce
Dr. Pendelbury's wonderful pectoral cough cure ..... =	1/32 gr. heroin per drachm	1/64 gr. heroin per drachm
Shiloh's cure for coughs, colds, consumption, etc.....=	1/4 gr. heroin per ounce	1/7 gr. heroin and 2⅔ minims chloroform per ounce
Stoddard's prani codeia .....=	1/5 gr. codeine per drachm	1/8 gr. codeine per drachm.
Terraline .....=	1/24 gr. heroin per ounce	No heroin.
Dr. Taft's sure relief =	1/6 gr. opium per drachm	1 gr. opium per ounce.
Taylor's horehound balsam..... =	1/4 gr. codeine per ounce	1/6 gr. codeine per ounce.
Mrs. Winslow's soothing syrup ... .=	1/10 gr. morphine per ounce	No morphine.
Wister's balsam of wild cherry .....=	1-2/3 gr. opium per ounce	4/5 gr. opium per ounce.

The Select Committee of the House of Commons.

The remedies in the list are for the most part not familiar on this side of the Atlantic, but the principle involved applies to many that are. The comments of the Select Committee on this part of the subject are contained in the following paragraph:

Changes in Name or Composition of Remedies.

It is not uncommon for the composition of a secret remedy to be altered without any change in the name. "Antikamnia," as we have said, was acetanilide in America, and is now phenacetin, and "Daisy" powders were similarly changed. "Powell's Balsam of Aniseed" was repeatedly proved in courts of law to contain morphine. It now contains none. The same is true of "Mrs. Winslow's Soothing Syrup." The formula of "Pond's Arthriticus" was said to be altered by the addition of potassium bromide and salicylic acid. The powders in one packet of "Steedman's Powders" varied in weight from 1.9 to 4.5 grains. Sir Joseph Beecham informed us that "Beecham's Cough Pills" at one time contained morphia, as that was considered to be a necessary medicinal ingredient; that when the law compelled the word "Poison" to be put on the wrapper of preparations containing morphia, the morphia was taken out of the pills; then so small a quantity was put in again that it was "comparatively innocuous or perfectly innocuous," and therefore did not need to be labelled "Poison." That is, a potent drug was put in this remedy, taken out, and put in again, without regard to its medicinal effect, but solely because of the legal conditions under which it could or could not be sold.

The Select Committee of the House of Commons on the Sale of Patent and Proprietary Medicines advised that, to deal with a condition of things which it regarded as intolerable, new legislation was needed, inasmuch as amendment of existing laws would involve complicated legislation by reference, and would not afford adequate and available protection. The Committee recommended that the administration of the law governing the advertisement and sale of patent, secret, and proprietary medicines and appliances should be co-ordinated and combined under the authority of one department of State, and that in the meanwhile the work should be undertaken by the Local Government Board; that this Board should appoint a competent officer to advise the Minister, and to keep a register of manufacturers, proprietors, and importers of patent, secret, and proprietary remedies, and that every such person should be required to apply for a certificate of registration, and to furnish the principal address of the responsible manufacturer or representative in this country, and a list of the medicine or medicines proposed to be made or imported. The three next recommendations of the Committee are as follows:

6. That an exact and complete statement of the ingredients and the proportions of the same of every patent, secret and proprietary remedy; of the contents other than wine, and the alcoholic strength of every medicated wine, and a full statement of the therapeutic claims made or to be made; and a specimen of every appliance for the cure of ailments other than recognized surgical appliances, be furnished to this Department, such information not to be disclosed except as hereinafter recommended, the Department to control such statement, at their discretion, by analyses made confidentially by the Government Chemist.

7. That a special Court or Commission be constituted with power to permit or to prohibit in the public interest, or on the ground of non-compliance with the law, the sale and advertisement of any patent, secret or proprietary remedy, or appliance, and that the Commission appointed for the purpose be a judicial authority such as a Metropolitan Police Magistrate sitting with two assessors, one appointed by the Department, and the other by some such body as the London Chamber of Commerce.

8. That the President of the Local Government Board (or Minister of Health) have power to institute the necessary proceedings to enfore compliance with the law, the sale and advertisement of any patent, secret or proprietary remedy, or appliance.

Unfortunately the report was presented to the House of Commons on the very day that war was declared, and the Government has not hitherto found time to deal with the very strong recommendations, of which we have quoted only a few, made by the Select Committee. We hope that neither the Government nor the profession will lose sight of a matter which nearly concerns the health of the people, and we should like to learn that a bill on the subject was being drafted by the Local Government Board.

*Constitution of a patent medicine.

BOARD OF EDUCATION.

SIXTH ANNUAL REPORT OF THE MEDICAL OFFICER.

(Continued from p. 555.)

THE PROVISION OF MEDICAL TREATMENT.

THE report claims that there is evidence of a growth in public opinion that the sphere of an education authority should not be confined to the training of the intellect only, but should be extended to comprise the fitting of the child in every respect for its purpose in life. Physical deficiency is a handicap on such a fitting out which must be removed. But there are defects not medical, but due to home circumstances; these also can be influenced by medical inspection. In the matter of actual medical treatment ways and means are given consideration. When the parent can pay there is no difficulty. But one medical officer writes: "Where the parents are unable to afford treatment, and cannot get charitable help, one is compelled to suggest application to the guardians." He points out the grave unsatisfactoriness of such a proceeding. Another medical officer rejoices that they are surrounded by voluntary hospitals which will attend to all their children! With regard to this exploitation of charitable institutions the report takes the following very fair attitude:

> A large number of hospitals exist throughout the country for the free treatment of the poorer classes. These institutions are staffed by honorary physicians and surgeons, whose only recompense lies in the varied experience obtained and the honourable nature of the post they hold. On the whole, until the last few years, it was apparent that the resulting advantages have constituted a fair recompense for the responsible duties involved in the position. The coming of medical inspection has tended of recent years to modify the position in more ways than one. Without any corresponding advantage to the medical and surgical staff, a large number of school children have been presented for treatment, suffering for the most part from conditions which indeed require careful and skilled attention, but which are devoid of any special clinical interest. To deal with these children necessitates a large expenditure of time and care, and the medical staff can hardly be expected indefinitely to continue to do for nothing work for which the Local Education Authority has now been given power to pay.

That paragraph of the report ought to be printed in large type and sent to every hospital board in the country. There is still too much fear on the part of lay boards that if they refuse patients who are really State patients the meaner sort of their subscribers will dock their petty subscriptions.

Some of the difficulties of treatment arise from the attitude of the parents. Many will not take advantage of the opportunities offered them. Some are indifferent to the dangers of ailments they do not understand—that is not unnatural. Some fear the danger of operation. It is therefore necessary to explain the ultimate results of parental neglect, and part of that is given in a quotation from the Children's Act, 1908, Sec. 12, in which pains and penalties are provided for neglect likely to cause injury to the health of a child.

The duty of following up cases between inspection and treatment falls to the nursing staff. This staff has been increased by over 400 in the year. If she is to do efficient work, a nurse cannot deal with more than from 2,000 to 3,000 children. At present the staff works out at one to every 6,000. The effects of a good nursing staff is shown in the comparative returns from the county of Oxford. In schools where there was a nursing staff 63.2 per cent. of the children found defective received treatment; in schools where there was no nursing staff to follow up cases only 35.9 per cent. of the defectives obtained treatment.

It is evident that before long the difficulties of treatment will be in large measure solved by the provision of facilities by the local authorities themselves. Out of 317 such authorities no fewer than 241 have already made some sort of provision. The various methods of obtaining this are considered. The pros and cons of treatment in the home, in private surgeries, in hospitals, and in school clinics as duly weighed. It is written that "no permanent scheme should be based primarily on the utilization of general hospitals, voluntary or other." And therein the Board is in line with the policy of the Association. A special section is given to the consideration of the school clinic. The number now sanctioned is over 250, an increase of more than 70 per cent. on the previous year; these have been provided by 190 authorities. These clinics are not always free; charges are made where the parents can reasonably afford to pay. Reports from certain of the clinics are given which indicate the scope of the work and the manner of its arrangement.

The Treatment of Special Conditions.

Much good work has been done in the treatment of dirt by co-operation between the school and local sanitary authorities. In many districts arrangements are now in force whereby dirty children are taken to cleansing stations on certain days. There baths are at their disposal, and while the body is being cleansed the clothes are rendered sterile of their undesirable life by the disinfectors. Where the local authority has failed to provide such stations the school authorities has in some cases established them in connexion with the school clinic. With few exceptions school medical officers report distinct improvement from year to year. Much credit in this matter is due to the school teachers whose help is invaluable. Only recently parents have learnt to consider vermin a disgrace, and there are still a residue of parents whose indifference to the welfare of their children renders all efforts at persuasion futile. In such cases the home itself is found to be verminous. In some districts great help has come from the action of factory surgeons, their refusal of would-be workgirls on account of dirty heads has reacted to the advantage of the school authorities.

Under special defects there is a note on the alleged ill effects of the cinematograph on the eyesight of children. It is stated that injection of the conjunctiva, lacrymation, retinal fatigue, pain, headache, and dizziness have followed the excessive attendance of children at demonstrations of "moving pictures." No doubt these effects are dependent on uncorrected errors of refraction, fatigue, late hours, and bad air.

Dental treatment is being extended, and the percentage of parents who refuse to allow their children to be treated is steadily diminishing. This is partly due to efforts made to educate the parents. London and Sheffield give demonstrations to parents; even the lantern is called in to help. The staff of the dental clinic is discussed. For the country part-time men is the better plan, but in town whole-time men are recommended. The general anaesthetic is considered safer, cheaper, and more satisfactory than the use of a local drug. Children submit badly to the preliminary injection process.

Special Schools.

Reference is made to the extension of the work of the myope classes; such classes have been established in London, Bolton, Birmingham, Leicester, Leeds, Oldham, Stoke-on-Trent, Nottingham, Exeter, Brighton, Bristol, Sheffield, and Liverpool—a goodly list. In regard to the blind, the great cost of their training is noted, and the fact that by reason of concomitant mental and physical defects many, at the end of their training, are unable to become wage earners. In the absence of sufficient special workshops for the blind they fall back upon charity or the Poor Law. London returns show that only 23 per cent. of the blind get good or promising work; in Leeds the returns are better, 44 per cent. getting good work. The deaf fare better; after-care returns show that satisfactory employment is found for from 60 to 80 per cent. of the cases.

The Education of the Mentally Abnormal Child.

With this year educational arrangements that were formerly permissive now become compulsory. Under the Elementary Education (Defective and Epileptic Children) Act of 1899 local authorities had the power, but not the duty, of providing instruction for mentally defective children. The Act of 1914, which came into force in January, 1915, says the authorities "shall" make provision for the education of such children. Further, the authorities have to find out these children, determine their educability, and

the necessity or otherwise of special care. If there are so many as forty-five children of this sort in the area a special school must be established unless other satisfactory provision is made. The Exchequer pays one half of the cost of providing for the child, including the cost of medical attendance and treatment and of conveyance.

A long table is given of the returns of "dull or backward" children. There would seem to be serious divergence in the standard of dullness in various districts. Westmorland and Essex are both agricultural counties, yet the former heads the list of dullards with 13.5 per cent., and Essex is the bottom with only 0.6 per cent. More striking is the divergence of London suburbs, Acton and Hornsey are very similar districts, yet Acton is the top of the town list with 24.1 per cent., and Hornsey near the bottom with only 1 per cent. York reports 21.7 per cent. amongst the leavers only, whilst her near neighbour Huddersfield gets off with 0.2 per cent. A cathedral city is commonly reckoned a very dull place.

Among the causes of this dullness "unfavourable home and social surroundings" heads the list; next irregular attendance at school, physical defects (adenoids, deafness, bad vision), employment out of school hours; whilst inferior mental development comes last. If special training is thought desirable for these, it is recommended that much physical training should be included, more than can be given in the ordinary school. Feeblemindedness, on the other hand, is predominantly congenital, an arrest of development. The cases are much fewer than those of the foregoing. Dr. Lyster, of Hampshire, got returns from the school teachers of 700 cases; 550 of these have been examined; 449 were found capable of doing ordinary school work, 101 needed a special class or school. Of the 101, 54 were "dull and backward," 47 were mentally defective. Of the 47 defectives, 41 were considered educable, and only 6 held to be doubtful. Dr. Auden of Birmingham has correlated moral with mental defect, as shown by police-court cases. Of 216 such cases he found 7 per cent. mentally defective, 4 per cent. borderland cases, and 2 per cent. moral defectives, imbeciles. The rest, or 87 per cent., escape the meshes of the Act, for the vicious child is not provided for.

The question of physical stigmata is considered, and the conclusion of Dr. Steward of Surrey is that the occurrence of two or more stigmata in one normal child is comparatively rare, while a defective often has two, three, or more.

Open-air Education.

The most important point noted in this connexion is the necessity for attention to the feeding of those children who are admitted to the schools; they are nearly always ill-nourished, and the open air makes them more than usually hungry. Regular medical examination is insisted upon, with record of heights and weights. The school work should be modified so as to increase oral lessons, manual work, and physical exercises. The simplicity of the necessary equipment is noted, and the desirability of the provision of a rug for each child for warmth in bad weather. A very successful beginning has been made with vacation schools run on the same plan as the foregoing. The type of child found most suitable for these schools is the badly-nourished child living in the same house as a consumptive or under conditions of slum life which are likely to undermine its vitality to a serious extent. It is not desirable that children suffering from open tuberculosis should be admitted. Children convalescing from illness or operation benefit greatly. Admission to the school should be made conditional on thorough attention to defective teeth, tonsils, etc. An account is given of the work of a number of these schools, with reproduction of the plans and elevations of some of the new ones.

After reading of the routine work of such an one as the Bristol school one could wish that all children's schools were run on the same lines: Dry clothes on reaching school, a substantial breakfast, lessons to suit each child, freedom yet discipline, work under the trees when fine, a nourishing two-course dinner; then pillows, rugs, and sleep for an hour, and finally tea after the last lessons, and withal a warm spray bath once a week! The average stay at the school is six and a half months; we are sure the kiddies must be sorry to give place to the newcomer.

Provision of Meals.

There is new legislation in this matter also, and the passing of the Act of 1914 was singularly opportune. The bill passed the House of Commons on August 4th, the date of the outbreak of the war; meantime the Board had issued a circular giving the new regulations in advance, so that when the necessity arose by the sudden withdrawal of the breadwinner on war service the children were fed. For the week ending August 8th barely 5,000 meals were given, a fortnight later more than half a million, by October 3rd the week's total had risen to 1,200,000. It is pleasing to note that in succeeding weeks the total has fallen, no doubt due to the excellent provision made by the Government for dependants.

The new Act legalizes the provision of meals during holidays and when the schools are closed, it repeals the limit of the halfpenny rate. Substantial grants are made by the Board, even to as much as 40 per cent. of the expenditure of the local bodies.

About 16 million meals are provided annually, of which about half are given in London. In the last year 85,000 children were fed in London, and 225,000 in the rest of the country. The figures are less than the preceding year. The average number of meals per child is 70, and one meal a day. It is concluded that only one half the children of the schools that suffer from malnutrition have been fed. One conclusion has been arrived at: That the feeding is done better in the schools than by the restaurant method, style and manners are better, and the educative influence great. Whether one or two meals should be given, and which is the better—breakfast or dinner, and the problem of the selection of the children to be fed, all remain to be settled. The report notes with regret that one school medical officer has to report that he has nothing whatever to do with the arrangements; while still others only get the figures of work done. Since it is notified that the Board's medical department will inspect the work of these feeding centres, it is to be hoped that the authorities will take the hint and call their own medical officers into consultation over the work. If any practical results in records of the effects of this expenditure of public money is to be obtained the supervision of the medical officer is essential.

The Examination of Leavers.

Reference has already been made to the fact that nutrition was less satisfactory amongst the leavers as compared with the entrants. In this connexion the employment of children out of school hours is of particular importance. The Birmingham figures are of interest. Boys working as paper boys had height of 55.9 in., weight 75.4 lb.; milk boys, 54.4 in. and 74.3 lb.; as compared with 57.5 in. and 80.7 lb. for boys who were not employed. Some of the boys had been examined the year before, and it was interesting to note that paper and milk boys who had been working throughout the period gained 1.4 in., 3.16 lb. and 1.3 in., 2.5 lb. respectively, while those who were not employed increased by 1.9 in. and 9.3 lb. Last year the medical officer suggested that lack of sleep was the chief factor in this deficiency in growth, and his further results show that the greater number of hours of sleep the bigger and heavier are the boys. These findings have some bearing on the question of half-time workers, despite the fact that measurements amongst those children so employed have been held to be better on the average physique than those of ordinary children. The half-time boys, aged 12–13, employed in the cotton industry were on the average 0.4 in. above the standard in height and 0.5 lb. below standard in weight. The girls were 0.8 above standard height and 1.4 lb. below standard weight. But, as Dr. Stalker of Swinton writes: "The fact that the half-time children of 13 years are to a certain extent picked, must not be lost sight of. They are rejected as unfit in the mill if physically unsuited. This rejection I myself, as certifying surgeon, effect." That is a point to bear in mind when the virtues of early work are expatiated upon. As the report adds: "What is required is the comparison of the individual child with itself before and after commencing half-time work."

The report concludes with a number of appendices, including the lists of school medical officers for the various authorities, notes of cases of prosecution by education authorities, copies of circulars embodying new regulations, and specimen tables for medical inspection returns.

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SATURDAY, APRIL 3RD, 1915.

THE SPREAD OF TUBERCULOSIS BY DUST.

THE idea that tuberculosis could be conveyed by the inhalation of tuberculous dust or the pulverized sputum of tuberculous patients must be thousands of years old. It was definitely formulated by the French physician Villemin in 1868, and was proved beyond the possibility of doubt by Koch's great series of over two hundred inhalation experiments with pure cultures of the bacillus which he had isolated in the early eighties. About five-and-twenty years ago Cornet claimed to have proved that it was the dust containing pulverized tuberculous sputum from the immediate neighbourhood of phthisical patients that was the main infecting agent concerned in the spread of tuberculosis, and for the next ten years this view obtained very general acceptance. But in 1899 Flügge brought forward arguments to show that phthisical patients were infectious to others by means of the minute droplets of tuberculous sputum they discharge on coughing rather than by the dried sputum in the form of dust they leave behind them. Their coughing, sneezing, and even speaking were alleged to load the surrounding air with tuberculous sputum, and directly to endanger all persons who came near them during the performance of these acts. Flügge wrote with all the authority of an eminent German bacteriologist; and his theory of tuberculous infection by *verspritzte Tröpfchen*, or sprayed droplets, is widely believed at the present time. Quite recently, however, the question has been submitted once more to a careful experimental re-examination by Chaussé[1] of Paris, and, as has so often been the case on previous occasions in scientific matters, the conclusions of the French man of science flatly contradict those obtained by the German.

Chaussé brings forward reasons and experimental work to prove that in tuberculosis infection is exclusively, or almost exclusively, effected by dry particles. Indoors, tubercle bacilli possess sufficient vitality to survive drying; on the other hand, phthisical patients do not often scatter tuberculous spray, and, when they do, the spray is in the form of comparatively large drops that fall to the ground close by and cannot be inhaled by other persons. He finds that, even when guinea-pigs are made to inhale the air expelled by the phthisical patient in coughing, they do not become infected with tuberculosis. Having access to the wards of the Hôpital Boucicaut in Paris, where Professor Letulle's phthisical patients are treated, Chaussé made numerous experiments to determine in the first place how great the danger of living with phthisical patients is, and, in the second, what is the origin of that danger. The hospital is of modern construction, well lit, well ventilated; the tiled floors of the two phthisical wards, which look attractive if a little crowded in a photograph reproduced, are washed down daily. Each of the 32 patients in each ward has about 1,140 cubic feet of air space. The bedclothes are changed every week. Examining the sputum of 24 of the patients, Chaussé found from 1,000 to 160,000 tubercle bacilli in 1 mg. of the moist expectoration, the average being 60,000. He kept a cage containing thirteen guinea-pigs for five weeks in the middle of one of these wards; not one of the animals contracted tuberculosis, although the cage was close by the bed of a patient who coughed "enormously," and brought up a sputum containing 125,000 tubercle bacilli per milligram. In other experiments Chaussé kept cages containing from 14 to 19 guinea-pigs for weeks by the side of patients with advanced phthisis in smaller separation wards with only two beds in each ward. Here the opportunities for infection appear to have been greater than they were in the large wards. In an experiment carried out during the summer, when doors and windows were freely opened, 1 guinea-pig out of 14 contracted tuberculosis. A similar experiment at mid-winter, when the doors were kept shut and the windows almost entirely closed at night, resulted in the infection of 10 out of 16 guinea-pigs. Two other experiments carried out during the cold weather gave similar results. In all, out of 76 guinea-pigs exposed for four or five weeks to infection 30 became infected, and the pathological lesions found in them *post mortem* were always those of an inhalation tuberculosis. Examining eighteen specimens of dust collected in the smaller wards, Chaussé found that seven of them (or 38 per cent.) contained virulent tubercle bacilli. But the presence of the patients rendered the sojourn of the animals in these wards far more dangerous to them than did the dust alone. An experiment was contrived and carried out for ten weeks, in which the two phthisical patients inhabited one separation ward by day, another by night. One cage of 19 guinea-pigs kept company with the patients day and night for five weeks, while another cage containing 18 of the animals was kept constantly for ten weeks in the ward just left by the patients. Of the 19 guinea-pigs 15 became tuberculous, but of the 18 only 2 were infected.

The immediate source of danger lies, according to Chaussé, not in the phthisical patient's coughing so much as in his handkerchief. He describes experiments showing that tuberculous sputum dried on a handkerchief preserves some of its virulence and vitality for at least ten days. The patient's bedclothes and person he believes to be much less dangerous sources of infection to others, although, as he admits, it would be hard to demonstrate this fact by experiment. He quotes further experiments to show that the dust met with in public places, and even in so apparently infectious a spot as a third-class smoking compartment in a French train, only rarely in actual practice contains virulent tubercle bacilli.

The general conclusions to which Chaussé comes are of considerable practical importance. The spread of tuberculosis must be controlled by limiting the dangers of infection by inhalation to which those who are brought into contact with phthisical patients indoors are exposed. He discards Flügge's droplet hypothesis altogether, and states that it is only dust contaminated recently with tubercle bacili that is dangerous. Until it has dried up, tuberculous sputum is practically harmless because it cannot get into the air in the form of dust; and after it has been dried and exposed to the light for a few days, the tubercle bacilli it contains lose their virulence even if they still survive. He attributes an altogether secondary importance to any hereditary tendency to tuberculosis.

[1] *Annales de l'Institut Pasteur*, Paris, 1914, xxviii.

WORK AS MIND CURE.

WHAT appears to be a hopeful line of research, and one likely to be followed in time by practical results, is outlined in Bulletin No. 5 of the Government Hospital for the Insane at Washington.[1] In an interesting introductory paper Dr. William A. White, the Medical Superintendent, describes the origin at his asylum of the scientific investigation of occupation in the treatment of the insane. He became imbued with the belief that much of the deterioration of the inmates of large asylums was the result of the environment in which they were forced to exist, that is to say, that much of the deterioration was not an inevitable declension determined by internal factors, but was due to the patients taking their colouring from their surroundings—in fact, adjusting themselves to their environment. He therefore secured the services of a psychologist for the sole purpose of studying the problem of habit formation. The work done, though confined to very few patients, was extremely suggestive, Dr. White says, and very hopeful in its results. "It was quite remarkable," he tells us, "how patients who had been considered absolutely inaccessible could be awakened to interest, and how patients who had been considered almost impossible to care for because of noisy, destructive tendencies, could have their discharge of nervous energy drafted into more useful channels."

The three essentials for the scientific use of work in a large asylum are given in the following order of importance by Dr. White: The primary object should be therapeutic; the second object should be the economic advantage of the institution; and the third should be to ensure that all employment of patients is so conducted and records so kept that the results may be available for scientific analysis. To carry out this scheme successfully there must be a preliminary examination of each patient to indicate what Dr. White well terms "the avenue of approach to his interests," and the occupation when decided upon must be followed under scientific supervision, and not left to shop foremen and instructors in arts and crafts. Individualization, and the avoidance of the factory type of employment, furnish the keynote of success, just as in training institutions for the feeble-minded.

There is, of course, nothing new in the use of work as a therapeutic measure. The value of Dr. White's scheme consists in its scientific application; in its prescription of the form of labour only after and according to the results of psycho-physical analysis and its continued scientific scrutiny—in fact in its extension of the psycho-physical laboratory to the farms and workshops of the asylum. To what extent such intensive effort will meet with practical reward remains to be seen.

Dr. Shepherd Franz, Scientific Director, says that the facts already gathered have demonstrated the ease with which new habits may be acquired, and how soon insane patients may be made useful and partly self-supporting in an institution; they have shown that the insane are capable of adjusting themselves to new conditions, of forming new habits, and of following new methods of thought. There is nothing, however, in the carefully described experiments on habit formation in dementia praecox, by Grace Helen Kent, Ph.D., nor in the account of the course and character of learning in the same disorder, by Edwin G. Boring, M.E., A.M.—on which the rather wide generalizations of Drs. White and Franz appear to be founded—nor in the cautious conclusions of the two experimenters, to show how long the newly acquired habits and adaptations persist after the cessation of instruction. Even if, however, the hardly gained adaptations and good habits prove temporary and entirely incommensurate with the trouble and expense involved so far as the great majority of patients are concerned, it cannot be doubted that a clearer insight will be gained into the mechanisms and processes by which recovery takes place in the minority, and the possibility and manner of assisting these processes made plainer. There may even be possibilities of adjustment lying fallow in a considerable proportion of the permanently invalid which will repay a more scientific and discriminating cultivation than has heretofore been attempted.

The study of work as a therapeutic agent has been carried on at Washingtom Asylum by graduate students of universities under the Scientific Director for only three years—a time quite insufficient to give conclusive results. Nevertheless, Dr. White and his colleagues have done well even at this stage in publishing a bulletin devoted to this problem, as interest in and helpful criticism of a movement which seems likely to grow in importance will thus be stimulated.

[1] Government Hospital for the Insane, Washington, D.C. Bulletin No. 5. Edited by William A. White, M.D. Government Printing Office, Washington.

THE DETERMINATION OF SEX.

FEW biological problems are so fascinating as that of sex determination; none are more baffling. Many writers on the subject have been influenced by theoretical conceptions, often based upon inadequate statistical evidence, and others have exaggerated the importance of histological or physiological discoveries, the significance of which they have generalized unduly. An impartial statement of our present knowledge of the subject will be welcomed by all students, and Dr. Doncaster's treatise[1] goes far to satisfy their requirements.

The problem, as Dr. Doncaster points out, is comparatively simple if attention be confined to certain species and others are neglected. Thus evidence that the eggs may determine sex apart from fertilization is afforded by (1) the facts of parthenogenesis; (2) sex limited hereditary transmission by the female; (3) cases in which two kinds of fertilizable eggs, differing in their chromosomes, are produced. Similarly, evidence in favour of sex determination by the spermatozoon is afforded by (1) cases in which unfertilized eggs produce males and fertilized eggs females; (2) sex limited transmission by the male; (3) the existence of two kinds of spermatozoa differing in respect of their chromosomes. On the basis of these facts we might say that sex depended upon the presence of a greater or less amount of some "sex-determining substance" in the chromosomes, or upon the interaction of this substance with the rest of the cellular material. But this simple explanation is rendered doubtful by the existence of facts which suggest that the eggs may influence the sex in cases in which observations on chromosomes indicate that the determination should rest with the spermatozoon, and of others which point to the possibility that sex may be modified after fertilization by influences acting on the early embryo, or even later.

In this connexion the experiments of Hertwig and the remarkable studies of Geoffrey Smith are of special importance. Hertwig found that over-ripeness of the eggs, in the case of frogs, caused a

[1] *The Determination of Sex.* By L. Doncaster, Sc.D. Cambridge: The University Press. 1914. (Med. 8vo. pp. 172; 22 plates. 7s. 6d. net.)

preponderance of male offspring, but that, in the same species, certain males produced a higher percentage of female offspring than others when mated with any female. Geoffrey Smith found that the physiological condition induced in the crab by the parasite *Sacculina* went far towards converting a male into a female. In the case of man, fluctuations of the sex ratio cannot be attributed to influences operative upon the male parent alone. It may be observed that the study of causes affecting the sex ratio in man is extremely difficult, as has been shown by the work of, among others, Heape, Punnett, and Ewart. Heape, who investigated the subject on the basis of Cuban data, held that when metabolic activity was great female ova tended to develop rather than male ova, and attributed the preponderating influence to the female. Ewart argued that the age of the mother was an important factor in sex determination, the ratio of males to females increasing with the age of the mother. Punnett found that the ratio of male to female births was lowest in the poorest class of the population, but pointed out that this could not be attributed purely to a nutritional influence, not only because the age of the mother might play a part, but because the earlier born children of a family tended to show a higher male to female ratio than the later born. These influences would both tend to increase the ratio in the case of the wealthier classes, with their higher average age at marriage and greater tendency to artificial restriction of fertility.

Dr. Doncaster is inclined to think that sex should be regarded as dependent on a physiological condition consequent upon the interaction of certain chromosomes with the protoplasm of the cells, determined, in the absence of disturbing factors, by the presence or absence of these particular chromosomes. If the difference between the male and female chromosomes is considerable, this will outweigh any other influence which might tend to affect the general result, but, as the differences become less and less marked, environmental changes become more and more important elements in the determination. Insects, birds, and amphibia perhaps stand in that order when classified according to the importance of chromosomes as sex determiners. With respect to the possibility of influencing or predicting the sex of human offspring, Dr. Doncaster thinks we should still preserve an open mind, with perhaps a tendency towards scepticism.

THE PRESIDENCY OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE Royal College of Physicians of London has had ninety-seven presidents since Henry VIII, in the tenth year of his reign, granted a charter of incorporation. In granting this charter he said that his main reason was to check men who professed physic rather from avarice than in good faith, to the damage of credulous people; accordingly, after the example of other nations, he had determined to found a college of the learned men who practised physic in London, in the hope that ignorant and rash practitioners might be restrained or punished. The charter was granted to John Chamber, Thomas Linacre, Wolsey, Archbishop of York, and others. The College so constituted first exercised its privilege of electing a president by choosing Thomas Linacre for that office in 1518. Down to 1876, when Sir George Burrows ceased to be president and was succeeded by Sir James Risdon Bennett, a graduate of Edinburgh, the president had always been a graduate of Cambridge or Oxford. Since the spell was broken the presidents have all been graduates of the University of London, with the exception of Sir Andrew Clark, who was a graduate of Aberdeen, and Sir William Church, who is a graduate of Oxford. The new president, Sir Frederick Taylor, elected last Monday, the day after Palm Sunday according to the statutes, is a graduate of London, having taken the degree of M.D. in 1870. He became a Fellow of the College in 1879, was an examiner at various periods from 1885 to 1896, was on the council from 1897 to 1899, and was censor in 1904, 1905, and 1910. He has been the representative of the College on the Senate of the University of London since 1907. He gave the Lumleian lectures in 1904 on "Some Disorders of the Spleen," and was Harveian orator in 1907. He is physician to Guy's Hospital; his predecessor, Sir Thomas Barlow, was physician to University College Hospital. Sir Richard Douglas Powell, who was president from 1905 to 1910, was physician to the Middlesex Hospital; his predecessor, Sir William Church, was physician to St. Bartholomew's Hospital; Sir Samuel Wilks, who preceded him, was physician to Guy's Hospital. Sir J. Russell Reynolds, who was president from 1893 to a few months before his death in 1896, was physician to University College Hospital; Sir Andrew Clark, who preceded him, was physician to the London Hospital; and his predecessor, Sir William Jenner, was physician to University College Hospital. At the present time the Treasurer, the Harveian librarian, and the Registrar are members of the staff of St. Bartholomew's Hospital. The longest tenure of the office of president was that of Sir Henry Halford, who was president from 1820 to 1844. The office is an annual one, but is, as a rule, held for five years.

PUBLICATION OF FORMULAE OF SECRET REMEDIES.

IF America is the land in which unrestrained individualism is allowed the largest opportunity of filling private pockets at the public expense, it is also distinguished by the courage with which its public authorities set about the remedying of demonstrated abuses, regardless of the vested interests which may suffer by such procedure. We published recently the particulars supplied by the U.S. Department of Agriculture as to the principles on which action in regard to patent medicines would be guided in future. They seemed to promise severe repression of excessive claims as to curative power. In the present issue (p. 601) will be found some particulars in regard to the regulations recently made by the Department of Health of the City of New York requiring that patent medicines sold within the city shall bear a label describing the ingredients, or that such information shall be filed in the office of the Board. Needless to say, the proposal has aroused the liveliest opposition on the part of the makers of proprietary medicines, who appear to have succeeded in getting a number of the retail druggists to attend a meeting to protest. We reproduce an interesting article from the *Bulletin* of the Department dealing with alterations in the composition of proprietary articles, and from another issue of the same *Bulletin* it appears that the meeting of retail druggists was worked up, if not actually originated, by a firm of proprietary medicine makers, and that some druggists have written to the Department warmly supporting the new regulation. The alteration in the composition of a patent medicine is, of course, an occurrence by no means peculiar to America. Recently, in reply to a correspondent, we mentioned that the nostrum sold as Celmo, when analysed not long ago, was found to have a composition very different from that shown by the analysis published in 1910 and reproduced in *More Secret Remedies*.[1] Again, in the same book, mention is made of the great variation found in different supplies of "Karox Compound," and several other instances are

[1] *Secret Remedies: What they Cost and What they Contain;* and *More Secret Remedies: What they Cost and What they Contain.* London: British Medical Association, 429, Strand, W.C. (Price 1s. each; postage, 3d. each.)

to be found in that volume and its predecessor *Secret Remedies*. Such variation is, of course, only one of the minor evils attending the sale of these remedies, but the proposal that the formula should appear on the label would seem to be an effective means of dealing with it, as any vendor selling a medicine of different composition from that set forth on the label would render himself liable to penalties. It will be remembered that one of the principal proposals put forward by the British Medical Association before the Select Committee of the House of Commons was for the publication of the formula; the Committee recommended that the formula should be divulged to a Government department, but not that it should be published on the label, and possibly that method might prove quite satisfactory if the Government department exercised sufficient vigilance. It will be very interesting to watch the effect of the working of the new regulation in New York, and possibly the experience there gained may be of use when legislation on the subject is before the House of Commons, as we hope it may in the not too far distant future.

THE FREEZING-POINT OF MILK AS EVIDENCE OF ADULTERATION.

A REPORT[1] issued recently by the Local Government Board contains an account of an interesting investigation by Dr. G. W. Monier-Williams into the variations of the freezing-point of milk and the possibility of utilization of its determination as evidence of the addition of water. Attention has been drawn by previous workers to the very constant values obtained for the freezing-point, and its determination is utilized to a considerable extent on the Continent, but very little work appears to have been done in regard to it in this country hitherto. Many determinations have been made by various workers of the osmotic pressure of the blood serum of different animals, and it has been shown that this is practically constant for any given species. It is naturally to be expected that different fluids of the body should either possess the same osmotic pressure, or that there should be a constant relation between them, and it has been shown that there is such a constant relationship between the osmotic pressures of the blood and milk of cows, most of the work which has been done pointing to the identity of these constants. As is well known, the freezing-point of a solution is a simple and reliable index of its osmotic pressure, and the result of the work of various investigators has been to show that the freezing-point of milk is independent of differences in breed, age, or period of lactation of the cows yielding it, whereas the proportions of all the constituents of milk which are determined even in a thorough analysis are liable to considerable variation. The osmotic pressure, or the freezing-point, is a function of the ratio of the number of molecules of dissolved substances to the number of molecules of the solvent; the variation in the proportion of one dissolved constituent, therefore, as for example, lactose, may be compensated by a corresponding variation in the opposite sense of the proportion of some other soluble constituent. In milks containing less than the normal proportion of solid matter, it is frequently very difficult to decide whether this is due to some abnormality in the milk itself or to the presence of added water, and, for the reasons just stated, the determination of the amount of lactose or ash may be insufficient to settle the question; any serious variation in the freezing-point in an upward direction, however, points with considerable certainty to the addition of water. The chief disturbing element in such argument is the development of acidity in the milk by fermentation of the lactose, by which the number of molecules of dissolved substance is increased, and deductions from the freezing-point can therefore only safely be made in the case of milks which have not undergone any appreciable souring. Dr. Monier-Williams's experiments, carried out with about 150 samples of milk, show the freezing-point to be from $-0.514°$ to $-0.558°$, the mean value found being $-0.5345°$. Very elaborate precautions were taken in the experiments to eliminate all sources of error as far as possible, and these figures are probably accurate to about $\pm 0.002°$. It would scarcely be practicable, in the ordinary examination of milk, to adopt all the precautions employed by Dr. Monier-Williams in order to obtain accurate data, but it is pointed out in the report that the experimental procedure may be greatly simplified without appreciable loss of accuracy by using as a standard a solution of 9.405 grams of pure cane sugar in 100 grams of water, the freezing-point of which is the same as that found to be the average freezing-point of milk. The conclusion arrived at is that the freezing-point appears to be the most constant property exhibited by genuine milk, and that the method may, in certain circumstances, be applied with advantage as a confirmatory test for the detection of added water and the approximate estimation of the amount present. A formula is included in the report for the calculation of the probable percentage of added water from the freezing-point found.

[1] Food Reports, No. 22. Price 4d. To be purchased, either directly or through any bookseller, from Messrs. Eyre and Spottiswoode (London), Messrs. Wyman and Sons, Limited (London and Cardiff), H.M. Stationery Office (Edinburgh); or E. Ponsonby, Limited (Dublin).

GONORRHOEAL INFECTION IN CHILDREN.

THE subject of gonorrhoeal infection in children is important not only on account of the moral disquietude introduced into the family circle, but also by reason of the chronicity of many cases and the possible complications which may ensue. This applies more particularly to gonococcal vulvo-vaginitis in girls, which is by far the more frequent form of infection. The majority of articles published on this subject are by American writers, but this is probably due to more thorough investigation, for the condition is certainly common in this country. Kimball[1] observed 70 cases of vulvo-vaginitis out of 600 admissions to the Babies' Hospital in New York; and Pollock[2] estimates that from 800 to 1,000 girls are infected yearly in Baltimore. All observers agree that the great majority of these cases are due to gonorrhoeal infection, but opinions differ considerably as to prognosis and the results of treatment. While some claim rapid cures by combined local and vaccine treatment, others state that many cases become chronic in spite of treatment, and that vaccine treatment is useless. Taussig,[3] in a recent report on 66 cases, takes an intermediate position, and says that with proper treatment 75 per cent. of the cases should be cured in three or four months. He admits, however, that the proof of cure is difficult to obtain, even by means of the gonococcal complement fixation test. The method of treatment he adopted consisted in the instillation of silver preparations by means of an ordinary rubber-tipped urethral syringe; he preferred this method because vaginal douching does not distend the folds of mucous membrane. For the first two weeks 25 per cent. argyrol was injected twice daily; for the third and fourth weeks 1 per cent. silver nitrate daily; for the fifth and six weeks 2 per cent. silver nitrate every other day; from the seventh to the tenth weeks 4 per cent. silver nitrate once or twice a week. He regards vaccines as useless in gonorrhoea of mucous membranes, and obtained little benefit from treatment by the lactic acid bacillus. In Taussig's series of cases complications were rare—1 case of supposed salpingitis and 1 of arthritis, but peritonitis has been recorded by other observers. Comby[4] reported 8 cases of vulvo-vaginitis with varying degrees of peritonitis, all of which recovered without operation, but fatal cases have been reported by Huber and Baginsky. Barnett[5]

[1] *Med. Record*, 1903.
[2] *Bull. Johns Hopkins Hosp.*, May, 1909.
[3] *Amer. Journ. Med. Sci.*, 1914.
[4] *Ann. de méd. infantile*, 1914.
[5] *Arch. of Pediatrics*, 1913.

found endo-cervicitis a frequent complication. It is, therefore, possible that gonorrhoeal vulvo-vaginitis in childhood may lead to infection of the uterus and its appendages, and account for some instances of chronic tubal disease and sterility which are only discovered later in life. Gonococcal vulvo-vaginitis is important from the medico-legal standpoint; the source of infection may be immediate by attempts at sexual connexion, constituting evidence of rape, but indirect infection is much more common. In Taussig's cases there was no evidence of rape, and in only two cases was there gonorrhoea in the mother. This author is of opinion that infection is usually from child to child through the medium of the common lavatory seat. He points out that vulvo-vaginitis is rarely observed after the age of puberty, owing to the protection afforded to the vaginal orifice by the growth of the labia majora and pubic hair. As regards prophylaxis, he recommends notification of the disease and instruction of parents and guardians in the sanitary measures to be taken to prevent spread of the infection.

INCREASE OF TRACHOMA IN THE NEW WORLD.

SINCE the conclusion of the Spanish-American war trachoma has greatly increased in Cuba, and from a note in the *Medical Record* (January 30th), it would appear that the disease is spreading in different sections of North America in a manner which seems to warrant the opinion that other factors more important than immigration were concerned, though immigration played the chief share in Cuba. King, of Porto Rico, has reported a rapid increase of trachoma, in no way attributable to immigration., among the school children in that island. The most potent factor was, it would seem, the fact that the school system had expanded from an enrolment of 26,000 in 1899 to 182,766 in 1913–14, thus bringing together thousands of school children who would otherwise scarcely have been thrown together at alk. On the other hand, trachoma has increased in the mountain regions of Kentucky, Tennessee, and Virginia, where there has been no immigration and no expansion of the attendances in the rural schools, which are situated in relatively healthy districts. Hence, it must be concluded that whilst it is certain that trachoma is on the increase in North America and the West Indies, the cause of this increase remains more than doubtful. It happens that the disease is appearing in a relatively mild form; but, as our contemporary concludes, the purely sociological aspects of trachoma loom larger than its strictly medical aspects.

EARLY HUMAN REMAINS IN AMERICA.

THE question of the determination of the age of the earliest human remains found in America is discussed in the *Journal of the American Medical Association* of September 26th. Until a few years ago, says our contemporary, North America was believed to offer the most valuable evidence on this point, though the Bureau of American Ethnology stated in 1907 that "no specimen had come to light in the Northern Continent which from the standpoint of physical anthropology represented other than relatively modern man." Then some discoveries were reported from the Lagoa Santa caves of Brazil, and bones and cultural objects were found in Argentina. As a result, there was a revival of the story of Atlantis, the origin of the human race being traced from very primitive anthropoid forms in South America. Still more recently it was reported that human remains had been found in North America, in an asphalte deposit at Rancho La Brea in Southern California. A preliminary account of these remains was read before the Museum of History, Science, and Art of Los Angeles on June 11th, 1914, by Mr. John C. Merriam. The Bureau of American Ethnology sent two experts—Dr. Ales Hrdlicka as anthropologist, and Mr. Bailey Willis, of the United States Geological Survey—to report on these discoveries. The material was submitted to the palaeontologist of the Geological Survey, and to the Geophysical Laboratory of the Carnegie Institution of Washington, and the conclusion was that the human remains from the Lagoa Santa caves could not without more conclusive proofs be accepted as "belonging to a race which lived contemporaneously with the extinct species of animals found in the same caves." As regards a skull taken from the harbour of Buenos Aires, Dr. Hrdlicka says that it presents no features which would justify its classification as a representative of a species of ancient primates, premediate forerunners of the human being, the *Diprohomo platensis*. The skull, in his opinion, bears no evidence even of having belonged to an early or physically primitive man, but to a well-developed and physically modern-like individual. Our contemporary, after discussing the evidence in some detail, concludes that, while the question of antiquity is undecided, every evidence available in North as well as in South America seems to point to the comparatively recent origin or occurrence, geologically speaking, of man on the American continent.

THE HEALTH OF BELGIUM.

WRITING from Brussels at Christmas Dr. Mamlock, a frequent contributor to the *Deutsche medizinische Wochenschrift*, has sent to that journal an account of the measures adopted by the Belgian and German medical authorities to safeguard the health of the nation and its self-imposed guests. It appears that the public health department is nominally under the control of the Belgian authorities, but is in reality administered by the Germans. Galling as this state of affairs must be to our ally, there is some comfort in the reflection that, when he comes into his own again, he will find the sanitary conditions of the country not totally disorganized. At present Belgian and German doctors are working together to prevent the outbreak of epidemics, among which venereal disease seems to be a particularly frequent source of anxiety. In the province of Namur the notification of infectious diseases has been carried out with the aid of the Belgian Sisters of Charity and the staff of the public health department. The Bacteriological Institute of Namur has been available for public health work, its Belgian staff having voluntarily continued their duties. A joint board of Belgian and German doctors meets from time to time to discuss matters of public health. With regard to military matters, it is to be gathered that after the earlier battles of the war Namur was made a clearing place for the casualties, the Belgian hospitals in the town being taken over by the German authorities. As several of the buildings utilized had originally been convents, many alterations had to be made. The Germans, Dr. Mamlock states, have fitted up *x*-ray departments, baths of various kinds (including sun baths), gymnasiums, sitting-rooms, dental surgeries, etc. Special quarters are set apart for infectious cases. In Charleroi, Sedan, and Brussels ninety hospital trains have been provided, and every station on the lines served by these trains is equipped with refreshments and first-aid requirements. In Brussels there is an ambulance department which provides motor cars for the removal of the wounded to hospital. Here, too, many of the hospitals have been improvised, and the Palais des Académies, the barracks of the Belgian Carabiniers, and the Royal Concert Hall have been commandeered for this purpose. The greatest consideration has, Dr. Mamlock says, been shown in the execution of these alterations. Be this as it may, we hope the time will soon come when Belgium will again be able to manage its own affairs.

RESUSCITATED JOURNALS.

IN the BRITISH MEDICAL JOURNAL of March 27th we gave a list of French medical periodicals which had come to life again after varying periods of suspended animation following the outbreak of the war. This week we are pleased to welcome the reappearance of two more. One of these is

the *Progrès Médical*, which, although many of its contributors are on active service, has been able to make arrangements for the renewal of their co-operation and for the carrying on of the journal. It deplores the loss of not a few members of its staff who have fallen on the field of battle. For the present it will be issued monthly instead of weekly as before, and it will be largely devoted to the medicine and surgery of war. The other periodical whose reappearance we are glad to report is the *Revue Neurologique*. It has just published its issue for July 13th, 1914, which was actually in the press when the storm cloud burst upon Europe. The missing numbers will appear in the course of 1915. No number of the *Journal of the Royal Army Medical Corps* has appeared since December, but we understand that another issue is now in the press, and will probably be published in about ten days.

THE PATHOLOGY OF WOUNDS IN WAR.

SIR ALMROTH WRIGHT'S lecture on Tuesday afternoon before the Royal Society of Medicine turned out to be in part a philosophical discussion of certain fundamental problems of surgical pathology, and in part a description of some novel and highly ingenious methods of seeking a solution of some of them. The war, he said, involving as it had or would some two million wounds, all, or nearly all of them, infected from the time of their infliction, presented a bacteriological problem the like of which, in magnitude at least, had never arisen before, the numbers concerned being greater than those involved in the study of the great plague epidemics of India. He insisted on the essential importance of an unbiassed study of the physiological processes occurring in wounds, the investigation of antiseptics or of vaccine therapy being ancillary to the more fundamental inquiry. We hope to publish a full report of the lecture in an early issue.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

ABROAD.

WHEN Professor Jacobs of the University of Brussels came to this country, at the end of October, he came as spokesman of a provisional committee of doctors and pharmacists in Belgium. That committee was afterwards enlarged as was stated in the JOURNAL of January 2nd (p. 34), where the names and offices of its members were set out. They are representative of the universities, medical faculties, the medical journals, and pharmacists of Belgium. The President of this committee, which has taken the name of the "Aide et Protection aux Médecins et Pharmaciens Sinistrés," is Dr. Péchère, professor in the University of Brussels, and the secretary M. Delacre, president of the General Pharmaceutical Council of Belgium.

When the British Committee was formed in November last it announced that while it proposed at once to help refugee Belgian doctors and pharmacists in this country, it appealed to the profession in the hope and expectation that the work would develop as the conditions of Belgium permitted and would be associated with corresponding efforts throughout Great Britain and Ireland, in the United States, and other countries which are neutrals or allies in the war. The expectation that such co-operation would be given has been fulfilled; committees have been formed in Scotland, Ireland, Manchester, Liverpool, Birmingham, Sheffield, and Newcastle, which have been successful in collecting considerable sums of money.

Committees have been formed in Canada and the United States, and from the former the British Committee has received important donations. It has also received generous gifts from the Danish Union of Doctors.

Hitherto the Executive Committee has been hampered in its work of assisting doctors and pharmacists remaining in Belgium by the military occupation of the country, and by the uncertainty whether money sent to Belgium could be distributed to the proper persons under suitable conditions. The Executive Committee at its meeting last week had before it further information concerning the urgent needs of Belgian doctors and pharmacists remaining in their own country. The Committee in Brussels, the Aide et Protection aux Médecins et Pharmaciens Sinistrés, received a subsidy from the National Relief Fund a month or two ago, but that has been exhausted. It has thoroughly prepared the ground, despite the immense difficulties under which it has had to work. Forms have been issued to all the doctors and pharmacists in Belgium, on which they are asked to state frankly their position, that of their families, the loss that they have sustained, and the amount of money necessary to enable them, at any rate, to tide over their existing terrible circumstances. In estimating the validity of the claims, the Committee in Brussels has acted in consultation with the local medical societies throughout Belgium and with the Government inspectors of pharmacy, who also inspect the dispensaries of medical men. Those who have been relieved include the widows of doctors and pharmacists who have fallen fighting, or who have been the victims of German ferocity. It is noteworthy that such money as has been hitherto given has been given entirely to the country at large, although distributed from Brussels; in Brussels the better circumstanced doctors and pharmacists have supported the fund for the relief of their poorer colleagues. Many of the forms relating to the pharmacists have reached this country and have been submitted to the Executive Committee of the Belgian Doctors' and Pharmacists' Relief Fund, and it is hoped later to receive the forms relating to the medical men; but enough evidence has been submitted to the Executive Committee to enable it to realize that immediate help in money ought to be sent, as this now seems feasible. With the co-operation of the banks concerned a sum of money is being sent immediately to Belgium to be distributed by the Aide et Protection aux Médecins et Pharmaciens Sinistrés in accordance with the particularized needs which are now in the hands of that body; and it is proposed to send further sums from time to time as detailed reports from the committee in Brussels and other information at the disposal of the Executive Committee show that the money is being usefully expended.

Subscribers to the Fund will see that the Executive Committee has now embarked upon a definite scheme of large expenditure, and, generous as the responses have been to the appeal by British doctors and pharmacists, it will be necessary that further effort should be made, and even made with greater vigour than heretofore. The Fund can do much with the money it has in hand, but it is not possible to estimate how long the strain upon it may have to be maintained, and far greater resources than it possesses will be urgently required.

GIFT OF INSTRUMENTS TO BELGIAN MILITARY HOSPITALS.

At an early stage the Committee made an appeal for gifts of surgical instruments to be sent to the Master of the Apothecaries' Society, London. The instruments have been examined and sorted under the superintendence of the Master, Dr. Meredith Townsend, and Sir Rickman Godlee, Chairman of the Executive Committee. In response to a request received through Mr. Samuel Osborn, F.R.C.S., a selection of instruments suitable for hospital use were sent for the use of the Belgian military hospitals, and a cordial letter of thanks has been received from Captain G. Deffontaine, writing for the Belgian Military Command in Calais from the Hôpital de Passage. Mr. Osborn has reported to Dr. Townsend that the instruments arrived at a particularly opportune moment, when a fire had burnt out the operating theatre of the Hôpital Jeanne d'Arc.

The Master of the Society of Apothecaries acknowledges the receipt of surgical instruments contributed by Dr. J. Jones of Leigh, Lancashire.

SUBSCRIPTION LIST.

Owing to the earlier date of the publication of the JOURNAL due to the Easter holidays a list of subscriptions is not published this week. It is proposed to publish a list for the two weeks in our next issue.

THERE are twenty-five women in the Women's Medical Service for India, and last year the Central Committee of the Dufferin Fund, which provides the salary of these women, requested all Provincial Branches to see that competent assistant surgeons were appointed to help the medical women in their hospital work. The Central Committee is now glad to announce that in the majority of cases this principle has been carried out, and that it will shortly be followed in the few remaining posts.

THE WAR.

NEED OF THE ARMY FOR MORE MEDICAL MEN.

SIR ALFRED KEOGH'S APPEAL.

THE Special Committee of the British Medical Association, which is conferring with Sir Alfred Keogh, Director-General, A.M.S., on Thursday, consists of the chairmen of Standing Committees of the Association, under the chairmanship of the Chairman of Representative Meetings, Dr. T. Jenner Verrall. Owing to the date of publication of the JOURNAL we are unable to report the results of this meeting, but hope to do so in an early issue. Meanwhile the following notice showing the action which has already been taken in Aberdeen will be read with interest.

ABERDEEN.

At a meeting of the medical profession held on Sunday, March 28th, under the auspices of the Aberdeen Division of the British Medical Association, the recent appeal of Sir Alfred Keogh, Director-General A.M.S., was considered. After full explanations as to the requirements of the various branches of the service had been given by Lieutenant-Colonels Scott, Ogston, and Mitchell, it was resolved to issue the accompanying circular. It was hoped that by this means full use of the profession could be made both for civil and military work.

BRITISH MEDICAL ASSOCIATION.

Aberdeen Branch.

March 24th, 1915.

Dear Sir,—You will have observed in the BRITISH MEDICAL JOURNAL of March 6th the urgent appeal made by Surgeon-General Sir Alfred Keogh, K.C.B., Director-General Army Medical Service, for medical assistance during the continuation of the war. This call for aid will doubtless find a ready response from every section of the medical profession, which has at all times shown a high sense of its duty, and an ardent patriotism.

The Acting President of the Local Branch of the British Medical Association (Dr. John Gordon) supports Sir Alfred Keogh's call for assistance, and he does so with the full confidence that every member of the Branch will devote to his country's need all the time that he can possibly spare from his usual work, and will most cordially co-operate with the local military staff of the profession in attending upon those who have fought in the battles of our Empire and are located within this area.

The civil members of the profession are herewith asked to volunteer for whole or part-time service, and to enter the particulars required in the enclosed Schedule [see foot of page]. All Schedules ought to be completed and returned before Wednesday, March 31st, 1915, to Dr. F. K. Smith, Hon. Sec. B.M.A., 7, East Craibstone Street, Aberdeen.

Your most earnest attention to this request is solicited.—Yours faithfully,

JOHN GORDON.

HOSPITAL RESIDENTS AND SCHOOL MEDICAL OFFICERS.

Dr. C. K. TOLAND writes: The general practitioner in active practice and of suitable age is torn between two desires—his duty to his civil patients and his desire to take his share in the work of the battlefield. The former is as important for the welfare of the nation as the latter. The latter to me is the more attractive. Hospital resident staffs are young, active, and eager men, willing, I am sure, to join the army. The general practitioners in the neighbourhood of the hospitals would, I am certain, be glad to give a portion of their time to the work of these residents, and so free them for the army. I would further suggest that as this is war service on the part of the general practitioner, it should receive some recognition from the authorities—for example, a war medal, as is suggested for the workers in shipyards and arsenals.

D.P.H. writes: Would it not be desirable to discontinue the routine medical inspection of school children during the period of the war, just as the Tuberculosis (Animals) Order has been suspended? This would at once release a large number of young medical men, many of whom are unmarried. The essential part of their work could, in the meantime, be undertaken by medical officers of health who are not school medical officers, or by general practitioners.

SOUTHAMPTON MEDICAL EMERGENCY COMMITTEE.

The Medical Emergency Committee for Southampton, appointed by the medical profession in the county borough at a general meeting held at the beginning of August, has, through its honorary secretary, Dr. H. L. Hamilton, issued a circular letter to which details of the scheme which has been arranged are appended. The circular letter recalls that at the meeting of the Committee on August 4th it was resolved to ask each doctor liable to be called away for duty to make any arrangements he could with the doctor or doctors in his neighbourhood to do his work, including attendance on confinements. In view of the fact that a considerable number of medical men may be mobilized in the near future, a general meeting of the medical profession in Southampton was held on March 5th, and, after discussion, the appended scheme for carrying on the practices of those absentee doctors who may fail to make their own arrangements, was adopted. It is hoped that medical men not resident in the county borough of Southampton who are asked to attend patients of absentee Southampton doctors will fall in with the arrangements outlined in the scheme. It was further resolved at the general meeting to ask each doctor in Southampton to contribute half a crown towards the expenses incurred by the Committee, and many have already done so.

From Doctor..... *Address*..... *Age*.....

Age.	Particulars of Service.	Time Employed.	Rank.	Pay per Day.	Answer. If Whole-Time—Say "Yes" or "No."	Answer. If Part-time—State Probable Number of Hours per Day.
Under 40...	Probably "Overseas": Medical duties not defined	Whole-time officers	"Temporary Lieutenant"	24s. consolidated		
Under or over 40	Probably "Overseas," but may be at home: Medical duties of Field Units, namely: (*a*) The Highland Division's Field Ambulances (*b*) The Highland Division's Casualty Clearing Station	Whole-time officers	"Lieutenant," for duration of war, with promotion	14s., with allowances of 5s. to 6s.	(*a*) (*b*)	
Any age ...	At Home: Dépôt Medical and Camp Duties	(*a*) Whole-time civil surgeon (*b*) Part-time civil surgeon	Civil surgeons ...	Contract rates not to exceed £1 per day		
Any age ...	At Home: The 1st Scottish General Hospital Ward Duties	Part-time civil surgeon				

Please complete and return by 31st March to Dr. F. K. Smith, 7, East Craibstone Street, Aberdeen.

SCHEME.

For the purposes of defining this scheme, absentee doctors are divided into two classes:

1. Whole-time absentees.
2. Part-time absentees.

Similarly, patients are divided into four classes:

(*a*) Private patients.
(*b*) Public Medical Service patients.
(*c*) Panel patients.
(*d*) Parish patients.

1. *For Whole time Absentees.*

(*a*) *Private Patients.*—The acting doctor attends patients for the absentee doctor, and remits to them on his own forms the accounts, stating thereon that he is sending it on behalf of the absentee doctor. Before sending in his account the acting doctor should, if possible, ascertain the usual fee charged by the absentee. Payment is to be made to the acting doctor, who, on receipt of the settlement, sends 50 per cent. thereof to the absentee doctor's representative. This refers to all private work, including temporary resident panel patients, National Seamen's Insurance patients, etc.

The acting doctor is to be liable for all expenses, etc., in connexion with the cases, and is requested to make a financial settlement with the absentee doctor's representative not less frequently than once every quarter.

Each absentee doctor before leaving is to name his representative (bank, etc.) to the Emergency Medical Committee, and to give authority for settlements to be made with that representative.

(*b*) *Public Medical Service Patients.*—Inquiries are to be made (by the Clerk of the Service) from each of the absentee doctor's patients as to which of the doctors on the active list of the P.M.S. they wish to act as his substitute. To the doctors thus selected, lists of the members who have chosen them are submitted.

The agreement being mutual, the acting doctors are to be credited with 50 per cent. of the emoluments due in respect of the members assigned to them, the remaining 50 per cent. to be accredited to the representative of the absentee doctor.

(*c*) *Panel Patients.*—A list of the acting doctors is to be placed in the surgery of the absentee doctor. The panel patient on visiting the surgery selects one from the list. The selected doctor keeps a record of his attendances on the patient, whether at the surgery or at the patient's home, and charges the absentee doctor the uniform sum of 1s. per consultation or visit.

(*d*) *Parish Patients.*—A fixed sum, at the above rate, is to be paid by the official deputy to the acting doctor. This applies only to patients whom the official deputy is unable to attend.

2. *Part-time Absentees.*

(*a*) *Private Patients.*—The part-time absentee remits the account to his own patient, and credits the acting doctor with 50 per cent. of the emoluments for the work undertaken by the acting doctor on behalf of the part-time absentee.

(*b and c*) *Panel or P.M.S. Patients.*—The part-time absentee, for work done on his behalf by the acting doctor under this heading, pays the latter the same fee per consultation or visit as has been agreed upon for panel work under the "whole time absentee" scheme.

(*d*) *Parish Patients.*—As under parish patients in scheme for "Whole-time Absentees."

Addenda.

1. This scheme does not interfere with nor prejudice any arrangements which the absentee doctor has made or may make privately and on his own behalf.
2. In case of any dispute arising in connexion with this scheme, the decision of the Southampton Medical Emergency Committee shall be final.
3. Definition of a "Private Patient": "A private patient of an absentee doctor is one who would have called him in if he had not been absent." In any case of doubt the acting doctor is to report the matter to the Southampton Emergency Committee for decision.
4. The acting doctor is to be debarred from attending on his own behalf any patient of an absentee doctor for whom he acted in respect of the said patient for a period of two years after the return of the latter doctor.

CASUALTIES FROM NEUVE CHAPELLE AND ST. ELOI.

OUR Special Correspondent in Northern France writes: The heavy casualties resulting from the recent very active operations round Neuve Eglise and St. Eloi were dealt with on the general principles underlying the whole of the work of the last five months. All the wounded, after receiving treatment at the ambulance and casualty clearing stations, were brought down to Boulogne in ambulance trains. At Boulogne the trains were either unloaded or the more serious cases only were removed and the train then sent on with the other cases to Rouen or other of the more distant bases. The Boulogne hospitals themselves were kept free from undue crowding by the dispatch of any case fit for transfer by hospital ship to England. The wounded detrained at Boulogne included a number of "walking cases," who for the most part went to No. 13 Stationary Hospital, where their wounds were re-dressed and the cases further examined with a view to determining whether they were likely to be fully recovered within three weeks. If the decision was in the negative they were sent home.

For two or three days the work in the receiving-room of this hospital was exceedingly heavy, but the nursing staff was temporarily strengthened, and though for several days a great strain was thrown upon all concerned, the work was got through satisfactorily. The fact that there was likely to be a very large number of casualties was of course known in advance, and nearly all the base hospitals —especially those at Boulogne—had practically been emptied in anticipation. Similarly the staffs of the clearing hospitals had been increased by the dispatch to them of extra surgeons of experience. A detachment of such officers is now, I believe, always ready to meet any demand made by a clearing hospital. There are, I understand, in fact, a good many such "emergency" detachments, each being formed of five surgeons, and affiliated, so to speak, to one or other casualty clearing station.

THE KITCHENER INDIAN HOSPITAL.

BRIGHTON.

THE Kitchener Indian Hospital, which consists of three Indian General Hospitals, each of nearly 600 beds, has been established at the old Brighton Poor Law Institution. This building, placed at the disposal of the War Office by the public spirit of the guardians of the poor of Brighton, is situated in a healthy and elevated part of the town, close to the racecourse, with the open downs around. It was built in 1866 at a cost of over £30,000, and has since been considerably enlarged. It consists of numerous large blocks, adjoining one another, and is admirably adapted for its present use as a hospital. It has necessarily taken some time to find adequate accommodation for the inmates of the institution, who numbered about 1,200, but those responsible applied themselves with ardour and diligence to the task, and all the inmates have for some time now been located in suitable places.

The process of conversion of the Poor Law Institution to a large hospital has called for an immense amount of foresight and organization, but the task is now rapidly approaching completion, and about 1,700 beds are available. If it should be necessary to extend this hospital, it would be possible to utilize the adjacent ground of the racecourse and put up tents or huts there for 1,000 more patients with ease.

The staff of this hospital is composed as follows. It will be seen that it includes many of the best-known names of men in the Indian Medical Service, men who have had extensive experience of treatment of natives in India.

Commanding: Brevet-Colonel Sir Bruce Seton, Bt., Honorary Surgeon to the Viceroy, Deputy Director-General Indian Medical Service at head quarters in India.

Registrar and Resident Medical Officer: Major J. P. James, M.D., Assistant Director-General, I.M.S., who has for many years belonged to the Bacteriological Department, and has carried out most valuable researches in connexion with malaria and yellow fever.

Staff Officer and Adjutant: Major C. C. Murison, F.R.C.S.E., Civil Surgeon in Bombay, Superintendent of Matheran.

No. 1 Indian General Hospital.

Lieutenant-Colonel H. Austen Smith, M.B., Civil Surgeon, Simla, Principal of Agra Medical School.

Major W. S. Willmore, M.D., M.R.C.P., Civil Surgeon and Principal, Agra Medical School, well known as a physician in the United Provinces.

Major J. Husband, M.B., F.R.C.S.E., Residency Surgeon, Wano, North-West Frontier.

Major L. P. Stephen, M.B., F.R.C.S.E., Civil Surgeon and Principal, Medical School, Hyderabad; formerly Professor of Anatomy and Clinical Surgery in Grant Medical College, Bombay.

Major J. B. Christian, Civil Surgeon, Bengal.
Captain B. Gale, M.B., with large experience of *x*-ray work, and is in charge of the X-Ray Department.
Captain D. G. Cooper, M.B.

No. Y Indian General Hospital.

Lieutenant-Colonel J. M. Crawford, M.B., Civil Surgeon, Benares, Naini Tal, and other large stations.
Lieutenant-Colonel A. F. King, F.R.C.S.E., Civil Surgeon, Karachi.
Major E. C. Maddock, M.D., F.R.C.S.E., Civil Surgeon, Ahmednagar.
Major T. H. Gloster, M.B., is in Bacteriological Department, and is Assistant Director, Parel Laboratory. He was on the Plague Commission.
Major G. E. Stewart, M.B., F.R.C.S.E., Civil Surgeon and Superintendent, Mahableshwar.
Major T. A. Langston.

No. Z Indian General Hospital.

Lieutenant-Colonel J. W. Grant, M.B., Residency Surgeon, Jodhpur.
Major D. C. Kemp, Civil Surgeon, Trichinopoly.
Major W. F. Harvey, M.B., belongs to the Bacteriological Department and was Director of the Central Research Institute, Kasauli. He is in charge of the laboratory at the hospital.
Major W. Richards, M.B., Civil Surgeon, Salem.
In addition to the above, who belong to the I.M.S., the following have temporary commissions in the I.M.S., and are on the staff of Kitchener Hospital: Lieutenants C. Stiebel, M.B., B.C., T. H. Bishop, M.B., J. D. Grant, M.B., J. B. Maloney, M.B., G. D. Batra, M.B., S. N. Mukerji, M.B., D. Giri, M.B., D.O., M. B. Yin, M.B., S. N. Roy, M.B., J. Das Gupta, M.B., B. Parsad, M.B., A. N. Bose, M.B., B. Sabawala, M.B., F.R.C.S.E., K. Kanga, M.B., F.R.C.S.E., S. Kapoor, M.B., S. Bankor, M.B., P. Banerjee, M.B., and Professor B. Mukerji, Professor of Physics at Roorkee.

The members of the staff do not reside in the hospital, but at various hotels and private houses in the town, but there are always three orderly officers on duty night and day. There is a mess in the building for those officers who desire to take their meals there.

Up to date there have been about 1,200 admissions with only 3 deaths. Arrangements for disposing of the dead have been made in conformity, as far as possible, with native customs; the Moslems are buried in a cemetery of their own religion in London, others are cremated.

The sanitary and cooking arrangements have also been adapted to native custom. The cooking for Hindus and Mussulmans are separate—the men, the utensils, and the cookhouses being independent. The w.c.'s are stand-up closets, and the baths shower-baths.

When it is recognized that the patients belong to so many races—Afridis, Beluchis, Mahrattas, Gurkhas, Pathans, Punjabis, Dograhs, Garwahlis, and Sikhs—the language difficulty might at first seem formidable, but this is not so. The officers speak various dialects, and are able to communicate well with the patients. Notices are put up in Urdu and Nagir, and, as a matter of practical experience, no difficulty is found on this score.

The necessary arrangements are carried out by men of the R.A.M.C. and by Indian native orderlies, about one to every ten patients. These men were quite untrained on enlistment, yet, probably on account of the habits and customs of the natives, the patients are quite content with the amateur nursing they receive. The opinion of the medical staff on this point is divided. It remains to be seen when there are more severe cases which will tax the nursing capacities of the orderlies—such cases as compound fractures of the femur, abdominal operations, enteric fever, pneumonia, etc.—whether it would not be advisable to provide more skilled and trained nurses, whether male or female, to ensure greater comfort, greater safety, and speedier convalescence to the patients.

The ordinary wards, which are well arranged, comfortable, and commodious, vary in size, containing eight to fifty beds.

Infectious cases are nursed in a separate block consisting of six huts, which will hold thirty, or, in an emergency, fifty beds. It is possible by this means to treat each variety of infection in a separate hut, and thus thoroughly isolate the cases. All tuberculous cases are placed in a separate ward, where open-air treatment is available.

Mental Cases.

A building containing twenty beds and four padded cells has been provided, and here all mental cases, whether from this hospital or any other Indian hospital in England or France, will be treated. The wards have been equipped with every modern provision, including wire gauze windows, and protected radiators and electric light.

Special quarters have been arranged for native Indian officers. There are fifty beds for them, with their own staff and cooks.

Operating Theatres.

There are three operating theatres, with sterilizing rooms adjacent, but up to the present, owing to the nature of the cases taken in, not many operations have been performed. The last convoy, however, just admitted, contained a large number of bullet wounds.

Physical Methods of Treatment.

The electro-therapeutic department contains all the most modern equipment for this branch of medicine. There is a universal machine for faradization, galvanization, ionization, sinusoidal currents, cautery, light, and vibratory massage. Also a Schnee's four-cell bath for hand and feet, which can be employed for ionization, galvanism, faradism, or sinusoidal currents. A high-frequency apparatus is also provided. Cases of frost-bite, rheumatism, chilblains, paralysis, lumbago, and neuritis are treated here with success.

There are twelve Dowsing radiant heat beds and apparatus for the local treatment of feet, hands, or joints. The temperature is between 300° F. and 350° F., and the higher or actinic rays are not employed, only the luminous and semi-luminous heat rays. This treatment is very popular with the patients, and has been employed in combination with massage for trench rheumatism, frost-bite, stiff joints after gunshot wounds, sciatica, and lumbago. The medical staff also are satisfied with the results obtained.

The *x*-ray department contains all the most modern apparatus for diagnosis and treatment, including Bult's *x*-ray set with stand for screening and radiographic work. All gunshot wounds are examined by *x* rays as a routine practice, and when one remembers that on a single day recently 500 cases of this nature were admitted, one can easily imagine how busy the staff of this department are. Many interesting cases have been examined and some valuable light thrown on many cases which would otherwise have remained obscure.

Pathological Department.

The pathological department, which deals not only with cases for its own hospital but also those from the three other Indian hospitals in the town, is provided with every necessity for the complete investigation of disease, including an electric centrifuge, electric sterilisers, Baird and Tatlock's incubator, Cox's sterilizer, a hot-air sterilizer, and an autoclave. Examinations are made of pathological specimens, urine, blood, sputum, cerebro-spinal fluid, etc. Vaccines and serums are manufactured, and tests, such as that for Widal's reaction, Wassermann's reaction, etc., made. The whole work of a modern pathological laboratory is carried out here.

There is a polygraph for heart work, a Mackenzie-Davidson telephone bullet detector, in fact all the most modern instruments which medical and surgical science demand.

Among the other departments in the hospital are a barber's shop, a dry canteen, a steam laundry, where all the washing is done; three linen disinfectors, a linen store, with clothes, blanket, sheets, linen, towels, etc., for 3,000 men on the same scale as for English soldiers; three dispensaries, stocked with a plentiful supply of drugs; a pack store for clothes; cells for prisoners—in fact, everything which could possibly be desired in a well-equipped, modern hospital.

All records, whether of admission, deaths, special treatments, such as *x*-ray examinations, bacteriological or electrical treatment, operations, etc., are kept on the card index system, and thus any patient's history and record can be traced with the minimum of labour.

Staff Quarters.

There is a hut village, capable of holding 400, adjacent to the hospital, where all the staff, with the exception of the medical men, have their quarters.

Convalescent patients are kept fit by a route march of one hour daily, if the weather is suitable. They are also employed in various duties in the hospital previous to going back to the front. The town is out of bounds for all

natives except medical men and students, and patients who go to places of entertainment, or for walks, are always under escort.

Recreation is provided in the hospital for the men. There is a gymnasium, a shooting gallery and recreation rooms, and also grounds in which the men can sit if weather permits.

There are 1,380 windows in the hospital, and these are a source of anxiety to the Commanding Officer, on account of the lighting orders of the military authorities and the police. The building being situated on such an elevated spot is most conspicuous, and it is necessary, therefore, to conform precisely to the regulations, and have the windows darkened at night. This has been effected by the simple device of using brown paper.

Diet.

The diet of the men is, of course, quite different to that of our men. It is as follows. It will be seen that it is on an extremely liberal scale:

Meat	8 oz.	Fresh fruit	¼ lb.
Atta 1½ lb., or rice ...	12 oz.	Onions	1 oz.
Dhall or peas	3 oz.	Tea	⅕ oz.
Butter, winter	3 oz.	Gur or sugar	2 oz.
,, summer	2 oz.	Chillies	1/10 oz.
Ghee, winter	4 oz.	Turmeric	⅛ oz.
,, summer	3 oz.	Garlic	1/16 oz.
Potatoes	4 oz.	Salt	¼ oz.
Fresh vegetables ...	1 oz.	Milk...	2 oz.

Authorized extras include fish, spirits, wines, stout, jam, eggs, sago, arrowroot, meat, fowls, treacle, biscuits, cigarettes, puffed wheat, shredded wheat, puffed rice, opium (2 grains, Sikhs, when specially ordered).

The meals are as follows: Breakfast at 8 a.m., midday meal at 12 noon, and evening meal at 5.30 p.m.

The Commanding Officer, Colonel Sir Bruce Seton, whose great organizing abilities are well known, is to be heartily congratulated on the success which has attended his efforts to turn the Brighton Poor Law Institution into a great Indian General Hospital. It can be said without exaggeration that this building is probably the best equipped emergency military hospital in England.

The Secretary of State for India paid a surprise visit to the Indian hospitals in Brighton on March 29th. He first visited the Pavilion Hospital, where he saw many Indian soldiers recently returned from the fighting in the neighbourhood of Neuve Chapelle. He afterwards visited the Kitchener Hospital, where he spent several hours; on entering one of the wards he was received by the Sikh patients with a Sikh song of victory. Afterwards he visited the York Place Hospital, and everywhere expressed his high satisfaction with the arrangements which have been made.

THE HEALTH OF THE GERMAN VOLUNTEER.

THOUGH conscription is in force in Germany, there are, in time of peace, many loopholes of escape, and of late years the complaint has often been made by Bernhardi and his school that the net is not drawn closely enough. At the outbreak of the war thousands of Germans, who had previously escaped the military net, volunteered for active service. This incident has been exploited by the Germans in the neutral press in order to prove the enthusiasm of the nation for the war, and also to create a favourable impression of the German resources in men. But the physique of these volunteers seems in a large proportion of cases to be very poor, for in a paper by S. Kaminer and A. da S. Mello, in the *Deutsche medizinische Wochenschrift* for February 11th, 1915, it is stated that only 63 per cent. of these volunteers are fit for active service. This conclusion is based on examinations made at the Charité Hospital, Berlin, in the period August 20th to October 1st; during that time 1,829 volunteers were examined. These examinations were more difficult than the ordinary examination of recruits, who, in doubtful cases, can be consigned to the Landsturm or can be referred to a subsequent examination. In the present crisis these alternatives are not available, and the difficulty is accentuated by the inadvisability of enlisting men who, when they break down on account of feeble physique, become chargeable to the State as if they had been healthy persons invalided on active service. The volunteers were classed as follows: (1) Perfectly fit for active service; (2) fit for some branches of the service; (3) perfectly unfit for service; (4) at present unfit for service on account of poor physique, but capable of service in a short time if suitably trained. The percentage of each of these classes was: 63, 7, 12, and 18. The percentage of men fit for active service increased with the age of the volunteer; of those 16 years old, only 55 per cent. were fit for active service, while 69 per cent. of volunteers 30 to 39 years old were fit for active service. It is, in the opinion of the authors, a disquieting fact that 25 per cent. of all the volunteers over 20 were disqualified by poor physique, although no organic disease was demonstrable. Volunteers from the labouring classes were, on the whole, stronger than volunteers from the shopkeeping, clerking, and teaching classes; while 68 per cent. of the labouring classes were fit for active service, only 50 per cent. of the lads who had volunteered for service while still at school were found fit. But even in the labouring classes the authors were disappointed to find poor physique in 17 per cent. Little difference was found in the physical condition of town and country dwellers. Special methods of examination, including the Roentgen rays, were employed in 250 cases. Slight deformity of the spine was found in 28 per cent. of these. In 36 per cent. systolic murmurs were audible over the heart; when to this class cases of slight abnormalities of the cardiac sounds were added, only 47 per cent. of the total could boast of perfectly healthy hearts, as judged by the stethoscope. The Roentgen rays showed a normal heart in 75 per cent., although in every fourth of these cardiac murmurs were audible. The authors do not attach very much importance to cardiac murmurs *per se*, and they quote many authorities in support of their contention that a man may be healthy and a good soldier in spite of this abnormality. After bemoaning the frequency with which various defects disqualified the candidates for military service, the authors are strangely inconsistent in concluding their paper with a rhetorical flourish, in which they call upon their countrymen to rejoice over "the beautiful picture which the great number of able-bodied men gives of the defensive power of the German nation."

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Wounded.

Captain H. S. Cormack, I.M.S.
Lieutenant J. W. Cannon, M.B., R.A.M.C.
Lieutenant H. M. Mackenzie, M.B., R.A.M.C.
Lieutenant R. F. Wilkinson, R.A.M.C.

NOTES.

NEW ZEALAND EXPEDITIONARY FORCE.

SIR LAMBERT H. ORMSBY, senior surgeon to the Meath Hospital and co. Dublin Infirmary, past-president Royal College of Surgeons in Ireland, late examiner in surgery (War Office) for R.A.M.C. examination, has been appointed honorary consulting surgeon to the New Zealand Expeditionary Force, with the honorary rank of Lieutenant-Colonel. It is not generally known that Sir Lambert is a New Zealander by birth, although of Irish parentage.

ORTHOPAEDIC CENTRE FOR WOUNDED SOLDIERS.

The War Office has at its disposal some 350 beds set aside solely for the orthopaedic treatment of wounded from His Majesty's Forces. This army orthopaedic centre, to which suitable cases are drafted from all parts, is the Alder Hey Hospital of the West Derby Board of Guardians, equipped for 1,000 beds. The chief of the staff is Major Robert Jones, R.A.M.C.(T.), Professor of Orthopaedics in the University of Liverpool, who is ably assisted by Captain T. R. W. Armour, Assistant Surgeon, Royal Southern Hospital, Liverpool. Captain Lloyd-Roberts, Physician to the Royal Southern Hospital, and Mr. T. P. McMurray, are also on the staff. The chief work of this hospital is the treatment of cases of injury of joints and bones in which special orthopaedic methods are required. Deformities not necessarily the result of wounds have developed in soldiers—for example, pes cavus, pes planus, and cartilage-joint affections, on active service, and such case receives the necessary treatment. At present there are in the hospital cases of nerve injury and a certain

percentage of malunion of fractures, chiefly of the bones of the forearm. The metacarpus is frequently damaged, necessitating often operation to preserve the usefulness of the hand. The *x*-ray department is under the control of Captain Thurstan Holland, whose skill in his speciality is well known. Electric treatment, diathermy, and ionic medication are also carried out, and a staff of competent masseuses, many of whom give their services voluntarily, completes the organization of this important orthopaedic centre.

Typhoid Hospital for Serbia.

Among the passengers on the Admiralty ship *Saidish*, which left for Serbia this week, is the first part of the typhoid hospital unit sent by the Wounded Allies Relief Committee (Sardinia House, Kingsway). The party consisted of two doctors (both Belgians who have seen service in the war), and two nurses, one of whom is a Russian lady who is acquainted with the Serbian language, and has been working at the Ambulance Jeanne d'Arc at Calais. The party will prepare the building provided by the Serbian Government, so that on the arrival of the rest of the unit, work will begin at once.

Danish Ambulances.

A Danish ambulance, under the direction of Professor Tscherning, of Copenhagen, who is assisted by several surgeons belonging to the Danish Red Cross Society, is expected to arrive shortly in France. A Danish ambulance is already at work in Belgium, and another is about to set out for Russia.

Military Honours.

Lieutenant Edmund Hume Moore, M.B., R.A.M.C., attached to the 2nd Battalion of the Leicestershire Regiment, has been appointed Companion of the Distinguished Service Order for conspicuous gallantry on February 23rd, 1915, near Richebourg L'Avoue, in going out with another officer and a stretcher bearer to within 150 yards of the enemy and attending to a severely wounded soldier. The stretcher bearer was then wounded, and Lieutenant Moore remained in attendance on him, undoubtedly saving his life. On the next day this officer again went with the greatest gallantry to the assistance of a wounded man under the aimed fire of the enemy. He dressed the man's wounds, and was immediately afterwards wounded himself.

Lieutenant T. W. Clarke, M.B., R.A.M.C., Special Reserve, has received the Military Cross for conspicuous gallantry and great devotion to duty during the past six months. On March 5th, at Neuve Eglise, when the 14th Field Ambulance dressing station was destroyed by shell fire (1 officer and 5 men being killed and 19 wounded therein), Lieutenant Clarke continued to attend on the wounded with great gallantry until he collapsed from his own wound, which he received from the first shell.

The Military Cross has also been conferred upon El Mulazim Awal Khalil Effendi Ghahow, of the Medical Corps attached to the 5th Battery Artillery of the Egyptian Army, for gallantry and devotion to duty in attending on the wounded under heavy fire during the action at Tussum on February 3rd.

Medical Officers Wanted.

2nd Line South-Eastern Mounted Brigade Field Ambulance (T.F.).

There are vacancies for four medical men willing to serve abroad in the 2nd Line South-Eastern Mounted Brigade Field Ambulance. Applications, giving age, service (if any), etc., should be sent to Major J. Hamilton, R.A.M.C.(T.), Bridge, near Canterbury.

2nd Line Welsh Border Mounted Brigade Field Ambulance.

There are vacancies for medical officers in the above unit. Pay and allowances as in the regular army, together with outfit and camp kit grants. Full particulars can be obtained on application to Major D. C. Leyland Orton, Officer Commanding 2nd Line Welsh Border Mounted Brigade Field Ambulance, Thomas Street, Chester.

1st North Midland Field Ambulance.

Two medical officers required at once for the 1st North Midland Field Ambulance. Applications should be sent to the Officer Commanding, R.A.M.C. Dépôt, 91, Siddals Road, Derby.

2/2nd East Anglian Field Ambulance.

A medical officer prepared to undertake the imperial service obligation is required for the above unit. Pay and allowances as in the regular army. Applications to Lieutenant-Colonel G. Blake Masson, 2nd East Anglian Field Ambulance, Peterborough.

3/2nd Northumbrian Field Ambulance.

Several medical officers are required for the completion of this unit for either imperial or home service. Applications should be addressed to the Officer Commanding the ambulance at the Military Hospital, Bensham, Gateshead.

England and Wales.

County of London Branch of the British Red Cross Society.

Dr. F. M. Sandwith, the chairman of the County of London Branch of the British Red Cross Society, presided on March 30th, over the annual meeting, which was well attended. The annual reports and balance sheet indicated the great expansion that took place in the work of the branch during the second half of 1914. The summary of the accounts of local divisions showed that subscriptions by the public amounted to £7,856 as compared with £44 in the previous year; practically the whole was subscribed during the second half of the year. The total sum raised by the divisions was £9,842. On the expenditure side, administrative expenses were £767 as compared with £200 for 1913. The principal items of expenditure were grants to hospitals, supply of Red Cross material, comforts for the wounded, drugs, etc., amounting to £2,391. The accounts of the divisions showed a balance in hand at the end of 1914 of £5,590, but, as the Treasurer (Mr. R. M. Holland) mentioned, the calls upon the funds during 1915 would be exceedingly heavy, especially if the war extended over the whole twelve months. In the case of the central organization of the branch, a deficit of £200 had been converted into a balance of about £300. London now possessed 70 voluntary aid detachments with a total personnel of 2,711. Particulars were given of the work done in each division since the outbreak of war. A description of its scope was published in the JOURNAL of January 9th, p. 85.

Dr. Sandwith said that the War Office had already selected sites for 52 new military hospitals for 50,000 patients. For work in these hospitals 3,000 women would be wanted from voluntary aid detachments, and he called for volunteers from London.

Lord Robert Cecil gave an account of the work of the department of the Red Cross organization which seeks to trace the whereabouts of the missing. He also described the motor ambulance service established by the Red Cross Society as in itself an ample justification of its existence. It was his convinced opinion that in some cases prisoners taken by the Germans are insufficiently fed, and urged that the neutral nations and the international Red Cross organization should make representations to Germany in cases of infringement of the Geneva and Hague Conventions. It was folly to make rules in time of peace for the proper conduct of war if belligerents were free to disregard these rules when it suited them.

Lord Onslow also addressed the meeting, and the report and balance sheet was adopted and the officers of the branch re-elected.

Ireland.

Ulster Medical Society.

The eighth meeting of the session was held in the physiological rooms of the Queen's University, Belfast, on March 25th, when Dr. J. S. Morrow, President, occupied the chair, and Mr. Robert Campbell read a short paper on fractures of the head of the radius. Professor Milroy's paper on the influence of reaction (hydrogen ion concentration) and calcium content on the activity of reunion was read by Dr. John Milroy. Dr. J. M. Gibson read some observations on heart-block, and showed tracings taken from the frog's heart when perfused with a 1 in 20,000 dilution of quebrachim. Dr. W. W. D. Thomson read a short paper on the estimation of pancreatic activity. He said that the estimation of the diastase reaction in the urine and the amount of fats in the stools and the relation of unsaponified to saponified

fat were the two most reliable methods of estimating the activity of the pancreas. Dr. John Milroy read a short paper on some metabolic anomalies due to oxidation of the fat series in food.

THE ROYAL VICTORIA HOSPITAL, BELFAST.

The 122nd annual meeting of this institution was held in the hospital on March 25th. The Lord Mayor of Belfast (Mr. Crawford McCullagh) occupied the chair. The office of President of the hospital, vacant by the death of the late Lord Londonderry, was filled by the unanimous election of Lady Pirrie to the office. Mr. R. J. Johnstone, F.R.C.S.Eng., read the report of the medical and surgical staff, and moved its adoption. It showed that 2,090 surgical cases and 1,256 medical cases had been treated in the wards; 1,715 operations had been performed, with a mortality of 3.21 per cent. In the out-patient department 33,028 new cases had been treated. He referred to the liberal spirit with which the board of management had met their request for increased expenditure in the wards and in the electrical department, and to the private generosity in the purchase of an electro-cardiograph. A large number of past students were serving in the R.A.M.C. abroad; many students were serving in the army and three members of the staff had been appointed to one of the St. John hospitals, and might be called upon to leave in the near future. Professor Lindsay, F.R.C.P., seconded, and pointed out the increase of numbers in the last decennium.

EXPERIENCE OF TUBERCULOSIS IN IRELAND.

A report from the medical superintendent of the Cork County Sanatorium, containing an account of the results obtained in 311 cases of tuberculosis in different stages of the disease, emphasizes the need of more stringent measures for the detection of early cases and the economic advantages that would accrue from their adoption. The absence of compulsory notification in Ireland and the slow development of the dispensary system prevent any rapid headway being made against the development and spread of the disease in infected houses and areas. The very high average—97 per cent.—of early cases that have been restored to full working capacity goes to prove that the later stages of tuberculosis would never be reached if means could be adopted to maintain in the home the same conditions that lead to recovery in the sanatorium. The isolation of the advanced case is strongly advocated—not of necessity in a distant institution, but in special quarters within reach of the home, where the last months or years could be spent in comparative comfort. "So long as we throw back the incurables among the people we are sowing disease as fast as we are weeding it out." More especially is this the case in Ireland, where the housing conditions and the domestic hygiene of the poorer classes are not of a high order. Science has shown the way towards eradication of tuberculosis; the difficulties are wholly political and financial.

Scotland.

THE MORISON LECTURES.

"The New Psychiatry."

(*Concluded from p. 512.*)

IN his third lecture Dr. Stoddart began by discussing "projection," a psychological mechanism which often served as an indicator of repressed complexes. Effects of the repressed complex were attributed by the individual possessing it, not to himself, but to some other person. Self-reproach was so unpleasant to consciousness that it was repressed and converted into reproach of other people. Projection was common in many forms of insanity, and hallucinations sometimes arose through it—the hallucinations being in reality symbolized self-reproaches. In the discussion of neurasthenia the term was limited to a class of case exhibiting definite symptoms, the chief of which was an undue tendency to fatigue, as revealed by ergographic tracings, by the method of adding columns of figures, and by the "irritable eye." The slightest physical or mental effort, even the thought of it, led to fatigue; and there were various paraesthesias. Dr. Stoddart expressed the opinion that in true neurasthenia there was always to be found one essential etiological factor—namely, sexual excess, generally masturbation, and that it was easy to understand how this habit acted when one considered the severity of the mental conflict taking place. Suitable advice and recommendations as to mental hygiene were the proper remedy.

The "anxiety neurosis" was characterized by a persistent state of anxiety or fear, usually without obvious cause, but sometimes initiated by some real cause, though always out of proportion to the cause: the other symptoms of the neurosis were exaggerations of the normal physical signs of fear. It was Freud who had recognized this disease and had discovered its essential etiological factor, namely, an accumulation of mental excitement which could find no somatic outlet; this excitement Dr. Stoddart thought was probably always of a sexual nature, and occurred characteristically in engaged couples who could not afford to get married, in widows and in widowers, and in others for whom cohabitation was denied or impracticable. There were also important contributory factors, such as heredity, overwork, and exhaustion following upon severe illness. The obvious remedy for such cases was usually impracticable; and Dr. Stoddart made it his custom to seek by means of a short analysis interests of the patient into which his repressed energy might be directed, and in the meantime to prescribe some anaphrodisiac medicine.

The psychoneuroses and psychoses were on an entirely different plane from the neuroses, which owed their origin to existing causes probably of a chemical nature at the time of the malady. The psychoneuroses and psychoses were compromise formations between repressed wishes and the forces which repressed them; their mechanism was the same as that of dreams. Though dreams were normal, whilst the psychoneuroses were abnormal, the similarity was closer than appeared at first sight; in both there was the same mechanism of distortion (condensation, transference of the affect, symbolism, somatic displacement, ellipses, inversion, and dramatization).

Hysterical manifestations, in Dr. Stoddart's opinion, were compromise formations between repressed wishes and inhibitions. Anxiety hysteria, which was one form of the disease, comprised hysterical phobias, hysterical day-dreams, and what might be called hysterical attacks (including cases in which the repressed complexes were converted into somatic symptoms). Psycho-analysis had shown that phobias could not all be referred to the obsessional or compulsion psychoneurosis; some took their origin in a conflict between a repression and an inhibition. Brill and Freud agreed in regarding hysterical day-dreams or hypnoid states as invariably occurring in patients who had renounced masturbation, and refused to relieve an overstimulated sexual impulse; but Dr. Stoddart had seen some cases in which masturbation played no part. Freud's theory of hysteria, depending on the recognition of the infantile development of sexuality, was next discussed. Unconscious infantile memories influenced the whole sexual life of the individual, and in the illustrative cases given were held to be the determining cause of the masturbation. "Conversion hysteria," the other form of the disease, resulted from a persistent strife between some painful memory and the restraint of the censor from its coming to the surface; the result of the struggle was a compromise whereby the idea by distortion became converted into a somatic symptom, some bodily motor, or sensory innervation or inhibition. Psycho-analysis was to be regarded as the most radical form of treatment of hysteria; other methods in common use were Weir Mitchell's "rest cure" and hypnotism.

The "compulsion neurosis," which showed itself in a large number of ways, was regarded by Freud as a disease of the unconscious, to be interpreted on a purely sexual basis, its symptoms being substitutions for certain repressed sexual ideas and emotions. The lecturer was of opinion that psycho-analysis had proved to be the only really successful method of treating the compulsion neurosis, but hypnotism could be used in much the same way as in hysteria—namely, (1) for suggestion, (2) to recover buried memories, or (3) to obtain an emotional reaction to a repressed complex. Transvaluation, resynthesis, and transmutation, as methods of treatment, were described and illustrated.

In maniacal depressive insanity it was useless to attack the psychosis in one of the acute phases; the treatment

had to be undertaken during a period of sanity. A short analysis might be most successful in effecting a cure, whilst a complete one only led to relapses. Dementia praecox had a remarkable psychological resemblance to hysteria, yet was conspicuously incurable whilst hysteria was eminently curable.

Finally, Dr. Stoddart discussed paranoia, considering its two main classes, the "mattoids" or eccentrics and the "ego-centries"; psycho-analysis, he thought, had shown that paranoia was a psychosis erected upon the invariable basis of repressed homosexuality. Homosexual inclinations were repugnant to the individual, and were repressed into the unconscious; but when such repression failed the homosexual complex reappeared in consciousness in the disguised form of paranoia or of dementia paranoides. Treatment by psycho-analysis had usually failed, though cures in the early stages had been reported by a long and complex process, requiring much tact, patience, and skill.

The lecturer concluded by expressing the opinion that no physician of experience could deny the enormous part played by sexual conflicts in the genesis of the neuroses. He thought that cases sometimes occurred in which the psychogenetic conflict was non-sexual, but they were very rare. The essential factor in the development of insanity was not hurry, bustle, and brain-fag, but the repression of the instincts, enforced by civilization.

The President (Dr. Barbour), in moving a vote of thanks to the lecturer, expressed his regret that Sir Thomas Clouston, who was to have proposed the vote, was unavoidedly prevented from doing so; his regret was the greater because he felt sure that Sir Thomas would in so doing have expressed also the views of Scottish alienists on the new psychiatry.

Hospital Accommodation for Soldiers.

The county of Roxburgh has been asked to provide 50 hospital beds for sick and wounded soldiers. The Hawick Combination Poorhouse Committee has notified that 40 beds are available in the Hawick institution which could be utilized for Poor Law patients at present at Jedburgh or Kelso; or, as an alternative, it was suggested that the inmates at Hawick might be transferred to those towns, when 91 beds altogether could be offered at Hawick for military purposes.

Blind Soldiers and Sailors.

At a meeting of the directors of the Royal Blind Asylum and School, Edinburgh, last week a committee was appointed to consider what practical steps could be taken to meet the needs of Scottish soldiers and sailors who had lost their sight in the war. At the West Craigmillar institution the society possesses one of the best equipped establishments for Braille printing to be found anywhere, with thoroughly well trained expert teachers, qualified to give instruction to the blind; books printed there are sent to all parts of the world. It is hoped that the Scottish soldiers and sailors who have lost their sight may be housed during their period of tuition near that institution, and it was asked that the names of any such men should be sent to the secretaries, Messrs. J. L. Steel, Dougal, and Co., 18, Hill Street, Edinburgh.

IT is stated by the *Journal of the American Medical Association* that a bill permitting Christian Scientists to practise in the State of New York was practically killed on March 3rd, when it was recommitted in the Assembly for a hearing by a vote of 69 to 31.

HEARSEY, in his sleeping sickness *Diary* of the Nyasaland Protectorate, Part XXIV, December 31st, 1914, states that 19 cases of the disease have been notified since the publication of his last memorandum. This brings the number of cases recorded up to the present to 211. A detailed account is given of the new cases. The prophylactic measures taken have consisted mainly in making clearings round villages and along the main roads. Such measures have been systematically carried out in the proclaimed area of the Dowa district, and to a less extent in the Marimba district. Nothing apparently has been done in the way of driving back the game from villages and inhabited areas, but this question—a very important one—will have to be decided sooner or later. Were such a campaign combined with the prophylactic measures already being carried out, something definite as regards the abolition of the disease may be hoped for.

Correspondence.

THE EARLY ADMINISTRATION OF VACCINE IN PNEUMONIA.

SIR,—Apart from all technical questions, the endorsement of Sir A. E. Wright's latest conclusions with Dr. W. H. Wynn's clinical results is of epoch-making significance in its bearings upon practice. His record of success with his early treatment suggests some important considerations for thought and action. The central facts are the successful control over all the toxaemic symptoms, which, he contends, is attainable by the exclusive and early use of an efficient vaccine; and its failure, which he emphasizes, to check the evolution of the pathological process in the lung, although he is satisfied that its resolution is definitely accelerated. The inferences which might be drawn provisionally from them are far-reaching.

1. From that strange contrast it would seem that there are two great objectives for study and for treatment: (*a*) The "blood toxaemia," answerable for the severe and fatal symptoms, mainly in the nervous sphere; and (*b*) the "blood hyperinosis," now exculpated of any major harm *per se*, but still prominently responsible for the lesion, the mysterious accessory agents being the unknown "pulmonary" and the unknown "localizing" intrapulmonary factors.

2. Whilst still holding to a joint infective causal pathology for the toxaemia and for the fibrinosis, we might regard his experience as evidence that they are largely independent one of the other in their natural history and also in their different therapeutical response.

3. Their essential difference is that the toxaemia can be fatal without any consolidation, and that the consolidation can be quite harmless, provided the toxaemia be completely or sufficiently suppressed. The onus of the fatality would be directly identifiable with the toxaemia; but that of the consolidation much less directly identifiable with it than hitherto imagined, seeing that the lung will solidify after its potency has lapsed—a fresh enigma awaiting its elucidation.

4. The "therapeutical" master facts we owe to Dr. Wynn are that, in the terms of our bacteriotherapy, "antibodies" induced by such vaccine potencies as are consistent with safety, can suppress the toxaemia; but that, within the safety limits which he adopts, they are powerless to prevent the thrombotic haemopulmonary complex. In his "earlier" cases consolidation seems to have occurred in due time; but, in "cool blood," as a post-toxaemic event.

5. The first practical suggestion from these novel data is that the consolidation, assuming that it might sometimes be worth preventing, would have to be met by other means, in conjunction with vaccines. It is not altogether an idle one, as that brilliant record of recoveries in an unselected series does not include any of the worst or "alcoholic" cases.

6. A fact of much theoretical and practical importance is that we possess efficient means of dealing with a general blood hyperinosis. According to Chantemesse, followed by Plicque[1] (who has slightly modified his method), large doses of citric acid or of citrates act as a preventive and as a cure for the severe phlebitis apt to arise under the physiological hyperinosis of advanced pregnancy. Moreover, in my own experience, it has been practicable to prevent and to cure the local extravascular thrombosis of pneumonia. By resorting "at once" to an hourly medication by pot. iod., amm. cit. and hot lemonade (with the rind), with an initial local leeching, and exclusive whey for twenty-four hours, we may be able to prevent both the exudation and its clotting. On the second day, or sometimes later, the same method may effect a rapid softening and absorption of early consolidations. Similar testimony as to the efficacy of an adequate and early resolvent treatment has been published by others.

7. That achievement by the simplest of means shows that there are two efficient early treatments, the "haemic" for the consolidation, and the "specific" for the infection, and two separate mechanisms: pathological, "by antibodies"; and physiological, mainly by neuro-vascular and

[1] *Bulletin médical*, May 6th, 1914.

haemic agency to prevent the consolidation, or in addition by phagocytic agency to reabsorb it.

8. A striking feature of the non-specific method is that it also rapidly allays the toxaemic symptoms in a remarkable degree; though, in my limited experience, always short of the marvel enacted in Dr. Wynn's Case IV, of a complete defervescence, immediate and final, at one stroke.

9. Assuming the competence of both sets of observations, it might be concluded that curable pneumonias might be cured on two plans: by preventing or aborting the consolidation, as an efficient means of reducing the toxaemia (presumably by an "early" phagocytosis); or by suppressing the toxaemic symptoms, but not the consolidation, as a means to its rapid reabsorption (clearly by a "later" phagocytosis).

10. As the pathological cure does not wholly clear the way for the *vis medicatrix* of function, helping her only as chemical antibodies might do with a late appeal to phagocytosis, we are not surprised that it should work "by instalments"; nor that, as the other makes a physiological appeal to all her forces, her response to this, when favourable, should occur along the whole front. Although incapable of any heroic lightning blow, it has none of the hazards and dangers of heroism. It might be regarded not only as a more complete early cure, but also as more reliable in the supply and in the quality of its materials.

11. My persistent advocacy of the "citric and iodide" treatment (coupled always with an appeal for some better substitute) was a stringent "conscience clause" so long as the *onus medendi* was dogmatically delegated to the "self limiting" pneumococcus, and to the "nurse" to watch it. Thanks to Dr. Wynn, though seemingly less urgent, it might now be more heeded, when merely urged, as in these lines, as a "clause of expediency." But, be the final shaping of our treatment what it may, our chief debt to him will remain that "expectancy" is henceforth a dead letter for ever. The nurse will resume her normal functions, and the physician realize that the sufferers' "critical day" had never been other than the first.

12. Shall we choose to limit our help to the patient on that day? Why withhold from him the "certainty" of comfort from harmless means, and a "pittance" of relief (at the lowest estimate of those who, though not sceptics, still hesitate to try)? Even at that, his grievance could never be that nothing had been done. And, if the greater ordeal, when risked, should prove a failure or a disaster, we should then not have denied him the most favourable conditions which our present experience could secure for its success. But, should it chance to have become superfluous, there would be no regrets.—I am, etc.,

London, W., March 23rd. WILLIAM EWART.

SIR,—It was inevitable that some one should make the very obvious and easy criticism that it is very difficult to draw conclusions from a limited number of cases and that the relation between the injection of vaccine and the improvement of the patient might have been one of coincidence. It is a very usual experience that cases admitted to hospital have a crisis shortly afterwards, and the only unusual feature in Dr. Grünbaum's series is that this should have happened in 13 out of 15 cases admitted in twenty-four hours. I could have published records of more than 100 cases of pneumonia treated with vaccine, but owing to the difficulty of drawing conclusions when the vaccine is administered late, I purposely limited my paper to cases injected within three days of the onset of the first symptoms, especially as a series of such cases had not previously been published.

The striking feature of the cases injected early during the initial septicaemic stage was that the crisis occurred before consolidation had appeared or before it was well marked, and that consolidation appeared for the first time or became more distinct at a time when the temperature, pulse, and respiration were normal. I have seen such cases with a crisis on the fifth or sixth day, but, apart from vaccine treatment, I have not seen them with a crisis on the first or second day. To me it is a new phenomenon, and it is difficult to attribute it to anything else but the treatment given. It would be interesting to know whether older physicians, with very extensive experience of the disease, can recall such cases. I can imagine that isolated cases have been met with, but that it should happen almost invariably after the early administration of vaccine in patients of all ages, of various social position, not grouped together but seen at intervals of weeks or months, suggests very strongly that it was the vaccine which modified the course of the disease. Since this paper was written in October many similar cases have been seen, and I regard it as unusual if there is not a distinct improvement after an injection of vaccine in the early stage. It is a much greater strain upon my credulity to be asked to believe that the results were pure coincidence than that they were connected with the vaccine.

I am glad Drs. Stavely Dick and Hendley can confirm my results. Both have used successfully smaller doses than I now recommend. I quite agree that good results are often obtained with doses of 25 million, and some of my cases show this, but I have found that doses of 50 to 100 million give more striking results. Dr. Hendley has found, for instance, that although he obtained a normal temperature and pulse, the respirations were still rather frequent. This was one point which led me to use larger doses. The fact that normal respirations can be obtained in a patient with considerable consolidation appears to be proof that the consolidation is not the cause of the frequency, but that it is a toxic effect. The larger dose gives more immunity, and the respirations then have a normal rate. The respiration and pulse rate were added to my charts, but were not published owing to the space they would occupy. They would have shown the relation to dosage. I have seen no harm from a dose of 100 million in an adult. Sir A. E. Wright, who has inculcated in us the fear of the negative phase, now advocates doses of 250 to 1,000 million in the early stage of pneumonia, although I have seen no reports of cases in which such doses have been used.

Dr. Hendley's success in obtaining cases within twelve hours of the onset shows the great opportunity afforded at the present time of staying the ravages of pneumonia among our troops, and *a priori* objections should not be allowed to hinder a method of treatment which seems to give more definite results than any other.—I am, etc.,

Birmingham, March 28th. WILLIAM H. WYNN.

THE TREATMENT OF MALIGNANT DISEASES OF THE SKIN.

SIR,—In a letter to the JOURNAL of March 20th Dr. Christopher Kempster questions the advisability of giving eight pastille doses of *x* rays to the same area at one sitting. The result of so large a dose of unfiltered rays to the normal skin would be, of course, disastrous, and Dr. Sequeira has already replied that these doses are given through a 4 mm. aluminium filter and measured above the filter.

But it should not be forgotten that the application of "massive doses" of unfiltered *x* rays is also a recognized method of treating rodent ulcer. This method was introduced by Broca and described by him in the *Archives d'électricité médicale* (December 10th, 1909) and later by Bordier in the same journal (December, 1910). By the employment of massive doses rodent ulcers and other malignant epitheliomata of the skin have been removed without subsequent ulceration and with rapid cicatrization. Four to six full pastille doses are given at one sitting after carefully protecting the healthy skin around the growth. A drawback to this method is that in the case of large growths the radiation may be followed by oedema, and some ten days later by symptoms of toxaemia from absorption. On the other hand, far better results are obtained by "massive doses" than by repeated single pastille doses.

In regard to the employment of highly filtered rays, it is a remarkable circumstance that, as Dr. Sequeira states in his letter of March 27th, so many as seventy pastille doses (measured above the filter of 4 mm. aluminium) may be given in the short space of three and a half weeks without damage to the normal skin. Such a dose, if we calculate by the tables of absorption for different thicknesses of aluminium as worked out by Guilleminot, by Belot, and by Bordier, and suppose the tube to have been emitting rays of a medium degree of hardness, would represent approximately seventeen full pastille doses beneath the filter; or, according to Dr. Sequeira's own table (in a valuable contribution to the *Archives of the Roentgen Ray*, January, 1915), twenty-three

full pastille doses—not very far short of an average of one pastille dose for each day. Now this, of course, would be a truly enormous dose for unfiltered rays. But in Bumm's clinic doses amounting to 300 X to 400 X are said to have been given in the space of one week, and this would represent, when translated into pastille measure, thirty to forty full doses.

Indeed, the tolerance of the healthy skin for very large doses of rays of a high degree of penetration is now well known, and it has been made use of during the past five or six years in the treatment of deeply seated growths, of ovarian fibroids, of amenorrhoea, and of other internal disorders, since it enables large doses of rays to reach the deeper parts without damage to the skin.

But it seems probable that there is a limit of tolerance of the skin even to these highly filtered rays, and a standard of maximal dose such as we have for unfiltered rays is greatly needed. An attempt to give accuracy to the measurement of these rays has been made by Regnaud and Nogier (*Archives d'électricité médicale*, 1913), who give as a safe maximal dose 20 to 22 H (or 40 X; or four Sabouraud pastille doses) measured beneath the filter of 4 mm. aluminium. The dose varies with the degree of penetration of the rays emitted from the tube, and this dose is for rays of 7 to 8 of the Benoist scale. Such a dose is stated to produce, after a short period of latency, an erythema without blistering, which passes away, and leaves no subsequent trace of damage to the skin, but permanent depilation and some pigmentation. This erythema may be repeatedly reproduced on the same area without causing dermatitis, or atrophy, or telangiectasis.

Whether highly filtered rays are about to find a place in the radio therapeutics of skin diseases is still a question which needs further experience for its answer. Possibly these rays, which tend to approach the gamma rays of radium, will be found useful in the treatment of the less superficial affections such as naevi and keloids, in the permanent destruction of hair papillae in hypertrichosis (as Chilaiditi has recently reported), or of the sweat glands in hyperidrosis, and, as Dr. Sequeira has found, of certain deep seated rodent ulcers. Though whether heavy doses of highly filtered rays give better results in rodent ulcer than massive doses of unfiltered rays is at present a debatable point.—I am, etc.,

London, W., March 27th. H. G. ADAMSON.

THE TREATMENT OF MALIGNANT GROWTHS BY RADIUM EMANATION NEEDLES.

SIR,—The method of treating cancer masses by puncturing them with several hollow needles containing radium emanation (as described by Dr. W. C. Stevenson, BRITISH MEDICAL JOURNAL, March 20th) is certainly an improvement upon the burying of a single tube in the growth. It must be pointed out, however, that the ramifications of any particular tumour cannot be exactly determined; and, although the main body may be evenly and effectively irradiated by needling, it is impossible to be sure that all outlying cells have been reached.

The effect of the radiations in stirring up the surrounding, and, as yet, uninvaded tissues to increased resistance is quite as important as any direct action on the cancer cells. But for this purpose only rays of a penetrating gamma type are suitable, and the ideal aimed at by nearly all electro-therapeutists is to deluge both the tumour and its surroundings with the hardest available rays. It has been clearly proved that a dose just sufficient to injure very gravely the cells of a malignant growth is nevertheless well within the stimulant range for normal cells; hence a parallel beam of rays, extending for some distance on either side of the apparent limits of the tumour, and of such a hardness that it emerges on the far side but little diminished in energy, is the form of radiation best calculated to give good results. Such a beam, it is true, would give up only a small proportion of its total energy to the cancer mass and its surroundings, and this energy would be for all practical purposes evenly distributed throughout the whole of its path. (The energy content of hard gamma rays is so prodigious that a very small proportion of it suffices for therapeutic purposes. It is the electrons liberated in the tissues which really matter, and the hard *x* or gamma ray causes them to be ejected with a velocity from five to fifteen times greater than is the case with soft rays.) In practice, this ideal cannot as yet be attained, for (*a*) the gamma rays of radium, after filtration through 1.5 mm. of platinum, cannot be obtained in sufficient quantity to make a parallel beam possible; and (*b*) the hardest *x* rays as yet produced lose considerable energy in passing through a thick tumour. It is quite possible by the use of special Roentgen bulbs to produce a parallel beam of *x* rays. It remains to increase the hardness of artificially-produced gamma rays until they approximate in penetrating power to those produced by radium.

Owing to the outbreak of war it has not been found possible to publish the proceedings of the Section of Electro-therapeutics at Aberdeen; but I may perhaps be allowed to quote here the concluding paragraphs of my paper.

> I should like to emphasize once more that radium therapy is simply *x*-ray therapy writ large, and to point out that when it is divorced from general electro-therapeutics, no small loss results. To afford the maximum of relief to the victims of cancer, the whole armamentarium of the electro-therapeutist has often to be called into use. For instance, a rodent ulcer which is refractory to radium or *x* rays may often be sensitized by previous ionization with a heavy metal. This combined method, introduced by the present writer three years ago at Birmingham, has since been shown by many workers to be of undoubted value. Again, de Keating-Hart and others have stated that diathermy increases the action of rays on deep-seated growths. Whether or not this is so I cannot say, but it is certain that, in cases of recurrence after breast operations, diathermy and other forms of electricity will often give great relief to the intolerable aching of a swollen arm and shoulder. Many other instances will occur to you, but the above examples are sufficient to show the truth of my contention; yet questions of scarcity and cost debar most electro-therapeutists from keeping always at hand an efficient supply of radio-active materials.
>
> Radium is little likely to become cheaper unless it has a powerful rival. The mere appearance of an efficient substitute would at once pierce any artificial inflation of price, and its coming into general use would release all existing supplies of radium for employment in the comparatively few special cases which still required it. The perfecting of an apparatus such as I referred to in the early part of this paper is, therefore, earnestly to be desired, as its introduction would tend to place the carrying out of gamma-ray treatment within the reach of all, such as, by reason of training and bent of mind, are capable of successfully wielding a weapon so potent both for good and evil (*Archives of the Roentgen Ray*, October, 1914).

—I am, etc.,

FRANCIS HERNAMAN-JOHNSON, M.D.
Cambridge Hospital, Aldershot, March 20th.

CEREBRO-SPINAL FEVER.

SIR,—It has been pointed out to me that my brief letter in your issue of March 6th on this point would have been more useful if it had been more explicit. During the epidemic we examined the blood of each patient who came with any symptom which might possibly be due to the disease, however slight. The finger-tip, or ear, was washed in methylated spirit, allowed to dry, and a puncture made with a stout needle. The film was fixed for half an hour in alcohol and ether, then stained. A positive result showed a polynuclear leucocytosis, often very marked, and the presence of diplococci. In many cases the latter were in the leucocytes.

In some cases we succeeded with the first film. If these were negative, we examined next day. If there were any symptoms showing involvement of the nervous system, we found the germ in the blood.

We isolated every case with the germ in the blood, and so long as we did this the disease did not spread to the civil population. We also grew the germ from the blood, using from 2 c.cm. to 5 c.cm. daily.

We had cases of every degree of severity—from a man who started with agonizing pain in the head and was dead in a few hours, to cases in which diarrhoea, giddiness, and malaise of a slight degree were the only symptoms. The *post-mortem* appearances of those who died corresponded to the descriptions given in Osler and McCrae's *Medicine*.

A diplococcus persisted in the urine after it ceased to be visible in blood films. Whether in blood, urine, sweat, or genital secretion, attempts to obtain cultures were not necessarily successful unless we inoculated the media directly from the patient. It died easily.—I am, etc.,

Malvern, March 28th. MARY H. WILLIAMS.

SIR,—In the discussion on epidemic cerebro-spinal meningitis at the Royal Society of Medicine, Dr. W. H. Hamer took exception to the statement that the disease was first described in 1805. The clinical manifestations are described by Sauvages in his work published in 1763. It is interesting to note the extent of our knowledge of this disease, as exemplified in the writings of prominent members of our profession during the past forty years.

Samuel Wilks, in 1878, wrote:

Our first knowledge of this disease in Great Britain was about the year 1846, when it occurred in the neighbourhood of Dublin, and mostly among young boys of the poorer classes. It had, however, appeared in epidemic form three or four years previously in France . . . a novel and undescribed disease. It must be regarded as a specific blood disease. The disease is questionably contagious.

He quotes Dr. Wood, who wrote that this disease has occurred as an epidemic; at the Cape of Good Hope Dr. Wood has never seen any rash, nor does he consider the disease to be contagious.

In the same year (1878) Bristowe wrote:

This disease has only been distinctly recognized from the time of its epidemic prevalence in France between 1837 and 1848. Is it infectious? Of this we think there can be little doubt.

Dr. T. W. Grimshaw, in 1882, wrote:

It is generally believed not to be contagious. A few doubtful cases of contagion have been reported.

Roberts wrote in 1888:

Cerebro-spinal meningitis presents the characteristics of an acute specific disease; but its exciting cause has by no means been defined, although micrococci have been described in the exudations. There is no reliable evidence that it is contagious.

Therefore it is clear that our knowledge of this disease was very nebulous, down to 1888. As a profession we recognized its epidemicity, we clearly recognized its symptoms, as a reference to the works of the authors quoted will clearly prove. We were agreed as to its pathology; bacteriologists were on the track of the cause. We were not agreed as to its contagiousness; we recognized the vagaries of its clinical manifestations, and that haemorrhagic eruptions were of sinister significance. With regard to treatment, bloodletting was generally approved. The drugs which were recommended were all of the sedative class; bromides, chloral, cannabis indica, opium, and stimulants were to be prescribed freely.

At the present time our position with regard to treatment is this: We have discovered the causal organism, and that there is increased intracranial tension. Therefore we perform lumbar puncture, which relieves the symptoms, and also enables us to confirm our diagnosis; and then we employ Flexner's serum to kill the diplococcus, and so remove the cause of the most threatening symptoms. Soamin has been suggested as a treatment, which has resulted in curing the patient when injected either intramuscularly or intravenously. I am convinced that the most successful treatment in the future will be by autogenous vaccines.

It may be interesting to add to the above remarks some observations of Surgeon-General Jeffery A. Marston, published in the *Lancet* of July 6th, 1867, under the heading, "On the so-called endemic or malignant purpuric fever in Ireland," as it occurred amongst the troops:

Private H. was on guard at the Magazine Fort on February 24th, and came to hospital next morning. He exhibited lividity of countenance and symptoms of extreme pulmonary distress, for which no cause intrinsic to the thoracic viscera could be discovered. During his illness he suffered from symptoms of cerebral oppression, vomiting and purging, hiccough, and great pain in the back of head succeeded by coma. He died on March 11th, 1857. No spots are spoken of.

The *post mortem* showed intense congestion of the membranes of the brain and opacity of the arachnoid in patches, the congestion most intense at the base of the brain, accompanied by lymph, and traces of purulent matter about the pons and upper part of the medulla oblongata.

In a leading article (July 6th, 1867) it is stated—

That the disease is the so-called epidemic cerebro-spinal meningitis of Continental and American writers does not admit of doubt. But since the recent epidemic in Ireland the following designations have been suggested: "Purple fever," "neuro-purpuric fever," "black fever," "purpuric fever," "malignant purpuric fever," and "cerebro-spinal typhus."

The Dublin disease is undoubtedly the epidemic cerebro spinal meningitis of standard works.

—I am, etc.,

Monkhams, March 22nd. S. J. ROSS.

THE PHTHISICAL SOLDIER AT THE FRONT.

SIR,—No doubt from the academic and clinical point of view it is interesting to watch the consumptives who are at the front; but, as Dr. Crossley says, it is very doubtful if their presence there is for the country's good. Any sudden strain or unexpected emergency is apt to cause haemoptyses, and this was well illustrated a short time ago. An officer, stationed in Colchester, was undergoing a course of tuberculin treatment, and when the war started he rejoined, and was sent out to France; when he was leading his men into action he had a severe haemoptysis, and was invalided home. As Colchester and Harwich are both in my area, I have often been called into consultation by the medical officers in charge of troops, and have seen some advanced consumptives employed. One man had just left a sanatorium. One of my patients is an A.B., and is at sea; another is working in a dockyard; one has been out on active service, and has been invalided home, not on account of his chest, but because of a nervous collapse: another is a corporal in the R.A.M.C., now in France; another (this man's left chest is full of rhonchi and crepitations) is in France with his Yeomanry Regiment; while one or two others are training at home. The physical signs in those cases were marked, and one cannot understand how they were accepted. There can be little doubt that if the question of their service had been left in the hands of the local tuberculosis officers, few, if any, phthisical patients would be allowed on active service. Their presence there will cause the country needless expense, and will take up the valuable time of the already overworked medical officers. They may, of course, be a source of infection to others.—I am, etc.,

J. D. MACFIE,
Tuberculosis Officer, Essex County Council.

Colchester, March 27th.

THE RUM RATION.

SIR,—Having no first hand knowledge of the conditions in the trenches, I feel I have little right to take part in this important discussion; I have, however, learnt a little indirectly, as a considerable number of wounded soldiers have passed through my hands at the Leicester Isolation Hospital.

It is evident from the tone of some of the letters which have appeared that irritation is felt in certain quarters at Sir Victor Horsley's somewhat outspoken and vigorous dialectic methods. Sir Victor, however, is well known as a hard-hitting controversialist, and no one who knows him can doubt his absolute sincerity or the strength of his convictions. Moreover, he has certainly paid much more attention to the subtle and difficult question of the physiological effect of alcohol than most of those who differ from him, and perhaps after all he may be in the right in his outspoken condemnation of the rum ration, whilst they are in the wrong.

I well remember when I first entered hospital practice over twenty years ago how common—nay, almost universal—it was in some hospitals for the medical officers to order comparatively large doses of alcohol in the form of brandy or whisky as a routine practice in all sorts of conditions where the patient was considered seriously ill. At that time medical men ordering alcohol no doubt sincerely believed in its efficacy, yet the remarkable change which has now taken place in the majority of hospitals, as indicated by the enormous reduction in the amount spent on alcohol per patient surely proves that the medical profession are no longer of the same opinion as to the value of alcohol.

Prior to the present war I certainly believed that the supposed value of alcohol as a stimulant or restorative in cold and arduous climatic conditions had been very largely discredited through the experience of our great antarctic explorers. I am very much afraid that the practice during this war of serving out rum rations as a routine to our soldiers in the trenches will go a long way towards rehabilitating alcohol in this respect in the public estimation, with the result that resort to it in all sorts of conditions will be encouraged. If we were certain that it would

help to bring victory to our cause in this war, few, I think, dare to object to its use, but the striking example of Russia, under what I imagine are even more adverse and trying climatic conditions, should surely give us pause.

In the *Illustrated London News* for February 13th (p. 206) is a photograph of a Russian A.S.C. detachment beneath which is written "With the army whose field kitchens carry hot soup to the firing line." Is it certain that in this matter we are not taking a retrograde step in serving out rum whilst failing to give hot liquid food, the value of which is beyond question?—I am, etc.,

C. KILLICK MILLARD,
Leicester, March 21st. Medical Officer of Health.

SIR,—Dr. Lyon Smith complains that statements he made in another journal have not been refuted by myself or "any other antialcohol crusader." I have now read those statements, but they carry us no further.

He refers to Professor Besredka's paper on anaphylaxis produced by subcutaneous injections of serum toxin, and says the condition resembles death from septic pneumonia. I do not agree that these conditions are clinically parallel, but, letting that pass, it is extraordinary that any one should suggest the usage of alcohol based on Professor Besredka's work.

Reference to his original paper shows that he tried the old experiment of giving a narcotic before injecting a poison which acts on the nervous system, and he describes two such experiments. In the one he found, as others found long ago in investigating septic fever, that deep anaesthesia with ether inhibited the so-called nerve shock of anaphylaxis. In the second experiment he made a guinea-pig dead drunk with alcohol, and when it woke up he found that injection of serum produced no anaphylaxis. The injection of the toxin, however, had to be made within twenty-four hours. This is not unnatural, as the guinea-pig would have got over its alcoholic debauch to a large extent in a couple of days.

According to these experiments, then, our troops would have to get dead drunk with rum every night to profit by Dr. Lyon Smith's teaching of the prophylactic value of alcohol. He positively quotes septic pneumonia! Surely if any clinical fact is well ascertained, it is that the resistance of the alcohol taker to any infection causing pneumonia is not so good as that of a total abstainer. Perhaps Dr. Lyon Smith has some facts—indeed, lower down he hints he has—which would traverse this universally accepted position. If so, I trust he will publish them in full detail, and then we can examine them.

The same criticism applies to his own experiments, of which he kindly informed me some time ago. When he publishes them in full detail we shall be able to consider them also. Further, as I am collecting literature on the very point, I trust he will give us the reference for his statement that he has "good evidence to show that colossal doses of whisky taken at once may neutralize an otherwise fatal amount of snake venom."

Finally, he attacks my "logic." He does so by employing the method known as *suggestio falsi*. Without the slightest explanation that half the assertions are his own, he puts them forward as mine, and so tries to convict me of an absurd deduction.—I am, etc.,

London, W., March 27th. VICTOR HORSLEY.

*** We cannot continue this correspondence.

COLOUR VISION THEORIES.

SIR,—I have to thank Dr. Lynch very heartily not only for his kind remarks, but for his determined efforts that the true facts of colour vision should be widely known. He has shown in his admirable *Psychology* how inconsistent two hypotheses, each supposed to support the same theory, may be.

The theory given by Mr. Greenwood is not the Young-Helmholtz theory, but an interpolation in the second edition of Helmholtz, edited by König, and is not to be found either in the first or third editions. I have heard stated very strongly that it does not represent the views of Helmholtz correctly. The Young-Helmholtz theory is given quite accurately in the textbooks of our leading physiologists, as, for instance, those of Starling, Halliburton, and Waller.

Mr. Percival first very unfairly charged me with not replying, though I was not present when he read his paper, and I immediately sent an explanation to the *Ophthalmoscope*. This was followed by a letter in which he stated that he was not aware that any physicist had written on the Benham top, thus showing that he did not know of the work of Bidwell and others. He has not given a single fact against my theory, but he has made many dogmatic assertions. I call upon him to substantiate any one of the statements made in his last letter, or to apologize in his next.

The references to Bidwell on the Benham top are as follows: "In every case when the spectroscope showed that the glass transmitted red light, the tinfoil strip became red, but never otherwise" (*Proceedings*, Royal Society, vol. lx, p. 372). "Though the image of the needle was colourless when the patch was illuminated by the greenish-yellow rays of the spectrum, it appeared red when the same hue was formed by combining red and green rays" (Ibid., vol. lxviii, p. 280). Bidwell states that the red border can be seen with spectral light up to λ 5740 – λ 5860, though in this case it is feeble (Ibid., vol. lxviii, p. 278).—I am, etc.,

London, N.W., March 27th. F. W. EDRIDGE-GREEN.

PETROLEUM AS AN HABITUAL LAXATIVE.

SIR,—It is to be hoped that Dr. Hayes Newington's timely criticism of those who have conjured up the cancer bogey in regard to liquid paraffin will be carefully thought upon by your readers. It would be a thousand pities if the benefits of this valuable remedy were to be denied our patients without some very weighty reason. Taking, for example, the large army of sufferers from neurasthenic and psychasthenic conditions, liquid paraffin offers the most suitable means of combating the habitual constipation so prevalent in these disorders. Whatever be the pathological basis of the common neuroses and psychoneuroses, there can be no doubt that the attainment of a clean colon is an essential part of successful treatment; and, speaking from a not inconsiderable experience, I have found the preparations of liquid paraffin a most valuable adjunct in the purifying process.—I am, etc.,

London, W., March 27th. EDWIN L. ASH, M.D.

WASTE AND OVER-EATING.

SIR,—Dr. James Oliver, in your issue of February 27th, appears to have taken some of the assertions made in your helpful leading article of January 30th too literally.

For example, he quarrels with the following statements: "The cheapest American cheese is as nutritive as Stilton or Roquefort"; "the herring is as nourishing as salmon."

Strange to say, while he condemns certain American cheeses because they contain *less* fat than the other cheeses you mentioned, he disparages the herring because there is *more* fat in it than in salmon.

Seeing that most foodstuffs contain more than one of the cardinal elements of diet, and that these elements are present in very different proportions, it is no doubt difficult or impossible to estimate their comparative nutritiveness or food value. Their respective food values in the matter of, say, protein element alone may be compared, but it is difficult or impossible to take account of their nutritiveness with respect to all the necessary elements of diet at once.

If for some reasons it were desirable to make an attempt at estimating the comparative food value of different kinds of stuffs, the proportion of waste matter (including water) present might be taken as a criterion, the nutritiveness being regarded as being in inverse proportion to the amount of such waste matter; or, of course, the number of calories available might be estimated. These methods, after all, would perhaps only give us the theoretical relative food values, for as Dr. Oliver suggests, the question of digestibility, assimilability, absence of irritating properties, etc., might have to be taken into consideration. We may properly ask, however, whether these latter considerations should be taken into account in the case of persons with normal digestions, with which class, I take it, we are chiefly concerned in this connexion.

Dr. Oliver's principal grievance, however, seems to be based on these considerations (of digestibility, etc.), and he acutely resents your statement that "margarine is as nourishing as butter." He compares certain foreign and vegetable fats (such as palm oil, peanut oil, or cottonseed oil) very unfavourably with milk fat. I, for one, would be

very thankful for further enlightenment on the question of the comparative nutritiveness or food value of these different fats, including animal fats other than milk fat. Is there a difference in the number of calories available?—I am, etc.,

Criccieth, March 15th. E. LLOYD OWEN, M.D., D.P.H.

BURSTING GOLF BALLS.

SIR,—There must have been a considerable number of cases of injury to the eye, in England as well as America, from the bursting of golf balls, though we are told there is only one such case recorded in any English ophthalmic journal. I have myself heard of two or three instances, and some four or five years ago I was shown a case at the Sussex County Eye Hospital at Brighton. In this case the front of the eyeball was completely disorganized. As usual, the accident had resulted while the boy was cutting open the ball out of curiosity to see the contents.—I am, etc.,

Wolverhampton, March 28th. E. WEATHERHEAD.

Obituary.

DAVID MOORE ALEXANDER, M.D.,

LIVERPOOL.

THE untimely death of David Moore Alexander on March 18th, from pneumonia, has removed one of much promise in the ranks of research and scientific medicine in Liverpool. Only 37 years of age, he received his primary and professional education in the city of his birth, and graduated M.B.Vict. in 1901, and M.D.Liverp. in 1906. He was chief of the inoculation department at the Royal Southern Hospital; Assistant Medical Superintendent, Maghull Epileptic Colony; and Assistant Lecturer on Bacteriology in the University of Liverpool. He had contributed several articles based on original observation. Among these were the bacteriology of the respiratory infections; the uses and abuses of vaccine therapy; the specific treatment of hay fever; the bacteriology of the intestines. His most important work is contained in the Supplements to the Reports of the Medical Officer of the Local Government Board, and his work was largely concerned with the bacteriology of epidemic diarrhoea and the part played by the domestic fly in its causation.

At the time of his fatal illness Dr. Moore Alexander was occupied in inoculating soldiers against typhoid, a subject with which he was thoroughly conversant. He had just received the appointment of bacteriologist to the Liverpool City Merchants' Mobile Hospital, which has now left for the front. At the time of his death he was secretary to the pathological meetings of the Liverpool Medical Institution, and, out of respect, the meeting of March 18th was adjourned.

Dr. Moore Alexander was the only son of Dr. William Alexander. He leaves a widow and one child. In character he was quiet and unassuming, and as recreation he devoted his holidays to fishing. He leaves behind the memory of a hard-working pathologist and an amiable medical man, much appreciated by a large circle of friends.

THOMAS RAWDON GLYNN, M.B., B.C.CANTAB.,

LIVERPOOL.

THE death of Dr. Thomas Rawdon Glynn occurred on March 9th. He was the second son of Dr. T. Robinson Glynn, professor of medicine in the University of Liverpool, and brother of Dr. Ernest E. Glynn, professor of pathology there. Thomas Rawdon Glynn received his general education at Liverpool College, and his medical education at the Universities of Cambridge and Liverpool. He graduated in medicine in 1910, and held the usual resident appointments at the Liverpool Royal Infirmary, and later was elected physician to the Hospital for Consumption and Diseases of the Chest. His medical career was thus auspiciously begun, but he discovered unfortunately that he was suffering from a malady which he realized would in all probability terminate his life in a few years. Nothing daunted he determined with noble courage to pursue his daily duties, taking all rational measures to preserve his health. Until a few weeks ago he was about, and to those unaware of the precariousness of his life he exhibited that cheerfulness so characteristic of him. He became seriously ill at his father's country residence, Nerquis Hall, Flintshire, where he passed peacefully away in his 35th year.

Thomas Rawdon Glynn has left a pleasant memory—a companionable young man, a staunch friend, and, now that we know how his life hung, so to say, on a thread, an example of enduring courage, ready to do his duty until he could do it no longer.

DR. GEORGE M'KERROW, of Ayr, has died at his residence in that town, at the age of 65. He graduated M.B., C.M.Glasg. in 1871. After serving as resident physician and surgeon at the Royal Infirmary, Glasgow, he settled at Waterside, where he practised among the colliers for about thirty-five years. He was surgeon to the Ayr County Hospital, and J.P. for the county. For some time before his death he had been laid aside by illness.

Medical News.

DR. CHARLES MACFIE, of Bolton, formerly a member of the Council of the British Medical Association, died on March 25th, after six weeks' illness, from angina. The funeral took place at the Manchester Crematorium on March 30th. It is hoped to publish shortly an obituary notice.

THE Honorary Secretary of the School Medical Service Group of the Society of Medical Officers of Health (Dr. A. Ashkenny, 2, London Road, Basingstoke) gives notice to members and others interested in the service that a meeting of the Group will be held on Saturday next, April 10th, at 3.30 p.m. at the Society's offices, 1, Upper Montagu Street, Russell Square, London, W.C. The annual meeting, postponed on account of the war, will be held at 3.30 p.m., and the general meeting immediately after tea at 4 p.m. Several items of importance to members of the service brought up by members or referred to the Group by other official bodies will be considered.

THE West London Medico-Chirurgical Society has decided, in place of the annual dinner, to give a reception at the West London Hospital on Friday, April 23rd. The programme will include war exhibits and short illustrated addresses on war subjects. The charge for each ticket, whether for a member, lady or guest, will be 5s., and the whole of the proceeds after the deduction of expenses will be presented to the Belgian Doctors' and Pharmacists' Relief Fund. Applications for tickets, accompanied by a remittance, may be sent to either of the honorary secretaries, Mr. Oswald Addison, 125, Harley Street, W., or Dr. Reginald Morton, 66, Harley Street, W. At the next meeting of the society, on Friday next, at 8 p.m., a series of clinical cases will be shown.

VISCOUNT BRYCE, O.M., who has become president of the newly formed Belgium Town Planning Committee, will open a Belgian exhibition at University College, Gower Street, on April 6th. This exhibition, which will remain open until the end of the month, is the result of the conference recently held at the Guildhall. The committee has been formed by the amalgamation of various bodies which had previously been considering the question of the replanning of Belgium. It is proposed to establish subcommittees of architects, lawyers, and others, including, we may hope, medical men experienced in public health administration, although this is not stated, to consider the technical sides of town planning. The offices of the committee are at the School of Architecture, University College; the chairman is Mr. Raymond Unwin, and the secretary Mr. Ewart G. Culpin.

THE Annual Congress of the Ophthalmological Society of the United Kingdom will be held on Thursday, Friday, and Saturday, April 22nd, 23rd and 24th. On Thursday morning papers will be read at the Royal Society of Medicine, 1, Wimpole Street, W.; at the afternoon sitting a discussion on "Ophthalmic Injuries in Warfare" will be opened by Mr. W. H. H. Jessop and Colonel W. T. Lister. Friday morning will be devoted to a discussion on "Detachment of the Retina," to be opened by Dr. Maitland Ramsay, Mr. Leslie Paton, and Mr. M. S. Mayou; in the afternoon there will be a clinical meeting at the Royal London Ophthalmic Hospital. On Saturday morning papers will be read. Members desirous of reading papers or showing cases should communicate at once with the Honorary Secretary, Mr. G. Coats, 50, Queen Anne Street, W. It is intended to hold an exhibition of drawings, specimens, etc., and exhibits should be addressed to Mr. M. S. Mayou, 30, Cavendish Square, W.

Universities and Colleges.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

ELECTION OF PRESIDENT.

AN extraordinary Comitia was held on Monday, March 29th, Sir Thomas Barlow, Bt., K.C.V.O., being in the chair.

Presidential Address.

Sir Thomas Barlow delivered the usual presidential address, in the course of which he referred to the royal honours which had been conferred on Fellows, Members, and Licentiates during the year. He especially mentioned Captain A. M. Leake, R.A.M.C., who for the second time had been awarded the V.C. He also reviewed the list of the lecturers of the year, the gifts made to the college, and the medals and scholarships awarded. After consideration of the principal matters which had been discussed at the college, the President read obituary notices of the Fellows who had died during the year, namely: Samuel Herbert Habershon, Edward Cox Seaton, Isaac Burney Yeo, Eustace Smith, John Abercrombie, and Philip Henry Pye Smith. In conclusion, the President thanked the Censors and the officers of the College and the Fellows for the support they had given him during the time he had occupied the presidential chair.

Vote of Thanks to the President.

Dr. P. W. Latham proposed a resolution thanking the President for his address, and requesting that it might be printed, and expressing the Fellows' high appreciation of his services to the College whilst he had been President.

Sir Thomas Barlow thanked the College, and vacated the chair.

Election of President.

A ballot then took place for the election of President, and Dr. Frederick Taylor was elected. The Senior Censor (Dr. Percy Kidd) delivered the charge, and handed to Dr. Frederick Taylor the insignia of office. The President then gave his faith to the College, and thanked the College for the honour conferred on him. The Comitia was then dissolved.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B.—*J. M. Brydson, *J. R. Hughes, S. E. H. Anderson, S. R Chatterji, Iris M. Cheeseright, E. Girgis, I. Girgis, Mary I. A. Grimmer, G J. D. Hammond, R. A Hickley, D F Hocken, L. Lavine, D. Levinstein, A. Saleh, H. W. Walther, G. R. Woodhead.

THIRD M B (*Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology, and Elementary Bacteriology*).—N A Martin, G N. Metzger, A. Smirthwaite.

* With second-class honours.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examination indicated:

FIRST M.B. AND CH.B. (*Part I, Inorganic Chemistry and Physics*).—Mary E. Boullen, G. H. Buckley, T. H. S. Bullough, T. E. Coope, G. Cumming, E. B. A. Edelston, F. C. Jones, S. Kelly, J. Leather, W. E. Mason, P. B. Mumford, E. R. Ormerod, Elimé Ratner, J. S. Robinson, H. Stafford, Doris M. R. Tompkin, Ruth A. Wilson. (*Part II, Biology*).—N. Abdoh, May Ashburner, Mary E. Boullen, G. H. Buckley, T. H. S. Bullough, T. E. Coope, G. Cumming, Kathleen Doyle, Georgiana M. Duthie, E. B. A. Edelston, Olive M. Gimson, F. G. Hannett, A. Harris, F. C. Jones, S. Kelly, J. Leather, J. A. Marriott, W. E. Mason, P. B. Mumford, J. G. Nolan, E. R. Ormerod, W. Reikan, J. S. Robinson, A. H. Sadek, H. Stafford, Doris M. R. Tompkin, Ruth A. Wilson.

THIRD M.B. AND CH.B.—E. R. Gilmore, J. B. Leigh, B. L. Lloyd.

SECOND M.B.—Frances G. Bullough, J. Charnley, R. S. Paterson, H. T. Savage.

D.P.H.—T. F. Bamford, A. G. Bryce, D. I. Dakeyne, H. H. Proudfoot, D. M. Wilson.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B.—F. A. Anderson, J. J Block, R B. Boston, J G. Dobson, D. S. Falconer, F. J. Ng-a-Fook, H. J. Foote, A. W. Forrest, H. C. Fox, E. Fullerton, E. G. M. Gilchrist, David Golding, H. A. Hewat, Eric Jamieson, A. C Laing, J. Lawson, R. J. S. M'Dowall, I. C Mackay, R. M'Kinlay, P. C MacRae, J. W. Mathews, Isabel Mitchell, S. N Mitra, R. F. T. Newbery, C. H. Newton, J M'C. Orme, R N. Phease, W B. Postlethwaite, J. O. Reid, C. Resnekov, Muhammad Abdul Latheef Sayeed, J. C. Sinclair, B P Varma.

SECOND M.B. (*Physiology*).—E. H. Ablett, Lal S. Anand, G. Balsillie, V. C. Beckerleg, L. J. de Beer, W. T. Benson, R. F. Boltman, G. Buchanan, R. M. Buncle, R. E. Burns, Ruby T. Carr, B. Cheifitz, A. C. Y. Chow, Anna G. Christie, Eva M. Clark, A. Y P. Cochrane, E. D. D. Dickson, J. Edelstein, H. S. Fisher, H. A. E. Girby, H. R. Goldberg, W. H. Herberg, L. C. D. Hermitte, N. Hirschman, W. G. Hughes, H. M. Jacobs, J. T. Johnston, A. Klenerman, M. Lall, G. Lange, J. Learmont, T. K. Lwin, W. M. M'Alister, J. C. M'Cartney, H. B. Mackenzie, A. W. Mackie, I. F. Macleod, R. Macnair, J. M. Macpherson, A. MacRae, A. Maja, P. Malherbe, J. S. Mann, C. J. van der Merwe, D. J. Micah, J. K. Mitchell, T. B. Moyes, T. Parr, I. Platzky, H. S. Ploman, J. W. Rabkin, K. N. Rao, Gertrude M. V. Richardson, L. Rifkind, Dorothy A. Robertson, I. H. L. Shapiro, G. M. S. Smith, Janet Smith, Janet S. Smith, F. B. Sutherland, A. B. Thaw, J. C. Truter, M. S. Tun, R. Wallace, G. R. S. Walles, K. L. S. Ward, G. N. Wardle, D. T. Watt, J. J. Wessels, U. G. Williams, J. L. Wilson. (*Anatomy*).—Janet C. P. Alison, Z. J. de Beer, W. T. Benson, R. M. Bowman, R. E. Burns, Ruby T. Carr, Eva M. Clark, E. D. D Dickson, G. W Dunlop, D. T P Gay, H. A. E. Girby, H. R Goldberg, W A. Gray, L. C. D. Hermitte, C. Edith L. Hole, W G. Hughes, H. M. Jacobs, J. T. Johnston, A. Klenerman, M. Lall, J. Learmont, J. K C. Liddell, A. G. Mackay, H. B. Mackenzie, R. D. Mackenzie, A. S. M'Kern, J. M. Macpherson, A. MacRae, J. S. Mann, D. J. Micah, J. K. Mitchell, T. B. Moyes, J. O. Murray, Mary S. Paterson, A. Renwick, Gertrude M. V. Richardson, Annie C Roberts, Susan A Robertson, J Robinson, G M S. Smith, Janet S. Smith, S Stein, F B. Sutherland, H. W Y. Taylor, A B. Thaw, R Wallace, G. N. Wardle, J J. Wessels, J. L Wilson

THIRD M.B. (*Pathology*).—J. J. Ackerman, J. Allison, Sarah Boyd, Y. Y. Chan, E. Chapelle, D. Colombos, D. Cook, P. B. Corbett, F. R. Cripps, P. W. Edwards, N. P. R. Galloway, K. Gillis, J. G. Gilruth, G. W. Grant, B.A., J. A. C. Guy, Martha L. Hamilton, J. B. Hanna, Elizabeth Harper, Jeannie J. Harper, J. L. Hill, M.A., N. Jennings, S. N. Kaul, J. T. M'Auslin Annie M. Mackay, I. MacKenzie, P. D. M Laren, M.A., D. W M'Lean, W. R. Mathewson, G. H. H. Maxwell, J. S Munro, R. A. Nathaniel, A. van der Poel, A. J. Pollock, J. C. Preston, J. K. Rose, E. S. Seah, G. L. M Smith, M. Stewart, R. L. Stewart, C. G. Terrell, L. W. Thomas D. W. Warren, C B. Woolward, H. D. Wright, D. M. Young. (*Materia Medica*).—J. J. Ackerman, Sarah Boyd, Y. Y. Chan, A. H. Chu. D. Cook, P. B. Corbett, W. J. F. Craig, W. C. Craig, R C. Crawfurd, F. R. Cripps, A. L. V. Davin, P. W. Edwards, J. W. C. Fairweather, N. P. R. Galloway, J. S. Galvin, K. Gillis, G. W. Grant, B.A., J. A. Hadfield, M.A., B R. Handoo, Elizabeth Harper, C Harris, B.A., J. L. Hill, M.A., A. N. Homewood, M. K. Jardine, J. T. M'Auslin, Marjorie I. S. M'Gregor, J. O. Marais, B.A., E. A. Mills, R A. Nathaniel, J. H. Neill, M. S N. Panikkar, D. H. Paterson, B.A., P. W. Robinson, Jean K. Rose, L. C. Rudd, J. Sellar, E. O. A. Singer, J. M. Smellie, E. D. Soderstrom, R. L Stewart, D. W. Warren, Gladys R. M. V. Williamson, T. Po Woo, H. D. Wright, D. M. Young.

The following candidates have passed in Practical Materia Medica:

J. J. Ackerman, J. Allison. R. M. Buncle, W. E. Canekertne, B. T. Chain, Anna G. Christie, W. J. F. Craig, N. P R. Galloway, H. Gordon, A. B. Grant, J. A. C. Guy, Martha L. Hamilton, B. R Handoo, J. B. Hanna, J. L. Hill, M.A., Y. C. Lee, J. T. M'Auslin, J. C. M'Cartney, R. MacGarrol, R. D. Mackenzie, J. S. Munro, R. B. Okholm, A. J. Pollock, J. Ratcliffe, R. B. Renton, W. Richards. L. C. Rudd, J. M. Smellie, G. L. M. Smith, A. F. de Waal. J. D. White, D. H. Williamson, Gladys R. M. V. Williamson, J. W. van Zyl.

UNIVERSITY OF ABERDEEN.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—W. Anderson, Elizabeth G. Berneaud, D. W. Berry, *R. J. Bruce, P. T. Catto, A. B. Clarke, R. T. Cox, D. Cran, A. G. B. Duncan, G. W. Elder, A. Farquhar, R. Forgan, *J. A. Innes, J. W. Innes, W. H. Kay, W. Leslie, *H. J. A. Longmore, J. M. Mackenzie, J. Moir, R. Munro, R. B. Myles, E. Newton, C. M. Nicol, F. H. B. Norrie, G. W. Rose, *C. G. Shearer, *W. J. Webster.

* Passed with distinction.

UNIVERSITY OF ST. ANDREWS.

THE following candidates have been approved at the examination indicated:

SECOND M.B., CH.B. (*Anatomy*).—Annie Renwick Campbell, F. J. Charlton, J. R. Nelson. (*Physiology*).—D. Fisher, Dora M. Walker.

UNIVERSITY OF DUBLIN.

THE following candidates have been approved at the examinations indicated:

INTERMEDIATE M.B. (*Part I, Physiology*).—P. B. Moloney, T. S. McDonald, H. J. Wright, T. E. Hill, T. M. Bentley, W. V. Pellissier, A. I Steyn, H. Banks, W. A. Byrn, F. W. P. Sullivan, Meta G. Jackson, W. J. Hamilton, J. E. Hill. (*Part II, Applied Anatomy and Applied Physiology*): *W. R. Fearon, *E. D'A. McCrea, *S. C. Mitchell, *A. H. Davidson, *A. R. Barlas, E. O. Marks, G. W. B. Shaw, W. P. Lubbe, H. J. Rice, A. G. Wright, F. J. Smith, J. R. Brennan, B. A. McSwiney, M. Dippenaar, Rita Henry, P. Rocks, R. W. Nisbett, C. P. Chambers, W. J. McClintock, H. Brill, P. Hall, J. G. Bird, Eileen G. Gwynn, Marie A. Hadden.

FINAL M.B. (*Part I, Materia Medica, Medical Jurisprudence, and Hygiene and Pathology*).—*C. C. J. Young, A. H. Watson, F. J. Murphy, Clotilda B. Bevis, †W. L. Bates, ‡J. T. Westby, E. Lipman, R. H. Graham, †E. Parker, †J. J. Keatley, §H. S. Campion, R. M. Gordon, J. A. C. Kidd, T. E. Beatty, ‖W. Hunt, ¶T. G. Roche, ¶G. L. Murphy. (*Part II, Surgery*): *J. Speares, H. McW. Daniel, E. J. McSwiney, A. C. Bateman, J. S. Robinson, A. W. P. Todd, G. Stanton, E. Mannix, F. A. L'Estrange, Clara B M. Adderley, W. B. Cathcart, H. I. G. Rutherford, Kathleen D. Wallace. (*Medicine*): *J. V. Cope, *J. Speares, F. S. Mitchell, J. M. Ryan, A. C. Bateman, I. W. Corkey, †W. B. Cathcart, †W. F. Wilson, Hilda Varian, N. McC. Boyce, E. Robinson, W. McE. Snodgrass, Geraldine Murphy, E. Boyers, J. S. Robinson, J. H. C. Walker, C. C. Albertyn. (*Part II, Midwifery*): W. F. Wilson, G. W Doran, F. R. S. Shaw, T. Stanton, †G. Bateman, †W. J Dowling, Evelyn Ross, T. E. B Beatty, G. O. F Alley, E. G. Fishe, A. G Fisher, G. L. Murphy, W. B. Walker, R. W. Acheson, C. F. Brady.

FIRST D.P.H.—W. Crane, M.D., E H. P. Murphy, M.B.

* High marks. † Equal. ‡ Materia Medica, Pathology.
§ Medical Jurisprudence and Hygiene, Materia Medica.
‖ Materia Medica completing examination.
¶ Pathology completing examination.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate. Westrand, London*; telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

ABUSE OF MAGNESIA.

O. B. asks for suggestions as to treatment of a man, aged 86, who, he believes, is suffering from chronic intestinal obstruction resulting from accumulation of magnesium salts. He was formerly a chemist and habituated himself to taking citrate of magnesia in a dry state. Recently he has been much incommoded by frequent actions of the bowels and increasing distension of the abdomen.

LETTERS, NOTES, ETC.

A WARNING.

DR. P. W. MOORE (Buckhurst Hill) writes, in reference to last week's warning from Messrs. E. and S. Livingstone: The description given of the man working in Kent and Surrey strongly resembles that of a man who victimized several medical men (including myself) in this district last year. He also was tall, thin, fair, with a moustache, quiet manners, and apparently about 45 to 50. He walked into my surgery one day last March and informed me that his name was Williams, that he represented Messrs. Renshaw and Co., and had called to see if he could tempt me. I was wary at first, but he produced some samples with such excellent surgical diagrams that he did tempt me, and I ordered a volume of Thomson and Miles's *Surgery* and Riviere and Morland's *Pulmonary Tuberculosis*. The order was entered in a book, in which I was casually shown the order of a colleague on the preceding page. On his statement that 5 per cent. was allowed for cash with order, I, like a fleecy lamb, gave him a cheque, with the idea of getting the business done with. A few weeks later, on trying to communicate with Renshaw and Co., I found that they had disappeared from the publishing world. The whole business was very cleverly done, and others, as well as myself, were completely taken in. I hope that this note of his methods may serve as a warning to others not to "part" without the goods, and also may assist in cutting short Mr. Williams's career.

WHITE CHESTNUT SOUP.

J. S. writes: Diet being one of the questions of the hour, the cook was asked if she could make chestnut soup. She could and did; it was excellent. It is not claimed that the following directions are scientific; it would probably be better not to boil the milk and to split the chestnuts after the washing stage.

> Take 1½ lb. of chestnuts, one pint of milk, one gill (one quarter of a pint) of cream, a pint of water, a piece of butter the size of a walnut, and a teaspoonful of flour. Wash the chestnuts in hot water and leave them in it a quarter of an hour; strain off this water and pour on boiling water; leave them in this another quarter of an hour. Peel the chestnuts; both skins should now come off together. Put each chestnut as soon as peeled in cold water to keep it white. Boil the chestnuts in the pint of milk and pint of water mixed, adding the butter, some pepper and salt, but not the cream; take the teaspoonful of flour and make it into a paste with a little milk and add this to the boiling mixture; continue the boiling till the chestnuts are quite soft, which will be in about three-quarters of an hour; then rub the whole mixture through a wire sieve with a wooden spoon: reheat to short of boiling and stir in the cream; serve with small squares of toast.
>
> REMARKS.—The cost of the soup thus made would be about 10d. for four persons, but the cream and butter may be omitted, and skim milk substituted for whole milk; the cost would thus be reduced to about 4d., but the fat value of the food would be reduced, which would be a disadvantage for children. The cost could be still further reduced by substituting water for skim milk, but the general nutritive value would then be less.

The books say the best proportion of protein, fat, and starch in food is 1 : ½ : 4; in chestnuts it is 1 : 1 : 7. There is thus, compared to the essential protein, too much fat and too much starch. Too much fat is an advantage, for it assists, as we shall see in drawing up a vegetarian dietary. Most vegetables contain too little fat, but they also, like chestnuts, contain too much starch. Only oats seem about right; their proportion is 1 : ½ : 5; that of wheat is 1 : *nil* : 5. That is why we eat butter with bread.

The peas, beans, and lentil family are an exception; they have only twice as much starch as protein, but they, too, have very little fat. If equal weights of chestnuts and peas are taken we get 1 : 1 : 7 added to 1 : *nil* : 2—that is, 2 : 1 : 9 or 1 : ½ : 4½, which is about right. But though a soup could be made thus, no one would like to live only on chestnuts and peas; it is therefore necessary in a vegetarian dietary to use olives, and Brazil and cocoanuts, all of which contain over 50 per cent. of fat.

FOODS AND FEEDING.

DR. W. sends us the following story, which may perhaps interest the German professors who are at present giving so much attention to the question of nutritive values of different foodstuffs and to the instructions of good Teutonic citizens in the manifold dietetic applications of the potato. For an hour a teacher had dwelt with painful iteration on the part played by carbohydrate, proteins, and fats respectively in the upkeep of the human body. At the end of the lesson the usual test questions were put: "Can any girl tell me the three foods required to keep the body in health?" There was no answer till one enterprising maiden, moved by a sudden inspiration, put up her hand. To a repetition of the question as to the three foods, she answered, "Yer breakfast, yer dinner, and yer tea!"

A NOVEL FORM OF THE "QUACK" NUISANCE.

THE British officer of health of a Siamese town not long ago received the following complaint from a native photographer:

> Dear Sir,—I beg leave to remind you the following facts: Since several months ago, a Siamese, living behind my house, is breeding several ten ducks and ducklings which quack constantly day and night with impatient voices and, leaving excrements here and there, my family and perhaps our neighbours are suppressed to have unhappy livelihood by snifting the bad stinks every moment. It is not only us but even customers, who kindly favour us to take photos, are hating to see such graceless scene. Therefore, from the viewpoints of the preservation of public health and the protection of my own business, I beg leave to request you to kindly take proper measures for the above facts.—Believing your kind favour, I am, Sir, your obedient servant.

It would be interesting to know what measures were taken "for the above facts."

THE SANITARY EDUCATION OF THE ARMY.

A LIEUTENANT, R.A.M.C.(T.), writes: I read with great interest, in the JOURNAL of January 16th, the answer of the private in the R.A.M.C. as to the treatment of a typhoid stool.

Recently, while examining men for corps pay, I asked every man what an antiseptic was. The following were some of the answers: (1) "A bayonet wound"; (2) "Stuff to kill Germans with"; (3) "Sulphuric acid."

Another man, when asked what a simple fracture was, could give no answer. He was then asked what a fracture was, and finally replied, "A sprained ankle."

INTELLIGENT TEUTONS.

A PART of the much-vaunted military organization of the Germans is to inspire among their fighting men the belief that all prisoners are tortured. After the North Sea fight a wounded German sailor was taken on board a British hospital ship. The injury was somewhat obscure; it was therefore proposed to examine him by means of the *x* ray. The man, thinking the time of torture had come, showed the most acute fear. He was soon undeceived, however, and in due course left the hospital full of gratitude for the treatment he had received. Another case is related in the *Chronique Médicale*. In a hospital at Bourges a badly wounded soldier was ordered a tonic, which he obstinately refused. On being assured that it was harmless he shook his head and pointed to the label, *Potion de Todd*, on the bottle—a mixture of old brandy and tincture of cinnamon. *Tod* in German means death, and the hero was determined not to be poisoned!

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An Address
ON
WOUND INFECTIONS;
AND ON
SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

DELIVERED BEFORE THE ROYAL SOCIETY OF MEDICINE ON MARCH 30TH.

BY COLONEL SIR A. E. WRIGHT, M.D., F.R.S.,
A CONSULTING PHYSICIAN TO THE EXPEDITIONARY FORCE.
(From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.)

THERE are a number of quite elementary problems which must be solved before we can arrive at any really effective treatment of wound infections. A very brief consideration of the facts will bring us face to face with the questions to which we have to find an answer.

In this war practically every wound is heavily infected. The chain of cause and consequence seems to be as follows. The clothes and skin of the soldier on war service become contaminated with all manner of filth containing pathogenic organisms and spores; the projectile takes these in with it, and it implants them far beyond the reach of any prophylactic applications of antiseptics.

A cultivation medium is now provided by the blood and lymph which are poured out into the track of the projectile; and we find in the wounds—I have in view here wounds examined immediately after arrival from the front—a mixed infection of a streptococcus with microbes derived from the faeces. This faecal infection is a special outstanding feature in this war.

Among many species of intestinal microbes which have been found in wounds, two have a quite special importance. One is the *gas-phlegmon bacillus*, or *Bacillus aërogenes capsulatus* of Welch—a large Gram-staining anaërobic and actively gas-forming microbe. It is found both in infiltrated superficial wounds, and in deep wounds, and is particularly abundant in the frothy and offensive faecal-looking discharges which anaërobic wounds furnish. The other is the tetanus bacillus. It is more rarely encountered, and is also much less abundant in the discharges. Sometimes, however, it may show up in every field of the microscope.

The presence of the streptococcus and these two faecal microbes makes the first period of the wound infection—the period of imprisoned discharges—a specially critical time for the patient. During this the streptococcus may invade the tissues, and set up cellulitis or, more rarely, erysipelas. Or the tetanus bacillus may find opportunity to grow out and manufacture its poison and induce tetanus. Or the bacillus of Welch may make its way into the body and set up a gas-phlegmon in the region round about the wound, and an obstructive gangrene in the distal portion of the limb. Or, again, the bacillus of Welch and the streptococcus may join forces, and may in conjunction produce the gas-phlegmon or cellulitis.

As soon as a free outlet has been provided, and aërobic conditions have been established in the wound, its bacterial flora changes. The ordinary pyogenic infection, which has up to this been in abeyance, now gains the upper hand, and instead of an "*infection of the imprisoned discharges*," or, as the case may be, *an infection of tissues*, we have now an "*infection of the granulating wound surfaces, and of the flowing discharges.*" The chief bacterial agents here at work are the streptococcus and staphylococcus, and *Bacillus proteus*.

This pyogenic infection may, after lapse of time, subside, the wound healing up when this occurs; or the mixed infection may narrow itself down to a streptococcic infection and become chronic, the wound in this case remaining open indefinitely in the form of a discharging sinus. Or, lastly, when there is an obstructed outflow, the infection may go from bad to worse until the patient succumbs to continued suppuration and septicaemia.

Those are in very brief summary the facts with regard to the evolution of wound infections, and I would venture, in passing on to discuss with you their treatment, to remind you that the ideal we ought to approximate to is the healing of the wounds by *first intention*—that is, without sensible interference by bacterial infection; and that we are so far from the attainment of that ideal that nearly all our wounded are suffering from bacterial infections; that very many are ill of these infections; and that not a few are, through these, in danger of their lives.

We have at disposal for the treatment of these wound infections three different therapeutic measures. Let me enumerate them to you in the order in which they would naturally suggest themselves to you.

First in that serial order would come *treatment by antiseptics*. After this would come what I would propose to call *treatment by physiological methods*—I mean procedures such as the opening and draining of the wound—which bring the antibacterial powers of the blood to bear on the infecting microbes. And lastly would come the reinforcement of the antibacterial powers of the blood, that is, *treatment by vaccine therapy* and similar methods. I believe it is really beyond all question that of these three the second is beyond all comparison the most important, and I would submit that, all loud talk about antiseptic treatment notwithstanding, this is at best an ancillary method of treatment. And of course the same applies also to treatment by vaccines.

Let me also here suggest to you another quite fundamental consideration. It is this: It will be clear that we cannot apply physiological treatment aright, nor can we apply any antiseptic or vaccine to best advantage in wound infections unless we first understand the physiological processes which go on in the wound. We do not understand these yet even in outline.

It will therefore be necessary to address ourselves to the task of discovering what goes on in the wound and of following out its biological evolution. And the only way of doing this will be to formulate to ourselves in clear terms the questions which want answers; then to consider how to set to work to get our answers—for merely looking at the wound will not help—and finally to take cognizance of the results which the experimental methods which I am about to describe to you have already yielded.

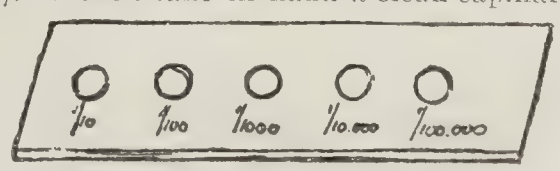
Our first question can be formulated thus:

1. *Can the microbes which are found in wound infections live and multiply in the unaltered blood fluids?*

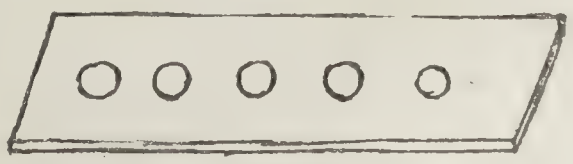
In other words, if I take pyogenic microbes from the wound and implant these into the normal undiluted serum, will this give me a satisfactory amount of growth? If we are going to carry out this experiment, and to carry it out repeatedly, and deal with a number of different bloods; and if we are going to cultivate directly from the pus, we shall evidently have to work in capillary tubes with very minute quantities of pus and very small quantities of undiluted serum. The technique which I have arrived at for fulfilling these requirements is a very simple one. I may call that technique the *wet-wall method*.

Method of Making Cultivations of Pus in Serum.

The first step in the procedure is to make, by the technique I described in my book on *Technique*,[1] a graduated series of dilutions of pus, using for this purpose any indifferent diluting fluid, and arranging the successive dilutions on a slide in the form of a series of drops (Fig. 1, Slide I). I then take in hand a clean capillary pipette



Slide I.



Slide II.

Fig. 1.—Slide I: Graduated dilutions of pus arranged on slide. Slide II: Volumes of serum implanted with the above dilutions of pus.

fitted with a teat, make a mark upon the stem, and then draw up into it a series of unit volumes of serum, one unit volume of serum for every dilution of the pus. This done, I commence with the highest of these dilutions—that is, the one containing the smallest

number of microbes—and draw it up into the stem of the pipette, stopping off exactly at the fiducial mark (Fig. 2). I then expel this column, leaving, of course, as I do so, the walls wet with a quantum of microbial suspension—a quantum which would correspond roughly to that which would be left on the outside of a platinum wire of similar stoutness dipped into the suspension. I now expel from my capillary tube my first volume of serum—this in passing over the wet wall will take up its charge of microbes—and I receive this as it issues on to a clean slide. I repeat these manipulations with the next lower dilution of pus and the next unit volume of serum, and so on, until I have implanted my series of volumes of serum with my series of bacterial dilutions. At the end I find myself with a series of drops of serum containing graduated charges of microbes, ranged in order upon a slide (Fig. 1, Slide II); and I have in my hand a pipette which is contaminated up to the point indicated by my fiducial mark. I get rid of this contaminated segment of my capillary stem by resecting this just above the fiducial mark, and I now proceed to draw up into my pipette, separating off by bubbles of air, the whole series of drops of serum, beginning with that implanted with the fewest microbes. After sealing up the distal end of the pipette, and closing the butt end by bringing it down upon a bed of plasticine, the pipette is placed in the incubator. After an interval of six to twenty-four hours it is taken out, and the series of unit volumes are now, for purposes of microscopic examination or culture, expelled from the pipette in the order in which they have been taken up—that is, in succession from the lightest to the heaviest implanted. This is effected by cutting through the proximal end of the stem of the pipette and then the distal end, and afterwards luting the latter air-tight into the truncated end of the pipette. The luting is done by rolling a little plasticine into a ball, pressing the capillary stem into this pellet as we hold it between finger and thumb, doubling over the plasticine round the stem, and then invaginating the neck of the pipette into the plastic mass. We can now with a teat expel our series of unit volumes of serum on to a slide, obtaining them in the serial order which avoids the contamination of the lighter implanted with the heavier implanted.



Fig. 2.—Capillary pipette filled with five unit volumes of serum, and one unit volume of the last dilution of pus.

Method of Making Anaërobic Cultures in Capillary Tubes.

When we desire to make anaërobic serum cultures we do not employ the capillary pipette used for the original implanting operations as a receptacle for our series of serum cultures, but employ instead a separate capillary cultivation tube for each unit volume of serum. The capillary cultivation tubes here in question are made as follows: We take a portion of capillary stem, say some 8 cm. long, draw it out at one end in the flame of a by-pass into a hair-fine tube, and then break it off, leaving a certain length of throttle attached. We now introduce the other end of the capillary stem into the flame of our Bunsen, and let gravity bend it round into a siphoning curve.

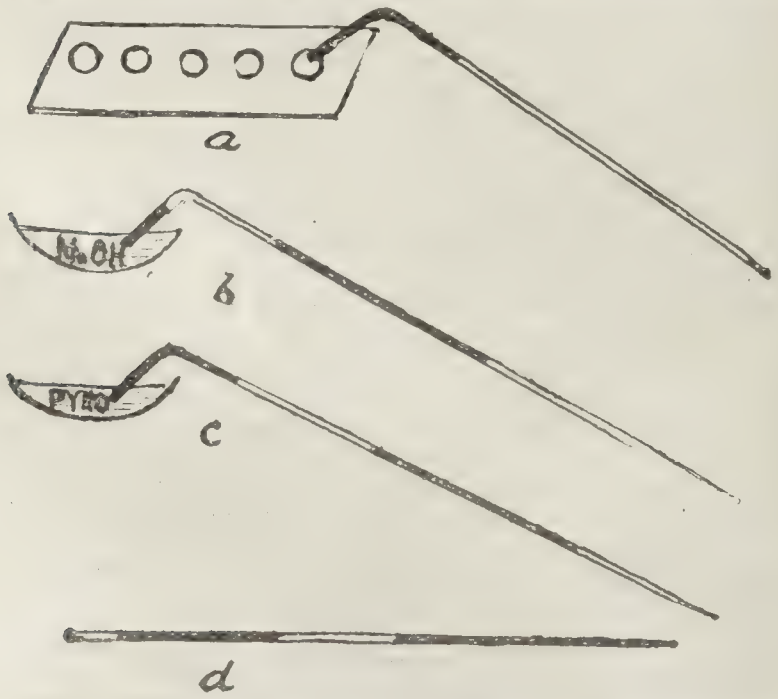


Fig. 3.—Method for making anaërobic cultures in capillary tubes.

Taking one of these capillary cultivation tubes we bring down the siphon end upon our drop of serum (Fig. 3, *a*), and let this run in, afterwards tilting the tube so as to take in, as a rear guard, a good sized dividing bubble of air. This done, we fill into our tube, by siphonage, from watch-glasses placed conveniently to hand, first a small quantity of pyrogallic acid, and then, without dividing off, a small quantity of caustic soda (Fig. 3, *b* and *c*). We now further incline the tube, and let the contained fluids gravitate down towards the distal end until the serum begins to enter the throttle. At that point we arrest it by sealing the tip, and we finally also seal up the butt end, leave the mixed pyrogallic acid and caustic soda to do their work and absorb all the oxygen from the dividing bubble air (Fig. 3, *d*).

Serum cultures made by this method furnish a very striking and uniform result. We obtain in the cultures implanted with the higher dilutions of the pus a pure culture of the streptococcus, and in the cultures more heavily implanted with the pus the streptococcus mixed with a certain number of other microbes; in particular, a few staphylococci and an anaërobic wisp-like diphtheroid bacillus which often is abundant in pus, being found both intracellularly and extracellularly. All the other pyogenic microbes appear to be inhibited in undiluted normal serum, and when they put in an appearance it is only after fairly heavy sowings with pus, and comparatively late.

Out of these facts would come what we shall presently see to be a practically important classification of pyogenic microbes—a classification into, on the one hand, *sero-phytes*, and, on the other, *sero-saprophytes*. The sero-phytes would be those which, presumably because they find their foodstuffs ready made in the blood fluids, are at home there, and can, in the absence of phagocytes, grow and multiply there without restraint, or practically without restraint.* The sero-saprophytes would be those which cannot grow and multiply in the blood fluids until a change, which we may, pending nearer investigation, call simply a degenerative change, has passed over those fluids.

What holds true of the blood fluids themselves might perhaps justifiably be assumed to hold true also of the lymph which pours into the wound. None the less, it will be well specially to investigate this point.

2. *Does the lymph which pours into the wound provide a favourable nutrient medium for the microbes which have been growing in that wound?*

To pose this question is already to go a long way towards getting an answer to it. For we can, by the aid of a very simple device, obtain the lymph from the walls of the wound. I employ for this purpose what I may perhaps call a *lymph leech*. This consists, as you see, of a small glass tube. It is sealed up at one end, drawn out at the other in the form of a nozzle, and is furnished with a lateral mouth with a raised rim, the whole being very easily made out of a piece of glass tubing or small test-tube. To the nozzle we fit a piece of fairly thick walled rubber tubing, and this is blocked at the end with a piece of glass rod. When we want to obtain the exudate from a wound we bring down the lateral opening of the lymph leech upon a granulating surface, and then, transfixing the rubber tube with the needle of a hypodermic syringe, we draw out the air and make a negative pressure (Fig. 4). It will be appreciated that the lymph leech is in principle merely a small cupping glass, and that it will, by means of the vacuum we establish in it, hold on tight for whatever period may intervene between dressing and dressing, and furnish an exudate free from all contamination with residual pus left behind in the wound.

* I introduce this qualifying clause because I have on several occasions found the serum of the infected patient to give cultures of streptococcus with a planting of his pus much smaller than that which was required to give a culture in the serum of a normal man.

We can now proceed to compare the fluid in the cavity of the leech with the fluid in the wound outside, or, in connexion with work on antiseptics, to compare the contents of leeches applied respectively to treated and untreated surfaces in the same wound.

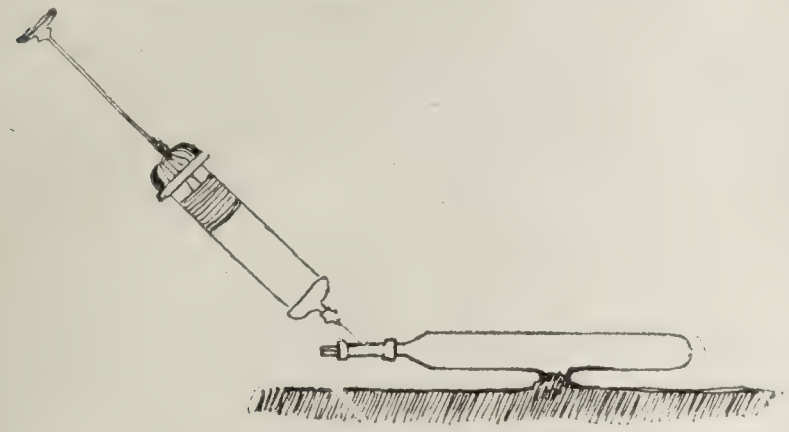


Fig. 4.—Lymph leech.

And lymph leeches also can be put to other uses. We can introduce for this purpose with a syringe any fluid we may select into the lymph leech, and investigate the effect that fluid exercises upon transudation and emigration. Again, where the nature of a deep-lying infection of a mucous or other surface remains uncertain, the application of a lymph leech might clear up the difficulty. We can also, in the case where we are testing the effect of a vaccine upon a wound, take to our aid the lymph leech. For the effect of a vaccine would probably show itself in the exudate in the cavity of the leech long before it would manifest itself in the outside wound. And, lastly, the application of a lymph leech to the site of inoculation might, perhaps, help to resolve the problem as to whether or no protective substances are then developed.

But it will be realized that for us at the moment that which is of chief interest is the comparison of the fluid in the cavity of the leech with the fluid in the wound outside.

When, after washing out a heavily infected wound with an antiseptic or simple saline solution, we apply a lymph leech to the walls, and then at the next dressing compare the contents of the lymph leech with the fluid outside, we think at first that there must be some mistake. Outside we have an opaque exudate presenting all the ordinary physical characters of pus containing leucocytes in all stages of degeneration, and swarming with all manner of pyogenic organisms. Inside we have a transparent and slightly blood-stained exudate containing streptococci in practically pure culture, and in addition a few leucocytes, all of which are actively phagocytic. Except in this latter respect, we have, in fact, identically the same result as when we made our thin implantations of pus into normal serum.

The problem now stares us in the face—What is it that makes all this difference between the contents of the lymph leech and the contents of the wound? How has the lymph which gives in the cavity of the lymph leech only a culture of streptococcus been converted in the wound outside into a fluid which is ideally favourable to the growth of a great number of different species of micro-organisms?

3. *What is the cause of that "corruption of the lymph" which converts it into a favourable nutrient medium for sero-saprophytic microbes?*

The proper way to go to work upon a problem of this kind is to keep it unremittingly before the mind. For then some hypothesis will in the end suggest itself. That found, there will invariably come to notice a certain number of accepted data which the hypothesis will fail to explain. These must then be carefully re-examined to see whether they will stand fast and discredit the hypothesis, or whether they also will come in and support it. And, finally, before launching our theory, we ought to think out all its consequences, and then take each of these and verify it.

At any other time one would wish, before promulgating a far-reaching hypothesis, to have verified it at every point. But we have on our hands in Europe, I suppose, already two or more millions of wound infections, and every other consideration must give way to that of accelerating the researches, which we must look to to guide us in treating these infections.

I will therefore, before completing its verification, venture to put before you what is, I believe, the solution of the problem of the corruption of the lymph in the wound.

Let me take my departure from those facts which we were considering a moment ago, relating to the culture of pyogenic microbes in the blood fluids. You will remember that I suggested in connexion with serophytic microbes that these must find all the food materials they require ready formed in the blood fluids, and in connexion with sero-saprophytic microbes that for these no nutrient substances would be available until the albuminous substances of the blood had undergone some sort of preparatory transformation.

I conceive that that transformation could come only by a digestive process. Now, supposing this to be so, there would in the serum come into account a counteracting influence. For we have there an antifermentative, or, as we usually style it, an antitryptic element, which would directly counteract any digestive element which might be struggling to come into operation. And it is clear that microbes which were dependent for their sustenance upon the products of digestive action could establish themselves in the blood fluids only on condition that this antitryptic influence was overborne.

This hypothesis furnishes, as it seems to me, an explanation for certain striking facts relating to the cultivation of microbes on blood fluids, and to bacterial infections. It, as it seems to me, explains the finding that heavy sowings of microbes into serum are effective in giving cultures, while light sowings are not only ineffective, but lethal to the implanted microbes. For it would be only natural that the resistance offered by the antitryptic power of the blood should be overcome by the mass effect of a number of microbes operating upon a restricted or—and this would come into consideration in localized infections—a mechanically isolated quantum of blood. And, again, it would be only natural that the mass effect of a large volume of antitryptic serum could not be overcome by the digestive activities of a very few microbes; and also, I think, in accordance with what we know, that microbes deprived of access to foodstuffs should perish of inanition.

Our hypothesis would also make intelligible, in connexion with infections by sero-saprophytic microbes, that frequent and heavy sowings into the blood should be required before a septicaemia can supervene upon a local infection. And again our hypothesis makes it comprehensible that there should be serious difficulty in obtaining haemocultures, even when the microbes have gained a footing in the blood stream.

And, lastly, our theory brings home to us that, in considering the defence of the body against bacterial infection, we have to take into account not only *active defence* in the form of phagocytes and bacteriotropic substances which make a direct attack upon micro-organisms, but also *passive defence*—that is, protection against infection obtained by preventing microbes converting to their uses the nutrient substances of the blood fluids.

These, however, are general considerations with applications far beyond the sphere of wound infections, and we must return to the particular problem of the corruption of the lymph in the wound.

When, after treating a wound with antiseptics and leaving it clean, we find it a very few hours afterwards teeming with microbes, we are in presence of something which, in my view, urgently stands in need of explanation. For our findings both in the lymph leech and in serum cultures made with the wet wall method from pus, would seem to teach us that the sowing of microbes left behind cannot be nearly heavy enough to produce the voluminous culture found in the wound, nor yet to account for the rapidity with which the sero-saprophytes have started to grow. And, moreover, consideration will bring out that another powerful factor must constantly come into operation in the wound. The factor in question is the tryptic ferment which is elaborated in the phagocytes and which is, when these break up, discharged into the surrounding medium. This tryptic ferment will come into operation under two different conditions. It will come in whenever a residue of pus—for this would contain free trypsin—is left behind in, or afterwards makes its way into, the

wound. Trypsin will again come into account whenever, after the washing of the wound, leucocytes once more begin to emigrate, and phagocytose, and break down.

I see in the reduction of the antitryptic power of the lymph thus effected the prime cause of its corruption. Before attempting to obtain confirmation of this from crucial experiments, there was a set of findings to be cleared up. I had found in connexion with pus implantations made into serum that when this was heated to 60° C. for ten minutes one no longer obtained the same differential growth of streptococcus as with unheated serum, but obtained instead mixed cultures of streptococcus with sero-saprophytes, in particular staphylococcus and the wisp-like diphtheroid bacillus already made mention of. It seemed at first sight as if this could not possibly be related with a reduction in the antitryptic power of the serum, for it has, in view of the high quality of Opie's work on this question, been generally accepted from him that the antitryptic power of the serum is unaffected by exposure to heat until a temperature approaching the coagulation point of serum is reached. In reality, however, when this is reinvestigated quantitatively,* it emerges that the antitryptic power of the serum is reduced by one-third to one-half when we subject the serum to a temperature of 60° C. for ten minutes.

That difficulty having been removed out of the way of our hypothesis, we may proceed to take cognizance of the results of the crucial test experiments—experiments in which graduated additions of trypsin are made to serum as a preliminary to the implantation of sero-saprophytic microbes. The event of these experiments can be summed up in a sentence. When we add trypsin in quantities sufficient to reduce appreciably the antitryptic power but insufficient to give us any free trypsin, the serum is converted into an eminently favourable nutrient medium for sero-saprophytic microbes.

Our hypothesis is thus very strikingly confirmed. It will be necessary hereafter to follow it into all its consequences. For the present it will, however, suffice if we ponder on the following points. The antitryptic power of the blood would appear to be increased in every case of severe wound infection. We have perhaps here a defensive reaction of the organism directed against a possible invasion of the blood by sero-saprophytes. And we may perhaps look in this direction for an explanation of the non-specific benefit which has been observed to follow upon the inoculation of bacterial vaccines. It is clearly not impossible that the inoculation of a bacterial vaccine might contribute both to active and passive defence—to the active defence of the body against a particular microbe by calling forth a production of specific bacteriotropic substances, and to the general passive defence of the organism by calling forth a production of antitrypsin. And these two forms of immunizing response would not necessarily be linked together. The production of specific bacteriotropic substances would no doubt depend upon the quantum of bacterial antigen incorporated; while the production of antitrypsin might perhaps depend upon the breaking down of phagocytes and the liberation of their trypsin.

REFERENCE.

[1] *Technique of the Teat and the Capillary Glass Tube*, Constable, London.

* The quantitative method here employed was in essentials that described in my *Technique of the Teat and the Capillary Glass Tube*. It was varied only in the respect that the series of trypsin, serum, and calcified milk mixtures which are employed in that method were taken up, not into a many-stemmed pipette, but into a long, unmounted wide-bored capillary stem, which had, for the purpose of convenient filling in, been bent round at one end in the flame of a Bunsen into a siphoning curve.

(To be continued.)

A SCHEME, drawn up by Drs. William and Charles Mayo, of Rochester, Minnesota, for the establishment of a £200,000 foundation for medical research, has been submitted to the consideration of the University of Minnesota Board of Regents. It is proposed that the interest of the fund shall be used in research work to be carried out by medical graduates at Rochester.

THE Minnesota State Medical Society intends to ask the State Legislature to set aside 10,000 acres of land to be used as a leper colony. According to the *New York Medical Journal*, about fifty persons in the State are known to be suffering from leprosy. It is also proposed to establish a branch hospital at the State Hospital for clinical purposes.

CEREBRO-SPINAL MENINGITIS:

DIAGNOSIS AND PROPHYLAXIS.

IS LUMBAR PUNCTURE JUSTIFIABLE?

BY

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NOBODY thinks of performing lumbar puncture on slight grounds. The indications for and against are carefully weighed. The operation is decided on the evidence obtained by a careful clinical examination of the case.

The indications for the operation are perfectly clear. An ingravescent headache, absolutely intolerable to the patient, is a very good reason for lumbar puncture at epidemic seasons. The concomitant symptoms may be diverse. There may be fever or no rise of temperature at all. The pulse may be accelerated, normal, or infrequent. There may be vomiting or no gastric disturbance at all. There may be a rash of one type or another, or the skin may be unaffected. There may be head retraction, or even flexion of the head. The knee-jerks may be normal, exaggerated, or unequal. Kernig's sign may or may not be present. The plantar reflex may be flexor or extensor. (The headache itself may be absent, and the symptoms present may be anomalous, and indicate delay.)

The cranial nerves ought to be examined systematically as far as possible, but it will be best first of all to study the patient's power of attention, before putting questions to him that he may answer at random. If his headache is really intolerable, it will often be observed that in spite of his being able to answer questions, the patient speedily lapses after each one into an apathetic state. He may, indeed, continue to mutter and groan, but he is not alert and alive to his critical condition. This condition contrasts most strikingly with the mental state prevailing in yellow fever. Here the patient is extremely alert. If he is of a certain mental calibre, he may clearly diagnose his own illness, and direct its treatment with the utmost nonchalance. He may fully realize his dreadful danger, and determine to do his level best to fight it out, or he may sink into a state of terror, and discuss the mortality of his disease with the attendant. He remains alert to almost the very end. On the contrary, in cerebro-spinal meningitis, there is early dulling of all the senses, and it is well worth while to stand at the bedside and make these observations, as they are of great diagnostic significance.

In testing the cranial nerves, it is best to adhere to the old system of beginning at the first and proceeding in the proper order. The sense of smell may be dulled or lost, optic neuritis should always be looked for. The movements of the eyeball should be tested. The other special senses should, if possible, be also tested. Hearing is commonly found to be defective, and if so, the deafness must not be mistaken for stupor. Hyperacusis has been observed.

A careful study of the nervous system will show the existence of some random process, and in each case there will be differences, proving that the lesion is not the same in every case, and that it is not possible to systematize the symptoms, so as to draw a classical picture of a typical case from nervous symptoms alone. Each case must be taken on its own merits. The acceleration or retardation of the pulse may indicate the point of greatest inflammation at the time the symptom is observed. The thermic phenomena are probably due to the same cause. It may be a matter of chance whether the thermic centre is involved in an inflammatory process or not. There probably is often a pan encephalitis, rather than a meningitis; in one *post-mortem* examination the corpus callosum tore across without being cut, simply owing to its own softened condition and the weight of the cerebral hemispheres. In another case there was a complete breaking down of the tissue forming the wall of the descending cornu of the lateral ventricle. There was no special reason why the other ventricle should not be similarly affected, unless the

one affected happened to have been shut off from communication with the other by inflammation at an early stage of the disease. The occasional phenomenon of many exaggerated reflexes is no doubt due to paralysis of higher controlling centres.

So striking are these random lesions of the nervous system that cases of pure throat affection have not been regarded as cases of the disease at all. The initial catarrh is so quickly got over that it is often ignored by the patient, or he imagines it to be his usual condition, due to smoking or to some other cause. But all the time toxin is being gradually absorbed, and at length it reaches the nervous system and depresses it, and thus the way is prepared for a general advance. Then, on the occurrence of any severe depression, a sudden change takes place, and the disease is then called fulminating. Why a fulmination takes place is not an easy matter to explain. Some cases develop all the serious aspects at once, and yet get well. The cerebro-spinal fluid at this stage is sometimes reduced so much that only a few drops can be got, but they usually contain pus cells and many organisms. A negative pressure has been alleged in these cases, but no air rushes into the cannula, while the few drops exude without suction. In these cases a reduction of the normal amount of fluid has taken place, and such cases are severe, and a second puncture gives an excess of fluid which is usually purulent.

Other cases give a clear fluid which is sterile. It contains no pus or formed matter at all on centrifugalization. But it has only once been found to be normal, in a chemical sense. Normal cerebro-spinal fluid contains dextrose 5 per cent., salts, and about 0.02 per cent. globulin. All these fluids contained an excess of albumin or albumose, and in the cases examined for sugar there was a loss of sugar, but never complete absence of it. Normal cerebro-spinal fluid is rendered pink by the addition of a 1 in 1.000 solution of potassium permanganate, and remains pink for at least five minutes, but in meningitis the clear fluid promptly becomes yellow. This is not due to reduction by glucose, but may be due to reduction of a glucose fermentation product, which must be the result of enzyme action, as there are no living organisms in the fluid.

The pathological process, then, seems to be this:

1. Local infection (that is, Stage 1).

2. General infection (that is, Stage 2). Toxic action on the nervous system, with excretion or escape of albumin into the cerebro-spinal, fluid, transforming it into a culture medium for the invading organisms.

3. Breakdown of the defences of the meninges and general advance (that is, Stage 3). Occasionally the entrance of organisms to the cerebro-spinal fluid takes place early, accompanied by apparent absorption of fluid; but the general rule seems to be for an accumulation of sterile fluid first to take place, and then a breakdown of the defences, accelerated by the pressure of the fluid, and it therefore seems to be advisable to puncture early to prevent the occurrence of the final stage. The accidental escape of blood into the meninges would probably do good by supplying antibody where it is naturally deficient.

As regards the pain inflicted by puncture, it is quite tolerable when the operation is done skilfully, and in partially stuporose cases it seems to be totally ignored. In those cases in which the fluid happens to be clear and sterile, the relief of the headache is so marked that one patient made the observation that it was well worth suffering the pain of puncture to obtain the relief of headache which immediately followed it.

Sequelae of Puncture.—None have been observed yet. Sepsis, of course, should never occur, and in this Command Isolation Hospital it is unknown, although cases are sometimes punctured every day.

The Amount of Fluid to Remove.—As much as will come is a good rule. Three or four ounces can safely be removed. Early and frequent puncture has undoubtedly saved many lives, but this is encroaching on the question of treatment.

Lumbar puncture in competent hands is always justifiable, and it gives the only criterion by which to diagnose the third stage of the disease. In fact, not a case yet notified in this Command has failed to present pus and meningococci in the cerebro-spinal fluid, and only such cases have been regarded in estimating the mortality. All sterile cases have been put in another category, awaiting a satisfactory nomenclature of the disease.

PROPHYLACTIC INOCULATION AGAINST TUBERCULOSIS.

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SINCE tuberculosis is, next to old age, the chief cause of death in these countries, there is no need to justify the assertion that some further measure or measures are necessary in dealing with the disease.

It is generally agreed that practically every one who has attained adult years has been infected by the microbe, and a large proportion show healed lesions *post mortem*. For instance, Hamburger and Monti investigated in Vienna the question on a large scale by means of skin and subcutaneous tuberculin reactions, and found that 95 per cent. of children who attained the age of 11 to 16 years were infected.

There are two ways in which a disease may be dealt with: (1) The microbe may be prevented from attaining access to the individual; (2) the individual may be rendered an unsuitable environment for the microbe to grow in.

Since under present conditions the infection is so universal, it would appear impossible to prevent the infection attaining access to the individual, although it is obvious that more might be done to prevent direct infection from the diseased, both human and bovine.

Taking Vienna again as an example, it is shown that while, as I have said, 95 per cent. get infected, only 15 per cent. develop tuberculous disease to a serious extent. That is, only in this percentage is the soil suitable for the continued growth of the bacillus. We must assume that in this proportion of the inhabitants (20 per cent.) the resistance to the disease is subnormal. If we could make the resistance of these to the disease equal to that of the 80 per cent., the problem would be solved, and the disease would occur only sporadically.

The development of the disease in the 15 per cent. may be due to:

I. Bad hygienic surroundings.
II. Lowered resistance due to infection with other microbes.
III. Inherited low resistance.
IV. Overcoming of a normal resistance by a virulent or continuous infection.

I. *Environment.*—The effect of bad environment is well illustrated by figures of tuberculosis mortality among the different classes in the Dublin registration area for 1912:

Professional and independent classes ...	0.41	per 1,000
Middle class	1.92	,,
Artisans and small shopkeepers... ...	2.94	,,
General service classes	3.16	,,

We may take the middle class as having reasonable hygienic surroundings, and being people who are likely to die at home, so that good hygienic surroundings will not produce the desired result. Something further is necessary.

II. *Resistance Lowered by other Microbes.*—It is common knowledge that in children such infections as measles and whooping cough predispose to tuberculosis. More important, as far as pulmonary disease is concerned, are catarrhs of the respiratory tract brought about by the catarrhal microbes. The onset is constantly traced to acute or chronic catarrh, which is the primary infection, and not the tuberculosis. Frequently the ordinary methods of treatment entirely fail to cure the patient of these catarrhs. In my opinion it is seldom that tuberculosis of the lungs is not due to a mixed infection, and for successful treatment it is essential to deal specifically with the accompanying catarrhal microbes, as well as with the tubercle bacillus. It is, therefore, very important not to allow a catarrhal infection to become chronic. It is comparatively easy to clear off these infections with autogenous vaccines. However, while these catarrhal microbes are important helpmeets of the tubercle bacillus, yet increasing the patient's resistance to them will not give the same guarantee against the disease as putting up the resistance to the tubercle bacillus itself.

III. *Inherited Low Resistance.*—I do not know whether the opinion that children of tuberculous persons inherit a

low resistance, or the opinion that they are more likely to get the disease owing to greater opportunities for infection, holds the field at present. For my present purpose it does not matter much. My own opinion is that a low resistance is inherited. *A priori*, it seems unreasonable to suppose that germ cells inhabiting a person poisoned with tubercle toxin should not participate in the poisoning effect and hand on its lowered resistance, especially if the infected parent is the mother. This point has been investigated statistically by Karl Pearson, who writes as follows:

> It is impossible to examine such data . . . without being impressed with the importance of the constitutional factor in this matter, and although the constitutional factor may without doubt be weakened by a wide variety of causes, our investigations in the eugenics laboratory show it to be in the main and on the average of large numbers a question of inheritance. That clinically obvious and apparent tuberculosis appears to be inherited at precisely the same rate as stature or cubit or insanity, impressed me at the outset as remarkable evidence for the constitutional immunity factor being of more importance than the infection factor.

It does not seem necessary to bring forward further evidence on this point.

IV. *Virulent or Continuous Infection.*—A normal resistance may be overcome by a massive or continuous infection with virulent microbes. There can be no doubt as to the variability of the tubercle bacillus with regard to virulence; it is the experience of every laboratory worker. One of the most potent ways of increasing the virulence of microbes is to pass them through a series of animals with low resistance. So that if a person of low resistance gets the disease he is likely to pass on a more virulent strain. A normal resistance in every individual, human or bovine, would tend to reduce the virulence of the tubercle bacillus, so that a normal resistance would suffice to protect the individual.

There is only one method of bringing up a low resistance to normal or of increasing a normal resistance, and that is the production of specific antibodies or of a mechanism facile in the production of these antibodies in the individual by inoculating him with a vaccine of that particular microbe. In the case of a universal infection like tuberculosis, it is the one measure that will protect when the constitutional resistance is lowered by the various environmental and inherited causes of low resistance.

There is plenty of precedent for such a measure. Witness the success with regard to both incidence and death-rate brought about by preventive inoculation against typhoid fever and the marked reduction in the incidence of pneumonia by the prophylactic use of vaccine amongst the native workers in the mines in South Africa.

Is there experimental evidence that inoculation with tuberculins of various sorts conveys any immunity against the tubercle bacillus when artificially injected? It is true that with most of the antigens so far used no complete immunity has been obtained. At the best only a retardation of the fatal result. But the conditions of artificial infection with large amounts of living bacilli, causing a sudden and overwhelming strain on the immunizing mechanism, are very different from the natural infection, where at the most a comparatively few microbes have to get so acclimatized that they can develop to such an extent as to produce evident disease. If these considerations are correct, partial immunity is all that is necessary under natural conditions.

None of the serological tests so far designed to give evidence of the extent of the immunity that can be produced are satisfactory. Wright found the opsonic index of little or no value in gauging his antipneumococcic dosage. Recent work has demonstrated that patients obviously dying of tuberculosis gave large complement fixation. So far as I am aware, there is no test of value for anti-endotoxin such as can be used for antitoxin, and it must not be forgotten that when immunity is most complete it is a cellular one with no discoverable antitoxin or other antibody in the blood. This is well known in the case of production of antidiphtherial and antitetanic serums, where the animal may be completely immune and yet have no antibodies in the serum.

The only real test of production of sufficient immunity after prophylactic inoculation is the reduction of case incidence and possibly of case mortality.

It has been my practice for the last eight years to urge the members of families whose parents were tuberculous, or in which cases of tuberculosis had occurred, to undergo a short course of tuberculin. The tuberculin I have used until lately is Koch's T.R., and the doses I have used for adults have been, as a rule, 0.001 c.mm., 0.005 c.mm., and 0.01 c.mm. For infants 3 months old 0.0001 c.mm., 0.0005 c.mm., 0.001 c.mm. Sometimes further doses are given. There is sometimes a slight rise of temperature in the evening if the injection has been given in the morning, but otherwise no serious disability. The usual interval is seven days. The improvement in health in many of the members of tuberculous families I have thus treated has been most satisfactory, and so far no case has occurred among those who have been inoculated, but the numbers are far too small to have any value.

T.R., however, is not a very good antigen, nor are any of the ordinary tuberculins on the market. Some years ago I was fortunate in discovering that tubercle bacilli would dissolve in benzoyl chloride, and that this solution produced very marked focal and general reactions in tuberculous patients. When using it for therapeutic purposes, the initial dose had to be very small—0.0000001 mg. in lung cases, 0.000001 mg. in extra-pulmonary cases. The highest dose that had to be attained was 0.01 mg. The clinical results have been so satisfactory that I now use no other for therapeutic purposes. The doses are increased as follows: 0.0000002, 0.0000004, 0.0000006, 0.0000008, 0.000001, and so on. The dilutions are made in liquid paraffin, containing 2 per cent. benzoyl chloride, and I generally add 0.032 gram iodoform dissolved in ether, so as to combine immuno- and chemo-therapy.

For prophylactic purposes the initial doses may be larger and the rises more rapid. At present I use the following series: 0.000001, 0.00001, 0.0001, 0.001 for infants; 0.00001, 0.0001, 0.001, 0.01 for older children; for adults an additional dose 0.1 may be used. The usual interval is a week. If after the initial dose there is a marked reaction, focal or general, then the immunization must be more carefully carried out, using the increments of dosage prescribed for treatment.

Many methods have been used to obtain free endotoxin for antigenic purposes, such as grinding frozen microbes, allowing them to undergo autolysis in distilled water, treating them with antiserums, and so on; some of these have been successful. Von Ruck has produced an antigen by grinding tubercle bacilli and extracting them with different fluids, combining the substances extracted in certain proportions. He reports good experimental and clinical results. I hear that Moss has produced a solution of bacilli in lactic acid, but I have not seen his paper.

The benzoyl chloride solution is very easily made. Ten milligrams living tubercle bacilli from the heaped-up growth in Dorset egg medium are weighed on an accurate chemical balance. The weighing is done on the under surface of the glass stopper of the bottle containing the 10 c.cm. of benzoyl chloride they are to be dissolved in. The masses of bacilli are broken up and mixed with a little of the benzoyl chloride on the stopper. The stopper is then inserted into the bottle and shaken down into the fluid, which turns milky. The bottle is put in the incubator for twelve hours, and is shaken occasionally. The fluid gradually clears. The stock solution appears to keep a long time.

My opinion, then, is that, while I think every one ought to be inoculated against this disease so as to make sure their resistance is at least normal, a beginning might be made with members of families in which tuberculosis has occurred, since their resistance is usually subnormal and they have peculiar facilities for contracting the disease. Experience alone will teach us the value of the measure, the best antigen to use and the best average dosage, and the experiment, while necessarily prolonged, is perfectly harmless and inexpensive; it might be extended by inoculating calves, and thus attempting to cut off the bovine source of infection.

DR. LANGLET, Mayor of Rheims, who was recently decorated with the Cross of the Legion of Honour and mentioned in dispatches for his conduct during the bombardment, has been awarded the Audiffred prize of £600 by the Académie des Sciences Morales et Politiques, in recognition of his devotion to public duty.

A METHOD FOR LOCALIZATION OF BULLETS.

BY

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AT the Dreadnought Hospital, Greenwich, we had already made use of the same principle as that stated by Lieutenant K. W. Mackenzie, R.A.M.C., in the JOURNAL of January 2nd, for the localization of bullets, but our method differed in some details which I think are of value.

The bullet was localized on the screen, say in the thigh. An opaque object was placed beneath the thigh so that its centre corresponded with a definite point in the bullet; for convenience we selected the point. Another body was similarly placed on the upper surface of the limb. The centre of the lower object, the point of the bullet and the centre of the upper object then lie in a straight line. The *x*-ray bulb is shifted a definite distance, for example, 3 in., and a plate taken, the plate being in contact with the upper object and being horizontal. The positions of the two surface points are then marked with a skin pencil before the two objects are shifted. These marks can then be made permanent by scratching with a sharp needle. The plate after development appears as in Fig. 1. The

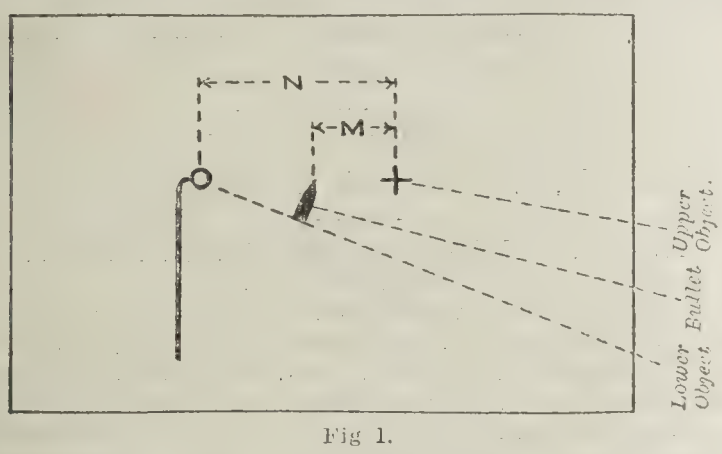


Fig 1.

measurements m and n are made, m representing distance from the shadow of the upper object to that of the bullet and n the distance between the shadows of the two opaque objects. We require also to know the distance of the anode from the upper surface of the *x*-ray table, but this is a constant for all exposures, let it be represented by b, and let a represent the distance the bulb is moved. Then the bullet lies in the line between the two points marked on the skin and at a distance from the anterior mark equal to—

$$\frac{bm}{a}\frac{(a+n)}{(a+m)}$$

If the bulb be moved 3 in., if the anode be 12 in. beneath the upper surface of table, and if $m=1$ in. and $n=3$ in., then—

$$\text{Depth of bullet} = \frac{12\times 1\,(3+3)}{3\times(3+1)} = \frac{12\times 6}{3\times 4} = 6 \text{ in.}$$

The measurements can easily be made with an accuracy of one-sixteenth of an inch, and in no case, experimental or otherwise, did the error after calculation exceed one-eighth of an inch.

The advantages which it appears to me that this method has over that described by Lieutenant Mackenzie are:

1. The original ray by which the objects are placed in alignment need not be absolutely vertical, and so time is saved in adjustment. The distance A C (Fig. 3) is measured vertically, but any probable deviation from the vertical will make so slight a difference in A C that the error is negligible.

2. The limb may be in any position of rotation that is most convenient at the time of the operation, as the two ends of the line are marked, and not only that one from which a perpendicular must be dropped.

3. As the calculation is made mathematically, there is no chance of error from an inaccurate drawing.

4. There is no necessity of measuring the diameter of the limb, for which a pair of calipers would be necessary.

But even with the bullet accurately located there is frequently difficulty while operating in identifying a point in the tissues when only measurements are given. In order to locate this accurately, and to find the bullet without any unnecessary destruction of tissue, I devised an instrument. It consists of a frame, as shown in Fig. 2.

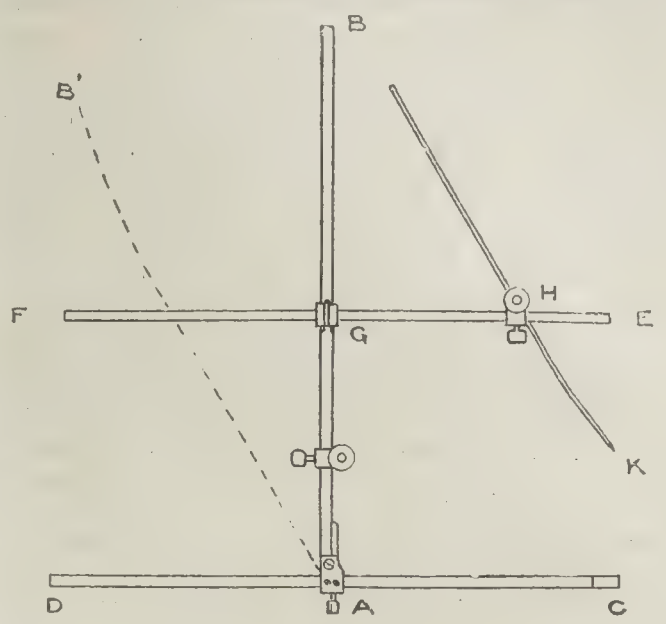


Fig. 2.

All the joints are sliding, and there is a hinge joint at A so that the upright A B can be bent backwards into position A B'. The bar E F is adjusted so that when C touches the posterior of the two points marked on the limb, E touches the anterior; H K is a light pointer, and is fixed to the bar E F by a sliding joint, and the pointer can be rotated and shortened or lengthened. It may be attached to the horizontal bar E F, or to the vertical bar A B. The point K is fixed in line between E and C, so that the distance E K equals that found by the above calculation. If, then, C touches the posterior point and E the anterior, K must be in contact with the bullet, for the bullet lies in the line E C at a distance from E equal to E K. The instrument is adjusted before the operation. The patient comes to operation having two points marked, the bullet lying in the line joining these points at a known distance from the anterior point; C is clamped to skin at posterior point, the upright bar being bent back so that K is out of the way. The upright is then raised in an attempt to bring E to the anterior mark. As this is done the point K is obstructed by the tissues, and they are divided in front of it until E can be made to touch the anterior point. The tip of the pointer then touches the bullet. The instrument is most useful where one has cut down in the ordinary way to the point where one expected to find the bullet but it is not there. By using this instrument the exact point and direction in which the incision must be extended is indicated at once, and all unnecessary groping about is done away with.

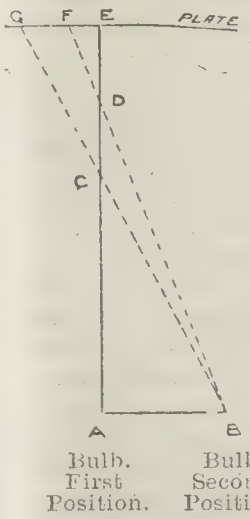


Fig. 3.

The calculation by which the above formula is obtained is:

$EF = m$
$EG = n$
$AB = a$
$AC = b$
$ED = x$ } both unknown.
$DC = y$ }

$AB : AC = EG : EC$, i.e., $a : b = n : x+y$

$AB : AD = EF : ED$, i.e., $a : b+y = m : x$

$ax = bm + my$

i.e., $ax - my = bm$

$\therefore\ ax + ay = bn$

$max + may = bmn$

$a^2x - may = abm$

add $ax(m+a) = bm(a+n)$

$$x = \frac{bm\,(a+n)}{a\,(a+m)}$$

THE Department of Health of the City of New York is making arrangements to establish a division of industrial hygiene, which will be under the general supervision of the Director of the Bureau of Infectious Diseases. The chief of the new division will, says the *New York Medical Journal*, be expected to co-ordinate all the resources and activities of the Bureaux of Public Health, Education Laboratories, and Sanitation which have any bearing on occupational diseases.

SOME NOTES ON THE TREATMENT OF BITES BY VENOMOUS SNAKES.

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ALTHOUGH the correct and most certainly effective treatment of snake bites is to be found in the use of an anti-venom serum, yet it must often happen that cases of poisoning by a venomous snake occur at a time or place when a serum is not available, though remedies more commonly used are at hand. This being the case, some results obtained by a treatment outlined below may be of interest. I fully realize that the small number of cases on which it has been tried, however encouraging, can lead to no definite conclusions. The treatment I employ is the injection of a full dose of cocaine hydrochloride at the site of the puncture caused by the fangs of the snake, followed later on by appropriate treatment of symptoms as they arise.

I am indebted to the Rev. J. D. Aitken of South Nigeria for the knowledge of the efficacy of cocaine in the treatment of scorpion stings which led me to its use. It not only relieves the very severe pain, but also, if the treatment be immediate or not long delayed, causes a complete absence of the swelling that is usually so rapid and characteristic. Cases which I have treated with cocaine combined with potassium permanganate include those bitten by *Echis carinatus*, *Naia nigricollis*, and *Bitis arietans*. Cases treated primarily with cocaine alone consist only of those bitten by *Echis carinatus*. At first I used to incise punctures deeply, and rub into incisions potassium permanganate, and then inject hypodermically a solution of cocaine hydrochloride proximally. In cases of *E. carinatus* venom I was, however, troubled by uncontrollable haemorrhage from incision starting on the second or third day. The incision and the potassium permanganate were omitted in the next case, but there was still troublesome oozing haemorrhage from all mucous surfaces, which reduced the patient to a dangerous state of anaemia. To try and stop this I gave large doses of a solution of gelatine by the mouth, with the hope of at least dealing with the mouth and intestinal tract for part of its length.

In the last 5 cases of snake bite which have come to me, all of which have been due to *E. carinatus*, I have relied on this treatment alone—that is, the injection of a full dose of cocaine hydrochloride into the punctures and immediate and continuous dosing with a solution of gelatine, 1 oz. to the pint.

Of these 5 cases, 4 gave me no anxiety of any sort, the haemorrhages being either absent or very slight and pain and swelling being slight, except in those where the swelling was considerable before the patient arrived. These 4 cases were African children between the ages of 6 and 10 years, and in all the punctures were plainly visible and the snakes of good size. Of these cases, none arrived sooner than half an hour after being bitten, and some as much as two hours after.

The fifth case, arriving half an hour after being bitten, was that of an elderly African man, very big and beginning to run to fat and to suffer from the effects of too much native beer. He on the fifth day had great swelling of his tongue, which, however, subsided somewhat that evening. The next day the swelling became greater and his breathing seemed much impeded, possibly from swelling lower down. Intubation was impossible, and tracheotomy, in the hope of doing something, was refused absolutely by the relations. The man died that day from asphyxia, presumably obstructive.

VISIBLE EFFECTS OF VENOM.

Echis carinatus.—Patients evince a good deal of fear. Much pain at site of bite and progressive and rapid swelling extending almost visibly. On second or third day, sometimes earlier, oozing haemorrhage from the gums and from the nose and any recent cut on the body begins. Blood is also present in the stools and urine, but owing to the prevalence of bilharziosis, these symptoms may be deceptive, except when the bleeding has been high enough and copious enough to cause melaena.

Naia nigricollis.—One case. Evidence of considerable shock; pain very severe and unrelieved by cocaine. Swelling very extensive from foot to tip of scapula of corresponding side. The bite was on dorsum of foot. Later there was extensive sloughing, involving at least half of surface of leg, irregular in area and serpentine in outline, with sharply defined borders, not extending below subcutaneous tissues. Natives say this sloughing is typical of venom of this snake if victim survives long enough.

Bitis arietans.—One case, with symptoms same as *Echis carinatus*.

As to what action the cocaine has I cannot venture an opinion. It may merely be one of dilution, in which case an injection of distilled water would be equally effective. It will be noticed that the visible effects of the venom in the cases that have come to my notice do not agree very closely with those noticed in laboratory experiments on animals. In no case that has come to my notice has death taken place within twelve hours. One untreated case was brought to me on the sixth day and died on the seventh. Two other cases treated, in my absence, with potassium permanganate alone died some time after the third day. In these three the prominent symptom was the haemorrhage.

NOTE.—Although *naia* is not usually supposed, I believe, to be a spitting snake, yet in Northern Nigeria it has been my experience that *Naia nigricollis* habitually uses this method of attack when not within striking distance. A simple and effective remedy for cases where the venom falls on the conjunctiva is to wash immediately with a solution of unsweetened tinned milk. No doubt other substances would be equally effective as washes, but tinned milk is to be found in every white man's house in Nigeria and probably in most tropical climates. The milk from a newly-opened tin should be sterile.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INFECTION OF PLEURAL CAVITY FROM PERITONEUM.

THE following case was seen in consultation at various stages by the late Dr. Robertson of Lerwick, Dr. Brown of Aberdeen, and Dr. Grant. A delicate boy, of 2 years and 3 months, was in a condition of reduced vitality for some weeks before his illness. On June 27th, 1913, he had a sharp attack of vomiting and diarrhoea. Until July 6th he was in a condition of toxaemia, originating in the gastro-intestinal tract; this improved under treatment. On July 3rd it was noted that the skin had a dusky hue; this deepened to a yellow tint, and on July 8th there was marked jaundice of skin and conjunctivae with increased hepatic dullness, white motions, and urine containing biliary pigment. The onset of the pulmonary condition was very insidious; it began on July 4th as a scarcely perceptible harshness of respiration. On July 6th fine crepitant râles could be heard at the right base, though obscured by friction sounds heard plainly over both bases and axillary regions. On July 8th there was loud, rough pleuritic friction over the whole pulmonary area, except the apices in front. On July 10th consolidation of the right base was complete. On July 14th the pleurisy had invaded the left apex, and was impinging on the cardiac area; but the cardiac sounds remained clear. From this stage onwards the course of the disease was easily followed through the emaciated chest wall. The pleurisy rapidly subsided and disappeared without effusion. The right base began to resolve on July 14th, but a fall of temperature next day was followed by a rise associated with crepitant râles in the right middle lobe, succeeded by all the classical features of lobar pneumonia in this area. On July 23rd another crisis occurred, to be followed next day by another relapse, the right upper lobe being invaded. Crisis occurred on the evening of July 26th. During the night of July 27th a serious collapse came on, when the heart sounds were inaudible, the breathing scarcely perceptible, and the thermometer in the rectum did not rise above 95° F. Brandy by the mouth, strychnine hypodermically, and a saline injection into the rectum elicited a ready response. The patient subsequently made a good recovery and is now a perfectly healthy, though not very robust, boy.

To begin with, we had a gastro-intestinal catarrh, followed by a catarrhal jaundice. Next we had a generalized pleurisy, which passed off, leaving pneumonia, which began at the right base and extended upwards through the whole of the right lung. The whole process was probably microbic, and there is some support for the

view that the organisms reached the lung from the bowel via the peritoneal and pleural cavities. We know that microbes may pass through the unbroken bowel wall or peritoneal membrane. The peritoneal and pleural cavities are in communication through lymphatic spaces in the diaphragm and the current flows from peritoneum to pleura. The organisms would reach the peritoneum in the neighbourhood of the bile duct, doing no more damage here, probably, than obstructing the duct and causing a perihepatitis. Thence they would be carried in the lymph stream to the pleural cavity, giving rise to generalized pleurisy, which was quite marked on the left side, where there was no subsequent pneumonia. At the right base, which would be the point of entrance of the organisms, their numbers or virulence would be so great that they were able to penetrate the lung and cause pneumonia. While the invasion of the right base was insidious and the consolidation slow, the invasion of the middle and upper lobes was sudden. The infection probably reached these regions from the resolution of the consolidate in the base via the bronchi—that is, along the usual route.

Ollaberry, Shetland. THOMAS LOVETT, M.B.

HERPES AND VARICELLA.

E. H. B., the father, had a severe attack of shingles, first appearing on July 10th, 1914, and lasting for weeks.

On August 1st, twenty-two days later, the only child, aged 5, developed chicken-pox. She did not attend school, had not travelled in any public conveyance for some considerable time, and there were no known cases of varicella in the neighbourhood.

Enfield. HOWARD DISTIN, M.B.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

ROYAL NORTHERN SEA-BATHING INFIRMARY, SCARBOROUGH.

CASE OF TETANUS WITH LONG INCUBATION.

(By ROBERT CUFF, M.B.)

PRIVATE C. B., 22nd Regiment, one of a draft of thirty wounded Belgian soldiers, was admitted under my care on October 15th. He had been wounded at Wavre St. Catharine on September 30th by the bursting of a shell; he was, in fact, the only survivor of a party of forty. His wounds were numerous in head, body, right hand, left leg, and foot. When he reached the infirmary from Folkestone on October 15th all the wounds were fairly healthy with the exception of one deep punctured wound on the dorsum of the left foot; this was foul and sloughy. This wound was at once scraped and cleansed thoroughly with lysol, 1 in 10.

Progress was normal until October 23rd, when he felt poorly and experienced some stiffness of the jaws; he did not complain of this until my visit on October 24th, when I found risus well marked; he could not separate the teeth, and complained of stiffness in the back of the neck. He was treated by injections of antitetanic serum in doses of 1,500 units; two injections were given on October 24th, two on the 25th, two on the 26th, and one on October 27th, 28th, and 29th; urotropin gr. x was given every eight hours. The temperature rose once to 102°, but the pulse did not exceed 98, nor respiration 32. He improved steadily; he had slight spasms (opisthotonic) on October 25th, but none afterwards. On October 29th he could separate the jaws well, was brighter, and the risus had disappeared.

My reason for noting this case is the length of the period of incubation—three weeks.

THE Kansas Senate has unanimously passed a bill forbidding the payment by surgeons of commissions to medical practitioners who may advise patients to go to them for treatment or operation. It shall not, however, be unlawful for the attending doctor to receive a fee from the surgeon or specialist for services actually rendered, provided the patient is informed beforehand of the amount to be so paid.

Reports of Societies.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 16th, Dr. MANKNELL in the chair, Dr. MITCHELL read notes of a case of *Urinary incontinence in a female cured by a para-urethral injection of paraffin.* The woman had sustained a rupture of the urethra during a very prolonged and difficult labour. The urethra had been sutured and the canal remained perfectly intact after, but the incontinence continued and made the patient's life miserable. After the injection of paraffin the patient was able to hold her water, and no recurrence had taken place. The case was commented on by Drs. WOOD, BRONNER, and MANKNELL. Dr. MITCHELL replied. Dr. WRANGHAM read notes on two cases of *Vertigo induced by intestinal parasites.* Both patients were women and the symptoms of short duration. In neither case could any cause be at first assigned for the symptoms. In one case a tapeworm and in the other several round worms were discovered after some time. Treatment was immediately adopted, and in both cases the vertigo abruptly ceased after the worms had been evacuated. Several members took part in the discussion, and Dr. WRANGHAM replied. Dr. H. J. CAMPBELL read short notes on the *Use and abuse of purgatives.* He drew attention to the numerous drugs which were being used indiscriminately as purgatives by the public. Broadly speaking, purgatives could be divided into vegetable and mineral, the former being more generally used in early life and the latter after middle age. The vegetable drugs acted on a normal bowel and all along the tract. There was no absorption, as their action was entirely on the epithelial cell. The mineral drugs, on the other hand, acted on a bowel more or less overloaded with food and exerted their influence on the vessels, the action being that of bleeding the patient into his own bowel. Great care and discrimination were required in the use of purgatives. Drs. WOOD and WRANGHAM discussed the paper, and Dr. CAMPBELL replied.

Reviews.

THE WORK OF THE RED CROSS.

THE most irrefutable proof that we did not, as German apologists are still trying to persuade an incredulous world, force the sword into the hands of a peace-loving Kaiser, is surely the state of unpreparedness in which the sudden outbreak of the war found us. It is no business of ours to labour this point from the military point of view; we need only recall the inadequacy of our machinery for dealing with the sick and wounded. The Royal Army Medical Corps was indeed well organized, but it was, as it still is, deficient in numbers. But the voluntary aid services, consisting of the Red Cross Society and the St. John Ambulance, though full of zeal, were to a certain extent caught unawares. Hence there was at first some unavoidable confusion and consequent waste of energy. This has since been remedied, and the two organizations are rendering invaluable service. An interesting account of their work is given by Messrs. E. CHARLES VIVIAN and J. E. HODDER WILLIAMS.[1]

The authors describe the general organization of the care of the wounded and of the sick and give a general account of the work done by doctors and nurses and the Voluntary Aid Detachments, and of the arrangements for the transport and distribution of the sufferers. Typical stories are related about men of various arms of the service, illustrating their spirit of self-sacrifice, the cheerfulness with which they bear their sufferings, and the manly fortitude with which they face the prospect of a life crippled by mutilation. It is gratifying to note the unanimity with which they bear witness to the skill and kindness of the doctors and nurses. There was, especially in the earlier days, much ungenerous sneering at the Red

[1] *The Way of the Red Cross* By E. C. Vivian and J. E. Hodder Williams. With a preface by Queen Alexandra. London, New York, and Toronto: Hodder and Stoughton. 1915. (Cr. 8vo, pp. 288. 2s. 6d. net.)

Cross nurse—her incompetence, her love of posing, flirtation, and so forth. Doubtless some of this criticism had a certain foundation of truth, for there is a good deal of human nature in woman as well as in man. But the following tribute paid by the authors to the devotion of the nurse is fully deserved:

> The nurse who goes to look for romance at the front must take it with her. It is clear that she does so, for nothing but love of humanity and selflessness—the very soul of romance—could enable these noble women to do what they do. There is demanded of these women twelve hours and more in every day, Sundays included, devoted to hard work, much of which is of a distinctly menial nature and much of which is positively unpleasant. There is no romance in bandaging and dressing the stumps of limbs, in washing gangrened wounds, or in feeding men paralysed by shell fire or too weak to feed themselves.

A particularly interesting chapter is that which tells of the pains taken to trace the fate of the missing, and a sympathetic account is given of the Belgian soldier.

The book, unpretending and unsensational as it is, should suffice to convince the cynic how much goodness there is in human nature. It should also serve to prove to those—and there were many such even amongst ourselves—who cried from the housetops that we were a decadent race, caring for nothing but wealth, sport and pleasure, how mistaken was their notion of the British character. The record of the work done for the relief of the wounded should make us as proud as the story of the heroism with which our soldiers have faced death on the battlefield, and the endurance with which they have borne the less thrilling, but more trying, experiences of the trenches.

The profits of the sale of the book are devoted to the *Times* Fund for the Sick and Wounded, which is divided between the British Red Cross Society and the Order of St. John. The authors state in their preface that one object they had in view was to obtain the means of repairing a stretch of road over which the ambulances pass to the military hospitals of Boulogne, over which so many wounded men have to be carried. We are glad to note that this object is likely to be fulfilled. In the *Times* of March 29th there appeared a letter from Messrs. Hodder and Stoughton, stating that on receiving the necessary sanction they were prepared to pay the sum of £500, the first instalment of profits from *The Way of the Red Cross*, to be applied to the repair of the road.

THE FURTHER PROGRESS OF A PEACEFUL CAMPAIGN.

WHILE the whole civilized world has been commenting upon the "baby-killing" propensities of our cultured enemy, the ravages of a less demonstrative foe to babes are also receiving world-wide attention, and reports of success and failure are now available for analysis and study. No fact has been more strongly impressed upon the national mind during the last few months than the national need for the support of a hardy and healthy race of young men and women.

Too many have had to stand aside, owing to ill health traceable to tubercle, and in most cases the seeds of the disease have been sown in infancy or childhood. Obviously, then, it becomes a national duty to combat by every possible means the development of such seeds, even though the sowing cannot be entirely prevented. This great work has been started and already a measure of success has been obtained, but far more remains to be achieved.

A most useful step in this direction has been taken by the issue of a *Year Book of Open-Air Schools and Children's Sanatoria*,[2] by Dr. T. N. KELYNACK, who has collected a vast amount of information and skilled opinion. He has been aided by a full staff of expert contributors, and it may be said that almost every phase of the subject of tuberculosis in children is here represented. It must suffice to refer only to a few of these, selected at random, to indicate the scope of the work.

The need for close co-operation between open-air schools, of which the number is steadily increasing, and the local tuberculosis dispensaries is emphasized by the tuberculosis officer for Hertfordshire, who rightly insists upon the vital importance of early recognition of latent disease in children.

The opinion has for many years been held by clinical workers that much of the glandular, joint, or non-pulmonary tuberculosis in the young is due to the bovine rather than to the human form of the bacillus. The fact that early sufferers from the non-pulmonary forms frequently escape any lung troubles in later years would seem to point to some protective action, and it has sometimes been thought that an early bovine infection is not to be regarded as an evil, but rather as a natural means of protection from the more fatal form. Dr. Riviere discusses this question in an interesting article. As to the therapeutic value of open-air life there is abundant evidence from many sources. Perhaps the most remarkable are the series of photographs of Dr. Rollier's small patients at Leysin, who are seen to be enjoying their work and their play clad in the scantiest of clothing on balconies amid snow and icicles, but in full sunshine, or tobogganing on the actual snow slopes wearing sun hats and waist cloths only. Experience has shown that by slow degrees the young bodies can become perfectly tolerant of the hot sun and the crisp frosty air, and that the effect of the sun's rays thus used to influence the whole skin has been almost miraculous in bringing about the healing of suppurating sinuses and rapidly disintegrating joints. In very many institutions scattered about our own and other countries the health-giving properties of the open air life are made manifest, but it is to be feared that much of the work is undone again when the small patient is obliged to return to the former life of poverty, overcrowding, and squalor. It will be the function of the tuberculosis dispensaries to counteract these evil influences by all the means at their disposal. A very valuable essay by Mrs. Esther Carling on the ideal construction and scheme of management for children's open-air schools is worthy of special note. Many points of apparently minor importance may make a very great difference in the smooth working of such schools and deserve close attention on the part of administrators.

The early diagnosis of latent disease is of the utmost importance, and many observers are disposed to attach major importance to the revelations of radiography, more especially as regards the shadows thrown about the root of the lung. Many writers—Dr. Murray Leslie may be quoted as one of them—believe that tubercle makes its primary attack upon the hilus and that the apical disease follows later. Hence the correct interpretation of the hilus shadows becomes of primary importance. Happily a mistake in diagnosis founded on an incorrect interpretation is not likely to be productive of harm to the patient. Nothing could be better for the suspected child than a course of ultra-hygienic life.

Dr. Kelynack's well illustrated volume is a really valuable addition to the literature of a most important subject.

SEWAGE PURIFICATION AND DISPOSAL.

THE latest volume of the Cambridge Public Health Series on *Sewage Purification and Disposal*,[3] by Mr. G. BERTRAM KERSHAW, is a noteworthy addition to this admirable collection of public health literature. Mr. Kershaw is exceedingly well qualified to deal with this subject, as he has been engineer to the Sewage Disposal Commission (now slowly completing its labours) for the last sixteen years, and had thus had unique opportunities of seeing different methods of sewage treatment in operation. In a monograph so limited in size it has necessarily been difficult to deal with so large a subject without touching upon some details in a somewhat sketchy manner, but an excellent description is given of the more important.

Mr. Kershaw begins by discussing the merits and demerits of conservancy methods, including the use of dry closets and cesspools, but no detailed description is given of these, which are sometimes necessary evils. He briefly discusses the composition of sewages and the methods of taking samples. In the third chapter, which

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2 *The Year Book of Open-Air Schools and Children's Sanatoria.* A companion volume to "The Tuberculosis Year Book and Sanatoria Annual." By T. N. Kelynack, M.D. Vol. i. London: John Bale, Sons, and Danielsson, Ltd. 1915. (Sup. roy. 8vo, pp. 497; illustrated. 7s. 6d. net.)

3 *Sewage Purification and Disposal.* By G. B. Kershaw, M.Inst.C.E. Cambridge Public Health Series, under the editorship of G. S. Graham Smith, M.D., and J. E. Purvis, M.A. Cambridge: The University Press. 1915. (Demy 8vo, pp. 350; 56 figs. 12s. net.)

contains a very useful explanation of combined and separate systems of sewerage, a brief account of storm-water overflows is given. The author then goes on to deal with screening arrangements and detritus tanks, and in a very interesting and instructive chapter describes and discusses various forms of settling tank. The flow of sewage through settling tanks of different form is a subject which calls for detailed experiment and observation by engineers. Mr. Kershaw refers to the experiments carried out in Germany on the flow through simple rectangular tanks, but little similar work appears to have been done in connexion with tanks of other shapes. The subject of slate beds deserved a little more space than has been given to it. On page 73, in Table XI, is a quotation from the Fifth Report of the Royal Commission on Sewage Disposal, on the capacities of tanks required in different forms of tank treatment, but it is not noted that the capacities there given differ entirely from the requirements of the Local Government Board. In this and other particulars Mr. Kershaw, as perhaps is natural, deals more with the suggestions of the Royal Commission than with the requirements of the Board, to which, however, it must be borne in mind attention must especially be paid by engineers when preparing a sewage scheme.

In Chapter V the disposal of sludge is dealt with, and it is rightly pointed out that in many cases this is now the chief difficulty in the treatment of sewage. Various methods of sludge drying are described, but it is disappointing to find a good deal of space given to the description of sludge lagoons without any effective under-drainage, for such contrivances are now very rapidly being thrown out of use as obsolete, and engineers are more and more making provision for proper sludge filters, thoroughly underdrained and constructed as carefully as percolating filters or contact beds. The various uses to which dried sludge can be put are touched upon, but too little is said about the methods of preparing it in the form of a powder for agricultural use, which are now engaging so much attention, and which seem likely to give the most satisfactory result in the future. Here again Mr. Kershaw deals with the subject as it was considered by the Royal Commission, and has not given sufficient attention to the developments which have taken place since the Commission considered the matter.

The chapter on the land treatment of sewage is excellent, but it is to be noted that in the paragraphs dealing with sewage-sick land no reference is made to the experiments of Russell and others. Mr. Kershaw, however, disarms criticism in this direction by stating that he does not profess to deal with the subject from a chemical or bacteriological standpoint. In speaking of the disposal of sewage-farm crops he omits to advise that crops such as celery, lettuce, and watercress, which are usually eaten uncooked, should never be grown on sewage land.

The description of contact beds and percolating filters is very good, but in regard to the last it is surprising to find the statement that the grading of filtering material is not necessary. This is certainly not in accordance with the views of most engineers, and it is common experience that filtering material which is not properly graded is exceedingly likely to become choked. The removal of humus from filter effluents is properly advocated, for no scheme is nowadays considered complete without the provision of humus tanks, or sand strainers, or land treatment following percolating filters or contact beds.

The last chapter, on trade wastes, is an example supporting the criticism that some of the descriptions are a little too sketchy. The information given is not sufficiently detailed to be of much value, and it may be suggested that in another edition the space taken up by it should be devoted to a fuller discussion of some of the details of the treatment of sewage proper.

Mr. Kershaw has compiled an excellent handbook, which will be found of great use to sanitary authorities and their officers. He gives a useful though rather limited bibliography at the end of each chapter, and a satisfactory index. The book is neatly got up, and very few mistakes have been noticed, but two may be mentioned, one in the preface, where a very engineering form of spelling "hydrolytic" is adopted. The other, more important, is in the formula given on p. 123, where a figure 6 has crept in by mistake.

CHEMISTRY AND PHYSICS.

THE division between chemistry and physics has long since ceased to be representable by a line, and has widened out into a considerable territory occupied by the subject of physico-chemistry, in which experiments and direct observations are far less frequently to be met with than laws, hypotheses, and mathematical formulae. Professor J. L. P. MORGAN'S *Elements of Physical Chemistry*[4] presents an outline of the various branches of the subject in one volume, and is intended as a textbook for either class work or self-instruction. Following a general introductory chapter, the divisions of the book deal with the gaseous, liquid, and solid states of matter, the phase rule, solutions, thermo-chemistry, chemical change, and electro-chemistry; in a final chapter between two and three hundred problems, with their answers, are given, and these furnish an excellent illustration of the practical importance of the subject, its importance in scientific theory being sufficiently obvious. Although the author has endeavoured to keep the mathematical treatment of the subject as simple as possible, formulae are abundant on almost every page, and the calculus is constantly in requisition. It may be doubted whether Professor Morgan has been able to put himself in the student's place sufficiently to present the subject in such a way as to be readily assimilable by those working without the assistance of classes; a good deal of previous knowledge is assumed, and explanations are sometimes implied rather than given. Definitions and laws, printed in italics, should be so carefully framed that they have not to be more or less invalidated subsequently by exceptions, and this is not always the case—for example, Dulong and Petit's law (p. 118) is given as "The atomic weights of all elements have approximately the same capacity for heat," and the fact that this should be qualified by the words, "when in the solid state," after "elements" only becomes apparent subsequently. Again, a solution is defined (p. 147) as "a homogeneous mixture which undergoes a change in composition in producing a new phase," and almost immediately afterwards the author gives an example of a solution (20.2 per cent. solution of hydrochloric acid under normal pressure) which does not undergo a change in composition in producing a new phase. Other examples might be given which must be regarded as flaws in the work; but the volume will certainly be useful to those who are taking a course of lectures in the subject, or have already sufficient general acquaintance with the matter to escape being perplexed by such lapses.

KINGSCOTT AND KNIGHT'S *Methods of Quantitative Organic Analysis*[5] contains brief descriptions of quantitative analytical methods employed in the examination of organic substances, including those chiefly used by the pure chemist and others which are more of value to the practising analyst. A very considerable number of methods is included, only sufficient directions being given to enable a chemist of reasonable experience to carry out the processes; references to the original papers in which the methods have been described make it easy to obtain additional details when desired. A few slips may be noted, as for example in the statement that the dissociation of chloral hydrate in acetic acid gives a very large depression of the freezing point in Regnault's method, "and in consequence a molecular weight in this solvent much above the normal," the fact being, of course, that too large a depression leads to too small a molecular weight being found by the usual formula. Excellent judgement has been shown in selecting the methods to be described, and the book will be thoroughly useful to those engaged in analytical or simple research work in organic chemistry.

[4] *The Elements of Physical Chemistry.* By J. Livingston R. Morgan, Ph.D., Professor of Physical Chemistry in Columbia University. Fifth edition, revised and enlarged. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Ltd. 1914. (Post 8vo, pp. 521. 12s. 6d. net.)

[5] *Methods of Quantitative Analysis.* By P. C. R. Kingscott, D.I.C., A.R.C.Sc., A.I.C., B.Sc.Lond. and R. S. G. Knight, D.I.C., A.R.C.Sc., B. e.Lond. London: Longmans, Green and Co. 1914. (Demy 8vo, pp. 299; 51 figures. 6s. 6d net.)

SCIENTIFIC men of all nationalities have subscribed towards the monument to be erected to Cesare Lombroso at Verona. The work has been entrusted to the distinguished sculptor, Signor Bistolfi.

NOTES ON BOOKS.

THE appearance of a fifth edition of *Examination of the Urine*[1] testifies to its deserved popularity. At its origin it was no new venture, being originally founded on Husband's useful book. Dr. HEWAT has added chapters on blood, sputum, pus, and faeces, with directions for a complete examination of the contents of the stomach for diagnostic and therapeutic purposes. The author has availed himself of all new matter recently published in standard works on the subject suitable for his manual, such as Dr. Philip Panton's *Clinical Pathology* and treatises by Emerson, Morris, and Dixon. The small size and good print, the more distinctive features of the book itself, render it convenient for pocket.

Dr. LYTTON MAITLAND'S small book on ionic medication[2] is uniform with a series which includes several nursing handbooks, but, except for a somewhat ambiguous reference in the preface, the nurse is not specifically mentioned from first to last, nor does she appear on the title page, and many of the questions discussed belong solely to the province of the physician. A pocket guide to such a subject, especially one so concise and well arranged, doubtless has its niche to occupy, though we remain a little dubious as to the value of any such brief summary if it is intended for the medical man who is to undertake ionic treatment. The author takes for granted in his readers "a small knowledge of chemistry and electricity." Surely in the case of these two departments of knowledge above all others, when it is intended to apply them in medicine, a mere sipping at the Pierian spring holds possibilities of disaster.

INTERNATIONAL CONTROL OF TRAFFIC IN DRUGS OF ADDICTION.

RESULTS OF THE THIRD OPIUM CONFERENCE.

Two important publications have recently appeared which serve to illustrate the present position of the opium question, and of the control by international agency of those drugs which are liable to similar abuse to that of opium and morphine. The first is a parliamentary paper [Cd. 7813], "Correspondence Respecting the Third International Opium Conference held at the Hague, June, 1914"; and the other, issued from the Royal Printing Office at the Hague, gives the "*Actes et documents, procès-verbaux officiels*" of the same conference.

The time may appear inopportune to speak of international effort on behalf of any movement for the betterment of mankind, and pessimists might be disposed to declare that the three International Opium Conferences which had less than a year ago led up to an almost universal readiness to give effect to the Opium Convention of 1912 are now likely to lead to no practical results. Yet, exactly a hundred years ago, another humanitarian movement was ripening for international settlement while the Napoleonic wars still convulsed the continent of Europe. Thanks to the persistency of William Wilberforce, the Congress of Vienna, notorious mainly for intrigue and grab, nevertheless, as one of its first constructive acts, and on the initiative of Castlereagh, the British representative, resolved that the slave trade was to be no more. This bright omen of 1815 may serve to hearten those who look to the next International Congress to give effect to the Convention, now ripe for coming into force, for the control of the traffic in those drugs of addiction which it may in truth be said are the enslavers of the will.

In the JOURNAL of July 11th, 1914, a brief summary was given of the work of the third conference, which sat at the Hague from June 15th to 25th, 1914, and on February 20th, 1915, we adverted to the attitude then assumed by Germany. We expressed the intention of returning to the question when, as is now possible, the full account of the proceedings which then took place became available.

At the first session Mr. Loudon, the Foreign Minister of the Netherlands, summarized the position of affairs. Eight Powers out of the forty-six, he said, had ratified the Convention. Two only—namely, Turkey and Serbia—had refused to sign it; the remaining thirty-six had signed the Convention, and several of them were ready to proceed to ratification. The second Conference had resolved that, despite non-signature by all the invited Powers, ratification might nevertheless proceed. It was for the present Conference to decide whether the Convention might come into force notwithstanding the non-signature by two Powers and the non-ratification by others. The instructions given by Sir Edward Grey to the two British delegates are fully set out in the White Paper, and at the second session Sir William Collins outlined the position of Great Britain as follows. He said:

As was announced yesterday the Government of His Britannic Majesty is ready to ratify the International Opium Convention, and we entertain the hope that all the other signatory Powers are also ready to do so. The British Government cordially recognizes the success which has attended the efforts of the Netherlands Government in securing so many additional signatures since the rising of the second Conference and shares the regret already expressed at the abstention of Turkey and Serbia and the partial abstention of Greece. The attitude of His Majesty's Government is that if all the signatory Powers are ready to ratify the Convention will come into force automatically three months after the receipt by the Netherlands Government of the last act of ratification. The minutes of the first Conference, however, indicated that we had always contemplated the possibility of the situation now confronting us arising by reason of the abstention of one or two Powers.

The Convention prescribed two different routes whereby ratification may be attained, (1) consequentially on signature by all invited Powers without convoking a conference, and (2) in case all signatures had not been received by the end of 1912 by a conference to consider whether ratification could not, nevertheless, proceed. The Conference contemplated by the second alternative took place in July, 1913, and unanimously resolved in favour of ratification proceeding. This second Conference had further resolved that if the signatures of all invited Powers had not been received by the end of 1913, a third Conference should be called to consider the question of putting the Convention in force. The position, therefore, now is that forty three out of forty-six invited Powers have signed the Convention and nine of the forty-three have ratified it, while several others are ready to do so. It seems inconceivable that the objects in view should be frustrated by the abstention of two or three Powers. The decision of the second Conference seems to preclude the suggestion that the Convention is not to come into force unless and until every one of the invited Powers shall have signed. It may even be possible to contrive measures to neutralize the effects of such abstention, but such abstention can surely not be regarded as a reason for abandoning the humanitarian objects which have been pursued hitherto with so much international accord.

The delegates from Holland, Belgium, Switzerland, the Argentine, and Chile then successively detailed the progress towards ratification achieved in their respective countries.

Then arose the delegate from Germany, Herr Felix von Müller, the Kaiser's Envoy Extraordinary at Queen Wilhelmina's Court, whose recall has recently been announced in the papers. He stated that "the Imperial Government, to its deep regret, could not at the present moment contemplate the possibility of ratifying the Convention." He cited the reservations attached to the signatures of Sweden, Montenegro, and Greece, as well as the abstention of Turkey and Serbia, and the unsatisfactory attitude of Austro-Hungary, as the grounds for this declaration.

The Swedish delegate promptly repudiated the suggestion that any reservation was in effect attached to the signature of his country. The attitude of Germany evidently came as a disappointing surprise to the Conference as a whole. Germany had been one of the twelve Powers which drafted the Convention at the first Conference; and, as the records of its proceedings show, several articles of the Convention dealing with the traffic in morphine and cocaine had been, at the sole instance of Germany, materially modified after they had been agreed to by her delegates and those of the other Powers. Moreover, at the second Conference Germany had agreed in the unanimous resolve to allow ratification to proceed despite the refusal of signature by two or three invited Powers. Herr von Müller's colleague from Berlin, Herr Ernst Delbrück, had been overruled at the first Conference when he endeavoured to claim that the further progress of the Convention must await the sanction of every one of the invited Powers. Yet at this stage that Power, which had been exceptionally deferred to in drafting the Convention, stood alone in declining to take the next step forward, and seemed to revert to the obstructive position assumed and abandoned by one of her delegates to the first Conference.

[1] *Examination of the Urine and Other Clinical Side-room Methods (late Husband's).* By A. F. Hewat, M.B., Ch.B., M.R.C.P.Edin. Fifth edition. Edinburgh: E. and S. Livingstone. 1914. (5 × 3, pp. 212; 31 figures. 1s. 6d. net.)

[2] *The Theory and Practice of Ionic Medication.* By Lytton Maitland, M.D.Lond. London: The Scientific Press, Ltd. 1914. (Imp. 32mo, pp. 114; 16 figures. 1s. net.)

It is evident that after this disclosure the efforts of the other delegates were necessarily directed to the best means whereby they might circumvent this unexpected impediment towards the achievement of the objects in view.

The United States Minister, Dr. Van Dijck, boldly expressed the desire of his Government to make progress, and proposed a resolution binding the Powers to put the Convention into force from December 1st, 1914. He inquired whether forty-three civilized Powers were to be frustrated by the abstention of two nations.

Dr. van Deventer, who with Mr. Cremer, the President, again represented the Netherlands, said:

An incontestable success had attended the work of the two previous Conferences. Ratification by the Netherlands Government only awaited the action of the First Chamber of the States-General. If Turkey and Serbia declined to join, why should not the other Powers unite among themselves to carry out the Convention?

Mr. Yen Hui Ching, the Chinese delegate, said:

It is too late in the day to raise questions of monopoly and self-interest, as the Convention from the first implied the sacrifice of vested interests for humanitarian ends.

Sir William Collins, before the debate closed, said, on behalf of the British delegation:

We have listened with great interest to the different communications which have been made, some of which have not unnaturally been a little unexpected. It now appears that some signatory Powers are unable, solely on constitutional grounds, to proceed to ratification—that is, a question of form which time will solve. But is it the case that certain signatory Powers are indisposed to ratify on other than constitutional grounds? Would it not be well formally to resolve, what seems to be implied by the resolution of the second Conference, that the Convention might come into force even if all the invited Powers do not sign? Great Britain is ready to discuss the question of a fixed date, but we are not in a position, without further instructions, to decide at once what that fixed date shall be.

The first full session of the Conference concluded by referring the proposals which had been made to the *Comité de rédaction*—which consisted of Mr. van Deventer (Netherlands), Baron Fallon (Belgium), Mr. Denby (United States), and Sir William Collins (Great Britain)—in order that it might bring up a formula which would enable the Convention to be put into force between the signatory Powers.

The British delegates in their report say:

The *Comité de rédaction* immediately got to work under the presidency of Mr. van Deventer. We used our best endeavours to frame the report so as to lead up to a decision on the questions: First, of the possibility of the Convention coming into force, notwithstanding the abstention of certain invited Powers; and, secondly, of the early ratification by the signatory Powers, so that the coming into force might proceed automatically or from an agreed date.

It is not necessary to follow the rather involved discussion which took place at the next full session, when the Committee's report was presented. Suffice it to say that on the resolution being put—

> That the Conference is of opinion that it is possible to put into force the International Opium Convention of January 23rd, 1912, notwithstanding the fact that some Powers invited to sign under paragraph 1 of article 23 have not yet signed the Convention

—twenty-five voted for and only two against—namely, Germany and Portugal. Portugal, however, at a later sitting, withdrew the negative vote, so that Germany alone opposed this resolution.

Meanwhile, the British delegates appear to have been busy drafting a resolution, which, with the cordial support of the United States, was subsequently carried unanimously. It ran as follows:

> The Conference invites his Excellency the Minister for Foreign Affairs of the Netherlands to transmit, in the name of the Conference, an urgent and respectful request to those signatory Powers which have not ratified the Convention nor expressed their intention of doing so, with a view to inducing them to declare as soon as possible their readiness to deposit their ratifications in order that the Convention may come into force with as little delay as possible.

There appear to have been some searchings of hearts over this obvious endeavour to force the pace, notwithstanding Germany's obstructive attitude, for the British delegates in most diplomatic language report:

Prior to the assembling of the fourth full session of the Conference we learnt that some apprehension was entertained by the President and some of the Dutch Ministers as to difficulties which might ensue if the foregoing resolution were not passed unanimously, but was opposed by any of the Powers, or was the occasion for any abstentions. We accordingly addressed ourselves to the delegates of Germany and Portugal, who had voted in the negative on the first resolution submitted by the *Comité de rédaction*. Our representations were very courteously entertained, the German delegate intimating that he would acquiesce in the resolution when proposed; and the Portuguese delegate undertook not only to support it, but to withdraw the negative vote given at the last sitting.

This was indeed a diplomatic triumph, since the German Minister now voted for an "urgent request" being made to his Government to ratify a Convention in order that it might be enforced "with as little delay as possible," although he had a few days previously voted that it was impossible to put the Convention in force in view of the refusal of two Powers to sign it.

After a further reference to the Committee of the question of a partial enforcement of the Convention by a group of Powers, which raised many difficulties, it was eventually resolved at the fifth session:

> That the Conference is of opinion that if by December 31st, 1914, all the signatory Powers have not deposited their ratifications, it will be lawful (*loisible*) for the signatory Powers whose ratifications shall have been deposited by that date to put the Convention in force. The same power shall obtain for the signatory Powers who shall successively deposit their ratifications after that date.

It was further resolved, with the approval of the Minister for Foreign Affairs of the Netherlands, to open a special protocol at The Hague, in which those Powers desirous of acting in accord with the foregoing resolution might record their signatures.

A declaratory resolution was also passed to the effect that the possibility of acceding to the Convention should remain open to the Powers which had not yet signed.

Due testimony was borne to the ability and tact of Mr. van Deventer, the chairman of the invaluable *Comité de rédaction*, by Sir William Collins, who remarked that it might be truly said that "the third Conference had served in a most efficacious manner to review the situation and to accelerate the pace towards the end in view." He and his colleague, Mr. Max Müller, claim that "a perusal of the final protocol and the *procès-verbaux* will, we think, serve to show that we have carried out, *literatim* and *verbatim*, the instructions with which we were favoured." A comparison of these instructions, now published, with the protocol certainly substantiates that claim, and the White Paper concludes with a letter from Sir Edward Grey to the British delegates, thanking them "most cordially" for the services rendered to His Majesty's Government, and for their "lucid and able report, which will be an invaluable record for future reference."

The net results attained at the close of the three Conferences are thus summarized:

> At the close of the *first* Conference twelve Powers had signed the Convention which they had participated in drafting, and thirty-four other Powers were invited to attach their signatures.
>
> At the close of the *second* Conference thirty-four out of the total of forty-six Powers had signed the Convention and twelve had not then done so, while eight Powers had either ratified it or were disposed to do so.
>
> At the close of the *third* Conference forty-four out of the total forty-six Powers have signed the Convention, eleven have ratified it, and fourteen more are disposed to do so, while not one of the remaining nineteen signatories has expressed any intention of not proceeding to put the Convention in force. Moreover, all the signatories present were desirous that respectful representations should be pressed upon those which had not deposited their ratifications to do so as soon as possible.

As was announced in the JOURNAL of February 20th, 1915, three Powers—namely, the United States, the Netherlands, and China—have already signed the Special Protocol prepared at the instance of the third Conference for those Powers who are ready to put the Convention in force without waiting for others. Thus by sure, if by slow, steps is the machinery for the international control of the traffic in drugs of addiction being got into operation.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

THE thirty-second annual meeting of this society was held at its offices, 300, High Holborn, W.C., on March 30th.

The President, Dr. DE HAVILLAND HALL, announced that the Chairman, Vice-Chairmen, and Treasurer had been re-elected, and called upon Dr. F. J. Allan to preside.

ELECTION OF EXECUTIVE COMMITTEE.

Dr. ALLAN said that he had anticipated a contested election, but the fresh nominee having withdrawn his name, he declared the remaining members duly elected. Mr. Sturges was reappointed auditor. Dr. Brindley James was elected a vice-president, and returned thanks for the honour conferred upon him.

CHAIRMAN'S ADDRESS.

The CHAIRMAN referred to the great claims which were being made upon the services of the medical profession by the war, and the magnificent way in which it had responded to the country's call. Appreciation of its action had been expressed in Parliament, and by the Commander-in-Chief, Sir John French. Those who had remained behind to look after the civil population and undertook extra duties for their colleagues were equally serving their country. The strain upon their health and strength was considerable, and at no time more than the present were the benefits offered by the society more essential to the profession. Over 300 members of the society were serving in the various forces of the country; he was glad to state that the claims arising from those in the fighting line had been few, but they would probably increase during the year. He regretted to have to record the death of one member, Lieutenant Armstrong, who prior to the war had been in practice in Monmouthshire. The society had, however, been instrumental in obtaining from the Royal Medical Benevolent Fund an allowance for his widow and family. At the early part of the war the committee had decided that members serving with the troops abroad could retain their membership without extra premium, though they were not entitled to sickness benefit until they returned to the United Kingdom. It had also been decided that those who had taken out life policies should remain fully covered without extra premium. It was a big risk for the society to take, but not bigger in proportion than the self-sacrifice and loyalty of those serving their country—in fact, under Section 43 of the Friendly Societies Act, 1896, which applied to the Territorial Force, a person did not by reason of being enrolled in any of the auxiliary forces forfeit any interest he might have in a friendly society, or incur any penalty for non-attendance at any meeting of the society, if such absence was due to his being engaged on military or naval duties. Any member permanently incapacitated would be entitled to sickness benefit up to 65 years of age.

Notwithstanding the war and the dislocation of business, the society had had a successful year. It had now become a solid concern, able to stand shocks which might make less substantial concerns regard the future with misgivings. There had been 276 new proposals during the year, and the total membership at the end of the year was 3,255, a net increase of sixty-five. In the Sickness Fund the gross premiums received amounted to £24,190, while £15,931 had been paid in claims. In 1913 the amount paid in claims almost equalled the amount received in premiums, and the actuary was somewhat apprehensive that the society had approached a period when it might have to pay away more than was actually received in premiums. The committee, on looking closely into the matter, found that the stricter medical examination instituted some years back was beginning to tell in the reduction of the chronic cases, especially such as general paralysis and locomotor ataxy. The committee also found that, although 1912 and 1913 were much above the average, yet examination of the statistics showed that there had been fluctuations in previous years; it had decided to recommend that further benefits should be given last year. The action of the committee had been amply justified, as in 1914 the amount of sickness had been less than in the previous five years, and many members had given evidence of their appreciation by increasing their insurances. An investigation had shown that the average payment per member for six years had been £5 10s. a year. Last year 21 per cent. of the members had to apply for sickness benefit, thus showing that there must be mutual co-operation among the members. No society could insure a percentage of its members against loss by sickness or accident without the support of a large number of others to provide an average experience. There seemed to be some doubt in the minds of some members regarding the rule of the society relating to compensation on retirement. Under ordinary circumstances there could be no surrender value of sickness benefit. Members insured for sickness; they had been covered during their membership, and the society had been liable to pay them sickness benefit. It would be impossible at the present rates to pay sickness benefits to those who were ill and return the premiums to those who remained well. The annuity fund was gradually being reduced since no new business had been accepted in this branch since 1894. The life insurance fund showed an increase; the effect of the new tables would, no doubt, soon begin to show itself, and he was pleased to report that the new business since the commencement of the year had been well maintained. Some members appeared to be under the impression that in cases of accident they might apply for partial incapacity and still continue to do some professional work, but the rules of the society provided only for total incapacity. If insurance for partial incapacity was desired, there was no doubt that extra premiums would have to be charged. Most insurance societies doing accident business looked upon partial incapacity as not at all a paying scheme, and generally tried to settle for a lump sum.

The funds of the society, which now amounted to £266,599, were well invested, and, after careful consideration, it had been decided not to write them down. At the end of the year the Stock Exchange was not open, and from inquiries made it was ascertained that the prices then quoted were not to be relied upon. Many of the securities held were either repayable at par or were municipal loans paid off from time to time and therefore not subject to Stock Exchange fluctuations.

He hoped the members approved of the change of the office. The lease of the previous office, which had been found too small, had expired, and after looking round carefully their present premises had been taken.

The actual expenses of the management had been slightly higher owing to two causes—namely, valuation, and also the furnishing of the new offices. In spite of this extra expenditure the total amounted only to a little over 7 per cent. of the premium income and 5 per cent. of the total income of the society. He considered that the members had cause to congratulate themselves on the small amount of the management expenses.

He desired to express the thanks of the society to the BRITISH MEDICAL JOURNAL, the *Lancet*, and the *Medical Press and Circular* for their assistance during the year. He referred also to the work of the staff, which had been satisfactory in every way. One member of the staff had joined the new army, and the committee had decided that his position should be kept open for him.

He thanked the members for having re-elected him as their chairman. He took great interest in the work, and hoped that at the next annual meeting he would be able to report another year of successful work. He moved that the report of the committee and audited accounts for the twelve months ending December 31st, 1914, be received and adopted.

The motion having been seconded, Dr. VINRACE expressed his dissatisfaction with the present method of electing the Executive Committee, and inquired if proxy voting was allowed.

The CHAIRMAN replied that under the Friendly Societies Act only those members present at the annual meeting could take part in the voting. In reply to an inquiry, the Chairman stated that under the rules of the society a member was not eligible for sickness benefit while abroad, but the committee generally viewed such cases sympathetically.

The motion that the report be received and adopted was then put to the meeting and carried unanimously, and the proceedings closed with a vote of thanks to the Chairman.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

THE WOUNDED FROM RECENT ACTIONS.

INQUIRIES addressed to various surgeons who see large numbers of cases have failed to elicit any circumstances which point towards any material difference in the general character of the wounds resulting from the Neuve Eglise and St. Eloi engagements as compared with those from earlier operations. Head wounds, of course, did not predominate as in the past two months, when the chief fighting has been between snipers, but figured to about the same extent as in the last weeks of 1914, when trench rushing and heavy shell firing were on both sides the order of the day. The proportion of severe wounds in other parts of the body would seem to have been about the same as before the comparative calm set in after Christmas, and despite the fact that at the time of the fighting and for some days previously the trenches had been relatively dry gas gangrene occurred.

The casualties included a considerable number of the Royal Army Medical Corps, owing to the fact that the siege tactics of the last six months were for the time being abandoned, and there would seem to have been a partial return to ordinary battle practices on the medical side of affairs, battalion medical officers advancing to form regimental aid posts, and some field ambulances throwing forward their bearer sections. The general arrangements for the evacuation of the wounded from the field medical units to the advanced and distant hospital bases worked well. There was no hitch in the ambulance train service, and there was a sufficient supply of hospital ships available. Both Southampton and Dover have for some time past been used as disembarkation ports, and ships told off for the latter destination can, if necessary, embark, transport, and disembark two convoys every day. All hospital ships I have ever seen have been easily distinguishable from all other ships and at a great distance by the fact that they are painted white with a green band from stem to stern. Lately steps have been taken to render them equally distinguishable at night by placing a row of small green lights along the taffrail on both sides, and a large red cross amidship built up of red lamps on one side and a corresponding green cross on the other. It is intended, I was informed, to light all hospital ships in corresponding fashion. The high speed of these vessels is an additional protection against submarine attacks.

BARGE AMBULANCES.

From statements made to me by a prominent member of the Union des Femmes de France, in a recent conversation, it would appear that the society is quite satisfied up to the present with the result of its experimental work in the matter of floating ambulances. Very few voyages have at present been made, despite the many months that have elapsed since the first of the barges was completed, but they have sufficed to show that the idea is of real utility, serious cases being easily transportable by these means, and no material difficulty in treating them arising. The voyages hitherto made have been from Bar-le-Duc, close to the Vosges battle front, and to Dijon, midway between Paris and Lyons. Certain administrative difficulties in regard to discharging the vessels rapidly on arrival at their destination would appear to have been encountered, and it is the delay thus caused rather than the time occupied on the journey which has led to comparatively few patients having so far been carried by these boats.

I understand that they travel about ten kilometres an hour, and stop at night-time for a certain number of hours, if possible in the neighbourhood of a town or village. Each of the four units of the hospital—that is to say, each of the four barges of which it consists—is fitted up to accommodate 30 patients, together with a doctor, 3 nurses, and one or two men who understand barge work. They are towed along in a line by an electrically-driven tug. Each barge has part of its length partitioned off to provide space for the performance of any operation that may be necessary, and the barge that I saw at Paris in October had a very clever but simple arrangement for lowering the patient into its interior. It was, I understand, an ordinary coal-barge which had been roofed in, or rather decked over, and had its interior converted into two wards. The two ends were used as quarters for the personnel. The cost of the whole undertaking has up to date been exceedingly small.

PRISONERS.

I met recently a medical man who had been a prisoner in the hands of the Germans for over four months, and learned that the discipline to which he and his companions were subjected was very severe. Endeavours to remonstrate as to the conditions imposed upon them were dangerous, and failure to rise and salute any German officer who approached them spelt four days' solitary confinement and bread and water. The ordinary diet consisted of a slice of dry bread and some coffee in the morning; water and a piece of bread with some indifferent cheese in the evening, and at midday some thin soup, four ounces of pork, generally rather fat, and two potatoes or some sauerkraut. What struck my informant as particularly curious in a prison run by a scientific nation was that neither sugar nor salt formed part of the dietary. They were each allowed, however, to buy a quart of beer a day if they chose, and occasionally some chocolate. They were allowed to take exercise in the open air for two hours each day, but this period was nominal, since it included a parade lasting about half an hour. There were six such parades, or roll-calls, daily. The exercise ground was the centre of the fort serving as a prison. In the afternoon they could walk about some corridors for a certain period, and attend lectures in German, but were usually confined for about eighteen hours daily to their cell, where they were for the most part dependent on lamplight, for its window opened into a corridor; it was about the size of a four-bed ward, but had nine occupants. Each had a separate bed (straw mattress and bolster and one blanket), so the floor space was very crowded. They washed at a tap in one corner of the room, which was consequently always damp. They had their meals in their cell, the table being just big enough to hold plates for four and the vessel containing the food. The other five camped for their meals on their beds. After many weeks they were allowed to buy each one pillow, one sheet, and a second blanket; also a spirit lamp on which to warm their food, and occasionally some milk.

QUEEN MARY'S HOME FOR BRITISH OFFICERS (CONVALESCENTS), CIMIEZ.

It is a far cry from Flanders to the Alpes Maritimes, but one which sounds almost daily, for in the very centre of the Côte d'Azar there is a home for British officers convalescent from wounds or sickness, and recommendations for admission arise with frequency. The two buildings, the one old and the other new, stand within 100 ft. of each other in the private park at Cimiez, near Nice, which surrounds the house chosen as a spring residence for Queen Victoria in several successive years just before the close of her life. This fact in itself suggests and vouches for the attractiveness from many points of view of the general position of the home. In ordinary times it is a large hotel, but was offered to the Paris branch of the British Red Cross Society at the beginning of last winter, with a view to its conversion to its present use. Since the beginning of January it has been officially known as "Queen Mary's Convalescent Home for British Officers."

A good many such offers were received from various parts of the Riviera, but no decision to accept any of them was reached until an examination of each proferred home and its general environment had been made by a medical representative of the Society. A decision in favour of the Cimiez plan, if any, having been reached, the question was laid before Sir Arthur Sloggett in his joint capacity of Chief Commissioner of the Order of St. John of Jerusalem and of the British Red Cross Society and of Director-General of the British Medical Services in France. He at once decided to take up the scheme as an offshoot of the work of the two bodies mentioned and as a definite part of the army medical arrangements for British troops on the Continent. Despite its official status, however, the home presents a considerable degree of individuality, having—besides a committee of management, consisting of the D.G.M.S., the Commissioner of the Order of St. John of Jerusalem and British Red Cross Society (Sir Cortauld

Thomson), the A.D.M.S. southern lines of communication, and a representative of the conjoint societies—a president in the person of Sir John French, an official visitor (The Lady Michelham), and two honorary presidents, one being the British Ambassador and the other Monsieur André de Joly, Prefect of the Alpes Maritimes, who assisted the foundation of the home by obtaining for it various facilities likely to add to the comfort of its occupants.

The home itself resembles, in respect of appointments and comfort, a large first-class hotel; an excellent table is, for instance, maintained, and every officer has a separate bedroom, usually with a dressing and bath room attached. The administration closely resembles that of a military hospital; at the head of all things is a colonel of the Army Medical Service, who has a staff of four officers, the principal of whom, on the professional side, is a physician familiar by long experience with the climate of the South of France as also with the class of case represented by a large proportion of all the occupants of the home. There is also available an honorary staff of consultants in all the chief special departments of medicine, and a nursing staff consisting of a matron, three sisters, and a number of orderlies.

As for the atmosphere of the place, it is comparable to that of the officers' quarters of a large barrack in the after-morning-duty hours. A physical and mental military *tenue* is maintained, and though comparatively little "shop" is talked, every one remembers that he is merely off duty for a few days, so to speak, and that his chief aim meantime must be to recruit his strength for a further term of work at the front. At one time there would seem to have been an idea of allowing the adjoining building, formerly occupied by Queen Victoria, to be used by the wives and other women relatives of the officers in residence at the home, but this plan, which would have completely changed the atmosphere of the home and been gravely detrimental to its value as a military medical unit, was fortunately abandoned. This does not mean, however, that family claims have been set aside; on the contrary arrangements have been made by which various hotels in Nice itself receive the relatives of officers at very low terms, and the latter are at liberty to see as much of their friends as they please in the day time and to invite them to tea, etc., at the home. In the way of general occupations there are always a few officers who are more or less cripples for the time being, and others who have to spend a good deal of the day at rest, but the great majority of those admitted are able, after a day or two, to get about freely, going for strolls on the hills or down to Nice, or for expeditions in the motor touring cars with which the home is provided. It is, in fact, for those whose convalescence is likely to be rapidly completed in favourable circumstances that the home is mainly designed, and its value to the army lies in the circumstance that it helps dozens of officers, both senior and junior, quickly to regain complete health who might remain only semi-efficient for months but for an opportunity of spending a couple of weeks or so in a bright sunshiny atmosphere in a cheerful environment.

The home, indeed, may be regarded in a measure as a sort of officers' rest camp, the majority of the occupants coming from the hospitals at Boulogne and Rouen, and being signed up eventually for duty once more at the front. Some, it is true, who go before the medical boards are assigned permanently to light duty or are invalided out of the service; but these are fortunately very few. The bronchial troubles acquired through long weeks of exposure, the sequelae of influenza, which has been very common in some areas, and the late effects of frost-bite and general overstrain, etc., seem usually to vanish with rapidity at Queen Mary's Convalescent Home. Whether they would do so if the moral atmosphere of the place were different may be doubted. It it were less cheerful and soldierly, men in a condition of health such as that of most of the patients on their arrival might well remain semi-invalids for months, despite the climatic virtues of the Riviera. As things are, most of the officers admitted to the home, besides soon beginning to spend almost the whole day out of doors, rapidly reacquire a healthy interest in bridge at infinitesimal stakes, and spend the evening thus occupied when not beguiled towards the billiard-room or to the music-room by the sound of a rousing chorus or of a pattering breakstep. Thus it comes about that the population of the home is of a rapidly changing character. In ten days, a fortnight, in extreme cases a month, each convalescent in his turn metaphorically girds on his sword once more and is off again on active service. This it is that makes the home an asset of real value to the army, and this, too, it is that attaches an element of sadness to the whole undertaking. It is not to ordinary life that are returning those whom the home has successfully endeavoured to restore to full energy and health, but to one whose risks the daily casualty lists reveal only too clearly.

The bulk of the funds necessary are provided by the lady mentioned as holding the post of a lady visitor. Consequently the expenditure imposed on any officer who recruits his strength at the home is quite small. This is a very great advantage to the army at large, for, as every one knows, a very large proportion of all those who now hold commissions are men practically dependent on their pay.

It is expected that the home will remain open until about May 1st, and it may be hoped that after that date an equivalent institution may be available in France, for such places are undoubtedly of very great utility provided that the officer in command is possessed of the qualities necessary for their successful administration. In the present case, for instance, not only Cimiez but also Nice regards itself as the host of all English officers, and the commandant who is in disciplinary as well as medical charge of these must conceal an iron hand under a very thick velvet glove in the performance of his duties. It is not, it should be mentioned, only English officers who represent the allied armies on the French Riviera; most of the larger hotels at Nice, Cannes, and in other towns on the coast have been converted into hospital establishments, and, taken together, they must contain many thousand French patients. The majority of the latter would appear, however, to be either convalescent or cases which have reached a more or less chronic stage.

THE CANADIAN RED CROSS.

There are already four or five Canadian hospitals at work in France, and I hear that three more are expected to arrive within the next few weeks. They will sail, in short, so soon as the places at which they are to be located under canvas have definitely been decided. At present it is expected that two will be placed a little south of Boulogne and one a little north. They will be large establishments, each accommodating, I understand, 1,000 patients. One is being sent by the University of Laval, Quebec, another by McGill University, Montreal, and the third by the University of Toronto. They are coming out under the general auspices of the Canadian Red Cross, but each has its own equipment and maintenance fund, and will be otherwise directly representative of the university whose name it bears. The orderlies, for instance, will be drawn from its undergraduates, and its medical and surgical staff from medical graduates and members of the teaching staff of the university. There are already some 300 Canadian medical men on this side of the Atlantic, and one at least of their field ambulances has been at work for several months. The Canadian medical units do their work under the command of the A.D.M.S. of the area in which they happen to be serving, but also, according to a Canadian medical officer of my acquaintance here, a D.M.S. and A.D.M.S. of their own—that is to say, there is a D.M.S. of the Canadian contingent, and to him all Canadian medical units, whether Red Cross or military, are finally responsible. He in his turn is responsible to the D.G.M.S. of the British Forces in France, Sir Arthur Sloggett, and was recently gazetted to the rank of Surgeon-General in the British army. The occupant of this post is Surgeon-General Carlton Jones, who attended the International Medical Congress in London in 1913 as one of the representatives of Canada, and is thus well known to many of his colleagues in England. So, too, must be Colonel C. A. Hodgett, the chief of the Public Health Department of Toronto, who contributed a good deal to the success of the annual meeting of the British Medical Association in that city in 1906, and is now in Europe in charge of the affairs of the Canadian Red Cross Society (address 14, Cockspur Street). I hear that he has already established a hospital in Derbyshire, and that other projects include a convalescent home for officers in France. The necessary funds, I understand, have been guaranteed by

three Canadian ladies, but a site has yet to be chosen. The Society has also agreed, I hear, to take under its wing a hospital which started work in Paris at the beginning of the winter, catering solely, I understand, for French needs. It was established by a French-Canadian newspaper, and draws its support mainly from the readers thereof.

THE RUM RATION.

From statements made to me by French soldiers, both officers and rank and file, it would appear that the French authorities share the British view as to the value of adding a spirit ration to the dietary of men at the front. Its issue is permitted whenever the officer in charge of the unit concerned considers it desirable, the spirit usually given being what the French call Jamaica, which is ordinary West Indian rum. There appears to be some difference in practice in regard to the hour at which it is served out, but the usual plan would appear to be to use it as a lace for the early morning coffee. The quantity is about 50 grams, a little under 2 oz. On the other hand, the use of spirits in barracks or the billets of reserve troops is strictly forbidden, and efforts to lessen the consumption of alcohol by young men of military age are encouraged. A poster headed "Alcoholism *versus* the Army" is, for instance, often to be seen in barracks and military camps. Many of the statements are accentuated by the use of heavy type, the general text running much as follows:

Nearly all the conscripts dismissed from the service or whose enrolment is delayed are either alcoholics themselves or are the sons of such persons, for the children procreated by heavy drinkers tend greatly to be persons of feeble mental and bodily development.

Alcoholism predisposes its victims to tuberculosis and is one of the indirect causes of venereal disease. It also diminishes vital resistance; it increases the gravity of wounds and retards their cure. It is not alone the physical health of a soldier that alcohol attacks. It attacks also his moral health, destroying his sense of discipline, dulling his intelligence, and awakening his bad instincts. As many, for instance, as 141 out of 297 soldiers found guilty of various offences at courts-martial at Lyons and Rennes were alcoholics, while in Morocco in 1913 all the prisoners condemned at courts-martial in the first week of May were found to have committed their offences under the influence of absinthe. Many a man becomes an alcoholic without ever having got actually drunk—merely by daily indulging himself with an apéritif or petit verre, or even by taking an unstinted amount of wine. In barracks alcohol is forbidden, and it is outside that the danger lies. It is, in short, the cabaret that is the true enemy of the soldier. It is there that he empties his purse and loses his health. Alcoholism is ruining France, lessening its population, and disarming it before other nations. Let all soldiers give up taking apéritifs, petits verres, liqueurs. More especially let every soldier set his face against the drinking of absinthe, the most dangerous of all poisons. Let them band themselves together against a plague which annually kills thousands of Frenchmen. Every man who desires to prove himself a good soldier should keep himself sober and abstain from alcohol.

This manifesto made its first appearance a year or two ago, but was republished quite recently, despite the fact that it has lost some of its point owing to the sale of absinthe having been declared illegal. It holds good, however, against the other forms of alcohol specifically denounced—namely, the innumerable sugary tinctures of gentian, cinchona, and the like, which are known as apéritifs, the tiny glasses of cheap cognac known as a petit verre, and ordinary liqueurs. Use of the two latter is limited more or less to the working and wealthy classes respectively, but an immense proportion of all Frenchmen habitually take one or more apéritifs during the hour spent at the café before dinner, if not also before luncheon. The manifesto emanates from the French Antialcohol League, a body which, if it is to be regarded as the analogue of teetotal campaigns in Great Britain, is much more temperate in its views. What its official programme may be I do not know, but inquiry among members of it suggests that they see no objection to the ordinary dietetic use of wine and beer, and set their faces solely against spirit drinking. A wine allowance, it is to be noted, is included in the French soldier's daily ration, whether in barracks, in hospital, or on the field; the usual amount, I believe, is one bottle for every four men.

LOCALIZATION OF FOREIGN BODIES.

A discussion on the practical value of *x*-ray localization was held recently at the Boulogne Hospital Base, those attending it being the guests of the medical officers of the Meerut Hospital, by whom the discussion had been organized. The proceedings were opened by the commanding officer of the hospital (Lieutenant-Colonel Wall), who, after welcoming the various representatives of the Boulogne hospitals, suggested that as many of those present were not conversant with the technical side of *x*-ray work, the opener of the discussion should give some description of the general principles underlying any methods likely to be mentioned in considering the value of *x*-ray localization in military surgery.

The discussion was then opened by the radiographer of the Meerut Hospital (Captain D. B. McGrigor, R.A.M.C.), who, after allusion to the many methods recently described or mentioned in the BRITISH MEDICAL JOURNAL, said that, excellent as were most of them in theory, only a few were really suited to the circumstances of work at hospitals near the front. Practically speaking, there were five methods which might be used, but they were by no means all equally useful. Two of them depended on photography, and three were screen methods. In the first group he included (1) Mackenzie Davidson's original thread method, which was much the most accurate of all methods but absorbed a good deal of time; (2) the stereoscopic method, which was admirable in many respects but not generally really useful, since to obtain much assistance from it the surgeon concerned must have acquired stereoscopic vision—a somewhat rare possession. As for screening methods, their attraction was rather superficial; apparently they were very rapid, but this was rarely so in reality, since the results obtained tended to be inaccurate. The true value of screening lay in the speed with which the presence or absence of a foreign body could be determined; but to go further and determine its exact position was a very different matter. Of available screening methods, the two diameter methods was likely first to suggest itself to most radiographers, and good results might be obtained provided the patient were placed on the operating table in exactly the position in which the screen had been applied, and that there was no subsequent movement. The method of Shenton was also of value, for it was easy to use, but it necessitated the assistance of mechanical attachments, which were not always available. In field equipments the amount of apparatus must necessarily be kept down as low as possible. This was one reason why the Mackenzie Davidson method was so useful; that all the appliances required could be reduced to a very small compass was evident from the sample shown.

Finally, there was the method of estimating the position of the foreign body by mathematical formulae based on the theory of similar triangles. When all was said and done these formulae all came to the same thing. $A \times S$ divided by $T + S$ gave the distance from the screen to the foreign body, A being the distance from the anticathode to the screen, T the movement of the tube, S the movement of the shadow. Unfortunately, the real utility of no one of these methods was precisely equivalent to its theoretical value, for a knowledge of the depth of a foreign substance from the surface of the body did not necessarily disclose its anatomical position; the thickness of the tissues varied greatly in different subjects; and even if a mark placed on the skin as a kind of buoy remained untouched, the surgeon could not always approach the foreign body in a direct straight line as he should if he were to make certain of not missing it. Various attempts had been made to overcome these and other drawbacks by mechanical contrivances such as a combined operating *x*-ray table, the graduated director of Ironside Bruce, and the telephonic probe, but all these were better suited to the environment of home hospitals than to that of those in the field. Furthermore, though failures certainly occurred, cases in which the methods preferred afforded valuable information to the surgeon and acted as a complete guide to him were very much more common. Among the failures, some were due to the surgeon displacing the foreign body during his manœuvres, and of this fact the speaker quoted some examples; it was also not unknown for a radiographer to get his plates mixed. The speaker then mentioned some cases which well illustrated the modern tendency to depend too much on physical means of diagnosis; bullets for which careful radiographic search had been made had finally been detected immediately under the skin either at the neighbourhood of the wound or on the opposite side of the body, but in either case in a position in which they could

readily have been detected in the first instance had a careful palpation been practised.

Captain McGrigor then gave a demonstration (1) of a series of slides illustrating the various points to which allusion had been made in the paper; (2) of some simple apparatus for utilizing the Mackenzie Davidson and stereoscopic methods; and (3) of means by which all mathematical formulae might be avoided when shadow triangulation was used. It consisted in using ordinary French 0.25 cent. square ruled paper, and drawing the triangles thereon.

In the discussion which followed, the views expressed varied considerably. Captain Kennedy (Lahore General Hospital) said that the method that he preferred his radiographer to use was that of taking two pictures at right angles, but he did not seem to regard any existing method of *x*-ray localization as of really great value to surgeons, and strongly deprecated revealing to a patient anything that an *x*-ray picture might disclose.

Captain R. Higham Cooper (Rawal Pindi Hospital) was strongly opposed to screen methods; they all involved an element of danger to the radiographer himself, and were apt to be misleading when fractures were in question. In a case of suspected fracture from the impact of a bullet a diagnosis in the negative should never be made on the strength of a screen examination. The Mackenzie Davidson method was the only absolutely accurate process at present available, and the same plates could be used for producing stereoscopes. The objections that had been raised to *x*-ray localization on the ground of the disappearance of skin marks were perfectly sound so far as they went, but it was to be remembered that skin marking need not be employed at all. The measurements and markings could, and should, be made on a plate of sterilizable copper, and this used as a guide during the performance of the subsequent operation.

The two-plane method did not deserve its popularity, since surgeons so often forgot that any alteration in the position of the limb would materially alter the apparent position of the foreign body. Apart from the principal objection to the stereoscopic method—namely, that stereoscopic vision was difficult of acquirement—it was to be remembered that the density of lead always introduced a facultative source of error, the bullet appearing nearer the surface than it really was.

Captain Herschel Harris (Australian Hospital) agreed that the Mackenzie Davidson method was very exact, but had as yet seen no apparatus for applying it which he regarded as really suitable to field work. In the majority of cases the method that he had described in the BRITISH MEDICAL JOURNAL[1] provided all the information necessary for approximate localization.

Lieutenant Stone (Duchess of Westminster's Hospital) agreed that, in the case of bullets, precise localization was unnecessary. He had often seen operations performed under the screen, and had been struck by the extent to which the bullet moved about during the procedure.

Captain Oldham (No. 14 General Hospital) thought there was room for screen work. Its rapidity was an advantage, and, provided that there was no question of any bone lesion, its use was legitimate. For triangulation work he used a formula which was exceedingly simple, owing to all factors, except the distance of the two shadows, being constants.

Captain Curtis-Webb (No. 7 Stationary Hospital) thought there was some tendency to over-estimate the time-absorbing quality of the Mackenzie Davidson method. The time required might be described as ranging inversely with the familiarity of the operator with this method. He was not enamoured of two-diameter work, but many surgeons seemed to like it. The difficulties in regard to skin marking might be avoided by using silver nitrate to make the mark and dipping into it a little photographic developer. The resulting indelible black mark would become an indelible white when the surgeon applied iodine to the general surface previous to operating. The method of detecting foreign bodies in the eyeball described by Captain Harris seemed to him to have the disadvantage that it could only be effective when the foreign body was free in the hyaline fluid or aqueous humour. As a rule foreign bodies in the eye were entangled either in its muscles or its coats.

[1] BRITISH MEDICAL JOURNAL, January 16th, 1915, p. 113.

Captain Helby (No. 13 General Hospital) preferred to be supplied with stereoscopic plates, for he was fortunate enough to have acquired stereoscopic vision, and was thus an example of the individual described by the opener of the discussion as the "stereoscopic surgeon." He distrusted the two-plane method. Bullets never moved, except backwards or forwards along their track.

Lieutenant McKelsey (No. 13 Stationary Hospital) was at one with those who considered very precise localization superfluous. For eye work the Mackenzie Davidson was the only legitimate method, but in dealing with foreign bodies elsewhere in the body he preferred either the stereoscopic or the two-plane method.

Dr. Lake Hope (No. 4 B.R.C.S. Hospital) considered that it was inaccurate to speak of any "best method," though doubtless there was an optimum method for every individual wound. For screen work he used an attachment which calculated the depth of the foreign body mechanically by two sliding rules.

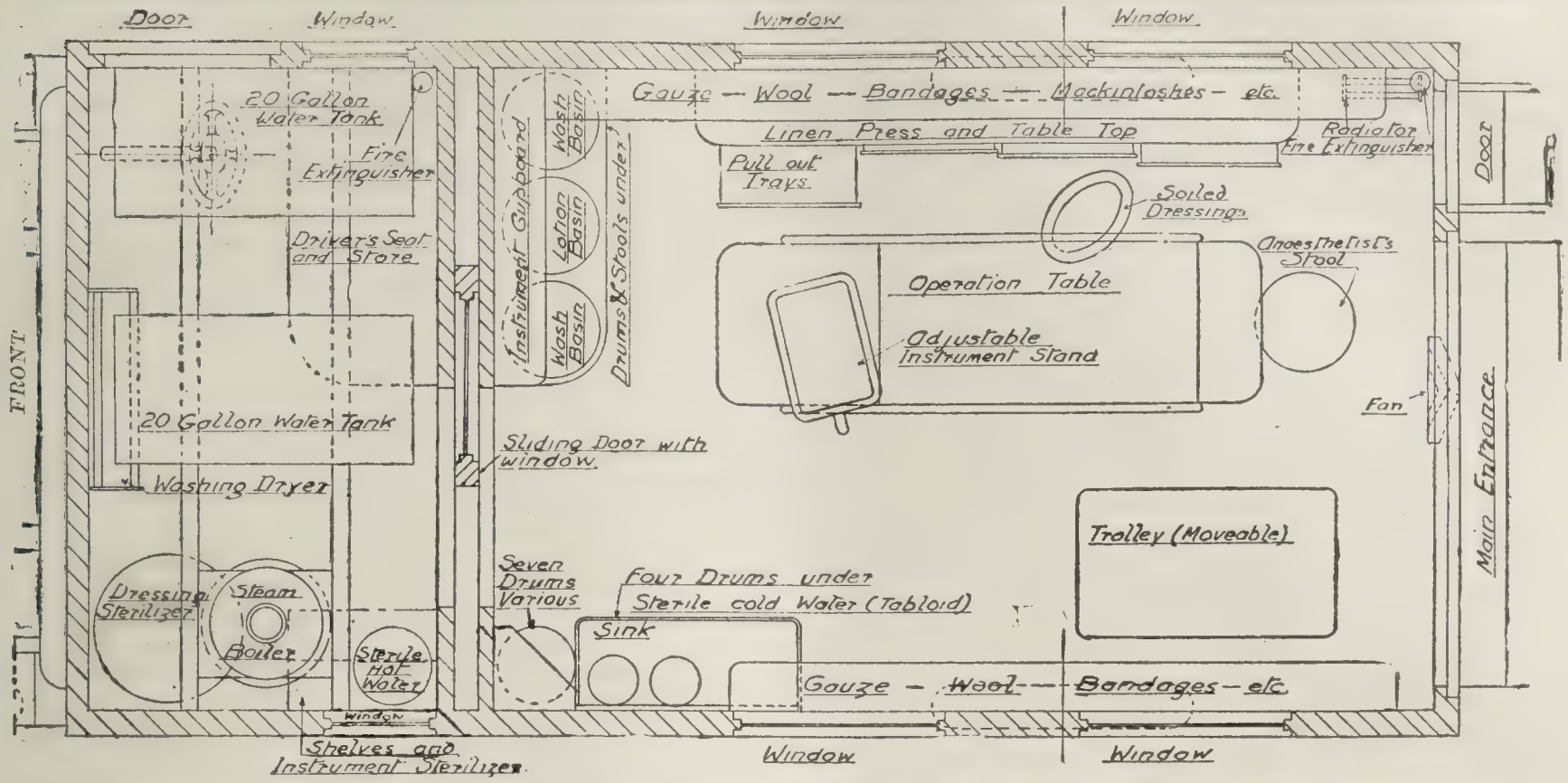
Lieutenant Colonel Sargent (Consulting Surgeon to the Forces) held that it was only in the case of a bullet lodged in the brain that a surgeon was liable to falsify a radiographer's estimate of its position by pushing it with his finger. Apparent movement in positions such as the arm or leg was common enough, but what really moved was the muscle in which the bullet was embedded, not the bullet itself. When making stereoscope plates radiographers should invariably mark the position of the wound on the plate. The ideal would be for radiographers to devise a method by which they could state the distance of a foreign body from an osseous point instead of from the skin surface. Surgeons should always see the plates taken of a case and hold a consultation with the radiographer as to their interpretation.

A MOTOR OPERATING THEATRE.

MR. G. H. COLT, F.R.C.S., Assistant Surgeon, Aberdeen Royal Infirmary, has made another design for a mobile operating theatre, in which only one table is provided; in the design published in the JOURNAL of January 16th two tables were provided. The general appearance of the new model may be gathered from the photograph then reproduced (p. 131). The coach consists of two parts, a body 9 ft. 6 in. long and 6 ft. 6 in. wide, with a cab in front 3 ft. 6 in. long and 6 ft. 6 in. wide. The height of both over all is 7 ft.; the chassis is of the commercial vehicle type, weighing 2½ tons, 20-30 h.p., with a wheelbase of 11 ft. 6 in. The weight carried, including five persons, is about 2⅛ tons, and is suitably arranged as regards steering facilities. The personnel will consist of a surgeon, an assistant surgeon, an anaesthetist, a nurse, and a chauffeur.

The arrangement of the interior of the operating theatre and cab are shown in the accompanying drawing.

All boiling and sterilizing and drying are done in the cab (or partly outside the theatre) by paraffin burners. The cab is separated by a sliding door from the body of the theatre, thus eliminating phosgene gas—an important point as regards the efficiency of the personnel. Cold sterile water is obtained in the body of the theatre either by tabloid hypochlorite in fifteen minutes, or by filling the four vessels from the boiler. There is storage room of 34 cubic feet for, say, 60 towels, 15 gowns, wool, gauze, bandages, and instruments. In addition 16 full-sized drums, shelves, two drum-stools containing plaster of Paris, and a trolley are provided. The space available under the operation table, if required, is 7 cubic ft. Two 20-gallon water tanks are carried. The electric light can be run for six hours off accumulators. A minimum time of fifteen minutes is available for recharging off the engine between operations if required. Ventilation is by windows and electric fan causing an indraught of filtered air. Special safeguards against dust are provided. The windows have closely fitting flanges. The tailboard, which lets down to admit patients, is arranged so that its outer surface, when shut, is outside, and dirt is not tipped into the theatre when closing it up. The back of the car is covered by a sheet of American cloth during travelling. After arrival, any dust which may have got in is removed by swabbing the interior with dilute antiseptic solution of glycerine. For stretcher way a clear space of at least 2 ft. 9 in. is available, and more can be obtained if required.



Plan of proposed Motor Operation Theatre. The bonnet, as well as the tailboard and steps in the rear, have not been reproduced in the above plan. (Scale, 1 inch to about 2.3 feet)

The car is designed to be lighted by electricity; for heating and sterilizing it is proposed to use pressure paraffin burners. As washing, drying, and sterilizing are provided for in its outfit the theatre can be kept in continuous use provided supplies arrive regularly.

It is designed to serve casualty clearing stations and to deal with cases of grave abdominal injury, head cases, and severe wounds, including those involving immediate amputation. It is not intended to be used for cases that can be removed further without serious risk of producing complications, shock, or severe pain. The theatre will take the surgeon and anaesthetist to the place where they are wanted, and provide them with all they require.

The operating table and other fittings can be folded so as to provide space for reclining chairs or for slinging hammocks in which some members of the personnel could sleep, if necessary. The estimated cost of the chassis is £600, of the body £200, of the electrical installation £70, and of the surgical equipment £200 or £230. Mr. Colt has recently demonstrated a model of this type of mobile operating threatre in London. It has been on view since Easter Monday at the offices of *Cooper's Vehicle Journal*, 104, Long Acre, W.C. It has been examined by various experts, and it is possible that they may be able to suggest certain further improvements, but as it stands it is a model of ingenuity and compactness.

AUSTRIAN EXPERIENCES.

IT is a little difficult to glean accurate information about the war from the Austrian medical press, for the censor has been indefatigable in deleting, not only records of facts, but also expressions of opinion. News which has escaped the censor's ban is, as a rule, interesting rather than instructive; and when *Der Militärarzt* for January 9th is permitted to refer to "the brilliant part played by the Austrian-Hungarian armies," the reader is interested, but he does not feel he is the recipient of important information. The somewhat elliptical style of this journal and of its parent journal, the *Wiener medizinische Wochenschrift*, may be baffling to the censor, but it is also embarrassing to the general reader.

The Medical Service of the Austrian Army.

Although the medical organization of the Austrian army is spoken of by its apologists in general laudatory terms, the detailed discussion of its various branches shows that there have been many and great disappointments. The Austrian surgeons complain of the want of a distinction, such as the German iron cross, which is given for merit, irrespective of the recipient's rank. The *Wiener medizinische Wochenschrift* for January 2nd points out that this honour has been conferred on more than a thousand German medical men, and that the German nation is boundlessly grateful to its medical men for what they have done. In Austria, however, there seems to be a general impression among the public that the nation's most distinguished surgeons have not borne their share of the burdens of the war. The *Wiener medizinische Wochenschrift* refutes this accusation indignantly, and points out that as distinguished Austrian surgeons gave their services to the various belligerents in the recent Balkan wars, it is absurd to accuse them of staying at home when their own country is at war. It is even argued that the Austrian and Hungarian medical men have done almost more than their German colleagues, for, owing to the lack of regular army surgeons in Austria, the medical profession as a whole has been called on for service in the army more extensively than in Germany. It is admitted, however, that there has been a lamentable dearth of skilled surgeons, and it is urged that after the war the medical service of the Austrian army should be radically reorganized. It appears that even in time of peace the medical service of the army has been understaffed, and at the present time the public is loudly complaining of the neglected state of the wounded. Even if every surgeon in the monarchy were to join the army, it would be impossible to guarantee immediate and adequate surgical treatment for all the wounded.

The Needs of the Civil Population.

Among the general public the need for medical attendance is even greater than in the army. Large districts are totally bereft of medical aid, and in other districts the few remaining medical men are seriously overworked. Were serious epidemics to break out in the civil population the available medical aid would be totally inadequate. Hitherto serious epidemics appear to have been confined to the army and the districts in which fighting has taken place. From the districts occupied by the Russians there has been an exodus of Austro-Hungarian medical men who, in many cases, are practically destitute.

Travelling Laboratories.

While other medical institutions come in for scathing criticism the Red Cross receives unbounded praise. Under its auspices hundreds of hospitals have been organized, hundreds of surgeons have been provided, and an enormous supply of instruments and dressings collected. The popularity of the Red Cross, even in the remotest villages, is exceedingly great, and the public gladly contributes to its funds. The travelling laboratories have also proved a great success. There are thirteen large travelling laboratories, each with a staff of two or three experts in bacteriology and hygiene, and ten nurses supplied by the Red Cross. There are also several travelling laboratories of a smaller type. These laboratories and the Red Cross ambulance have done much to prevent or limit the outbreak of epidemics, and to ease the lot of the wounded

soldier, but it is admitted that the wounded are often sent home in a disgraceful condition owing to lack of suitable attendance on the way. It is also stated that the quarantine system is improperly administered, and that cases of typhoid fever, dysentery, and cholera are sent home together with the wounded.

Cholera.

In the *Wiener medizinische Wochenschrift* for January 30th an account is given by Dr. Emil Epstein of his experiences of cholera, several hundred cases of which he has investigated. In about 300 the bacteriological examination was positive, in 550 it was negative. With few exceptions all these cases came from the scenes of fighting in Galicia and Northern Hungary. Among the cases with a positive bacteriological report were 60 "carriers" without any clinical sign of the disease. In about two-thirds of all the cases the symptoms were slight, but in the remaining third they were severe, and death occurred in 50 cases. Although the calculated case mortality was only 20 per cent., this is probably misleading, as Dr. Epstein's observations were made at a base hospital a considerable distance from the scene of the outbreak. It is probable that many of the most severe cases terminated fatally in a few days, whereas the slighter cases were drafted to the hospitals in the interior. When a sufficient observation period was possible, the clinical diagnosis usually tallied with the bacteriological examination, and this was positive in 48 of the 50 cases in which a necropsy was made. In one case neither the bacteriological examination nor the necropsy supported the clinical diagnosis of cholera, and in another case, though the bacteriological examination was negative, the necropsy confirmed the diagnosis of cholera.

With regard to the comparative value of the clinical and bacteriological diagnosis of cholera, Dr. Epstein observed in wards containing 80 patients that in 12 cases improvement in the general condition coincided with the disappearance of the vibrio from the faeces. In about two-thirds of the total the bacteriological examination was still positive for two to fourteen days after the patients had recovered clinically. In about 20 cases the vibrio disappeared from the faeces two to nine days before the clinical symptoms, including diarrhoea, ceased. In a few cases, in which there was no clinical evidence of active disease, the bacteriological examination of the faeces was alternately positive and negative for a considerable time. These observations naturally rendered the task of sifting infectious from non-infectious convalescents exceedingly tedious; and it is highly probable that some of the clinically cured subjects of cholera returned to the front as "carriers."

In a discussion on Dr. Epstein's remarks, several physicians with recent experience of cholera in Austria have expressed their views on the treatment of this disease. Much, evidently, depends on careful nursing, and this alone may often avert the *statum algidum*. The intravenous injection of saline solution and cardiac tonics, particularly strophanthin, are warmly recommended; the latter may be effective, it is said, even in those apparently moribund. Subcutaneous infusion of hypertonic saline solution, combined with adrenalin, was found particularly effective when supplemented by a salt-free diet. Hot mustard baths, acting by virtue of their stimulating effect on the vascular system, were also found beneficial. Most important of all is the application of these various methods at the most critical time; and for this reason the patient's pulse should be almost continuously watched.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Wounded.

Lieutenant (temporary) E. Stratford, R.A.M.C.
Lieutenant (temporary) A. N. Smith, R.A.M.C.

LOST IN SS. *Falaba*.

The Elder Dempster liner *Falaba* was torpedoed by a German submarine in the Irish Sea on the morning of Sunday, March 28th, the day after leaving Liverpool for West Africa, with great loss of life, no time being allowed to take to the boats. The number reported as missing—passengers and crew—amounted to 112; while about 140 were saved, and 7 died after being rescued, including Captain F. J. Davis, the Commander. Among the missing were two medical men, Drs. F. J. A. Baldwin and A. W. H. Grant.

Dr. Francis John Augustus Baldwin was educated at London Hospital, took the diplomas of L.S.A. in 1891, of L.R.C.P.Lond. and M.R.C.S. in 1896, and the diploma of the London School of Tropical Medicine in 1903. He was a member of the West African Medical Staff, stationed in the province of South Nigeria. He was the second son of the late William Bennett Baldwin, of Ardmanagh House, Schull, county Cork.

Dr. Alexander William Harvey Grant was also a member of the West African Medical Staff, and was formerly stationed at Ogoja, in the east province of South Nigeria. He was educated at Charing Cross, and took the diploma of L.S.A. in 1901. He served as a civil surgeon in the South African war, and held the medal with three clasps; he had been assistant medical officer of the Brecon and Radnor Asylum at Talgarth, and of the Three Counties Asylum at Hitchin.

NOTES.

SERBIA.

THE Scottish Women's Suffrage Society, which has for the present set aside political activities, has in Great Britain taken the lead in giving hospital assistance to Serbia. The prevalence of typhus, typhoid and relapsing fevers, and small-pox is stated to be traceable to the hospitals and camps left by the Austrians when they retreated. In one village alone they left 3,000 sick and wounded with only 12 Serbian nurses to look after them. The hospital sent out by the Scottish women in the middle of January has trebled its nursing staff and equipment, and is now able to receive 300 cases. As already noted, Sir Alexander Ogston of Aberdeen started for Belgrade last week, accompanied by his daughter, Mrs. Carter, and a hospital unit numbering 18. The society hopes to send out another unit to Serbia, and is appealing altogether for £50,000 in cash, and gifts of night-shirts, pyjamas, socks, and bandages, for there is also a Scottish women's unit working in the region of Soissons; it at present has accommodation for 150 patients, and has been highly praised by the French military authorities.

The American Red Cross Society and the Rockefeller Foundation has sent a commission to Serbia to help in checking the prevalence of typhus fever and cholera; £10,000 has been collected to defray the expenses of the commission. Dr. Richard P. Strong, professor of tropical diseases at Harvard Medical School, is the administrative head; Dr. Thomas W. Jackson, of Philadelphia, the chief sanitary inspector, and Dr. Hans Zinsser, professor of bacteriology in Columbia University, the bacteriologist of the commission. Dr. Nicolle, a well-known French authority on typhus fever, has been invited to co-operate.

Professor Dr. Reiss of Lausanne University, who was invited by the Serbian Government to investigate allegations of atrocities committed by Austro-Hungarian troops in Serbia, gave an account of his experiences at the Royal Society of Medicine on March 31st. Dr. Frederick Taylor presided, and the Serbian Minister in London, M. Boschkovitch, was present. Dr. Reiss declared that he had found ample evidence of brutalities committed by Austro-Hungarian troops, and many of them were of such a character that it was impossible to doubt that they had official sanction. Lantern slides made from actual photographs were exhibited showing explosive and expanding bullets found on the field of battle, and photographs of wounds which Dr. Reiss said could only have been caused by such missiles. Many photographs were exhibited of mutilated bodies of civilians, and examples shown of the bombardment of buildings of no strategic importance, including the University and National Museum at Belgrade.

A fund is being raised at Tain to commemorate the memory of Dr. Elizabeth Ross of Tain, who died of typhus while attending the hospital at Kragujevatz, Serbia by establishing a bed in the hospital there. Messrs. Wallace and Fraser, Tain, will receive and acknowledge donations, large and small.

MEDICAL OFFICERS WANTED.

2/1st Highland Field Ambulance.

Four medical officers are required to complete the establishment of this unit at the war station. Applications to the Officer Commanding, Rye Close, Bedford.

British Medical Association.

THE WAR EMERGENCY.

THE URGENT NEED OF THE ARMY FOR MORE MEDICAL MEN.

At his conference with the Special Committee of the British Medical Association last week Sir Alfred Keogh, Medical Director-General at the War Office, put the need of the army for more medical men in the clearest possible light. The Committee was fully convinced that the need was large and urgent, and recognizing that a great patriotic duty devolved on the British Medical Association, it unanimously resolved to request the Divisions and Branches immediately to take certain steps with a view of enabling the army speedily to get the whole-time medical officers wanted for the field forces, and more part-time service at home for hospitals and for recruiting and training stations.

The function of the medical service of an army is two-fold. First, military—to preserve the health and improve the physical fitness of the troops during training in the field; secondly, humanitarian—to treat the wounded and sick. In discussing the ways and means by which the shortage could be met, Sir Alfred Keogh drew a sharp distinction between these two classes of work, and pointed out that in the present emergency they must be dealt with by two different methods.

The ground was cleared at the beginning of the Conference by Sir Alfred Keogh's emphatic statement that no redistribution of whole-time men already commissioned would meet the need of the field forces. There have been instances in which the number of medical officers with troops at home has apparently been in some cases unnecessarily large, and in others too small, but redistribution is going on rapidly as the units are completed for field service; when it is complete there will still be a large deficit of whole-time medical officers. Sir Alfred Keogh said that the response to his appeal, published three weeks ago, had been most encouraging, but the number was still quite insufficient.

The fundamental duty of the armies—Regular, Territorial, and New—is the defence of the empire. The defence of the soil of these islands is the task for which the Territorial Force was established. The strategy and course of the war have allowed parts of the Territorial Force, which have been in training during the autumn and winter, to discharge this duty by volunteering to serve abroad, but the organization of the force must be kept intact for any event; it must not be robbed to supply the needs of the new armies.

In the case of the very large number of recruits who, in response to Lord Kitchener's appeal, enlisted in the new armies, the work of the winter and spring has been to train them as infantry, mounted men, or artillery, or for one of the special corps, and to form them into units fit to take the field. Medical officers are an essential part of the organization of each battalion, brigade, and division. Sir Alfred Keogh insisted on the vital importance of the work of the battalion medical officers; they were the pivot on which the whole military machine turned, since upon them devolved the task of keeping the men of their units physically fit for the hard work of actual warfare. It was their duty to know each officer and man and to superintend physical training, to attend to the sanitation of camps, barracks, and billets, and to recognize infectious disease in its earliest stage. It was essential, therefore, that during training its medical officer should be with the battalion to teach and also himself to learn. In the field the work of the medical officer of a battalion is almost entirely prophylactic, using that term in the widest sense, for a man who is wounded or goes sick must be removed as quickly as possible, usually within a few hours, for his continued presence diminishes the fighting capacity of the unit.

The Committee is thoroughly convinced that the appeal of the army for more whole-time medical officers to serve anywhere, and for more part-time service at home is justified up to the hilt. It recognizes that the need is very real and very urgent, and appeals to the Divisions and Branches to act without delay. The Committee is convinced that every man under 40 who is physically fit and can be set free from his existing engagements should offer his whole-time services, and take a temporary commission in the R.A.M.C. for the duration of the war. Further, the Committee realizes fully that the number of men free to make this offer at once would not nearly suffice, and that arrangements must be made to liberate others. Among them are those who at present hold appointments under public authorities and as residents in civil hospitals.

The Board of Education has issued a circular, reproduced below, to local education authorities stating that it will do everything in its power to facilitate the volunteering of officers of the school medical service to help to staff the additional hospital accommodation needed to meet the requirements of the large forces now being placed in the field. It is hoped that the Local Government Board will take a similar line with regard to tuberculosis officers, assistant medical officers of health, and medical officers in institutions under its control. But only a small part of the deficit can be met from this source. It will be necessary to appeal to the voluntary civil hospitals to set free their residents and to ask members of the local profession to act for them. The Branches and Divisions of the Association can help this forward by pointing out its necessity to the managing committees of hospitals, and by organizing a system by which medical practitioners in the neighbourhood shall replace them; this assistance will, we have no doubt, be given most readily.

The work that is waiting for men who can now take temporary commissions is set out in some detail in our note of Sir Alfred Keogh's statement. It seems to us highly attractive to any man keen in his profession; men a little over 40 who can give their whole time have also promise of congenial work at home, and probably eventually, in some cases, in hospitals abroad. Here again local arrangements to do the work of absent practitioners must be made, and can best be organized by the Divisions and Branches. To them also falls the task of arranging, in consultation with the Deputy Director of Medical Services of the home Command to which the county belongs, or with an officer deputed by him, for the staffing of the new local military hospitals now being established for the medical inspection and treatment of men in camp or billets, and for the sanitation of all military stations.

The call thus made on the Association is of the most important and honourable nature. The difficulties are great but not insuperable, and it is certain

that the officers and members of the Divisions and Branches never had a finer opportunity of showing to the public and the profession itself the advantages of a great national medical organization.

THE CONFERENCE.

THE Conference between the Special Committee of Chairmen of Standing Committees of the British Medical Association and Sir Alfred Keogh, K.C.B., Director-General of Army Medical Services in this country, took place on Thursday, April 1st, at the offices of the Association. Sir Alfred Keogh was accompanied by Colonel Blenkinsop, Assistant Director-General in charge of questions of personnel.

The Chairman of Representative Meetings (Dr. T. JENNER VERRALL) was in the chair, and the other Chairmen present were: The Chairman of Council (Dr. J. A. Macdonald, Taunton), Public Health (Dr. Green, Portsmouth), Hospitals (Dr. H. J. Campbell, Bradford), Ethical (Dr. M. G. Biggs, London), Science (Dr. F. J. Smith, London), Naval and Military (Surgeon-General Benson, I.M.S.), Scottish (Dr. J. A. Hamilton, Hawick).

The CHAIRMAN said that the British Medical Association had, from the outbreak of the war, been anxious to do everything in its power to help the Army Medical Department to obtain the medical men necessary for the new armies. The matter had been referred to the Committee now in session, consisting of the Chairmen of the Standing Committees of the Association, with power to act. It had already taken steps to make the needs of the army known and to organize the means of meeting them. The recent appeal by the Director-General proved that more must be done, and he had been invited to confer with the Committee as to the nature and extent of the present needs of the army, and the way in which they could best be supplied. The Association was desirous of doing all in its power to ensure an adequate response to the present appeal and to utilize its organization for the purpose of arranging mutual assistance among civil practitioners, so that as many as possible of those physically fitted for medical duty might be free to volunteer. In preparation for the conference expressions of opinion had been invited from the profession, and a number of letters had been received in reply. Speaking generally, these showed that two considerations were chiefly occupying attention, and were in some degree deterring men from coming forward. In the first place there seemed to be a rather widespread belief that military medical personnel was being to some extent wasted owing to commissioned officers being employed, in numbers which in some places appeared excessive, to look after men in training; it was suggested that better distribution of personnel would go a long way to fill up existing gaps. The second point was that sufficient use was not being made of the part-time services of civilian practitioners to attend men in training and to staff the smaller hospitals. Suggestions made were that civilian practitioners should be used (1) in their own neighbourhood for second and third line units, morning sick parade being taken by one such practitioner and a rota formed to meet emergency calls at other times; (2) for attendance daily, or more often if necessary, at smaller hospitals; (3) as anaesthetists and assistants in the general hospitals. It was thought also that more use should be made of the help medical officers of health could give in sanitary administration. It was suggested also that the Board of Education and the Local Government Board ought to consent to set free medical school inspectors and tuberculosis officers, many of whom were men under 40. Other points would arise in the course of discussion.

STATEMENT BY THE DIRECTOR-GENERAL.

Sir ALFRED KEOGH, in the course of a general statement, said that in existing circumstances the help of the civilian profession was wanted in two directions: First, for whole-time men to serve with the new units destined for service abroad, in France, or elsewhere where British armies might operate. All officers holding permanent or temporary commissions in the R.A.M.C. were now either abroad or were noted in his office for foreign service. He was aware of the criticisms mentioned as to an apparent surplus of medical officers in some places at home; he had received such letters himself; but the surplusage was transient and apparent only. There was a place for every one of these men to serve with units which would, sooner rather than later, be sent abroad. It was essential to distinguish between distribution in locality and the total number available. When everything that redistribution could effect was done, there still remained a most serious shortage of whole-time medical officers to serve with the troops wherever they might be sent. This was a matter which particularly concerned his office, and Colonel Blenkinsop had got out details of the number of men needed to join the R.A.M.C. at once as whole-time officers for the duration of the war. For military reasons the actual numbers could not be published, but he gave the Committee evidence that the need was large and urgent. The overseas dominions had responded admirably by sending a large number of medical men, and since the publication of his appeal, some three weeks earlier,[1] a very satisfactory number of applications had been received from the profession at home, but he believed that there were still a number of men under 40 doing work as residents in voluntary hospitals or as locumtenents who could offer themselves, and he hoped to have the assistance of the Association in these directions. Offers of service as commissioned whole-time medical officers for the duration of the war should be made to the Director-General, Army Medical Services, War Office, London, S.W.

The second need was for men to serve at home at recruiting dépôts and training camps, and in hospitals. The medical base of the British forces serving in any part of the field of operations was the British isles, and the provision of military hospitals was being rapidly extended in all parts of the country, so that the very large number of beds that a prudent foresight indicated might be required should be provided. For all this work the army must look to civil practitioners willing to give help in their own localities. He fully realized that the help must be given by way of part-time engagements, and he hoped that the Association through its local organizations would be able to give the army most valuable aid in organizing the arrangements.

The civil medical profession had already given the army so much generous and self-sacrificing assistance since the outbreak of the war that he regretted to be compelled to make further demands on it. But it was necessary to look ahead and make adequate provision to safeguard the health of the home army when the Expeditionary Force was increased in strength to such an extent that every commissioned medical officer fit for active service would be required for service on the Continent. It was anticipated that this increase would take place in the course of the next three or four months, so that the call on medical resources was urgent. The general summary of the position given by Sir Alfred Keogh was as follows:

"I would suggest the following means by which the civil practitioner could come to our aid.

Whole-time Service.

"1. I would urge all those who are under 40 years of age and who are fit for active service to apply for temporary commissions in the R.A.M.C. if their civil obligations will allow them to do so. Such men would have an opportunity of seeing active service on the Continent or elsewhere where we have fighting armies. We are especially in need of young general practitioners who are willing to go anywhere and do anything in the way of duty with troops or with medical units.

"There are also vacancies for men who have specialized in surgery, bacteriology, medicine, *x*-ray work and ophthalmic surgery. They would probably eventually be appointed to the large hospitals of 1,040 beds each which are being fitted out for service with the Expeditionary Force, but they would be required to do a certain amount of work in a military hospital in this country first, so as to familiarize them with the routine of a military hospital.

"2. Men over 40 years of age are not being sent abroad at present, but their services would be of the greatest value to the military authorities in this country, and many of them would probably go overseas for hospital work later on.

[1] BRITISH MEDICAL JOURNAL, March 13th, p. 488.

Part-time Service.

"So much for men who can offer themselves for whole-time and general service, and who are therefore eligible to receive temporary commissions. We now come to men who, on account of age or health, or local obligations, are unable to accept these larger responsibilities. I will divide these into three classes:

"1. Those who can give so many hours a day to military work and give a certain fixed time on each day. These men would be a great help in doing work in military hospitals, seeing men in combatant units reporting sick with minor ailments, and looking after the sanitation of camps, barracks, and billets.

"2. Men who could not devote a specific time to military work, but who would be willing to attend the wives and children of officers and soldiers as part of their general practice at good rates of pay.

"3. Men who could arrange to help the neighbouring practitioners who have undertaken military duties, and who would do so without encroaching on their practices, and under terms which would have to be settled by mutual agreement.

"It will be seen that every medical man in the country can 'do his bit' to help the Government to bring this great war to a successful issue, and from our previous experience we can trust them to respond generously to the appeal we are now making to their patriotism."

Discussion.

A general discussion followed, during which various points of detail were raised. Local arrangements for recruiting dépôts, training camps, and the organization and staffing of hospitals, Sir Alfred Keogh said, should be discussed with the Deputy Director of Medical Services at the head quarters of the command in which the locality was situated (a list of the commands with the counties included in each is given below). With regard to the staffing of hospitals, he said that it might be possible in some circumstances to arrange for a system of relays, under which a medical man, after serving away from the place in which he practised for a period of three months or so, would be replaced by another practitioner from the same locality, but he warned the Committee that very few civilian practitioners serving in military hospitals abroad had wished to be relieved; they were so much interested in the work that they desired to stay on. He insisted again on the importance of the work of battalion medical officers. The efficient working of the whole military machine depended on them since it was their function to maintain the army in health as a fighting force; a battalion medical officer ought to superintend every detail of the daily life of the men—work, exercise, sanitation and water supply; he ought to know every man in his battalion, and the personal equation of every officer. Any medical man who had offered his services last autumn, and had not received a definite reply, should repeat his offer. The pressure on the War Office at the outbreak of war and for some time afterwards had been very great, and it was possible that oversights had occurred. In making application practitioners should decide as to what kind of service they were prepared to offer. If whole time, they should apply to the War Office If part time, the offer should be made to the Deputy Director of Medical Services at the Head Quarters of the Command, preferably through the local organization which he hoped the British Medical Association would institute. Questions as to rank and pay raised many complicated issues very difficult to adjust; concession in one direction often involved injustice in another.

Committee's Appeal to Divisions and Branches.

The Chairman having thanked Sir Alfred Keogh and Colonel Blenkinsop they withdrew, and the Committee resolved to address a letter to the Divisions and Branches at home asking them to hold meetings at any early date to consider the appeal of the army for the whole-time and part-time services of more medical men in the light of the explanations and additional information Sir Alfred Keogh had given.

COMMANDS OF THE ARMY.

United Kingdom.

Aldershot Command.

From the railway station at Liss, north-eastward, along the South-Western Railway (but omitting the three small portions of Sussex lying to the north of the railway, and the portions of the parishes of Artington, St. Nicholas, and Stoke-next-Guildford to the west of the railway), through Woking to the eastern boundary of Woking Parish, thence northward following the eastern boundaries of the parishes of Woking, Horsell, and Chobham to the Wokingham and Reading Railway, thence westward along that railway as far as the River Loddon, thence southwards along the River Loddon and the road leading from Reading to the Liss Railway Station, through Odiham, Alton, Alton Butts, and Selborne; but inclusive also of the portions of the parishes of Alton and Chawton lying west of that road. Brooklands, as far as the Royal Flying Corps is concerned, is in the Aldershot Command.

Head Quarters: Aldershot.

Eastern Command.

The Counties of
Northamptonshire,
Cambridgeshire,
Norfolk,
Suffolk,
Essex (except Purfleet and Rainham Rifle Range, and (for Foot Guards) Warley,
Huntingdonshire,
Bedfordshire,
Hertfordshire,
Middlesex,
Kent,
Surrey (except the portion included in the Aldershot Command),
Sussex, and
Woolwich (exclusive of the Territorial troops quartered therein).

Head Quarters: Horse Guards, Whitehall, S.W.

Irish Command.

Head Quarters: Parkgate, Dublin.

London District.

The County of London, the Guards' Dépôt at Caterham, Purfleet, Rainham Rifle Range (for Foot Guards), Warley, and (for Regular troops) Windsor. For purposes of training, the camp at Pirbright is included in the London District. Woolwich (exclusive of the Territorial troops quartered therein) is under the command of the General Officer-Commanding-in-Chief Eastern Command.

Head Quarters: Horse Guards, Whitehall, S.W.

Northern Command.

Berwick-on-Tweed (except Regulars and Special Reserve), and the Counties of
Northumberland,
Durham,
Yorkshire,
Lincolnshire,
Nottinghamshire,
Derbyshire,
Staffordshire,
Leicestershire, and
Rutland,

Head Quarters: York.

Scottish Command.

Scotland and Berwick-on-Tweed (so far as regards Regulars and Special Reserve only).

Head Quarters: Edinburgh.

Southern Command.

The counties of
Warwickshire,
Worcestershire,
Gloucestershire,
Oxfordshire,
Buckinghamshire,
Berkshire (except Windsor for Regular troops and that portion of the county included in the Aldershot Command),
Cornwall,
Devonshire,
Somersetshire,
Dorsetshire,
Wiltshire, and
Hampshire (except that portion included in the Aldershot Command).

Head Quarters: Salisbury.

Western Command.

Wales,
and the counties of
Cheshire,
Shropshire,
Herefordshire,
Monmouth-hire,
Lancashire,
Cumberland,
Westmorland, and the
Isle of Man.

Head Quarters: Chester.

Communications with reference to part-time service should be addressed to the Deputy Director of Medical Services, at the Head Quarters of the Command which includes the county or other area in which the applicant resides.

CONDITIONS OF WHOLE-TIME SERVICE.

Temporary Commissions, R.A.M.C.

The following is the official statement as to terms and conditions of service of civilian practitioners joining the R.A.M.C. with temporary commissions:

Civilian medical practitioners desiring to serve at home or abroad as surgeons with the army should communicate with the Secretary, War Office, London, S.W. Gentlemen accepted for such service will be granted the temporary rank of Lieutenant in the army, and must fulfil the following conditions:—

1. They must be registered practitioners.
2. They must engage for a period of 12 calendar months or until their services are no longer required, whichever shall first happen.
3. Their pay to be twenty-four shillings a day, inclusive of all money allowances, except travelling allowances and expenses when travelling on duty.
4. They will be granted free passages to and from any country abroad to which they may be sent.
5. They must devote their whole time to military service.
6. They will receive an allowance of £30 in respect of the provision of outfit, and a gratuity of £60 at the termination of their engagement if they have rendered satisfactory service.
7. They must furnish—
   (*a*) A statement of any previous service with the army.
   (*b*) The names of two persons of position and responsibility for reference as to character.

Particulars of Civil Surgeons desirous of Service with the Royal Army Medical Corps.

Surname.....
Christian Name in full.....
Date of Birth .....
Qualifications .....
Date of Registration as a Medical Practitioner.....
If willing to serve at home or abroad .....
Whether married .....
Whether of pure European descent .....
Whether a British-born or a naturalized British subject .....
Permanent address .....
Present address for correspondence .....
Whether now serving, or previously served, in any other Government Department (Home, Indian or Colonial). If so, give particulars. .....
Have you been nominated for any other Regiment or Corps? .....
Appointments held since qualifying as a Medical Practitioner. .....
Particulars of previous Army Service (if any) including Officers' Training Corps and Territorial Force. .....
Names of two persons who can be referred to as to qualifications, character, etc. .....
Languages, knowledge of .....
Whether able to ride .....

Signature .....

SCHOOL MEDICAL OFFICERS.

The Board of Education has issued the following circular (899), dated March 29th, 1915, to Local Education Authorities:

Whitehall, London, S.W.

Temporary Employment of Members of the School Medical Staff in Military Hospitals.

Sir,—1. The Board have been informed by the War Office that there is at the present time an urgent need for the services of more medical men in order fully to staff the additional hospital accommodation needed to meet the requirements of the large forces which are now being placed in the field. The Board have further been asked whether they would be prepared so far as their powers go to facilitate the volunteering of officers of the School Medical Service for this hospital work. The Board understand that, in view of the pressing need for further medical assistance, facilities are being given to medical men who are serving as combatant officers in the Territorial Forces to transfer their services to the Royal Army Medical Corps of the Regular Army.

2. In cases where a school medical officer is also a medical officer of health, further considerations arise, and the Local Government Board should be consulted. So far, however, as the Board of Education are concerned, they feel that they can give but one answer to an application of this kind. They do not suggest that any pressure should be brought to bear on any particular medical officer to volunteer for service, but should any such officer desire to volunteer the Board will raise no objection to his doing so, even though his temporary absence may cause dislocation of the School Medical Service. They have no doubt that Local Education Authorities will regard the matter in the same light and will give any medical officer who desires to volunteer leave of absence on such terms as will not involve any loss in his salary, status, or tenure.

3. The terms on which medical officers can engage for service in the Royal Army Medical Corps are set out in the enclosed forms [see above]. The Board understand that arrangements can be made by which officers of the School Medical Service who join that corps would be employed for home service only if they so desire. Further, it is open to medical officers to offer themselves for service in military hospitals as civilians.

4. The Board rely upon authorities to do what they can to maintain as far as possible the efficiency of their School Medical Service by obtaining temporary medical assistance. In some areas it may be possible to obtain the services of retired practitioners, or private practitioners may be able to afford some help. The Board recognize, however, that in many areas a temporary curtailment of the work of the School Medical Service may become inevitable. The Board do not desire to prescribe in what way the curtailment should be effected, except that they are of opinion that the medical inspection of children of all ages who appear to be ailing and the maintenance of any treatment at present being undertaken by the authority should be regarded as the first charge on the time of the staff. The Board on their part will gladly render authorities any assistance in their power; and in determining the rate of grant they will give full consideration to the difficulties in which authorities have been placed, and will continue to pay grant at the present rate in relation to expenditure in all cases where the arrangements made are in their opinion reasonably satisfactory, regard being had to all the circumstances. In their circular letter of last January (Circular 887) the Board have already stated the conditions under which they will take into account for grant any allowances made to members of the School Medical Service who are temporarily absent with the forces.

5. The Board will be glad to receive information on a copy of the schedule to Circular 887 with regard to any medical officers who may volunteer. They also desire to have submitted to them as soon as possible particulars of any curtailment of the work of the School Medical Service which the authority may be proposing to make.—I am, Sir, your obedient servant,

L. A. Selby-Bigge.

Aberdeen.

At a meeting of the medical profession, held in Aberdeen on Sunday, April 4th, it was reported that as a result of the recent circular issued with regard to Sir Alfred Keogh's appeal, six practitioners had intimated their willingness to apply for full-time commissions and that twenty practitioners had offered part-time service for dépôt and hospital work. This was thought to be an extremely gratifying result, and it was resolved that the most urgent matter was to arrange for the practices of those who had offered full-time service. Accordingly a small committee was appointed with power to co-opt, and to arrange particulars of a bureau system, which was thought to be the only feasible system.

Need for Local Organization.

Pro Patria writes: Dr. C. K. Toland strikes the nail on the head when he says that the general practitioner in active practice and of suitable age is torn between two desires—his duty to his civil patients and his desire to share the work of the R.A.M.C.

This is so with many of us, and the difficulty will remain, unless by organization the work of the younger general practitioners can be taken over and looked after by perhaps older men, or those who are prevented from going for various reasons. It is, therefore, with much pleasure that one reads of a definite effort being made to deal with the matter.

Take my own case. I am in a fairly large, good class practice in a town of some 60,000 inhabitants. There are thirty-two general practitioners, of whom five have been called up for service, leaving twenty-seven of us to do the work. This is none too many, and lately the work has been very heavy. But, in addition, there is the local civil hospital of about 200 beds to keep going, besides several large charitable institutions, one of which alone has an honorary staff of nine. Further, we are running three military hospitals with close on 300 beds, and have been asked to raise that number to 500.

Can one with justice, then, throw up the work one is doing in private, in the civil hospital, and in the military hospital without obtaining some one to take one's place? I think not; and, further, it would be most unfair on the remaining men to do so; but, at the same time, it might be made quite possible with proper organization and better use made of the available men.

Our local military hospitals may be taken as an instance. As there was no building large enough for the whole of the beds required, there are at present three distinct hospitals with separate and complete staffs from the Officer Commanding down to the scullerymaid. If we are enlarged to 500 beds, another complete staff will be formed.

The hospitals are doing a magnificent work, but can any one imagine a more wasteful method both as regards doctors and nurses?

Therefore, good luck to the effort at organization, and may the results be soon apparent, for time presses.

MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

WE have received the following communication from the Secretary of the National Medical Research Committee:

In consequence of the outbreak of war the Board of Trade suspended the Patent and Trade Mark of the drugs salvarsan and neo-salvarsan, and, as the medical profession will be generally aware, granted a licence to Messrs. Burroughs, Wellcome, and Company for the manufacture in this country of these preparations, which they sell under the names of Kharsivan and Neo Kharsivan, and to the Société Anonyme des Etablissements Poulenc Frères, of Paris, for the sale in Great Britain (through the agency of Messrs. May and Baker, Limited) of the same products under the names of Arsenobenzol-Billon and Nov-Arsenobenzol-Billon.

It must be understood that, although the manufacturers have in both instances adopted distinguishing trade names for their preparations, the latter are not merely similar substitutes for, but are chemically identical with salvarsan and neo-salvarsan, differing in no known respect from Ehrlich's original products, either in their final constitution or in the details of their preparation. The proof of such absolute identity is, however, in the case of these substances, a matter not only of great importance, but of unusual difficulty. Salvarsan is a highly-reduced substance. If the reduction, which constitutes one stage of its manufacture, is carried out with insufficient vigour, or if the product is later exposed to the danger of oxidation by contact with air, it is readily contaminated with a much more toxic oxidation product. The water-soluble derivative "Neo Salvarsan" is even more liable to this defect. As a matter of fact it is impossible, by the most careful procedure, altogether to exclude the presence of the more toxic oxide, and the best specimens, from any source, contain it in the proportion of about 0.5 per cent. The extent of this known contamination can be chemically determined with some degree of accuracy, and it is an obligation resting upon the manufacturer to see that no batch of his product contains it in an unsafe proportion. According to Ehrlich, the proportion varies from 0.5 to 0.8 per cent. in good specimens.

If the presence of an excess of this easily recognizable and determinable oxide were the only source of difficulty or danger, a chemical standard of purity, on similar lines to many in the *Pharmacopœia*, could easily have been defined and enforced for these preparations. Unfortunately there are indications that other toxic products, of unknown constitution, may arise through uncontrollable accidents of preparation. The presence of these is only indicated by the fact that the toxicity of the salvarsan products cannot be accounted for by the percentage of the known toxic oxide which they contain. While, therefore, the determination of the latter is a necessary safeguard, it can be regarded as a preliminary precaution only, and the final appeal, in the present state of knowledge, must be to animal experiment, the result of which gives evidence of the total toxicity from whatever source it comes.

The Board of Trade licence in both the above cases was therefore granted, subject to the condition that all samples of these drugs sold in this country should be submitted to biological tests by an authority approved by the Board of Trade.

In the special emergency created by the war the Medical Research Committee, at the request of the Board of Trade, accepted for the time being the responsibility of directing the biological tests of the salvarsan and neo-salvarsan produced by these English and French firms.

Examples of these products, therefore, cannot be properly sold in this country by Messrs. Burroughs, Wellcome, and Company, or by Messrs. May and Baker, unless and until samples of the batch of product from which they are taken have been tested under the direction of the Committee, and a certificate has been issued by the secretary of the Committee approving that particular batch for sale.

In view of the public interest which must attend the establishment of so intricate a manufacturing process in England at short notice, and in view also of the great importance to the medical profession and the public of the degree to which success has been attained in the manufacture, it is thought desirable that a general statement should be made of the policy which the Medical Research Committee have pursued in their performance of the public duty which has fallen to them.

When the work of biologically testing samples of these arsenical compounds from other than German sources was undertaken, there was no time for any elaborate preliminary investigation of new methods of biological assay. The public need for an immediate and abundant supply was urgent, and the existing stocks of German production were found to be too low to allow delay.

The Committee entrusted the details of the work to most competent pharmacological workers, who took as a basis for the biological control, supplementing the chemical tests of the manufacturer, the methods and standards which had previously been found adequate in Ehrlich's Institute. It was decided, accordingly, that specimens should be passed as satisfactory, under the official certificate of the Committee, which were not more toxic to mice than the average sample of German manufacture. This decision has already involved the rejection of some samples which exhibited no greater toxicity than some of those previously issued in this country with Ehrlich's authority, and used therapeutically without adverse result.

In addition, however, to this application in all cases of the official German test, every sample has been further tested by the intravenous injection into a rabbit of a large dose only slightly less than that which may be expected, according to Ehrlich's publications, to be lethal for the animal. The object of this test was to guard against the presence of any immediate toxic constituent which might escape detection when doses were given hypodermically to mice. If, in the performance of this test, any difference had been found to exist as between the English or French products on the one hand and the original German products on the other, the sample in question would not have been passed for certification and for sale to the public.

It should also be added that in addition to these biological tests which have been imposed as an invariable routine, the Committee have caused experimental assurance to be obtained that both the French and English preparations are equivalent to the German in therapeutic effect. This has been done by a comparison of their relative potencies in curing experimental trypanosomiasis in mice and experimental spirochaete infections in rabbits.

In the opinion of the Medical Research Committee the experimental work which has been done under their direction has already shown that the problem of the successful manufacture of the salvarsan compounds in England and France has been solved. By the communication from time to time to the manufacturers of certain findings of the scientific workers entrusted with the problem by the Committee, assistance has been given wherever possible towards the establishment of fully satisfactory technical manufacturing methods, and the Committee are confident that, so far as the strictest laboratory controls can ensure it, the profession and the public are now receiving from English and French sources compounds fully up to the standard of the best German samples previously sold. It is to be hoped that very soon the quantity of the products so supplied will be as sufficient as their quality.

April 7th, 1915.

THE late Dr. Anthony Traill, M.D., F.R.C.S.I., Provost of Trinity College, Dublin, left estate valued at £6,779.

AS the outcome of a suggestion made by the *Boston Medical and Surgical Journal*, a committee was appointed not long ago by the Massachusetts Federation of Churches to confer with a similar committee of the Massachusetts Medical Society, with a view to securing co-operation between the clerical and medical professions in the solution of problems of public health. At a meeting of these two committees, held on February 24th, a resolution was passed that the churches of every community should consult the doctors practising in its midst as to questions of public health, and should co-operate with them, educationally and practically, as to the means of meeting local sanitary requirements.

British Medical Journal.

SATURDAY, APRIL 10TH, 1915.

THE ACTION OF MINERAL SUBSTANCES ON LIVING PROTOPLASM.

THE study of the chemical processes concerned in the activity of living protoplasm is one of extreme difficulty, partly on account of the great molecular complexity of the substances reacting and the products formed, and partly because of the impossibility, at present, of controlling all the conditions of the reactions. In some respects the vegetable kingdom offers a better field for experiments on such processes than the animal, and a good deal of research is being done in this direction by various workers. It would, of course, not be safe to generalize from a limited set of experiments, or to argue directly from the behaviour of the protoplasm of vegetable organisms to the probable behaviour of that of animals; but there is sufficient unity in protoplasm, of whatever origin, to make the results obtained in one particular department of some interest outside their immediate application. In a monograph on inorganic plant poisons and stimulants[1] published recently by Dr. Winifred E. Brenchley, of the Rothamsted Experimental Station, a careful survey is made of the available evidence, including that from many experiments at Rothamsted, as to the effect of the five elements—copper, zinc, manganese, arsenic, and boron—on plant growth, and the conclusions arrived at are of some general interest. The facts recorded also give an indication of the difficulty of arriving at general rules as to the action of such substances on living protoplasm.

Early investigations into the effects of inorganic substances on plant nutrition led to the classifying of the elements into three groups—nutritive, indifferent, and toxic. Further work, however, led to some modification of this view, since typical nutrient salts may prove toxic when applied singly to the plant in certain concentrations, the toxic power decreasing and the nutritive function coming into play more fully on the addition of other nutrient salts. Even typically toxic substances may under suitable conditions increase plant growth as if they were nutrients, and this has led to the hypothesis that any poison may act as a stimulant if given in sufficiently small doses. It is shown, however, in the Rothamsted experiments that this is not universally true; some substances, such as arsenic, failing to stimulate certain plants even in the most minute quantities.

The difficulty of the subject is exemplified by the fact that a given material may have a stimulant or toxic action on one plant and not on another, and it is by no means a simple matter to define stimulant action; the rate of growth as judged by the weight of the plant in the green state may be increased, owing to an acceleration of the transpiration current, while the dry weight of the plant may actually be diminished. From the practical point of view stimulation of the former kind may sometimes be important, but in other cases only an increase in the dry weight of the tissue could be regarded as a thing to be aimed at. In the experiments at Rothamsted water cultures, sand cultures, soil cultures in pots, and field experiments were all employed, and considerable differences were found, according to the nature of the test, substances often acting differently in soil cultures and water cultures.

The investigations on the effect of copper salts showed that in most circumstances copper compounds act as poisons to the higher plants, and that it is only under particular and peculiar conditions and in very great dilutions that any stimulative action on their part can be clearly demonstrated. A distinct effect may be observed when surprisingly small quantities are used. In some experiments formerly recorded by Kanda with the seeds of peas and vetches in water cultures, it was found that copper sulphate solutions down to 1 in 40 million are harmful to peas, and still further that down to 1 to 4,000 million copper salts act as a poison rather than as a stimulant. Water which has been distilled in a copper still shows a decided toxic effect, and in one experiment one litre of pure water distilled in glass was allowed to stand on a small piece of metallic copper foil of the area of about three-quarters of a square inch for an hour, and even such water exercised a very considerable retarding influence upon the root growth of barley, checking it entirely in some instances. This furnishes an interesting example of the minute quantities of substances which can affect living protoplasm. When the size of molecules is considered, however, it is evident that a solution containing only such small quantities of an element as to be undiscoverable by the most delicate analysis may yet contain very large numbers of molecules. One milligram of hydrogen is calculated to contain 200 millions of millions of millions of molecules, and 1 milligram of another element would no doubt contain a number of molecules of the same order, though smaller.

The poisonous action of copper on algae is well known, and is utilized in clearing ponds or reservoirs of growths of this plant. Algae are so much more sensitive than the higher plants that they may be destroyed in this way by solutions which leave unharmed the higher plants to be found in ponds, such as *Nuphar lutea*, *Menyanthes trifoliata*, and *Polygonum amphibium*. On the other hand, some of the microscopical fungi are almost unaffected by the copper solutions. Penicillium and aspergillus grow quite readily in solutions of copper sulphate, penicillium having been found to develop in solutions of 9 per cent. strength of this salt. Very dilute solutions of copper sulphate act as stimulants to these two moulds.

The effect of zinc salts on plant growth shows considerable differences from that of copper salts. While zinc is undoubtedly toxic in its effects under some conditions and at anything like moderate concentrations, small amounts of zinc appear to be definitely shown to have a stimulating effect on plants grown in the soil. Some plants appear to be able to take up very considerable quantities of zinc without the latter distinctly retarding or stimulating growth; but, as a rule, such plants, when grown on soil rich in zinc, differ in characters so much from the same plant grown on ordinary soil as almost to resemble new species. An example of such plants is *Thlaspi alpestre*; it grows in Aachen on soil very rich in zinc (up to 20 per cent. in places), and its leaves have been found to contain as much as 1.5 per cent. of zinc oxide calculated on the air-dry weight. Some

[1] *Inorganic Plant Poisons and Stimulants.* By W. E. Brenchley, D.Sc., F.L.S. Cambridge Agricultural Monographs. Cambridge: The University Press. 1914. (Roy. 8vo, pp. 119; 19 figures. 5s. net.)

experiments on the effect of zinc compounds on germination are suggestive as to the mode of action of such poisons. Barley seeds were soaked in a solution of a zinc salt and grown on filter paper soaked in the same solution. Others were soaked in water and grown on filter paper soaked in water. Both sets were at first placed in the dark, and so long as no light was admitted for a period of eleven days germination was uniform in both sets, but directly the covers were removed the growth of the seeds treated with zinc ceased almost entirely, and they did not assume the green colour taken on by the unpoisoned seedlings. These results seem to indicate that the formation and activity of chlorophyll is impaired by the toxic agent; since fungi do not produce chlorophyll the much smaller toxic effect of some mineral salts on them than on green plants may perhaps be due to the same cause.

Investigations of the effect of arsenic did not afford any evidence of stimulation under any circumstances or at any dilution. The toxic effect of arsenic upon higher plants is much more marked with arsenious acid and its compounds than with arsenic acid and arsenates. Some fungi grow well in arsenical solutions and liberate highly poisonous arsenical gases; concentrated arsenical solutions have a toxic action on some fungi only.

Boron in the form of boric acid has a decidedly less harmful effect on the growth of higher plants than the compounds of copper, zinc, and arsenic. Below a certain dilution boron appears to exercise a favourable influence on plant growth, encouraging the formation of stronger roots and shoots, this stimulation being more strongly marked with some species than with others. Fungi appear to be indifferent to boron compounds.

Of the five elements dealt with in Dr. Brenchley's monograph, manganese was the only one in which the stimulating effect appeared to be more important than the toxic, though in high concentration a toxic effect on the higher plants was observed. As little as one part in 100 million was found to have a beneficial effect on the growth of barley, and it is thought probable that manganese may prove to be an element essential to the economy of plant life even though the quantity usually found in plants is very small. The effect is not simple in this case as in others. For example, in experiments on the effect of dilute solutions of manganese sulphate on barley, the vegetative growth was improved, but the ripening of the grain was retarded.

A PIONEER OF MODERN SCIENCE.

SIR CLIFFORD ALLBUTT delivered before the British Academy last year a remarkable essay on Palissy, Bacon, and the revival of natural science in the sixteenth century. It was not, he maintains, by the methods of philosophers, not even by that of Bacon, that the natural sciences were brought back to life from the long sleep into which they had sunk under the stupefying influence of scholasticism, but by men who looked at Nature with their own eyes, not through the spectacles of authority.

He illustrates this thesis by the work of Bernard Palissy the potter. Like Gilbert and Galileo, Palissy was led to investigate certain problems of physics, which on account of their comparative simplicity had to be solved before the subtler secrets of chemistry and biology could be discovered. He was born in 1510 in Périgord, which was then an important centre of the art of glass painting, and to this craft he was apprenticed. In the course of his apprenticeship he wandered over the Pyrenees and the Netherlands, and wherever he went he closely observed the various works of Nature, especially earths and minerals. Glass painting was then falling into decay and supplied but a poor means of living. A cup of glazed *faience* which was put into his hands showed him the way to a new craft, but the secret of the pastes and glazes used was jealously hidden in the workshops of della Robbia and other Italian craftsmen. Palissy set about the investigation of the qualities and mixtures of earths and the chemistry of glazes. Selling the coat off his back to procure the materials for research, he succeeded in discovering lead and tin glazes, the amalgamation and chemistry of earths, and methods of making and modelling, which resulted in art products now almost priceless. The patronage of powerful friends helped him to establish himself in Paris, then becoming one of the most hide-bound of European centres of learning.

The record of Palissy's scientific work is contained in books dealing but little with the art of pottery, but largely with natural science. How wide a range he covered in his writings may be gathered from the fact that in his first book he treats of agriculture, forestry, the outward forms and surfaces of the various countries over which he had wandered, and their causes; the various kinds of earth, the formation of rocks by consolidation from liquid suspension or solution, and the formation of crystals and gems by precipitations and segregations in past ages. He had, Sir Clifford Allbutt shows, advanced notions on chemistry, and he had the penetration to see the folly of alchemy. In 1580 he published his *Discours Admirables*, in which he treats of the nature of waters and springs, natural and artificial; of metals, salts and salines, stones, earths, fire and enamels. At this period he exercised his great influence on society in Paris. This is the most interesting part of Sir Clifford Allbutt's essay. He has found that men of science and historians are not aware of the fact that in the third part of the sixteenth century a great scientific naturalist was lecturing in Paris on agriculture, chemistry, mineralogy, and geology, and giving demonstrations on the objects themselves, of which he had collected enough to form a considerable museum. His lectures were, so to speak, drawn from life, and were very different from the airy nothings of fine-spun theory of which the "science" of the day mainly consisted. "Into the faces of the learned of his time," Sir Clifford Allbutt says, "he thrust his facts; he urged the might of the verified fact, the tests of practical experience, the demonstration of the senses; and these in a keen and original way. All the world went to wonder at the knowledge of a man without Latin or Greek!" Among his hearers was Ambroise Paré; many physicians, too, went to listen to him, and as they were nearer to Nature than any class of students at that time they were doubtless influenced as well as interested by his teaching. Nevertheless he did not spare the doctors, but denounced a number of the superstitions or futile remedies then in common use.

Palissy was held in high esteem for his artistry, but his independence of scientific thought excited the jealousy not only of the orthodox authorities, the University and the Sorbonne, but of the astrologers and alchemists. He died in the Bastille in 1589, having escaped the fate of the heretic only by the influence of powerful protectors who admired the artist whatever they may have thought of the innovator. We may guess by what methods his teaching was buried in oblivion by what befell

Etienne de Claves, a doctor of medicine, who in 1635 published in Paris a book entitled *Paradoxes ou traités philosophiques des pierres et pierreries contre l'opinion vulgaire*, based on the teaching of Palissy. The author was harassed by persecution and his book publicly destroyed. In this essay Sir Clifford Allbutt has made an important contribution to the history of science written with the grace of style which sets him so far apart from the ordinary Dryasdust of antiquarianism.

PERIODICITY IN INFECTIOUS DISEASE.

THE tendency of epidemic diseases to recur at more or less regular intervals has often been remarked, but the subject has only recently been submitted to careful examination on mathematical lines. We are indebted to Dr. John Brownlee, statistician to the Medical Research Committee, for some important work on these lines.[1] The principle of Dr. Brownlee's method is easy to grasp. If it be desired to ascertain whether a given series of figures exhibits periodicity, the problem can be solved by the construction of a periodogram—a course often followed in meteorological inquiries. Thus, if we wish to learn whether there is a recurrent cycle of, say, six terms and have a series of, say, 144 figures, we write the first six in a row, the next six under the first (the seventh in series being below the first, etc.), and make in this way four sets of figures, each composed of six rows and six columns. The columns are then added up, and if there is really a period of six terms, the maximum will be in the same column in each set. If the period has not been correctly guessed, we can, from a consideration of the way in which the maximum moves from column to column in the different sets, form some idea as to what the true period is and begin the process again, arranging, say, in rows of seven or five, etc. When in this way the true period has been determined, the mathematical equation of the resulting harmonic series can be easily calculated.[2] Although the principle is readily apprehended, its application to the statistics of infectious disease is often rendered difficult by the phenomenon of interference. Thus, supposing that the infective organism were to possess in reality a truly periodic life cycle, it might happen that its periods of maximum activity coincided with meteorological phases unfavourable or favourable to the development of an epidemic. Then we should have the case of two periodic cycles with different periods, and their phases would sometimes be in opposition, the combined effect being similar to that of tuning-forks of different frequencies simultaneously set in motion, "beats" being produced. Dr. Brownlee shows that this is probably the state of affairs in the case of measles, using the London records 1840–1912. He finds a period of approximately $1\frac{7}{8}$ years, presumably that of the life cycle of the organism, while if the successive maxima are examined it appears that there is in these a periodicity corresponding to a cycle of seven years and a half. This might be due to the interference of the life cycle with the meteorological cycle expressed by the well-known fact that epidemics in London tend to occur both in early summer and early winter, the former rise being, as a rule, the more important. Thus there are two periods suitable for the development of an epidemic in each year, while the cycle of the organism consists of a period of $1\frac{7}{8}$ years, divided into intervals of one-eighth of a year, so that when the life-cycle phase is at a maximum and corresponds with a meteorological maximum the correspondence will not recur until the fourth successive maximum of the former curve is reached, that is, a period of $7\frac{1}{2}$ years. If one of these two annual meteorological maxima is much more effective than the other, so that the latter may be ignored, then the interval between successive epidemic maxima will be 15 years. Dr. Brownlee examines in this way the data relating to measles in several large cities, and finds in each case evidence of periodicity. Thus in the case of Perth epidemics of measles have occurred regularly every 16 months during the last 40 years with but two variations. In Glasgow, up to 1800 the periodicity was one of about $15\frac{1}{2}$ months; data are lacking for the first half of the nineteenth century, but from 1855 the chief period has been $24\frac{1}{2}$ months; there are some indications that two strains of organism exist, characterized by cycles in the one case of slightly less and in the other of slightly more than 2 years. We have not space to describe Dr. Brownlee's applications to other epidemic diseases; but enough has been said to make plain the interest of his researches. We think, indeed, that the value of some of his statistics, particularly those dating from the eighteenth century, and even earlier times, is questionable, and we are not convinced that the explanation of the shorter periodicities on the basis of a life cycle of the infective organism is the only possible one. But the determination of the periods must precede an explanation of their genesis, and Dr. Brownlee's pioneer work ought to stimulate other epidemiologists to undertake researches in this field. While we should by no means welcome a return to the days of speculative epidemiology, and recognize fully the important services rendered by bacteriologists in the elucidation of epidemic diseases, not to speak of treatment and prophylaxis, we think there is nowadays a tendency to subordinate epidemiological to bacteriological inquiry. This is not an entirely satisfactory state of affairs, and it is encouraging to see signs of activity on epidemiological lines.

[1] Periodicity in Infectious Disease. *Proc. Roy. Phil. Soc., Glasgow*, March 25th, 1914. Investigations into the Periodicity of Infectious Diseases by the Application of a Method hitherto only used in Physics. *Public Health*, xxviii, March, 191 , p. 125.

[2] Full details and illustrative examples of this part of the work will be found in Runge's *Theorie und Praxis der Reihen*, Leipzig, 1904.

THE MECHANICAL EDUCATION OF CRIPPLED SOLDIERS.

AMONG the wounded from the war there must be a great many men maimed or crippled by the loss of a hand, or an arm, or a leg; many will not be able to resume their ordinary occupations, especially if they have been mechanics, and must suffer from great depression when they regard the future. A great deal, however, can be done by education of the sound limb, and often by re-education of a damaged limb, to enable such men to follow many mechanical trades. But we conceive it to be important that arrangements should be made to give the necessary education without delay; not only will it act as a mental tonic, but it is, perhaps, in the early stage, when a man first realizes his deficiency, that he will be most keen to make it good as far as possible. The French have already taken steps in this direction, and a school of "functional readaptation and professional re-education" has been established for maimed and crippled soldiers. The scheme has been started by the Ministers of the Interior and of War acting together, with the assistance of a special Parliamentary Committee. Professor Kirmisson, the well-known orthopaedic surgeon of Paris, is in charge of the first temporary schools at Saint-Maurice and Vacassy. It is proposed to establish a number of other schools, one of which will occupy the Grand Palais and another the convalescent home at Vincennes. The Austrian Red Cross, which has earned the highest praise for its work in many directions, has also established schools for crippled men; already four such schools are at work in Vienna under the direction of Dr. Spitzen, and one in Prague. A letter from a lady of neutral nationality, published in the *Daily Chronicle* of April 7th, describes the work of these schools. Workrooms and classes for twenty-eight trades are, she says, now established in one school she visited, and the products of each are designed to supply, as much as possible, the demands of the hospitals with which each is connected. Men who were skilled workmen and are

not so crippled as to be unable to resume their trades are encouraged to regain their powers. Thus carpenters with crippled hands can be supplied with special hammers and planes, and bootmakers with sewing machines, which they can learn to work. Those totally incapacitated from following their former occupations are being taught new trades. Knitting machines are supplied for legless men, others are taught typewriting; men who have lost the right arm are taught to write with the left, and so on. One point is mentioned which we believe to be of great importance—namely, that definite manual labour with an object is far better training for crippled men than gymnastic exercises. "We find," a nurse at the Vienna school said, "that a man will patiently work a plane for hours, where a simple exercise with weights in the gymnasium would completely wear him out." In this country an orthopaedic centre has been established at Liverpool under the direction of Mr. Robert Jones, professor of orthopaedics in the University of Liverpool, but we understand that it is chiefly devoted to the treatment of injuries of joints and bones, or of deformities aggravated on active service. So far as we are aware, the centre does not include educational classes, but we have no doubt that such classes could easily be added to the existing organization, for it appears that a larger number of beds are available than are at present in use.

THE TREATMENT OF SICK AND WOUNDED SOLDIERS IN VOLUNTARY HOSPITALS.

THE efforts of the committees of the voluntary hospitals to cope with the increased number of patients entailed by the war are likely, in the near future, to require further financial assistance to enable them to carry on the work successfully. In most of the London hospitals that work has been done hitherto without any grant of money from the military authorities. It has been found that the cost of the increased number of beds has been to some extent balanced by the less expensive nature of the cases admitted. The large proportion of minor ailments, not calling for expensive operations or prolonged after-treatment, has served to keep down the average cost per bed. Many country hospitals, on the other hand, have received payment for all military cases admitted, the charges varying from 4s. to 2s. a day, but no uniform scale has been adopted. With the object of establishing some scale of payment, not necessarily uniform, the British Hospitals Association approached the War Office and obtained a definite answer, which was published in the JOURNAL of March 6th (p. 443), but its purport does not appear to be generally known. Hospitals desiring to receive payment for the treatment of wounded soldiers are advised to "take up the question with the General Officers of the Command or District in which the hospital is situated." The suggestion thus thrown out by the War Office for their guidance should be acted upon by all hospital committees whose resources are likely to be overtaxed by the heavy demand which must surely follow when the new armies are brought into action in France and Belgium.

DOCTORS AS PRISONERS OF WAR.

THE reports of the Swiss Commissioners, Colonel du Marval, and National Councillor Eugster, appointed as representatives of the Red Cross to investigate the conditions of life among the prisoners of war in German and French camps respectively, have recently been published. Colonel du Marval found that in all the French concentration camps visited by him the German prisoners were well treated. The only inconvenience from which they suffered was due to vermin brought by themselves. In Germany, on the other hand, although M. Eugster is on some essential points diplomatically vague, he makes it clear that in regard to the detention of doctors the Geneva Convention is still treated as a scrap of paper. In the camp of Zossen he found eight French doctors, of whom only three had any professional work to do among their fellow prisoners: in that of Koenigsbruck he found thirteen, besides four assistants; while in that of Grafenwohr there were eighteen. At Ingolstadt in one fort (Number IX) there were forty doctors for 356 French officers. Among them was a sick man, who in spite of two requests addressed to the authorities, had not been liberated. It was impossible to ascertain the number of orderlies and bearers detained. M. Edouard Herrion, Mayor of Lyons and Senator for the Rhône, writing in *Le Journal* of March 28th, makes a strong appeal to the International Committee of the Red Cross to intervene on behalf of the French doctors thus wrongfully held prisoners.

THE PRINCESS CHRISTIAN HOSPITAL TRAIN.

THE Princess Christian Hospital Train, which is now ready to be shipped to France, is due to the initiative and energy of Her Royal Highness, by whom the necessary funds have been raised. It is the successor of the train which, under the same name, was sent to South Africa in 1899, and contributed so much to the comfort of the sick and wounded in that campaign. The experience thus gained has been utilized in the present instance by Sir John Furley and Mr. William J. Fieldhouse, and the train has been constructed on their design and under the personal superintendence of Mr. Fieldhouse by the Birmingham Railway Carriage Company. The rule of the War Office is that a hospital train should be capable of carrying 400 patients; all questions relating to undercarriages, couplings, brakes, lighting, and other points had to be submitted to the French railway engineers, but with the assistance of a joint committee of managers of the leading English railway companies and French railway engineers all requirements have been met. It was first intended that there should be eight coaches, but the War Office desired that four others should be added for sitting-up patients. To comply with French conditions an ordinary brake van is to be added to each end, thus making up fourteen vehicles of a total length of about 700 ft. After the first brake van, the first coach contains an office, provided with a bed, desk, safe, etc., for the Quartermaster-Sergeant, partitioned off from a ward which contains beds for thirty patients. Coaches 2, 3, 6 and 7 have each thirty-six beds, with lavatory in the centre, and lockers in the four corners; the fourth has beds for twelve orderlies, with two lockers and a lavatory; a kitchen fully equipped and provided with a tank for 60 gallons of hot water, and beyond this is a capacious store-room for linen. The first part of the fifth carriage affords sleeping accommodation for the nurses, and there are two dining-rooms for nurses and doctors, and an office with sleeping accommodation for the principal medical officer. Next to this is the surgery, followed by a sleeping room for doctors. The eighth coach contains beds for twelve orderlies, a kit store, and a second kitchen chiefly intended for hot water and small cooking. The four coaches for sitting-up patients provide for fifty each, and have folding tables between the seats, so that meals can be taken. The train is completed by a terminal brake van. There is an ample supply of water throughout, each kitchen being provided with 90 gallons of cold water and 60 gallons of hot water, and each of the hospital coaches is provided with 50 gallons of cold water and an extra tank containing 6 gallons of drinking water. The train is lighted with gas and electricity, and in case of these sources failing gimble candle lamps have been placed in each carriage. As platforms are not often used in stations on the Continent, sets of broad-tread steps have been supplied for the convenience of the orderlies. The equipment of the train includes beds, bedding, linen, china, plate and glass, cutlery and enamelled metal ware, hot-water trays, invalid tables, etc.

A SUPPLEMENT TO THE "BRITISH PHARMACEUTICAL CODEX."

DURING the four years which have elapsed since the current edition of the *British Pharmaceutical Codex*[1] appeared, a number of drugs have either come newly into use or their use has been so much extended as to require their inclusion in this well-known book of reference; in addition, the publication of a new *British Pharmacopoeia* has rendered out of date certain parts of the text dealing with official substances. A small *Supplement* has accordingly been issued with the view of bringing the volume up to date. This consists in part of new monographs dealing with such drugs as the perborates, the acetylsalicylates of calcium and lithium, quinine and urea hydrochloride, salvarsan and neo-salvarsan, etc.; these monographs are on the same lines as those in the main work, comprising a sufficient description of the substance with notes on its action, uses, and dosage; as the Committee which has carried out the revision has included Professor W. E. Dixon, we assume that the pharmacological information is given on his authority. Another part of the SUPPLEMENT deals with alterations in the *Pharmacopoeia*, these being in the form of corrections of the text of the *Codex*, with reference to the appropriate pages. Another section of some fifteen pages consists of a list of proprietary drugs with their chemical names, and non-proprietary short names suggested for general use; a number of such names already find general employment, some of them having been admitted to the *Pharmacopoeia*, but a number of proprietary drugs in fairly frequent use remained, the only short name for which has been the proprietary one. Unless it is desired by the prescriber to indicate the product of one particular firm, it is very undesirable to use a proprietary name in a prescription; the introduction of non-proprietary trivial names, however, can only be carried out by some such independent body as the Pharmaceutical Society, and the present list should prove extremely useful. If they are to come into general use, it is, of course, necessary that prescribers should familiarize themselves with these new trivial names and their equivalents; and it is therefore likely that the *Supplement* to the *Codex*, which is not larger than a pamphlet, will very commonly be carried for this purpose, and pharmacists will then be able to supply the product of any make which is of sufficient purity. A very full index adds materially to the usefulness of the *Supplement*.

PERMANENT INJURIES FROM ATHLETICS.

P. TORGERSEN[2] puts forward the two following hypotheses: That even healthy, powerful men may suffer permanently from excessive indulgence in athletics, and that many such disasters may be averted if a fully qualified medical expert supervises the training of athletes. The ordinary trainer does not possess the qualifications nor the authority of a medical man, and cannot, therefore, exercise the same judgement in difficult cases. The author gives seven examples to show how harmful indiscriminate training and exercise may be even in healthy persons. One patient was a lad, aged 16, who underwent forced training for a boat race. A few days before this was due he collapsed with symptoms of neurasthenia, and for a long time had to give up both work and athletics. The second patient was a powerfully built teetotaler, aged 20, who trained only for a week before a boat race. At the end of the race his colour was greyish-yellow, and he suffered from vomiting and attacks of shivering. He never raced again, and for many years complained of recurrent dyspnoea, and pain in the heart on the slightest exertion. The third patient was a tall, somewhat slim, student, aged 24, who took part in a boat race after a short period of forced training. During the race he felt ill and faint, and two days later developed symptoms of neurasthenia, including giddiness, headache, insomnia, distaste for work, and extreme depression and lassitude. This condition lasted many years, and did much to spoil his career. The fourth patient was a powerfully built man, aged 25, who developed a slight sore throat a few days before a boat race. At the start his temperature and pulse were normal, but he collapsed during the race and had to be laid on the ground for several hours before he could be taken home. The cardiac and hepatic dullness was increased and the pulse was small and rapid, and there were cyanosis and dyspnoea and extreme muscular weakness; it was found necessary to give two injections of camphor. He had to give up rowing for good, and for many years suffered from depression and shortness of breath. The fifth patient was induced to practise starvation principles in his training. He lived largely on bread and water, and combined exhausting exercise with heavy office work. He reduced himself to a state of extreme emaciation and fatigue, developed mitral disease, and became a confirmed invalid. The sixth patient, aged 20, was incapacitated for even slight exercise for two years, owing to taking part in a ski race after only eight days' training. The seventh patient tried to combine long office hours with various forms of exercise. At the age of 18, when this had continued for four years, he developed attacks of dyspnoea, accompanied by palpitation of the heart and a sense of exhaustion and anxiety. These attacks occurred by day after slight exertion, and by night with no apparent provocation. The pulse was irregular, and the apex beat was in the sixth space and 1.5 cm. outside the nipple line. He had to give up all his former athletic exercises. The author concludes by pointing out how, in each of these cases, the timely interference of a medical trainer might have averted misfortune.

THE PREVENTION OF NATIONAL DECADENCE.

WE have—especially in recent years—had among us many Cassandras and prophets of the "gloomy dean" type, who seemed to have taken it as their special mission to foretell the coming doom of England and the break-up of the world-wide empire she has built up. That increase of wealth had brought with it a growing tendency to frivolity and that over-refinement threatened to sap the inborn vigour of our national character need not be denied. And although the war has already shown that we have not lost the bulldog tenacity which won for our little island the commanding position it has so long held in the world, there are still signs that we are in some danger of suffering the penalties of over-civilization. It would be impossible for British sailors to make no attempt to rescue surviving enemies after a battle, still less to jeer at women drowning after the sinking of a non-combatant ship. It may be admitted that such brutality gives the savage a certain advantage in war, just as a bully who kicks and hits below the belt may get the better of an opponent who fights fair. But, as is pointed out by Sir James Barr in a timely article contributed to the Manchester *Sunday Chronicle* of April 4th, "the perfect man, and superman when he arrives, will never be a mere personification of brute force." Discussing the prevention of national decadence and the making of a virile race, he says: "A truly virile race must be healthy, strong, sound, vigorous, intellectual, courteous, chivalrous, diligent, dexterous, energetic, enterprising, inventive, resolute, reliant, calm, honourable, manly, moral, temperate, truthful, and thrifty. The race must be free, with no tolerance of serfdom, the altruistic feeling should be highly developed but free from all mawkish sentimentality, and our altruism should extend to the well-being of future generations." Woman should be held in the highest honour, and should be the chief home influence in

[1] *Supplement to the British Pharmaceutical Codex, 1911, including Additions, Alterations, and Corrections.* Published by direction of the Council of the Pharmaceutical Society of Great Britain. London: The Pharmaceutical Press. 1915. (Demy 8vo, pp. 75. Price 1s. net.)

[2] *Norsk Magazin for Laegevidenskaben*, January, 1915.

guiding her sons; where she holds a subservient position as in Germany, "they become immoral and intolerant bullies without due respect even for their own sisters." Sir James holds that it is on our young women that the future of our race depends; therefore he advises them to be careful in their choice of husbands, and urges that a girl should not marry a man unless she is in love with him. Sir James Barr sees signs of decadence in the crowds that go to watch football matches and believes that the application of "the gentle art of compulsion" would do much to remedy this possible source of national decay too plainly visible among them. He would encourage the true military spirit from early youth upwards as the best means of developing the moral and physical grit of the nation. "The character and discipline imparted to the Boy Scouts form the best primary education in this country." We earnestly hope that Sir James Barr's teaching will be taken to heart by those patrons and promoters of football and boxing who—in many cases it is to be feared, from unworthy and sordid motives—have done so much to hinder recruiting in this hour of national emergency. It makes a lover of his country blush with shame to see the amount of space still devoted by certain newspapers to records of the doings of "muddled oafs" who struggle over a ball like schoolboys instead of doing their duty as men in the trenches and on the battlefield. What is "sport" to them might possibly be death to their country. But the heaviest responsibility must rest on those who encourage the players by looking on. If, as they say, they want recreation, the proper place for it at present is the drilling ground.

THE WAR RATIONS OF THE ARMIES.

IN a note on this subject published in the JOURNAL of March 20th, p. 519, the articles of diet of the German infantry soldier were set out, on the authority of Zuntz, and were shown to yield a calorie worth between 4,100 and 4,500. The calorie worth of the ration of the British soldier was shown to be about 4,700, not counting certain extras. A dispatch from its correspondent with the German armies on the western front, published a short time ago by the *Frankfurter Zeitung*, seems to show that the soldiers of the German armies on the western front were being adequately fed, whatever may be the anxiety concerning the food supply of the whole civil population. Each German soldier, it was stated, got 1½ lb. of bread, ¾ lb. of fresh meat, ½ lb. of vegetables or 3 lb. of potatoes; 65 grams of fat, 50 grams of cheese, 25 grams of salt, and 25 grams of coffee. In addition, each man got daily two portions of warm drink—coffee, tea, or cocoa; a special portion of sugar, 0.1 litre of cognac, arrac or rum, 2 cigars or 2 cigarettes, or an equal amount of tobacco or snuff. The calorie worth of this diet is probably over 4,500. The men are reported as looking fit and well, as they should with an open-air life, such ample feeding, and the care bestowed by the German staff in protecting the men in the trenches from damp, and giving them adequate resting periods. It is of interest to note that every one of the armies now at war is provided with a ration of alcohol. This and tobacco are solaces which vary the monotony, and distract the attention from surrounding discomforts. Music and singing have the like effect. Any one lying on a sick bed knows how the weary drag of the day is relieved by the frequent little attentions of the nurse. The ablutions, the taking of medicine, the frequent small portions of food, the visit of the doctor, are all events valued as distracting the thoughts from dwelling on the monotony of bodily discomfort. There must be great art in handling troops in the trenches, exposed to wet and cold, in such a way as to vary the monotony of the miserable conditions. Here come in the preparation of food, artifices for warming it, efforts at shaving, at digging and the decoration of dug-outs, the visits of inspection by officers, the cigarette, and, lastly, the medicinal portion of rum.

THE RESEARCH INSTITUTE AT KUALA LUMPUR.

IN the thirteenth annual report of the Institute for Medical Research in Kuala Lumpur, Federated Malay States, presented by the Director,[1] Dr. Henry Fraser, the question of unpolished rice in relation to the prevention of beri-beri is again considered. It is pointed out that the subpericarpal zone in the rice is the important part. The removal of this in the process of polishing converts a harmless rice into a harmful one. To what extent the use of unpolished rice may save people from acquiring beri-beri is well shown by the expedition of Dr. Wollaston and Mr. Kloss in Dutch New Guinea. This expedition consisted of 204 natives of the Malayan Archipelago, who were rice-eaters, together with two Europeans and four Eurasians. The expedition lasted seven months, and, despite the laborious nature of the work, among the 204 rice-eating natives not a single case of beri-beri occurred. The general health conditions of the expedition are reported to have been excellent. The preparation is advocated of an unpolished rice—that is, a rice from which the subpericarpal layers have not been removed, and which should yield not less than 0.4 per cent. of phosphorus pentoxide. The Governments of the countries concerned could easily create a demand for such a rice by making it compulsory in all gaols and institutions. Some interesting work was also carried out on the cultivation of the leprosy bacillus, various media as recommended by different authors being tried. Material was obtained from 41 non-ulcerating cases of the disease, and nearly 1,000 inoculations were made. The results have been uniformly negative. This work, then, throws doubt upon the positive results which have been recorded so far of the growth of this organism outside the human body. Dr. Stanton furnishes a report of further studies of the larval and pupal stages of *Anopheles*, *Stegomyia*, and other genera of mosquitos, which should prove of special interest to entomologists. Observations on dysentery, the Wassermann reaction, water and water supplies, rabies, and the examination of tumours of different sorts are also contained in this very interesting report.

THE Oliver-Sharpey lectures before the Royal College of Physicians of London will be given by Mr. Joseph Barcroft, F.R.S., on Tuesday and Thursday next at 5 p.m., the subject being a comparison between some physiological and pathological conditions.

WE regret that by a clerical error the new President of the Royal College of Physicians of London was referred to in the JOURNAL of last week in one place as Sir Frederick Taylor. There was another error in the same paragraph. It should have been said that the original charter was granted by Henry VIII on the petition of, among others, John Chamber, Thomas Linacre, and Wolsey, Archbishop of York. Wolsey's name was not mentioned in the charter which was granted to Drs. John Chamber, Thomas Linacre, Fernandez de Victoria (a Spaniard, spoken of also as the Queen's physician), the King's physicians and Nicholas Haleswell, Giovanni Franceschi and Robert Yaxley, physicians.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

THE fund during the fortnight that has elapsed since we reported upon its progress has received notable accretions.

The large local fund collected in Manchester has been paid in to the treasurer, making an addition to the resources of the fund upon which the influential Manchester committee and Dr. E. M. Brockbank, the energetic secretary, may well be congratulated. Handsome subscriptions have reached the treasurer from Canada and

[1] Thirteenth Annual Report of the Institute for Medical Research, Kuala Lumpur, Federated Malay States, 1913. Henry Fraser, M.D.Aberd., Director. Kuala Lumpur: Printed at the Federated Malay States Government Printing Office. 1914.

New Zealand, while the funds in the Birmingham and Newcastle districts continue to grow.

The Fortnight's Subscriptions.

The subscriptions received by Dr. Des Voeux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by certain local funds, and the Scottish and Irish funds, are as follows:

Nineteenth List.

	£	s.	d.
Dr. Carey Coombs ...	2	2	
Lt.-Col. G. T. Langridge, R.A.M.C.	1	1	0
Tower Hamlets Division, B.M.A. (per Dr. W. H. F. Oxley, Hon. Sec.) (3rd donation)—			
Dr. McCrae	1	1	0
Dr. Rosewarne ...	2	2	
Dr Arthur R. Randle ...	1	1	0
Southern Branch B.M.A. (per Dr. J. Green, Hon. Sec.)—			
Dr. E. L. Cambie ...	2	2	0
Dr. J. T. Leon ...	2	0	0
Capt. W. Carling, R.A.M.C.	1	1	
Mr. Henry Rundle ...	1	1	0
Dr. L. K. H. Hackman	1	1	0
Dr. T. A. Mulcahy ...	1	1	
Dr. Thos. Baker ...	1	1	0
Dr T. S. Pennington Sparrow	1	1	
Dr. A. E. Peters ...	1	1	0
Dr. C. D'A. Collings ...	1	1	0
Dr. H. C. Major ...	2	2	0
Dr. Hutton Castle ...	0	1	6
Brigade-Surgeon J. W. Wilson	1	1	0
Dr. J. A. Gibson ...	1	1	0
Col. W. E. Webb ...	1		
Dr. Alfred Hill ...	1	1	0
Lt.-Col. Le Mottée ...	1	1	0
Brig.-Surg. W. M. Harman	3	3	0
Dr. O. V. Payne ...	1	1	0
Dr. J. B. Wood ...	0	10	6
Mr. C. Gordon Brodie	2	2	0
Lt.-Col. Dimmock ...	2	2	0
Dr. C. H. Fowler ...	1	1	
Dr. D. A. Sheahan ...	3	3	0
Dr. E. Lawrie Robinson	1	1	0
Dr. H. I. Gauvain ...	1	1	
Fleet Surg. K. Hurlstone Jones, R.N. ...	0	10	6
Dr. Charles H. Bois ...	0	1	6
Capt. J. A. Cruickshank, I.M.S.	1	1	0
Major T. Hunter, I.M.S.	3	0	0
Birmingham Local Committee (per Dr. R. Saundby) (13th donation — total, £338 1s. 3d.)—			
Mrs. Allison	10	10	0
North of England Branch, B.M.A. (per Dr James Don and Mr. A. S. Percival, Hon Secs.), (6th donation—total, £323 14s.)—			
Dr. W. Hay	1	1	0
Dr. A. S. Hedley ...	1	1	0
Dr. H. A. Edwards ...	1	1	0
Dr. Henry Smith ...	2	2	0
Dr. G. E. Welford ...	1	1	0
Dr. John Brown ...	1	1	0
Dr. J. W. Blandford ...	2	2	0
Dr. W. Petter	1	1	0
Dr. J. R. Baumgartner	2	2	0
Dr. George Murray ...	1	1	0
Dr. G. R. Philipson ...	1	1	0
Dr John Wishart ...	1	1	0
Dr. Thos F. Johnston	0	10	6
Dr. T. Buckham ...	2	2	0
Dr. G. H. Norris ...	5	5	0
Dr R. Parry	2	2	0
Dr Wm. Allen ...	1	1	0
Dr. C. L. Fraser ...	1	1	0
Dr. G. B. Morgan ...	1	1	0
Dr H. de Legh ...	1	1	0
Dr. T. A. McCullagh ...	1	1	0
Dr Wm Scott ...	1	1	0
Dr A. M. G. Walker ...	1	0	0
Dr. Dora E. L. Bunting	1	0	0
Dr. Martin	1	0	0
Professor Hutchens ...	2	2	0
Dr Hart Jackson ...	0	10	6
Sir G. H. Philipson ...	5	5	0
Dr R. Morris ...	1	1	0
Dr R. McGregor ...	1	1	0
Dr. S. Basham ...	2	2	0
Dr Dewar	1	1	0
Dr. A. Brown	1	1	0
Dr. G. Lloyd	1	1	0
Dr and Mrs. A. Campbell	2	2	0
Drs. H. and S. Russell	4	4	0
Dr. A. Herbert Peters	2	0	0
Dr. R. B. Reed ...	1	1	0
Dr. A. Walker ...	1	1	0
Dr. U. B. Walker ...	1	1	0
Dr. C. H. Walker ...	1	1	0
Dr G. M. Coull ...	1	1	0
Chichester and Worthing Division B.M.A. (per Dr. A. Morton Palmer, Hon. Sec.), 3rd donation—			
Dr. R. M. Going ...	1	1	0
Dr. D. Hethcote ...	1	1	0
Dr. G. F. Briggs ...	2	2	0
Mr. H. Crompton ...	1	1	0
Mr. F. W. Scanlon ...	0	10	6
Mr. Waldron Griffiths ...	0	10	6
Buckrose Pharmacists' Association (per Mr. P. Hawkins)	1	10	0
Mr. A. Chapman ...	0	8	9
Mr. G. Knowles... ...	1	1	0
Mr. J. H. Hart	1	1	0
Lanarkshire Pharmacists' Association (per Mr. J. Lohoar) ...	1	1	0
Messrs. Fairchild Bros. and Foster	52	10	0
Bath Pharmaceutical Association, collected by Mr D. A. Evans (per Mr. W. J. Hallett) ...	11	14	6
Dr. L. S. Clark	1	1	0
Warrington Division B.M.A. (per Dr. J. A. Murray, Hon. Sec.), result of lecture at Padgate, organized by Dr. J. Bennett, Chairman of Division, gas and lantern provided by Mr. Hill	10	7	6
Dr. Arthur Whitfield (2nd donation, total £7 7s.)	5	5	0
Harrow Division B.M.A. (per Dr. C. M. Pennefather, Hon. Sec.)—			
Dr. B. H. Barton ...	0	10	6
Dr. A. H. Bindloss ...	1	1	0
Mrs. Brady, M.B. ...	0	10	6
Dr. Andrew Brown ...	0	10	6
Dr. T. Compton ...	1	1	0
Dr. J. D. Cooke ...	1	1	0
Dr. W. S. Darby ...	0	10	6
Dr J. Davidson ...	0	10	6
Dr. Godkin Downes ...	1	1	0
Lt.-Col. E. F. Drake-Brockman	0	10	6
Dr. H. E. Dyson ...	1	1	0
Dr. Cavendish Fletcher	1	1	0
Dr. C. E. A. Goddard...	1	1	0
Dr. H. R. Harley ...	1	1	0
Dr. H. J. Hildige ...	0	10	6
Dr. R. E. Humphry ...	0	10	6
Dr. M. O. Hunter ...	0	10	6
Dr. M. F. Huston ...	0	10	6
Dr. H. S. W. Jones ...	1	1	0
Dr. T. S. Kerr... ...	1	1	0
Dr. S. H. A. Lambert...	1	1	0
Dr. G. A. B. Levick ...	2	2	0
Dr. R. H. Martin ...	1	1	0
Dr F. M. Matheson ...	0	10	0
Dr. H. Crichton Miller	2	2	0
Dr. T. T. O'Callaghan	1	1	0
Dr. C. M Pennefather	1	1	0
Dr. R. L. Romer ...	0	10	0
Dr. R. J. Stilwell ...	1	1	0
Prof. G. D. Thane ...	3	3	0
Dr. W. D. Traill-Thompson	1	1	0
Dr. F. E. Walker ...	0	10	6
Dr. A. H. Williams ...	1	1	0
Dr. F. H. Woodroffe ..	0	10	6
Dr. A. K. Baxter ...	1	5	0
Dr. Agatha Porter ...	0	10	6
Dr. C. Oldfield (per Dr. Barrs)... ..	5	5	0
Mr H. Secker Walker (per Dr. Barrs) ...	3	3	0
Barnsley Division, B.M.A. (per Dr. R. F. Castle) (2nd donation) ...	7	7	0
Dr. John Fawcett ...	3	3	0
Canadian Committee (per Dr. J. Gibb Wishart, Hon. Treas.) (4th donation, total £9 8 5s. 3d.)	400	0	0
Rotherham Division, B.M.A. (per Dr. Knight, Hon Sec.)—			
Dr. Anderson	1	1	0
Dr. Elliott	1	1	0
Dr. Jago	1	1	0
Dr. Knight	1	1	0
Dr. Lodge	1	1	0
Dr. Picken	1	1	0
Dr. Reid	1	1	0
Dr. Riddell	1	1	0
Dr. Kenny	1	1	0
Dr. Slack	1	1	0
Dr. Williams	1	1	0
Dr. Sedgwick	1	1	0
Dr. Collinson... ...	1	1	0
Brussels Medical Graduates' Association (per Dr. Major Greenwood, Treas.) (7th donation, total 126 14s. 6d.) ...	2	2	0
Dr. C. R. Benson ...	1	1	0
Anonymous from Dunedin (per Bank of New Zealand) (3rd donation, total £605)	200	0	0
Mr. S. T. Briggs... ...	0	5	0
Mr. A. E. Grimwade ...	1	1	0
Miss A. McNicol ...	0	10	0
West Ham, East Ham, and Metropolitan Essex District Association of Pharmacists, proceeds of annual dinner (per Mr. W. T. Johnson) ...	7	7	0
Western Pharmacists Association, collected by (per Mr. W. E. D. Shirtliff) (2nd donation, total £125 14s.)... ...	5	14	0
Norwich Pharmacists' Association, collected by (per Mr. W. J. Lacey) (3rd donation)... ...	1	14	0
Birmingham Pharmaceutical Association, collected by (per Mr. F. Smith) (6th donation, total £128 12s.)—			
Mr. H. O. Lloyd ...	1	1	0
Manchester and District Subcommittee (per Dr. E. M. Brockbank, Hon. Sec.) (£574 7s. 5d.)—			
Dr. G. H. Pinder ...	2	2	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited. £8,250 had passed into the Treasurer's hands by Tuesday last, the sum not including the Scottish and Irish and several large local funds.

Scotland.

The following subscriptions have been received by the Scottish Committee in addition to those acknowledged in the Journal, March 13th, p. 481. Further subscriptions should be sent to either of the following treasurers of the fund, Dr. Norman Walker, 7, Manor Place, Edinburgh; Dr. R. McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh; Dr. W. G. Dun, 15, Royal Crescent, Glasgow; and Mr. J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.

	£	s.	d.
Amount previously published	888	5	6
Dr. R. P. McMorland ...	1	1	0
Dr. John Dalgleish ...	5	0	0
Dr. Robert Crawford ...	2	2	0
Dr. John Alex. Gray ...	0	10	6
Dr. A. S. Walker ...	2	2	0
Dr. H. L. Calder ...	5	5	0
Dr. Alex. Robb	1	1	0
Dr. H. E. Langwill ...	3	3	0
Miss Fanny Marshall ...	0	12	6
Dr. D. Gilmour... ...	0	10	6
Dr. Alex. M. Malcolmson	2	2	0
Dr. L. W. C. Macpherson	1	1	0
Dr. F. I. Mackintosh ...	1	1	0
Dr. John Ritchie ...	1	1	0
Dr. Robert Abernethy ...	2	2	0
Dr. J. J. Graham Brown	5	0	0
Dr. Frederick Gourlay ...	1	0	0
Dr. G. R. E. G. Mackay...	3	3	0
Mrs. Glen Henderson ...	0	10	0
Dr. George S. Carmichael	2	2	0
Dr. Ada Miller	1	0	0
Dr. James A. Adams ...	2	2	0
Dr. John Lindsay ...	1	1	0
Dr. W. F. Gibb... ...	1	1	0
Dr. George S. Middleton	4	4	0
Dr. E. H. L. Oliphant ...	2	2	0
Dr. William J. Richard	1	1	0
Dr. P. S. Buchanan ...	1	1	0
Dr. R. Barclay (Ness) ...	1	1	0
Anonymous	1	1	0
Dr. Jane H. Filshill ...	1	1	0
Dr. Thomas Barr, per B.M.A. (Central Division)	3	3	0
Dr. John Wright ...	1	1	0
Professor T. K. Monro (additional) ...	5	5	0
Partick and District Medical Society ...	5	0	0
Dr. R. Speirs Fullarton	1	1	0
Dr. John Paterson ...	1	1	0
Dr. Alex. Munro ...	2	2	0
Dr. J. Maxwell Ross (Dumfries)	1	1	0
Dr. Wm. Craig (Cowdenbeath)...	3	3	0
Dr. George Hunter ...	3	3	0
Mr. Charles W. Cathcart, F.R.C.S.E.	5	0	0
Dr. Wm. Bruce (Dingwall)	0	10	6
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Mr. A. Kennedy... ...	3	3	0
Mr. R. Cairnie	1	1	0
Mr. M. Carmichael ...	1	1	0
Grand total	£1,020	16	0
Glasgow Chemists' Association and Pharmacy Athletic Club, per Mr. William Seivwright, Glasgow	2	0	0
Mr. A. P. McCallum ...	2	0	0
West Fife Colliery Chemists' Association, per Mr. C. Hoy, Kelty...	1	7	0
Messrs. John Currie, Limited	1	1	0
Mr James Finlay ...	1	1	0
Mr. John Fraser ...	1	1	0
Mr. Jas Grant	1	1	0
Mr. John Hodge ...	1	1	0
Messrs. W. O. Kay and Son	1	1	0
Mr. T. McKenzie ...	1	1	0
Mr. J. B. McLaren ...	1	1	0
Mr. J. H. Nicholson ...	1	1	0
Mr. A. W. Ritchie ...	1	1	0
Mr. R. Robertson ...	1	1	0
Mr. J. H. Scroggie ...	1	1	0
Messrs. Smith and Govan	1	1	0
Mr. Geo. Somerville ...	1	1	0
Mr. D. N. Wylie ...	1	1	0
Mr. R. A. Scott	1	0	0
Mr. Alexander Davidson	0	10	6
Mr D. Dunnet	0	10	6
Mr. J. S. B. Heddle ...	0	10	6
Mr. W. J. Jack	0	10	6
Mr. J. G. Sclater ...	0	10	6
Mr. F. W. Soddy ...	0	10	6
Mr. Charles Stewart ...	0	10	6
Mr. Robert Aitken ...	0	10	0
Miss R. R. Bell	0	10	0
Mr. D. Black	0	10	0
Mr. A. J. Clark	0	10	0
Mr. J. Smith	0	10	0
Mr. D. Walker	0	10	0
Miss M. D. Hutchison ...	0	9	0
Mr. P. S. Beatton ...	0	7	6
Mr. W. C. D. Robertson...	0	6	0
Mr. William Barrie ...	0	5	0
Mr. C. P. Bayne... ...	0	5	0
Mr. W. J. Cameron ...	0	5	0
Mr. S. P. Crowden ...	0	5	0
Mr. Robert Fraser ...	0	5	0
Mr. Andrew Gold ...	0	5	0
Mr. A. Inglis	0	5	0
Mr. A. Macdonald ...	0	5	0
Mr. Peter Nisbet ...	0	5	0
Mr. A. A. Porteous ...	0	5	0
Mr. Findlay Stuart ...	0	5	0
Mr. J. M. Turner ...	0	5	0
Mr. William Walker ...	0	5	0
Miss E. R. Hodge ...	0	2	6

Instruments.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by Dr. T. F. Blaker, Brighton, and Messrs. Claudius Ash, Sons and Co., London.

Scotland.

Edinburgh Royal Maternity and Simpson Memorial Hospital.

The seventieth annual meeting of the Edinburgh Royal Maternity and Simpson Memorial Hospital was held on March 31st, in the Hospital, Lauriston Place. Lord Salvesen presided, and the annual report (for 1914) was presented and adopted. The gratifying fact was announced that the large falling off in the number of patients which had followed the coming into force of the Insurance Act and the fixing by the hospital of the fee of 15s for an insured person had now been made up. The fee had not been insisted on, pending a conference with the other maternity hospitals in Scotland and with the Scottish Insurance Commissioners, and there had also been some extension of the hospital's work in connexion with the wives of men on active service. The result was that whilst in 1912 the number of patients treated through the hospital was 1,915, and whilst in 1913 it had fallen to 1,484, in 1914 it had risen again to 1,928. This total was higher than any year since 1909 with the exception of 1911 when it was 1,998 (the hospital's high-water mark). Further, it was matter for congratulation that every month in 1914 showed an advance upon the corresponding month in 1913. With regard to the quarters it was noted that the autumn (July to September) as usual, led the way with 526 cases, whilst the spring totalled 450, the summer 495, and the winter 457. During the year the nurses paid 12,985 visits in connexion with the outdoor department (including the Leith Branch), an average of 9.6 visits a case; the corresponding numbers in 1913 were 9,246 and 9.3. The number of nurses training in the hospital in 1914 was 53 against 65 for 1913; the number of undergraduates who attended the clinics in the hospital and cases through the Associated Dispensaries was 51. A few medical men and women attended the post-graduate course in obstetrics during the month of July, but the outbreak of the war led to the abandonment of the usual courses in August and September. The war had another hampering effect upon the work of the hospital, for it led to the calling up for duty in military hospitals of the matron, the sister, and several of the probationer nurses who were members of the Territorial Nursing Association. Further, the supply of fully-qualified house-surgeons and of nurse pupils had been interfered with; but towards the close of the year matters had much improved, and the directors acknowledged with gratitude the assistance rendered during the time of scarcity by the extern assistant physicians, who undertook night duty in the district work. They also desired to place on record their high appreciation of the unwearied efforts on behalf of the hospital made by Dr. Freeland Barbour, whose term of fifteen years' service as physician ended in October, 1914. The directors renewed their earnest appeal for such an increase of financial support that the hospital might be maintained in a state of efficiency worthy of the city and of the medical school of which it was a part. The calls upon the hospital were greater than ever, for while King and country claimed the men, the mothers of their children were a national asset and a national responsibility that could not be neglected. Two new electric incubators were needed for the hospital, and the money for one of these had been promised if that for the second could be found; it is satisfactory to know that before the end of the meeting both were assured. Dr. John Carswell, in moving the re-election of the directors, touched upon the question of the diet of the population, and especially upon the dieting of infants and mothers.

Braxy.

Dr. J. P. M'Gowan, assistant superintendent of the laboratory of the Royal College of Physicians in Edinburgh, who some time ago investigated the disease of sheep called "scrapie," has been for some time engaged in an investigation of "braxy" for the Highland Agricultural Society. He has had the assistance of sheep breeders in various parts of the country, and his report will appear in the next volume of the society's *Transactions*. The disease, which was the subject of an inquiry by Professor Hamilton for a special commission at the time of his death, is responsible for a heavy mortality among sheep in the West of Scotland.

Ireland.

Enforcing the Vaccination Act.

At a recent meeting of the Dunfanaghy Board of Guardians it was proposed that the question of notifying defaulters under the Vaccination Acts should be considered, and all resolutions passed by the board refusing to enforce vaccination rescinded. In the discussion it was pointed out that the position in Ireland and England under the Vaccination Acts was substantially different: in Ireland, unlike England, the conscientious objectors' clause had no existence; that being so, the guardians were bound to enforce the Act as heretofore, and the Local Government Board had full power to compel the guardians to enforce vaccination in Ireland. By seven votes to three the guardians decided to administer the Vaccination Acts in accordance with the statute and the regulations of the Local Government Board.

Approved Societies and Sickness Benefit.

At a meeting of the Rathdrum Board of Guardians an application for relief was considered from an insured man whose daughter was also sick, and though she had been employed as a servant and insured, was not obtaining sick benefit under the Insurance Act. A guardian stated that he had met cases in which approved societies placed every difficulty in the way of insured persons getting what the State allowed them. Several other guardians stated that their experience was similar. The application was referred to the relieving officer to afford the necessary relief. In the Rathdrum district the medical attendant does not certify for sickness benefits, and the insured have to depend for their certificates on clergymen, magistrates, and a few medical advisers appointed by the Insurance Commissioners for the whole county.

Carrick-on-Suir Guardians and their Doctors.

After close on one hundred applications from the Poor Law medical officers, and several requests from the Local Government Board to the Carrick-on-Suir Board of Guardians to fix an increased scale of salaries, the guardians have consented to give an increase of £50 a year to each doctor. It was not until the guardians failed on several occasions to receive an application for the medical vacancy of the Rathgormac dispensary district that a majority of them could be got to vote an increased salary for this district as well as to increase the salaries of their existing medical officers. The increased salaries have been accepted by three of the four Poor Law medical officers, and sanctioned by the Local Government Board. Dr. M. J. Moran has declined to accept the increase offered by the guardians as being inadequate, owing to his length of service, which is now close on thirty years.

England and Wales.

Leicester Royal Infirmary.

The military authorities requested that a number of beds in the Leicester Royal Infirmary might be set aside for wounded soldiers. The board regarded it as a duty to render all possible assistance in this time of crisis, but at the same time realized that, except in dire emergency, the public should not be deprived of beds always needed for urgent cases. After due consideration, therefore, it was decided to place the out-patients' department at the disposal of the Government, and the department was accordingly fitted up for fifty beds. The number of military patients admitted to December 31st was eighty-two.

The 142nd annual report shows that the total income of the infirmary for the year 1914 was £25,756 and the expenditure £25,773. The number of in-patients was 4,003, ten more than in 1913, and more than in any previous year; the total attendances in the out-patient department was 35,091. Attention is called to the importance of building and equipping a new pathological department. The architect's plan for this building and for a modernized mortuary has been approved, and the estimated cost is £3,600, whilst the expenses of furnishing

and equipment will probably increase this figure to £4,200. Notwithstanding the war the board is encouraged to proceed with that urgently needed work by several generous contributions—£1,000 from Sir Edward Wood, £500 from Mr. Simpson Gee, the chairman; and sums of £100 from the vice-chairman, Mr. C. J. Bond, F.R.C.S., Mr. Fielding Johnson, and Mr. Fielding Johnson, jun., leaving a sum of £2,400 still to be obtained. In order to complete the rebuilding of the Children's Hospital £2,202 are needed. The majority of the members of the honorary medical staff have been called up for service with the Territorial Forces, twelve of the resident medical officers have left the institution to proceed on foreign service, six members of the nursing staff volunteered and were dispatched to the front, and other nurses are serving at base hospitals.

UNIVERSITY COLLEGE HOSPITAL, LONDON.

At the annual meeting of University College Hospital, London, the chairman said that 100 beds had been reserved for treatment of sailors and soldiers. Every member of the staff who could be spared had—in many cases at great personal sacrifice—placed his services at the disposal of the Government. In addition many students and no fewer than sixty members past and present of the nursing staff were engaged in military service. The incorporation of the National Dental Hospital as the dental department of the hospital had been one of the notable events of the year. The department had rendered valuable service in the treatment, free of charge, of no fewer than 8,451 recruits for the new army. All departments of the hospital continued in a high state of efficiency, and financially, by the exercise of all possible economies, the results of the year had been slightly more favourable than they had expected.

New South Wales.

NEW MEDICAL FELLOWSHIP AT THE SYDNEY UNIVERSITY.

A NEW endowment has recently been received by the Senate of the University of Sydney to found "The Walter and Eliza Hall Travelling Medical Fellowship." The object of the Fellowship is to promote the interests of medical science and practice in Australia by enabling highly qualified graduates in medicine of the University of Sydney to obtain special experience abroad, and subsequently to return and give the advantage to the medical school of the University of Sydney. The amount of the Fellowship will be payable as follows: £150 upon leaving Australia, £100 after six months, £100 after twelve, eighteen, and twenty-four months respectively, £150 after thirty months, and £200 after thirty-six months. The Fellow will be required to proceed abroad on appointment, and to return to Sydney on the completion of twenty-four months. The tenure of the Fellowship will be three years. The Fellowship is to be awarded by the Senate of the University of Sydney, acting on the recommendation of the Faculty of Medicine, to a graduate in Medicine of the University of Sydney of not more than five years' standing from his qualification by examination. During the first two years' tenure the holder must follow a course of work approved by the Senate on the recommendation of the Faculty of Medicine. The third year's tenure of the Fellowship must be spent at the University of Sydney, doing such work as may be approved by the Senate on the advice of the Faculty of Medicine. The Fellow must do such teaching as shall be required of him, and directly furthering the objects of the Fellowship. The Fellow shall be under the control of the head of the Department in which he carries on his work. An allowance of not more than £200 per annum will be paid to the Fellow to defray the cost of such material, apparatus, and other expenses incidental to the research as may be approved by the Senate.

VITAL STATISTICS.

The Government Statistician's report on the vital statistics of Sydney and suburbs for 1914 states that the estimated population of the metropolitan area was 752,500 on December 31st, 1914, of which the city contained 110,700 and the suburbs 641,800, an increase during the year of 27,100. The city population decreased by 5,200 (the scheme for improving the city which has been in progress several years necessitating the demolition of a number of dwellings), but the suburban population increased by 32,300. The number of marriages in 1914 was 9,479, corresponding to a rate of 12.79 per 1,000 of the population. The rate is, with the exception of that of 1912, the highest experienced, and is 7 per cent. above the average of the last five years. The birth-rate was 28.09 per 1,000 of the population, the highest ever recorded in the metropolis. The death-rate was 10.26 per 1,000 of the population. This is equal to that in 1909, which was the lowest recorded, and is 5 per cent. below the average of the preceding five years, which, however, were all years of exceptionally low mortality. The number of children under 1 year of age who died was 1,452, or 67.9 per 1,000 births. This rate is the lowest on record, and is 10 per cent. below the average of the previous five years.

India.

SICK AND WOUNDED SOLDIERS.

THE hospital ship *Madras*, which left Bombay in February for Basrah, returned to Bombay on March 8th from that port with 4 officers and 205 Indian wounded and invalided solders. The *Madras* entered the Alexandra Dock in the afternoon, and the more serious cases were taken to the Lady Hardinge Hospital for treatment. The remaining cases were sent to up-country stations. During the voyage one soldier died from enteric fever.

The motor ambulance presented to the War Hospital, Lahore Cantonment, by the Maharaja of Jind, for the comfortable transport of the wounded from the train to the hospital, has just arrived. The ambulance has a very silent sliding-valve Daimler engine of 40 h.p., capable of seventeen miles an hour. The ambulance is admirably fitted to provide comfortable accommodation for seating sixteen men, or for carrying four stretchers with nurses.

According to the latest list of donations to the St. John Ambulance Red Cross War Fund, the total sum received now stands at Rs.2,82,278/7/8 (nearly £19,000 sterling).

THE KING EDWARD VII SANATORIUM, BHOWALI.

The King Edward VII Sanatorium at Lotni, Bhowali, for the treatment of tuberculous disease was opened in April, 1912, at Bhowali, in the hills, a few miles from Naini Tal, the summer capital of the United, formerly the North-West, Provinces of India. Between April, 1912, and December, 1913, the number of patients admitted was 145, while 95 were admitted during 1914. Of these 95, 11 were Europeans and Anglo-Indians, and 84 were natives of India. A curious point is that, out of the 11 Europeans, no fewer than 9 were females, while there were only 14 females among the 84 Indians. The method of treatment carried out is that by tuberculin, and the results are distinctly encouraging. Though it is not claimed that any cases were cured, out of 80 patients discharged during the year, 21, or 26.25 per cent., were in a condition of arrested disease, and the same number much improved, these two heads comprising more than half of the total; 14, or 17.5 per cent., were improved; 16, or 20 per cent., stationary; while 4, or 5 per cent., were worse, and the same number died. One sanatorium, however, with under 100 admissions during the year, is a mere drop in the ocean in the treatment of tuberculous disease in a province with a population of between 40 and 50 millions. Classes of instruction in the use of tuberculin for medical officers and subordinates have been instituted, but only one such class was held in 1914, the meeting of others having been prevented by the war. The sanatorium is in charge of Major A. Cochrane, I.M.S., F.R.C.S.Eng., as superintendent, with Dr. Amba Dutt Joshi as assistant.

GIFT TO A HOSPITAL.

Rai Jyot Kumar Mukerjee, Bahadur of Utterparah, has made a donation of Rs. 30,000 (£2,000) towards the cost of construction of the new nurses' quarters at Howrah General Hospital, recently opened by Lady Carmichael.

A VETERINARY EXHIBITION.

One of the most interesting features at the recent Aligarh Horse Show was an exhibition arranged by the Civil

Veterinary Department of a number of the latest scientific instruments, appliances, and remedies used in the treatment of domestic animals. Illustrations and charts bearing on important diseases were shown, and also collections of biting flies and harmful parasites. A series of demonstrations were given during the day by the members of the provincial staff of the department under the supervision of M. Niaz Mohamed, deputy superintendent, while each evening a lecture was delivered by Veterinary Inspector S. Raza Hussain, illustrated by interesting lantern slides. The subjects chiefly comprised cattle and sheep breeding, diseases of animals and their treatment, and simple veterinary sanitation and hygiene. The benefits of protective inoculation against rinderpest and other deadly animal plagues were explained, and pamphlets on interesting veterinary subjects were distributed. Judging from the large attendance of zamindars, cultivators, and others, this branch of the exhibition appeared to be greatly appreciated.

Correspondence.

SECRET REMEDIES.

SIR,—The article published in the BRITISH MEDICAL JOURNAL, on April 3rd, on Patent Medicines in New York (p. 601) and your comments thereon, Publication of Formulae of Secret Remedies (p. 607), should receive the consideration and support of every member of the medical profession, for there is urgent need for similar regulations in this country.

The British Medical Association, in its proposals laid before the Select Committee of the House of Commons, supported the publication of the formulæ, and the Select Committee in its report last August recommended very strong measures to check the widespread use and abuse of secret remedies. Unfortunately, owing to the great demands made upon the press by the outbreak of war at the time, the attention of the public was not adequately drawn to the gravity of the report.

The General Medical Council during its session last November agreed:

(*a*) That the General Council should convey to the Lord President of the Privy Council an expression of its complete approval of the recommendations of the Select Committee.

(*b*) That the General Council represent to the Government through the Lord President the necessity for the immediate creation of a Ministry of Public Health in pursuance of the recommendations of the Select Committee.

In view of these facts could not some medical member of Parliament be induced to take up a matter so pressing in the interest of public health and bring in a bill embodying some, if not all, of the recommendations contained in the report? Or, if immediate legislation is impracticable, would it not be possible to take other steps towards diminishing the dangers of the unregulated sale of secret remedies by making more generally known the evils at present associated with it? Cordial recognition is due to the JOURNAL for the clear lead it has always given in this direction.—I am, etc.,

H. LANGLEY BROWNE, M.D., LL.D.

West Bromwich, April 3rd.

EARLY ADMINISTRATION OF VACCINE IN PNEUMONIA.

SIR,—Dr. William H. Wynn's interpretation of my letter of March 27th is different from that which I had intended. I do not deprecate the use of vaccine in pneumonia. It would be a task almost as lengthy as invidious to record the many lines of treatment which have been suggested during the last dozen years to which the sage's remark of "using the new treatment while it still cures" is especially applicable. It is only by treating alternate cases that the value of a new remedy can be determined when the disease is very variable from time to time. A long series is needed before any conclusion can be arrived at. The possibility of suggestion must be removed by letting the treatment appear to be the same to all the patients by using some innocuous material for the controls, such as normal saline containing the usual minute quantity of antiseptic, and this should be given at the same times and with the same frequency as the vaccine.

In the *Lancet* (April 3rd, 1911) a paper appeared showing the great value, according to the author, of vaccine treatment, stating that the mortality in 300 cases was 13 per cent. This led me to look up the records of the London Hospital, and the last that have been satisfactorily tabulated related to 1913. During that year 294 cases of pneumonia in males were admitted, and of these 39 died; whilst of 161 females suffering from pneumonia, 12 died. Amongst the deaths are included one who died of carcinoma of the stomach, one from Addison's disease, three from pericarditis; four, aged under 3 years, from empyema, and several within a few hours of admission to the hospital.

Nevertheless, including all—several of which would have died before a vaccine could have been administered—the mortality is 11.2 per cent.

During 1913 a very small percentage of cases of pneumonia were treated with vaccine at the London Hospital.

My contention is that vaccine treatment of pneumonia may be the best treatment known, but in my opinion the observations published are not convincing.—I am, etc.,

London, W., April 6th. OTTO GRÜNBAUM.

AUTOGENOUS LIVING VACCINE IN THE TREATMENT OF TYPHOID FEVER.

SIR,—It does not appear to me that Drs. Bourke, Evans, and Rowland obtained very remarkable results from the use of living autogenous typhoid vaccine. Their best case was No. 1, when the temperature became normal six days after vaccine treatment was started. This, undoubtedly, was a good result. But in Case II the temperature was not normal for fifteen days; in Case III it was not normal at the end of twenty days; in Case IV it took twenty-four days; in Cases V and VI, fifteen days.

In typhoid and paratyphoid fever the coliform microbes inhabiting the intestine always become pathogenic, and to obtain the best and most rapid results it is necessary to include them in the autogenous vaccine. I make the vaccine from the first growth on agar, or, better still, endo-plate without subculture. The suspension in 0.5 per cent. phenol saline is killed by heating for thirty minutes at 58.6°. The microbes are counted together by the direct method in a counting chamber. The vaccine can be ready in twenty-four hours after the arrival of the specimen at the laboratory. The doses I use are $2\frac{1}{2}$, 5, $7\frac{1}{2}$, 10, and 11 million, and are given subcutaneously in the pectoral region. The intervals depend on the reaction of the patient. If there is no effect on pulse or temperature after the $2\frac{1}{2}$ million dose, the 5 million may be given in twenty-four hours if there is a rise of temperature. The next dose is the same ($2\frac{1}{2}$ million) given when the temperature comes down and begins to rise again, and so on. In two cases by this method the temperature has been normal in twenty-four hours, in others after three days, while in others it has fallen rapidly after the third ($7\frac{1}{2}$ million) dose. I always continue the vaccine, giving several increasing doses (10, 15, 20 million) after the temperature has become normal in order to prevent relapse.

Live vaccines have not given me any better results in treatment than dead.—I am, etc.,

Dublin, April 5th. W. M. CROFTON.

TREATMENT OF DRY PLEURISY BY TEMPORARY PARTIAL ARTIFICIAL PNEUMOTHORAX.

SIR,—Dr. Lucas has had such considerable experience of artificial pneumothorax in particular, and so much more experience of the treatment of phthisis in general than I can lay claim to, that I feel some diffidence in commenting on his case published under this heading in the JOURNAL for April 3rd (p. 593). But I will risk the prophecy that, in the course of the next year or two, he will regret having concluded the treatment by artificial pneumothorax so early.

Though the patient's most prominent symptom was pain due to dry pleurisy, it is more than probable that the lung was also diseased. If this was so, it is unlikely that brief, partial collapse of the lung could permanently arrest the disease. The experience of the past ten years has definitely shown that the benefit derived from an artificial pneumothorax is directly proportional to (1) the completeness of the pneumothorax, and (2) the consistency with

which a complete pneumothorax is maintained for a considerable period, usually one to two years, or even longer. Though these principles are generally accepted on the Continent, there is a tendency in this country to coquette with half measures. The compressed lung is often allowed to re-expand partially, and when fever, cough, and expectoration begin to return, another injection of gas is given, and the physician points proudly to the rapidity with which these symptoms again disappear. Though he may be demonstrating the efficiency of the treatment, he is also, incidentally, demonstrating his ignorance of its principles.

A competent surgeon does not play fast and loose with acute tuberculosis of a joint, but, while the surgeon who takes a splint off a tuberculous joint too soon can retrace his steps, the physician who has allowed a tuberculous lung to re-expand too soon usually finds the pleurae adherent when he attempts to collapse a lung for the second time. This, I anticipate, will be Dr. Lucas's experience should the disease in his patient's right lung flare up again. He has, in fact, burnt his bridges to relieve one symptom. Professor Saugman's advice—"When in doubt, continue the treatment"—is based on much bitter experience of the effects of a too early re-expansion of the lung; and within the last fortnight I have had occasion to doubt whether, in allowing a lung to re-expand after more than two years of complete collapse, I have acted wisely.—I am, etc.,

Gorleston-on-Sea, April 5th. CLAUDE LILLINGSTON.

THE TREATMENT OF MALIGNANT DISEASES OF THE SKIN.

SIR,—I thank Dr. J. H. Sequeira for his reply in the BRITISH MEDICAL JOURNAL of March 29th to my inquiry, and also for a reprint of his interesting article, "Some experiments with *x*-ray filters," which he kindly sent to me.

I must again point out to Dr. Sequeira that his reply is misleading, for he says:

> I have to state that it is a common practice to give massive doses of *x* rays, equivalent to eight or ten pastille doses, through a filter of 4 mm. aluminium. The doses are measured with the pastille on the proximal side of the filter, 7.5 cm. from the anode of the tube, and the same exposure is given to the whole area treated.

The statement does not convey any definite meaning, for anybody with a practical knowledge of *x* rays knows that with a "hard" tube eight pastille doses measured upon the proximal side of the filter may be equivalent to about three pastille doses delivered to the patient at 15 cm. from the anode; but with a "soft" tube it may mean that the patient will receive few or possibly practically no *x* rays whatever, according to the degree of "softness" of the tube, and, consequently, of the penetrating quality of the rays. At a hospital in which I am interested we are said to be in the habit of delivering heavy doses of *x* rays, but I do not think that anybody in that institution would deliver eight or ten pastille doses to the patient at one sitting upon one area.

Dr. Sequeira also mentions that to a patient of his seventy pastille doses were given to the same area in three and a half weeks in seven sittings. Surely he means that seventy pastille doses were given to the 4 mm. filter, and not to the patient.

If a bottle of medicine containing eight doses were ordered for a patient and the patient swallowed two doses, I do not think it would be justifiable to say that the patient had had eight doses administered to him when the remaining six doses were retained within the bottle.

The question of *x*-ray dosage is a very serious one.—I am, etc.,

London, N., March 31st. CHRISTOPHER KEMPSTER.

COLOUR VISION THEORIES.

SIR,—From what I knew of Shelford Bidwell's work I was confident that he had never said that the red lines on Benham's top do not appear when it is illumined with yellow light. In the first place, in neither of the quotations given is he dealing with the Benham top at all. What have "tinfoil strips" and "needles" to do with the Benham top? The quotations refer to his ingenious experiments designed to throw light on the problems of colour vision.

But, waiving this point, let us examine Bidwell's papers more carefully. He endeavoured to interpret his results on a very crude and early form of the Young-Helmholtz theory, in one place referring to Hering's theory. He found that they neither of them give a completely satisfactory solution of his observations.

In the *Proceedings* of the Royal Society (vol. lxviii, p. 278) we find an account of certain coloured border effects surrounding a circular patch under different illuminations.

> If the rays illuminating the circular patch seen in the eyepiece were taken from the red, orange, or yellow regions of the spectrum, the image appeared to be surrounded by a narrow red, or rather crimson, border.

In the next sentence he says that this effect was obtained when the light used was orange-yellow λ 5830 to λ 5990 (my sodium light was λ 5890 to λ 5895), "and a yellow of λ 5740 to λ 5850; in the last case the border was less conspicuous, but still recognizable with certainty." In another experiment, on p. 279, he says that the focussed image of the needle appeared to be red

> when the slit was placed in any part of the spectrum between the extreme red and the greenish yellow. With the slit in the greenish yellow itself the image of the needle appeared to be almost colourless.

The only possible inference from these experiments is that the red lines do appear on the Benham top when the illumination is yellow light. On p. 280 he says:

> Though the image was colourless when the patch was illaminated by the greenish-yellow rays of the spectrum, it appeared red when the same hue was formed by combining red and green rays.

Although a combination of two lights of different wave lengths may give rise to the same psychical perception of greenish-yellow as a spectral light of that colour, we have no right to assume that the preceding changes in the retina are the same in the two cases.

Let us now examine the quotation from vol. lx, p. 372, with its context:

> In every case when the spectroscope showed that the glass transmitted red light, the tinfoil strip became red, but never otherwise. For example—it reddened with a dark blue cobalt glass, but not with a blue glass which transmitted much more light, but intercepted the red end of the spectrum.

Surely from this it is obvious that when the red excitatory process in the observer was not stimulated, the red border was not seen; and in the subsequent experiment (vol. lxviii, p. 279) it was found that any colour from spectral red up to and including spectral yellow, did stimulate the red excitatory process.

Mr. Bidwell's results seem to confirm my views, as given in my paper (*Ophth. Trans.*, 1909).

As Dr. Edridge-Green now tells me that his letter was intended as an explanation of his curious behaviour, when I attempted to raise a discussion on the theories of colour vision, I am ready to accept it as such; but, like most of his statements, it is difficult to understand. On January 9th, for instance, he said "though I consider my theories of vision and colour vision are actual facts, I have never taken exception to any one not accepting them as such"; surely this long correspondence is sufficient evidence that his words require very special interpretation. Be it noted that I have never disputed one of his facts, only his theory and his misrepresentations of the assertions of others.—I am, etc.,

Newcastle-upon-Tyne, April 4th. A. S. PERCIVAL.

SIR,—Dr. Edridge-Green asserts that the theory of colour vision enunciated on p. 341, etc., of the second edition of v. Helmholtz's treatise is an "interpolation," and insinuates that it does not correctly represent the views of its putative author.

In the preface contributed by Koenig to the book in question (the publication of which was not completed until after the death of v. Helmholtz) it is specifically stated on p. x that the revision of the whole of the text down to p. 645 was undertaken by v. Helmholtz himself, and that the only "interpolation" (*Einschaltung*) the editor has felt himself justified in making appears on p. 799.

Dr. Edridge-Green should have read this preface, and he must know that no graver charge can be made against the editor of a classic than that of putting forward as the original author's statements interpolated matter. Nevertheless, he makes this charge against Koenig without producing a particle of evidence, unless he regards tittle-tattle as evidence. In the circumstances I need not trespass further upon your space. Dr. Edridge-Green and I have such very different criteria of what constitutes evidence, that any interchange of views must be waste of time.—I am, etc.,

Loughton, April 2nd, M. GREENWOOD, jun.

MULTIPLE LIPOMATA AND ELEPHANTIASIS.

SIR,—Dr. Marion Archibald's case (BRITISH MEDICAL JOURNAL, April 3rd, p. 595) is of considerable interest and of some variety; judging by the description and photograph it belongs to the group described by Adams in 1894 as "false hypertrophies." The characteristics of these cases are that they are not always congenital; they are occasionally bilateral, they are associated with syndactylism and lipomatosis, and in many cases are irregularly progressive. These cases must be distinguished from true congenital elephantiasis, which is a condition resembling the trophoedema of Meige, and is not associated with multiple tumours or other congenital defects, such as supernumerary digits.

The swelling of the superficial veins is interesting for two reasons: First, because many of these cases are associated with naevi and angeiomata, and secondly, because one theory of the causation of the hypertrophy is that it is due to an increased blood supply and venous engorgement dependent on certain supposed changes in the coats of the arteries. The literature goes back to 1858, at least, but no very satisfactory explanation of these hypertrophies has yet been forthcoming.—I am, etc.,

J. M. FORTESCUE-BRICKDALE, M.A.,
M.D.Oxon., M.R.C.P.

Clifton, April 3rd.

WINES AND WINES.

SIR,—We publish the analysis of "Winox Wine Food" with a full appreciation of the reasons you give why many medical men hesitate to prescribe such preparations. By printing the full analysis on every bottle we prove "Winox" contains no drugs, injurious or otherwise, and physicians can see that its strong tonic properties, besides being beneficial in themselves, must prevent any *reaction* from the alcohol, which causes a "drink habit." Our recommendations to the public are based entirely upon the experience of a great number of practitioners, and are *not*, as you suggest, my private opinions as a member of the public. I accept the fullest responsibility for all such statements, and remain, yours faithfully,

L. CAMPBELL JOHNSTON,
Managing Director.

65, London Wall, London, E.C.,
March 1st.

PROHIBITION AND THE OUTCRY AGAINST ALCOHOL.

SIR,—Now that the question of altogether prohibiting the sale of alcohol has arisen, it seems to me that the suppression of certain harmful public advertisements might well be considered first of all. There are all kinds of false claims made in the advertisements of various "meat wines," so-called "tonic wines," and other "medicated wines," but what, may I ask (except harm), can be the result of the following advertisement, which I saw this morning in a railway carriage at Baker Street Station? It runs: "————'s Hollands—The Spirit of Health. If you want to keep really fit, drink ————'s Hollands. Ask your doctor why. He knows; moreover, it's cheap." Surely, a doctor need not be a teetotaler to be offended by seeing such insidious statements pasted up in public places, as if contradiction were completely out of the question.—I am, etc.,

F. PARKES WEBER, M.D.

London, W., April 4th.

Obituary.

WALTER LEWIS THOMSON, M.D., D.P.H.,

ASSISTANT MEDICAL OFFICER OF HEALTH FOR DERBYSHIRE.

BY the sudden death of Dr. W. Lewis Thomson, Assistant Medical Officer of Health for Derbyshire, that county has lost an exceptionally able officer. Dr. Thomson was just 40 years of age. He received his medical education at the University of Glasgow and at Cardiff. After acting as assistant to Dr. Mitchell of Gorseinon for several years, he returned to Scotland as assistant medical officer of health to Dr. Wilson of Lanarkshire, where he remained for two years. In 1907 he was appointed assistant school medical officer for Derbyshire, and subsequently became the chief assistant medical officer of health and bacteriologist and tuberculosis officer. While in Derbyshire he published an important report on the heating of elementary schools, its point being that with the heating area of hot-water pipes then allowed it was impossible to keep the schools warm if adequately ventilated. His recommendations were adopted by the Derbyshire Education Committee, and effect is now being given to them, with the result that the schools are not only adequately heated, but efficiently ventilated. He also published an exhaustive report on the bacteriology of diphtheria, one of his first pieces of work in Derbyshire. In 1911 he reported on a bacterial food poisoning epidemic at Chesterfield. In this investigation he showed that a serious outbreak was due to contamination with *B. suipestifer* of the jelly poured in pork pies. An important recommendation made in this report was that all jelly which could not be used at once, and which had to be stored, should be covered while sterile with a layer of melted mutton fat, the fat being removed when the jelly is required. In 1908 Dr. Thomson, at the Royal Institute of Public Health at Buxton, read a paper on the epidemiology and infectivity of cerebro-spinal meningitis, based on an examination of some 208 cases he had investigated in Lanarkshire. The paper is of extreme interest at the present time.

Dr. Thomson was of an extremely simple, kindly nature, and the school children who attended his clinics and the tuberculous patients under his care were all treated with great consideration. Among many other activities Dr. Thomson had charge of the *x*-ray apparatus at the Derby County School Clinic, and was most successful in its application to cases of ringworm, alopecia, and tuberculous glands. He was an omnivorous reader, and kept abreast of all current medical literature—American, English, and German. The vacancy caused by his death cannot possibly be filled by one man, for it is seldom that one is found who can cover so much ground and is at the same time thorough in every aspect of his work.

Recently the War Office had appointed Dr. Thomson Bacteriologist for South Derbyshire and South Notts. On March 24th he was making a spinal puncture of a trooper and examining a large number of contacts; on March 25th, in company with Dr. Barwise, he was doing the same work, and appeared to be suffering from a chill. Dr. Barwise sent him home by train, but, with characteristic self-denial, he went back to the laboratory, where he remained working until 7 p.m. On March 26th he remained indoors, and took to his bed on the following day. Dr. Laurie and Dr. Barber were called in, and it was found he was suffering from bronchopneumonia, with profuse expectoration. An examination was made of the sputum, and from it the meningococcus was isolated. On the evening of March 29th he rapidly got worse, became unconscious, and died on the following day.

Dr. Thomson leaves a widow and three young children.

Dr. BARWISE writes: "I should like to bear testimony to the loss we have sustained in Derbyshire by the death of my colleague Dr. Lewis Thomson. No chief ever had so loyal, willing, and able an assistant. The motive spring of his action was a real love for the poor and those afflicted. He was always cheerful, and in our long intercourse together I can never remember any disagreeable passage between us. On occasions when he was not in agreement with me he had a most effective silence, which gave me the opportunity of reviewing my opinion. Practically the whole of the school reports of Derbyshire were written by him. He was well known to the members of the various committees for whom he worked, and they placed implicit confidence in him. His untimely death is mourned by committees, colleagues, nurses, and patients. I also have reason to know that his work as school medical officer was thought highly of by the Board of Education."

EDWARD FRANCIS HERMAN HARDENBERG,

M.B.LOND., M.R.C.S., L.R.C.P.

MANY Guy's men will be grieved to hear of the death, at the early age of 44, of Edward F. H. Hardenberg. His fatal illness commenced in November, 1913, and from that time to his death, on March 22nd last, he had to pass through a most distressing call upon his courage and patience. Fully aware of his condition, he faced his fate with exemplary fortitude, and to the last his friends and attendants were stirred to admiration at the brave and cheerful spirit he manifested. His fellow-members of the

West Herts Division have lost a loyal and most highly esteemed colleague; he was a staunch member of our Association.

After a distinguished career at Guy's Hospital, Dr. Hardenberg joined Dr. F. Haycraft Berry in partnership at Watford in 1897, and from the first settled down in earnest to the exacting demands of a large and important practice. Careful, methodical, and most painstaking, he acquired, as the years went past, the full confidence of his patients, with, at the same time, an increasing public regard. His Dutch extraction contributed to the eminently critical methods of practice he adopted. The excellences of a "Guy's man" were manifested daily in his detailed work, and it was a pleasing feature during his painful illness to see how spontaneously his former teachers, Dr. G. Newton Pitt in particular, came to his assistance. Probably the highest tribute to his memory is the work he did, as medical officer, for the children of the London Orphan Asylum. He gave unstintingly of his best for their welfare, a service warmly appreciated by the governors of that institution: the children were devoted to him.

Outside the routine of practice Dr. Hardenberg maintained a keen interest in general literature, and was well versed in the classical French and German authors. A life of hard work in general practice, over at 44, is in reality a tragedy. Short though his career was, Dr. Hardenberg left behind him a memory which his colleagues will cherish and a reputation of honour to his profession.

The interment took place at the Watford Cemetery on March 26th, and the large attendance of colleagues, of representatives of public bodies, and of the general public testified to the respect in which Dr. Hardenberg was held.

MR. BERNARD ROTH, the well-known orthopaedist, who died recently at the age of 63, was the eldest son of the late Dr. Mathias Roth, of Wimpole Street. He studied medicine at University College, becoming M.R.C.S. in 1874, and afterwards serving the office of house-surgeon, under Sir Henry Thompson, in University College Hospital. He also worked at Brussels, Paris, Vienna, and Berlin. In 1875 he became associated with his father in orthopaedic practice, giving special attention to the treatment of spinal curvature. He became F.R.C.S. in 1878, and for many years practised both in London and in Brighton, travelling daily from one place to the other. He was the author of numerous writings, the principal among them being *The Treatment of Lateral Curvature of the Spine*, published in 1888; a second edition appeared in 1899. He also contributed to the BRITISH MEDICAL JOURNAL in 1897 an analysis of 1,000 cases of lateral curvature treated exclusively by posture and exercise without the use of mechanical supports. In his later years he took a keen interest in numismatics, and, besides other papers, published in 1910 a monograph on Hiberno-Danish coins. He was a Vice-President of the British Numismatic Society and of the Royal Numismatic Society and a Fellow of the Society of Antiquaries. He was a J.P. for Middlesex and for Brighton, and a Visiting Justice of H.M. Prison, Pentonville. Mr. Roth married, in 1878, a daughter of John Bright, who survives him, with a son and a daughter.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

SECOND M.B. (*Part I*).—Lena C. Adam N. D. Ball, L. S. Banes, Annie H. Banks, M. Baranov, H. E. Beasley, L. Bernstein, A. Blackstock, J. D M. Cardell, W. B. Christopherson, C. E. Cobb, H. N. F. Cook A. B. Cowley, Joyce E. Craggs, Nora A. Crow, E. S. Davies, I. Davies, Mary Day, F. P. de Caux, Elizabeth Denniston, G. W. R. W. Dreiheller, A. Eidinow, Sylvia V. Elman, F. A. Evans, D. C. Fairbairn, Lilian M. Fisher, G. W. T H Fleming, A. Foner, W. F. Francis, A. L. Goff, J. Gorsky, *W. H. Grace, Gwenvron M. Griffiths, *A. W. Holgate, H. N. Hornibrook, J. F. Howells, M. Jackson, S. W. Jeger, R. D. Jones, N. E. F. Kemm, V. R. Khanolkar, *Muriel E. Landau, Mary K. F. Lander, C. G. Lewis, S. S. Liebermann, E. K. Macdonald, *Janet McA. McGill, G. J. W. McMichael, Vida S. Maxwell, D. C. Mintzman, L. M. Moody, Edith M. P. Morris, Edith M. Newman, J. E. Nicole, Norah D. O'Flyn, Marguerite H. Pam, M. J. Panthaky, R. J. Perkins, G. S. B. Philip, Ruth W. Plimsoll, L. D. Porteous, J. N. J. Powlesland, Dorothy P. Priestley, Mary M. Prior, E. F. Rabey, R. S. Ralph, E. D. T. Roberts, E. S. Rose, H. T. Rymer, S. N. Senitzky, B. B. Sharp, J. H. Sheldon, A. G. Shurlock, W. H. Simmons, B. L. Slater, G. J. Sophianopoulos, G. P. Staunton, Mary S. Stocks, H. E. Suter, K. S. Tan, S. R. Tattersall, J. A. Tennyson-Smith, C. J. Thomas, H. M. Toop, R. L. Walker, A. D. Wall, Hygeia L. J. Wallace, A. E. Ward, R. W. Warrick, E. Wolff.

* Awarded a mark of distinction.

SECOND M.B. (*Part II*).—G. Adler, G. E. Archer, E. M. Atkinson, R. D. Aylward, K. N. G. Bailey, J. R. Banks, C. W. W. Baxter, E. Biddle, H. J. Blampied, I. Braun, D. G. Churcher, *W. E. Le G. Clark, A. J. Cokkinis, J. M. Courtney, T. M. Cunnington, G. V. Davies, S. C. de Silva Wijeyeratne, H. L. Douglas, M. Edwards, Grace H. Ewart, W. Feldman, D. H. A. Galbraith, M. W. Geffen, *Dorothy Gilford, E. H. Glenny, †H. Gluckman, E. Glynne, A F. G. Guinness, H. O. Gunewardene, Joan Hardy, T. L. Heath, K R. Hill, Bertha Hinde, E. C. Hinde, V. R. Hirsch, Theodora Johnston, J. I. Kühne, F. R. Leblanc, *†Emily C. Lewis, Ethel M. McCartney, †B. Maclean, P. N. Menon, M. H. Oldershaw, A. E. P. Parker, Irene G. Parsons, A. E. B. Paul, E. S. Phillips, F. Porras, Sybil M. G. Pratt, H. N. Pritchett, H. T. Prys-Jones, Miriamne O. Ramsay, J. B. Reed, Frances E. Rendel, Olive Rendel, Gwendolen M. Rolfe, J. P. Ross, H. B. Russell, Eleanor M. Scarborough, S. C. Shaw, R. D. Shirvalkar, A. A. Thiel, B. Thomas, †D. J. Thomas, J. H. Thomas, G. E. Tilsley, C. M. Titterton, S. A. T. Ware, F. W. A. Watt, R. E. S. Webb, A. W. Wells, J. P Williams.

* Distinguished in Anatomy.
† Distinguished in Pharmacology.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

Dr. F. Wood-Jones, lecturer and head of the department of Anatomy, has been granted the title of Professor of Anatomy in the University of London. The title of Reader in Pharmacology in the University of London has also been conferred on Dr. Fred Ransom, lecturer and head of the department of Pharmacology.

The Rose Neville scholarship of £150 a year for four, five, or six years; the Mabel Webb research scholarship of £30 for one, two, or three years; the St. Dunstan's exhibition of £60 a year for three or five years; the Mabel Sharman Crawford scholarship of £20 a year for four years; and the Isabel Thorne scholarship of £30, will be awarded during the summer term. Full particulars can be obtained on application to the Secretary.

Mr. A. G. R. Foulerton, F.R.C.S., D.P.H., has been appointed lecturer in public health in succession to Professor W. J. Simpson, resigned.

The Duchess of Marlborough has accepted the office of Honorary Treasurer of the Extension Fund, and Miss Edith Calkin, B.A., has been appointed Organizing Secretary of the Fund.

UNIVERSITY OF DURHAM.

AT the Convocation held on March 27th the following degrees and diplomas were conferred:

M.D.—R. C. H. Francis.
M.D. (*for Practitioners of Fifteen Years' Standing*).—M. L. G. Hallwright A King.
M.S.—J. H. Barclay.
M.B.—P. A. Clements, G. B. Egerton, Mary Sarah Gordon, W. Herbertson, C. H. Keay, H. A. Lake, G. E. Stephenson, W. Stott, E J. Tyrrell.
B.S.—P. A. Clements, G. B. Egerton, Mary Sarah Gordon, W. Herbertson, C. H. Keay, G. E. Stephenson, W. Stott, E. J. Tyrrell.
D.P.H.—Margaret M Miller.
L.D.S.—G. G. Robertson.

UNIVERSITY OF EDINBURGH.

GRADUATION CEREMONY.

SIR WILLIAM TURNER, in his address at the graduation ceremony on March 30th, said that the occasion was remarkable not only on account of the predominance of the military element among the new graduates, but because degrees had been conferred upon many other graduates *in absentiâ*, as they were either at the front or otherwise engaged with the military forces. The number of graduates was above the average for this season of the year because the Senate, acting on behalf of the nation, had given opportunities to students to graduate then instead of waiting till the summer. To obtain this special privilege, the students were required to show that they had attended all the courses of instruction, and to pass the examination with credit. The war, which dominated all thoughts, had told upon academic life, for the university had had to part with about 1,000 of its male students, and it had lost largely in its income. Altogether 2,000 of its students, graduates, and staff had joined the forces in one capacity or another. The university had been called upon to participate in a great national movement, and the part it had been enabled to play was due in large measure to the Officers' Training Corps, composed of students of all the faculties under the direct charge of a military committee of the university which had the sanction and approval of the War Office. Looking back to 1859, when there was a great national movement owing to a possible invasion, he said that students of that day formed what was known as No. 4 Company in the great Edinburgh Volunteer Battalion. Of that company he was a member, and had served as a volunteer for thirty years, passing through the various grades. The old volunteer corps was not disbanded when the new system was introduced, but was continued as a corps to which many of the students now belonged. In conclusion, he congratulated the graduates—not only the male,

but the large body of female graduates—upon the success which had crowned their studies with a degree which they would value throughout their lives.

The following medical degrees were granted:

M.B., CH.B.—F. A. Anderson, I. J. Block, R. B Boston, J. Brown, J. G. Dobson, D. S. Falconer, H. J. Foote, A. W. Forrest, H. C. Fox, *E. Fullerton, E. G. M. Gilchrist, D. Golding, *H. A. Hewat, E. Jamieson, A. C. Laing, J. Lawson, R. J S. M'Dowall, I. C. Mackay (Lieutenant, R.A.M.C., S.R.), R. M'Kinlay (Lieutenant, R.A.M.C., S.R.), P. C. MacRae, J. W. Mathews, Isabel Mitchell, S. N. Mitra, R. F. T. Newbery, C. H. Newton, J McC. Orme (Lieutenant, R A M.C., S.R.), R N. Phease, W. B. Postlethwaite (Lieutenant, R.A M.C., S.R.), J. O Reid (Lieutenant, R A.M C., S.R.), C. Resnekov, M. A. L. Sayeed, J. C Sinclair (Surgeon Probationer, R.N.V R.), B. P. Varma, F. J. F. Woo.

*Second-class honours.

Honorary Degrees.

Of the nine recipients of honorary degrees of LL.D. proposed by the Senatus, one—Professor Arthur Thomson, of Oxford—is a medical man.

UNIVERSITY OF GLASGOW.

SPECIAL GRADUATION CEREMONY.

A SPECIAL graduation ceremony was held on April 1st, when about 50 graduates were presented, 45 in medicine. Many were in uniform. Principal Sir Donald MacAlister said that those who had received the degrees in medicine were greatly needed by the country at this time. They had been faithful to the first duty enjoined by the military authorities—to complete their course in order to be able to afford the essential services only the trained could render. To encourage and stimulate them to be faithful to their new duties they had the noble example of 384 graduates of the university who were serving with the Forces of the Crown. The list was not complete, and he was happy to know that it would be substantially increased by additions from among the new graduates.

The following is a list of those receiving the degrees of M.B., Ch.B.:

I. Abdurahman, G. K. Allan, J. M Anderson, W. E. Boyd, S. Bryson, J. Buchanan, †J. M. Campbell, †A. M. Clark, G. G. Cooper, H. P. Crow, A. H. Donaldson, †H. T. Findlay, †G. Fleming, G J. Fraser, I. M. Frazer, D. G. Gardner, W. Gordon, *R. T. Grant, T. C. Houston, W. H Howat, R. Kyle, H B. Lawrie, A. T. Logan, D. K. MacDougall, D. M'D. M'Intyre, J M. Mackay, J. A. MacLean, T. D Miller, J. L. Munro, †P. Nath, L.D S., T. A. O'Brien, J. R Pate, J. Paterson, †W. B. Primrose, A F. Ross, W. J. Scade, *S. C. Shanks, W. B. Stewart, †R S. Strachan, R. Taylor, C. R. T. Thompson, Margaret Walker, W. J. C. Watt, J. G. Wilson, T. Young.

*With commendation.

†Has already passed the examination in Medical Jurisprudence and Public Health, and are candidates under the New Medical Ordinance (19 1.

The following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B. (B., Botany; Z., Zoology; P., Physics; C., Chemistry): J. S. Aitken (Z.), R. C. Allan (Z.), C. O Anderson, (B., P.), J. L. Anderson (Z.), J. Baird (Z., C.), A. Barr (C.), A. K. Begg (Z., C.), A. S. Bisset (P.), A. R. Black (Z., C.), J. W. S. Blacklock (Z., C.), D. C. Bowie (C.), A. D. Boyd (Z.), A. L. Brough (Z., C.), A. D. Brown (Z.), M. Brown (Z., C.), J. Caddies (Z., C.), A. Campbell (Z., C.), D. S. Campbell (B., Z.), J. G. Campbell (Z., C.), L. F. Capell (Z., C.), J. P. Chisholm (P.), B. F. Clarke (B., P.), H. Collingbourne (B.), J. G. Coltart (Z., C.), A. C. Connell (Z., C.), G. M. Cooper (Z., C.), J. L. Cowan (Z., C.), A. J. Cronin (Z., C.), E. M. E Cumming (B., P.), D. R. F. Davidson (Z.), J. C. Dow (P.), J. G. Drew (Z., C.), P. A. Faichney (Z., C.), R. Fletcher (Z., C.), C. M. Forbes (Z., C.), R. A. Forsyth (Z., C.), A. D. Fraser (C.), W. A. Galbraith (Z., C.), M. F. Gibson (Z., C.), W. Gibson (Z., C.), F. D. Gillespie (Z., C.), J. D. Glaister (Z., C.), A S. Goudie (P.), J. C. Grant (Z., C.), J. F. Hamilton (Z., C.), W. M. Hamilton (Z., C.), W. Harrison (Z., C.), J. Hewitt (Z., C.), R. G Howat (Z., C.), D. Imrie (Z., C.), J. E. Jeffrey (Z., C.), A. Y. P. Johnston (Z., C.), I. G Kennedy (Z., C.), R. Kennedy (Z., C.), W. M. Kennedy (Z., C.), J. Kirk (Z., C.), A. A. Kirkland (Z.), W. M. Knox (Z.), J. B. Lawson (Z.), J. Leishman (Z., C.), B. Levine (Z., C.), D. M. Lindsay (Z.), D. Logan (Z., C.), G. A. Lowe (Z., C.), D. MacColl (B., P.), R. M'Courtney (Z.), P J. M'Cusker (Z., P.), A. B. Macdonald (C.), J. MacC MacDougall (Z., C.), F. M'Elwee (Z., C.), W. D. Macfarlane (Z., C.), R. M'I. M'Kean (B., Z., P.), W. M'Kendrick (Z.), K. Mackenzie (Z., C.), A. H. M'Lean Z.), A. Maclean (P.), Neil A. MacLean (Z., C.), W. H. M'Leish (Z., P.), J. P. M'Millan (Z., C.), P MacMurray (Z., C.), A. M'C. Macqueen (Z., C.), R. Muir (Z., C.), J. Matheson (B.), J MacK. Maxton (Z., C.), H. R. Melville (B., P.), M. S. Molema (Z., C.), J. B. Morrison (C.), G. Nelson (Z.), J. Nicolson, M.A. (C.) J. S. Nisbet (Z., C.), J. A. R. Oswald Z., C.), G. Paterson (Z., C.), J. Paterson (Z.), W. J. Payne (Z., C.), J. Pollock (Z., C.), T. Poole (C.), R. U. Qureshi (Z., P.), P. C Rankin (Z., C.), D. Reid Z., C.), A. M. Robertson (Z., C.), H. A. Ross (Z., C.), A. M. Sanders (Z., C.), J. K. Scotland (Z.), T. Sommerville (Z., C.), D. M'D. Sproul (Z., C.), H. W. J. Steen (B., Z. C.), J. Stevenson (B., P.), R. M. Stevenson (B., Z.), W. H. Stevenson Z., C.), A. S. B. Stewart (Z., C.), N. E. Stone (Z., C.), A. Strang (Z., C.), H. Sutherland (Z., C.), W. C. Taylor (B.), W. R. P Templeton (Z.), E. J. T. Thompson (Z.), J. Todd (B., Z., C.), J. L. Turpie (Z., C.), J. W. Walker (Z., C.), W. B. Wallace (Z., J. A. Walls (B., Z.), R. J. Watson (Z., C.), J. C. Watt (Z.), R. K. Watt (Z., C.), J. Whitelaw (Z., C.), A. Wilson (Z., C.), R. McL. Wilson (B., P.), S Young (B., Z., P., C.), Christine C. Abernethy (Z., C.), Helen F. Allinson (B., Z., C.), Ellen D. Anderson (Z., C.), Grace Hay-Anderson (Z., C.), Elizabeth P. Cameron (Z., C.), Helen C. Cameron (Z., C.), Edith Chalmers (Z.), Mary Turner Liddell Clark (Z., C.), Emily L. Clow Z., C.), Veronica C. J. Davies (Z., C.), Charlotte A Douglas (Z.), Helen Hogg (Z.), Marion P. Hogg (Z., C.), Elizabeth S. Inglis (Z., C.), Margaret Logan (Z., C.), Alice M'Elwee Z., C.), Alice M'Glashan (Z., C.), Evelyn C. M'D. M'Gregor (Z., C.), Ellen T. Mackenzie (Z., C.), Annie I. C. Maclardy (Z.), Margaret E. M'Laren (Z., C.), Mabel M. Maclean Z., C.), Caroline J. Maclennan (Z.), Muriel M. M'Walter (Z.), Agnes H. MacWhirter Z.), Florence F M Milne (P.), Georgina Murdoch (Z., C.), Kathleen Nicol (B.), Margaret M. Paterson (Z.), Louisa E. Pigeon (Z., C.), Margaret I. Prangnell (P.), Eliza D Sandison (Z., C.), Elaine B. S. Stocquart (Z., C.), Muriel A. Stowe (Z.), Jean B. Thomson (Z.), Marion Thomson (B., Z., P., C.), Lilian Jane T. White (Z., C.), Helen B. Wilson (Z., C.).

SECOND M.B., CH.B. (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics).—J. Alston (M.), A. B. Austin (P.), A. G. Brand (M.), W. M. Cameron (A., P.), J. W. Dalglish (M.), J. F. Duthie (M.), K. H. Dyke (A., P.), J. Ewing (M.), T. Fleming (A.), T. R. Fulton (M.), K. J. A Gillanders (A.), J. G. Gilmour (A.), W. H. Gordon (M.), E. G. S. Hall (A., P.), F. W. Hebblethwaite (A., P.), G. M. Hetherington (M.), A. R. Hill (M.), T. J. Honeyman (P., M.), J. N. Jamieson (A., P.), O. Johnston (A., P.), P S. Kinloch (M.), W. F. Kirkhan (A.), A. B. McA. Lang (A., P., M.), G. Lean (A., P.), J. Liddell (A., P.), F. R. Lubovius (A., P.), W. W. Lundie (A., P.), A. D C. McGowan (P., M.), A. McC. Macintosh (A., P.), J. E MacIntyre (A., P.), D W. M. MacKenzie (A., P.), N. MacKillop (M., R. H. M'Killop (A.), D. Macqueen (A., P.), W. M'William (A., P.), W. D. Miller (A., P.), G. A. Mitchell (A., P.), J. Moffat (P.), W H. Palmer M.), J. W. Patterson (A., P.), S. M. Riddick (A., P.), I. M. Robertson (A., P.), J. L. Rowlands (P.), A. B. Stich (A., P.), T. S. Stirling (A., P.), J. J. Treanor (A., P.), J. L. Walker (A.), R. N. Walker (M.), J. A. White (A.), K. J T. Wilson (M.), W. A Wilson (M.), R. Young (M., Jane ta M. Alexander (M.), Annetta G. T Anderson (A., P.), Mabel N. Blake (A., P.), Margaret O'R. Gallagher (P.), Mary B. Gillespie (A., P.), Margaret H. Glen (M.), May C. B. Leigh (A.), Margaret J. T. Leitch (M.), Elizabeth C. M'Haffie (A.), May E. MacIver (M.), Alice J. Marshall (M.), Mercedes M. Morton (A.), May I. T. Reid (M.), Marion Watson (M.).

THIRD M B (P., Pathology; M., Medical Jurisprudence and Public Health).—W. D. Allan (M.), J. Alston (P.), W Baird (M.), J. Beveridge (P., M.), J. P. Broom (P.), D. Cameron (M.), J. Chalmers (M.), D. H. Coats (P.), A. F. Cook (M.) A. . Cook (M.), J Crerar (P.), J. N Cruickshank (M.), J F. Cunningham (P.), J W. Dalglish (P.), A Davidson (P., M.), G. del Pino (P.), M. Devers (P.), A Dick (P.), J. Dunbar (M.), J F. Duthie (P.), J. Ewing (P.), J. B. Fisher (P., M.), M. M. Frew (M.), L W. Gemmell (P., M.), W. H. Gibson (P., M.), N W. Gilchrist (P.), T. Gray (P.), D. Heard (P.), A. R Hill (P.), T P. Hutchison (P.), J. S. Kinross (M.), G Kirkhope (M.), R Lindsay (M.), F C. Logan (P.), D. J. MacDougall (P., M.), J. W Macfarlane (M.), G. J M'Gorty (P.), J P. M'Grechin (P., M.), J. MacInnes (M.), N MacKillop (P.), K S Macky (M.), D. M'Laren (P., M.), J. W Maclean (P.), F R. Martin (P.), W. W Morrison (P.), A. Morton (M.), J. H. Murray (P.), W. H Palmer (P.), J. A. Paterson (P.), T S Paterson (P.), W. J Poole (P.), T. J. D. Quigley (P., M.), A. W. Ritchie (M.), D. B. Robertson (M.), T. R. Sinclair (M.), W. M Stewart (M.), J. L. Torley (M.), R. N. Walker (P.), R. S. Weir (P.), C A. Whittingham (P., M.), K. J T Wilson (P.), Janetta M. Alexander (P.), Christina B Buchanan (M.), Maud C Cairney (M.), Ann K Cormack (P.), Jane B Davidson (M.), Jessie C. Gilchrist (M.), Florence S Kirk (P., M.), Margaret J T. Leitch (P.), Elizabeth S Martin (M.), Helen Y. Murdoch (M.), Mary I. Sinclair (P.), Jane Stalker (M.), Marion B D Wilson (M.).

FINAL.—*J. E. Jeffrey, *J. W. S. Blacklock, *A. D. Brown, *J. Hewitt, *R. G. Howat, *S B Stewart, *E. J. T. Thompson, *Mary T. L. Clark, *Charlotte A. Douglas, *Margaret Logan, *Evelyn C. M. M'Gregor, *Caroline J. Maclennan, *Georgina Murdoch, *Muriel A Stowe, *E. M. E. Cumming, *G Paterson, *W. J. Payne, *J Pollock, *A. B. Stich, *Margaret H Glen, *Frederick C. Logan, *C. A. Whittingham, *W. E. Boyd, *A. T. Logan, *H. B Lawrie.

*Passed with distinction in one or more subjects.

UNIVERSITY OF ABERDEEN.

GRADUATION CEREMONY.

AT the spring graduation ceremony on March 30th the degree of M.D. was conferred on 4 graduates and that of M.B. and B.S. on 26 undergraduates; 2 diplomas in Public Health were granted. Principal Smith, who presided, said that there were over 1,100 graduates, alumni, and students of the university in the King's services. Some 150 were in the trenches, and many others were ministering near the front to the sick and wounded. Already 5 graduates of the university and 1 alumnus had given their lives. Whether the war was to carry the country to the verge of exhaustion or not, clear and supreme remained our duty to God, to the liberal institutions with the development of which He had entrusted us throughout the empire, to our heroic neighbours of Belgium, and to the sacred cause of good faith among the peoples of Europe.

The following were among the degrees conferred:

M.D.—*S. V. Van Niekerk, †E. W. Wood-Mason, †Major T. C. McC. Young, I M.S., R. Semple.

*Honours for Thesis. †Commendation for Thesis.

M.B., CH.B.—W. Anderson, E. G. Berneaud, D. W. Berry, †R. J. Bruce, P. T. Catto, A. B. Clarke, R. T. Cox, D. Cran, *A. G B. Duncan, G W Elder, A. Farquhar, R Forgan, †J A. Innes, J. W. Innes, W H. Kay, W. Leslie, †H. J. A. Longmore, J. M. MacKenzie, J. Moir, R. Munro, R B. Myles, E. Newton, C. M. Nicol, F H. B. Norrie, G. W. Rose, †C. G. Shearer, *W. J. Webster.

*With second-class honours

†Passed Fourth Professional Examination with distinction.

D.P H.—J. McG. H. Reid, B. T. Saunders

A MONUMENT is to be erected in memory of Dr. Emile Reymond, Senator of the Loire, and one of the boldest pioneers of aircraft in France. Dr. Reymond was mortally wounded in Lorraine some months ago while making a reconnaissance, but was able to make his report before he died. He had won distinction as a surgeon before devoting himself to aviation. The subscriptions already amount to between £300 and £400 The monument will be executed by the well-known sculptor, M. A. Bartholomé.

Medical News.

DR. CHARLES W. THORP, of Todmorden, has been appointed to the Commission of the Peace for the West Riding of Yorkshire.

THE Chelsea Hospital for Women has received from the trustees of the Zunz Bequest £500 for the maintenance of the Annie Zunz Ward.

WE regret to record the death, on April 4th, of Dr. H. Lewis Jones, consulting medical officer to the Electrical Department, St. Bartholomew's Hospital. His only child, a cadet in the Royal Navy, was serving in one of the cruisers sunk in the North Sea last autumn.

THE next meeting of the Society of Medical Officers of Health will be held on Friday, April 16th, at 5 p.m., at 1, Upper Montague Street, Russell Square, when Dr. William Robertson, M.O.H. Leith, will read a paper on the personal equation in the vital statistics of a community.

THE annual meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, April 13th, 1915, at 4 p.m., when Dr. H. Crichton Miller will open a discussion on "Dual Personality and Intemperance."

AMONG the medical men wounded in France is Dr. Auguste Marie, physician-in-chief to the Asylum of Villejuif, and director of the psychiatric laboratory of the Ecole des Hautes Etudes, Paris. He was struck on the head by a projectile while dressing a wounded man in a trench.

DR. GORGAS has been appointed to the rank of Major-General in the United States Army. This, according to the *Journal of the American Medical Association*, is the first time this rank has been given to a doctor. The promotion carries with it the thanks of Congress and a life appointment as surgeon-general.

To the list of French medical journals which have come to life again after a longer or shorter period of temporary suspension owing to the war, we are pleased to add the following: *Archives d'Electricité Médicale*, which began to appear again in February, and the *Gazette hebdomadaire des Sciences Médicales de Bordeaux*, of which we have this week received the issue for April 4th.

A THREE months' course of lectures and demonstrations in hospital administration will be given at the North-Western Hospital by Dr. J. MacCombie, medical superintendent; and at the Grove Hospital, Tooting Grove, by Dr. J. E. Beggs, medical superintendent, on Mondays and Thursdays, at 5 p.m., beginning on April 12th. The fee for the course is £3 3s., and should be paid to the Clerk of the Metropolitan Asylums Board, Embankment, E.C.

THE North Staffordshire Field Club celebrated its jubilee this year, and to mark the occasion elected Mr. W. D. Spanton, F.R.C.S., an original member, to be its president. Mr. Spanton, in acknowledging the honour, said that it must be a very unusual occurrence for an original member of a club to become its president in its jubilee year. Mr. Spanton, who was very warmly applauded on taking the chair, afterwards gave an address on Staffordshire mammals.

THE efforts that have been made in past years to bring hospital authorities into line for consultative purposes have not met with marked success. Comparison of results has been greatly assisted by the statistical tables published every year under the aegis of the King's Fund, but these tables have revealed a very marked variation as between one system of administration and another. The administrators of the Fund have as yet afforded no means by which such variation might be equalized. The need for consultation and co-operation between the medical charities has become more apparent than ever during the last few years, and a means appears to have been found in the British Hospitals Association, if we may judge from the very representative character of its list of members. Matters of interest common to all hospitals have been discussed at its meetings, and annual gatherings have been held, at which full opportunity has been given for private discussion and friendly criticism of failures and successes. An association, the prominent members of which are engaged in actual hospital administration, not only in London, but in most of the large towns and county centres, may justly claim to be representative of all the best work in the country, and as such entitled to be heard in all legislative matters relating to their special sphere of action.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard. (3) MEDICAL SECRETARY; *Medisecra, Westrand, London*; telephone, 2634, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

AN Irish doctor would feel grateful to any of his brethren who have experience of two-seater light or cycle cars, and will state their opinion as to which make they consider the most serviceable and lasting for rough country roads.

LETTERS, NOTES, ETC.

A WARNING.

MESSRS. AYRTON, SAUNDERS, AND CO., wholesale druggists and druggists' sundriesmen, Liverpool, state that within the last month two medical men in London have been visited by a man, stating that he had been engaged by the firm to fill a vacancy, but was without means to pay his railway fare. Any medical man receiving an application of this kind would be well advised to communicate with Messrs. Ayrton, Saunders, and Co., 34, Hanover Street, Liverpool. (Telephone: Royal 2070.)

THERAPEUTIC USES OF TURPENTINE.

H. L. D. writes: With reference to Dr. Foy's remarks on turpentine in the BRITISH MEDICAL JOURNAL of March 27th, I have seen good results in a case of sloughing sore of the penis. The local application of this drug quickly cleared off the sloughs and established healthy action. I would like to try it in other cases of gangrene.

ALLENBURYS PASTILLES.

MR. F. W. GAMBLE (Director, Allen and Hanburys, Ltd.) writes: Our attention has been drawn to an article in the BRITISH MEDICAL JOURNAL, April 3rd, reprinted from the *Weekly Bulletin* of the Department of Health for the City of New York. The inclusion of "Allenburys Pastilles" in the list of medicines quoted appears to be founded on misapprehension. There are eighty varieties of medicated "Allenburys pastilles," some of which contain cocaine whilst others do not. In no case has the published formula been altered, and in every instance when cocaine is present in the pastille the box bears such an indication. As the "Allenburys pastilles" are largely prescribed by medical men to whom the various formulae are well known, we shall be obliged if you will allow us to remove any misapprehension that may have arisen from a perusal of the article referred to.

A CORRECTION.

IN an answer to a correspondent which appeared in the BRITISH MEDICAL JOURNAL of March 27th, p. 580, under the heading "French Military Surgery," the periodical referred to as the *Bulletins et mémoires de la Société de Paris* should have been *Bulletins et mémoires de la Société de Chirurgie de Paris*.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address
ON
WOUND INFECTIONS;
AND ON
SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

DELIVERED BEFORE THE ROYAL SOCIETY OF MEDICINE ON MARCH 30TH.

BY COLONEL SIR A. E. WRIGHT, M.D., F.R.S.,
A CONSULTING PHYSICIAN TO THE EXPEDITIONARY FORCE.
(From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.)

(*Continued from p. 628.*)

What are the Factors which Influence the Emigration of White Blood Corpuscles into the Wound?

I PASS now to consider yet another subject-matter—the emigration of leucocytes into the wound. I need not labour the point that this is a factor which may determine the issue of an infection: nor need I point out that it behoves us to acquire a control over the movement of leucocytes, and then to turn this to account, as the case may be, by activating or restraining emigration.

Broad foundations for our work have, as you know, already been laid by the brilliant researches of Metchnikoff. But it was with Metchnikoff always a question of experiments *in vivo*—that is, of experiments carried out under conditions which cannot be sufficiently simplified to give quite unambiguous answers. And we require for the elucidation of our problems and for all detail work connected therewith, absolutely simple crucial experiments, such as can only be made *in vitro*.

The line of thought which I have followed in elaborating a laboratory method for the study of the phenomena of emigration is the following: The leucocytes in extravascular blood are known to retain their emigrating power. A difficulty will, however, when we are working with extravascular blood, attach to our observations by reason of the fact that we have not at disposal such a containing membrane as the capillary wall. We are, in fact, in dealing with extravascular blood, confronted with a situation similar to that which would be encountered in observations *in vivo* if the capillary walls were to give way and we had to make observations on emigration in a portion of tissue which was flooded out by red corpuscles.

I had hoped at first to be able to circumvent this difficulty by taking advantage of the fact that when clotting occurs the red blood corpuscles become enclosed in a meshwork of fibrin, after the manner of fish in a net. But all my efforts to make the fibrin meshwork take over the office of a containing membrane were defeated. No matter how tenderly the clot was treated the meshes of the net broke, and haemorrhage from the clot interfered with the observations.

A second difficulty also presented itself. When in the living body white corpuscles emigrate into connective tissue it is possible to register their travel because they move forward through a retaining meshwork. It would not be possible to do so if they merely passed out into fluid, to be afterwards carried hither and thither by every chance convection current. Exactly the same applies to the extravascular blood. The emigrating leucocyte must be provided with some sort of scantling to move forward upon, and come to rest in.

After a time I alighted on a method which satisfies the two aforementioned experimental requirements, and which, as I think, provides all that is required for a quantitative estimation of emigration. Let me first tell you the general lines upon which the method proceeds, and then set out the details of the technique.

Principle of the Method Employed for Making Observations on Emigration.

The principle of the method is as follows: We fill in a capillary tube with blood from a prick in the finger, immediately place the capillary tube in the centrifuge, and centrifugalize until we have carried down all the corpuscles. We have now in the upper half of the tube a plasma which has been completely freed from all formed elements; and in the lower half of the tube, at the bottom, the red blood corpuscles intermixed with a certain number of polynuclear white blood corpuscles; and above this a layer made up predominantly of white blood corpuscles—these last in the front ranks consisting almost exclusively of small and large mononuclears. The blood now clots. And this gives in the upper half of the tube a clot consisting of fibrin without any formed elements—let us call this the *white clot*—and in the lower half of the tube a clot—let us call this the *red clot*—which holds all the corpuscles in its meshes. When a chemiotactic stimulus now comes into application from above the white blood corpuscles will come out from the red clot and will travel upwards through the meshes of the white clot—afterwards maintaining their positions so as to allow of our making measurements and enumerations. We will now pass to the details of the technique.

Details relating to Apparatus and Procedure.

With regard to apparatus, all that is required is a supply of flat capillary tubes. By using flattened capillary tubes we obtain a thin clot, which can more easily be examined under the microscope.

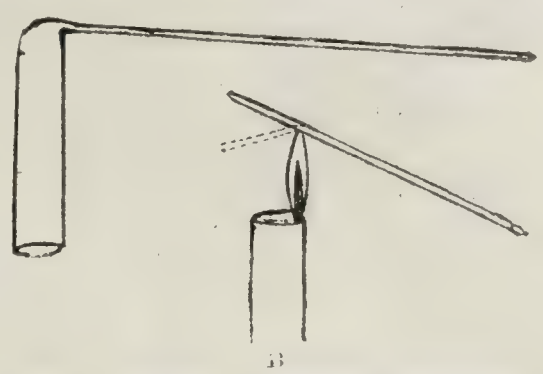


Fig. 5.—Method of making emigration tubes. A, Method of giving the flattened conformation to the capillary stem. B, Method of bending the tube round to form an elbow.

We make these tubes—and they may conveniently be called emigration or chemiotactic tubes—either out of a small test tube, or out of a length of fairly wide-bored glass tubing. We heat in the blowpipe flame until the glass becomes very plastic; then, making a sharp outward turn with the right wrist, bend the tube round through a right angle, giving it the proper flattened conformation; and then draw out into a long flat capillary stem (Fig. 5, A). We then cut this through at the point where it begins to lose its flattened conformation; and so leave attached to the next segment a sufficient length of tube to take hold of when we go to work upon it. When a sufficient number of lengths of flattened stem have been provided, we cut these up into segments of about 8 cm. in length; arrange them side by side after the manner of a palisade; and then with our glass writing pencil rule two lines across the face of our tubes. The first of these lines ought to fall somewhere in the middle. It is to serve as a fiducial mark for filling in the blood from the finger. The second line, which may conveniently fall at a point to about half or three-quarters of a centimetre to the end of the tube, is to serve as a fiducial mark in filling in the chemical agent whose effect we are to study.

The tube may now be used just as it is; or we may before using it furnish it with a siphon curve by bending it round at the level of our second fiducial mark. We do this by taking up each tube separately, holding it horizontally, and then passing it rapidly to and fro through a small by-pass flame. The action of gravity will then, as soon as the glass softens, bend round the tube for us (Fig. 5, B).

Method of Using the Emigration Tubes, and Bringing the Chemiotactic Agent into Application.

The emigration tube is first filled in up to the midway point with blood drawn from a puncture in the finger. In the case where we employ a bent tube this is done by letting the blood flow in through the siphon curve.

The chemiotactic agent can now be brought into application in three different ways.

1. *It may simply be superimposed upon the clotted blood.* This is done by using a *filiform pipette*, made by heating the stem of an ordinary capillary pipette in a small by-pass flame and drawing out, while we with a rubber teat apply internal pressure to prevent the walls of the hair-fine tube collapsing. Considered as a method for bringing a chemiotactic agent into immediate application, this

method falls short in the respect that the chemical has to diffuse down through the whole white clot before it comes into operation. In view of this, the method does not lend itself to the institution of any comparisons between normal blood and anaemic blood. For the experimental conditions are not comparable when our chemiotactic agent has, in the one case, to diffuse through a length corresponding to half the column of blood; and, in the other case, through a length which may amount to nine-tenths of that column.

2. The *second* method of bringing the chemiotactic agent into application is that of *superimposing the chemiotactic agent upon the unclotted blood* (Fig. 6, B and C).

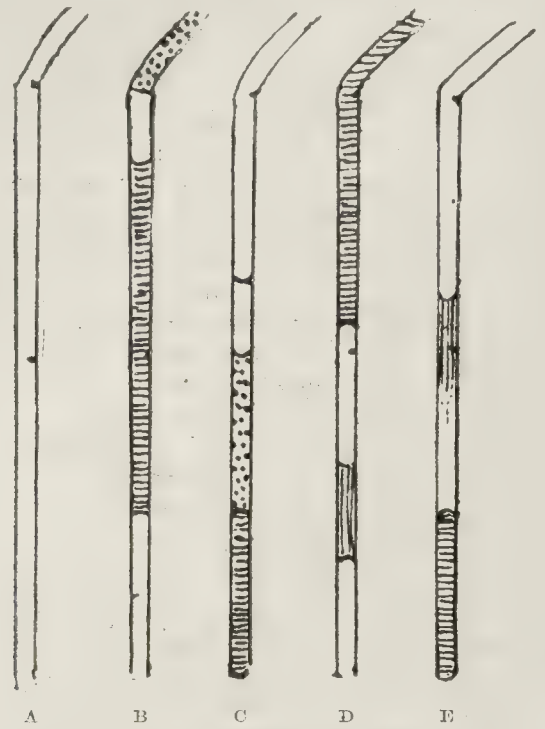


Fig. 6.—Method of adding chemiotactic fluid to blood. A, Curved emigration tube, empty. B, Tube filled in with a column of blood, a dividing air bubble, and then, as far as the elbow, with a bacterial suspension. C, Tube after centrifugalization; the bottom of the tube is occupied by the red clot, and the intermediate portion by the white clot and implanted bacteria; at the top is the watery menstruum in which the bacteria were suspended. D, Tube filled in for *traversing*; in the lower portion of the capillary stem is the chemiotactic agent; in the upper part the column of blood. E, Tube after centrifugalization; the bottom of the tube is occupied by the red clot, and the intermediate portion by the white clot, containing traces of the chemiotactic agent; at the top the watery menstruum containing the bulk of this agent.

Having filled in a curved emigration tube up to mid-point mark with blood, we tilt the tube so as to take in a dividing bubble of air; then fill it up as far as the elbow with the chemiotactic agent; and then, after sealing up the distal end of the tube, proceed to centrifuge. This method is applicable, in particular, when we are working with bacterial suspensions; for while the watery suspending fluid remains, by reason of its light specific gravity, on the top, the microbes are, by virtue of their higher specific gravity, carried down into the plasma to be embedded in the white clot all the way down to the leucocytic layer.

3. The *third* method is the method of *traversing* (Fig. 6, D and E). In employing this we may use either a straight or a bent emigration tube. We fill in, first, with our column of blood; follow on with the dividing bubble of air; and then, making use of the forerunning column of blood to serve as a brake, fill in up to the fiducial point with the chemiotactic agent.* Finally, we seal up that end of the tube which has served as an inlet, and place the tube in the centrifuge.

Our chemiotactic agent will now traverse the column of blood and take up a position at the top, leaving behind it in the plasma traces of whatever chemical it holds in solution. That this is what actually happens, can be shown by employing, in place of a colourless chemiotactic agent, a solution of methylene blue, or simple water. This last, when it follows on after a column of blood and dissolves the red blood corpuscles which this leaves in its wake, will come out at the top coloured with haemoglobin.

The traversing procedure will be applicable in the case where we want to bring into operation chemical agents, and especially applicable where we want to bring such agents into instant application.

When we are working with a series of tubes, as will practically always be the case, it will be well to place each, as soon as it is filled, into iced water, or ordinary cold water. The buckets of the centrifuge will serve as convenient receptacles. After centrifugalization the emigration tubes are placed in the incubator, according to circumstances, for from three to twelve hours or more. While in the incubator the tubes may conveniently be placed upright—that is, with the white clot uppermost—in plasticine. They may also be laid on their sides, tilted a little upwards. The inverted position is to be avoided. For when we invert our tubes we bring down into the white clot a shower of red corpuscles which block emigration and also obscure the view.

Method of Bringing the Emigration Effect into View and taking Cognizance of the Results.

When all we want is to get a general idea of what is going on in the tubes, we can obtain this by introducing the unopened tube into an observation cell. A very simple form of observation cell can be made by placing small pellets of plasticine upon each of the four corners of a microscopic slide, covering in with another slide—allowing a little overlap—and then filling into the interspace either water or some more highly refractive fluid, such as glycerine or oil. By observing in such a cell we bring in view not only the leucocytes which have emigrated into the white clot, but also those which have escaped into the interspace which may develop between the clot and the walls of the capillary tube.†

For all purposes of quantitative observation we blow out our clots into water, wash carefully so as to remove leucocytes adhering to their exterior, and then mount them on a slide. We then, after cutting off the surplusage of red clot, fix by drying and stain for a few minutes in Kühne's

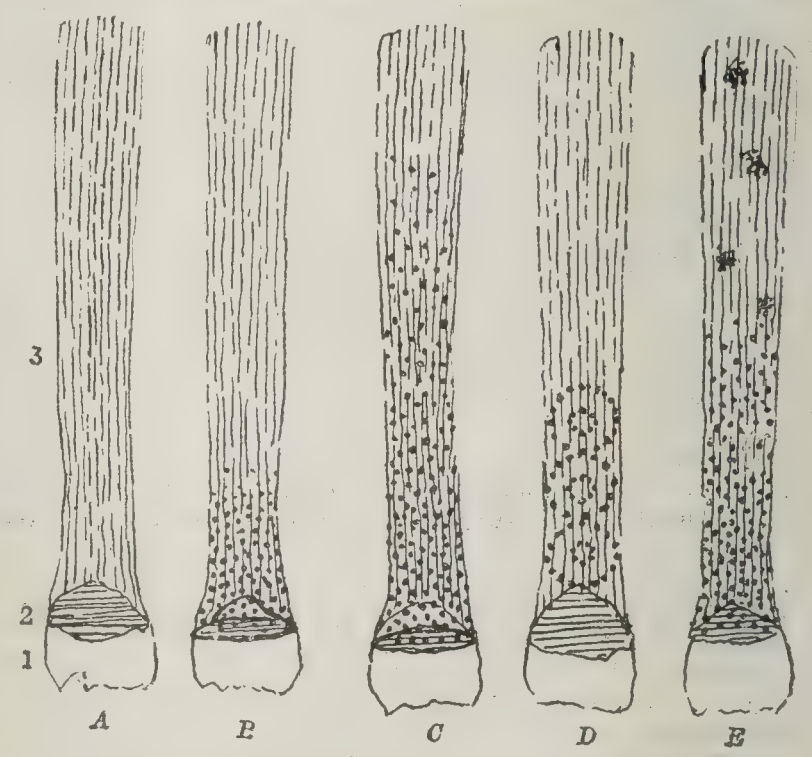


Fig. 7.—Clots from emigration tubes blown out and mounted. A, No emigration; B, compact emigration; C, dispersed emigration; D, method of enumerating leucocytes which have emigrated; E, bacterial colonies coming up only in portion of clot which has not been reached by the emigrating leucocytes.

methylene blue freely diluted. The specimens are examined, first, dry or in water, under a low-power objective, and afterwards in oil under an immersion.

*In practice the procedure of traversing is to be carried out exactly as here described. In the illustration Fig. 6, D, in order to convey the idea of traversing to the eye, the chemiotactic agent precedes instead of following the column of blood.

†Attention may, in connexion with this, be called to facts which have an importance and a useful application in medicine, which happen to have also an importance and a useful application in connexion with the emigration method here under consideration. The facts I have in view are as follows: The blood of a person suffering from chilblains, or any other manifestation of a lowered blood coagulability, will, on centrifugalization, generally fail to give the kind of white clot we require for our emigration experiments—that is, one that is firm and non-contractile. This condition of things can be remedied by the exhibition of calcium salts, or, as the case may be, by appropriate additions of these salts made to the blood when filling our capillary tubes. I would in connexion with this emphasize that we have here brought into clear view what is really the material factor in connexion with the effect exerted by calcium salts in the blood.

And I may perhaps be permitted to point out, in connexion with my own work on calcium as an agent for promoting and citric acid as an agent for diminishing coagulability (BRITISH MEDICAL

General Considerations relating to the Movements of White Blood Corpuscles.

Before passing to consider the question how it will be possible to arrive at a quantitative expression for the leucocytic movements induced by a chemiotactic agent, it will be well to take a general survey of the things that present themselves to view in every emigration tube.

We have to take into account in connexion with white blood corpuscles two kinds of movements. We have, on the one hand, a process of wandering at large; and, on the other hand, a directed movement—that is, a movement along some particular axis—undertaken under the direction of a chemical stimulus. We may call the first kind of movement an *eleutherotropic* movement. The second is usually known as a *chemiotactic*—I prefer to call it a *chemiotropic*—movement. It is, of course, the latter, not the former, kind of movement which we are here primarily concerned to study. For clearly it is the chemiotactically directed movements of the leucocytes towards the bacterial focus, and not their wanderings at large, which come into consideration in any conflict against infection.

None the less, a word may be said about eleutherotropic movements. One finds in every specimen of blood which has been simply centrifugalized and placed in an incubator, always a certain wandering at large of the leucocytes—in particular, the mononuclear white blood corpuscles, which have been tightly packed together by the action of the centrifuge, and are ranged at the top of the red clot, leave their ranks and wander out into the adjacent regions of the white clot. The polynuclear leucocytes also are affected by eleutherotropic wandering. They come out from the hinder ranks of the leucocytic layer, and also from deeper down in the red clot, and wander free. In our observations we leave out of account all these leucocytes that have wandered outside the white clot. We regard them as having run to waste.

A further point which claims attention in connexion with emigration is the *nature of the emigrating leucocytes.*

Ordinary *eleutherotropic emigration* is predominantly mononuclear, this being probably accounted for by the fact that the white blood corpuscles which are ranged up along the line which divides the red from the white clot are almost all mononuclear. In *chemiotactic emigration* we have either a differential emigration of polynuclear white corpuscles, or a mixed mononuclear and polynuclear emigration in which either the one or the other of these varieties of leucocytes may predominate. In all such mixed emigrations the polynuclear, presumably because they are faster of foot, overtake the mononuclear leucocytes and pass on and occupy the more distal portion of the field of emigration.

Method of Arriving at a Quantitative Expression respectively for "Compact" and "Dispersed" Emigration.

A quantitative expression for the emigration movement which takes place in a capillary tube can be arrived at in two ways. When we are dealing with a *compact* emigration (Fig. 7, B)—that is, where the field of emigration is quite closely packed with leucocytes—we have simply to measure the area of that field, or (and this answers the purpose perfectly well) the length of clot occupied by the emigration; and we may conveniently measure it in terms of microscopic fields. In such measurements we take off from the base line furnished by the distal border of the cone of leucocytes which occupies the base of the white clot. This represents the original leucocytic layer converted, by the contraction of the fibrin, into a cap covering the upper end of the red clot.

When, as will happen when a longer time has been allowed for the wandering out and dispersion of the leucocytes, we have before us a *dispersed emigration* (Fig. 7, C) it will no longer suffice simply to measure the distance the leucocytes have travelled into the clot. It now becomes necessary to enumerate the emigrating cells. Employing first a low-power lens, we bring the upper edge of the cap of leucocytes to the extreme edge of our field of view. Then turning to our oil immersion, we bring this down upon the central portion of the low-power field, and make a count of all the leucocytes which lie within its purview, when necessary, helping ourselves out in our count, by introducing into the diaphragm of our eyepiece a cover-glass divided up by light rulings, made with a glass writing pencil. Having obtained in this way a value for the emigration in an arbitrarily selected portion of the first microscopic field, we go back to our low-power objective and move our specimen along until the objects on the extreme distal margin have been carried right across the field, and now lie just out of view on the other side. The further steps in the procedure are now simple repetition.

What are obtained by this method of enumeration are, of course, only arbitrary figures, and it will be realized that the comparative values arrived at will be strictly accurate only where we are employing clots of similar thickness.

Survey of the Data which the Method has Already Given.

We may now pass on to consider some of the data that the method has already given. White blood corpuscles will move out in any direction towards a chemiotactic substance. They will, however, emigrate more freely downwards, than horizontally; and more freely horizontally, than upwards.

Anaërobic conditions are more favourable to emigration than aërobic conditions. Leucocytes will travel out further in the direction of a chemiotactic substance when we absorb the oxygen in the tube with caustic alkali and pyrogallic acid and seal, than when we leave the end of the tube open to the air.

Leucocytes emigrate more abundantly in tubes standing at a temperature of 40° C. than in tubes standing at 37° C. They do not emigrate at temperatures of 10° to 15°—the temperatures which prevailed on our laboratory bench. After exposure to temperatures of 0° C. for periods of half to one hour they emigrate apparently as freely as before.

Emigration apparently goes on unaffected in the presence of ether. It is abolished or suspended in an atmosphere of chloroform.

Physiological salt solution, brought into application either by traversing or by superimposing it upon the clotted or unclotted blood, induces a very vigorous emigration of polynuclear white blood corpuscles. Weaker salt solutions induce a less vigorous emigration, and water again a less vigorous. Strong salt solutions—for example 5 per cent. salt solutions—suppress emigration.

It will be appreciated in connexion with these and all findings obtained by this method that they do not tell us the effect of reagents acting in the specified dilutions directly upon leucocytes, but only the effect of these reagents operating from a distance. In other words, our experiments do not furnish information as to what would be the effect of bringing the chemical agents in the specified concentrations directly in relation with the capillary wall.

Bacterial suspensions which have been sterilized by heating evoke, according to the dilution in which they come into application, quite different effects. The general rule applying to bacterial suspension would seem to be as follows: Concentrated suspensions usually completely suppress emigration. Ten or hundredfold diluted, these same suspensions evoke vigorous emigration. When we employ progressively higher dilutions we arrive in time at a point when the effect of the bacterial suspensions is exactly the same as those of the particular fluid which we are employing as a diluent.

Normal bloods tested with one and the same series of bacterial suspensions exhibit quite different degrees of chemiotropic sensibility. Chemiotropic sensibility, not alone to bacterial suspensions but also to physiological salt solution, is very strikingly modified in the case of patients suffering from bacterial infections. The same applies to persons inoculated with streptococcic vaccines. In five out of six men, inoculated with such a vaccine and examined both before and afterwards, the emigrating response to streptococcus was subsequently to inoculation very strikingly increased. In the case of one man it was diminished.

Results somewhat similar to those obtained with dead cultures are obtained with suspensions of living microbes (streptococci and gas phlegmon bacilli), but here the prolonging of the incubation period may strikingly alter the situation.

Journal, July 29th, 1893, and July 1894; *Lancet*, January 18th, 1896, and January 3th, 1897), that while what I have said with reference to the clinical effects exerted has been, I believe, universally confirmed and accepted; what I have said with respect to the effects of the coagulability of blood *in vitro* has been traversed. This stands, as I believe, in relation to the fact that the laboratory workers who have repeated my work have employed methods which took into account rapidity, but left out of account firmness, of coagulation. It will now, I hope, by adopting the method of centrifugalizing, and watching the effect exerted upon plasma which has been disembarrassed of corpuscles, be possible to arrive at unanimity in these matters. Finally, I may direct attention to the fact that what comes into view in centrifuged, is seen also in uncentrifuged, blood. When we make to this appropriate additions of calcium salts, we obtain, as I long ago pointed out, a firmer and non-contractile clot.

What generally happens may be summed up as follows: When, by superimposing and centrifuging, a heavy sowing of microbes has been implanted into the unclotted blood, the colonies come up all along the white clot, and emigration into this is completely checked. Where only a moderate implantation of microbes has been made we have in different parts of the clot different results: Bacterial colonies develop freely in the distal area of the clot which is not invaded by emigration. In the intermediate region—that is, in the region where the microbes can grow out before the leucocytes arrive—one sees with the low-power objective areas specially crowded with leucocytes—these are in point of fact colonies which are being broken up and dispersed by invading leucocytes (Fig. 8)—and with the oil immersion one sees that every leucocyte in these crowded masses is taking up microbes, and that there is also in all this region of the clot plentiful phagocytosis of scattered microbes (Fig. 9). In the base of the white clot—that is, in the area where emigration has occurred earliest and most vigorously—one finds absolutely no trace of microbial growth.

The appearances which have just been described correspond, of course, to a period of conflict. This conflict is generally at its most interesting phase in tubes which have been incubated from three to six hours. When we come later—for instance, after twelve or more hours—the conflict is over. We then find either that the white corpuscles are masters of the field and the microbes have disappeared; or else that the microbes have invaded the whole clot, and that this crumbles away as soon as it is blown out into water. There can be little doubt that the crumbling away of the clot, and the overrunning of the blood with microbes, are due to the digestion of the fibrin, and to the corruption of the blood fluids by trypsin set free from the disintegrated leucocytes.

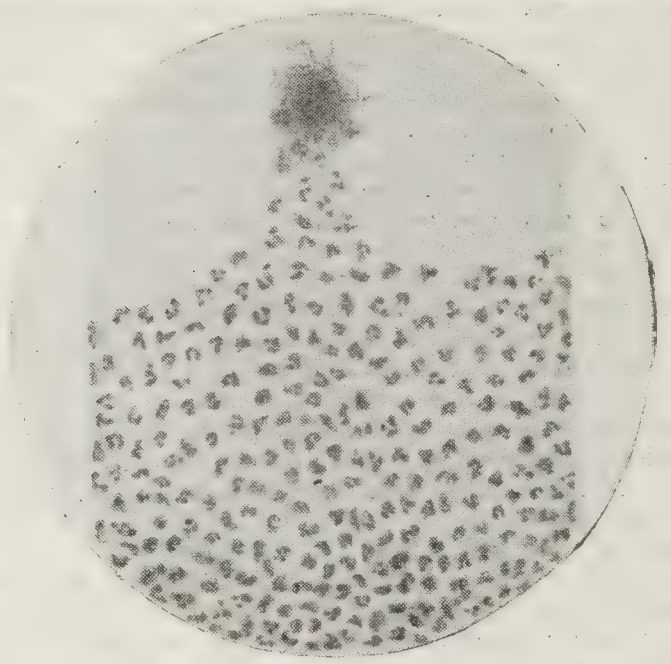


Fig. 8.—Extreme limit of emigration, showing phagocytes attacking streptococcus colony.

Experiments such as these just outlined, in which living microbes are brought into application on blood, provide, in point of fact, a valuable test method. They tell us the resultant of the *chemiotropic sensibility* of the leucocytes, the *opsonic power* of the blood fluids, the *digestive capacity* of those phagocytes which come into action, and of the *antitryptic* and, where such comes into account, the *bactericidal* power of the blood fluids. We are, in fact, furnished with something like a complete evaluation of the antibacterial powers of the blood.*

There is still one element left out of account. The method here in question does not tell us anything as to whether or no there are bacterial poisons in solution in the blood fluids of the infected man. But this is a question which can be separately investigated. I have tried to find the answer by traversing normal bloods with serums derived from patients suffering from septicaemic infections. And I have by this procedure obtained in a series of cases what appeared to be a definitely chemiotropic emigration.

All that has been recounted above is, of course, only a very small beginning. But I think we may be confident that the method for the study of emigration which has here been proposed will resolve important problems in connexion with infection generally, and also—and this is what specially concerns us here—some of the problems in connexion with wound infections which are now urgently pressing for a solution.

In the matter of general problems of infection it would, I think, be possible, by implanting bacteria into blood in combination with chemical agents which would respectively promote and hinder emigration, to resolve for each particular bacterial infection the question as to whether it is the leucocytes or the blood fluids which come most into consideration as destructive agencies. That problem once resolved, we should know whether we ought, in the infection in question, to direct our chief efforts to increasing the efficacy of the blood fluids or to modifying the chemiotropic sensibility of the leucocytes and encouraging emigration.

Again it looks as if it might be possible by very simple experiments to resolve the problem as to why in gonorrhoea, and also in other surface infections, the purulent discharge is suddenly arrested when the microbes succeed in invading the blood stream, or establishing themselves in an articulation or elsewhere in the interior of the body. It would seem possible (for something of this sort would seem to occur in septicaemias supervening on wound infections) that we may be dealing here with a paralysis of the emigrating powers of the leucocytes. Or, again, it is possible that in these cases emigration may be simply suspended by a redistribution of the chemiotactic forces. In other words, the cessation of the external discharge may simply mean that there is now in the blood a bacterial poison; and that this chemiotactic element, acting upon the leucocytes as a *vis a tergo*, counterbalances the *vis a fronte* of the chemiotactic substances produced by the bacteria on the external surfaces.



Fig. 9.—Phagocytosis of streptococci towards extreme limit of emigration.

In connexion with the particular problems of wound infections we may hope at no distant date to come into possession of information which will enable us to activate or restrain, according as the one or the other may approve itself the better policy, the emigration of leucocytes into the wound. And we may hope also to determine in connexion with every antiseptic or other solution which is brought into application in a wound, whether it promotes or hinders emigration.

Finally, let me point out—for everything that concerns bacterial vaccines concerns the treatment of wound infections—that experiments on emigration will almost certainly resolve a number of important outstanding questions in connexion with vaccines. They ought very easily to resolve the question as to what is the best excipient for a vaccine—whether a menstruum which would restrain emigration, or one like physiological salt solution which would call forth a vigorous emigrating response at the point of injection. And lastly—and this would be one of the most important applications of observations on emigration—we ought to be able to determine what is in the case of each bacterial vaccine the dose which will induce the earliest possible and the most effective determination of phagocytes to the focus or foci of infection.

(To be continued.)

* It will be observed in connexion with tests thus conducted with centrifuged blood that, if we leave out of regard the centrifugalization, they are in all essentials the same as the *phagocyto-bactericidal* tests with freshly drawn uncentrifuged blood which I have already described (*Vaccines and Drugs in Pneumonia*, Constable, 1914).

BLOOD PRESSURE ESTIMATION IN CHILDREN.

BY

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It is practically impossible at the present moment to meet with any class of patient or any clinical condition of which no record of blood pressure exists. Till recently it seemed almost impossible to break fresh ground or to supply data that were original and not merely confirmatory or contradictory. But from the present standpoint of sphygmomanometry these existing records must be regarded as vitally incomplete. Blood pressure, clinically interpreted, consists of a more or less constant pressure—the diastolic pressure—on which there is periodically superimposed an additional pressure—the systolic pressure. So long as there was no method of determining the extent of the constant strain on the blood vessels due to the diastolic pressure, "blood pressure readings" was a term synonymous with "systolic pressure readings." There has certainly for some time existed a class of apparatus designed to make good this serious deficiency. While some of these instruments were cumbersome in structure or complicated in the method of working, all suffered from a lack of definition in the indication (maximum oscillation, etc.) they were designed to give. Moreover, the theory on which they were based is one which must now be regarded as interesting but inaccurate.

Application of the Auditory Method in Children.

This method is simple and determinate. By experiment and investigation it has been established as accurate. A doubt in our own minds as to the applicability of the method in the case of the small arteries of children led to our carrying out a series of determinations. We were early satisfied that the phenomena were not only very definite, but were in many cases as definite as those in adults; in fact, the clearest impression of the sounds we have yet obtained was obtained in the case of a child.

The apparatus required for the application of the method in children are:

1. A mercury manometer (preferably an ordinary one). The slight advantage in portability of the compressed-air type of manometer is depreciated by the necessity in its use for frequent calibration to ensure accuracy.
2. An armlet of suitable size, much narrower than the ordinary one for adults; an armlet of 8 cm. broad does very well for example, that supplied with the Pachon oscillometer.*
3. Some form of filler, either of the "ball" type or of the "screw compressor" type. The latter, greatly superior for finer adjustments of pressure, suffers in having a fixed capacity. This difficulty can, however, be easily overcome.
4. An Oliver tambour with strap attachment, which secures it in a fixed position on the arm. Such an arrangement leaves the observer with both hands free—an important point.
5. Rubber tubing and connexions.

With such an apparatus, extremely simple and portable, it is possible to do a complete blood pressure estimation. In making a determination, the armlet is fitted snugly but not tightly to the upper arm, and the tambour (phonendoscope) is strapped lightly over the site of the brachial artery of the same arm at the bend of the elbow. The strap of the tambour should not constrict the arm, but should be sufficiently tight only to prevent movement of the tambour, which then lies practically without pressure on the skin. With the ear pieces fitting properly in the ears of the observer, both his hands are free. One hand should be utilized to palpate the radial pulse of the arm under investigation, the other to manipulate the compressor. The armlet should now be inflated till the external pressure thus established is considerably higher than that at which the radial pulse was felt to disappear.

It is perhaps desirable in the meantime to proceed with the next step, before directing attention to the significance of the phenomena appreciated. The next step consists in the gradual lowering of the external obliterating pressure. At a certain point, most probably while yet no pulse is appreciable by tactile examination at the wrist, a distinct sound is heard. Careful attention directed to the quality and intensity of this sound will enable the observer to note the following alterations, first proposed by Ettinger, and now pretty generally accepted by workers at the method: The sound at first clear cut, the *first phase* as it is called, develops a murmurish quality—the *second phase*. This, later, is replaced by a clear sound—the *third phase*. The onset of the *fourth phase* is marked by the transformation of this loud, clear sound into a dull sound of less intensity. The complete abolition of the sound is referred to as the *fifth phase*.

*Supplied by Hawksley.

Significance of the Phases.

Experiment has shown that attention must be directed to two of these phases:

Phase 1.—The onset of the sharp, clear sound. The external pressure indicated by the manometer at the point at which phase 1—that is, the beginning of sound—represents systolic pressure.

Phase 4.—The commencement of the fourth phase—that is, the point at which the sound, from being loud and clear, becomes dull and diminished in intensity—is an indication of diastolic pressure. By some observers the fifth phase—that is, the point at which the sounds disappear—was regarded as indicating diastolic pressure; but it must be admitted that such a view is untenable.

For the actual determination of these pressures all that is required is that the observer gradually lower the external obliterating pressure, and note the external pressure corresponding to (*a*) the onset of the sound; (*b*) the onset of the fourth phase. He will then be in possession of the values of the systolic and diastolic pressures.

We make it a point to determine that the auditory systolic index exceeds the tactile systolic index—that is, that the first sound is heard at a higher level of external pressure than that at which the pulse is felt to return at the wrist. This is almost invariably the case, and is to be insisted on. Otherwise—that is, if the pulse be felt before the sound is heard—we do not proceed with the estimation, unless, as generally happens, it be possible, by adjustment of the tambour, or other alteration, to establish the proper relation of auditory systolic index at least as high as tactile systolic index.

The extent of pressure to which the sound persists after the diastolic index—that is, the duration of the fourth phase—is very variable in young adults. It seems to depend in part, but by no means wholly, on the degree of quiet prevailing in the surroundings in which the examination is made. In children a fourth phase of any considerable duration is very rarely found.†

The method, as will thus be seen, is exceedingly simple, and to a very large extent removes the personal equation which with other methods often results in appreciably different estimations. From personal experience we gladly welcome a method which, especially in the case of children, substitutes the delicate sense of hearing for the coarser and more variable sense of touch. Its simplicity and ease of application, together with the portability of the apparatus employed, makes its employment possible in almost every conceivable situation.‡ Above all, it is accurate both as regards systolic and diastolic pressure values, without which properties no method of blood-pressure estimation has at the present day any legitimate right to the title.

The tabular statement (p. 670) shows some of the results we have obtained from investigations made on forty children. These children, of ages between 4 and 14 years, had an average age of 9.5 years. So far as we could make out, they were, as far as the circulatory system was concerned, healthy, so that our results are to be taken as applying to normal children. No such data have hitherto been supplied; they are obviously essential as a basis for the study of blood pressure in disease.

Estimated by the auditory method, the average systolic pressure is seen to be 103.1, the average diastolic pressure to be 72.4, and the average pulse pressure 35.7 mm. Hg.

The cardiac output is, of course, very small in children, and in association with this the capillary system to be filled is very limited as compared with the adult. Yet, from our results, it is to be noted that the systolic pressure

† The fourth phase rarely amounts to more than 2 to 3 mm. in children—in only one case of the present series was a prolonged phase got (Case No. 8, Table).

‡ An obvious exception is in noisy surroundings.

Table of Results Obtained from Healthy Children.

No.	Age.	Pulse-Rate.	Auditory Systolic.	Auditory Diastolic.	Pulse Pressure.	No.	Age.	Pulse-Rate.	Auditory Systolic.	Auditory Diastolic.	Pulse Pressure.
1	10	100	108	80	28	21	7	128	110	60	50
2	12	102	105	78	27	22	12	128	100	80	20
3	10	60	90	55	35	23	7	100	106	85	21
4	12½	50	108	65	43	24	5	95	114	90	24
5	14	84	108	78	30	25	4	90	102	58	44
6	12	84	115	80	35	26	10	80	106	55	51
7	12	84	113	77	36	27	5	70	95	55	40
8	10	92	110	86	24	28	10	90	110	78	32
9	12	100	110	70	40	29	6	120	120	80	40
10	13	106	100	70	30	30	11	106	108	62	46
11	8	104	112	75	37	31	13	60	90	70	20
12	14	88	106	68	38	32	11	90	120	90	30
13	9	80	108	75	33	33	4	80	90	60	30
14	8	90	120	70	50	34	9	93	120	80	40
15	11	100	120	90	30	35	8	104	115	75	40
16	7	120	110	60	50	36	6	92	106	78	28
17	11	65	120	65	55	37	8	96	100	70	30
18	9	96	90	62	28	38	11	82	120	85	35
19	12	96	120	80	40	39	11	126	130	80	50
20	5	132	90	50	40	40	4½	84	100	70	30

Averages: Age, 9.5; pulse-rate, 93.6; auditory systolic, 108.1; auditory diastolic, 72 4; pulse pressure, 35.7.

is only very slightly lower in children than in adults. Various observers, using the much less accurate tactile method, have estimated the average systolic pressure in children at decidedly lower values, for example, 90 mm. mercury. But the fallacies of the tactile index are much more serious in young children than in adults, and the results by the auditory method are so sharp and precise as to admit of no doubt.

The average diastolic level, on the other hand, is decidedly higher in children than in adults; this is the main cause of the considerably smaller pulse pressure in children—35.7 mm.—as compared with 46 mm. in adults.

Comparison of Children and Young Adults.

The relation between the values obtained in a series of fifty-nine healthy young adults and in the present series of children is as follows:

	Adults.	Children.
Systolic pressure ...	... 111.8	... 108.1
Diastolic pressure	... 65.7	... 72.4
Pulse pressure ...	... 46.0	... 35.7

The average pulse-rate in children was 93.6 (range 132–50), and it is noteworthy that, while a slow pulse naturally tends to give a lower diastolic pressure (by allowing longer time for the blood to escape from the arterial system into the capillaries between the beats), the adjustment of the vascular system may be such as to give a diastolic pressure quite up to the normal, in presence even of a markedly slow heart-rate—for example, Cases Nos. 4 and 31 in table.

Some other points of comparison between children and adults may be stated. By the tactile method the average systolic pressure was 105.7 in children as compared with 108.7 in adults, while the range was 125-84 in the former and 132-92 in the latter.

By the auditory method the range of systolic pressure was 130–90 in children and 135–92 in adults, while the range of diastolic pressure was 90–50 in the former as compared with 82–50 in the latter.

In children the relation of pulse pressure to systolic pressure was 1:3 and to diastolic pressure 1:2, while in adults this relation was 1:2.7 and 1:1.6 respectively.

The normal readings of systolic and diastolic pressures and of pulse pressures in children, as described above, are so definite and reliable as to constitute a sound basis for the study of pathological variations and their significance.

We have to record our thanks to Professor J. A. MacWilliam for much kind advice and assistance in this investigation.

ON IDIOGLOSSIA: WITH AN ACCOUNT OF A CASE.

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IDIOGLOSSIA is a defective condition of speech of such a nature that the affected person is unintelligible, except, perhaps, to his own relations; yet what he speaks is really English, very grossly mispronounced. In the following marked case rapid improvement took place under treatment.

A boy, 13 years and 9 months old, was brought to the Sick Children's Hospital, Edinburgh, on February 18th, 1914, on account of his defective speech. Dr. John Thomson reported that he was strong and healthy, though small for his age. His intelligence was quite up to the average. His birth was premature by two weeks, his mother having had a fright. There was no family history of any disability of speech. Though his teachers (in a country school) apparently left him much to himself, he was advanced in his classes along with his companions.

When he was first examined he mispronounced twelve letters in the alphabet. These were as follows: C—he, F—ech, H—aick, I—oi, L—ai, Q—kay, S—ech, V—oo, W—do'er, X—ech, Y—oi, Z—he'ed. Yet, as in other cases, many of these letters were pronounced quite differently when he spoke. Moreover, consonantal sounds were often slurred over, or missed out altogether. When asked to say "the school" he said "ud kooi." Instead of "pleasure" he said "penur." His speech generally was quite unintelligible. As in other cases the consonants D, T, B, P, and H were, as a rule, correctly rendered, especially as initials. They were also liable to be substituted for other sounds. His voice was disagreeable and very monotonous.

Miss Margaret Drummond, lecturer on psychology, and myself undertook the treatment of the boy, who was keenly anxious to be cured of his defective speech. As the patient had failed to learn correct articulation by the ear, he was taught by eye. The various sounds were taken up seriatim, more or less in accordance with their arrangement in Professor Wyllie's physiological alphabet, and the boy was shown how to reproduce them as is done in teaching deaf-mutes to speak. An exercise book was also gradually filled with lists of words containing the different sounds in various positions, and sentences were constructed so as to secure a frequent repetition of the required sounds. He spent half an hour every evening reading his exercises aloud to his mother, and repeated to himself at intervals during the day as many of the sentences as he could remember. These instructions were faithfully carried out, and just two months after treatment was begun Dr. Thomson saw the boy again and reported that he now pronounced all letters properly except L, W, and Y, and even those three he could articulate if made to repeat them. The boy could now speak quite intelligibly to anyone, though the letter L, which was the last to be learnt, still gave him a good deal of difficulty, especially at the beginning of a word. Unfamiliar words were still something of a stumbling-block, but if he were asked to repeat a sentence containing such words, he did not become embarrassed, but broke up the words into syllables—tackled separately as he had been taught to do. He had none of the lack of confidence of the stammerer who will write down a message he is asked to deliver, in case he may be unable to deliver it verbally. This boy was a very good visualizer, and he could "see" before him, as if in printed characters, any word which still gave him difficulty. At this time the boy could speak intelligibly and with fair fluency. His voice was still, however, very monotonous, after the fashion of an unpractised reader.

Thus the visual memory in this case, and the power to concentrate the attention, were good. Dr. Leonard Guthrie, in discussing the nature of idioglossia, says, "The subjects of idioglossia have some inherent inability to make prolonged use of the faculties of attention and observation which are necessary for the acquisition of correct speech." This boy, however, had very good observing powers, and his attention did not readily wander, even towards the end of a prolonged lesson. He had a fair vocabulary, which he could use well, and if told to describe something he had seen, he would do so in detail without prompting. On the other hand, his auditory memory was poor, and he had little or no ear for music. He could not hum or whistle music, and he declared that there was no tune he could recognize, not even the air of the psalms frequently sung at the opening of school, which he could only distinguish by the words. At present his condition continues as above described.

The symptoms in this case support the view that in idioglossia the peculiar speech is neither a persistence of

baby language nor a new tongue invented by the patient. The child's speech really represents a very defective attempt to speak his own mother tongue. The defect does not arise from any impediment in the articulatory mechanism; nor to want of intelligence; nor to lack of visual memory; nor to inattention, though these may be noticed in some cases; nor to deafness in the ordinary sense. But the symptoms are explicable on the theory that there is defective audition in the sense of some affection or imperfect development of the auditory word centre. Idioglossia would thus come under the same class of cases as congenital word-blindness. But if so, why should the former condition be readily curable (in the case of an intelligent and industrious subject), while the latter is extremely intractable or even incurable, although the intelligence of the patient may be quite normal? The explanation seems to be as follows: In cases of congenital word-blindness the word-seeing centre in the brain fails to develop under the stimulating influence, successful in the case of all normal children, of school lessons. But an efficient word-seeing centre is absolutely essential for reading, and if the affected child's reading centre has not sufficient latent capacity to undergo the normal course of development even under the stimulation of individual tuition and prolonged effort, the case is hopeless. The child cannot learn to read because he cannot develop a reading centre. In a case, on the other hand, of idioglossia the defect in the audition centre does not interfere with the child's hearing nor with his capacity to understand what he hears, but it does incapacitate him from reproducing by ear, as normal children do, the sounds transmitted to his ear. It may even incapacitate him from learning how to reproduce such sounds by ear, just as the word-blind is incapacitated from recognizing, or even in some cases from learning to recognize, word symbols by sight. But in order to teach a child with idioglossia to speak it is not necessary to provide him with a complete audition centre. There are several ways of speaking, and if the child with a defective audition centre cannot learn to speak correctly by ear he may learn to speak by the intelligent utilization of visual or kinaesthetic memories.

It may be impossible for him to learn to reproduce words correctly by means of his auditory memory, but if he cannot learn to pronounce words as they sound, he may yet learn to pronounce them as they look, not merely in books, but also as they appear on the lips of other people. Nor does the unphonetic character of our spelling present any difficulty to this theory. Recollection that "would" and "wood" are produced in the same way in speech depends upon visual memory. The auditory memory is not necessarily involved at all. In the case above described there is no reason to suppose that the original defect of audition has been cured; for, although the boy can now talk quite fluently and intelligibly when he is expressing his own thoughts, he cannot echo immediately an unusual word. If one says to him unexpectedly "Say 'mathematics,'" he has to consider what the parts of the word are and how the proper sounds have to be produced before he can tackle the word successfully. When he has got the word correctly syllable by syllable, he has then no difficulty in repeating the whole word as fluently as a normal person.

TWO CASES OF LUPUS IN CHILDREN.

BY

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THE treatment of lupus vulgaris is often so unsatisfactory, especially when the employment of the Finsen rays is impracticable, that the following two cases may be of interest:

CASE I.

G. G., aged 14, came under my care in November, 1913. In November, 1912, her condition was described as follows by the physician under whom she then was: "Tuberculosis of the nose—lower surface, surrounding the nostrils and upper lip on right side. Mucous membrane of septum and alae also involved. Duration one year. Said to have followed a blow. Weak, ill-nourished child. No phthisis in the family." She was treated for nearly a year by half-pastille doses of *x* rays, given about every fortnight, with ung. hyd. oleat. as a local application.

She had apparently improved considerably under this treatment. When I saw her the nose was covered with crusts, and there was a considerable area of skin on either side actively involved, the typical apple-jelly appearance being well marked. The disease also affected the nasal mucous membrane.

On December 3rd I decided to try the effect of the intensive iodine treatment. This was continued for three weeks, but the patient was somewhat intolerant, and during this period no local changes were apparent. I then prescribed Unna's unguentum viride, the formula of which is: Acid. salicyl., liq. stibii chlorat., āā 2.0; creosot., ext. cannab. ind., āā 4.0; adip. lanae, 8.0.

This was kept on with lint and adhesive plaster, and after two months considerable improvement was apparent. During the greater part of this period the patient was taking cod-liver oil internally.

On March 18th, 1914, I prescribed potassium iodide (gr. v, t.d.s.) internally, and ordered a solution of hydrogen peroxide (10 vols.) to be applied twice daily on cotton-wool to the interior of the nose. At the same time the ointment was replaced by Unna's creosote and salicylic acid plaster (Beiersdorf, No. 81). This treatment was continued until April 29th, when the condition of the nasal mucous membrane had greatly improved. The iodide mixture and the hydrogen peroxide were then discontinued, and the patient was given petroleum emulsion (℥j, t.d.s.). A month later the child appeared greatly improved as regards her general health, and the nose was looking much better; there was still, however, a good deal of active tuberculous infiltration.

I then decided to try the effect of trichloracetic acid. A small glass rod was dipped into a semisolid mass of this substance, and then pressed firmly for a few seconds on the lupous tissue. Only a small area was treated at one time. The procedure causes a little temporary pain. The applications were continued at intervals of a fortnight for two and a half months, by which time practically all the active disease had apparently disappeared. An ointment consisting of menthol (10 per cent.) in zinc ointment, had been kept applied continuously on lint, and well rubbed in at night time during the whole of this period.

When I last saw the patient (October 28th) she was apparently cured except for two tiny nodules, which I treated with trichloracetic acid. The cosmetic result is extremely good, and compares favourably with that obtained by the Finsen rays.

CASE II.

T. C., aged 6, was brought to see me in January of this year. He had a patch of lupus about the size of a five-shilling piece on the right cheek. He had previously been treated with pyrogallic acid ointment and half-pastille doses of *x* rays. Part of the patch was apparently cured when I saw him; there was still, however, a good deal of active disease present.

I treated him very much on the same lines as Case I—namely, first with creosote and salicylic acid plaster, and later with trichloracetic acid and the continuous application of the menthol ointment. He also took petroleum emulsion internally. When I last saw him (November 4th) the patch was apparently completely cured, and, as in the other case, the cosmetic result is excellent.

The value of a strong application of creosote and salicylic acid is, of course, generally known, and Unna's plaster is widely used in the treatment of lupus. I have been very impressed by the results I have obtained with trichloracetic acid; it is undoubtedly very effective in destroying the lupous tissue, and, as has been noted, the cosmetic result is almost perfect. Whether the local application of menthol has any curative effect or not I do not know. I am rather inclined to think it has. It is undoubtedly absorbed when rubbed into the skin, for its application is followed by the appearance of a reducing body (probably glycuronic acid) in the urine, and many competent observers have testified to the value of menthol inunction in cases of phthisis. Finally, it may be noted that the general health and appearance of both cases improved very markedly as a result of the administration of petroleum, and there is little doubt that they both were subjects of intestinal stasis or intoxication.

ACCORDING to the *New York Medical Journal* Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, who has been in charge of the military hospital at Lyons ever since the war broke out, has been placed by the French Government in charge of a hospital at Compiègne in a hotel requisitioned for the purpose, which has accommodation for about one hundred patients. The Rockefeller Institute is equipping the hospital with complete apparatus for research in the bacteriological, pathological, chemical, and surgical conditions which may arise. Dr. Carrel will have a staff consisting of bacteriologists, chemists, and technicians, forming a laboratory unit, in addition to the regular surgical unit of the hospital. To Dr. H. D. Dakin has been assigned the chemical part of the work of investigation. The Rockefeller Foundation has voted an appropriation of £4,000, to be used under the direction of the Rockefeller Institute, in furthering medical research work under war conditions.

THE EFFECTS OF MILITARY TRAINING UPON LEAD WORKERS.

BY

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SINCE the beginning of August, 1914, 14 cases of lead poisoning have come under my notice among men who have joined or were members of the Territorial Forces. In North Staffordshire, where several thousands of male lead workers are employed, it can be safely said that some hundreds of these have enlisted in the various units of the army, and it is interesting to consider the effect of training and of the different mode of life upon those engaged in lead processes.

Of the 14 cases, 10 were pottery workers—3 being employed in the dipping house and 7 being glost placers, and of the remaining 4, 3 were house painters and 1 was a plumber. These cases did not occur among men belonging to the same battalion or among those stationed in the same place, and 4 had not left the head quarters dépôt.

Symptoms and Diagnosis.

The symptoms upon which the diagnosis of lead poisoning was made were the ordinary symptoms associated with this disease. In every case the patient was anaemic and showed the characteristic blue line on the gums. All of them complained of headaches and of feelings of sickness, and marked constipation was an invariable symptom. I noticed the blue line round the anus in 2 of the cases. In 12 cases there was definite abdominal colic, and in 1 case the patient suffered from peripheral neuritis of the arms. The patients suffering from abdominal colic complained of biliousness and pronounced constipation. They said that the pains "in the stomach" doubled them up, and there was general tenderness over the abdomen, but no localized tenderness over the vermiform appendix.

In only three instances had there been any previous trouble. In one case the man, who was a house painter, had been away from work in the spring of 1914 for nine weeks on account of colic, which was undoubtedly due to lead poisoning. The recurrent attack was of a serious nature, and the man was given his discharge. The second case was that of a glost placer who had previously suffered from several attacks of lead colic during the twenty years he had worked in a lead process. The examination of the blood showed that the haemoglobin was 65 per cent. of the normal, and basophilic granules were present in considerable numbers. Examination of the urine showed albuminuria. This man was incapacitated for three weeks, and on his recovery was excused drill and route marches and was allowed to follow light employment in the kitchens.

The most serious case was that of a patient who suffered from peripheral neuritis. He had worked for some years in the dipping-house, but two years ago, after being suspended for lead poisoning by the certifying factory surgeon, he gave up his employment at the pottery and became a general labourer in a non-lead process. The symptoms of lead poisoning commenced three weeks after the man had enlisted; he complained of pains and tenderness in the arms, weakness of the wrists, headache, giddiness, and nausea, and the bowels were only opened after taking a big dose of Epsom salts. On examination of the blood it was found that the haemoglobin was diminished by 40 per cent., and that cells showing basophilic granules were present to the extent of 500 per cubic millimetre. The man had the pasty appearance of the face characteristic of lead poisoning, was listless, and albuminuria was present. There was no question of the neuritis being due to alcoholism. The condition of the arms and wrists became worse, and the man had to be discharged from the battalion.

Date of Onset and Cause.

The onset of symptoms in the 14 cases occurred from three to seven weeks after mobilization or enlistment—that is to say, after the real military training began. This is of importance, as I find that no cases of lead poisoning have been observed or reported among Territorials after their annual training, which is never of greater duration than a fortnight.

The symptoms of colic must be attributed to lead poisoning from the fact that they were associated with the other symptoms that I have mentioned, and also because constipation was an invariable symptom. Had the colic been due to digestive trouble, I would have expected diarrhoea instead of the reverse condition, and I have already said that the case of peripheral neuritis could in no way be attributed to over-indulgence in alcohol.

There was nothing unusual in the course of each attack, and in two cases there has been a recurrent attack after the resumption of military duties, with abdominal colic, vomiting and headache as the most prominent symptoms.

These cases could certainly not be regarded as a local epidemic of lead poisoning due to impure water or to food contaminated with lead, from the fact that the men belonged to different battalions and four of them had never left the head quarters dépôt. And, further, if this were the cause of the trouble, I should have expected to find cases of lead poisoning among non-lead workers, who formed by far the greater proportion of the battalions of which these lead workers were members, but no cases of lead poisoning were found except among lead workers.

We do, however, know that symptoms of lead poisoning have frequently been observed in lead workers after attacks of influenza and tonsillitis and after the administration of such drugs as potassium iodide, potassium citrate, and sodium salicylate, but whether the symptoms are due to the action of these drugs upon the lead lying latent in the system or to the abnormal conditions resulting from influenza or tonsillitis is not yet known. I have seen acute symptoms of lead poisoning follow an injury to a lead worker.

But in the series of cases of which I am speaking I strongly suggest that the altered conditions of life, especially the muscular exercises associated with route marches and physical drill, cause increased metabolism, with the result that lead compounds previously locked up in the muscles and organs of the body become released and reach the blood stream, thus setting up the symptoms of which the men complained.

It is generally known that the work of a glost placer is as arduous as any that can be found in a pottery, and entails a great deal of muscular exertion; at first thought the theory that increased metabolism due to excessive muscular exercise is the cause of the onset of symptoms might not apply to men following this occupation, but it must be remembered that the military exercises which form part of the daily training of the soldier bring into play different groups of muscles from those used in the work of glost placing, so that even in the case of these workmen, in my opinion, the theory of increased metabolism might still hold. I do not wish to be dogmatic as to the cause of lead poisoning in these patients, but I think that the occurrence of so large a number is suggestive of the theory that the symptoms are caused by increased metabolism. I believe that these cases are similar in nature to the series of cases of delayed lead poisoning which have been recorded by Dr. Kauffmann, of Birmingham, in which partial starvation was supposed to promote the rapidity of the onset of the symptoms.

MR. JOSEPH A. HILL, in a report on the insane in the United States, recently issued by the Bureau of the Census, states that in a typical community of 200,000 persons, equally divided as to sex, 208 of the males and 200 of the females would be found in the insane asylums. In the course of a year, 72 males and 60 females would be admitted to the asylums. In 1880 the total number of inmates in lunatic asylums in the United States included 20,635 males and 20,307 females. Thirty years later the number of male inmates had increased to 98,695, and the number of females to 80,096. The excess of men among admissions in 1910 showed a still further increase in the proportion—namely, 128 males to 100 females. An analysis of the specific forms of insanity among these patients showed that if the factors of alcohol and syphilis, as manifested by general paralysis, were deducted, the proportion of the sexes was practically the same. Approximately, of every 500 persons in the United States in 1910, one was an inmate of a lunatic asylum.

TYPHUS FEVER.

BY

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Synonyms.

Epidemic fever, spotted fever, putrid fever, gaol fever, camp fever, fourteen-day fever, malignant fever, petechial fever.

French, Typhus exanthématique; *German*, Flecktyphus; *Italian*, Tifo esantematico; *Dutch*, Vlekkoorts; *Spanish*, Tabardillo.

Historical Sketch.

From the days of Hippocrates down to 1759 the word "typhus" (*tuphos* = fog) was used to denote a stuporous mental condition, without particular reference to individual diseases, or groups of diseases. In 1759 Boissier de Sauvages applied the term to a group of diseases in which mental hebetude might be observed. This group included what we now know as typhus.

In 1810 typhus fever was defined as a separate disease from typhoid by von Hildebrand, this term being applied to enteric fever by Louis in 1829. Von Hildebrand's claim for enteric as a distinct entity was confirmed by Bretonneau in 1813, by Gerhard and Pennock in 1837, and by Jenner about 1850.

Typhus fever is possibly the same disease as the plague of Athens described by Thucydides. It certainly was known in Italy, France, and Hungary in the sixteenth century, as described by Frascatorius of Verona.

In epidemic form the disease has repeatedly accompanied and followed war, attacking the camp, the beleaguered city, and the retreating host with impartial malignity. This was particularly the case between the siege of Reading in 1643 and the Crimean campaign.

Its ravages in Serbia in the spring of 1915 defy description. On March 31st no fewer than 3,000 fresh cases were reported from Skoplje alone.

In times of peace epidemics, till towards the end of the last century, were frequent in countries in which the disease held an endemic footing. Since the advent of the modern medical officer of health epidemics of alarming proportions have become rare in all countries in which he has had a free hand. In no disease has modern sanitation in its early days won greater triumphs than in typhus, unassisted by bacteriological research or by a knowledge of the bionomics of vermin. "The history of typhus," said Hirsch in 1893, "is written in those dark pages of the world's history which tell of the grievous visitations of mankind by war, famine, and misery of every kind." The knowledge we now possess of the etiology of the disease makes clear the inner meaning of Hirsch's inimitable summary.

Geographical Distribution.

In epidemic form, typhus, speaking generally, is a disease of cold or temperate climates. The tendency to overcrowding, stimulated by inclement meteorological conditions, has long been recognized as a dominant factor in the endemicity of typhus. Its geographical distribution is thus explained, certain parts of Russia, British North America, the United States, and Ireland affording familiar illustrations. Into tropical and subtropical areas the disease is sometimes introduced, and endemic centres thus established give rise to intermittent epidemic invasions.

Method of Spread of the Disease.

It has long been known that clothes play an important part in endemic centres and in epidemic outbreaks. The Spanish equivalent for the disease—*tabardillo*, denoting a peasant's cloak—speaks eloquently of the connexion between clothes and typhus, and of the Spanish power of observation. It has also long been suspected that the connecting link between clothes and typhus was the presence of vermin, and as long ago as 1876 Murchison declared that to prevent infection with typhus it was essential that the body should be protected from lice. That Murchison's clinical observations were sound was amply confirmed by the experiments of Ch. Nicole, C. Comte, and E. Conseil in 1909, and by Anderson and Goldberger in 1910, who at the same time exculpated the bed-bug and the flea. As an illustration of the connexion between endemic centres of the disease and epidemic outbreaks through the medium of vermin-infected clothes may be cited an experience during a study of the bacteriology of the disease in an epidemic in Ireland in 1914. It was found that between Glasgow, a well-known endemic centre, and a certain part of the west of Ireland, where the epidemic occurred, there is an extensive trade in old clothes, which can be bought by the peasants for a few pence; inspection of the clothes in an infected house showed large numbers of lice.

Lice, however, are probably not the only carriers of the infective agent of the disease, as was shown in 1914 by Hort and Ingram, who were able to reproduce in bonnet monkeys a disease which appeared to be a modified form of typhus by the injection of first cultures on human blood-agar of a minute cocco bacillus recovered from fresh typhus urine. This organism, which is of a pleomorphic type, is small enough, as it occurs in the body fluids, to pass tested Berkefeld filters, and can often be seen in large numbers in the centrifuged deposits of fresh human typhus urine. These observations suggest that the urine of typhus patients may be highly infective, and independent confirmation of the infectivity of excreta from typhus cases was recently obtained by C. E. Burns. This observer showed that in the island of Eriskey, in the Outer Hebrides, an outbreak of typhus could be traced with considerable confidence to a recent disturbance of a midden which had been in use by a family all of whom had died of typhus several years previously. The possibility of the disease being conveyed by the urine of convalescing and of chronic typhus carriers has not yet been investigated, but there is little doubt that during an attack of typhus a patient is an acute urinary carrier, and that the latter shares with the louse the stigma of being able to impart the causal organism of the disease.

Prevention of Spread of Typhus.

The methods to be adopted in arresting the spread of typhus in a quiescent community are easier of execution than in the case of a community disturbed by war.

In times of peace the danger of infection by lice should not be considered as adequately provided against by the employment of the various parasiticides which are widely recommended for the destruction of the louse in clothing or on the skin. The reason for this is that the favourite habitat for the louse in body clothing is under the lining and in the pleats, where he is relatively protected, and a false sense of security is therefore created by reliance on ointments, powders, vapours, and the like. Whenever possible, all personal clothes, bed-linen, mattresses, and so forth, from known cases of the disease should be thoroughly heated, or, if practicable, burnt, and careful search for lice on the skin and in the hair should be made, and these precautions should be observed before admission to hospital. After admission to hospital careful watch should still be kept for lice, in order to be certain that none have escaped detection, and for each patient arrangements should be made for the direct discharge of urine into vessels containing a 1 in 20 solution of carbolic, or other efficient disinfectant.

Incontinence of urine in typhus is not uncommon in severe cases, and special arrangements to prevent infection from soiled linen must therefore be made. In quiescent populations, provided that the points referred to are rigorously insisted upon, there is no danger in attending typhus patients, as is shown by the remarkable immunity enjoyed by doctors and nurses in modern hospitals.

In times of war the difficulties of controlling the spread of the disease are greatly enhanced, and the reason, therefore, for wholesale destruction of infected clothing, whenever practicable, and of disinfection of urine, becomes correspondingly increased. In dealing with grave epidemics, such as are now ravaging Serbia, the first essential for successful control is an unlimited stock of hospital tents, which should be frequently moved, unlined clothing which will stand dry heat, and large galvanized tanks containing carbolic solution for the reception of infected urine.

Clinical Course of the Disease in Uncomplicated Cases.

The incubation period lasts about fourteen days. In some cases it may be as short as one day or two, in others as long as twenty days. This variation is, perhaps, partly due to the particular stage in the life-history of the causal

organism, relative to its derivation from a pre-existing case of the disease, at which it was ingested by the lice responsible for infection of the particular case. The termination of the incubation period is followed by a short prodromal space, characterized by indefinite malaise. This leads up to rigors, fever, and pain in the back and lower limbs. The face may be early congested and even cyanosed.

On or about the fourth day a macular rash makes its appearance. It resembles that of measles, but is without the distinctive mouse smell of that disease. When the rash is fully developed there is often a characteristic odour from the skin, resembling that of a wet umbrella which is beginning to dry. The rash tends to appear first on the wrists and axillary folds. It then becomes abdominal, and subsequently invades the rest of the body, often missing, however, the face and neck.

Presently this measly rash is obscured by a subcuticular eruption of a peculiar mottled nature. The appearance now defies accurate description, but when once seen and learnt is almost pathognomonic. Soon after full development of the subcuticular rash profound toxaemia sets in, in severe cases, essentially characterized by heavy stupor, which may be disturbed by violent delirium or quiet muttering. In milder cases, as in children and the aged, there is no stupor, and there may be no signs of obvious illness. The spleen is not necessarily palpable, even in grave cases. After about fourteen days the continued fever of high range vanishes by crisis in uncomplicated cases, sometimes preceded by a fall between the eighth and tenth days. This, when it occurs, is characteristic of typhus, and is often to be seen in bonnet monkeys that have been injected with fresh typhus blood.

Diagnosis.

A. *Differential.*

From enteric fever typhus can be early diagnosed by the presence of the *B. typhosus* in the blood and urine. It used to be considered that a negative Widal reaction gave a useful method of diagnosis of typhus from typhoid. We now know that the serum of typhus patients may give a reaction with emulsions of the *B. typhosus*, even in dilutions of high titre (W. J. Wilson). In cases in which early diagnosis between typhus and enteric is difficult or impossible the study of the temperature chart during the third week will often prevent error, provided that the case is uncomplicated.

From measles the disease can usually be recognized by the character of the subcuticular rash, the smell of the skin and the absence of Koplik's spots.

From uraemia cases of typhus with stupor can be distinguished by the presence of fever and the peculiar nature of the rash. From small-pox, with which in some epidemics there has been considerable difficulty in diagnosis, the absence of rash from the face is a useful guide.

B. *Pathognomonic.*

The most important points on which, when taken together, a positive diagnosis of typhus can be based, are:

1. The characteristic rash.
2. The smell of the skin.
3. A history of previous cases of the disease in the same house, especially if associated with lice.
4. The stuporous condition of severe cases presenting the rash.
5. The precritical fall of temperature.
6. The enormous relative and absolute increase in the large mononuclear cells in the blood.
7. The presence in blood films of the large diplobacillary and diplococcal organisms described by numerous observers.
8. Their presence also in fresh urine.
9. The presence in the centrifuged deposits of fresh urine of the minute Gram-positive, Gram-negative, pleomorphic organism described by Hort and Ingram.
10. The isolation and cultivation of the same organism from the blood and cerebro spinal fluid.
11. The results of injection of cultures of these organisms, or of fresh typhus blood, into *bonnet* monkeys.

Morbid Anatomy.

Owing to the relative shortness of the disease in fatal cases as compared with enteric wasting of the cadaver due to typhus is seldom extreme. Tissue autolysis is rapid, and rigor mortis is fugitive. Haemolysis is particularly rapid, and the vascular endothelium is often stained with haemoglobin. Subcutaneous petechiae persist after death. The cardiac muscle shows cloudy swelling and granular degeneration, and the spleen often tends to diffluence on opening of the capsule. Apart from these and other similar changes common to all acute infections characterized by profound toxaemia, there are no *post-mortem* changes known to us on which a diagnosis of typhus unsupported during life can reasonably be made.

Complications.

Pulmonary stasis is often met with, and lobar and lobular pneumonia are not infrequent. Jaundice is rare. Convulsions, not necessarily fatal, were observed in 132 cases in the London Fever Hospital between the years 1862 and 1869. Meningitis is a rare complication, which is somewhat surprising in view of the liability to infection of the cerebro-spinal fluid and the early onset of typhus coma in severe cases. Paresis of sphincters is not uncommon. Incontinence and retention of urine may both be present. Taken as a whole, the complications of typhus, except in fatal cases, are few and relatively unimportant.

Bacteriology.

The earliest observer to show experimentally that typhus is due to an infective agent, and that this may be present in the circulating blood, was Moczutkowsky. In 1875 he inoculated himself with blood taken from a typhus patient in the tenth day of fever, and after a latent period of eighteen days he became ill. He then rapidly developed a severe attack of typhus, which nearly cost him his life. This experiment was repeated in 1908 by Otero, and also by Yersin and Vassal, who stated that they had been able to produce the disease in two natives by the same method of experiment. Moczutkowsky's classical experiment was repeated, and its results were confirmed by Anderson and Goldberger and by Nicolle, Conseil, and Comte, and by others, by injection of monkeys with human typhus blood; these observers also found that the louse is an important, if not the most important, factor in the spread of the disease, thus confirming Murchison's observations from the clinical standpoint.

It was also shown by these observers that the infective agent is small enough to pass through coarse Berkefeld filters, though previous to 1914 it had not been seen or cultivated. Before dealing with recent work on the subject, it is necessary briefly to survey the bacteriological work carried out between 1883 and 1914 in the hope of discovering the causal organism of the disease.

In 1883 Mott and Blore reported the presence of dividing cocci in fresh typhus blood from 12 cases. In 1891 Hlava of Prague obtained from the blood a streptobacillus in 20 out of 33 fatal cases. The organisms were cultivated on agar, in serum, and in bouillon. In 1893 Curtis and Albemarle obtained cultures of "diplococci" from the spleen in 3 fatal cases of the disease. In 1894 Dubieff and Bruhl described a "*Diplococcus exanthematicus*" which they obtained from the blood of 9 typhus patients. In 1906 Staniwechevskaja in 6 cases obtained cultures of similar organisms in blood bouillon, and in 1 case a "diplobacillus." In the same year Galesesco and Slatinéano in 4 cases reported cultivation from the blood of a Gram-positive "diplococcus," and in 6 cases a Gram-negative bacillus. The latter was also grown from the cerebro-spinal fluid in 8 cases, and in 4 cases a "diplococcus" was grown, and in the heart blood of 4 fatal cases Gram-positive "diplobacilli" were found. The Gram-negative bacillus produced acid but no gas from lactose; it coagulated milk, formed indol, and did not liquefy gelatine. It was non-motile, and it reddened the Drigalski medium. In 1908 M. Rabinowitsch described a "*Diplobacillus exanthematicus*" which he obtained from typhus blood. He said that in fresh cultures the organism was Gram-positive, and in old cultures Gram-negative. His optimum medium was glycerine ascitic broth.

In 1910 Wilson of Belfast reported that he had been able to cultivate in broth "diplococcal" organisms from the blood in 15 out of 33 cases of typhus, which he believed

to be identical with those cultivated by Staniwechevskaja. The organisms were Gram-positive, and gave a greyish film on agar and in gelatine, with a bluish tint by transmitted light. Subculture on agar from broth gave a growth which was quite unlike that of a *Staphylococcus aureus* or *albus*, and resembled that of *B. typhosus*. Gelatine began to liquefy in half the cases about the tenth day; in the remaining cases there was no liquefaction. The organisms fermented glycerine, galactose, maltose, laevulose, saccharose, mannite, dextrin, and lactose, but did not ferment sorbite, rhamnose, xylose, raffinose, arabinose, adonite, dulcite, salicin, amygdalin, or inulin. They clotted litmus milk. Wilson also reported in one case the growth of an ovoid Gram-positive "diplobacillus," which behaved like the "diplococcal" organisms in every respect but that of fermenting glycerine and mannite. The agglutination of Wilson's organisms with typhus serum was in 13 cases five to twenty times that with normal serum. In 1913 Müller cultivated from the blood of 5 typhus patients "diplobacilli" and "diplococci," which he believes to be identical with the organisms described by M. Rabinowitsch in 1908 and by Fuerth and by Predjtetschensky in 1893. The organisms were non-motile and appeared to be pleomorphic on subculture, cocco-bacillary forms being often seen. This appears to be the first record in the literature of the presence in typhus blood of pleomorphic organisms, with the exception of the large pleomorphic bacteria described by Fuerth and by Predjtetschensky. In 1914 Gram-positive pleomorphic organisms were also recovered from typhus blood by Plötz, varying between 1 and 2 microns in length. There are in addition various other organisms, bacterial and quasi-protozoal, described by Gotschlich, Lewaschew, Thoinot and Calmette, and many others, and there is also a long list of observers who have failed to find in or cultivate from typhus blood organisms of any sort or description.

Perhaps the most striking fact brought out by a study of the literature is the large number of observers who have cultivated from the blood organisms of a diplococcal or diplobacillary nature.

Some of the observers quoted insist that the organism they describe is the *causa causans* of the disease. This is notably the case with the bacillus of Fuerth, restudied by Rabinowitsch, and again by Plötz. Analysis, however, of the evidence submitted is far from convincing, and the moderate view put forward by Wilson that both the *Diplococcus exanthematicus* and the diplobacillus are secondary organisms is one that appears to find more general acceptance. Moreover, as was shown by Hort and Ingram, the injection into monkeys of these large cocco-bacillary forms cultivated in citrated typhus blood consistently failed to produce a fever reaction. And there can be little doubt that, whether secondary invaders or not, they are not the primary cause of the disease. As a result of extensive observations in four different outbreaks of typhus in Ireland in 1914, Hort and Ingram found it difficult to believe that a theory of secondary invasion explains the frequency with which the organisms of Rabinowitsch, of Müller, of Fuerth, and of Plötz, organisms which appear to be identical, can be cultivated from typhus blood. They suggested therefore, as an alternative theory, that these organisms merely represent harmless phases in the life-history of organisms previously undescribed. This theory was based on the fact that they were able to demonstrate in, and cultivate from, fresh typhus blood, urine, and cerebro-spinal fluid a minute filter-passing organism which was proved to be infective to monkeys, from which the organism could be again recovered. This infective organism, both in film preparations of the fresh urine and cerebro-spinal fluid as well as in primary cultures in human blood, showed the same tendency to pleomorphism as the larger non infective forms. And there was some evidence that smaller forms still are present in the blood, urine, and cerebro-spinal fluid, but outside the range of vision, and that these smaller forms do not persist as such in artificial cultures. These results require repetition and confirmation by other observers, but there is little doubt but that a good case has been established for thorough investigation of the etiological claims of the organism in question.

PROGNOSIS.

Attacks of the disease vary greatly in their severity in different epidemics. In Brill's disease, believed to be a modified form of typhus, the death-rate is usually low. In severe epidemics the dominant factor as regards a fatal issue in previously healthy subjects is age. The very young and the very old frequently escape with a light attack, even in severe epidemics. Robust adults between the age of 30 and 70 are said by those who see most of the disease to suffer severely, and to give the largest number of fatalities. In individuals exhausted by privation, exposure, fatigue, or disease, as in epidemics of war, the outlook is grave. Cases with early delirium, or stupor without delirium, do badly, as a rule. Sir John Moore gives the following prognostic data as unfavourable: A presentiment of death; soft, rapid, and compressible pulse in adults; feeble first sound; hurried respiration, not accounted for by pulmonary lesions; insomnia and delirium, complete coma-vigil and pin-hole pupils, extreme prostration, convulsions, muscular tremors and hiccough, early paresis of sphincters, tympanites, cyanosis, abundant and dark rash, persistent high fever, early profuse sweating, haemorrhagic manifestations.

In no grave disease is recovery so rapid or so complete as it may be after an attack of typhus.

TREATMENT.

The general treatment of typhus is that of any acute infective disease, and should be carried out whenever possible on open-air lines, due regard being paid to the avoidance of exposure.

Owing to the fact that previous to 1914 no satisfactory evidence was available as to the nature of the causative agent of the disease, specific treatment by vaccines or by antiserums has not been possible for typhus. It is, however, not unreasonable to hope that confirmation of the etiological relationship to typhus of the organism described by Hort and Ingram will lead to the establishment of efficient protective, and possibly curative, methods of specific treatment.

[By permission of the Editor translations of this paper into French, Russian, and Serbian are being sent by the British Red Cross Society to Serbia and Russia.]

EPIDEMIC CEREBRO-SPINAL FEVER.

A NOTE ON PLEOMORPHISM OF THE RESPONSIBLE MICRO-ORGANISM.

BY FLEET-SURGEON E. A. SHAW, R.N., M.D.CANTAB.

IN connexion with the hypothesis as to the above put forward by Drs. Hort, Lakin, and Benians in the BRITISH MEDICAL JOURNAL for March 27th, I would like to contribute a few bacteriological notes on a case from a small epidemic I have been recently investigating, which appears both to support and to be explained by their hypothesis.

M. H., a youth of 18, became sick on March 14th with what appeared to be "rubella," but after twenty-four hours in an observation ward, had become so clinically pronounced a case of cerebro-spinal fever as to cause his prompt removal to the ward set apart for this disease.

On March 16th a throat swab was plated on nasgar, and cerebro-spinal fluid was drawn off aseptically, from which ascitic broth, nasgar slopes, and Petri dishes were inoculated. This fluid was decidedly turbid, and microscopically showed marked leucocytosis, but no micro-organisms of any sort.

On March 18th, after forty-eight hours' incubation at 37°, all the slopes, Petri dishes, and broth were sterile; there had been no growth at all. Lumbar puncture was repeated, turbid cerebro-spinal fluid was obtained under pressure. The case was now clinically as complete a case of cerebro-spinal fever as could be imagined; every sign and symptom was present, the only thing lacking was the bacteriological confirmation of the diagnosis. The same inoculation of slopes, etc., was repeated. Microscopically, this fresh specimen of cerebro-spinal fluid showed again marked leucocytosis, but again absolutely no micro-organisms.

On March 20th there was again no growth; everything was sterile. Lumbar puncture was repeated, and again decidedly turbid cerebro-spinal fluid was obtained. Nasgar slopes and plates were inoculated, and this time 1 c.cm. of cerebro-spinal fluid was added to each of two 10 c.cm. ascitic 2 per cent. glucose litmus broth tubes. Yet again, microscopically, leucocytosis was seen, but no micro-organisms.

On March 21st there was again no growth, and everything was returned to incubator: 8 c.cm. of blood were taken aseptically from the median cephalic vein, added to 50 c.cm. of ascitic broth, and incubated. I did not expect much from this, for the blood of previous cases had very rarely yielded the meningococcus of Weichselbaum.

On March 22nd there was no growth on the slopes or plates of March 20th; the ascitic glucose litmus broth contained a few

Gram-negative diplococci in each loopful examined. Subcultures were made from these broth tubes. The blood broth appeared to be sterile. Lumbar puncture was repeated and further inoculations made. Microscopically the cerebro-spinal fluid showed no micro-organisms.

On March 24th the subinoculations from the two ascitic glucose litmus broth tubes of March 20th, which on March 22nd contained Gram-negative diplococci, had not grown; presumably the broth growth had died or metamorphosed before the subinoculations were made. The nasgar plates inoculated from fresh cerebro-spinal fluid on March 20th showed a typical growth, afterwards verified, of the meningococcus of Weichselbaum, and microscopically films from the blood broth of March 21st showed a Gram-negative diplococcus. Subcultures from this blood broth were made.

On March 26th the subcultures from the blood broth of March 21st only showed eleven very minute colonies on the two slopes, and were returned to the incubator, and fresh subcultures made from the blood broth of March 21st.

On March 27th the eleven minute colonies of the previous day had scarcely increased in size at all, but the slopes freshly inoculated from the blood sown in ascitic broth, which had then had five days' incubation, showed a thin, apparently homogeneous, greyish translucent film of growth, which, examined with a pocket lens, appeared punctate, and, with a low power of the microscope, as myriads of small colonies, some round, some oval, and all of fairly regular outline, moist and coalescing when touched by platinum wire, and emulsifying very readily. Slide films prepared from these, stained by Gram and counter-stained with Bismarck brown, were very surprising, for I fully expected the usual Gram-negative diplococci alone, instead of which I found micrococci singly, in pairs, and some in tetrads; some of the pairs were typical-looking diplococci, others were pairs simply by juxtaposition. There were other somewhat larger cocci with a tendency to staphylar grouping, and there were small bacilli and larger bacilli up to the size of a typhoid bacillus; some of each, both cocci and bacilli, were Gram-positive and others Gram-negative; in fact, every form was present described in the conjoint paper referred to as found in a single colony obtained from the urine, except Gram-positive diplococci.

In addition to these forms, there were others intermediate between cocci and bacilli, of the type spoken of by the French school as *cocco-bacille*, and also "club" forms, the largest of all, the enlarged end of which took Gram stain most deeply.

This composite picture made me suspect my Gram stain, which I at once tested on recent cultures of *Staphylococcus pyogenes aureus* and *B. typhosus*, only to find it was quite right. The "club" forms made one think of involution forms, but this growth was only twenty-four hours old.

A subculture made from this slope on to another that day and examined the next showed very similar features, but many fewer "club" forms. A film was stained with heated carbol-fuchsin, decolorized with 30 per cent. sulphuric acid, counter-stained with methylene blue, and examined for acid-fast forms, but none were found; the bulbous ends of the "club" forms took the counter-stain very deeply indeed. Further investigation is proceeding.

The possibility indicated by the preliminary note of Drs. Hort, Lakin, and Benians, that in cerebro-spinal fever we have to deal with a causative organism which is not only polymorphic, but in some phases ultramicroscopic and capable of passing the filter, would explain the earlier fruitless efforts in this case, and the later microscopical appearances of the growth ultimately isolated, which I have found only in this one case, but it means a vastly increased burden for the bacteriologist.

It is pleasant to be able to add, in conclusion, that the patient in this case is now convalescent, with a most healthy appetite.

ACUTE INVERSION OF THE UTERUS FOLLOWING LABOUR ON TWO OCCASIONS.

BY N. STUART CARRUTHERS, M.R.C.S.ENG., L.R.C.P.LOND.,

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INVERSION of the uterus is one of the rarest complications of labour. Statistics show that it is only met with in from 1 in 180,000 to 1 in 200,000 confinements. As I have seen two instances in the same woman at consecutive labours the circumstances are, perhaps, worth recording.

In textbooks of midwifery three degrees of inversion are described: The first, in which the fundus is depressed, and bulges into the interior of the uterus; the second, in which the fundus protrudes through the external os, and is felt in the vagina; and the third, in which the entire uterus and vagina protrude through the vulva. In the following case the inversion was of the third degree at the first confinement, and of the second degree at the second.

On February 12th, 1913, I was called in to see a healthy woman, aged 26, who had passed through one previous and perfectly natural confinement. Her pregnancy on the present occasion was normal, complicated by nothing worse than morning sickness. Violent labour pains, I noted, came on every four or five minutes; the presentation was left occipito-anterior and the os was rather more than half way dilated. As the patient was in great pain, crying out for relief, I gave her a hypodermic injection of morphine sulphate and hyoscin hydrobromide. The pain ceased and the uterine contractions were reduced to three or four in the hour, labour progressed slowly, and the patient remained semi-conscious throughout the day. Towards night the uterus contracted only at long intervals, and as the os was fully dilated I delivered with the forceps just twenty-two hours after the commencement of labour, without difficulty. Massage was then applied to the uterus, which could be felt to contract at intervals of ten to fifteen minutes. With each contraction a small indentation could be felt on the highest part of the fundus, somewhat anteriorly. It gradually increased, until it seemed deep enough to lodge a small egg. At this stage the patient moved vigorously about as if in great pain, and much bright red blood escaped from the vagina. Almost immediately the placenta was expelled through the vagina, but on endeavouring to remove it, I found that something more was protruding. On placing a hand on the abdomen no fundus could be felt, and the diagnosis became obvious. The patient was now extremely pale, with a small, thready pulse, only just palpable at the wrist. Her skin was clammy and cold, especially in the extremities. With a little difficulty the firmly adherent placenta was detached from the womb. The area of adhesion, about an inch and a half in diameter, corresponded to that part of the fundus where the dimple had been felt. The bleeding from the denuded surface consisted only of a general oozing, except at a few points, where some vessels spurted feebly.

The fundus was taken in the palm of the right hand, pressure was made upwards, and the vaginal displacement reduced. The hand was then passed through the vulva, the fist closed, and the inversion gradually undone by pressing the knuckles against the inverted fundus. Ergotinine citrate gr. $\frac{1}{50}$ and strychnine gr. $\frac{1}{15}$ were injected into the gluteal muscles. Vigorous rubbing was applied to the limbs and massage to the uterus. A hot intrauterine lysol douche was also given, and by these means contractions of the womb were induced. As the woman's condition was extremely critical, it was decided to infuse at once. I inserted a cannula into the axilla through the pectoral muscles; it was connected to a large funnel by a short length of tubing. In this way a pint and a half of saline was given. I had not a proper infusion apparatus with me, and the patient lived in a country cottage many miles from my surgery, so that this contrivance was the best that could be arranged in the circumstances. In spite of the fact that the saline was made from warm water which had not been boiled and salt out of the family salt-cellar, and the apparatus unsterilized, no sepsis occurred.

For several days the patient was in a very grave condition, and the uterus was exceedingly tender when touched. The temperature did not rise above 100° F., neither was the lochia excessive nor offensive in smell.

On the twelfth day a large vein in the left leg near the knee became thrombosed, but by the end of seven weeks the patient was able to be moved to a couch. Nine days after the confinement the womb was still rather large, but otherwise there was nothing to suggest that such a serious disaster had happened.

Complete inversion might, no doubt, have been prevented had the exact significance of the depression been grasped and the placenta promptly removed, but the third stage of inversion followed so rapidly upon the first that it had taken place before such a possibility was suspected. On the next occasion complete inversion was successfully arrested by early removal of the placenta.

On July 8th, 1914, I was again called to attend the same patient. Labour was normal and the pains strong and frequent. Nothing was given to allay her suffering, and in due course the child was born. During the third stage of labour the uterine contractions continued to be strong. After five or six pains a depression appeared in precisely the same situation as at the last labour, and with each pain became larger, so that even between them it could be distinctly felt by laying the hand flat on the fundus. Only the most gentle massage had been applied during this stage of labour. As the inversion was getting much more advanced, and the placenta showed no sign of separating, I thought it wise to remove it manually. On passing the hand into the vagina the greater part of the placenta was felt to be already detached, but one portion was firmly adherent and had pulled the fundus into the body of the uterus and past the external os. The placenta was detached and the inversion pushed out again. Recovery was uneventful. At the present time the woman enjoys good health and both children are alive and healthy.

It is interesting to speculate as to the cause of the inversion in this woman. According to Eden's *Manual of*

Midwifery, it may be either (*a*) spontaneous, or (*b*) induced. Under the heading of "spontaneous," we find it may result from: (1) Precipitate labour, (2) atony of the wall of the fundus uteri, or (3) traction on the placental site by a short cord, either relative or absolute. When "induced," it is said to be caused by (1) pressure on the fundus, or (2) traction on the cord during the period of relaxation of the uterine muscles.

On the first occasion I was inclined to think that the morphine and hyoscin had contributed to its production by causing a partial inertia, and over-vigorous massage had done the rest; but this explanation seems unlikely in view of the fact that part of the placenta was firmly adherent, and that on the second occasion neither morphine and hyoscin nor vigorous massage was employed. Therefore inversion was probably spontaneous on both occasions, and in both two factors were at work, namely: (*a*) An atony of the uterine wall, and (*b*) a partly adherent placenta. It is difficult to explain why inversion should have occurred in this woman, unless we assume an atony of the uterine walls; for if so common a complication as adherent placenta can produce this condition, it is strange that inversion is so rare. In the two labours above described, it seems that after the expulsion of the detached part of the placenta from the uterine cavity in the natural way the uterus continued in its endeavour to expel the remaining portion, which was so firmly attached over a small area that it was unable to do so. With each contraction the weakened uterine wall was pulled inwards by the placenta, the process going on, in the first instance, until the uterus was completely inverted. On the second occasion the same process was arrested by the forcible removal of the adherent part.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

COMPLETE INVERSION OF THE UTERUS WITH PROLAPSE.

INVERSION of the uterus is sufficiently rare to warrant publication of a case which I attended lately. It presented some features which are, I believe, unusual. At 2.30 a.m. on January 15th, 1915, I received an urgent message to see Mrs. G., a 2-para. I reached the house about 2.45 a.m.; the child had been born at 1.30 a.m. The patient, a woman of 23, was extremely cold and clammy, nearly pulseless, presenting every feature of extreme shock. I found a large tumour between the thighs, resembling nothing so much in appearance as the half of a Rugby football. It consisted of a completely inverted and prolapsed uterus, to which the placenta was adherent with moderate firmness. The whole vagina was everted and the parts were quite cold, dusky, and cyanotic. There was no outward evidence of much haemorrhage. I rapidly douched over the parts with warm antiseptic lotion, and detached the placenta. Then—and apparently this is not usually the case—I was able to reduce the inversion and replace the uterus with the utmost ease, using no anaesthetic. The profound shock from which the woman was suffering doubtless was the reason. The uterus went well up into the abdomen and was perfectly whole; the cervix was intact, and the perineum was not torn. No tendency to haemorrhage appeared. I gave the patient a hot intrauterine douche of liq. cresol. saponat. ʒj ad Oj, and injected ½ c.cm. of pituitary extract (P., D. and Co.), with the result that, in a few minutes, the uterus had contracted down to the classical cricket-ball size and feel.

As the patient was in an extremely collapsed condition, the lower end of the bed was raised, hot blankets and bottles were applied, stimulants used, and one and a half pints of warm saline given in the axillae. A certain return of the pulse occurred, but this recovery was only temporary, for she sank rapidly and died at 5 a.m.

The midwife told me that the child had been born rapidly and easily, and that, some fifteen minutes afterwards, she asked the woman to cough in order to help in the expulsion of the placenta. She declares that the placenta shot out, but that the condition then presenting itself was one unknown to her, and she therefore sent immediately for me. She emphatically denies having pulled at the cord, and this statement is corroborated by a relative of the woman present all the time. If the time of the inversion occurring is taken as 1.45 a.m., then the condition must have been present for somewhat over an hour, as I reduced it at 2.55 a.m.

The chief points which appeared unusual were the completeness of the inversion and the prolapse, the great ease with which reduction was effected, and the extreme shock from which the patient suffered. The great shock will doubtless explain the easy reduction, but, as there was by no means a large amount of haemorrhage, one must look for other reasons to explain the shock. According to some observers, the shock is due, in part at least, to the pressure of the ovaries on the brim of the pelvis, and also to pressure on the pelvic nerves; and in this instance the woman had intense neuralgic pains down the front of the thighs and legs.

The causes producing the inversion in this case are difficult to name if one accepts the statement of the midwife that she neither pushed hard on the fundus nor pulled on the cord. The woman was a healthy young subject and had been doing light household work at 9 p.m. the day before the labour. She was in labour only three to three and a half hours, and apart from a rapid delivery, first of the child and later of placenta (and its site), no unusual condition seems to have been present. Her previous labour had been uneventful, except for slight delay in the expulsion of the placenta.

The clinical conditions in the case must, I think, be an unusual combination, but the regrettable feature to me is the thought that, had a medical man been present at the birth and had he corrected the condition as soon as it appeared, the life of the patient might have been saved, as the death was, in my opinion, due to shock from the delay.

Newtown, Wigan. JAMES OAG, M.A., M.B., Ch.B.

A CASE OF RIGHT-SIDED HEART.

CASES of transposition of the heart are, I think, rare enough to make the following example of interest:

Private J. came under my observation on his return from the Expeditionary Force. He was sent home suffering from shock the effect of the explosion of a lyddite shell, but is now practically recovered. He is 19 years of age, quite healthy, and has never suffered from pleurisy or any condition which might lead to displacement of the heart. The lungs are quite normal.

Although he has been examined two or three times, no medical man spoke to him about the condition. His mother, however, noticed it when he was a boy, and told him about it. He has four brothers and four sisters, and he says that his mother did not notice the condition in any of them. The presumption is that they are normal.

In his case the heart is completely transposed. The apex beat is in the fifth interspace on the right side, one inch below the nipple and in line with it. All valve sounds are normal. The area of cardiac dullness is not enlarged. In a skiagram a very small portion of the heart can be seen to the left of the sternum.

Such cases, when they occur, are most commonly associated with transposition of the other viscera, but in this case there is no such transposition. All authorities agree that this is rare. Careful percussion showed both liver and splenic dullness to be normal, and this was confirmed by examination in the Armstrong College Hospital at Newcastle, to which I sent him. He was there given a bismuth meal, and the direction it took was noted. It was found to take a normal course.

The points of interest in this case are the completeness of the transposition, the age and health of the patient as showing that the displacement was not caused by pathological conditions of the lungs or pleura, and the fact that the heart alone is displaced. I am indebted to Major Arnison, R.A.M.C., for his kindness in obtaining the skiagraph for me and otherwise confirming the diagnosis, and to my colleague, Dr. G. H. Shaw, of Leigh, Lancashire, who was good enough to look up authorities for me which are not available to me in my present position.

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Backworth, Northumberland. Lieut., R.A.M.C.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

AT a meeting on March 12th, Dr. M. J. GIBSON, President, in the chair, Dr. ALFRED SMITH showed *An unusual degeneration of the cervix*. The patient, aged 60, was the mother of sixteen children. The menopause had come on ten years before. She enjoyed good health up to August, 1914, when she noticed a slimy discharge coming from the vagina. There was neither haemorrhage, or pain, or offensive odour. On bimanual examination the impression conveyed was that there was no internal os; the cavity of the uterus was greatly dilated; the mucous membrane felt like velvet pile. This slight palpation caused haemorrhage. On curettage, large quantities of brain-like matter came away, as in cancer. A simple panhysterectomy was performed. The total length of the uterus was 12 cm., fundus 3.5 cm., cervix 8.5 cm., greatest width 6.7 cm. The fundus was normal, but the cervical portion was greatly thickened. On section, this thickening was seen to be due to the transformation of the normal muscle wall into a spongy mass infiltrated with mucoid material; this material was directly continuous with a large amount of mucus in the cavity of the cervix. The remains of the true cervical wall was represented by a thin layer of fibro-muscular tissue. There was no evidence of malignancy. The specimen is in the nature of a channelled mucous polypus, but it is remarkable in that it involved more or less uniformly the whole of the cervical wall. Dr. E. HASTINGS TWEEDY said it seemed to be an adenomatous condition of the mucous membrane, something like a mucous polypus, spreading over the entire surface. Dr. R. J. ROWLETTE said he had never seen anything like the condition. It possessed remarkable similarities to the glandular structure found in mucous polypi. Dr. T. P. C. KIRKPATRICK investigated the claim put forward that the method of conducting the third stage of labour, known for so long as the *Dublin method*, had originated in Dublin. It was not mentioned in the *Midwifery* of Fielding Ould published in Dublin in 1742. In 1768 John Harvie published in London a short pamphlet, in which he gave a clear and exact description of the method. It seemed probable, then, that Harvie was the first to describe the method, and that subsequently it was adopted as the teaching of the Dublin Lying-in Hospital. Though the Dublin school might not be able to claim the honour of having first described the method, yet that school deserved every credit for so early recognizing its value and for so consistently teaching it. After remarks by Dr. PUREFOY, Sir WILLIAM SMYLY, and Dr. TWEEDY, Professor SMITH said the late Sir Arthur Macan had asked him some years ago to go through the literature to ascertain the claims of Dublin to this method, but he could get nothing but tradition to support it. Harvie's book did not come under their notice at the time. He agreed with Dr. Purefoy that the case was not proven. After some remarks by Dr. ASHE, Dr. KIRKPATRICK said the Rotunda Hospital did not need to base its claims to greatness on a suppression of the truth. Many of those who had written on this subject appear never to have seen Harvie's book. Had this method of conducting the third stage of labour been the teaching of the Rotunda Hospital when Ould was Master, from 1759 to 1766, it would almost certainly have been described by Foster, who was assistant to Ould's successor in the Mastership—William Collum. Foster, however, did not describe the method. Dr. D. G. MADILL reported the after-results of cases of the *Alexander-Adams operation and its results*, and described the method of doing the operation with a single incision. Professor SMITH said his own experience was that the type of case suitable for Alexander's operation hardly required an operation at all. That Alexander's operation gave good results in a certain limited class of cases he agreed, but he thought it would not do so if the uterus was enlarged. Dr. HASTINGS TWEEDY said that personally he favoured the operation of ventrisuspension, but his results from vaginal suspension had also been good. Dr. GIBBON FITZGIBBON agreed with Dr. Tweedy that there were no complications after ventral suspension. He had followed up a good many of his own cases, and had never found any trouble arising afterwards in pregnancy or parturition. The number of cases which he had come across suitable for Alexander's operation was exceedingly small, and if sterility was to be excluded they would have been further reduced. The debate was continued by Dr. PUREFOY, Dr. SOLOMONS, and the PRESIDENT; and Dr. MADILL replied.

Reviews.

COLOUR VISION.

IT is easy to understand why the study of colour vision should be of continual interest. The subject matter stimulates a whole gamut of emotions, while its intellectual study affords a field for the exercise of diverse talents—the experimental, the mathematical, and the introspective; when we add to this the practical importance of certain abnormalities of the colour sense, it is not surprising that the literature of colour vision not only includes some of the greatest names in the history of science, but is of enormous volume. The beginner is not, owing to the complex nature of the subject, well provided with textbooks, and this is particularly true if he is only able to read English. Manuals of both physiology and psychology always devote sections to colour vision, but such accounts are sometimes rather perfunctory, and nearly always too brief to afford an insight into the real difficulties of the problem. In 1910, in his *Physiology of the Special Senses*, Mr. Major Greenwood, jun., described in some detail the salient facts and leading theories of colour vision, but the scale of his book was hardly large enough to do full justice to the subject; while, since the date of its publication, some important researches have been reported, in particular those of Sir William Abney. There was, therefore, ample room for a new treatise, and Mr. J. H. PARSONS's *Introduction to the Study of Colour Vision*[1] is for this reason alone assured of a welcome.

The principle in accordance with which Mr. Parsons has divided his subject matter is excellent. In the first part he details the chief facts of normal colour vision; in the second he treats of colour blindness in the same way; in the third he examines the theories of colour vision. Naturally, as the author points out, such a classification cannot be strictly observed in detail, for many results obtained in attempting to prove or disprove a particular theory are just as much "facts" as conclusions reached without the stimulus of a preconceived theory. Nevertheless the distinction is useful, and, to judge from the animated discussion which is now being carried on in our columns, ought always to be borne in mind. Thus, it is an experimental fact that, with certain limitations, all possible chromatic stimuli can be reduced to terms of three, so that understood in this way it is a fact that normal colour vision is trichromatic. But this is a very different thing from saying that the trichromatic *theory* of colour vision is true. On this particular point Mr. Parsons's exposition will be found especially helpful to the reader who has, with good reason, been disposed to regard discussions of colour vision as the experienced chess player looks at disputes respecting the "best" defence to the Ruy Lopez, or in the light in which the accoucheur peruses demonstrations of the unique value of a particular pattern of forceps.

In a work of this kind which, although dealing exclusively with researches published elsewhere, breaks fresh ground by virtue of its arrangement, it is not difficult to point to passages which will not command universal assent. In the chapter dealing with simultaneous contrast it would perhaps have been better to devote more space to the description of those actual methods of study which can be easily employed; thus, many of Hering's demonstrations are both striking and easy to carry out. On the other hand, the quantitative observations of Pretori and Sachs, although of much theoretical importance, are a little difficult to follow in a written account. In the section on colour blindness we should have welcomed a short discussion of the practical aspects of the matter, particularly as the views of so distinguished an ophthalmologist as the author would have an original value which

[1] *An Introduction to the Study of Colour Vision*. By J. H. Parsons, D.Sc., F.R.C.S. Cambridge Psychological Library. Cambridge: The University Press. 1915. (Royal 8vo, pp. 316; 1 plate, 75 figures. 12s. 6d. net.)

the utterances of an ordinary compiler of textbooks do not possess. Possibly, however, Mr. Parsons did not consider that a book appearing in a series for the use of students of psychology was a suitable medium for the discussion of topics of professional interest.

In the sections dealing with theories Mr. Parsons has striven, and, we think, successfully, to maintain an impartial attitude. He has given a good deal of prominence to the researches of Sir William Abney and his associates, naturally devoting several pages to Professor Watson's ingenious and cogent evidence in support of the view that at least some cases of anomalous trichromatic vision can be described in terms of a three component hypothesis, on the assumption that, in some, the responsiveness of one component is weakened and, in others, the corresponding valency curve is shifted. It might have been as well to emphasize the fact that v. Helmholtz did not, at the end of his life, believe that partial colour blindness was explicable in terms of a mere suppression of one of the three fundamental components postulated in his theory, or rather in the theory of Young modified by him. Mr. Parsons quotes with apparent approval Greenwood's suggestion that the anomalous trichromatics may be extreme variants of a frequency system representing the whole range of trichromatics of visual types; it is arguable that the same may be true of the dichromatics, and, if so, the remark that "it is difficult to understand how any concordant classification of the colour blind can be arrived at by Edridge-Green's methods" (p. 296), although perhaps pertinent in reference to the statement which is its immediate object, would need modification. The sharp differentiation of protanopes and deuteranopes may not be altogether natural. This, however, is one of the debatable parts of the subject.

Mr. Parsons's exposition is nearly always lucid, but we cannot honestly say that his literary style is agreeable: it reminds us too much of the leading articles in an esteemed lay contemporary. For instance, when some method is unreliable and gives results of doubtful value, why not say so, instead of writing "Such observations can be appraised only at the value which an uncertain method merits"? Why translate such expressions as "some knowledge of" into "a not inconsiderable knowledge of"? We only draw attention to these minor blemishes because they tended to diminish the pleasure afforded us by a perusal of Mr. Parsons's able and learned monograph.

TREATMENT OF ANAEMIA.

VAQUEZ and AUBERTIN[2] summarize in a small volume the different pathological conditions of which anaemia is the most conspicuous symptom, and discuss the various means and methods commonly employed in the treatment of it. They give the indications for the use of iron, arsenic, salvarsan, bone marrow, etc.; state what in their opinions are the most suitable remedies, and record the results obtained by each of them controlled by repeated microscopical examinations of the blood. Very properly they insist that not every case of anaemia calls for an exhibition of iron or arsenic. There are affections, such for instance as achylia gastrica, chronic dysentery, haemorrhoids, helminthiasis, persistent bleedings from small vessels, etc., to which the associated blood changes are distinctly traceable, so that a radical treatment of the causes combined with rational hygienic measures speedily leads to the recovery from their effect upon the blood. When, however, such lesions or analogous conditions do not exist, or where those that are known or suspected to exist are irremediable, then recourse must be had to one or other of the agents above referred to.

The authors enter a warning against an unduly prolonged use of iron or arsenic, as the one is apt to derange digestion, and the other to produce just the state which it is intended to improve. To avoid the untoward consequences of the latter some practitioners have substituted for its internal administration injections of salvarsan. In six out of twenty-one cases in which Byrom Bramwell had used them he had indeed very striking successes. Others, however, were not so fortunate. In four cases out of five which Leede had thus treated death followed very soon upon the injections, and the authors declare that this method was of doubtful utility in anaemia, and decidedly contra-indicated in the pernicious form of it. Better results are said to be obtainable by the use of the bone marrow of a young and growing animal; and although they prefer the fresh substance, they speak favourably of its use dried and powdered or compressed in tablets. In one half of their cases the exhibition of bone marrow effected a cure; in some, however, not without the simultaneous use of iron or arsenic. In others, especially in those in which the anaemia was presumably connected with atrophy or degeneration of the haematopoietic organs, the results were doubtful. As to the utility of radio-therapy, direct infusion of blood, injections of defibrinated blood, injections of the so-called "haematopoietic," haemolytic, and anti-diphtherial serums, as also of thorium X and splenectomy, the authors give very guarded opinions. On the whole, although their book contains nothing that is not known to well-informed practitioners, it will nevertheless be acceptable to a large circle of readers.

[2] *Le Traitement des Anémies.* Par Dr. H. Vaquez et Dr. Ch. Aubertin (Les Actualités Médicales). Paris: J. B. Baillière et Fils. 1914. (Cr. 8vo, pp. 96; 24 figures. Fr. 1.50.)

LEAD POISONING.

SIR THOMAS OLIVER'S new work on *Lead Poisoning*[3] is the outcome of a series of lectures which he delivered at the Royal Institute of Public Health last summer, and when we consider that of all industrial diseases lead poisoning is the most frequently found, and at the same time presents so many difficulties to the medical practitioner, this publication should be widely read.

The first part of the book deals with the various industries in which lead processes are used, and special reference is made to the statistics drawn up by Dr. T. M. Legge, H.M. Inspector of Factories, from which it will be seen that in the years 1900–1912, in spite of legislation and regulations drawn up with the object of reducing the incidence of this disease, no fewer than 8,523 cases of lead poisoning were notified, and that of these 394 died.

In dealing with the causes of lead poisoning Sir Thomas Oliver emphasizes the point that women and young persons, especially young females, are more readily affected by lead than men, and that they are more susceptible to the worst types of the disease; further, his experience convinces him that workers addicted to alcohol should not be allowed to work in a lead process.

The symptoms associated with lead poisoning are very clearly described in detail. The researches upon the blood made by Teleky and the observations of Schönfeld, Hoffman and Schmidt, and Russell upon the frequency of basophilia in cases of lead poisoning are recorded; it must now be recognized that basophilia is a symptom of great importance in the diagnosis of lead poisoning, although the author says that he has not found it so helpful as have some other physicians.

The treatment of lead poisoning is discussed under two headings—preventive and curative—and it is rightly pointed out that the prevention of plumbism should begin not after the workers have commenced employment in a lead process but before, and that the preliminary medical examination of applicants should be so thorough that only the fittest be allowed to start work. It is pointed out that at one of the large factories at Newcastle-on-Tyne any person applying for work is not only questioned as to his health and previous occupation, but his mouth and teeth are examined, and the urine is tested for albumin. A sphygmogram is taken and also a record of the blood pressure. If the blood pressure exceeds 140 mm. of mercury the applicant is refused. In this way Dr. Irvine, the medical officer, has kept the works practically free from plumbism. The regulations of the Home Office with reference to lead processes in factories and workshops are printed in full as an appendix to the book; they will be found valuable for reference, especially by certifying factory surgeons, medical officers of health, and others interested in factory hygiene.

Relatively little attention is given to the curative treatment of lead poisoning, and the author's views upon the double electric bath treatment, with which his name and that of Mr. T. M. Clague are associated, may not meet with

[3] *Lead Poisoning: From the Industrial, Medical, and Social Points of View.* Lectures delivered at the Royal Institute of Public Health. By Sir Thomas Oliver, M.A., M.D., F.R.C.P. London: H. K. Lewis. 1914. (Cr. 8vo, pp. 304. 5s. net.)

general acceptance. No one denies that electrical treatment is of the greatest use in cases of paralysis produced by lead poisoning, but the experiments of Goadby and others go to show that the advantages of the double electric bath treatment are doubtful.

THE MINOR HORRORS OF WAR.

Readers of Boswell's *Life of Johnson* will remember a story there told about Dr. Grainger's *Sugar Cane* which in its original form contained the line

Now, Muse, let's sing of rats!

The mention of this humble scourge of plantations set the wits at Sir Joshua Reynolds's table on a roar when the poem was read in manuscript. Nowadays we have learnt not to consider much smaller "deer" as beneath the dignity of writers who deal seriously with causes of human misery. The Roman maxim *de minimis non curet praetor* has no application in modern sanitary science where the little things often matter most. Sir Hugh Evans says in the "Merry Wives of Windsor" that the louse is a familiar beast to man, and signifies love; we now know that it carries the poison of typhus fever, and often signifies death. We know, too, the part played by the mosquito in the causation of malaria, and by the *Stegomyia* in the production of yellow fever. The bug, the flea, the house-fly, the harvest mite, and the tick add, each in its degree, to the sufferings of mankind. Dr. A. E. Shipley, Master of Christ's College, Cambridge, has been giving a most interesting account of the minute scourges of man in the British Medical Journal. The first twelve articles have now been republished in book form,[4] at a price which puts it within the reach even of those who have to depend on War Office pay. They are written, as the author says in his preface, "in a certain spirit of gaiety," the subject being lighted up by happy quotations and literary references, but without any sacrifice of scientific precision. The book is therefore at once eminently readable and solidly instructive, and we recommend all who are responsible for the health and comfort of our soldiers in camps and trenches to study it carefully. Although the little animals dealt with are considered unmentionable to ears polite in time of peace, they may, as Dr. Shipley well says, in time of war make or unmake an army corps. He has collected and sifted the experiences of men who have themselves suffered from these "minor horrors of war" or had to do their best to mitigate them in others. While, as might be expected from an acknowledged master of the subject, the descriptions are, from the zoological point of view, clear and accurate, the practical advice given is thoroughly sound. We are glad to learn that a second edition has already been called for.

NOTES ON BOOKS.

In its fifth edition Luff and Candy's *Manual of Chemistry*,[5] which is especially suited for the requirements of medical students, has been thoroughly revised, and in particular the subject of ionization of salts in solution is more fully discussed. This inevitably means an increase in the length of the book; but although the new edition contains some forty pages more than the previous one, and blank pages for memoranda have also been added, the use of a slightly thinner paper has resulted in the volume being appreciably thinner, and a good deal of increase will be possible in future without its exceeding a size which can be carried in the pocket. The revision was presumably for the most part carried out before the appearance of the *British Pharmacopoeia*, 1914, as various changes in the chemical substances which are official are not included—for instance, no mention is made of the official names for eucaine, urotropine, veronal, etc.; it is a little surprising, too, to find the old term hydrochlor*ate* still used instead of hydrochloride (of an alkaloid). But these are very small blemishes in an excellent manual, which fully deserves the favour it has long enjoyed.

Mr. A. R. Bliss's *Laboratory Manual of Qualitative Chemical Analysis*[6] is intended for first-year medical students in the United States. It covers the usual ground of the group tests and individual tests for metals and the commoner acids, with particular reference to the salts and preparations of the *U.S. Pharmacopoeia*. The nomenclature (oxid, chlorid, for oxide, chloride, etc.) has a slightly foreign appearance, while argentium for silver may be good American but is certainly not the Latin word from which the symbol Ag is derived. As most of the pages are printed on one side only, the student can make notes on the blank sides.

THE NATIONAL INSURANCE ACT.

THE ESTIMATES.

The Civil Service Estimates for the year ending March 31st, 1916,* issued last week, contain various particulars with regard to the sums to be voted for carrying out the Insurance Act, some of which have direct interest for the medical profession.

The fact that votes for the proposed special services under items M, N, and O (Joint Committee) appear again this year must not be taken as proof that these services will be established before the termination of the war. The Joint Committee has accepted the advice of the Insurance Act Committee of the British Medical Association that it would not be expedient to attempt to obtain the services of whole-time medical referees, and the Joint Committee, we are informed, considers that it would not be possible to work a referee system with part time men alone. It is also considered inexpedient to attempt to establish specialist consultations and clinics before the end of the war; and the same is, we believe, true with regard to clinical laboratories. The Government has also been advised by those immediately concerned that it would be impossible to start a nursing service while the war lasts.

The figures for 1914–15 (the year ending March 31st, 1915) are those which were contained in the estimates presented to Parliament in March, 1914, and in the supplementary estimates presented to Parliament on July 28th, 1914. It will be seen that the sums to be voted for 1915–16 (the year ending March 31st, 1916) are, under certain heads, smaller than those voted in the year 1914–15. They are, in fact, in these cases about one-quarter. We understand that this is due to a change in financial arrangements, and that the sums available for sanatorium benefit and the remuneration of panel practitioners are not thereby diminished. Under the Insurance Act, 1911, the State grants for these benefits were required to be provided in advance at the beginning of each year, but this arrangement was abolished by an amending Act (1913), and as the grants for 1915 have already been voted, grants for only one quarter (January to March, 1916) have to be provided in the estimates for 1915–16. This explanation, it would appear, applies to the following heads of the Joint Committee estimates:

F.—Mileage grants.

G.—Grant in aid towards the cost of administration of medical benefit by Insurance Committees, and the provision of health lectures and the publication of information.

The same explanation applies, we understand, to the estimates under the head of the following grants to the Commissions in England, Wales and Scotland:

G. Grants in aid payable to the several Insurance Funds in England, Wales, and Scotland in respect of the Exchequer proportion due to Insurance Committees in respect of medical and sanatorium benefits, and in Ireland of the latter only.

J. Grants in aid payable to the several Insurance Funds in respect of the Exchequer proportion of the sums available for the expenses of administration of Insurance Committees.

K. The grant in aid payable to the Insurance Funds in England, Wales and Scotland, by way of additional payment towards the cost of medical attendance and treatment at a rate not exceeding 2s. 6d. for each insured person.

[4] *The Minor Horrors of War.* By A. E. Shipley, Sc.D., Hon. Sc.D. Princeton, F.R.S., Master of Christ's College, Cambridge, and Reader in Zoology in the University, London: Smith, Elder, and Co., 15, Waterloo Place, S.W. 1915. (1s. 6d. net.)

[5] *A Manual of Chemistry, Theoretical and Practical, Inorganic and Organic; adapted to the Requirements of Students of Medicine.* By Arthur P. Luff, M.D., B.Sc.Lond., F.R.C.P., F.I.C., and Hugh C. H. Candy, B.A., B.Sc.Lond., F.I.C. Fifth edition, enlarged. London: Cassell and Co., Ltd. 1915. (Fcap. 8vo, pp. 679; 62 figures. 8s. 6d. net.)

[6] *A Laboratory Manual of Qualitative Chemical Analysis for Students of Medicine, Dentistry, and Pharmacy.* By A. R. Bliss, jun., Ph.G., Ph.C., M.A., Phm.D. Philadelphia and London: W. B. Saunders Co. 1914. (Med. 8vo, pp. 244. 8s. 6d. net.)

* Price 3½d. To be purchased, either directly or through any bookseller, from Messrs. Eyre and Spottiswoode (London), Messrs. Wyman and Sons, Limited (London and Cardiff), H.M. Stationery Office (Edinburgh), or E. Ponsonby, Limited (Dublin).

The estimates of the sums to be voted for benefits to be administered through the Joint Committee are as follows:

JOINT COMMITTEE.

	1915-6	1914-5
CENTRAL ADMINISTRATION.	£	£
A.—*Salaries and Allowances*	15,575	16,964
B.—*Special Inquiries and Services*	750	1,250
C.—*Travelling and Incidental Expenses* ...	1,000	750
D.—*Insurance Stamps, Cost of Manufacture and Paper*	5,600	5,000
BENEFITS, ETC.		
E.—*Special Drug Fund (Great Britain) (Grant in Aid)*	30,000	30,000

The Grant in Aid will be paid to a special account administered by the National Health Insurance Joint Committee, and will be applied by way of special grants towards the cost of drugs where epidemics or other abnormal sickness conditions have caused an excessive demand upon the funds available for this purpose.

F.—*Mileage Grants (Great Britain, excluding the Highlands and Islands of Scotland)* ...	13,500	54,000

For grants to Insurance Committees in respect of mileage in sparsely populated districts, exclusive of the Highlands and Islands of Scotland, for which provision is made in Class VII, 11, Highlands and Islands (Medical Service) Board. Provision is included for grants towards the improvement of the medical service and kindred purposes in certain necessitous districts of Scotland outside the Highlands and Islands.

G.—*Administration of Medical Benefit, etc. (Grant in Aid)*	40,350	116,500

The sums issued out of the Grant in Aid under this Subhead will be paid to a special account administered by the National Health Insurance Joint Committee, and will be applied by way of special grants towards the cost of administration of medical benefit by Insurance Committees, etc., not exceeding in the aggregate an amount equal to 1½d. per insured person per annum.

It is also proposed to apply a sum not exceeding £20,000 in grants to Insurance Committees towards the cost of health lectures and the publication of information on questions of health (National Insurance Act, 1911, s. 60 (1) (*b*)).

H.—*Medical Research (Grant in Aid)*	56,500	56,500

Provision is made under this Subhead for the amount available for research under Section 16 (2) of the National Insurance Act, 1911. The sums issued out of the Grant in Aid will be paid to the Medical Research Fund administered by the National Health Insurance Joint Committee in accordance with regulations made under that section.

I.—*Expenses of Members of Insurance Committees* ..	30,000	30,000

For grants to Insurance Committees of such sums as the Insurance Commissioners with the consent of the Treasury may determine, towards the expenses incurred in making payments to members for subsistence allowance and compensation for loss of remunerative time in accordance with schemes approved under Section 31 of the National Insurance Act, 1913.

K.—*Arrears of Contributions (Grant in Aid)* ...	100,000	80,000

For grants to Approved Societies to be applied by them towards discharging the "penalty arrears" of their members incurred while out of work, including a contribution towards the expenses incurred by those societies in administering the grants.

L.—*Sickness Benefit (Women)*	150,000	500,000

For grants towards the cost of sickness benefit, including loss of contributions, incurred since the commencement of the Act by Approved Societies having women members on a basis calculated with reference to the relative incidence of incapacity during pregnancy among such members.

	£	£
M.—*Medical Referee-Consultants, etc., including Travelling Expenses of Insured Persons (Great Britain)*	50,000	50,000

Remuneration and expenses of Medical Referees and Consultants, travelling expenses of insured persons presenting themselves for examination, and other expenses for the purpose of Referee and Consultant services.

(NOTE.—Any payments made by Approved Societies in respect of the services of Medical Referees will be paid into the Exchequer.)

N.—*Supplementary Medical Services (Great Britain)*	25,000	50,000

For grants to Insurance Committees in respect of the provision of specialist consultations in connexion with the treatment of insured persons and in aid of the equipment and maintenance of clinics for the use of panel practitioners.

O.—*Nursing Grants (Grant in Aid)*	50,000	100,000

For grants to Insurance Committees towards the provision of nursing.

P.—*Sanatorium Benefit (Special Grants)* ...	50,000	100,000

For grants to Insurance Committees for the purpose of supplementing the funds available for sanatorium benefit under the National Insurance Act, 1911, on a basis calculated with reference, *inter alia*, to the relative incidence of tuberculosis in various areas.

NOTE.—The grants out of the moneys provided under subheads E, F, G, K, L, N, O, and P will be subject to such conditions, and calculated in such manner as may be determined by schemes made by the Joint Committee, after consultation with the Commissions for the several parts of the United Kingdom, and subject to the approval of the Treasury. The grants made to approved societies and Insurance Committees will be paid to the several National Health Insurance Funds for the credit of the approved societies and Insurance Committees concerned.

SPECIAL GRANTS.

The following are particulars of the sums to be voted for the special services indicated:

	1915-6.	1914-5.
	£	£
Grants towards the cost of the extension of Sanatorium Benefit to the dependants of insured persons, and of the Treatment of Tuberculosis generally	385,000	480,000

Provision is included in this Estimate for the Statutory Grants in the year ending March 31st, 1916, under Section 17 of the National Insurance Act, 1911 [Power to extend Sanatorium Benefit to Dependants of Insured Persons], and also for Special Grants towards the schemes undertaken by the Local Authorities (or combinations of Local Authorities), with the approval of the Departments administering the Grants, for the treatment of Tuberculosis generally.

The Grants will be administered in England by the Local Government Board, in Wales by the Welsh Insurance Commission, and in Scotland and Ireland by the Local Government Boards for Scotland and Ireland respectively, and will be calculated on the basis of 50 per cent. of the net cost, as ascertained upon the audit of their accounts, incurred upon the schemes by the Insurance Committees or by or on behalf of the Local Authorities (or combinations of Local Authorities) as the case may be, after taking into account the sums applicable thereto out of funds under the National Insurance Act and other receipts in connexion with the schemes. The accounts of the Insurance Committees will be audited under Section 60 of the Act [by auditors appointed by the Treasury], and those of the Local Authorities in the usual manner.

The amount provided will be allocated between the three Local Government Boards and the Welsh Insurance Commission, and issues will be made from the Vote to these Departments, by the Treasury from time to time as required. Issues in respect of the grants will be made from time to time upon the basis of a percentage of estimated expenditure in advance of the audit of the accounts, and the amounts so issued will not be liable to surrender, any adjustment necessary when the actual audited expenditure has been ascertained being made upon subsequent grants.

Inasmuch as in the case of Wales the income from investments of the National Memorial Association is applied for the purposes of schemes undertaken by that association on behalf of Local Authorities, the grant in the case of such schemes will consist of (i) one-half of the income from investments so applied, including interest calculated at 4 per cent. per annum on any of its capital funds applied by the association towards the provision of sanatoria, etc., under approved schemes, and (ii) one-half of the net cost of the schemes after deducting the income

from investments and the grant under (i) as well as other receipts.

	1915-6.	1914-5.
	£	£
Pathological Laboratories: Grants to assist in the provision of laboratory facilities with a view to the prevention, diagnosis, and treatment of disease	25,000	50,000

The money will be allocated, in accordance with a scheme made by the Treasury, to the English, Scottish, and Irish Local Government Boards for the purpose of distribution by those Departments, with the approval of the Treasury, as grants to county councils or sanitary authorities who are willing to provide or arrange for the provision of laboratory facilities with a view to the prevention, diagnosis, and treatment of disease. The scheme may provide that if in any area the Local Authority is unwilling to arrange accordingly, a share of the grants can be allocated to the National Insurance Joint Committee for distribution to the Insurance Committee of that area towards the provision of such facilities and aids. The accounts of the Local Authorities and Insurance Committees will be audited in the usual manner. Balances remaining in the hands of those bodies at the close of the financial year will not be subject to surrender to the Exchequer.

HIGHLANDS AND ISLANDS (MEDICAL SERVICE) BOARD.

Estimate of the amount required in the year ending March 31st, 1916, for the expenses of the Highlands and Islands (Medical Service) Board, and for a grant in aid of the Highlands and Islands Medical Service.

	1915-6.	1914-5.
	£	£
A.—*Salaries, Wages, and Allowances*	1,305	1,347
B.—*Travelling and Incidental Expenses* ...	710	1,500
C.—*Highlands and Islands (Medical Service) Grant (Grant in Aid)*		
Special Grant for the purpose of improving Medical Service in the Highlands and Islands of Scotland, and for other purposes connected therewith	42,000	42,000
Total	44,015	44,847

There is a further charge of £290 for office accommodation, rates, stationery, etc.

The Grant in Aid, which will be issued in full, will be paid to a separate fund, to be called the Highlands and Islands (Medical Service) Fund. Subject to regulations to be made by the Treasury with respect to accounts, audit, and accumulation, the fund will be administered by the Highlands and Islands (Medical Service) Board in accordance with schemes to be approved by the Secretary for Scotland with the consent of the Treasury. Any balance unexpended will not be liable to surrender at the close of the financial year.

INSURANCE FUNDS (NATIONAL).

The estimates of the sums to be voted to the several insurance funds in England, Wales, Scotland and Ireland are as follows:

	England.		Wales.		Scotland.		Ireland.	
	1915-6.	1914-5.	1915-6.	1914-5.	1915-6.	1914-5.	1915-6.	1914-5.
	£	£	£	£	£	£	£	£
CENTRAL ADMINISTRATION.								
A.—*Salaries, Wages, and Allowances*	268,656	271,161	36,103	36,452	51,977	51,615	44,265	43,920
B.—*Travelling*	19,000	19,000	3,500	4,500	6,500	7,500	10,300	10,000
C.—*Special Inquiries and Services*	1,000	750	250	500	750	2,000	100	1,000
D.—*Incidental Expenses*	3,400	4,000	250	500	800	1,500	225	800
E.—*Law Charges*	1,000	1,000	150	250	1,000	2,000	1,200	1,200
CONTRIBUTIONS, BENEFITS, ETC.								
F.—*Weekly Contributions (Grant in Aid):* Grant in Aid payable to the National Health Insurance Fund in respect of the contributions payable out of moneys provided by Parliament in respect of low-waged contributors (Section 4 1)); of persons coming under the provisions of Sections 47, 48 (2), and 8 (10) of the Act; and of persons over 65 years of age at the commencement of the Act (Section 49 (2)) (remanet expenditure)	106,500	98,400	1,700	5,100	15,600	16,400	126,300	75,600
G.—*Medical and Sanatorium Benefits (Grants in Aid):* Grants in Aid payable to the National Health Insurance Fund in respect of the Exchequer proportion of the sums due to be paid or credited to Insurance Committees, etc., in respect of Medical and Sanatorium Benefits, namely:								
Medical benefit	195,650	741,700	12,200	49,65	27,000	106,700	—	—
Sanatorium benefit	40,550	153,800	2,500	10,450	5,600	22,300	2,700	10,800
H.—*Sickness, Disablement, and Maternity Benefits (Grant in Aid).* Grant in Aid payable to the National Health Insurance Fund in respect of the Exchequer proportion of the cost of Sickness, Disablement, and Maternity Benefits	3,097,500	1,701,200	214,000	132,500	448,300	243,200	242,900	123,700
J.—*Expenses of Administration (Societies and Committees) (Grants in Aid):* Grants in Aid payable to the National Health Insurance Fund in respect of the Exchequer proportion of the sums available for the expenses of administration of Approved Societies and Insurance Committees:								
Approved Societies	704,000	415,550	62,900	27,450	110,100	59,250	63,400	29,450
Insurance Committees	9,400	10,250	600	2,050	1,300	4,350	600	1,050
K.—*Medical Benefit (Special Grants) (Grant in Aid):* Grant in Aid payable to the National Health Insurance Fund to be applied by the Commissioners in grants by way of additional payments towards the cost of medical attendance and treatment at a rate not exceeding 2s. 6d. for each insured person, including persons to whom Section 9 of the Act of 1913 applied, and for each aged and disabled member of a society to whom Section 15 (2) (*e*) of the Act of 1911, as amended by Section 10 (2) of the Act of 1913, applies*	375,100	1,371,400	23,400	92,300	50,100	194,000	100†	97,000
L.—*Miscellaneous Grants;* Grants payable to the Navy and Army Fund, representing (*a*) two-ninths of the assumed costs of benefits of seamen, marines, and soldiers while serving, calculated in accordance with regulations made under Section 46 (3) *b*; (*b*) the Exchequer proportion of the cost of benefits of discharged men payable under Section 46 (3) *h*	78,800	83,900	**	**	**	**	**	**

* In Ireland, for grants and other expenditure, subject to a maximum limit of 2s. 6d. per insured person, for the purposes of the provision of medical certificates of sickness and other expenses of administration arising from the absence of medical benefit in Ireland.

† The estimated gross expenditure in respect of the grants in the three months ending March 31st, 1916, is £23,250, but in view of the balances remaining in the Special Grants Account from the grants of previous years a token sum of £100 only is now required.

‡ £1,500, included under this subhead for 1914-5 is now provided for under Subhead G.

** Under Section 46 (4) (iii) of the Act of 1911, all persons entitled to benefit out of the Navy and Army Fund are deemed to reside in England.

British Medical Association.

THE WAR EMERGENCY.

APPEAL TO DIVISIONS AND BRANCHES.

THE following letter was addressed on April 8th to honorary secretaries of Divisions in the United Kingdom, in accordance with the decision of the Special Committee of Chairmen, as reported in the JOURNAL of April 10th (p. 647). Copies have been sent also to honorary secretaries of Branches in the United Kingdom with a covering letter pointing out that in some districts it might be convenient for the Branch Council, including as it does representatives of all Divisions in its area, to approach the Deputy Director of Medical Services of the Command so as to simplify his task in dealing with the military needs of the various parts of the Branch. Further copies of the reprint of the report of the conference with Sir Alfred Keogh can be obtained for circulation to members in their areas by honorary secretaries of Divisions or Branches on application to the Medical Secretary, 429, Strand, London, W.C.

British Medical Association,
Medical Department,
429, Strand, London, W.C.,
April 8th, 1915. (D. 33.)

Dear Sir,

1. As you are already aware, the Association has been in close contact with the Medical Department of the War Office since the commencement of the war, and has offered to use its organization in any way which the War Office might think useful. The call has now come. On Thursday last a conference was held between the Special Committee of the Association and Sir Alfred Keogh, Director-General of Army Medical Services, and Colonel Blenkinsop, Deputy Assistant Director-General, and I enclose an advance proof of the report of the conference which will appear in the forthcoming number of the JOURNAL [p. 646-7]. You will see from it that the Director-General states that the army is in need (1) of more whole-time men to join the R.A.M.C. (temporary commissions), and (2) of more part-time service. He lays the greatest possible stress on the need for more doctors willing to give their whole time to military service, and especially for doctors under 40 who are willing to take commissions and go with the troops wherever they may be sent.

2. The Committee is fully aware of the great strain to which the profession is at present subjected in many parts of the country and of the difficulty which will be experienced in setting free more practitioners for military service, but it is clear that the military needs of the country are paramount and must be met. It is believed that they can only be met without complete dislocation of the medical service of the community if the Divisions throughout the country take the matter in hand and organize it.

3. The Committee therefore urges that a meeting of every Division should be called at the earliest possible date for the following purposes:

(i) To devise means by which those medical men who are willing to apply for commissions, and particularly those under 40, may be set free and their practices and general interests preserved while they are absent;

(ii) To make arrangements, after consultation with the local military authorities, whereby the remaining local practitioners may be able to undertake as much as possible of the local military medical service.

4. It is believed that there are yet a good many medical men under 40 who, if they could see their way clear, would accept temporary commissions for either home or foreign service, and Sir Alfred Keogh's words leave no room for doubt that it is the duty of such men to volunteer and the duty of their colleagues to make it possible for them to do so. In this connexion you are reminded of the plan which was first formulated by the Scottish Medical Emergency Committee and published in the SUPPLEMENT of January 16th, and afterwards endorsed by the Special Committee of the Association and referred to in the SUPPLEMENT of February 13th, also of the excellent arrangements at Aberdeen and Southampton, published in the JOURNAL of April 3rd, page 611. Such arrangements are working quite satisfactorily in some parts, and it is believed that with the goodwill of the profession, this plan or some modification of it will meet every requirement. But it is unfortunately necessary to say that already some practitioners who have been mobilized and who relied upon the expressed intentions of their colleagues to safeguard their interests are becoming uneasy as to whether these colleagues really understand the sacred nature of the trust that has been imposed on them. Nothing could be more damaging to the reputation of the profession or to its *esprit de corps* than the growth of suspicion on the part of the men who have been mobilized that their interests are not being safeguarded in the spirit as well as in the letter. This is not a pleasant matter to deal with, but it is felt that something needs to be said because unless steps are at once taken to prevent the growth of such suspicions the chance of other men volunteering for service will naturally be lessened. The man who volunteers at a time like this should be made to feel that his interests are as safe in the hands of his colleagues as his money will be in the hands of his banker. You are reminded that as regards panel patients the Insurance Act Committee has already advised that no practitioner should accept a transfer from a doctor who is away on military service within a period of a year after his return.

5. The above remarks apply also to practitioners over 40 who are willing to volunteer for whole-time service, but who before doing so must arrange that their practices shall be attended to.

6. You will note from the reprint enclosed [p. 646] that Sir Alfred Keogh suggested that there are still available young practitioners who are either residents in hospitals or acting as locumtenents, and it is hoped that the Division will see its way to make representations to the Managing Committees of voluntary hospitals and other civil medical institutions whereby some of the resident officers can be released for whole-time service.

7. The Association has received many representations to the effect that the most economical use is not at present being made of the military medical personnel, but Sir Alfred Keogh convinced the Committee that such criticisms were mainly due to a misapprehension of the military situation, and I would direct your attention to his remarks on this subject. You will note that when the present military medical officers are removed from their present areas, as they will be before long, there will be a great deal of medical work to be done in connexion with the military hospitals and with recruits who are training, which it is suggested could mainly be done by local practitioners. The Committee directs the attention of the Divisions to this aspect of the question. The local arrangements are primarily in the hands of the Deputy Director of Medical Services of each Command, and in the enclosed reprint the areas of the Commands are given, together with their head quarters. It is suggested that each Division should get into touch with the D.D.M.S. of the Command in which the Division is situated, stating that the Division is both able and willing to provide a considerable amount of part-time medical service and will be prepared to organize this on hearing from the D.D.M.S. or from some officer appointed by him as to what is required by the military authorities in the Division area. It will be noted on reference to the report of the conference that such work will be paid for, and that most of it is of such a nature that it can be done by local practitioners without giving up their other work. In writing to the D.D.M.S. a statement of the area covered by the Division should be made.

Address:
The Deputy Director of Medical Services,
Head Quarters,
York (or as the case may be).

8. A copy of the enclosed reprint and an intimation of the appeal that is being made to the Divisions is being sent to each D.D.M.S., with an intimation that he may expect in due course to hear from each of our Divisions.

9. The business of the Division meeting should be:

(1) To consider the appeal made by the Director-General through the Association to the medical profession.

(2) To induce all medical men willing to take commissions to do so, and to arrange for carrying on their work during their absence.

(3) To communicate with the D.D.M.S. of the Command intimating that the Division is willing to organize the local profession so as to provide for the

military needs of the locality so far as is possible by part-time service.

(4) To appoint a Committee to formulate a local scheme after hearing from the D.D.M.S. and to call another meeting of the local profession at as early a date as possible.

10. It may facilitate matters if you, as Secretary of the Division, inform the D.D.M.S. of the date of the meeting and asked whether it would be possible for him before that time to give you any idea as to the local military requirements.

11. The Committee, in making this appeal to the Divisions, believes that they will recognize the importance and urgency of the demand made upon the loyalty of the profession and upon its solidarity. The War Office is already convinced of the usefulness of the BRITISH MEDICAL JOURNAL as a means of appealing to the profession. The Committee believes that the present affords a magnificent opportunity for showing the Government, the country, and the profession how useful the local units of such an organization as ours can be in this time of national emergency. The Committee therefore trusts that meetings of all the Divisions will be called without delay to discuss the important questions dealt with in this letter, and, in a more detailed fashion, in the report of the conference with the Director-General. Non-members, as well as members, should be summoned, and every effort should be made to impress on the whole local profession the fact that the situation is acute and that the War Office is now looking to us for assistance in the national emergency. I am, yours faithfully,

ALFRED COX,
Medical Secretary, British Medical Association.

We are informed that the South-West Essex Division of the Association, having got into communication with the D.D.M.S. as suggested in the above letter, has been informed that a military medical officer of high rank will attend the meeting of the Division, and it is believed that such a course will generally be followed if Divisions indicate to the D.D.M.S. that it will be helpful.

At a meeting of the council of the Metropolitan Counties Branch on April 13th it was decided to appoint a War Emergency Committee for the purpose of dealing with the necessities of civil and military practice that have arisen as a result of the war. The committee will meet at once and endeavour, as far as lies in its power, to meet the requirements of the Director-General of the Army Medical Service, while offering suggestions safeguarding the interests of civil practitioners called up for service. The secretaries of the committee and Mr. Bishop Harman and Dr. R. E. Crosse, to whom, we understand, all inquiries should be addressed, at the office of the Association, 429, Strand, W.C.

A list of the Commands at home, showing the counties included in each, together with the address of head quarters, will be found at page 647 of the JOURNAL of last week.

PART-TIME SERVICE AT HOSPITALS.

We are informed on inquiry that the remuneration for part-time services at hospitals is a matter for arrangement between the medical men engaged and the Deputy Director of Medical Services of the Command concerned. The rates will vary according to the particular duties performed and the time occupied.

STUDENTS IN THEIR FINAL YEAR.

THE suggestion contained in the following letter is not entirely novel, but it is very opportune to have it stated at this time with the precision of which Professor Harvey Littlejohn is a master, and with the authority of the dean of the medical faculty of the University of Edinburgh:

SIR,—One cannot read the account of the conference with Sir Alfred Keogh in your last issue without realizing that a special effort must be made to meet the requirements of the country for medical assistance during the war.

One of the greatest difficulties in connexion with the large increase in the number of beds to be provided in every district will be the supply of resident house-physicians and surgeons.

Judging by the experience of the last few months, they will be unobtainable, and yet nothing will so much lighten the duties of the civil practitioners who give their services to these hospitals as the presence of adequate junior assistants.

There is a source from which, in my opinion, this want can be supplied without difficulty and in a satisfactory manner. I refer to students in our medical schools who are in their "final" year and who, in accordance with the recommendation of the General Medical Council, are advised to spend the "final" year in clinical work.

Such students have attended all their systematic courses of lectures—they have already had considerable clinical experience in the medical and surgical wards, and the great majority are competent to act as junior house-physicians and surgeons and to render most valuable help in the routine duties of a hospital. Much more junior students are at present being employed by the Admiralty in duties of quite as responsible a nature,

If the emergency is as great as would seem to be the case from the statements which have appeared in the press, then it is incredible that the excellent material we possess in our fifth year students should not be fully utilized.

Their service would not contravene any regulation of the General Medical Council in regard to professional education, nor need it necessarily postpone the period when they are entitled to obtain a registrable qualification.

From now to October—a period of six months—there is only a short summer term with a long vacation of at least three months. I have no doubt that the majority of students will not be content to remain idle at such a time, and will offer their services in any capacity in which they feel they can help; but it would be much better for the deans of the medical schools to prepare lists of medical students in their final year willing to serve where they are wanted and to do what they are told, on the understanding that such service will be counted as part of the clinical work and hospital practice required by the regulations for the medical curriculum. Requests for such assistance should come to the deans of the medical schools through some central organization, such as the British Medical Association, which has placed its services and organization at the disposal of the military medical authorities.—I am, etc.,

HARVEY LITTLEJOHN,
Professor of Forensic Medicine,
University of Edinburgh.
April 13th.

It will be seen that Professor Littlejohn recognizes the call which the establishment of a very large number of beds in military hospitals must make on the energies of the medical profession during the coming summer, and that, from his experience as dean of one of the greatest of British medical schools, he is of opinion that something may be done to ease this burden, while at the same time giving final year students an opportunity of fulfilling their duty to the country, and gaining clinical experience in accordance with the regulations of the medical curriculum. We have said that the suggestion is not altogether novel, although it is more precise in its terms than others previously put forward. The Conjoint Board in England soon after the outbreak of war notified the following temporary regulation:

That time spent as Assistant on active service in one of His Majesty's Ships or in a Naval or Military Hospital, or any Hospital utilized by the Naval and Military authorities not exceeding six months be allowed to count for the equivalent period of Medical and Surgical Hospital practice and for three months each of the required period of Medical Clinical Clerkship and Surgical Dressership, provided that a satisfactory certificate is produced from the Principal Medical Officer under whom the Assistant serves.

PUBLIC HEALTH OFFICERS AND THE WAR.

WE learn that it is the practice of the Local Government Board to assent to the leave of absence for medical officers of health, assistant medical officers of health, medical officers of isolation hospitals, and tuberculosis officers who have obtained the permission of their councils to accept temporary appointments in the army.

The Board sent the following circular letter to county councils and sanitary authorities on August 12th last:

Local Government Board,
Whitehall, S.W.,
12th August, 1914.

Sir,—The Local Government Board wish to draw the attention of local authorities to the great importance of maintaining

the efficiency of the sanitary service of the country at the present time.

In many areas the medical officers of health and other officers engaged in public health work will be giving their services to the navy or army, and it will be necessary for the local authority to make other arrangements for carrying on their work.

It is essential that there should be no relaxation of the activities of local authorities in the prevention and control of epidemic diseases, the protection of water supplies from contamination, and the promotion of child welfare, and in securing the wholesomeness of food supplies and the general sanitary condition of each area. On this account it is important that all vacancies in the minor sanitary staff should be filled up.

The actual steps which may be open to local authorities to replace medical officers of health who are absent on naval or military duty will vary in different districts. In many areas adequate temporary arrangements may be made by co-operation between the county and district authorities or between neighbouring district authorities.

The Board will be glad to be informed of each case in which a medical officer of health or chief sanitary inspector or inspector of nuisances has been given leave of absence for naval and military service, and of the steps taken to arrange for the temporary discharge of his duties.

I am, Sir, your obedient Servant,
(Sgd.) H. C. MONRO,
Secretary.

We are informed that since then nearly 100 whole-time medical officers of health out of a total of 314 have, with the consent of their councils and of the Board, taken temporary commissions in the Royal Army Medical Corps. About the same number of part-time medical officers of health and many medical men holding other posts under county councils and sanitary authorities have also given their services to the army.

Each application to the War Office from a medical officer employed by a local authority is, in accordance with an arrangement made between the two departments, referred to the Local Government Board for its opinion as to whether the medical officer making the application can properly be spared from his civil duties. So far it has not been necessary for the Board to object to the granting of a temporary commission to any medical officer who has applied, as in each case temporary arrangements have been made for carrying on the officer's work.

From the beginning of the war Local Authorities and their Sanitary Officials have rendered valuable assistance to the military authorities, which the Army Council has acknowledged in a letter dated March 25th.

The Army Council concur with the Board in attaching great importance to the action taken by Sanitary Authorities and their officers in safeguarding the health of the forces and in preventing the spread of infectious disease, and they regard the action taken by Sanitary Authorities as an integral part of the precautionary measures necessary to protect the health of the troops at home. The Board are of opinion that serious risk of calamity would be involved if, during the coming months, Sanitary Authorities were to relax their efforts, or were unable to take the necessary action because they are inadequately staffed or have only inexperienced officers. Subject to these considerations, the Board is assenting to proposals for medical officers to take service in the army whenever this can safely be done. The Board has accepted temporary arrangements whereby the services of a senior practitioner are substituted for those of a junior medical officer both for sanitary and for hospital work.

The tuberculosis organization in each county and county borough is largely concerned with the treatment of sick persons, and some arrangement must be made for carrying it on, and the Local Government Board is of opinion that there should therefore be, in every such area, a tuberculosis officer available to advise both the Council and the Insurance Committee for the area, and that, as a rule, it is not desirable that both the medical officer of health and the tuberculosis officer should be absent from their duties.

Where local authorities have given their officers leave of absence, they have almost invariably done so on such terms as not to involve them in any financial loss or other disadvantage.

SCHOOL MEDICAL OFFICERS.

IN response to the circular letter of the Board of Education (No. 899 of March 29th) to local education authorities, published in the JOURNAL last week (p. 648), the chairman of the Derbyshire County Council, having ascertained that all the members of the county medical staff were willing to offer themselves for home service, called a meeting of the chairmen of the county committees concerned with medical questions. In view of the urgent need of the army for the services of more medical men, as revealed by the letter from the Board of Education, this meeting recommended the county council to adopt the following resolutions, which were carried unanimously at the meeting of the county council on April 14th:

1. That this council hereby offers to the War Office the services of the county medical staff for administering a hospital of, say, 300 beds, provided the Local Government Board will agree that the site of the Chesterfield Sanatorium, with its administrative buildings, is used for such purpose.
2. That in the event of difficulty arising with regard to the acceptance of the above-named offer, a subcommittee consisting of the chairman and vice-chairman of the council, together with Aldermen Barnes, Briggs, and Marsden-Smedley, be authorized to make such other arrangement with the War Office respecting the services of the county medical staff as they may consider advisable.

The county council felt that in the present crisis every facility should be given to the Government departments to provide proper and suitable accommodation for wounded soldiers, and that not only should the services of the medical staff, but the use of suitable buildings, be placed at their disposal. It was for this reason that the offer of the Chesterfield Sanatorium was made.

CORRESPONDENCE.

WE have received several letters making suggestions on various points. From these we make the following extracts:

COMPULSORY MEDICAL SERVICE.

Dr. H. E. LITTLEDALE (Charing, Kent), who has received a letter from the General Officer Commanding the district in which he resides asking whether he would be willing, should the necessity arise, to take part-time duty with troops, writes to us: My only possible reply, under existing conditions, of voluntary medical, as well as every other form of military service, is that I do not see how I can give up my practice without some support such as the Government of the country only could give. Am I, therefore, with many other married practitioners with families and over 40 years of age, to rest satisfied with the thought that it is impossible for me to offer any service situated as I am? Is it too much for the medical profession itself earnestly to appeal to the Government of the country to undertake the only adequate and fair solution of the problem—namely, compulsory medical service for every practitioner in the country under the age of, say, 65, or even without an age limit? By this means only could the profession be organized for civil and military medical service in such a way that the medical man could be utilized according to his physical and professional capacity. If I were selected for some special work some one unfit for such work would come in as locumtenent bound not to practise here after my return. The difficulties are great, but what are the difficulties that have to be overcome to win in this war?

REMUNERATION.

Dr. DAVID ROXBURGH (London, W.) writes: The War Office does not seem to realize that it is the same thing to appeal to the patriotism of the civil practitioner and offer him 24s. per day as it would be to appeal to the patriotism of the whole of the R.A.M.C. and ask them to accept the same remuneration and forego their pensions. The civil practitioner who volunteers loses not only the whole of his professional income for the time of his service, but also his future income, the practice which he may have created or bought. He loses a capital of anything up to £2,000. There are plenty of men willing to serve but only a few who are rich enough to sacrifice both income and capital. An offer by the War Office to place the civil practitioner in the same financial position as the R.A.M.C. man of the same length of experience will at once produce the required men.

MEDICAL OFFICERS OF PUBLIC AUTHORITIES.

A COUNTRY PRACTITIONER (Scotland) writes: Education authorities should not be allowed to appoint medical officers for temporary or permanent work till the war is over, and every school medical officer should be encouraged to take up work which is urgent—for example, some of the men might join the R.A.M.C.; some might take up appointments as residents in hospitals, thus setting younger men free to join the R.A.M.C.; some might help the general practitioners. Again, take the Asylum Medical Service; I believe every asylum with two or three assistant medical officers could spare one man by letting all the work which is not urgently necessary

(all the research work and a great deal of the clerical work such as the keeping up the case-book entries with regard to old chronics) be suspended till the end of the war. Then all the universities and medical schools would suspend their public health classes and such like. Probably some tuberculosis officers might be set free temporarily also. The last call should come on the general practitioners whose work is immediately necessary. General practitioners generally have, I should think, as much work to do as they can manage; but, certainly in towns, no doubt some of them can be spared, their work being done by their brethren, where that is possible. The work of the general practitioners could be lessened a good deal if the Insurance authorities would temporarily dispense with all unnecessary clerical and other work.

ANNUAL REPORT OF THE CHIEF REGISTRAR OF FRIENDLY SOCIETIES.

THE extent of the work now falling on the Chief Registrar of Friendly Societies is shown by the fact that it has been found necessary to increase the staff until it numbers 159 clerks, though at present there are 39 officers of the department serving with the army, and several clerks have been lent to the War Office and the Admiralty. In the report just issued it is stated that sufficient time has not elapsed to measure the effect of the Insurance Act on friendly societies. Up to the end of 1912 there had been no shrinkage in the membership or business of the societies on their voluntary side with which alone the department is concerned. At that date the membership of the Orders with branches and the branchless societies exceeded 7,000,000 and the accumulated funds £52,000,000. These figures are exclusive of the collecting societies, which had a membership of 7¾ millions, and funds amounting to over eleven millions sterling.

The position of members of societies who have joined His Majesty's forces for the war is explained at some length, and the report says:

> Many societies, so far from desiring to deprive those who are serving their country of their benefits by reason either of such service or of their failing to keep up their contributions, have made or propose to make provision for continuing their benefits either by voluntary levy or by an amendment of rules for the purpose, thus imposing on themselves a burden which may prove heavy but is cheerfully borne in the true friendly society spirit. In one instance a number of dividing friendly societies have combined in a scheme for the reinsurance of the death benefits in such cases, thus securing that an excessive burden shall not fall on any particular society among their number. It should be considered by societies and branches, however, whether suspension for the period of the war from sickness benefits, coupled with retention of the death benefit, is not the most apt way of dealing with the situation. It should be added, in response to many inquiries, that it is unnecessary for a registered friendly society or branch to have a certificate of death produced to it under Section 61 of the Friendly Societies Act, 1896, where a death occurs at the front or at sea. . . . A society or branch may, therefore, accept in such cases any evidence, official or otherwise, which satisfies it that the death has taken place.

The total number of new friendly societies and branches added to the register in 1913 was 1,153; as 1,048 were removed from the register there was a net increase of 105. One of the outstanding features of the tables is the decline of the dividing societies, only 13 new societies having been added, while 143 have been removed from the register. Of the larger orders, the Manchester Unity has shown the greatest activity, registering 224 branches; while the Rechabites registered 103, and the Sons of Temperance 51. On the other hand, the Foresters only registered 3, and suffered a net decrease of 43 branches.

Dealing with the branchless societies, it is noted that while in London and the south the total membership had increased by about 26 per cent. in the two preceding years, and the funds by about £600,000, in the north nearly one-sixth of the societies have gone out of existence, the membership showing a drop of 24,000, and the funds a drop of £270,000. By far the largest of the centralized societies is the Hearts of Oak, with a membership of 477,740, which is about half that of the Manchester Unity, and this society showed a remarkable increase of membership of 142,866, or about 42 per cent., while its funds now amount to £4,359,989, or about £9 2s. per member.

As regards societies with branches, it is reported that 513,659 new members were admitted in 1912, the total net membership being given as 3,006,000, but the figures are acknowledged to be somewhat doubtful owing to the unsatisfactory manner in which returns have been filled in.

A comparison of the death-rates in the various societies is of interest; they have been for many years much lower than the general death-rate, partly because the members of societies are often picked lives, and partly because of the effect of infant mortality on the general death-rate, which hardly affects the societies. In 1912, for example, the branchless societies showed a death-rate of 9.6 and societies with branches 11.9, as compared with the general death-rate of 13.8 for the United Kingdom. The death-rate varies to a remarkable extent in different societies, the Foresters, for example, showing a rate of 14, while the Rechabites only show a rate of 6, and this is probably due to the fact that the average age of the members varies so much in the different societies. The actual sickness experience of the societies has been found to exceed the estimated sickness by 30 per cent., but the result was largely due to the fact that in the case of one large society the sickness-rate was 42 per cent. in excess. Excluding this society, the actual cost was about 4 per cent. above the expectation.

Dealing with trade unions, it is noted that during the past ten years the membership of unions had increased by over a million, and at the end of 1912 the total stood at 2,597,772. In 1912 alone the increase was nearly 220,000, which is largely ascribed to the effect of the National Insurance Act. The total income of the unions is given as £3,385,000, the average contribution per member being about 7d. per week. The expenditure of the unions in 1912 was over 4½ millions sterling, but this was abnormally high owing to the miners' strike, which cost the miners' unions alone over £1,000,000.

The general summary for 1912 shows that the friendly societies had altogether a membership of 15,681,000, and funds £67,110,000, the industrial and provident societies had 3,144,000 members and £48,803,000 funds. Building societies 608,000 members and £48,896,000 funds, trades unions 2,597,000 members and £5,650,000 funds, registered savings banks 73,700 members and £7,152,000 funds, and including in addition to these, workmen's compensation schemes and loan societies, the total membership of all classes of registered provident societies was 22,206,000, which is 5 per cent. above the previous year, while the total funds amounted to £177,924,000, which is 2.4 per cent. increase in the year. These numbers relate to voluntary insurance only, and do not include members insured for State insurance only.

IT is stated that on March 22nd the Boston and New England State Legislature enacted a eugenic marriage law imposing a fine of £100 on any person who married without a medical certificate of physical and mental fitness.

THE annual report of the State Medical Service Association for the year ending September 30th, 1914, states that though the association has only increased by twenty-four members during the past year, the principles for which it stands have been more widely discussed than ever, and though the medical profession as a whole is still opposed to a State medical service, a great number of friendly societies, trade unions, and other organizations have begun to urge its acceptance in place of the existing panel system. Very few of the members of the association have contributed more than the minimum subscription, and, though it has been possible to keep a small balance of about £26 in hand, the executive committee feels that its propaganda work has been crippled owing to the small amount of money it can reckon on. A considerable number of pamphlets and reprinted articles are now issued by the association. For some time the official organ was the *Medical World*, but towards the end of 1913 it became evident that the *Medical World* was inclined to support the panel system rather than a State service, and, after some negotiations, it was finally decided to cancel the agreement between the association and that periodical. The committee therefore in the report emphasizes the fact that the *Medical World* has no longer anything to do with the association, which entirely disagrees with its present policy. The report gives a list of the chief meetings held under the auspices of the association during the year. Since the war began the association has noted with interest the great development of State services, especially in the organization of the medical services for the new forces, and the feeling is expressed that the lessons learnt in this way will be of great use for the constructive work of the association in the future.

British Medical Journal.

SATURDAY, APRIL 17TH, 1915.

THE DRINK QUESTION.

THE drink question at the moment resolves itself into the control of the strength of alcoholic beverages. The wholesomeness of small beer, "lager" beer, cider, and light wines is established by the general experience of temperate people. Such indulgence by these, so far as we can see, does no more harm, and probably less, than tea-tippling, which is now indulged in to an excessive extent by so many women, not all of the poorer classes, or the untimely munching of sweets and cakes by which so many children of the well-to-do become ill nourished owing to chronic disturbance of their digestive systems. It is alleged that small beer was the natural drink of Scotland before the Napoleonic wars, when it was killed—taxed out of existence. Now, a hundred years later, the State is suffering from this folly, and the critical supply of munitions and armament of war is imperilled by whisky drinking in Glasgow and elsewhere. The excise system is vicious; often its influence is opposed to true temperance. Recently, for instance, a process came under our notice by which alcohol is removed from beer, and a drink left indistinguishable from beer, save by the fact that it cannot produce intoxication, even though it be drunk in inordinate quantities. A brewer, recognizing the prospect of a considerable sale for such a beer, made arrangements to prepare it on a commercial scale; he was stopped by the Excise authorities. To withdraw alcohol from beer was equivalent, it was asserted, to distilling, even though it was not done by distillation, and the Excise would not allow "distilling" and brewing to be carried on by the same man. Possibly the officials realized that the brewers would demand a rebate on the de-alcoholized beer, and feared a large falling-off of revenue. This is an example of the way in which in the past the development of enterprise in the supply of wholesome national drinks has been strangled.

The State should have heavily taxed spirits, lightly taxed the lightest beers; the weight of the duty ought to be arranged in proportion to the danger of the drink to the community. The Excise system seems to have been juggled according to the interests of a trade which has long been over-represented in the Houses of Parliament, but we have no sympathy with those advocates of prohibition who now by post deluge overworked Ministers and their clerks with stereotyped appeals.

Speaking of the nation as a whole, far more harm is, we believe, done to the bodily health, virility, and happiness of the nation at the present moment by excess in eating, over-coddling, and neglect of disciplined physical exercise in the open air than by over-indulgence in alcohol, but the effects of the latter are more immediately visible.

Again, a popular medical writer, demanding prohibition of alcohol the other day, supported the indulgence in coffee as a stimulant, and cited himself as having worked at the university for days and nights on caffeine. He thus thwarted the natural course of his bodily functions, dulled the instinct for rest, and permitted that over-driving of his nervous system in which lies the very essence of intemperance. We believe in temperance in all things—the pleasant temperate indulgence in the pleasures of this life, the well-ordered restraint, the keeping fit of mind and body by the discipline of work and exercise. A glass of wine or beer may be an innocent pleasure, and may be harmless to the temperate majority.

It would have been well if the Government had instituted a committee of physiologists to control the ventilation and heating of factories, the shifts and holidays of the workers, and to advise generally with regard to the induction of over-fatigue and "staleness." We believe the failure in the supply of munitions is largely due, directly and indirectly, to strain from overtime, and the conditions under which the work is done. The confined air, heat, noise, high pressure of work, and the monotonous repetition of the one process performed by each man lead to nervous exhaustion, which can only be prevented by reasonable hours of work and a seventh day holiday. Many of the factories are worked night and day, and new hands taken on in a factory where gunstocks are made have complained to us of the excessive closeness—the old hands, they say, will have the windows shut. The factories ought to be blown out and thoroughly ventilated between the shifts, but no attention seems to be paid to this. Brief intervals ought to be arranged at, say, eleven and four, during which the workers could get a breath of fresh air and relaxation—kick a ball about a yard or the streets, for instance. Girl machinists in the boot factories sit on the benches for shifts of four hours at a time, morning and afternoon. The sedentary nature of the work and its monotony call for relief by a few minutes' physical drill at least every two hours. Such drill could be made pleasant and of the nature of a game, to the enormous advantage of the workers. To work at high pressure successfully the artisans need carefully planned holidays and the facility for taking themselves on the day of rest out into the country, to secure change of scenery, and the beneficent influence of the open air.

It is the monotony of the work and daily life that wearies the spirit and impels to drink. The excessive spirit drinking occurs in those parts of the country where the atmosphere is begrimed with smoke and the natural beauty of the world most hidden by the dirt of man's handiwork—in London, Lancashire, Glasgow, Tyneside. A teacher in a London school once drew on the board the sun rising behind a mountain. "Oh, mistress, it's as beautiful as a public-house," exclaimed a little girl. The lights and glitter, the warmth and fellowship of "the public" are a strong lure, in contrast with the cold wet grimy streets, or the confined tenement, the home crowded with children. Opportunities for healthful amusement and recreation are needed to lead men out of the bondage of drink, to raise in them the patriotic spirit of the more cultured class, whose advantages of education and environment are so infinitely greater. Factories ought to be installed with the environment of garden cities, halls of recreation, playing fields, and swimming baths. The State now suffers for the sins of omission in its lack of control of the growth of industrial England, a lack against which the medical profession has preached for generations, and the governing class pays the penalty by the loss of its sons.

We are all children, old and young alike, and the problem of a higher wage leaves many nonplussed by the difficulty of wisely spending it. It would have been more prudent for the State to have arranged for a bonus to be paid the workers after the war, when

times may be difficult and many turned off at loose ends. The extra wages paid have probably defeated the end in view; to slack and over-indulge is a natural temptation to a man with money to spare in his pockets. It requires a trained imagination to realize the needs of our fellow men at the front.

At the present moment we think the State can wisely do these two things—first, keep the artisan fresh by attention to factory conditions and his holidays; secondly, prohibit the sale of alcohol over 4 per cent. by volume. Let a man have his whisky and water if he prefers it to beer, but let it be sold only in such dilution that the alcohol is reduced to 4 per cent.—say, 1 oz. of whisky (containing 40 per cent. alcohol) in half a pint of water—provided always that the sale of non-alcoholic drinks, soup, wholesome tea, and so on are developed, and the public-house is made a house which serves the public, and not one which by temptation raises taxes out of its infirmities. If these results are attained, the manner of their attainment is a matter of secondary importance.

The intentions of the Government have not been announced at the time we go to press, and it seems probable that they are still unsettled. If it be deemed necessary now to take drastic measures, and the complete expropriation of the trade is among those mentioned, that trade will have to thank its own mistaken policy for any losses it may now incur. It has, speaking generally, failed in this generation to understand and meet the changing wants of the public. In earlier days the licensed victualler was a person who supplied food and drink, as distinguished from the innkeeper, who supplied lodging also. The clubbable faculty is very strong in man and woman, but the public-house keeper of to-day has taken advantage of it to encourage drinking, and has almost forgotten his older function as a supplier of food. In consequence he has seen the supplying of food go away from him almost altogether, and has relied more and more wholly upon the sale of alcoholic beverages. In this way he may have grasped an immediate advantage, but there will be very little sympathy with him if he now has to pay a heavy penalty for his shortsightedness.

THE INSURANCE ESTIMATES, 1915 1916.

The Estimates for civil services for the financial year ending March 31st, 1916, were issued last week, and it has been thought advisable to reproduce rather fully those sections of Class VII which deal with insurance matters (p. 680). They are of very considerable interest to all practitioners working under the Insurance Act, and also, owing to the votes for laboratories, referees, consultants, and clinics, and for tuberculosis, to others who have not hitherto been personally concerned with the National Insurance system.

It will be noticed that the sums provided for medical and sanatorium benefits show a heavy decrease as compared with those provided in 1914-15. We are informed, however, that this decrease is due merely to a change of financial arrangements and does not diminish the sums available for sanatorium benefit and the remuneration of panel practitioners. The Insurance Act, 1911, directs under Section 61 that all sums payable in any year in respect of sanatorium and medical benefits, and the administration expenses of those benefits, should be paid or credited to Insurance Committees at the commencement of the year, but under the amending Act of 1913, Section 28, the Commissioners were empowered to make regulations enabling the money to be paid or credited at such times and in such instalments as may be prescribed. These regulations have now been made, with the result that the grants for the year 1915 having already been provided in the Estimates for 1914–15, payment in respect of the first quarter of 1916 only will have to be made before March 31st, 1916.

The Estimates for the financial year 1915-16, now issued, show that the Government has not entertained the suggestion which, according to Dr. Salter, has been made in influential quarters, to the effect that the cost of the establishment of laboratories and a nursing service, and of referees and consultants, should, on the ground that they would be of great use to practitioners on the panel, be met from the Medical Benefit Fund. We have had also Sir Robert Morant's assurance that no such proposal has been under contemplation by the Insurance Commissioners. The suggestion that medical practitioners should contribute to the cost of medical referees is to be traced to the report of the Departmental Committee on Sickness Benefit Claims under the National Insurance Act (the Schuster Committee) presented on July 24th, 1914. It is unfortunate that it was ever made, but there is no getting away from the fact that it was contained in paragraph 70 of that report, which began: "We are of opinion that it would be equitable that practitioners should also contribute towards the cost of medical referees, in so far as the medical referee may remove from the panel practitioner the necessity of discharging certain of those duties which, by his agreement with the Insurance Committee, he has undertaken to perform." It is not necessary to argue this point, for the report went on in the same paragraph to state that the members of the Departmental Committee were "satisfied that it would not at present be practicable to defray any part of the cost of medical referees out of the Medical Benefit Fund," and in the next paragraph (71) recommended that "in so far as the cost of medical referees is not met by the contributions of those parties in whose interests the appointments are made, we recommend that the cost should be met out of moneys voted by Parliament." The wording of this paragraph is not very perspicuous, and seems to have been drafted by a Mr. Facing-Both-Ways; but the course which it was probably intended to recommend was that followed in the Estimates for 1914-15 (presented on July 24th, 1914). It is again followed in those for 1915–16, now published. The Estimates issued in July were voted soon afterwards, but it was decided not to make use of the money during the remainder of the financial year because it was felt that the outbreak of the war made it inopportune to attempt to start the new services, since they would involve the employment of a number of doctors and nurses who were urgently required to serve the military forces of the Crown. This decision, however, does not alter the fact that the Government, by causing the amount of the grants to be voted last year, was committed to the principle that the cost of the services should be met by special grants voted by Parliament and not out of the Medical Benefit Fund. That this principle is still recognized is shown by the reappearance of the grants in the new Estimates. But the application of the principle this year, as last, will, we understand, depend upon whether the state of war continues or not. At the present moment, when the demands of the military forces of the Crown on the profession are so great and urgent, it would be inexpedient to endeavour to set up a system of whole-time referees, and the Commissioners believe that it would be impracticable to work such a system

exclusively with part-time men. Clearly, also, it would be inexpedient to attempt to set up a nursing service, as the call the war makes upon the nursing profession is equally urgent. We may, however, feel confident that the special services proposed to be instituted—such as medical referees, consultants and clinics, and pathological laboratories, as well as the nursing service—will be set up as soon as national conditions render it expedient to do so, and that the cost will be defrayed out of State grants voted by Parliament.

The new Estimates also set at rest any doubt as to the continuance, for the present at least, of the grant in aid payable to the insurance funds in England, Wales, and Scotland to defray the additional payment, at a rate of 2s. 6d. for each insured person, towards the cost of medical attendance and treatment. Mr. Lloyd George originally said that this special grant in aid would be made as an experiment for three years. This period has expired, and the grant now appears for the fourth time.

In Ireland the grant of the same amount per insured person for the purposes of the provision of the medical certificates of sickness, and other expenses of administration arising from the absence of medical benefit in Ireland, was voted last year, the total sum being £97,100. In a note appended to the Estimates for this year it is stated that the estimated gross expenditure in respect of the grants in the three months ending March 31st, 1916, is £23,250, but in view of the balances remaining from the grants of previous years only a token sum of £100 is now to be taken. The circumstances with regard to medical certification in Ireland at the present time were explained in the Journal of March 6th (p. 431), and our columns have since contained many evidences of the deep dissatisfaction with which the arrangements are regarded by the medical profession, by insured persons, and by some approved societies in Ireland. The opinions expressed, with a strength of language we have not always thought it necessary textually to reproduce, by all the interests affected, though they may be distasteful to the Irish Commissioners, cannot be disregarded by the Joint Committee. To its attention we venture to commend the observations, for instance, of the Dean of Cashel, reported elsewhere in this issue (Supplement, p. 135): they are the expression, in the moderate terms of a public man accustomed to weigh his words, of the settled conviction of the vast majority of Irishmen.

MILITARY AND CIVIL CO-OPERATION IN SANITARY ADMINISTRATION.

The Local Government Board has issued to county councils, sanitary authorities, port sanitary authorities, and medical officers of health a pamphlet containing a circular letter relating to the co-operation of civil and military authorities in sanitary matters. A letter is set out, dated March 25th, addressed to the Secretary of the Local Government Board, expressing the thanks of the Army Council for the assistance given by the county councils, sanitary authorities, and medical officers of health to the army in safeguarding the health of the forces and preventing the spread of infectious disease. This letter concludes with an expression of the hope that the assistance, advice, and co-operation of these authorities and their expert officers, under the general supervision of the Board's medical inspectors, may be continued to the army through the coming summer months. The Board cordially endorses these expressions of appreciation by the Army Council, and points out that changes in the number or personnel of troops in an area will frequently call for immediate reconsideration or modification of existing arrangements. The Admiralty also has invited the Local Government Board and local authorities to act in co-operation with the naval medical authorities in so far as naval camps, dépôts, or billets on shore are concerned. Attention is again called to the importance of bacteriological examination of contacts of cases of cerebro-spinal meningitis in the civil population, and it is stated that some councils, on the advice of their medical officers of health, have made arrangements for the visits of a bacteriologist to any affected area, and for laboratory examination of material obtained from contacts. The Board expresses its trust that this action will be actively pursued and extended, and adds that corresponding arrangements have been made by the Army Council for military cases. A memorandum on the inspection of billets and camps by medical officers of health is printed in an addendum. In referring to the importance of immediate intimation being given to the medical officer in charge of local troops of the occurrence of any cases of infectious disease, including cerebro-spinal fever, in billets, or in houses in close proximity to places in military occupation, it is pointed out that for this purpose the medical officer of health may need to be in communication with more than one military medical officer. It is also pointed out that where arrangements for feeding troops are made through a contractor or caterer the medical officer of health should obtain from him a list of the various foods supplied and the names and addresses of the producers, and, when the materials are produced in the district, should make a special inspection of the place and preparation; when the materials are prepared or manufactured outside the district, the names and addresses of the firms concerned, of the caterer, and of the unit should be sent to the Chief Inspector of Foods, Local Government Board. An appendix contains a number of letters and circulars, from some of which it appears that the Army Council has had considerable difficulty in obtaining a recognition of its rule as to billeting, which prescribes that before allotting billets the medical officer of health should be consulted. The last letter is one dated March 3rd, from the War Office, to general officers commanding-in-chief of commands, directing that in any station or town in which cerebro-spinal meningitis has occurred and shows signs of increasing steps should be taken to see that no huts, buildings, houses, or billets are occupied which do not provide at least the full superficial space allowed by regulation—namely, 40 sq. ft. If additional suitable billets cannot be found, authority is given for placing the men under canvas. The importance is also impressed on the general officer commanding of consulting medical officers of health and military sanitary officers to ensure that premises which are unsatisfactory from a sanitary point of view should not be allotted for the accommodation of troops. Further particulars as to the attitude of the Local Government Board and the conditions under which it is proposed to sanction proposals for medical officers of health and tuberculosis officers to undertake temporary military service are given at p. 684.

BRITISH-MADE SALVARSAN.

In the discussions which have taken place during recent months with regard to the circumstance that the production of organic chemicals has attained so much greater development in Germany than in this country that many medicinal and technical chemicals have been obtained solely from German laboratories, various reasons for our relative backwardness in this department have been put forward. It has even been alleged by some that English chemists are not competent to carry out the work involved in the preparation of many of the more complicated products in question. It is very satisfactory to find, therefore, that the manufacture of perhaps the most complex of all—namely, salvarsan and neo-salvarsan—has now been established in this country and that the British-made products

are believed, so far as this can be proved by chemical and physiological tests, to be in every way at least equal to those which were formerly obtained from Germany. In view of the fact that not only is the manufacture of salvarsan an exceptionally intricate process, but that any failure in regard to the purity of the product would have most serious consequences, it was thought necessary to institute adequate biological tests by an independent authority of all the material coming on the market, and the licence of the Board of Trade to manufacture under the suspended German patents was only granted subject to such tests being satisfactorily passed. The report from the Medical Research Committee, which we published last week (p. 649), describes the stringency of the tests imposed and records that, in the opinion of the Committee, "the problem of the successful manufacture of the salvarsan compounds in England and France has been solved," and adds that "the Committee are confident that, so far as the strictest laboratory controls can ensure it, the profession and the public are now receiving from English and French sources compounds fully up to the standard of the best German samples previously sold." The tests carried out are both chemical and biological; chemical tests suffice to prove the absence of any considerable quantity of the more toxic oxidation products which may be formed in the manufacture; 0.5 per cent. of such compounds is regarded as permissible, Ehrlich having found from 0.5 to 0.8 per cent. in good specimens. The biological tests include those on mice, which had previously been found adequate in Ehrlich's institute; in addition, however, the total toxicity of the substance has been checked by other tests with large doses on rabbits, and the therapeutic activity has been proved by tests on animals infected with spirochaetes and trypanosomes. The two makes which have been subjected to these tests were those of Messrs. Burroughs, Wellcome and Co., London, and of Poulenc Frères, Paris, whose products are sold by Messrs. May and Baker, Ltd., London. It is worth while remarking that the British house which has thus succeeded in a remarkably short time in producing salvarsan and neo-salvarsan of the highest quality is one which has been distinguished for many years for the large amount of attention it has given to pure research by a special staff, in addition to the scientific staff controlling the ordinary manufacturing processes. It is to be hoped that a similar success will attend the manufacture of many other organic chemicals in this country.

THE CONSUMPTION OF ALCOHOL IN DIFFERENT ARMIES.

WE have recently published certain particulars in regard to the rations supplied to the British, French, German, and Austrian armies, and it is not without interest to compare the amounts of alcohol contained in these respectively. The ration of rum which is served out in the British army is 2½ fluid ounces, and it appears that this quantity is given twice a week to each man, and an additional half ration on each of the other days to the men in the trenches, and that during the very bad weather the full 2½ oz. has been issued daily to the men in the trenches. The alcoholic strength of rum varies considerably, but it may be taken that the average strength of this spirit as supplied for consumption is about 36 parts by weight of real alcohol in 100 parts by measure; the 2½ fluid ounces would, on this assumption, contain 25½ grams of real alcohol. In the French army the quantity of rum supplied per man is stated to be 50 grams, and this appears to be given daily; this quantity would contain 20 grams of real alcohol. As regards the German army, the figures given by Zuntz, which we published on March 20th, show a daily allowance of 1,793 grams of beer and 20 grams of brandy; on the other hand, the *Frankfürter Zeitung* has published a quite different set of figures, which include no beer, but 0.1 litre of cognac, arrack, or rum. It may be assumed that the beer referred to in Zuntz's figures would be of the nature of "lager" beer, containing about 3½ per cent. of alcohol; the total quantity of beer would then contain 62.7 grams of alcohol, while the 20 grams of brandy would contain about an additional 8 grams, or a total of 70.7 grams of real alcohol a day. Taking the other figures, it may be noted that 0.1 litre of cognac, arrack, or rum represents about 36 grams of alcohol as the daily allowance. It is stated that in the Austrian army the daily rations include half a litre of wine; this, no doubt, would be a natural light wine, containing about 8 parts by weight of real alcohol in 100 parts by measure, and the half litre would therefore represent 40 grams of alcohol. For exceptionally strenuous work and bad climatic conditions it is stated that the coffee or the tea and sugar ration is doubled, or, alternatively, 0.1 litre of spirits is given; in the latter case the alcohol would be increased by about 36 grams, making a total of 76 grams daily.

THE RECONSTRUCTION OF BELGIUM.

THE Belgium Town Planning Committee, a body formed to facilitate the study by Belgian professional men and others of the problems involved in the replanning and rebuilding of the towns and villages of Belgium, is holding at University College, London, this month, a town planning exhibition. Plans of many of the towns of Belgium as they existed before the war are exhibited side by side with photographs and plans of the best known garden city areas in this country, including Letchworth, Port Sunlight, Bournville, and the Hampstead Garden Suburb. It is hoped that this material will form a basis for study by Belgians of the professional classes now resident in this country, and that the suggestions the experience of other countries offer may enable the Belgians the better to plan the reconstruction of their country on lines suited to modern requirements and yet in keeping with local architectural traditions. At present the exhibition is very much taken up with "garden city" plans; we could have wished to see more space devoted to the illustration of British methods of water supply and sanitation, in which, pre-eminently, this country could afford valuable light and leading to a Continental people about to make a fresh start in their national life. We are assured that, although sanitary science and the public health aspects of town planning are not definitely mentioned in the statement of its objects issued by the Belgium Town Planning Committee, these important matters are not being overlooked. Study circles (for which University College is providing accommodation) are being arranged by the committee for Belgian architects, lawyers, and others, and it is hoped to find a Belgian medical practitioner with the necessary experience to lead a study circle dealing with public health questions. The development of this side of the committee's work has been considerably hindered owing to the fact that Dr. Fremantle, Dr. R. O. Moon, and other medical representatives have been absent on R.A.M.C. or Red Cross duties, and that the pressure upon the medical profession generally is so severe at the present time.

AFTER-TREATMENT OF SOLDIERS AT BRITISH HEALTH RESORTS.

THE committee formed by the Section of Balneology and Climatology of the Royal Society of Medicine to collect information and to advise the War Office in the distribution of cases suitable for treatment at British health resorts, the establishment of which was mentioned in the JOURNAL of February 13th, has now got so far as to issue, with the approval of the War Office, a pamphlet on the subject to military hospitals. It is entitled *Notes on Hydrological Treatment for Wounded and Invalided Soldiers and Sailors*, and consists of two parts—the first contains a summary of the medical and surgical maladies most commonly met with in the military hospitals, for

which after-treatment at a health resort is indicated; and the second, a list of the British spas and bathing establishments, indicating the factors which should influence the preference for one or another in the treatment of such maladies. It has also prepared a case-record card for the uniform record of cases treated. It is already in communication with ten local committees in the larger resorts, and with thirty representatives in the smaller. One difficulty which it will be necessary to surmount is with regard to the accommodation available at the spas. The local bath authorities have, we believe, as a rule agreed to place the waters and bathing facilities at the disposal of wounded officers and men free of charge. In some places special arrangements have been made by which officers are admitted to boarding houses at reduced terms. At present we know of no spa which has any adequate plan for housing non-commissioned officers and men during the time they are under treatment by the various resources which the bath authorities are willing to place at their disposal. The difficulty is, we understand, being considered by the committee, which proposes to get returns from the various British health resorts, giving for each place first the names of the hospitals or institutions into which men can be admitted, the number of beds in each, and the procedure to be followed to procure admission; and, secondly, the names of the homes or houses offering accommodation to officers, the number of beds, the procedure for admission, and the terms. Until this difficulty is adjusted, in the case, at any rate, of non-commissioned officers and men, we fear that the offer in their case of bath treatment will not have much practical result. Whether the difficulty can be wholly met by local enterprise or whether it will be necessary to obtain financial assistance from the War Office we are not prepared to say: but it is clear that something more and better than has yet been done is required.

DIFFICULTIES OF THE MEDICAL PROFESSION IN GERMANY.

As we have already pointed out, steps were taken in Germany soon after the war broke out to make a substantial increase in the number of medical men by shortening the term of medical study for senior students. Subsequent events seem to have shown that this measure was not as urgently necessary as the authorities thought. The justification for it was based on the assumption that there would soon be an alarming dearth of medical men; but it would appear that, while there has been considerable difficulty in distributing medical attendance uniformly according to the needs of the public, no alarming want of medical men on the whole has been shown to exist. It is reported that early in January the German Government addressed an inquiry to the Executive of the *Deutsche Aerztevereinsbund* as to the present and future supply of medical men. In a candid reply from Dr. Starke, it was pointed out that the army and navy were sufficiently supplied with medical men, many of whom, though attached to the services, were kicking their heels for want of employment. On the other hand, considerable difficulty was being experienced in supplying the needs of the civil population. In this respect the large towns were well enough off, but the smaller towns, villages, and country districts had suffered serious diminution of their medical attendants, and 1,082 locumtenents were undertaking the duties of 2,000 medical men who had been called to the services. In 65 districts all the medical men had been called away, and it had been impossible to offer terms tempting enough to attract the services of substitutes. It was, however, anticipated that these vacancies would shortly be filled by a more suitable distribution of medical men, and that substitutes would become available for the less fortunate districts. It was suggested that all medical students who had volunteered for active service should be attached to the ambulance department so as to relieve the work of the surgeons. All these students, however brief their medical education had been, would, it was thought, be able to apply bandages under supervision and keep records of cases. It was further suggested that no small hospitals or mansions should be used unless they accommodated at least 60 beds, the present system of small hospital units being extravagant as far as the supply of medical men was concerned. Another economy suggested was the redistribution of medical men in the reserve military hospitals, where there were too many; medical students might be more extensively employed in them than was the practice. In conclusion, Dr. Starke wrote: "At all events, it is desirable that the opinion of the German medical profession should be asked before new measures are adopted. In the past the urgency qualification of about 2,250 young physicians, by the remission of the practical year of study, was a measure which was adopted by the Government without consultation with the medical world, and which, doubtless, will lead to unsuspected and unintentional serious injury to the German medical profession after the war, and which, if the above hints had been considered, could probably have been completely avoided."

GERMANS AND THE GENEVA CONVENTION.

ALLUSION was made in the JOURNAL of March 13th, 1915, p. 478, to the trial of the staff of a German ambulance for looting in France. They were acquitted; nevertheless the fact that they were brought to trial seems to have caused great indignation in Germany, and has been the subject of comment by two eminent legal authorities—Professors von Arndt and von Liszt. Their deliverances throw a further light on the extraordinary mentality of the Germans, which seems to blind them to the fact that any people but themselves have any rights at all. Germans may do what they like, and the victims of their brutality have no just cause to complain, still less to make reprisals. The professors begin by denying the competence of the French tribunals. They argue that if acts alleged to be criminal were committed by Germans before they had fallen into the hands of the French, and if the places where such acts were committed were still occupied by German troops, the accused were at that moment outside the jurisdiction of the French, and they could not be brought under it without becoming prisoners of war. But, they proceed, inasmuch as, according to Article 9 of the Geneva Convention, members of the medical staff cannot, without violation of the law of nations, be treated as prisoners of war, therefore, whatever the charges or the proofs may be against them, the judgement cannot hold good. In view of the fact that a number of doctors—French, English, and Russian—have been held, and are still held, by the Germans as prisoners, this argument is, perhaps, the most amazing piece of impudence that even "Kultur" has yet produced. Either the German mind is so peculiarly constituted that it is incapable of perceiving the inconsistency of such reasoning, or it has taught itself to believe that other peoples are too stupid to see that this one-sided use of an international convention is merely an illustration of the arrogance which has done so much to disgust the civilized world.

BABY CLINICS AND MATERNITY CENTRES IN MANCHESTER.

THE scheme for baby clinics for Manchester, which in the main has been framed by Dr. Niven, the M.O.H., has now received the approval of the Sanitary and the Midwives Supervising Committees, and only awaits final approval by the city council and the Local Government Board. The scheme proposes the appointment by the corporation of a whole-time medical officer at a salary

of £350. Four centres would be established, each consisting of two adjoining six-roomed cottages adapted for the purpose, and advice and treatment would be given there on two days a week for infants and children below school age. A nurse would be attached to each centre, whose duty it would be to keep records, weigh the children, and visit them at their homes in order to see that the medical directions are carried out. Home surroundings would also be noted and investigations made into the circumstances of the parents, so that no one would be able to get free treatment who could afford to pay a private practitioner. The scheme also includes the provision of maternity centres, and it is proposed to take over that part of the work of the School for Mothers which deals with medical and nursing work and home visiting, still leaving the School for Mothers to attend to social work, including the provision of dinners, the holding of classes for cookery, and for the making of baby garments, and the general teaching of infant hygiene. For the maternity section it is proposed that one of the medical staff of St. Mary's Hospital should attend once a fortnight at each of the four centres to give advice to expectant mothers. Two nurses would be engaged for this part of the work, attending at the centres and also visiting the mothers at their homes where necessary. It is estimated that the scheme for baby clinics will cost about £4,800 a year, which is over and above the present expenditure of £2,800 by the Midwives Supervising and Infant Life Preservation Committees. It is expected that the Local Government Board will contribute one-half of the annual cost. The cost of the maternity section of the scheme is estimated at a further sum of about £750.

FEES OF LOCUMTENENTS.

IN view of the new and more urgent appeal of the War Office for more medical men for whole-time service, attention has again been directed to the fees which are in some cases being asked by locumtenents. Owing to the number of medical men in general practice who were called up with the Territorial Force, or who responded early to the appeal of the War Office for medical men to take temporary commissions in the Royal Army Medical Corps, the demand for locumtenents last year had already become very great. Later, as a well-known medical agent pointed out in our columns of February 13th, the fact that many of those previously available as locumtenents had later responded to the call made the difficulty of finding reliable substitutes to safeguard the practices of men at home increasingly great. There was, he said, a tendency on the part of a few to take advantage of the shortage to demand fees quite incompatible with the services rendered, and he appealed to men in a position to accept work as locumtenents to show their patriotism and loyalty to the profession by accepting fees in some measure proportionate to the earnings of the practice of which they were asked to take charge. Wider public attention has been called to the matter by a letter, signed "M.D.," published in the *Times* of April 14th. The writer stated that whereas before the war 5 guineas a week was considered a reasonable remuneration by locumtenents, to-day 12 guineas is being asked for and paid. The writer argues that this action makes it impossible for many medical men to go on active service, as they cannot leave their practices because they cannot pay such rates. The action, therefore, he says, is in the highest degree unpatriotic, amounting to an attempt to make capital out of the national emergency. Already, he says, it has brought ruin upon the families of some medical men ordered on active service with Territorial regiments. A correspondent, writing to us on April 14th from a provincial centre, observes that it is hard for a man in practice to offer his whole-time services when he finds that 8 to 10 guineas a week and all found has to be paid to obtain a man to do his work. "In a practice like mine," he writes, "it means that I am taking a greater risk than I probably ought, but with reasonable fees I should be quite happy." We believe that the sums mentioned by "M.D." in the *Times* do not quite correctly represent the position either before the war or since it began. We understand that at this time last year a fee of 7 guineas was often paid to a locumtenent to look after a heavy practice, and we believe also that the fee now asked is seldom more than 10 guineas, which is the maximum mentioned by the writer whose letter to the Association has just been quoted. While it is not reasonable to expect that the law of supply and demand should be entirely set aside, it would seem just that the fee asked by a locumtenent should have relation to the military remuneration received by the man whose place he is taking, and to the character and amount of the work to be done. The Scottish Medical Service Emergency Committee took up this matter at its first meeting, and expressed the opinion:[1] First, that it should be generally agreed that the fee offered to a locumtenent taking the work of a practitioner engaged in military duty should not exceed 5 guineas a week; secondly, that retired practitioners willing to relieve their professional brethren, and so enable them to serve their country in the field, should send their names to the Committee forthwith for registration and ultimate allocation to practices temporarily vacant. The Scottish Medical Emergency Committee has already received a good many offers of this kind, among others some from elderly medical men who could help, but could not be expected to take on the whole work of a practice. It is believed that there are many men in Scotland who would value such help, and communications on the subject may be addressed to the Convener of the Scottish Medical Service Emergency Committee, Royal College of Physicians, Edinburgh. In England and Wales such offers might, we think, best be made through the honorary secretaries to the Branches and Divisions of the British Medical Association, which, as will be seen, have under consideration in all its aspects the emergency created for the medical profession by the war.

DR. W. T. EDWARDS, of Cardiff, died on April 11th, aged 93. He was consulting physician to the infirmary, and played a large part in the public life of Cardiff and South Wales. In 1885, when the British Medical Association held its annual meeting in Cardiff, he was President. He was Vice-President of the University College of South Wales and Monmouthshire, to which he had been munificent benefactor.

Medical Notes in Parliament.

Business of the House.—The sittings during the present week have been confined to Wednesday and Thursday. The business of the house on Wednesday was limited to the motion known as "getting the Speaker out of the chair" on the Civil Service Estimates. Originally Mr. Keir Hardie was successful in the ballot for this motion, and had put down for discussion the question of employment of children of school age in agriculture. By general agreement, however, as the matter was considered urgent, this motion was taken before the adjournment on the Consolidated Fund Bill, and therefore was not pursued on Wednesday. The sitting on Thursday was devoted to the Office of Works Vote, the Meyer timber contract being the chief subject for discussion. The House is expected to sit only three days a week—at all events up to Whitsuntide. The present indications are that there will be, in all probability, no lack of subjects both of importance and interest for discussion. Apart from the innumerable questions which arise

[1] BRITISH MEDICAL JOURNAL, August 22nd, 1914, p. 374.

directly out of the war services, the proposals of the Government with respect to drink and employment on war contracts will certainly give rise to considerable discussion and be subjected to a close examination.

The Budget and Education.—The Budget may probably be introduced before Whitsuntide, and will, we may anticipate, contain features, apart from its magnitude, of much interest. According to the answer given by the President of the Board of Education before the adjournment of the House, it is evident that, apart from the inquiries into the conditions of university finance connected with the war which have been undertaken by the Board and to which reference has already been made, wider questions have been under consideration.

Scientific Organization.—Whatever else the war may have shown, it has certainly shown that in many respects the lack of encouragement and development of scientific education in relation to national trades and industries has been a serious drawback in connexion with some of our war services. Apart from whatever inquiries the Government may itself have instituted, we understand that this aspect of affairs is also being brought to their attention by memorials from the Royal Society and the Chemical Society. Let us hope that the lessons which may be learnt in this respect from the war will not be neglected whilst there is a disposition to attend to them with a prospect of a sufficient measure of public support.

British Doctors as Prisoners.—Lord R. Cecil, on April 14th, asked the Under Secretary for Foreign Affairs whether there were still any English doctors held as prisoners of war by the Germans; if so how many, and what steps the Government proposed to take to procure their release. Mr. Primrose said that it was believed that there were only three British subjects who claimed to be entitled to release as doctors now detained in Germany; representations on their behalf had been made through the United States Ambassador. According to the latest available information, the number of military doctors still detained in Germany was 50. Of these, 35 had been officially reported as prisoners through the United States Ambassador, and 15 unofficially. The white paper showed what steps had been taken to obtain the release of those prisoners. Lord R. Cecil asked whether it was a fact that prisoners in hospital in Germany, either as patients or doctors, were not allowed to write to their relatives freely, and if so, what were the reasons for this treatment. Mr. Primrose said that he had no information to show that doctors in hospital were treated differently from other prisoners of war in the matter of correspondence. Inquiries were being made through the United States Ambassador on this point. Lord R. Cecil then asked whether a particular doctor who had to attend to British prisoners in a certain hospital had, through the commandant of the hospital, informed his wife that he was not allowed to write. Mr. Primrose said he had not heard of it, but would make inquiries.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

THE Fund continues to receive solid support. A letter which has reached the treasurer from Dr. Colquhoun, of Dunedin, explains an anonymous contribution of £300, the receipt of which was announced on February 27th, 1915. The sum was subscribed by doctors, chemists, nurses, and the public of Otago, New Zealand, and was received by the Fund in response to a cable to Lloyd's Bank. Such support from New Zealand is particularly gratifying, while we learn from Dr. Colquhoun's letter that he hopes that an addition may be made to this handsome contribution, as subscriptions are still coming in to him.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by the Scottish and Irish funds, are as follows:

Twentieth List.

	£	s.	d.
Birmingham Local Committee (per Dr. Robert Saundby, Hon. Sec.), (14th donation, total £375 10s. 3d.)—			
"A Friend"	10	0	0
Dr. T. and Mrs. Halford Wilkins, proceeds of Whist Party ...	10	10	0
Dr. C. S. Rigby ...	5	0	0
Dr. Waddell	5	0	0
Dr. Walter Allen ...	5	0	0
Dr. Oswald R. Lewis ...	1	1	0
(La Pharmacie Française) (6th donation, total £45)—			
Mr. J. P. Ellerington ...	5	0	0
Rotherham Division, B.M.A. (per Dr. Knight, Hon. Sec.)—			
Dr. Ling	1	1	0
Southern Branch B.M.A. (per Dr. Jas. Green, Hon. Sec. and Treas.)—			
Dr. J. Lister Wright ...	1	1	0
Dr. W. J. Jolliffe ...	1	1	0
Dr. E. W. Simmons ...	2	2	0
Dr. F. W. H. Robson ...	0	10	6
Dr. M. Treston ...	1	1	0
Dr. A. Kennedy ...	0	10	6
Dr. J. H. Pridham ...	0	5	0
Dr. J. Davidson Wyness	1	1	0
Dr. J. Fletcher	0	10	0
Dr. Annie M. Black ...	1	0	0
Dr. T. L. Kennish ...	1	1	0
Dr. Charles H. East ...	2	2	0
South Eastern Counties (Scotland) Division, Edinburgh Branch B.M.A. (per Dr. M. J. Oliver, Hon. Sec.), (2nd donation, total £51 5s.). Collected by Dr. G. Gunn Bannerman, Hawick—			
Dr. Barrie	2	2	0
Dr. S. G. Davidson ...	2	2	0
Dr. Dixon	2	2	0
Dr. Bannerman ...	2	2	0
Mr. D. C. Michie ...	2	2	0
Mr. Geo. Cairns ...	1	1	0
Mr. W. E. Wilson ...	1	1	0
Mr. G. P. Ross ...	1	1	0
Mr. W. J. Kearney ...	1	1	0
Mr. John P. Scott ...	1	1	0
Dr. Evans (2nd donation)	2	2	0
Collected by the Hon. Sec.—			
Dr. Cullen	1	1	0
Dr. McInnes ...	0	10	0
Bournemouth Division, B.M.A. (per Dr. Eleanor C. Bond, Hon. Sec.), total £99 2s. 6d.—			
Dr. C. B. Mooring Aldridge	1	0	0
Dr. W. Alexander ...	2	2	0
Dr. G. H. Batterbury ...	1	1	0
Miss Bond, M.D. (2nd donation)	2	2	0
Dr. F. C. Bottomley ...	5	0	0
Dr. R. T. Bowden ...	1	1	0
Dr. F. J. Burge ...	0	10	6
Dr. A. E. Carsbury ...	1	1	0
Dr. T. Compton ...	1	1	0
Dr. A. H. Davis ...	1	1	0
Dr. H. Dobell	1	0	0
Dr. P. Duncan ...	10	10	0
Dr. F. Fowler	5	0	0
Dr. and Mrs. W. Gosse	1	1	0
Dr. G. S. Halton ...	1	1	0
Dr. A. Lattey	2	2	0
Dr. E. K. Le Fleming ...	1	1	0
Dr. N. MacGillicuddy ...	1	1	0
Dr. E. E. Maddox ...	1	1	0
Dr. T. Martland ...	1	1	0
Dr. S. Montgomery ..	1	0	0
Dr. C. D. Muspratt (2nd donation) ...	3	3	0
Dr. C. W. Parkinson ...	1	1	0
Dr. S. Powell	2	2	0
Dr. H. T. Pringle ...	2	2	0
Dr. F. Winson Ramsay	10	10	0
Dr. T. Richardson ...	1	1	0
Dr. B. Shillitoe ...	3	3	0
Dr. H. Simmons ...	10	10	0
Dr. Telford Smith ...	1	1	0
Dr. Johnson Smyth ...	0	10	0
Dr. A. de W. Snowdon	10	0	0
Dr. C. Thomson ...	1	1	0
Dr. Roberts Thomson	10	0	0
Dr. Medley Wood ...	1	1	0
Dr. G. D. H. Carpenter, Captain Uganda Medical Service (will subscribe £1 monthly) ...	1	0	0
Dr. T. W. Locket ...	1	1	0
Dr. William Angus ...	1	1	0
"E. B. H."	1	1	0
Supplementary from Manchester (per Dr. Brockbank, Hon. Sec., total £583 0s. 5d.)—			
Dr. Craven Moore ...	5	5	0
Dr. Dowzer	1	1	0
Mr. C. E. Hecht ...	0	5	0
Dr. G. Taylor	2	2	0
Dr. Arnold Gregory (2nd donation) ...	1	1	0
Dr. C. Carruthers ...	1	1	0
Dr. T. M. Popple ...	1	1	0
Dr. W. Chapman ...	1	1	0
Dr. J. T. McGlade ...	1	1	0
Dr. W. Bradley ...	1	1	0
Dr. M. J. O'Doherty ...	1	1	0
Dr. C. H. Thompson ...	1	1	0
Dr. Colley Salter ...	0	10	6
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.) (7th donation, total £333 3s.)—			
Dr. W. W. Williams ...	1	1	0
Dr. F. C. Pridham ...	1	1	0
Dr. Lillie Johnson ...	1	1	0
Dr. J. J. Archbold ...	1	1	0
Dr. H. Baigent ...	2	2	0
Dr. H. K. Wallace ...	1	1	0
Anonymous	2	2	0
Canterbury and Faversham Division, B.M.A. (per Dr. Neil Robson, Hon. Sec.) (3rd donation)—			
Dr. E. A. McAnally ...	1	1	0
Dr. W. P. Dickson ...	1	1	0
Queensland Section of the Australasian Pharmaceutical Conference (per Agent-General)	100	0	0
Mr. H. A. Watkinson ...	0	10	6
Hull Pharmacists' Association, collected by the (per Mr. T. W. Robinson) including a donation of £5 from the Hull Pharmacists' Association Fund ...	37	16	0
Sheffield Pharmaceutical and Chemical Society, collected by (per Mr. S. Furnival), (2nd donation	22	15	0
St. John's Ambulance Association, Indian Council (per Major R. J. Blackham, C.I.E.)	25	0	0
Mr. Cedric Chivers (per Mr. J. Y. W MacAlister), Brooklyn, N.Y. ...	25	0	0
Captain R. D. MacGregor, I.M.S.	5	0	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited. £10,012 had passed into the Treasurer's hands by Tuesday last, the sum not including the Scottish and Irish Funds.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments contributed by the following donors since the publication of the last list:

Professor Shennan, Aberdeen.
Mr. Horatio P. Symonds, F.R.C.S., per Professor Thomson, Oxford.
Anonymous, Bristol.
Dr. Daniel, per the Voluntary Aid Committee, Hull.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

THE MEDICAL AND NURSING SERVICES ABROAD.

A SUFFICIENT number of changes of station have been announced in recent orders to suggest a kind of military game of "family post." They affect the medical as well as other departments of the army, and for the most part may be taken, perhaps, as evidence of the completion of a definite stage in the war. In the medical department changes of the kind that are taking place have long been anticipated. It was recognized that as the various new armies came one by one into active being, and medical units of one kind and another multiplied, it would be necessary to distribute the more experienced permanent officers of the Royal Army Medical Corps over as wide an official area as possible. This step was thought to be immediately foreshadowed by the very large number of promotions from the rank of major to that of lieutenant-colonel in the Royal Army Medical Corps, and by the smaller but still considerable number of like promotions in and to the Army Medical Service that were made towards the end of February.

It is necessary that most posts of an administrative order in the medical department should be filled by men of a certain rank, and though it is easy to appoint to that rank men of suitable standing in civilian connexions, they could hardly be expected, however able they might be, to discharge the duties of these posts with success. Most of them demand from their occupants not merely qualities which only certain walks in life tend to develop, but also a great deal of technical knowledge and experience of a kind quite peculiar to the service. The net effect, so far, is the disappearance from the different hospital bases of various faces which have been pleasantly familiar. A good many of those who started and built up the work of the best known hospitals have handed over their posts either to newcomers or to men who previously served under them, and have proceeded to take up appointments as A.D.M.S. of some division, or a post in England, while the officers who held command of certain administrative work with the rank of colonel have been replaced by surgeon-generals. When the latter event occurs, the title or the post becomes D.D.M.S. instead of A.D.M.S.; so these initials will become more familiar in the future than they have been in the past.

In this connexion it may be mentioned incidentally that though what was said in a recent note on the subject of the use of initials in the British army was correct so far as it went, it did not sufficiently explain the difference between the terms D.G.A.M.S. and D.G.M.S. The former letters denote the office now temporarily occupied by Sir Alfred Keogh, and his responsibility for all army medical arrangements and work in the United Kingdom and for the supply of personnel and equipment as required overseas. The latter denotes the title of the principal medical officer on the staff of the Commander-in-Chief in the Field, he being in command of all medical contingents and units on the Continent from whatever part of the empire they are drawn. He thus holds a position for which there is no strict analogy in the previous history of the British army, and whose creation has been necessitated by the multiplication and multiplicity of its units. As every one probably knows, the officer holding the post is Sir Arthur Sloggett, who is also the titular occupant of the post of D.G.A.M.S., and likewise the actual occupant of that of Chief Commissioner of the St. John Ambulance Association and the British Red Cross Society.

The notices in orders in regard to changes of stations relate also with frequency to the lower ranks of the service. A good many medical officers who have hitherto been either attached to regiments or to ambulance units have been transferred to base hospitals, and men of like rank in the latter have been sent to take their place, and have thus been given the opportunity they desire of sharing to the full the dangers and drawbacks of life on active service.

Many members of Q.A.I.M.N.S. (Queen Alexandra's Imperial Military Nursing Service), and the various nursing services now practically forming a part thereof, have also figured in the list of transfers, some being sent from clearing stations to base hospitals, others from ambulance trains to hospitals or from hospital ships to trains, and vice versa. Apart from their utility to the service at large, all these transfers are probably of advantage to the individual concerned, since a change of work and scene commonly spells a quickened interest in life and a reinforcement of energy.

THE JUTE HOSPITAL.

A short time ago a party of newspaper correspondents were invited to visit General head quarters and were taken to see various places of more or less direct military interest. Among them was the institution known as the Jute Hospital, which some of them have since described with such a warmth of praise as possibly to have suggested some exaggeration. The enthusiasm of these writers was, however, quite justified. Not only is the underlying idea of the place thoroughly sound, but the care with which all details of administration have been worked out is quite remarkable. Officially the institution figures, I believe, as No. 4 Stationary Hospital, but in effect it is a kind of "rest cure home" on a gigantic scale. It is true that the patients are not kept in bed and subjected to massage, overfeeding, and other features of Weir Mitchell treatment; but the underlying notion is not essentially dissimilar. The patients, all of whom are privates or non-commissioned officers, are removed from their normal environment—which in these days is one of dirt, damp, chronic dangers, and endless dins—to one of spotless cleanliness, good beds, well served as well as ample meals, quiet amusements, and gentle exercise. The men sent to this hospital come down not in ambulance train, but by ambulance convoy straight from the head quarters of the regiments to which they belong. They are for the most part men not actually sick, but who might soon become so, but for that stitch in time which often in medical connexions, as in so many others, saves nine. They are men who are overtired, who are losing their appetites, ceasing to be able to sleep, becoming dyspeptic; who are footsore or sufferers from minor skin and other allied ailments; or who have wounds which in themselves are of no real importance but require a few days' attention and meantime lessen the man's efficiency. The patients usually enter the home dirty and bedraggled, with bent backs, and listless or despondent; they leave it after about ten days or so with their heads in the air and a springy step, and completely reclad and re-equipped.

As soon as the approach of the ambulance convoy is signalled a bell sounds at the entrance door and summons to certain positions just inside it the orderly medical officer for the day and a special staff of non-commissioned officers and men, each of whom knows his particular job so thoroughly that the reception of a consignment of fifty or sixty men—including the taking down of their names and regimental numbers, the recording of their condition, and the taking over from them and new marking of their haversacks, arms, and equipment—hardly occupies as many minutes. The machinery for dealing with them, when once they have been placed upon the books, works with equal swiftness and smoothness, and results in each man in his turn being given a hot bath and being provided with clean underclothing with very little loss of time. This done a bed for his permanent occupation is assigned to him in the main building, which is cut up into wards or rooms by canvas partitions about 6 ft. high; separate accommodation is thus provided for various ranks of non-commissioned officers, for meals, for a barber's shop, for chiropody, for tailoring work, for the overhauling of the contents of haversacks, for recreation rooms, for letter writing, and for a meditation room (provided with the ordinary appointments of a small chapel). There is, of course, ample provision for the disinfection of clothing and equipment, or rather for freeing it from parasites, as also for bathing and cooking. Some of the arrangements were of an improvised kind at the time of my first visit not long after Christmas, but permanent apparatus and huts to secure the various ends in view have now been erected in the grounds surrounding the main building. As soon as possible after his arrival every man is invited to visit the pack store and overhaul the contents of his haversack. If it contains any treasures which he wishes

to keep, these are made up into a separate bundle, while old underclothing is sent away either to be destroyed or to be put into good repair. In the end—that is to say, on the eve of his departure—the man receives back his equipment and arms in a thoroughly clean condition, and is provided with a uniform and complete set of underclothing which, if not always absolutely new, is in all cases in good order. During the day time he is not expected at first to do otherwise than rest and amuse himself by reading, writing, and indoor games of a quiet order; but as soon as he begins to pull himself together again, he joins the daily short route marching parties. As the ordinary population of this hospital is about 1,000 men, special arrangements have to be made in regard to meals, which are of a much more elaborate character than those served in camp. The arrangement much resembles that in vogue in restaurant cars on long-distance journeys both in England and on the Continent. The building in which all this work is carried on practically consists of a single hall measuring 300 ft. long, 150 ft. wide, and about 30 ft. high. As the whole of the space is broken up merely by the 6 ft. canvas partitions mentioned, it can easily be imagined that its aspect when viewed from a gallery at one end is somewhat remarkable. I do not know any other place where 1,000 beds and 1,000 sleepers can be seen at a single glance.

EXPERIMENTAL RESEARCH IN THE FIELD.

SIR JOHN FRENCH'S PRAISE.

THE dispatch from Field Marshal Sir John French, dated April 5th, which the Prince of Wales brought home, was published in a supplement to the *London Gazette* of April 13th. It contains the following references to the work of the medical services in safeguarding the health of the troops, in restoring men to the fighting line, and to the important results obtained from experimental researches carried out with the Field Force.

> Since the date of my last report the general health of the army has been excellent; enteric has decreased, and there has been no recurrence on any appreciable scale of the "foot" trouble which appeared so threatening in December and January.
>
> These results are due to the skill and energy which have characterized in a marked degree the work of the Royal Army Medical Corps throughout the campaign, under the able supervision of Surgeon-General T. J. O'Donnell, D.S.O., Deputy Director-General Medical Services. But much credit is also due to Divisional, Brigade, Regimental, and Company Commanders for the close supervision which has been kept over the health of their men by seeing that the precautions laid down for the troops before entering and after leaving the trenches are duly observed, and by the establishment and efficient maintenance of bathing places and wash-houses, and by the ingenious means universally employed throughout the Forces to maintain the cleanliness of the men, having regard both to their bodies and their clothing.
>
> I have inspected most of these houses and establishments, and consider them models of careful organization and supervision.
>
> I would particularly comment upon the energy displayed by the Royal Army Medical Corps in the scientific efforts they have made to discover and check disease in its earliest stages by a system of experimental research, which, I think, has never before been so fully developed in the field. In this work they have been ably assisted by those distinguished members of the medical profession who are now employed as military medical officers, and whose invaluable services I gratefully acknowledge.
>
> The actual strength of the force in the field has been increased and the health of the troops improved by a system of "convalescent" hospitals. In these establishments slight wounds and minor ailments are treated, and men requiring attention and rest are received.
>
> By these means efficient soldiers, whose services would otherwise be lost for a long time, are kept in the country, whilst a large number of men are given immediate relief and rest when they require it without removing them from the area of operations. This adds materially to the fighting efficiency of the Forces.
>
> The principal convalescent hospital is at St. Omer. It was started and organized by Colonel A. F. L. Bate, Army Medical Service, whose zeal, energy, and organizing power have rendered it a model hospital of its kind, and this example has materially assisted in the efficient organization of similar smaller establishments at every Divisional Head Quarters.
>
> I have already commented upon the number and severity of the casualties in action which have occurred in the period under report. Here once again I have to draw attention to the excellent work done by Surgeon-General O'Donnell and his officers. No organization could excel the efficiency of the arrangements—whether in regard to time, space, care and comfort, or transport—which are made for the speedy evacuation of the wounded.

In connexion with Sir John French's reference to convalescent hospitals, we may call attention to the article of our special correspondent on the convalescent hospital for officers at Cimiez published last week (page 639), and to that published this week on the Jute Hospital, Head Quarters.

NOTES.

FRENCH PRISONERS OF WAR.

A SOCIETY for the supply of clothing to prisoners of war in Germany has been organized in France. Although the French prisoners are not treated with such harshness as the British the conditions in which they have to live are very wretched owing to defective hygiene, insufficient food, and the want of suitable clothing. The society, which has been at work since December last, sends daily to various concentration camps in Germany from three to four hundred parcels of linen and other clothing and three kilos of foodstuffs addressed to individuals. In addition to these a wagonload for general distribution is dispatched weekly. But all this does not suffice to meet the needs of the prisoners, and French doctors kept in captivity are calling urgently for strengthening food and medicines to protect their fellow countrymen against tuberculosis and anaemia. How British prisoners have been treated is shown by the correspondence between His Majesty's Government and the United States Ambassador, which has recently been issued as a White Paper (Miscellaneous, No. 7, 1915). Yet it may be remembered that some months ago the Hamburg Medical Association addressed a letter to the profession of this country complaining of the "inhumanity" with which German prisoners were treated and of the disregard of the Geneva Convention shown by Great Britain. Even if such charges had any basis of fact to support them, would the gentle Teuton with his record of savagery and contempt of all international laws and conventions have any right to complain?

THE JAPANESE RED CROSS IN PARIS.

Le Journal of April 8th gives an account of a Japanese hospital established in the Avenue des Champs Elysées which it describes as a corner of the Far East brought by the Japanese Red Cross to Paris. The staff of doctors, nurses, dispensers, and assistants numbers thirty, and works under the direction of Dr. Shiota, professor of clinical surgery in the University of Tokio. They have brought with them a complete hospital installation, including bedding, drugs, dressings, surgical instruments, and sterilizers. The hospital is said to be excellently organized. Three operating rooms are equipped with all the apparatus for asepsis. There is a complete equipment of radiography and radioscopy and a dental service where the Japanese methods, in which the operator trusts more to the skill and strength of his fingers than to instruments, are practised. The Japanese *Pharmacopoeia*, which was completed only a few months ago, contains many organic products, a large place in it being occupied by serums and vaccines, all prepared in the Pasteur Institute of Tokio. Already a hundred wounded are under treatment and two hundred more are expected shortly.

SERBIA.

The *Boston Medical and Surgical Journal* of April 1st states that it is reported by the War Relief Committee of the Rockefeller Foundation, on its return from a tour of inspection through Serbia, that typhus, typhoid fever, cholera, small-pox, diphtheria, scarlet fever, and recurrent fever are all existing in epidemic form. Already typhus fever has caused the death of 60 out of 400 native doctors of the country. The foreign Red Cross units have suffered great losses. Two American units and one British have been compelled to suspend their regular work because of typhus. Nine American nurses and two physicians have contracted the disease. The Serbians assert that Austrian

prisoners of war, who were permitted to wander over the country, introduced the disease and infected the population. This is confirmed from other sources, notably by the Italian paper, the *Idea Nazionale*, which says that an enormous number of deaths has been caused among the Serbians by typhus introduced by the Austrian army.

It was stated in the BRITISH MEDICAL JOURNAL of April 10th that the American Red Cross Society and the Rockefeller Foundation of New York had sent a commission, with Professor Richard P. Strong at its head, to help in checking the prevalence of typhus and cholera in Serbia. According to the New York correspondent of the *Daily Telegraph*, Major-General Gorgas has accepted an appointment, at a salary of £10,000 a year, under the auspices of the Rockefeller Commission, to stamp out the scourge as he cleared the Isthmus of Panama of infectious disease. In quoting this statement, we think it right to suggest that it should for the present be accepted with some reserve. Confusion may have arisen from the fact, announced in the JOURNAL last week, that £10,000 had been collected to defray the expenses of the American expedition.

The New York Serbian Relief Fund amounted on March 27th to a little more than £5,000.

We regret to report that Sister Augusta Minshull, of the Scottish Women's Hospital, has lately died of typhus in Serbia, to which she went on February 8th. She is the third member of the nursing staff of the hospital who has fallen a victim to the disease, Sister Jordan and Miss Neill Fraser having died last month.

We are asked to state that a meeting will be held in aid of the London Unit, Scottish Women's Hospitals for Serbia, on Monday, April 26th, at 8.30 p.m., at St. Marylebone Institute, 50, Paddington Street, W., when Mr. Welby Fisher, F.R.C.S., of the Serbian Unit, British Red Cross, 1913, will give a lecture, illustrated by lantern slides, entitled "With the Serbians." Dr. Inglis will report upon the work of the hospitals prior to leaving for the front. Miss Cristitch, who has just returned from Serbia, will take the chair. Invitations can be obtained on application to Mrs. F. W. Mott, 25, Nottingham Place, W.

MENTIONED IN DISPATCHES.

The following officers of the R.A.M.C. have been added to the list of officers mentioned for gallant and distinguished service in the field in the dispatch from the Field Marshal Commanding-in-Chief, British Expeditionary Forces in the Field, dated January 14th: Major S. L. Cummins, M.D., Captain C. G. Brown, and Lieutenant (temporary) G. W. Milne, M.D.

MEDICAL OFFICERS WANTED.

2nd London Division R.A.M.C.(T.).

Medical men are urgently wanted for the R.A.M.C.(T.), 2nd London Division, both for the Sanitary Service and in the Field Ambulances, and also as regimental medical officers. Candidates for the Sanitary Service should possess the D.P.H. qualification or have had some special training in preventive medicine. Those joining the Sanitary Service especially are likely to have an early opportunity of serving abroad. Applications should be made in writing or preferably in person to the Officer Commanding, Dépôt Medical Units, 2nd London Division, Duke of York's Head Quarters, Chelsea, S.W. Captain Cave, Officer Commanding, will be pleased to see intending applicants any day between 9.30 a.m. and 5 p.m.

2/1st Cambridgeshire Regiment.

A medical officer is required for the home service with this unit. Applications should be addressed to Colonel C. T. Heycock, F.R.S., at the head quarters, 162, Shrowston Road, Norwich.

3/2nd Northumbrian Field Ambulance.

Several medical officers are required for the completion of this unit for either imperial or home service. Applications to the Officer Commanding the ambulance, at the Military Hospital, Bensham, Gateshead.

2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C.(T.)

Three medical men are urgently required to complete the establishment of this unit. Full particulars as regards pay, duties, etc., will be given by Captain A. Mowat, Officer Commanding H.M.B.F.A., R.A.M.C., 2nd Line, Houghton Hill House, Houghton, Huntingdon.

1st London (City of London) Sanitary Company, R.A.M.C.(T.).

We have received a letter from Major H. S. Fremlin, the officer commanding this company, stating that as the result of the notification made in these columns on March 13th, well-qualified officers have been obtained, and that the company will shortly have a complete establishment.

Correspondence.

CENSURE OF DOCTOR BY CORONER.

SIR,—At a recent inquest in South-West London a doctor was censured by the coroner for not attending an urgent case when sent for. The doctor's excuse was fatigue—that for forty hours he had been continuously at work.

This it would be thought was enough to exonerate any one, and should rather have evoked sympathy for the doctor, but Dr. Oddie in effect censured him by intimating that it was his duty under the circumstances to get an assistant. As Dr. Oddie is a lawyer as well as a doctor, it is surprising to find him giving vent to such a dictum.

What duty, moral or legal, rests upon a doctor, even if he is overworked, to get an assistant? The common-sense remedy, which is perfectly legal, is to do as this doctor did, knock off some of the work. The patient has a sufficient remedy. If the doctor does not come at once as desired, another can be procured. If the obvious remedy is not adopted and the patient dies before he is seen by the doctor, why should the latter be censured for delaying his visit?

In its issue of April 9th, the *Globe* comments on this case:

> There is far too much tendency on the part of coroners to censure a doctor because he has not gone to a case which has terminated fatally. . . . It is a pity that the medical profession as a whole does not take some steps to make official and unofficial busybodies understand that the doctor has to live, that he is just as much dependent on his fees as any other professional man, and gets tired out, just as if he were an ordinary human being. We could quote cases of doctors being censured at inquests for having inquired before attending to a case whether there was a chance of being paid, and this by officials who never do a stroke of gratuitous work.

The thanks of the profession are due to the *Globe* for drawing public attention to the way in which medical practitioners are sometimes treated at inquests; and it is much to be regretted that a medical coroner should have shown so little sympathy with his professional brethren. Happily it is very unusual for a medical coroner to treat us in this manner.—I am, etc.,

London, N.E., April 10th. MAJOR GREENWOOD.

SECRET REMEDIES.

SIR,—If Dr. H. Langley Browne will turn to the section of the report of the Select Committee on Patent Medicines on "The Press and Secret Remedies" (page x) he will be made aware of the real attitude and conduct of newspapers and periodicals. He will see that the Committee distinctly challenged them to discuss the report, remarking that "the extent to which criticism of secret medicines is excluded from the press may probably be judged by any one who will take the trouble to see how much attention is bestowed by the newspapers upon your Committee's report." As a matter of fact, the *Times* alone, among daily papers, devoted a short paragraph to it. The *New Statesman*, among the weeklies, discussed it in an admirably lucid article, and published a letter from me on the subject in the following number. Dr. Langley Browne will find in the same section of the report a probable explanation of the attitude of the great bulk of the press. He will see that they are dividing among them an annual income of more than £2,000,000 from advertisements of secret remedies. This amount does not include the vast sum derived from the advertisements (I quote the report) "of swindlers like Macaura, the 'eye quacks,' the 'deaf quacks,' the cancer curers, the consumption curers, the electric belt makers, the curers of rupture without operation, or 'fakirs' generally."

If Dr. Langley Browne will turn to the Minutes of Evidence, he will find proof of the fact that the majority of leading papers are fully alive to the nefarious character of this traffic. This conduct of the bulk of the foremost papers of the day has justified all those of inferior grades. If a high-class paper admits quack puffs, distinguished merely by the sign "*Advt.*" at the foot, inferior papers, for a price, will print them as editorial paragraphs.

Nothing can be done to remedy these evils until the war is over and Parliament has resumed its normal functions. Then much will depend upon the temper of the people and of their representatives. If any real good is to come out of the war, it can be alone in the elevation of national

ideals; in a determination to face the problems of social amelioration; and to find and root out the fundamental causes of all the foul sores that at present disfigure the body politic. Among these sores the effects of medical quackery are not those least conspicuous. The report of the Select Committee has demonstrated for the first time authoritatively the overwhelming strength of the case, and the urgent need for drastic reform. It will rest mainly with the Association whether at the proper time the case is brought to the front without delay, and, if possible, carried to a satisfactory conclusion.—I am, etc.,

Earlswood Common, April 10th. HENRY SEWILL.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

SIR,—Since the war broke out, and it at once became obvious that the German stock of salvarsan and neo-salvarsan in this country would soon run out, I have been experimenting with the chemiotherapy of syphilis, and have been through the literature, including all the patents, which had up to July of last year been published. With the knowledge gained therefrom I feel I ought in the public interest to criticize the matter which appeared in your last issue under the above heading.

The secretary of the National Medical Research Committee states that the products now obtainable in this country are chemically identical with salvarsan and neo-salvarsan, and that they differ in no respect from Ehrlich's original products, either in their final constitution or in the details of their preparation. Because the drugs are chemically identical it does not follow that they are similar in other respects. The chemical formula of natural salicylic acid is the same as that of the synthetic product; they are not only different to look at, but the therapeutic action is not the same. The chemical formula of adrenalin is the same as that of the synthetic suprarenin, but the physical properties of both are diametrically opposite. It is quite impossible to say that the final constitution and the details of preparation are the same, because how salvarsan is prepared is unknown outside Hoechst, and the patents are so drawn up as to intentionally deceive, as I have already found to my cost. Furthermore, I believe that the German products are not prepared in the same way as they were when the patents were taken out. The two firms mentioned cannot supply the demand, which probably means that the yield of the finished article from the material used is infinitesimal. This was a difficulty that was experienced when salvarsan was first made. The smaller the yield the less complete is the linkage of the arsenic. As the arsenic in salvarsan is non-metallic in its properties and is in a perfect colloidal state, it means that when the linkage is incomplete the arsenic is not so colloidal, and therefore partly metallic in its properties, with the result that the preparation is toxic. Dioxydiaminoarsenobenzol, when first made, was highly toxic; the "ideal" and "hyperideal" that superseded it had also to be shelved; then came salvarsan, which was to all intents and purposes innocuous. Those who have used "606" on a large scale must have noticed that the drug has become less potent (a ratio, within limits, exists between toxicity and potency); the change appears to me to have taken place about the beginning of 1912. The chemical formulae of all the products just mentioned are identical, but their mode of preparation is different, and as these differences have never been published, but kept an absolute secret, it is impossible to say that the products now obtainable are prepared in the same way as the German products. From the experience I have had of the drugs referred to in the National Medical Research Committee's communication, I would say that they are even more toxic than the dioxydiaminoarsenobenzol (ideal).

Unfortunately, the biological controls are valueless, because animals are not so susceptible to chemical poisons as man. Even among animals the greatest variation exists in their individual idiosyncrasies. All arsenical compounds exert a much greater toxic effect on cats than on dogs. If the difference is so great between two animals not far removed from one another, how much greater must it be when man is compared with rabbits and mice. The "dosis tolerata" of the various German preparations to which I have alluded differed extremely little, and one product did not supersede the other because of the knowledge gained from animal experiments, but because of the toxic effects the earlier ones had upon man, and because a more satisfactory method was found of getting a bigger yield of the drug. I am firmly of the opinion, from the several very toxic effects I have seen follow the use of the new products, that the successful manufacture has not been solved, and that the medical profession would be well advised to await the reports of clinicians before using the products, even if they have been passed by scientific workers, and submitted to the strictest laboratory controls. The products are not, as stated, fully up to the standard of the best German samples previously sold.

While on the subject of chemiotherapy I should like to say a few words on another aspect of it. The German patents are so drawn up that they would be infringed by any one manufacturing an arsenic compound at all resembling salvarsan. This practically excludes any observer in the British Empire and in the United States of America from attempting to improve upon salvarsan. French law forbids the patenting of a drug; therefore in France not only may salvarsan be made, provided the name is changed, but any product manufactured, differing only a little from it, becomes a French invention; hence the reason why ludyl and galyl have seen daylight. It is hardly likely that the war will last long enough to allow of the making of salvarsan and neo-salvarsan up to the standard of the German articles, or of a product superior to them. Unless this is the case, it is highly probable that following the cessation of hostilities, should a superior product be manufactured, it will mean infringement of the German patents. Could not therefore the National Medical Research Committee bring pressure upon the Government to institute in the British Empire such a state of affairs as exists in France?—I am, etc.,

London, W., April 10th. J. E. R. MCDONAGH.

*** We publish Mr. McDonagh's letter, because it is well that the grounds for the doubts he expresses should be considered; he does not, however, convince us that they are well founded. We do not know what he intends to convey by the statement that "when the linkage is incomplete the arsenic is not so colloidal." The memorandum of the Research Committee mentioned that the arsenic in salvarsan should be in a highly reduced state, and that if it becomes oxidized the oxidization product is toxic. But this danger has, we understand, been obviated. Nor do we think that Mr. McDonagh's observations as to the therapeutic actions of natural and artificial salicylic acids apply when a perfectly pure artificial product is used. As to adrenalin and synthetic suprarenin, when the latter is first made it consists of optically opposite isomers, but if these are separated and the lævo-rotatory compound only used we believe that its action has been found to be identical with the natural product. With regard to the patent specifications, it would only be in accordance with a general characteristic of German patent specifications for making chemical products if those for salvarsan did not disclose the whole process. This, however, does not necessarily preclude other workers from ascertaining by experiment all that is necessary to produce a perfectly satisfactory article.

TREATMENT OF DRY PLEURISY BY TEMPORARY PARTIAL ARTIFICIAL PNEUMOTHORAX.

SIR,—I am glad to see that Dr. Claude Lillingston has noticed my short contribution to the JOURNAL of April 3rd. His letter gives me the opportunity of expressing to him my gratitude for having initiated me into the technique of the operation and having thereby opened up for me a new and extremely interesting field of therapeutics.

On general principles I entirely concur with the opinion he expresses as to the desirability of maintaining an artificial pneumothorax for a considerable period. I should have almost been inclined to prolong the period he mentions, namely, one to two years. With regard to the particular case I reported in the JOURNAL, if Dr. Lillingston will refer to my article he will see that the pulmonary disease was on the *left* side, and that the temporary artificial pneumothorax was induced on the *right* side, solely with the object of relieving the pain of the pleurisy on that side. When relief had been given, I concluded the treatment, as in my opinion, to have maintained the

pneumothorax in the absence of any signs of active intrapulmonary disease on that side would have been to have run an entirely unjustifiable risk of exciting an effusion of fluid with its accompanying discomforts and dangers.

I may add that I saw the patient, whose case I quoted, last week, two months after her discharge. She had been entirely free from any recurrence of pain and was in excellent health.—I am, etc.,

Banchory, April 10th. GEOFFREY LUCAS.

SHOULD ALL BULLETS AND PIECES OF SHELL BE REMOVED?

SIR,—In view of occasional statements that these should be removed only if and when they cause trouble, the frequency of readmission of such cases as the following in a morning's work show is instructive:

1. 2,577; wounded on March 20th. *X* rayed at Havre and a rifle bullet located deep in neck. No pain from presence of bullet at that time. Advised to leave things alone. Sent home with wound quite healed. On admission here (from dépôt where he reported sick) some pain on rotation and extension of the neck, and both movements limited. Again *x* rayed, and rifle bullet seen deep on left side, one inch from second and third cervical spines and lying with its sharp point vertically upwards. Bullet easily removed from pocket of sterile fluid under local anaesthesia.

2. 8,427; bullet entered left thigh above head of femur on November 5th, 1914. *X* rayed in a general hospital and bullet located. Again *x* rayed at local hospital on return to dépôt. At both places advised that no operation be done, owing to depth of bullet and a minimum of pain. Admitted here on certificate of regimental doctor, who refused to send him to France unless the bullet, which was now giving some trouble, was removed. Again *x* rayed and shrapnel bullet located at base of bladder. Severe pain on sitting and when micturating. Bullet removed per rectum under spinal anaesthesia.

3. 7,592; wounded October 25th. *X* rayed in a general hospital. Piece of metal in back, said to be too deep for removal without grave risk. No local pain at that time. *X* rayed on admission here. Piece of shell ½ in. square lying behind lower end of right kidney, 2½ in. to right of first lumbar spine and 2¼ in. deep. Pain referred to left kidney, as well as some discomfort on right side of pressure. Removed under local anaesthesia.

4. 10,094; wounded November 7th. *X* rayed in a general hospital and skull trephined over right frontal bone. Piece of skull wanting. Admitted here for severe headaches and dizziness, due, he said, to piece of shell in brain. *X* rayed, and piece of metal seen inside and close to skull near trephine opening. Operation delayed for exact localization. The piece of shrapnel has since been removed.

Many cases such as above have come under my notice recently, where the reason for non-removal has been the danger to the patient owing to the depth of the bullet or piece of shell. Surely the danger of removal depends as much on the skill of the surgeon as on the depth of the bullet. There are few places in the body that cannot be reached with safety nowadays by many surgeons, and the services of such are at present available to the soldier in general hospitals throughout the country. These cases should not be sent from such hospitals with an equivocal opinion as both time and money are wasted, besides the loss of many trained soldiers urgently needed at the present moment. Removal ultimately will be insisted on before the soldier is deemed fit for expeditionary work. Finally, it is as easy to malinger with a harmless (?) bullet, as with a harmless varicocele for an excuse; and what price his pension when war is over, no matter how inoffensive these pieces of metal may appear to the "*noli me tangere*" surgeons?—I am, etc.,

A. DON, F.R.C.S.,
Captain R.A.M.C.(T.)

1st Scottish General Hospital, Aberdeen, April 8th.

GENERAL ANAESTHESIA FOR EYE OPERATIONS.

SIR,—I write to correct an error in Dr. Harrison Butler's paper (BRITISH MEDICAL JOURNAL, April 3rd, p. 591), in which he incorporated some of the remarks made by those who took part in a discussion on it. He states that I regarded A.E. mixture as the best anaesthetic for eye work. This should be the mixture of chloroform and ether, E_2C_1. The mixture he mentions I have never used, and I believe it is seldom, if ever, used by any one nowadays.

Dr. Harrison Butler states that the addition of ether slightly diminishes the danger of chloroform. In this he underestimates the value of the ether, I am sure, and this has already been pointed out by Mr. Whiting, to whom he refers. During the years 1905 to 1912 inclusive, at the General Hospital, Birmingham, the following was the mortality from the chief anaesthetics given:

In 5,158 administrations of chloroform there were			14	deaths.
,, 8,533	,,	,, E_2C_1	,, ,, 4	,,
,, 1,024	,,	,, Ether	,, ,, 3	,,
,, 650	,,	,, E_2C_1, ether	,, 2	,,
,, 2,469	,,	,, Ethyl chloride, ether	1	,,
,, 3,971	,,	,, Ethyl chloride	...	No deaths.
,, 2,783	,,	,, NO	... ...	No deaths.

These statistics certainly speak well for the E_2C_1 mixture. Considering that some of the deaths occurred in patients very seriously ill and a few moribund, and that the anaesthetics were administered not only by expert anaesthetists but also by house-surgeons, the mixture comes out exceptionally well. Dr. Harrison Butler does not quote statistics against E_2C_1, but perhaps he has some to support his views, which he owns are prejudiced.—I am, etc.,

R. BEATSON HIRD, M.D., F.R.C.S.E.,
Honorary Ophthalmic Surgeon The General Hospital, Birmingham; Assistant-Surgeon, Birmingham and Midland Eye Hospital.

Birmingham, April 6th.

COLOUR VISION THEORIES.

SIR,—When I wish to ascertain the basis of a man's theory I invariably study the first edition of his work, which obviously gives the basis of his views. In the first edition of Helmholtz the fundamental basis of the Young-Helmholtz theory is given in a paragraph on page 291; this paragraph does not appear in the second edition, as it would be quite incompatible with the interpolation.

Mr. Greenwood states that the theory makes no suggestion as to the nature of the fundamental processes, but in the first edition two pages are devoted to this suggestion, and a diagram is given. These two pages are 292 and 293. In the second edition the whole is removed with the exception of three lines of page 292 and four and a half of 293. In the third edition the interpolation alluded to is removed, and the omissions on pages 291, 292, and 293 restored. Mr. Greenwood should read the preface to the third edition. He states that the facts I advanced do not disprove the theory. I have discussed these with the leading workers of the world on the subject, and no one has previously disputed their force. It would greatly interest me to hear how Mr. Greenwood can reconcile them with the theory. I am inclined to think that he will find this more difficult than making the assertion.

I quite agree with Mr. Percival that "although a combination of two lights of different wave lengths may give rise to the same psychical perception of greenish-yellow as a spectral light of that colour, we have no right to assume that the preceding changes in the retina are the same in the two cases." The trichromatic theory, however, makes this assumption, and that is why any explanation of the Benham top on the trichromatic theory is untenable. On the trichromatic theory pure spectral greenish-yellow light is supposed to excite the fundamental red sensation strongly, and there is no evidence to support this. Mr. Percival has made no attempt to support his allegations. I again call upon him to do so or apologize.—I am, etc.,

London, N.W., April 10th. F. W. EDRIDGE-GREEN.

WASTE AND OVER-EATING.

SIR,—With reference to Dr. E. Lloyd Owen's letter in the JOURNAL of April 3rd I would point out that in this twentieth century it is impossible for any medical man to be hypercritical concerning authoritative laudatory statements disseminated regarding the economic and dietetic values of any foodstuffs, inasmuch as manufacturers, in advertising food products in which they are immediately concerned and interested, are ever eager to avail themselves of any authoritative pronouncement which will further their ends.

Physically as well as mentally we become what we are because of the character of the things upon which we feed, and it is not a matter of indifference what sort of fat we live upon, neither is it a matter of indifference what sort of starch nor yet what sort of protein we ingest. To-day our mode of living is unfortunately altogether too artificial, and it is on this account that the resisting powers of our bodies are being so lowered that we have to

resort to artificial methods for lessening our susceptibility to the action of many pathogenic organisms.

There exists, for example, a prevalent idea that margarine, which is a food product of recent years, is as wholesome and nutritious as butter. This, however, is quite a fallacy, for the vegetable fats which enter into the composition of margarine are, as I have on many occasions stated, less easy of digestion than milk fat. In the intestine there is a marked tendency for vegetable fats like palm oil, cotton-seed oil, and earth nut oil to combine with the calcium in our foods and form calcium soaps which cannot readily be utilized, and thus the body is deprived of calcium, which it can ill afford to lose, since the dietary of to-day is already very deficient in lime salts. Moreover, those same oils, which enter so largely into the composition of margarine, when assimilated tend to stagnate in and overload the liver. Fats, therefore, which are thus prone to exert a prejudicial influence, should be partaken of as sparingly as possible, even by the persons "with normal digestions" Dr. Owen refers to, for the day of reckoning is likely to come even to them.—I am, etc.,

London, W., April 2nd. JAMES OLIVER.

SIR,—Like Dr. Oliver, I was rather surprised at some of the statements made on "waste and over-eating" in the JOURNAL on January 30th.

Some considerable time ago it was pointed out in the JOURNAL that the great difference between butter and margarine was that butter contained "phosphorized fats," while vegetable oils did not. In the case of the parents of rickety children I have frequently quoted this statement in advising them to give the children butter and to avoid margarine. It seems a very reasonable point. The question is of importance, as margarine makers will soon quote the JOURNAL in favour of their non-phosphorized fat oil products with, I presume, bad results to rickety children. Other statements in the "just as good" article have been criticized by Dr. Oliver and doubtless by others who read it.—I am, etc.,

Edinburgh, April 3rd. JAMES CAMERON.

WORK AS MIND CURE.

SIR,—I have read with interest your leader in the JOURNAL of April 3rd, telling of the attempt in Washington, which has lasted three years, to ascertain how work is so beneficial to lunatics. For the credit of British medicine I hope you will allow me to call attention to the fact that for many years past, in the Psychological Section at the annual meetings, I have repeatedly called attention to the fact that making lunatics work had greatly improved the statistics, and that if they were properly dieted our asylums might soon be emptied; I have proved in my book, which I ventured to call *A Doctor's Discovery* (for, although not new, it was quite original on my part), that food is the chief cause of disease, and that exercise, which eliminates waste products from the system through the skin and lungs, is the only "elixir of life." If I am right, it follows that manual labour, apart from resting the higher nerve centres, clears the brain through insensible perspiration. One man in this village who heard voices and was very nearly insane followed my advice as to diet and improved so much that he never heard a voice and was much more fit physically. I tried to get an asylum superintendent to diet his patients as I might suggest, but, to my astonishment, I learnt that, although he might physic them as he pleased, he dare not feed them as he thought right. If I am correct in blaming food as the cause of insanity as well as gout, etc., it is time that our asylum superintendents had as much liberty as the general practitioner or hospital physician with regard to the dietary of his patients, and that is a subject which the Association might take up.—I am, etc.,

Denholm, Hawick, April 8th. JOHN HADDON, M.D.

LICE.

SIR,—Although the first edition of my little book, *The Minor Horrors of War*, was a large one, a second edition is already being called for.

As I am anxious to make the book as useful as possible, I should be grateful if any medical man who has had actual experience in dealing with *Pediculus vestimenti* and *Pediculus capitis*, and who knows of remedies other than those mentioned in the first edition, would communicate with me.—I am, etc.,

Christ's College Lodge, Cambridge, April 12th. A. E. SHIPLEY.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on March 24th.

Personnel of the Senate.

Dr. H. L. Eason and Sir Wilmot Herringham have been reappointed by the Faculty of Medicine to be members of the Senate, and Professor A. D. Waller, F.R.S., has been reappointed a member by the Faculty of Science.

University Chair of Physiology (St. Bartholomew's).

Applications are invited for the University chair of physiology tenable at St. Bartholomew's Hospital Medical School, salary £600 per annum. Full particulars can be obtained from the Academic Registrar at the University, by whom applications must be received not later than the first post on May 3rd.

Presentation Day.

The presentation of graduates will take place at the University at 3 p.m. on Wednesday, May 5th.

University Studentship in Physiology.

A university studentship in physiology, value £50, for one year, and tenable by a matriculated student or graduate of the University in a physiological laboratory of the University or a school thereof, will be awarded to a student qualified to undertake research in physiology. Applications to be sent to the Principal by May 31st, from whom full particulars can be obtained.

Advanced Lectures on Physiology.

Dr. T. G. Brodie, F.R.S., Professor of Physiology in the University of Toronto, will deliver a course of four lectures on the gases of the blood in the Physiological Laboratory, King's College, at 4.30 p.m. on May 31st, June 2nd, 7th, and 9th. The lectures are free to medical students, to internal students of the University, and to medical men on presentation of their cards.

Fellows of King's College.

Sir Arthur William May, K.C.B., Medical Director-General, R.N., and Sir Arthur T. Sloggett, K.C.B., C.M.G., Director-General, Army Medical Service, have been appointed Fellows of King's College.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on April 8th, when Sir W. Watson Cheyne, Bt., President, was in the chair.

The Cataloguing of the Museum.

The Council passed a vote of thanks to Mr. Arthur H. Cheatle for his presentation of a large collection of specimens illustrating the surgical anatomy of the temporal bone, and expressed their high appreciation of his services in arranging and cataloguing the whole series of otological specimens.

The thanks of the Council were given likewise to Mr. Alban Doran for his valuable services in arranging and cataloguing the obstetrical and gynaecological instruments in the museum.

Jacksonian Prize.

The Jacksonian Prize was awarded to Mr. Jonathan Hutchinson for his dissertation on the pathology, diagnosis, and treatment of trigeminal neuralgia.

The following subject was selected for this prize for the year 1916: "The Methods and Results of Transplantation of Bone in the Repair of Defects Caused by Injury or Disease."

John Tomes Prize.

The Tomes Prize was awarded to Mr. J. F. Colyer.

Begley Student.

Mr. J. C. Collins was appointed Begley student for the ensuing three years.

Election of Two Fellows.

The following Members of twenty years' standing were elected Fellows: Mr. F. G. Larkin, Grove Park, Kent, and Professor J. Symington, Belfast.

Representatives.

Sir Alfred Pearce Gould was re-elected to represent the College on the Senate of the University of London for the ensuing three years. Mr. G. Bellingham Smith was appointed to represent the College on the Managing Committee of the British Hospital, Woolwich, for Mothers and Babies.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the meeting of the President and Fellows held on April 9th Dr. James Joseph Aloysius Gannon (Tranmore, co. Galway) was duly elected to the Fellowship.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—Janet A. A. Sang, W. B. Stott, Rebecca Goodman, Muriel Keyes, N. B. Watson, A. F. Briglmon. *Passed in Physics:* M. Gottschalk, J. K. Steel, T. F. Thomas. *Passed in Biology:* J. B. Singh, T. F. Minford. *Passed in Chemistry:* G. S. Woodhead, A. F. Caddell, J. L. Gibson, R. F. Kerr, T. F. Minford.

SECOND COLLEGE.—*A. I. Meek, J. B. W. Telford, M. Talaat, P. J. Murnane, Janie I. McBirnie, Agnes E. Keen, A. H. B. Hudson. *Passed in Anatomy:* L. MacDuff, E. L. Adendorff, E. B. Bronstorph. *Passed in Physiology:* D. C. Howard, H. A. Madwar, R. G. Bell.

THIRD COLLEGE.—Z. A. Green, J. A. Murray, J. A. Tolmie, J. F. Campbell, F. C. J. Mitchell, I. Davies, E. A. Hamilton, Martha H. Hoshing, Phoebe Tripp, F. Jones, P. Vertannes. *Passed in Pathology:* I. Borrah, W. McElroy, S. W. Hoyland.

FINAL.—A. Craig, W. L. Coullie, V. J. Wilson, Bak Hin Ong, A. O. Olaribigbe. *Passed in Surgery:* C. E. Meryon, J. M. Hiddleston, J. S. Dickson. *Passed in Midwifery:* N. B. Morris, C. E. Meryon, J. M. Hiddleston. *Passed in Medical Jurisprudence:* M. McL. Bainbridge, J. P. Mathie, W. Ainsley, A. G. McKee, D. C. M. Page, A. W. McGregor, W. A. Backenstoe, P. L. Manuel, R. C. W. Spence, W. J. F. Craig, E. Spence.

* With distinction.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following were approved at the examination held at the end of the forty-seventh session of the school:

*G. Campbell, †W. L. Peacock, †R. Bruce-Low, E. Banos, M.D., †W. J. J. Arnold, P. T. Patel.

* Dr. Campbell, who passed with distinction, has been awarded the "Duncan" Medal of the L.S.T.M., this being awarded to the student who obtains the highest aggregate of marks during the session.

† Colonial Medical Service.

Obituary.

HENRY LEWIS JONES, M.A., M.D., F.R.C.P.,

CONSULTING MEDICAL OFFICER, ELECTRICAL DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL.

THE death of Dr. H. Lewis Jones, which took place on Easter Sunday, on the eve of his 58th birthday, removes an outstanding figure from the ranks of those who have applied electricity to medicine.

Henry Lewis Jones was the son of the Rev. Henry Jones, chaplain, R.N., and was born at Sheerness in 1857. He received his early education at Shrewsbury School; from there he proceeded to Caius College, Cambridge, as Tancred scholar, and afterwards obtained an open scholarship at the same college. He graduated B.A. in 1879, obtaining a first class in the Natural Science Tripos. He proceeded to St. Bartholomew's Hospital as entrance scholar in 1879, and took the diploma of M.R.C.S. in 1881. He was house-physician to Dr. Gee from April, 1883, to April, 1884, his assistant demonstrator in physiology from October, 1886, for three years, and was then appointed full demonstrator, and held this post for one year. He was casualty physician for two years from June, 1887, and assistant medical tutor from 1890 to 1891. He graduated M.D. in his university in 1887, and was elected a Fellow of the Royal College of Physicians in 1894.

On the death of Dr. Steavenson in 1891 Dr. Lewis Jones was elected his successor as medical officer in charge of electrical department at St. Bartholomew's Hospital. Those who remember the indifference and even the contemptuous attitude towards the use of electricity in medicine in those days and its restricted field and will compare its position at the present day, the continuous widening of its field of application, will realize the debt that is owing to the man who made such a development possible, and recognize in him the founder of the English school of electro-therapy and its most influential teacher. In 1891, when Lewis Jones took charge of it, the department consisted of a single one-roomed building divided by partitions into a lobby, in which the patients waited, and three other parts; one contained an electric bath (for many years this was the only bath of its kind in London), another apparatus for testing and treatment, and an operating table for treatment by electrolysis, and the third was used as a consulting-room. The electric current was derived from cells. There were three batteries, each containing sixty cells. When Lewis Jones retired from the active staff of St. Bartholomew's, twenty-one years later, the department contained four large light and airy rooms and two others which were used for *x* rays. These rooms were fitted with every modern device for treatment by electricity. There were eight electric baths, and both the direct and alternating currents from the mains were supplied to the rooms.

It is not possible here to do more than mention the more important work that Lewis Jones did for medical electricity. When electric lighting of the streets was introduced he began to use the current from the mains in place of that supplied by the batteries. Recognizing the danger attending the use of the *direct* current from the mains for electric baths, he introduced the use of the sinusoidal current from the alternating current mains. The current that passes through the baths is induced by that traversing the mains, and is on a quite independent circuit, so that dangers from short-circuiting and from imperfect insulation of the bath are avoided. A very large number of cases of paralysis attended the department for electrical bath treatment, and when once the current was switched on to the baths in suitable strength no further attention was required. Lewis Jones was the first in this country to recognize the importance of rhythmic variation in the strength of electrical currents when used for treatment and to adopt this principle for their application.

In the matter of the output of induction coils Lewis Jones made a contribution as important for physiological research as for medical treatment. He obtained oscillographic records of the discharge waves of induction coils, and showed that, far from being instantaneous, as had been taught, they were in most coils comparatively slow, varying profoundly in different coils, and even in the same coil from time to time. He showed how important was the knowledge of the form and duration of the discharge waves, if painless muscular contractions were to be produced during treatment, and if accurate results were desired in testing the reactions of muscles.

He introduced the ionic method of treatment into England, and read the first paper on the subject on the treatment of rodent ulcer by zinc ions in 1907. He introduced diathermy into this country in 1911. At the beginning of 1913 he introduced a new and practical method of testing the reactions of muscles by condenser discharges—a method which is much more accurate than the old, and is likely to lead to new knowledge on the subject of the degeneration of muscles and nerves. He also introduced a method of treatment by condenser discharges.

Lewis Jones taught that electricity, when used as a therapeutic agent, acted either by the chemical (ionic) effects which it produced or by its thermal effects, and so cleared the field of electro-therapy of the mist and obscurity which formerly surrounded it, and placed it on a firm foundation. He was a skilled physicist as well as an able physician, and was an associate of the Institute of Electrical Engineers.

Ten or twelve years ago he was the guiding spirit of the British Electro-therapeutic Society, its president for 1903 and 1904, and the editor of its *Transactions*. A few years later, largely through his instrumentality, a special section was devoted to electro-therapeutics in the newly-formed Royal Society of Medicine, and into this section the older society resolved itself. In the same year, 1907, an electrical section first formed a part of the annual meeting of the British Medical Association held at Exeter. Dr. Lewis Jones was the president of that section, and vice-president of the similar section at the London meeting in 1910.

He acted as official delegate for the British Government to the International Congress of Physiotherapy at Liége in 1905 and in Paris in 1910.

His book, *Medical Electricity*, now in its sixth edition, has been for many years the standard English work on the subject. He also wrote a book on *Ionic Medication*.

Dr. Lewis Jones contributed many papers to the BRITISH MEDICAL JOURNAL, and we had the great advantage during a number of years of his advice in dealing with books and articles on subjects affecting medical electricity. He also contributed to Allbutt and Rolleston's *System of Medicine*. The last paper he wrote was, we believe, that which he read before the Röntgen Society a few months ago on the retinal effects of an alternating magnetic field. He was then obviously ill, but, as always when discussing electrical phenomena, he forgot his indisposition while demonstrating the flickering sensation induced by the passing of the current.

Lewis Jones was always keenly interested in aquatic sports and loved the sea. He stroked one of his College

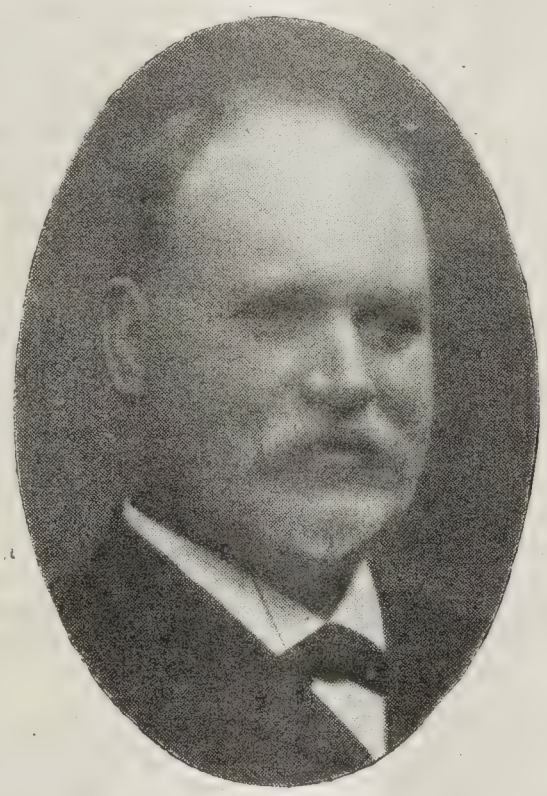
eights at Cambridge, and during his earlier years at Bartholomew's he owned, with the late C. B. Lockwood, a small sailing boat, in which he used to cruise along the estuary of the Thames. His book, *Swim, Swale and Swatchway*, is familiar to those interested in the sport. In his later years he was interested in gardening, and he used to cultivate rarer plants at his country house at Bradford-on-Avon, in Wiltshire.

He married, in 1896, the eldest daughter of Count H. H. von Platen-Hallermund. He had one child, a son, who was a midshipman on board H.M.S. *Hawke*, and went down with that vessel when she was sunk in the present war. His health had gradually been failing for some time, and the loss of his son was an irreparable blow, from which he did not rally.

CHARLES MACFIE, M.D.,

BOLTON.

It is with deep regret we have to announce the death of Dr. Charles Macfie, the senior member of the medical profession in Bolton, who died on March 25th, in his 66th year. He was born at the farm of Lower Ettrick, in the Island of Bute, in 1849. He received his literary education at Rothesay Academy, where he won a gold medal and other honours. He entered the University of Edinburgh as a student of medicine in 1866 and took the degree of M.B. in 1870. In the same year he obtained the diploma of L.R.C.S.Edin. In 1874 he proceeded to the degree of M.D., the title of his thesis being "The Lancashire Cotton Operative of the Present Day." After qualification he acted for a time as assistant to Dr. Soutar of Golspie; afterwards he went to Bacup in Lancashire and later to Blackburn. Forty years ago he settled in Bolton, where he had a large practice, and won the esteem and confidence of his own profession and the public. For many years he represented Lancashire and Cheshire in the Central Council of the British Medical Association, and he was one of the most popular presidents the Lancashire and Cheshire Branch ever had. In 1906–7 he was president of the Manchester Medico-Ethical Society. He was honorary secretary of the first medical society which was started in Bolton about thirty-five years ago. After a few years it lapsed, and a short time afterwards he helped to found a new society which is now flourishing. Dr. Macfie married Miss McNicol in 1882, and is survived by a daughter.



CHARLES MACFIE.
(Photograph by N. S. Kay, Bolton.)

The body was cremated at Chorlton-cum-Hardy, near Manchester, on March 30th, and at the same time a memorial service was held at St. Andrew's Presbyterian Church, which was attended by a large congregation, including many of Dr. Macfie's professional brethren. The Rev. T. McGregor, who conducted the service, said Dr. Macfie as a physician was admired and trusted from the beginning of his career in Bolton for the care and thoroughness which he brought to the performance of his work, for his mature experience and perfect straightforwardness. He always kept his mind open to the developments of medical science.

Mr. T. W. H. GARSTANG writes: I had known Macfie for ten years or more, meeting him regularly at one or other of the local professional societies to which we both belonged, but was most closely associated with him from 1908 to 1910, when he was a member of the Council of the British Medical Association. He also served on the Ethical Committee, 1908–9, and on the Medico-Political Committee 1909-10, and on various subcommittees of the latter. If I sum up my feelings towards him in one word, I would say he was an eminently "lovable" man. First, he compelled respect by his distinguished qualities as a medical practitioner, and by his unbending honesty of purpose in every matter which he undertook; but this was soon lost in the warm personal friendship which sprang from recognition of the nobility and generosity of his character as a man and as a colleague. His fund of native humour, too, rendered him a most pleasant companion. I mourn his loss personally as I would that of a brother, and the Association is deprived of one of its most loyal and honourable members.

WILLIAM ARTHUR BRAILEY, M.A., M.D.CANTAB.,

CONSULTING OPHTHALMIC SURGEON, GUY'S HOSPITAL.

DR. W. A. BRAILEY, who was so long connected with the Ophthalmic Department of Guy's Hospital, died in London on April 8th, in his 70th year, after a few days' illness.

William Arthur Brailey was the son of the Rev. William Brailey, and was born in 1845 at Uttoxeter. He was educated at Woodhouse Grove School. He passed the London Matriculation Examination with first-class honours at the age of 16, and obtained an open scholarship at Downing College, Cambridge. In 1867 he was second in the first class in the Natural Science Tripos. In 1866 he took the degree of B.A.Lond., having gained an exhibition in biology in that university in 1865. In 1871 Brailey graduated M.B. in the University of Cambridge, and in the same year was elected a Fellow of Downing College. He proceeded to the degrees of M.A. and M.D. in 1874. In 1873 he married Agnes, daughter of Mr. John Robertson.

After a brief experience in general practice at Witham, Essex, Brailey took up work at the Moorfields Eye Hospital, and was appointed registrar and curator. While there he formed the friendship with Sir William Bowman which ended only with the latter's life. Brailey was also lecturer on comparative anatomy at Guy's Hospital. At a later period he received the appointment of assistant ophthalmic surgeon to Guy's Hospital, and his connexion with that great institution continued to the end, for at the time of his death he was consulting ophthalmic surgeon to the hospital. He was for many years one of the most distinguished members in London of the speciality to which he devoted himself. To the consideration of new theories in pathology and treatment he brought to bear a natural critical acuteness of mind, tempered by the long practical experience he had gained as curator of the museum at Moorfields, and in the ophthalmic department of Guy's Hospital. He contributed many papers to the reports of the Royal London Ophthalmic Hospital and to the *Transactions* of the Ophthalmological Society, dealing especially with sympathetic ophthalmitis, a subject which seemed specially to appeal to him. He was Hunterian professor at the Royal College of Surgeons of England in 1885–86.

In 1880 he took a prominent part with Bowman, Hutchinson, Nettleship, and others in founding the Ophthalmological Society, in which he filled every office except that of president. Dr. Brailey was secretary of the Section of Ophthalmology of the annual meeting of the British Medical Association in 1880, when it met at Cambridge, vice-president of the Section in 1884 and 1895, when the meetings were held in Belfast and London respectively, and president of the Section at the Ipswich meeting in 1900. The Middlemore Prize was awarded to him (jointly) by the British Medical Association in 1890. His last was by no means his least distinction; for he was appointed honorary Fellow of Downing College, Cambridge.

Dr. Brailey's two sons are both in the medical profession. The elder is working with the army, and the younger with the navy. Dr. Brailey is survived by his widow.

The interment took place at Warbleton, Sussex, on April 11th.

SIR JOHN LENTAIGNE, F.R.C.S.IREL.,

SURGEON, MATER MISERICORDIAE HOSPITAL, DUBLIN.

THE sudden and unexpected death of Sir John Lentaigne came as a shock to the medical profession in Dublin, and, indeed, throughout all Ireland. He had been suffering from an attack of influenza for some days, but he had not allowed that indisposition to interfere with his public work. The day before his death he had been attending to the wounded in the Castle Hospital. In this we find the keynote of his character: his hospital work and his duty to the sick poor always came first, and into these he threw all the zest and enthusiasm, of which he had an abounding supply.

Sir John Lentaigne's grandfather came from France at the time of the Revolution, and settled in Dublin as a medical practitioner. His father was the Right Hon. Sir John Lentaigne, P.C., C.B., D.L., F.R.C.S.Irel. Sir John Lentaigne himself was born in Dublin in 1855. He received his early education in Clongowes Wood College and Vannes, Brittany, after which he entered Trinity College, Dublin, and graduated B.A. in 1880. For the medical part of his education he went to the Catholic University School of Medicine. In 1881 he received the licences of the Royal College of Surgeons and of the Royal College of Physicians in Ireland. Five years later he was elected a Fellow of the College of Surgeons. Soon after he became qualified he was appointed assistant surgeon to the Richmond Hospital, and in 1883 he was elected visiting surgeon to Jervis Street Hospital, where he spent four strenuous years. He then went to the Mater Misericordiae Hospital, where his thorough, painstaking, and skilful surgery was a boon to the suffering until his death.

A glance at some of the appointments he held gives an idea of the esteem with which he was regarded by all classes. In 1908 he was elected President of the Royal College of Surgeons in Ireland, after having served on the council of that body for many years. He was surgeon to the household of the Lord Lieutenant, consulting surgeon to the Royal Hospital for Incurables, to the National Maternity Hospital, and to the Convalescent Home, Stillorgan. He was also medical visitor to the Court of Chancery in Ireland. Just after his two years of office as President of the Royal College of Surgeons expired, he received the honour of knighthood.

The outstanding characteristics of Sir John Lentaigne were his sincere geniality and sympathetic kindliness; where a word of encouragement was needed either by the newly-qualified practitioner or by a patient in hospital, Sir John spoke it, and one understood that it had behind it all the experience of a keen observer of life. No man abhorred lip service more than he did: a straightforward, sometimes blunt but always kindly, honesty permeated every statement either in public or private life. The loss which the medical profession in Dublin has suffered can not easily be repaired, but the benign influence which Sir John Lentaigne exercised in life will survive his death, and many whom he has encouraged will remember his example and try to keep his influence alive.

DR. BENJAMIN DAVID CRAIGIE BELL of Kirkwall, who died on March 31st at the age of 55, was a son of the late Sheriff-Substitute Bell. He was born in Shetland and educated in Edinburgh, where he was admitted a Licentiate of the Colleges of Physicians and Surgeons in 1884. In the same year he became assistant to Dr. Logie at Kirkwall. When Dr. Logie retired a few years later Dr. Bell succeeded him in a practice which extended throughout Orkney. He was medical officer for the Burgh of Kirkwall and medical officer to the parish councils of Kirkwall, Firth, Holm, St. Andrews, Deerness, and Orphir, to the Combination Poorhouse, Orkney; he was also visiting surgeon to the Balfour Hospital, medical officer to the Post Office, to H.M. Prison, Kirkwall, and also to the Elementary School Teachers (Superannuation) Act, 1898; surgeon to the North Lighthouse Commission, certifying factory surgeon, examiner St. Andrew's Ambulance Association, medical inspector under the Housing Act (1909), medical referee Workmen's Compensation Act. Dr. Bell was the author of contributions to the *Edinburgh Medical Journal* and to the *Scottish Medical and Surgical Journal*. As medical officer of the Burgh of Kirkwall he rendered enthusiastic and devoted services, and nothing pleased him better than to put into practice those deductive methods, which his cousin, Dr. Joseph Bell, of Edinburgh University, so impressed upon his students in tracing outbreaks of epidemic diseases to their origin. Dr. Bell was a member of the British Medical Association and a J.P. for Kirkwall. He leaves a widow to mourn his loss.

DR. ALEXANDER MAXWELL ADAMS, of Lanark, who died recently at the age of 78, was a son of Dr. A. M. Adams, who was Provost of Lanark from 1860 to 1878. He was born at North Berwick, and obtained the diploma of L.F.P.S.Glasg. in 1857, and that of L.R.C.P.Edin. in 1860. He became F.R.C.S.Edin. in 1875, and D.P.H. in 1890. He was the first medical officer of health for the Borough of Lanark; this position he held for thirty years. He was medical officer to the Lockhart Hospital and to the Lanark poorhouse. He took a keen interest in local public affairs, especially in education. He was a member of the Lanark School Board from 1885 till 1903, and served the office of chairman for two periods, from 1889 to 1891, and again from 1894 to 1903. He was for many years medical officer to the 3rd and 4th Battalions of the Scottish Rifles, retiring with the rank of surgeon-colonel. He was the author of contributions to medical journals on puerperal mania, chloral hydrate, and dislocation of the knee-joint.

AT Crieff, Perthshire, on March 31st, Dr. GEO. DUNCAN, of Reraig, Lochalsh, passed away in the 84th year of his age. He was a highly qualified and successful practitioner, and served the combined parishes of Lochalsh, Kintail and Glenshiel as medical officer for more than half a century. During that long period, Dr. Duncan laboured incessantly, often under very trying conditions and with a meagre return, for the good of the people. Crossing wild Highland lochs and raging torrents, he found them at times too high in flood to use his horse, and had to swing on a deer fence. Dr. Duncan was frequently called upon to perform serious surgical operations single-handed. On the occasion of his jubilee a presentation of silver plate, suitably inscribed, was made to him which showed the high esteem with which he was regarded. His kindly solicitude and conscientious services, especially among the poorer members of his extensive practice, will long be remembered with gratitude and affection, and the greatest sympathy is extended to his bereaved family.

SURGEON-COLONEL CHARLES PETER COSTELLO, Bengal Medical Service (retired), died of heart failure following bronchitis, at Wimbledon, on April 1st. He was born on June 25th, 1835, educated at the Carmichael Medical School, Dublin, and took the diploma of L.A.H.Dublin in 1856, that of L.R.C.S.Edin. in 1858, and that of F.R.C.S.Edin. in 1881. He entered the Indian Medical Service as assistant surgeon on February 10th, 1859; became surgeon on February 10th, 1871, surgeon-major on July 1st, 1873, brigade-surgeon on June 30th, 1886, and deputy surgeon-general on January 1st, 1889, retiring on January 1st, 1894. His war services comprised two expeditions on the North-West frontier of India, Ambeyla, 1863–4, forcing of the Ambeyla Pass, medal and clasp; and Jowaki, 1877–8, clasp; Afghanistan, 1878–80, Hissarak and Laghman Valley expeditions, medal; and the Manipur expedition on the North-East frontier of India in 1891, when he was mentioned in dispatches. His earlier service was spent chiefly in the Punjab Frontier Force. On promotion to administrative rank in 1889 he became principal medical officer and sanitary commissioner of Assam, and during his tenure of that office received a good service pension. In 1869 he married Miss Harkan, and leaves two sons, Dr. Charles Thomas Costello, of the West African Medical Staff, and Major Edmund William Costello, of the 22nd Punjabis, Indian Army, who won the V.C. on the Malakand in 1897, and who is now serving in the Persian Gulf; and two daughters.

LIEUTENANT-COLONEL WILLIAM HENRY GRAY, Bengal Medical Service (retired), died at Aberdeen on January 14th, 1915. He was educated at Aberdeen, where he took the degrees of M.B. and C.M. in 1886, and entered the

Indian Medical Service as surgeon on March 31st, 1888. He became major on March 31st, 1900, lieutenant-colonel on March 31st, 1908, and retired on October 24th, 1913. He served in two campaigns on the North-West Frontier of India, gaining a medal and clasp in each case—Waziristan, 1894-5, and Buner, 1897-8. Much of his service was spent in civil employ, in the Gaol Department of the North-West (now the United) Provinces, where for several years prior to his retirement he was superintendent of the Benares Central Gaol.

DR. STANISLAUS VON PROWAZEK, who succeeded Schaudinn as director of the department of protozoology in the Institute of Marine and Tropical Diseases at Hamburg, has died at Lima of typhus fever contracted in the course of a research on the pathology of that disease. He was a native of Austria, and studied under Ehrlich, Hertwig, and Schaudinn. He was aged 39.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Allison Maxwell, for many years professor of diseases of the chest and clinical medicine in the Central College of Physicians and Surgeons, and Dean of the Medical School of Indiana, aged 66; Dr. Arthur Mermod, professor of oto-laryngology in the Medical Faculty of Lausanne, author of numerous contributions to the literature of his speciality, notably on the treatment of cancer of the larynx by electrolysis, and on laryngeal tuberculosis, aged 62; Dr. William Grant Moore, formerly president of the Missouri State Medical Association, one of the founders of the Marion Sims-Beaumont College of Medicine, St. Louis, in which he was professor of the theory and practice of medicine and clinical medicine, aged 61; Dr. Notta, surgeon-in-chief to the Lisieux Hospital; Professor Robert von Olshausen, dean of the Medical Faculty of Berlin, and formerly director of the gynaecological clinics of Berlin and Halle; Dr. Louis Parisot, formerly representative of the Vosges in the French Senate; Dr. Luigi Pastro, Senator of Italy, who suffered five years' imprisonment at the hands of the Austrians for the active part he took in the struggle for Italian independence; Dr. Pilate, senior physician to the Hôtel-Dieu of Orleans and a corresponding member of the Société de Chirurgie; Dr. Hunter Holmes Powell, professor of obstetrics and paediatrics in the Western Reserve University, Cleveland, aged 71; Dr. Dudley S. Reynolds, professor of ophthalmology and otology in the Hospital College of Medicine, Louisville, from 1874 to 1901, aged 72; Dr. Schaer, of Berne, formerly professor of pharmacy and materia medica in the University of Strassburg, author of researches on the influence of hydrocyanic acid and chloral on ferments, seeds and spores, and of a study of the reactions of guaiacum, including a very delicate method for the detection and identification of blood stains; Dr. J. W. R. Tilanus, professor of clinical surgery in the University of Amsterdam, and the oldest of the representatives of surgical science in the Netherlands, aged 92; and Dr. John Farmer Winn, professor of clinical obstetrics in the University College of Medicine, Richmond, U.S.A., and for several years editor of the *Richmond Journal of Practice*, aged 62.

The Services.

ROYAL ARMY MEDICAL CORPS.

PROMOTION OF LIEUTENANTS.

THE Under Secretary of State for War has informed Sir C. Kinloch-Cooke, M.P., that it has been arranged that all Lieutenants in the Royal Army Medical Corps shall be promoted to Captains. This applies to the permanently commissioned officers in the Regular Royal Army Medical Corps already serving and not to the Royal Army Medical Medical Corps Special Reserve or Territorial Force. These promotions were made to adjust the due proportion of ranks when the Royal Army Medical Corps was enormously increased by the engagement of temporarily commissioned officers. No addition is being made at present to the number of permanent officers in the Royal Army Medical Corps, and officers appointed temporarily are engaged as Lieutenants, except in a very few special cases. The promotion of a proportion of Lieutenants, Royal Army Medical Corps Special Reserve, and the conditions of service of the officers of the Royal Army Medical Corps Territorial Force, are under consideration.

TEMPORARY COMMISSIONS: ALLOWANCES.

We are informed on inquiry that officers holding temporary commissions with pay at 24s. receive rations or an allowance of 1s. 9d. a day in lieu, but are not provided with fire, light, etc., the allowances in respect of these being included in the daily rate of pay.

Medical News.

THE Louis Livingston Seaman medal for progress and achievement in the promotion of hygiene and the mitigation of occupational diseases has been awarded to Major General William C. Gorgas.

THE Lord Chancellor has appointed Dr. J. O'C. Donelan, of the Richmond Asylum, to be Consulting Visitor in Lunacy for the County and City of Dublin, in place of Dr. Joseph O'Carroll.

THE Warren triennial prize, founded at the Massachusetts General Hospital by Dr. J. Mason Warren in memory of his father, is offered for the year 1916 for the best essay on some special subject in physiology, surgery, or pathology. Full particulars as to the prize, which is of the value of 500 dollars, can be obtained from Dr. Frederic A. Washburn, resident physician at the hospital.

AT a meeting of the Order of Medical Practitioners held at Bologna on January 31st, the propriety of the attendance of doctors at duels was discussed. In view of the difficulty of refusing medical aid to those wounded in duels, a resolution was finally passed that the medical profession should use every effort to bring about the abolition of the duel, which was characterized as inhuman and barbarous.

COURSES of instruction and demonstrations in practical bee-keeping will be given throughout the spring and summer months at the Educational and Experimental Apiary of the British Bee-keepers' Association, established in the Zoological Gardens, Regent's Park, with the financial assistance of the Development Commissioners. Full particulars can be obtained from the Secretary of the Association, Mr. W. Herrod-Hempsall, 23, Bedford Street, Strand, W.C.

THE doctors of Cuba who have received part of their professional training in Paris have formed a committee, having its head quarters at Havana, for the supply of cigars and other Cuban products to the French wounded. The liberality with which this benevolent work is conducted may be gathered from the last consignment, which included 27,650 kilos of sugar, 2,500 hectolitres of rum, 10 cases of rum of superior quality, 400 kilos of tobacco, 14 large cases of cigars, 1,500 kilos of coffee, and nearly £200 in money.

WE learn from the *New York Medical Journal* that, in pursuance of a joint resolution of Congress, the President of the United States has issued invitations to the governments of all the South American republics inviting them to send delegates to the seventh Pan-American Medical Congress, which is to be held at San Francisco from June 17th to 21st. The replies which have been received indicate that there will be a large and representative attendance. Clinics are being arranged in a number of cities between New York and San Francisco for the purpose of giving the visitors an idea of the medical and surgical work that is being done in the United States.

AT an emergency meeting of the Royal College of Surgeons in Ireland licences were granted to a number of students who had just passed the necessary examinations and who had signified their intention to join the R.A.M.C. The President read out a list of the licentiates of the college who had been mentioned in dispatches up to February 19th. Over 600 licentiates of the college are at present serving with the R.A.M.C., while many students are with the colours in other capacities, and the President said that "the students of the college were to be found serving in many capacities from a mine-sweeper in the Dardanelles to a Major in the Life Guards; from a private in the 7th Battalion Royal Dublin Fusiliers to a Surgeon-General in Flanders; from a surgical dresser on board a torpedo boat to a Brevet Colonel in France. There was also a dispatch rider, a stretcher-bearer, a gunner—in fact, there was no branch of the service, either in the navy or the army, that had not a representative from that College."

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*: telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate. Westrand. London*: telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

PAYMENTS FOR NOTIFICATION.

A MEDICAL officer of health cannot refuse to accept a certificate under the Infectious Disease (Notification) Act, 1889. If a practitioner considers he is justified in certifying that a person in whose throat diphtheria bacilli have been found, but who has no clinical symptoms of the disease, is suffering from diphtheria, the certificate must be accepted and paid for. If refusal of payment is persisted in, recovery could be sought in the county court.

BILHARZIOSIS IN NATAL.

F. G. C.—It has been shown recently by Leiper and Atkinson in China that the miracidium of *Schistosoma japonicum* passes into a mollusc. A development takes place there, and finally the later stages escape into the water and enter the skin direct. Infection is acquired by wading in swamps or bathing in water where infected molluscs exist. It is probable that *S. hæmatobium* has a similar life-history, and work is being carried out in Egypt at the present time in this direction.

LETTERS, NOTES, ETC.

YEAST IN TYPHUS FEVER.

A CORRESPONDENT has drawn our attention to a note which appeared in the *Daily Chronicle* some time ago from a correspondent, who stated that in the memoirs of Edmund Cartwright, D.D., the reputed inventor of the power loom, it was related that he effected amongst his parishioners complete cures from the epidemic of typhus ranging at Brampton, Chesterfield, where he resided. He gave his patients two large spoonfuls of yeast every two or three hours in warm water. We have been unable to verify the reference, but Dr. Clippingdale has been good enough to inform us that in Hooper's *Medical Directory*, 1825, there is the following note on

"*Fermentum Cerevisiæ, Yeast, Barm.* . . . Medicinally it is antiseptic and tonic; and has been found useful internally in the cure of typhous fever attended with an obvious tendency to putrefaction in the system with petechiæ, vibices and the like; the best way to administer it is to mix a fluid ounce with seven of strong beer, and give three tablespoonsful to an adult every three or four hours."

In this connexion the following observations on the action and uses of yeast, which appeared in the *British Pharmaceutical Codex*, 1911, may be of interest:

"The idea that the therapeutic action of yeast is due to its property of inciting fermentation has been proved to be fallacious, for it is still effective after the yeast has been heated to 130° for an hour. Its action is virtually that of nuclein; if injected it increases the proportion of leucocytes, after a transient leucopenia, and it is stated to raise the opsonic index of the blood in respect to staphylococcus and the organism of tubercle. It is given internally to check the growth of boils, and has been added to poultices for application to unhealthy wounds. When fresh yeast is given by the mouth it grows actively in the stomach, and, besides being of value in some cases of furunculosis, it slightly diminishes the quantity of sugar passed by the urine in diabetes. It has also been given in phthisis, diabetes, and septic endocarditis, on the supposition that it has bactericidal or phagocytic properties. But living yeast cells do not live in the blood, as has been asserted, being disintegrated and absorbed, even when injected; the action of yeast is entirely due to its nucleo-albumin."

UNUSUALLY LARGE DOSES.

DR. S. J. D. ESSER (Rustenburg) writes: In the JOURNAL of January 23rd I notice it is suggested that unusually large doses should be initialled by the prescriber. Would it not be much simpler, now we have at last come so far as to use the metrical system, at the same time to take over the Continental custom of putting a note of exclamation after a dose which is larger than the maximal dose given by the *Pharmacopœia*?—for example, ℞ Morphin. hydrochloridi 0.040! would mean 40 milligrams, or more than gr. ⅔, which if given in a single dose would certainly be unusually large, yet necessary in some cases, and often quite safe. We only use grams and milligrams, and express everything in grams or parts of grams, yet in such a way that we always express in milligrams if a part of a gram is wanted—for example, 0.300 would mean 300 milligrams, or about 5 grains. It may look a big figure, but it is very simple in the long run. What makes it difficult is always transferring from the one system to the other, but that will soon become unnecessary.

MEDICINES AS DELETERIOUS SUBSTANCES.

WE think it was General Sherman who, when ill, received his physician with all the learned man's prescriptions, untouched, at his bedside. In the course of the conversation the doctor, probably nettled by the General's disbelief in his remedies, exclaimed, "Why don't you say, with Macbeth, 'Throw physic to the dogs'?" Sherman at once retorted: "I would do so at once, but for the fact that there are some valuable dogs about." The Hants, Wilts, and Dorset Mineral Water Manufacturers and Bottlers' Association, Limited, would seem to share General Sherman's opinion. A correspondent has kindly forwarded to us an advertisement which appeared in the *Portsmouth Evening News* of December 8th, 1914, in which the Association cautions the public against the improper use of their members' property—that is, mineral water bottles, beer bottles, and jars, for paraffin, paint, medicines, "*and such like deleterious substances.*" Doubtless the public appreciates the philanthropic zeal of the association for its safety.

A PIONEER IN AMERICAN MEDICINE.

DR. GEORGE FOY (Dublin) writes: In your interesting review, pp. 597-8, of the *Life and Letters of Nathan Smith, M.D.*, you refer to the part taken in the founding of the Jefferson School of Medicine in 1825 by George McClellan. May I supplement it by adding that in 1825 Dr. George McClellan married Elizabeth Brinton, and on December 3rd, 1826, their son, George Brinton McClellan, was born, who organized victory for the Federal Government of the U.S.A., during the Inter-States war. He saved Washington after Manasses, and introduced order in the Army of the Potomac after Pope's disastrous rout at Manasses Junction. Sometime afterwards he became a candidate for the Presidency, but was beaten by Lincoln, the American people being unwilling to swap horses whilst crossing a stream.

THE FRESH AIR SMILE.

THE *Albany Medical Annals* for February publishes a report of the Health Director in the Public Schools of Albany, State of New York. "Public school" in the States, let it be remembered, means a primary school. The director speaks in high terms of the good results of teaching in the open air, yet Albany is very cold in winter as compared with any British town. Miss Geraldine Mullin, teacher in the open-air school, reports that on the coldest day of the year, when the thermometer stood at ten degrees below zero, six small boys appeared and of their own free will decided to remain till the afternoon. One day in the classroom a cup of water became coated with ice in a very short time, and yet the "fresh air smile" and the wideawake appearance of these children is always remarked by people who visit open-air classes for the first time. With the enthusiasm characteristic of successful open-air school workers, Miss Mullin declared that "no one need feel sorry for us way down there in the cold, as we are very happy."

ERRATUM.

THE second letter under the heading "Early Vaccine Treatment of Pneumonia" (JOURNAL, March 27th, p. 573) was sent in by Lieutenant Alex. Wm. Hendry, R.A.M.C., not, as printed, Alex. Wm. Hendley.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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A METHOD OF TREATING COMPOUND FRACTURES OF THE FEMUR DUE TO PROJECTILES.

[WITH SPECIAL PLATE.]

BY A. H. TUBBY, M.S.LOND., F.R.C.S.ENG.,
MAJOR R.A.M.C.(T.).

To deal adequately with all varieties of compound fractures of the femur, due to projectiles, is a problem which has not yet been satisfactorily solved; and it is safe to say that no one form of apparatus meets all the requirements, not even the Hodgen thigh or Thomas knee splint.

In the treatment of fracture, especially of the thigh, no effort should be spared to obtain a good result, which may be summed up thus: A normally aligned thigh, leg, and foot, a loss of length amounting to less than half an inch in transverse or nearly transverse fractures, and in very oblique or severely comminuted injuries of less than one inch.

When one or more wounds are present, arrangements must be made to dress them without disturbing the setting of the fracture; and it may be several weeks, or even months, before the fragments of dead bone are extruded, or before it is considered justifiable to search for pieces of metal. These last considerations should be subordinated to the ultimate end in view—namely, a good, well-united, straight limb, with very little shortening. Therefore, let the fractured bone be put up as carefully as possible and be retained in the required position whilst healing is going on. If it is evident, however, that this is delayed because of the extent of the necrosis, then the apparatus should be removed, with due precaution as to maintaining full extension of the limb, and the portions of necrosed bone be extracted. Thereafter, the main objects of treatment must be pursued with unwavering patience, and with the apparatus reapplied.

After these remarks, I am desirous of recording a method which is being used by me in suitably selected cases; and the question of suitable selection will be discussed later. The method is a combination of plaster-of-Paris and strips of soft iron. Some surgeons deprecate the use of plaster-of-Paris in compound fractures of the thigh because of the difficulty of dealing with profuse discharge; if this is in such quantity as to saturate the plaster, and if it cannot be soaked up by frequent dressings, then I agree with them. If, on the other hand, the discharge is not more than 2 to 4 drachms in twenty-four hours, and comes from small, or medium-sized easily protected wounds, then I join issue with them, and am prepared to cite cases of my own which have been successful.

The materials used in the method which I am about to describe are plaster-of-Paris bandages, rolled on either over flannel bandages or a stockinette garment, and strips of malleable iron. The apparatus is applied under pulley-extension and full anaesthesia.

For convenience of reference to the Figures 1 to 8, the lettering, which is constant throughout the series, is given here.

A, Couch.
B, The counter-extension band of leather or webbing.
C, The perineal band, thoroughly well padded.
D, The leather or webbing anklet.
E, The pulley extension apparatus.
F, The first layer of plaster bandage, and opposite the letter F is an indication where a reinforcing strip of malleable iron has been added in order to prevent outward deviation of the fragments.
G, The upper end of the inside and essential piece of malleable iron, which is seen in Figs. 1 and 2, bent round into a boss or knob, G, and when covered with plaster becomes an ischial crutch.
H, The lower end of the inner or essential piece of malleable iron, bent into an S-shaped hook, H, to receive some turns of the plaster-of-Paris, and resting against the upper and inner side of the leg.
I, The manual traction which has replaced the leather anklet or stirrup at a late stage of the application of plaster.
J, The plaster-of-Paris over the foot and ankle.
K and L, The apertures cut through the plaster for dressing the wounds,

The material required is simple, and consists, first, of a strip of malleable iron, G, H, seen *en face* in Fig. 1. Its length is about 28 in., its width 1½ in., its thickness is $\frac{1}{12}$ in., and it is so tempered that it can be bent with the hand. It is important that the iron should be exactly the

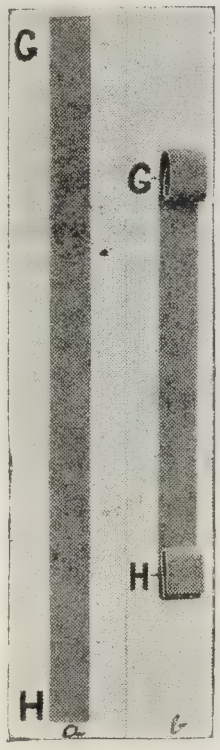


Fig. 1.



Fig. 2.

right temper, and Mr. A. E. Evans, of 38, Fitzroy Street, Fitzroy Square, has supplied me with it. In Fig. 1, *b*, this strip of malleable iron has been altered in shape at the upper end, G, by pliers. It has been rolled up so as to make a rounded knob at G, which will ultimately lie up against the tuber ischii. The lower end, H, is bent into a double curve, or S-shaped hook, which lies against the upper part of the inner side of the leg; and the object of this double bend, which should be wide enough to allow several layers of plaster bandage to pass through, is to prevent any shifting of the strip of iron when it is placed in position. Fig. 2, *a* and *b*, shows the piece of malleable iron in section: *a*, before it is bent, and *b* when it is ready for application. The malleable iron is of the gauge 14.

The other requisites are a set of pulleys, Fig. 3, E, a leather anklet, D, and a perineal band, C, which should be thoroughly padded, especially where it passes over the femoral vessels and the tuber ischii. At the latter spot it should not be less than 1 in. thick. The counter extension is effected by leather straps, Fig. 3, B. As it may not be possible after a severe action to have a sufficiency of the ordinary leather perineal bands and of anklets ready, simple substitutes can be supplied; thus, in place of the leather strap B, stout webbing can be used about 1½ in. broad, and this is continued on to form a perineal band. The latter is thickly and evenly covered either with cotton or asbestos wool, which is carefully laid on and then bandaged down to the webbing, so that it lies firmly on it; and, in place of the leather anklet D, a horizontal band of webbing, well padded, may be sewn round above the ankle with a stirrup attached, extending below for the pulley hook. In order to cover the limbs, a pair of stockinette drawers are used, or, failing them, flannel bandages are evenly applied to the limb, after it has been well dusted with boracic powder. Plaster bandages, 3 in. wide and 4 to 6 yards long, which have been recently baked so as to ensure rapid setting, are ready to hand. The patient is placed under an anaesthetic, and the wounds are thoroughly cleansed from any dirt which may be present, and syringed out with tincture of iodine 7 per cent., and water, or 1 in 20 carbolic lotion, and dressed with cyanide or iodoform gauze. The amount of shortening of the limb should be noted. Traction is then made upon the limb by the pulleys (see Figs. 3 and 4). The position of the limbs is of importance, and in view of the possibility of discomfort arising from pressure on the tuber ischii (in the illustration the right side) it is desirable to tilt the pelvis. This is done by abducting the limb on the sound side. By altering the position of the sound limb from

time to time, the area of pressure on the other tuber ischii can be varied. Traction is then made gradually and firmly and the total amount of lengthening of the limb should be noted. In the majority of cases our aim should be to draw the limb down until it is the same length as on the sound side. As the traction is steady and even, and not jerky, there is very little danger of fragments of bones wounding the great vessels. When the limb has been drawn down as far as is considered justifiable, the fragments are gently moulded through the dressings so as to bring them into as straight a line as possible. The exact position of the wounds should be noted by measurement from certain fixed points, such as the anterior superior spine, and the upper margin of the patella, and then a layer of wet plaster bandages (Fig. 4, F) is applied. Although it ought to be common knowledge, yet so many mistakes are made in the simple matter of soaking these bandages, that a few words on the subject may be introduced here. The basin should be deep enough for the bandages to be fully immersed, when they are set "on end," and the water should be of a temperature of from 70° to 80° F. The bandages should be left in the water until bubbles cease to escape, and then removed and very gently squeezed, so as just to rid them of the surplus moisture.

So far the procedure differs in no respect from that of applying an ordinary plaster-of-Paris spica bandage. The novel feature is the use of the bent piece of malleable iron (G, H, Fig. 4). The upper rounded end, G, is pressed firmly against the perineal band, passing beneath the tuber ischii, and so bears indirectly on that portion of bone. The shaft or stem of the piece of iron is bent so as to follow the contour of the thigh, the knee, and the upper part of the leg, and the great point is to push the rounded upper end G very firmly upwards. If the thigh shows signs of bending outward or forward, another flat strip of malleable iron—the outline of which is seen under the plaster in Fig. 4 at F—about 12 in. or 15 in. long, should be so bent as to fit the outer side of the pelvis and thigh, having due regard to the position of the wounds.

In Fig. 5 the method of securing the inner and more important band of malleable iron is seen. The plaster is passed round it and over it several times at G, until a large bulbous end is made, which constitutes an ischial crutch. The plaster is then continued downward until it reaches the double loop of iron at H (Fig. 5). It is passed closely in a cord-like manner through the first loop several times; the bandage, however, being flattened out on the outer side and distributed up and down the limb so as to secure a good hold. When one part of the S-like loop at H is filled up with plaster bandage, then the second loop is dealt with in the same way. This method secures the absolute fixation of the strip of malleable iron G, H, and prevents movement either in the upward or downward direction. Several more bandages are now wound on the limb from above downwards, until it is covered nearly as far as the ankle. In the illustrations one layer of dry bandage only has been applied so as to save discomfort to the model; but, in actual practice, a sufficiency of material will be used to render the joints of the limb and the fracture completely rigid; and, if there is any doubt on this point, the plaster may be reinforced behind the knee by a third strip of malleable iron.

At this stage the leather or webbing anklet is taken off, because it will happen that, owing to the pull which has been exerted at the ankle, there has necessarily been some constriction of the soft tissues, and pressure-sores may occur if the laced anklet is left on. In place of the anklet traction, an assistant now draws firmly on the limb with his hands (Fig. 6, I), and the plaster is then continued down over the ankle and the foot (Fig. 7, J) to just behind the heads of the metatarsal bones. During all this time attention is given to the alignment of the limb; the patella should look straight to the front, and the inner side of the head of the first metatarsal bone should be in the same plane as the inner edge of the patella; furthermore, the foot should be at right angles.

In Figs. 7 and 8 at K and L are seen the places where apertures are represented as having been cut in the plaster in order to dress the wounds.

It now remains to release the counter-extension band B (Figs. 3 to 8). This is done by cutting through it before and behind at the level of the crest of the ilium, leaving the loop of the perineal band in place. In some cases it may be desirable to carry the plaster-of-Paris bandage further up the body than is seen in the illustration.

Frequently the patient complains of the pressure of the ischial crutch and the perineal band against the tuber ischii for the first forty-eight hours; with practice, however, the requisite degree of pressure to secure sufficient extension can be gauged; and, in any event, minor adjustments can be made, which quickly relieve any distress.

The principle of this arrangement is very simple; the extension is secured in the first place by the tension of the pulleys, and is maintained by the fixation of the shaped malleable iron, G, H (Figs. 1, *b*, 2, *b*, and Fig. 5), which through its upper bulbous end makes an ischial crutch and presses up against the tuber ischii. This piece of iron is absolutely fixed in position by the plaster; and the further adaptation to the contour of the limb, especially above and below the knee and at the ankle, which a plaster-of-Paris support permits, acts as a further counter-extension factor. If it is found that, during the long interval sometimes required for recovery, the limb shrinks inside the plaster, then it is quite simple to apply another and more closely fitting bandage and to secure some further lengthening of the limb by pulleys in the same way as before, if the fracture is not yet united.



Fig. 9.

In bullet fractures of the femur it is noticeable that the injury, although excessively severe, is often localized to a short area of the shaft, not more than one to three inches in extent, and that the long oblique and spiral fractures so often seen in civil life, and so very difficult to treat satisfactorily, are the exception and not the rule. Thus, in military surgery we see that the fractures tend to be more transverse than oblique, and at the same time pieces of bone of varying size are bodily driven out of the line between the main fragments. Another type is also met with. The shaft of the bone is split vertically into a number of plates, and these "telescope" so that union takes place with a great deal of shortening. We must recognize that many of the displaced fragments do not die, but help to form a bridge of callus between the chief bone ends, and therefore they should be carefully preserved, and, if possible, held in position whilst union is taking place. In the absence of very severe septic infection the amount of ultimate necrosis of bone will be very small; and we can well afford to wait until we know how much of the bone is dead before attempting a sequestrotomy; more especially so when the projectile wounds are small and the discharge is not profuse and evil-smelling. No surgeon would, on the other hand, attempt to treat a fractured thigh, complicated by a large jagged wound, fetid with profuse discharge, by putting it up in plaster-of-Paris.

The actual cause of the shortening in all these cases is the excessive reflex and tremendous muscular pull, set up by the irritation of the soft tissues, due to the jagged bone ends digging into them when the parts are not kept quiet. The parts must be kept absolutely at rest and the fragments disentangled from amongst the soft tissues; when this is done spasm and pain cease. The modified plaster method accomplishes these results because it is applied in such a way and under such conditions as to draw the overlapping fragments apart. Further, the tension is continuous and unalterable, and therefore the muscles, becoming tired as it were, cease to

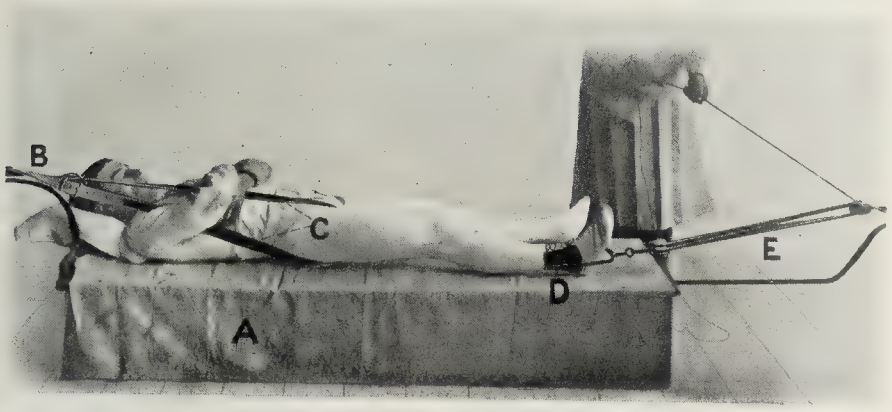


Fig. 3.

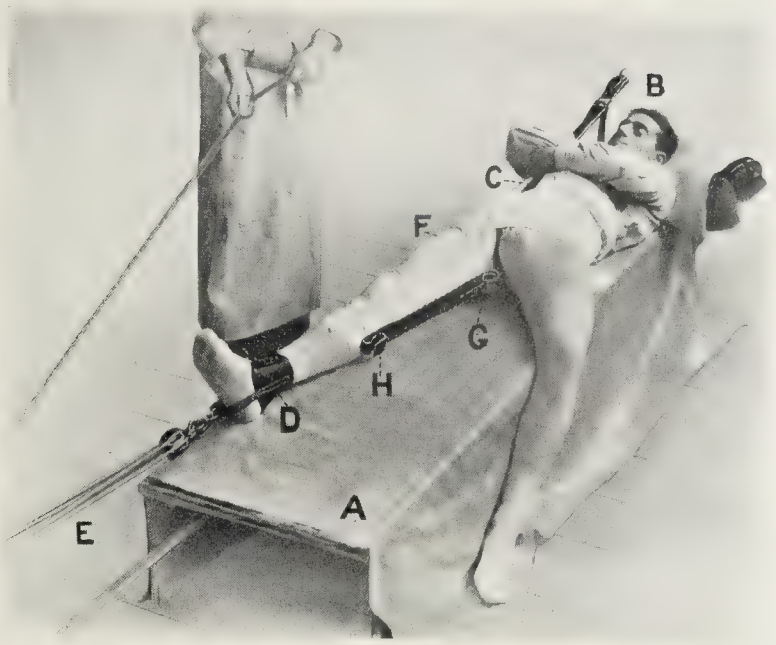


Fig. 4.

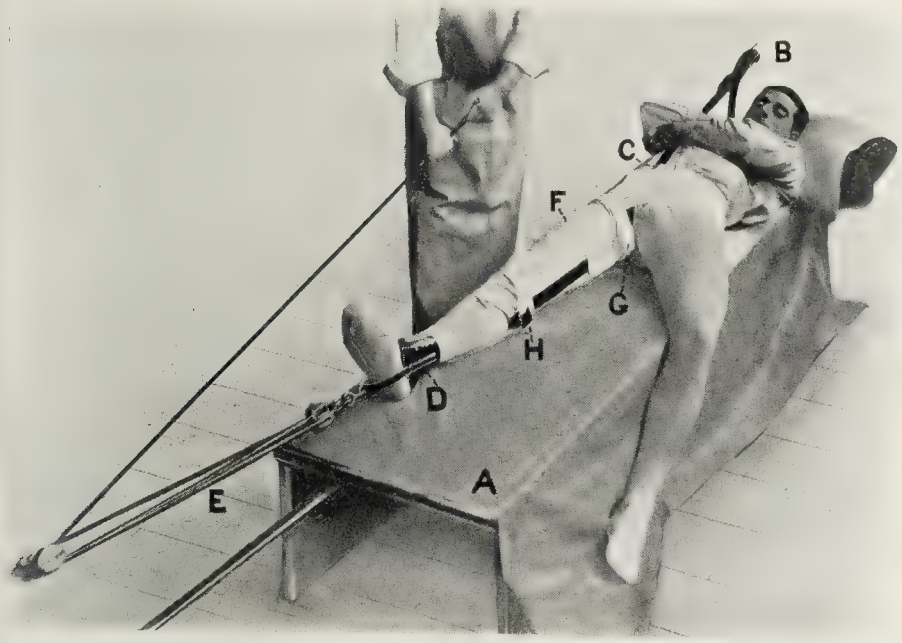


Fig. 5.

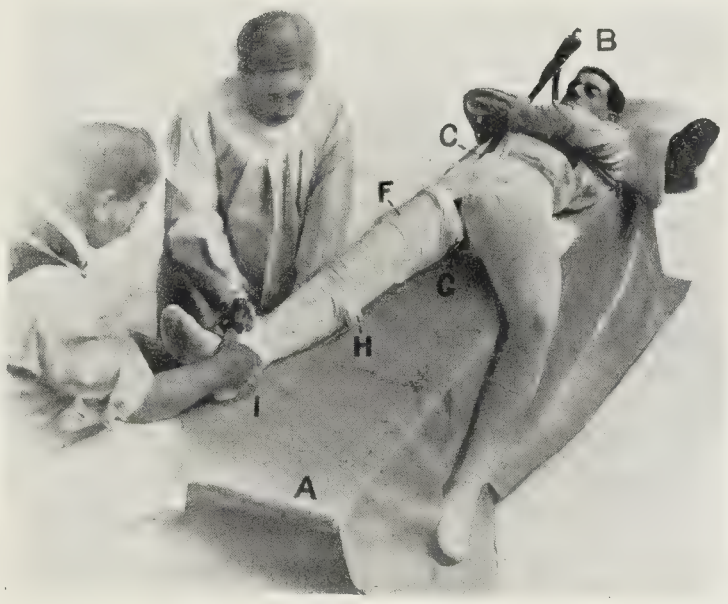


Fig. 6.

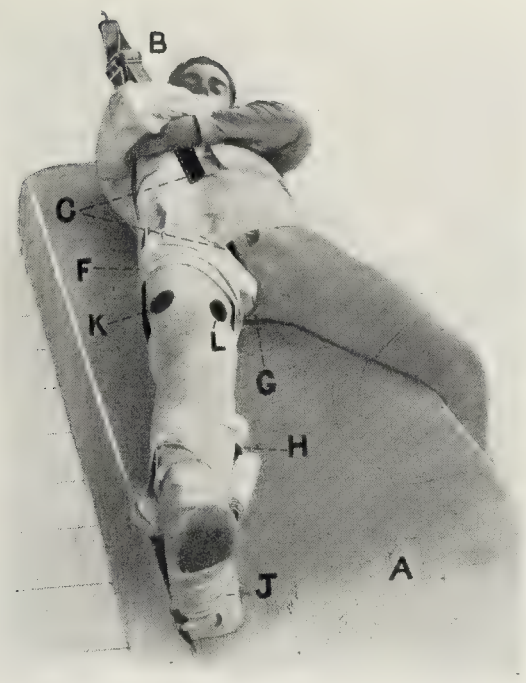


Fig. 7.

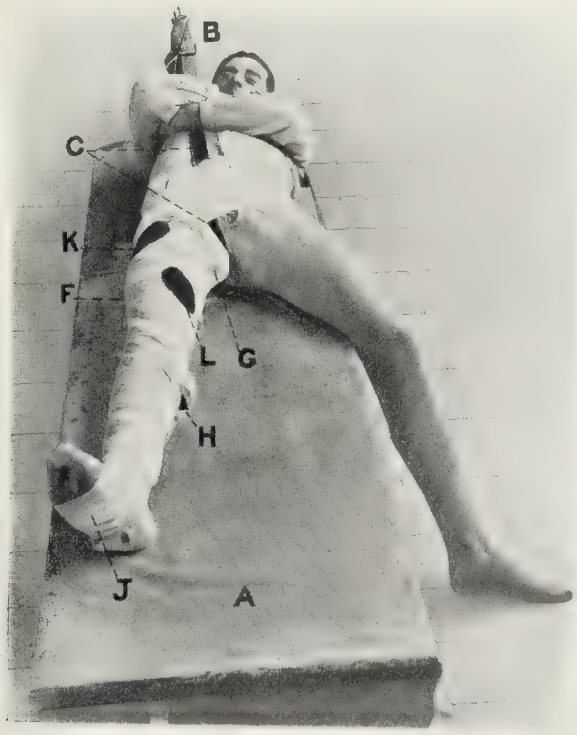


Fig. 8.

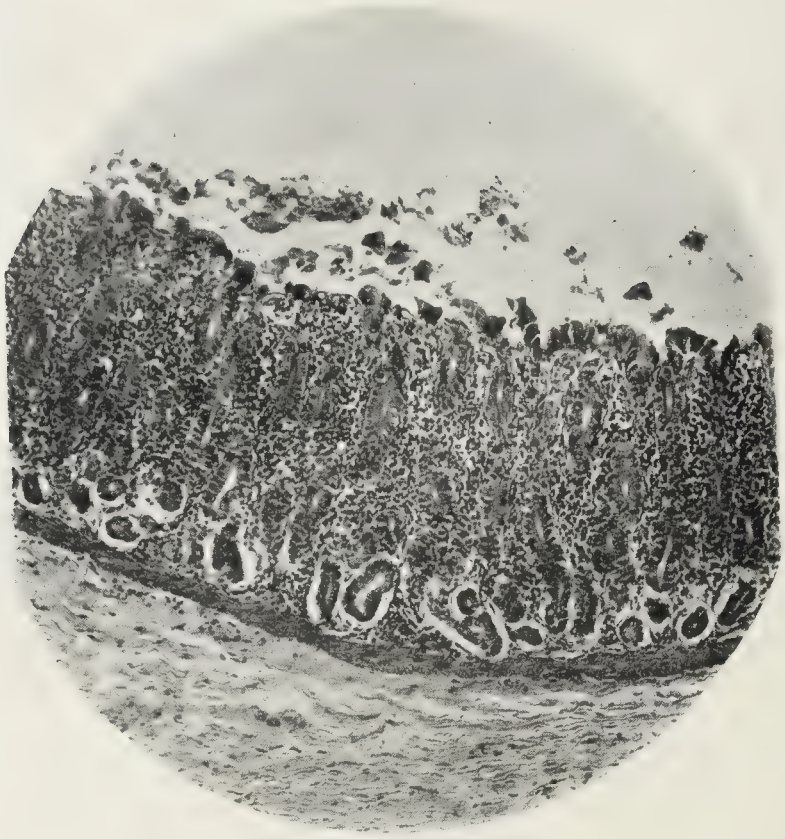


Fig. 1.

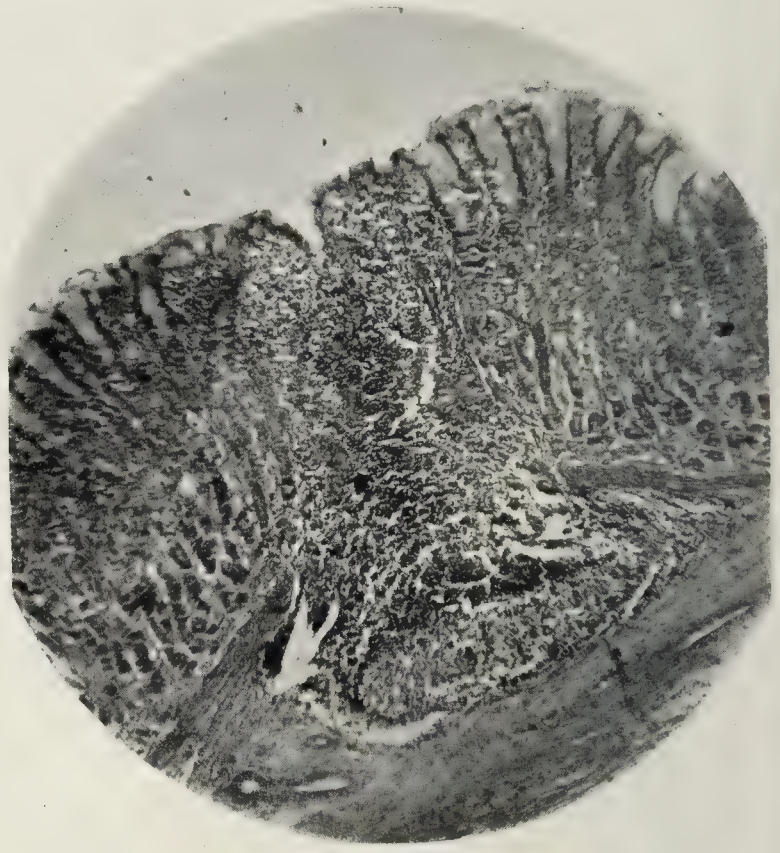


Fig. 2.



Fig. 3.

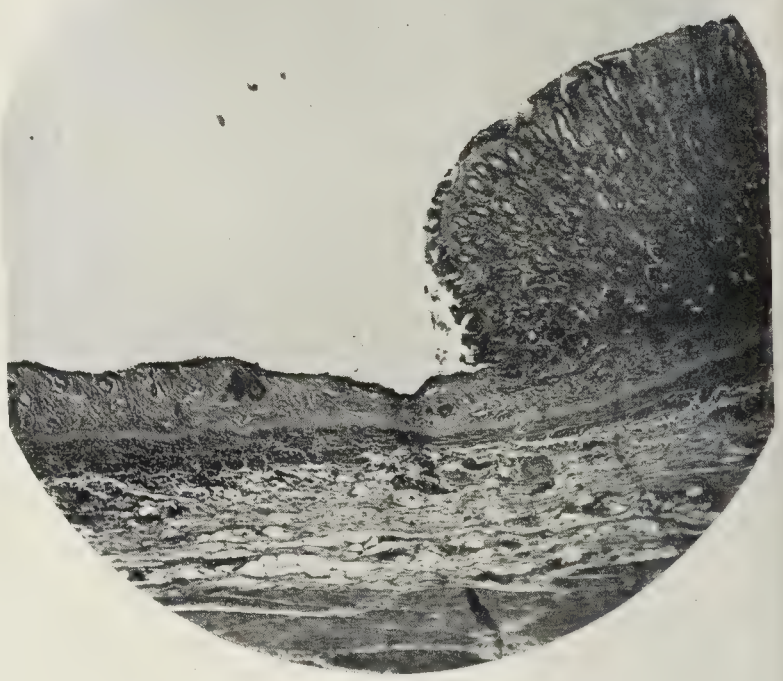


Fig. 4.

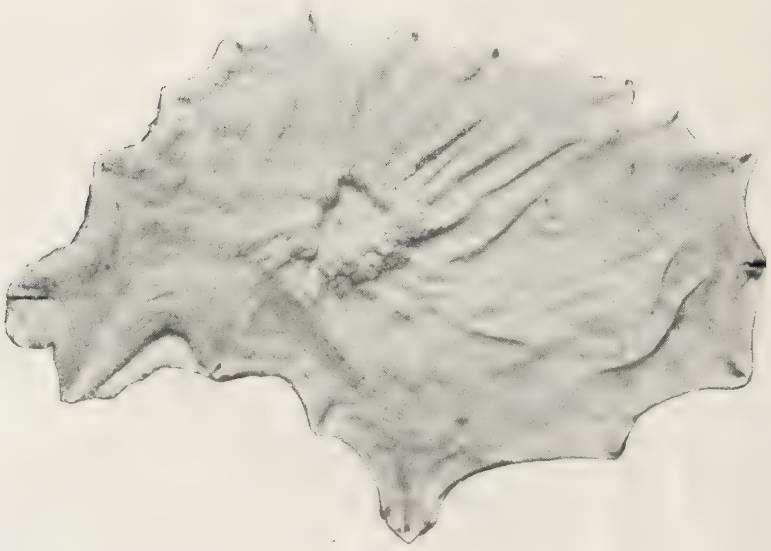


Fig. 5.

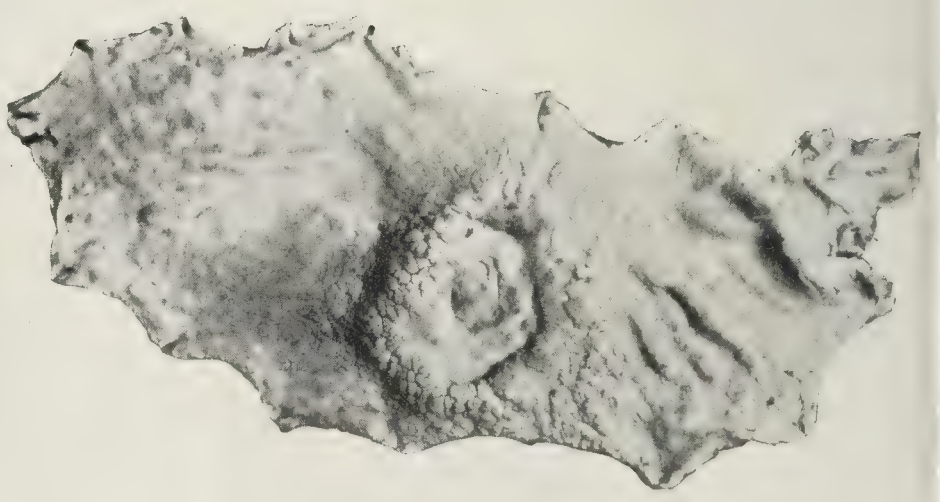


Fig. 6.

pull and the fragments are not ground together. There is immediate relief from pain, due to these causes, after the plaster has been applied; although there is sometimes, for the first twenty-four or forty-eight hours, pain and discomfort due to the pressure of the perineal band across the front part of the thigh and of the thrust upwards against the tuber ischii. The former may be relieved by passing a blunt hook beneath the plaster and pulling the band in front of the thigh upwards or pushing it downwards. The latter yields at once to slight alterations in the position of the limb. If the plaster has not been carried up any great distance above the crest of the ilium, the injured limb may be carried outwards, and so a fresh portion of the soft tissues over the tuber ischii receives the pressure. Also abduction of the limb will lessen the force of the upward thrust of the ischial crutch. The skin in this region may also be drawn from side to side twice a day. It is occasionally useful to adduct or abduct the sound limb in order to vary the incidence of pressure.

Whenever possible, and provided that no strips of malleable iron interfere with the passage of *x* rays to the fracture, it is advisable during the first few days to have an *x*-ray photograph made through the plaster. If it should happen that the fragments are not in good position, the plaster may be taken off and the limb put up again. When the shortening is between 2 and 3 inches, an attempt at an immediate reduction of the total shortening at one sitting may give rise to serious discomfort, owing to the resistance of the muscles of the thigh to the upward thrust of the ischial crutch. In these cases I would counsel that at the first attempt the effort should be confined to reducing part of the shortening, say to within an inch, and that in two or three weeks' time the shortening should be further reduced before the plaster is reapplied.

Once the limb is placed entirely at rest the tendency is for the discomfort to cease gradually and the wounds to close, because all is quiet. One other advantage of this method may be mentioned: not only can the patient be transported a considerable distance without pain, but also, with the limb securely guarded in every direction, he is able to get up at a much earlier date than otherwise, and can go about on crutches.

I give illustrations of *x*-rays (Fig. 9), showing one type of case to which this form of treatment is applicable, and where the shortening, when the first plaster had been removed, was found to be reduced to 1 inch.

DESCRIPTION OF SPECIAL PLATE

to Illustrate Dr. Bolton's Paper.

Fig. 1.—Gastritis of monkey's stomach due to hyperacidity. The photograph shows round-celled infiltration of the mucosa, destruction of the gastric glands, and catarrhal desquamation of the epithelium.

Fig. 2.—Photograph of section of mucous membrane of monkey's stomach, showing formation of follicular ulcer due to hyperacidity; the enlarged follicle has burst through the muscularis mucosae, displaced the glands to either side, and appeared at the surface of the mucous membrane.

Fig. 3.—Photograph of monkey's stomach, showing gastritis and follicular ulceration due to hyperacidity.

Fig. 4.—Photograph of section of cat's stomach, showing an ulcer due to necrosis of the mucous membrane owing to hyperacidity.

Fig. 5.—Photograph of acute ulcer of monkey's stomach on the twenty-first day, showing delay in healing due to administration of 0.39 per cent. HCl solution. Follicular gastritis is present.

Fig. 6.—Photograph of acute ulcer of monkey's stomach on the twenty-first day, showing delay in healing due to administration of 0.28 per cent. HCl solution combined with motor insufficiency.

RECENT OBSERVATIONS ON THE PATHOLOGY OF ULCER OF THE STOMACH, WITH INDICATIONS FOR TREATMENT.*

[WITH SPECIAL PLATE.]

BY CHARLES BOLTON, M.D., D.SC.LOND., F.R.C.P.LOND.,

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It has naturally been considered for many years past that the gastric juice played an important part either in the initiation or propagation of gastric ulcer. This idea has, however, been held in a vague kind of way and has not been supported by any very definite evidence with regard to what precise effects this secretion produces and as to what its mode of action really is. The question is of considerable importance in relation to the treatment of gastric ulcer; I therefore propose to discuss the subject, and hope to show that it is the *acid* of the gastric juice which is the chief damaging factor, and that it acts upon the wall of the stomach, both as an irritant and as a necrotic agent.

Efforts to prove that the *ferment* is the chief destructive agent and that the gastric juice can digest the wall of the stomach because the latter is deficient in protective antiferment have proved unsuccessful, and treatment directed to replace this presumably absent antibody has had no better luck. Moreover, on consideration it seems unlikely that such a hypothesis should be correct. If the gastric mucous membrane were deficient in antipepsin, the whole or greater part of the membrane should be digested and not merely a circumscribed portion. In no other part of the alimentary canal are ulcers found comparable to gastric and duodenal ulcers. If antiferment is occasionally absent from the stomach it should be now and again absent from the intestine, but the pancreatic juice does not produce lesions comparable in any way to gastric ulcer. Dilute hydrochloric acid is a powerful protoplasmic poison, and, owing to its presence, the gastric juice is alone amongst the digestive juices able to digest connective tissue, and therefore disintegrate foodstuffs and organs whose elements are bound together by that tissue.

SELF-DIGESTION OF THE STOMACH BY NORMAL GASTRIC JUICE.

In many forms of gastric ulcer a definite initial damage to the mucous membrane can easily be demonstrated—for example, in those due to bacterial infection and other causes of necrosis and haemorrhage, also in follicular ulceration. In such cases it is quite easy to understand how the gastric juice can attack the damaged portion of mucous membrane.

In other cases, however, the damage falls short of producing a visible pathological lesion, but is sufficient to lower the resistance of the mucous membrane to the gastric juice, which attacks the damaged part and completes the death of the tissue. Such damage may be done by poisons circulating in the blood. I was able to demonstrate this principle of self-digestion experimentally some years ago. This was done by producing a gastrotoxic serum active against the gastric mucous membrane, and studying its precise mode of action. Such a serum is manufactured by immunizing an animal by the repeated injection of the gastric cells of another animal. The immunized animal forms in its blood poisons which, on injection into the body of a similar animal to those whose cells have been injected, give rise to necrosis and ulceration of the mucous membrane of its stomach.

The poison fixes itself to the gastric cells rapidly and produces its effects within a few hours. If the gastric juice be neutralized with an alkali whilst the poison is acting, the mucous membrane is found intact on the death of the animal, whilst the controls with an active gastric secretion show the usual necrosis and ulceration. No microscopic lesion whatever is to be detected in the gastric cells which have been acted on by the poison when the gastric juice is thus put out of action. The cells have, however, been damaged to such an extent that the normal gastric juice is able to attack the wall of the stomach.

The resulting necrotic patches in the mucous membrane are stained black by the action of the hydrochloric acid upon the blood, and soon separate, leaving cleanly punched-out ulcers.

Similar necrosis and ulceration does not occur in the intestine when an enterotoxin is injected, although its mucous membrane is exposed to the active pancreatic juice.

* An address delivered before the Nottingham Medico-Chirurgical Society.

It is, therefore, to be concluded that the hydrochloric acid of the gastric juice completes the death of the tissue already devitalized by the gastrotoxin, and that this is then digested and removed. Hydrochloric acid of the strength found in normal gastric juice—namely, about 0.2 per cent.—is thus a potential protoplasmic poison, and is able to add its quota to that of a blood poison and become active in its presence.

This is the probable explanation of the frequency with which acute ulcers are found in various toxic and infective conditions of the body.

INCREASED DESTRUCTIVE POWER DUE TO HYPERACIDITY.

Hyperacidity of the gastric juice is commonly found in chronic gastric ulcer. The degree of hyperacidity varies considerably. It is very frequently above 0.3 per cent. and sometimes above 0.4 per cent. The highest which has been recorded is 0.5 per cent. Of course, it is only free hydrochloric acid which is able to act as a protoplasmic poison, so that in the early stages of digestion the gastric juice is much less destructive to the mucous membrane than in the later stages when free hydrochloric acid is present. It is most destructive in cases where there is also hypersecretion, in which condition the secretion of gastric juice continues for varying periods of time after gastric digestion has come to an end. I found experimentally that when an animal was under the influence of gastrotoxin an increase of the acidity of the gastric juice caused a marked increase in the amount of necrosis and ulceration of the mucous membrane, so that a striking contrast is seen between the stomachs of these animals with hyperacidity and those of the controls with a normal acidity. This effect is seen with any degree of hyperacidity above the normal, and with strengths of hydrochloric acid which are quite innocuous when administered alone. For example, single doses of hydrochloric acid of any strength up to 0.7 per cent. in the case of small, and 0.9 per cent. in the case of large, guinea-pigs are quite innocuous, and yet a 0.3 per cent. solution will increase the necrosis due to gastrotoxin. The effect is progressively more marked as the strength of the acid is increased.

As affording confirmation of the hypothesis that this effect is really due primarily to the poisonous action of the hydrochloric acid and not to any exalted action of the pepsin, I may mention that I found precisely the same result to occur when other mineral acids were employed in dilute solutions which were innocuous alone. We may therefore conclude that the gastric juice owes its destructive power primarily to the hydrochloric acid which is present in it, and that this power progressively increases as the strength of the acid is increased. In the presence of certain blood poisons the normal gastric juice is able to attack the gastric mucous membrane by virtue of the hydrochloric acid which it contains, and the effects produced are much greater when hyperacidity is present.

Effect of Hyperacidity Alone.

We must now consider the action of various strengths of hydrochloric acid upon the mucous membrane of the healthy stomach.

The effects of a single dose of hydrochloric acid are of no interest to us except from the point of view of the experiments just described, but the effects of repeated doses of such strengths as are found in the condition of hyperacidity in man are of great importance. I have found that repeated doses in the monkey produce two effects: (1) Irritant, (2) necrotic.

1. *The Irritant Effect.*

This is manifested (*a*) as a more or less diffuse gastritis, (*b*) by definite local patches of gastritis, (*c*) by follicular ulceration.

(*a*) In the case of diffuse gastritis there is found an increased amount of mucus in the stomach. In a slight case the mucus secreting cells are swollen and clear and there is slight round-celled infiltration commencing between the glands and most marked near the surface of the mucous membrane. The lymph follicles over and under the muscularis mucosae are a trifle enlarged, and there may be increased vascularity. In advanced cases there is desquamation of the surface epithelium and of the cells of the glands. The interglandular infiltration is very marked, the glands are separated and disappear, leaving a tissue chiefly composed of small round cells and proliferated connective tissue cells, with the remains of glands embedded in it. (Fig. 1.) The bases of the glands are much less affected than the portions nearer the surface and the ducts.

The surface of this tissue becomes re-covered with flat or cubical epithelial cells. In places follicular ulcers are present.

(*b*) The same process is apparent in the local patches of gastritis, which may be quite sharply marked off from the unaffected portions of the mucous membrane. Some of these arise by extension of the infiltration which spreads from enlarged follicles.

(*c*) The follicular ulcers arise by enlargement of a lymphatic follicle, which makes its way to the surface through the muscularis mucosae, and by displacing and destroying the gastric glands (Fig. 2). Finally, an ulcer results by removal of the surface epithelium. Such an ulcer to the naked eye has the appearance of a small white elevation in the mucous membrane with a hole in the centre (Fig. 3). These ulcers appear either isolated or surrounded by a condition of gastritis. The continued administration of hydrochloric acid does not deepen the ulcer or make it spread laterally. As a fact, the surface of the ulcer can often be seen to be covered with a single layer of newly formed epithelial cells and healed. There is no doubt that such an enlarged follicle often forms the nucleus of a patch of gastritis, which spreads by the continued administration of hydrochloric acid.

These irritant effects of hydrochloric acid are produced in the monkey by the daily administration of a solution of 0.28 per cent. in strength, and are progressively more marked when stronger solutions are employed. Solutions of 0.5 per cent. in strength, and also stronger ones commonly cause vomiting, so that the effects vary in intensity. The effects likewise depend on the length of time the administration is continued, but quite a considerable amount of gastritis is present after a few doses. The results also vary in individual animals to some extent.

It is remarkable that these results are obtained so easily, because such solutions leave the stomach very rapidly, and the degree of acidity quickly falls. For example, in one experiment 50 c.cm. of a 0.39 per cent. solution were administered, and in the space of half an hour later the stomach contained 15 c.cm. of a clear fluid containing only 0.12 per cent. HCl. In the human being the acid has a much longer time in which to act, particularly if hypersecretion or retention of food is present, and there is no reason to suppose that the stomach of man is much less susceptible to the action of HCl than that of the monkey, since they secrete about the same strength of acid. It seems, therefore, quite certain that hyperacidity, even though not excessive in degree, will give rise to this form of gastritis in man.

Chronic ulcer of the stomach is always associated with a type of gastritis similar to this, and it has more than once been suggested that chronic ulcer may be an advanced form of the follicular ulcer which accompanies this gastritis. It seems to me much more likely that the gastritis and follicular ulceration result from the hyperacidity which so frequently accompanies chronic ulcer. We have seen that the follicular ulcers cannot be transformed into spreading ulcers by continued hyperacidity; and, although commonly found in association with chronic ulcer, it is more likely that they are merely a part of the accompanying gastritis than that they constitute the origin of chronic ulcer.

Gastritis of this form is seen quite apart from chronic ulcer, and probably there are many causes for it. It gives rise to vomiting of blood; and, as I have before given reason to suppose, it is most likely responsible for the vomiting of moderate amounts of blood in young women, which cases have formerly been called "vicarious menstruation," "gastrostaxis," and so on. The follicular ulcers in this gastritis during their formation may open up an artery in the submucous tissue, and cause sudden and profuse haematemesis.

Such acute ulcers may be of various sizes according to circumstances. They commonly heal up, as I have already stated that they do in the monkey, and leave small stellate scars. Such patients may have several attacks of haematemesis at intervals.

2. *The Necrotic Effect.*

The necrotic effect of hydrochloric acid is less common than the irritant effect.

The weakest solution which I have found to produce this effect in the monkey is one of 0.38 per cent. strength. A high degree of motor insufficiency was present in this particular case, and it must be regarded as unusual with strengths of acid below 0.4 per. cent.

There is more irregularity in its occurrence, owing to individual variation, than in the case of gastritis.

In the production of this ulceration the ferment in the gastric juice is no doubt also concerned, and spreading acute ulcers are produced by the gradual spread and separation of the necrotic tissue, the HCl killing the cells and the ferment then digesting and separating them.

The ulcer begins as a tiny necrotic spot in the superficial mucous membrane, which separates. The necrosis spreads in all directions, and the tissue is gradually separated until an ulcer, involving the whole thickness of the mucous membrane, is produced, quite comparable to the acute spreading ulcer in man (Fig. 4).

The smallest ulcers are circular and as big as a pin's head. They often spread irregularly, but in the monkey referred to the ulcer spread in a regular shape to about half an inch long, lying parallel to and near the small curvature on the posterior wall of the stomach.

The strengths of acid necessary to produce this type of lesion render it unlikely that hyperacidity alone in man initiates it, unless the latter is of unusually high degree and combined with retention of food. If, however, a cellular poison is circulating in the blood, then a low degree of hyperacidity would be able to complete the death of the tissue, and the gastric juice would then form an ulcer.

Hyperacidity, particularly if combined with motor insufficiency, is therefore a factor of great importance, to be counted with both in the initiation and spread of an ulcer of the stomach.

Funnel Shape of Ulcer due to Gastric Juice.

Some time ago I gave my reasons for the belief that the funnel shape of a gastric ulcer is due to the action of the gastric juice. In the early stages of an ulcer which is extending laterally in the mucous membrane one can see that it has a shallow funnel shape with terraced edges due to destruction of the various layers of the gastric wall one after another. As time goes on, and the ulcer stops its spread, thickening gradually occurs round the edges and in the base by the formation of inflammatory tissue. The funnel shape becomes lost by elevation of the edges and undermining of the same by the action of the gastric juice. The subsequent shape varies greatly, owing to irregular lateral extensions at intervals, or to the base becoming adherent to some organ which is resistant to the action of the gastric juice. In other cases the funnel shape is more marked in the early stages owing to the limited superficial extent of the ulcer; digestion rapidly occurs in the base, and the ulcer perforates. Or the two processes of inflammatory thickening and digestion are more equally matched, and a funnel-shaped chronic ulcer results. The edges of this ulcer also become undermined and a more or less globular cavity results, the funnel shape being lost. All these changes are due to digestion of the base of the ulcer and to secondary inflammatory thickening largely owing to the necrotic and irritant actions of the hydrochloric acid.

Bacteria from the food infect the base to some extent, and so a very mild form of peritonitis leading to adhesions is established. Extensions in the mucous membrane, by which the ulcer becomes larger, are due to persistence or recrudescence of the original cause of the ulcer; but, however the ulcer is originally produced, the connective tissue base is vulnerable to the action of the gastric juice, and is acted upon as described above.

Want of Healing Power due to Hyperacidity and Motor Insufficiency.

I concluded that the unhealed condition was entirely due to the necrotic condition of the base, which is present in every chronic ulcer, the epithelium being unable to grow over it. The epithelium is quite able to proliferate, and is continually doing so even though advanced gastritis is present, but it can only grow over a base covered with granulation tissue, which is absent in chronic ulcer.

Clinical support is given to this view by the fact that the more chronic an ulcer is the more difficult and prolonged is the healing process owing to the changes in the base, and that healing is promoted by ensuring that the stomach empties itself in the normal time, and that hyperacidity is corrected by giving a diet which produces the minimum amount of secretion and by the administration of alkalis at the stage in the digestive process when free hydrochloric acid is present in the stomach. Rest in bed is also essential, because the diet can be more easily regulated, the irritability of the stomach reduced, and the disorders of motion and secretion more easily corrected than when the patient is moving about. It is practically certain that every patient with chronic gastric ulcer is subject to attacks of motor and secretory disorders. My experiments also support the view that the failure of a chronic ulcer to heal is due to the condition of the base and not to a fault in the epithelium, and also that the prolonged action of the acid gastric juice, particularly when hyperacid, is perhaps the chief factor leading to this state.

At the outset I may state that, although by disordering the gastric functions one may definitely delay the healing of an experimentally produced ulcer for a considerable time, an actual arrest has not hitherto resulted. But, as I have already pointed out, the only methods available of producing hyperacidity and motor insufficiency are defective, so that the results I am going to describe should be considerably exaggerated before they are applied to the human subject.

In considering the question of variations in the healing of experimental ulcer I must first explain how the ulcers were produced and how they heal normally. The two animals that I have employed in these investigations are the cat and the monkey. The ulcers were produced in each case by the local injection into the wall of the stomach of a gastrotoxic serum formed by immunizing the goat with the gastric cells of the cat or monkey.

An ulcer is thus produced very easily. It is necessary to open the abdomen, the stomach is drawn out, and the serum injected into any point under the peritoneum which may be selected.

The serum acts upon the cells with which it comes into contact, and these are then digested by the gastric juice, with the result that a cleanly punched-out ulcer is formed in a few days. The rate of formation is quicker in proportion to the degree of acidity of the gastric juice. The edge of the ulcer becomes smooth and rounded from the growth over its surface of epithelial cells derived from the adjacent glandular epithelium. From this edge the film of epithelium gradually grows over the base, which has now become covered with granulation tissue. In the meantime the base contracts, and the edges are brought together, sometimes to a remarkable extent considering the original size of the ulcer. As the base is continually becoming smaller there is an increasingly smaller surface to be covered with epithelium. This contraction of the base undoubtedly facilitates healing, because, if the wall of the stomach is stitched to the liver so that the base contracts with difficulty, the epithelium takes rather longer to cover the base. I have proved this in the case of the monkey. When the base is once covered with a layer of epithelium, and so protected from the gastric juice, the new mucous membrane is formed from this quite regularly a few weeks later.

In order to estimate the rate of healing under various conditions one must select some stage in the healing process as the standard of comparison, and the best stage for this purpose is the point at which the base is just covered with a single layer of epithelial cells. The reason for this is that up to this point delay may occur; but when once the base is covered with cells there is no delay, and the mucous membrane always regularly re-forms to the best that it is capable of, and, further, it is a point which can be at once recognized with ease.

Effects of Diet.

I found that the rate of healing depended upon the diet of the animal, or in other words upon the activity of the stomach with regard to secretion and motion.

This point was tested in the cat, owing to its suitability from a dietetic point of view. After a full meal of cat's

meat the animal's stomach is not empty for about twelve hours, whereas after a full meal of milk it is empty in about three hours. In the case of meat-fed animals, therefore, the base of a gastric ulcer is more continually exposed to the action of the hydrochloric acid of the gastric juice than in the case of milk-fed animals.

I found in a series of experiments that in the case of milk-fed animals the base of the ulcer was in most cases completely covered with a single layer of epithelial cells on the twentieth day and almost completely in a minority.

In the case of meat-fed cats this stage in the healing was reached at a later period, and in these cases the delay was caused by necrosis of the granulation tissue of the base of the ulcer so that the growth of the epithelium over it was delayed. Before healing could occur it was necessary for this superficial slough to separate.

In the case of milk-fed cats the superficial base of the ulcer was formed of granulation tissue at quite an early stage, but the prolonged action of the hydrochloric acid, assisted by the more vigorous movements of the stomach in meat-fed animals, killed off the superficial portions of this tissue, and by this means delayed the growth of the epithelium over it.

Effects of Motor Insufficiency.

This same action of the gastric juice in delaying the healing of an ulcer can be more strikingly demonstrated by producing retention of food beyond the normal time and dilatation of the stomach by artificial pyloric stenosis. The duodenum of the cat was constricted by a short piece of rubber catheter tied on the outside. In a series of experiments of this nature I found that the healing of an ulcer was delayed according to the degree of retention of food in the stomach. One can only proceed up to a certain degree of food retention, limited by the point beyond which it is impossible to maintain the normal digestive process, owing to vomiting or extreme dilatation of the stomach with wasting and death. The delay in cases of retention of food owing to motor insufficiency I found to be about twice the normal time, or even longer than this. The delay occurred in the early stages of healing and was due to necrosis of the granulation tissue base of the ulcer, so that the epithelium was unable to grow over it.

A further change was noted—namely, that the regeneration of the mucous membrane in these cases of delay did not occur in a normal manner. The glands consisted of cells of the duct type only and were very irregularly shaped and dilated. This latter change was due to the sclerotic condition of the base resulting from the chronic irritation of the hydrochloric acid, so that the glands had not a sufficiently vascular and cellular stroma in which to proliferate. A similar condition of newly-formed mucous membrane has for a long time been known to exist in healed gastric ulcers in the human subject.

Effects of Hyperacidity.

So far we have been dealing with gastric juice of a normal acidity, but which has been allowed a longer time in which to act, and which has perhaps been assisted in its action by the increased peristalsis of the stomach.

We must now consider the effects of hyperacidity upon the rate of healing of an ulcer.

I had already done some experiments with guinea-pigs, the food being soaked in solutions of hydrochloric acid, but was dissatisfied with this method and the results. The following observations were made upon monkeys, the animals being fed daily by the tube with hydrochloric acid solution of different strengths. Any strength of hydrochloric acid above the normal delays the healing of an ulcer, and the amount of delay varies with the strength of the solution.

Hydrochloric acid solution above 0.5 per cent. in strength is liable to be vomited, and perhaps largely for this reason stronger solutions do not produce a proportionately greater delay. Even a 1 per cent. solution either in the monkey or the cat will not cause extension of the ulcer, and the amount of delay in the healing is not much greater than with the weaker solution. In no case was the epithelium at the edge of the ulcer destroyed, giving rise to a regular lateral extension of the ulcer. If, however, the HCl was administered during the early stages of the formation of the ulcer, the extent of the latter was much increased. The hydrochloric acid of the gastric juice is thus only able to cause lateral extension of an ulcer the origin of which is partially due to it; the lateral spread of other ulcers in the mucous membrane is due to the persistence of the original causes of the ulcers. In all the cases the edges of the ulcers were inverted and rounded by the superficial growth of new epithelium, and the delay in healing was due to necrosis of the granulation tissue of the base. In such cases the newly formed mucous membrane was of the atypical variety. The amount of delay in the healing was from two to three times the normal period (Fig. 5). On the vegetable diet which a monkey eats, an acute ulcer of the stomach heals in three weeks.

When motor insufficiency is combined with hyperacidity a summation of effects is observed. The motor insufficiency was produced in these monkeys by constricting the first part of the duodenum with silver wire twisted upon a glass rod, 4 mm. in diameter, passed through a gastrotomy incision into the duodenum. An ulcer was also produced by injection of gastrotoxin. In three such monkeys, which were fed with strengths of 0.28, 0.39, and 0.9 per cent. hydrochloric acid solution respectively, large open ulcers were found on the twenty-first day. The bases were covered with necrotic tissue, and the epithelium had just rounded off the edges of the ulcers. All three were in very much the same condition, and their sizes were not much less than the original sizes of the ulcers (Fig. 6).

I have not observed the condition of such cases beyond the third week, but the presumption is that they would eventually heal. Another animal with a higher degree of pyloric obstruction and fed with 0.38 per cent. hydrochloric acid solution, died on the sixteenth day. A large excavated ulcer was found at the site of injection, and quite as big as the originally produced ulcer.

The delay in healing in all these cases must be ascribed to the necrotic action of the hydrochloric acid, and, as I have before remarked, in the human being the effect of hyperacidity must be considerably greater than in my experiments.

A similar condition of delayed healing of acute ulcer is found in human pathology. As a fact, one finds acute ulcers which heal readily, acute ulcers which are spreading, acute ulcers which are delayed in their healing, and definite chronic ulcers the healing of which is arrested and remains so for long periods of time.

In both the ulcers in which the healing is delayed and in chronic ulcer in which it is arrested, the same condition of the base is present—namely, necrosis of the connective tissue and secondary inflammatory thickening—and this is the reason why the ulcer is delayed or arrested in the healing. The fault is not in the epithelium, but in the connective tissue base of the ulcer. Motor insufficiency alone is able to delay the healing, and if one could efficiently produce hyperacidity even of a low degree in addition, it appears likely that a complete arrest in the healing of an experimental ulcer would be accomplished. We thus see what a very powerful factor the hydrochloric acid of the gastric juice is and what an important part it plays in the various pathological processes which constitute the life-history of a gastric ulcer.

ON GASTRIC ANALYSIS.

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THE analysis of the contents of the stomach after a test meal must always be an inexact method of achieving its object—namely, the measurement of the amount and composition of the gastric secretion. The limitations of the method are obvious. Its value must be only in so far as it gives information which may be compared with similar data, obtained under similar conditions from patients who have been found, whether at operation or *post mortem*, to present the various phenomena of gastric pathology. The value of the method must therefore obviously be the greater the more varied this information can be made, and the more perfectly the conditions of obtaining it can be standardized.

Gastric analysis, which is confined to the estimation of the chlorides, is unsatisfactory in several ways.

1. It does not differentiate between composition and quantity in the gastric secretion. If, for example, a test meal were given containing a pint of fluid, the gastric secretion might measure another pint with a chloride value of 1 per cent., or it might measure half a pint with a chloride value of 1.5 per cent., and the results of chloride analysis would be the same—namely, 0.5 per cent.

2. Directly the test meal enters the stomach it begins to leave it by the duodenum, and at the end of an hour, when the stomach tube is passed, the greater part of the meal will have left it. The product obtained with the tube will therefore consist partly of the meal, partly of gastric juice. The relative amounts of each will depend on the motor activity of the stomach, and the results of chloride analysis will vary accordingly.

3. The secreting mucous membrane of the stomach is not uniform in structure; part only—namely, the cardiac glands containing oxyntic cells—secretes hydrochloric acid. We have no justification for supposing that the gastric secretion as a whole is of constant composition as regards chloride; the cardiac portion, for instance, might initiate the secretion and the pyloric portion continue it. The results of test-meal analysis would then record only the particular composition of the combined product at the moment; in half an hour earlier or later it might have completely changed. This view has been elaborated by Sick.[1]

4. The pylorus, though no doubt a powerful muscular sphincter, is not a valvular orifice. A certain amount of regurgitation of duodenal contents is permitted into the stomach through it, and the percentage of gastric HCl, possibly even of total chloride, is thereby altered.

Now, of these four points the first and the second centre upon the fact that gastric analysis by the ordinary method is not the analysis of the gastric juice, but is rather the analysis of a mixture of this with the remains of the test meal. If it were only known how much of the mixture was meal and how much was gastric juice, both difficulties would disappear, for it would become possible to calculate the actual composition of the gastric secretion. Supposing, for instance, that one obtained a fluid with a chloride percentage of 0.25 per cent., and that one knew that 25 per cent. of this fluid was derived from the fluid of the test meal; then obviously the chloride percentage of the actual gastric secretion would be $\frac{100}{75} \times 0.25$, or 0.33 per cent. This calculated value for the actual composition of the gastric juice would be independent both of the total amount of the secreted juice, and of the rate of emptying of the stomach. Further, an idea would be obtained, though not perhaps an exact measure, of the amount of the gastric secretion, as well as its composition, as will be shown later. Finally, an indication would also be possible as to the rate of the stomach's emptying, and therefore of its motility.

These results can be attained by adding to the test meal some substance at a known concentration, and then by estimating the concentration of the substance subsequently in the fluid obtained for analysis. Suppose, for instance, that it be given at a concentration of 1 per cent., and the fluid removed be found to contain it at a concentration of 0.5 per cent., it follows that the fluid removed must consist of equal parts of the fluid of the meal, and of gastric juice. Suppose, then, that the chloride percentage of the fluid be 0.25 per cent., the chloride percentage of the gastric juice itself will be 0.5 per cent.

Various substances have been suggested from time to time for addition to the Ewald test breakfast, with a view to obtaining a measure of the gastric motility. These methods, since their object is now more satisfactorily achieved by *x*-ray examination with bismuth, have lately been dropped, for their wider application to the estimating of the composition of the secreted gastric juice has not apparently been made. Boas[2] first used a solution of chlorophyll in water, and subsequently estimated it colorimetrically. Mathieu[3] used oil of sweet almonds in emulsion in the test meal and then weighed the ethereal extract. Roux and Laboulais[4] used disodium phosphate, estimating it afterwards by titration against uranium acetate. Meunier[5] added to the test meal a minute quantity of an iron salt, and estimated with sulphocyanide. None of these methods are at all satisfactory; their technique is difficult, their sources of error great; in Boas's and Meunier's methods the meal must be one of water, for the tea in the standard meal (Ewald) would interfere with the estimations; Roux and Laboulais's substance interferes with and upsets the reaction of the gastric contents; Mathieu's method is laborious and inexact. For this work the substance used has been urea. To an ordinary test breakfast, consisting of toast and a pint of tea, 5.72 grams of urea are added, making a 1 per cent. solution. The concentration of the urea in the fluid subsequently obtained indicates the degree of dilution by gastric juice which the fluid of the meal has undergone. The estimation of the urea by an ordinary hypobromite method is vitiated by a slight error due to the presence in the gastric content of proteoses; a more exact figure would be obtained by the use of the urease method of urea estimation, first suggested by Marshall, jun.,[6] and this method, as adapted by Plimmer and Skelton,[7] has been utilized in some of the present experiments.

The conditions in which this refinement of gastric analysis would appear to have value are, then, first, where there is abnormally rapid or abnormally slow emptying of the stomach through the pylorus; and, secondly, where an increased or decreased secretion simulates or is indistinguishable from an increased or decreased acidity.

1. Delayed evacuation of the stomach (pyloric stenosis), or accelerated evacuation (hypertonus). These conditions introduce an element of confusion into the interpretation of gastric analyses, for the fluid analysed will contain in the one case an abnormally high proportion, and in the other case an abnormally low proportion, of the fluids of the meal. In pyloric stenosis the acidity is greater than it appears, for much of the administered fluid is present; in hypertonus the acidity of the gastric juice is practically the same as it appears, for practically all of the administered fluid will have left the stomach. If urea be added to the meal, as described, and subsequently estimated, and the volume of the gastric contents at the end of an hour be also measured, the total amount of urea remaining in the stomach at the end of that time can be calculated. Suppose, for instance, that 5.72 grams of urea be administered, and 100 c.cm. of gastric contents be obtained, with a urea concentration of 0.2 per cent., then it is plain that only 0.2 gram out of the original 5.72 grams of urea, or 3 per cent., can still be left in the stomach. The rate of emptying of the stomach, then, will be 97 per cent. in an hour. By these means it is found that in the normal stomach only 2 or 3 per cent. of the original meal remains in the stomach at the end of an hour, and hence the results of simple chloride analysis are approximately correct; while if there is pyloric stenosis the remnants of the meal may amount to 30 per cent. or more, and hence the figure on chloride analysis will be very far from indicating the actual composition of the gastric secretion. The following cases will illustrate the degrees of difference which are met with:

Subject.	Volume of Contents Obtained.	Urea %	Total Urea in Stomach (out of 5.72 Grams Administered).	Meal Left in Stomach at Moment of Emptying.	Condition.
A. 21	40 c.cm.	0.13	0.052 gram	0.9 %	Hypertonus.
T.B.H.	75 c.cm.	0.17	0.15 gram	2 %	Normal.
A. 0	300 c.cm.	0.63	1.89 grams	33 %	Pyloric stenosis.

Since the proportion of the meal-constituent in the gastric content varies in this way and to this degree, it follows that in cases of pyloric stenosis the actual acidity of the gastric juice will be obtained by multiplying the figure obtained by a large factor, while in the absence of stenosis, and in the opposite condition, this will not be the case; the figure obtained will represent fairly accurately the actual composition of the gastric juice. The factor by which it will be necessary to multiply the figure obtained

from analysis, is given by the percentage of urea found on estimation. Thus, in the three cases already quoted:

Subject.	Condition.	Active HCl on Analysis.	Urea % (1 % administered).	Calculated Active HCl of the Gastric Juice.	Diagnosis.
A. 21	Hypertonus	0.32	0.13	0.37	Hyperchlorhydria.
T.B.H.	Normal	0.16	0.17	0.19	Normal.
A. 30	Pyloric stenosis	0.15	0.63	0.41	Hyperchlorhydria.

In the last of these three cases, though the chloride is apparently only normal, it is actually very much above normal, for the gastric juice has been diluted with a larger proportion of the original meal than has been the case in the other two instances. By calculation from the urea value obtained, the actual hyperacidity of the gastric juice is demonstrated.

The condition of delayed emptying of the stomach does not always depend upon pyloric stenosis. It may often be due to atony, or to psychical causes. The danger of error in the simple gastric analysis in all these cases is equally great.

2. Increase in the quantity of the gastric secretion (hypersecretion), or deficiency (hyposecretion). These factors, whatever their pathological cause or clinical significance, must obviously have the effect of masking or of simulating changes in the actual composition of the gastric juice. The conditions of altered composition and of altered amount of the juice are, in fact, rarely differentiated. The possibility, indeed, of hyperacidity, as distinct from hypersecretion, has been called into question. From the standpoint of simple gastric analysis hyperacidity and hypersecretion will be indistinguishable. The above-mentioned urea method affords a simple means of determining the composition of the gastric secretion, and inferring its amount. When there is much gastric secretion the proportion of urea will be low; when it is scanty the proportion will be higher. Increased motility of the stomach, and increased secretion will therefore have the same effect of causing a low urea figure—that is, of increasing the ratio, gastric juice: residue of meal, in the gastric content. The more active the stomach movements, the more copious its secretion, the more closely does the analysed gastric content approximate to the composition of the actual secretion. When the movements are sluggish, or the quantity of secretion deficient, the deviation from this becomes wide, and it is in these cases that error is likely to be made in the interpretation of obtained figures. In a case, for instance, of suppression of the gastric secretion, the fluid obtained for analysis will consist almost entirely of the fluid of the meal, for but little gastric juice will have been added to it. Hence the figures of analysis will represent, not the true composition of the gastric secretion, but rather the composition of the administered tea, mixed with a small proportion of added juice. It is obviously desirable that we should know in these cases what is the nature of the fluid with which we are dealing. To take typical cases:

Subject.	On Analysis. Active HCl %.	Urea % (1% administered).	Calculated Active HCl of Gastric Secretion.	Condition.
A. 42	0.01	0.50	0.02	Hypoacidity.
T.B.H.	0.16	0.17	0.19	Normal.
S 44	0.02	0.94	0.35	Hyposecretion

It would, of course, be a mistake to suppose that these cases represented the conditions which they typify in extreme purity. The first of the cases, for instance, has some hyposecretion as well as hypoacidity, for the urea value in his case, though very much lower than in the third, is yet considerably higher than in the normal. The two conditions are often, in fact usually, associated; but it is none the less important to be able to distinguish between them. The gastric content of a case of carcinoma of the stomach, for example, in which HCl is often absent owing to neutralization of the secretion, would at once be distinguished from the so-called primary achylia gastrica, where the gastric mucous membrane has completely atrophied and the gastric secretion is absent. The clinical associations of hypoacidity, however, as opposed to those of hyposecretion, remain to be worked out.

The effect of a marked diminution in the quantity of the gastric secretion will be similarly great in cases where the acidity is increased. The figure on analysis may lie within normal limits, owing to the abnormally large proportion of the fluid of the meal still present, and yet the actual acidity may be very much above normal. Similarly, if the secretion is much increased in amount, as in the so-called cases of gastrosuccorrhœa, the fluid for analysis will be practically pure gastric juice, and an excessively high value for its acidity may hence be inferred. The urea method affords a comparatively simple method of distinguishing these two conditions of increased acidity, and increased secretion. Again, to take typical instances:

Subject.	On Analysis Active HCl %	Urea % (1 % administered).	Calculated Active HCl of Gastric Secretion.	Condition.
C. 11	0.28	0.16	0.33	Hypersecretion
T.B.H.	0.16	0.17	0.19	Normal.
A. 12	0.20	0.61	0.51	Hyperacidity.

Here, again, the conditions of hypersecretion and hyperacidity are not necessarily opposed to one another; they are commonly associated together, owing to a common cause. In the first of these three cases, for instance, there is some hyperacidity as well as hypersecretion. But these cases illustrate how a simple gastric analysis may fail to represent the actual condition of the gastric secretion. For in the first case analysis gives a higher figure for active hydrochloric acid than in the third; yet by reason of the fact that the secretion in the third case is so much the less abundant (as shown by the higher urea value), the acidity in the third case is actually the higher of the two.

It is sometimes found in the analysis of gastric contents, after urea has been added to the test meal, that the acidity of the fluid to phenolphthalein has disappeared. Its reaction may even have become alkaline. The figure for the active hydrochloric acid, however, remains in these cases unaltered. The cause for this is manifestly the formation of ammonia from the urea. Dr. J. H. Ryffel suggests that this is due to gastric sepsis, and, since it is only rarely observed, may indicate the presence of a special organism.

CONCLUSIONS.

1. The interpretation of the figures obtained by gastric analysis after a test meal is, by reason of the number of factors involved, a matter of great complexity. Any additional means of standardizing results is therefore desirable. Such means is afforded by adding to the meal a fixed proportion of some inert substance, such as urea, whose proportion can be estimated subsequently in the gastric content.

2. It is then possible to arrive by calculation at an approximation to the figures for the actual composition of the secreted gastric juice, as opposed to those of the mixture of this with the remnants of the fluid of the meal.

3. By this method it is possible also to eliminate the disturbing influences of an abnormally rapid or an abnormally slow rate of emptying of the stomach into the duodenum.

4. The conditions of hyperacidity and of hypoacidity can then be differentiated from those respectively of hypersecretion and hyposecretion.

This work has been carried on with the constant advice and help of Dr. Ryffel, and many of the analysis figures obtained and quoted were made by him in the routine analysis of gastric contents from ward cases. My cordial thanks are due to him for the use of these figures, and more still for his kind assistance.

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A COMPARISON BETWEEN SOME PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS.

THE OLIVER-SHARPEY LECTURES, DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

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LECTURE I.

(*Abstract.*)

AFTER expressing his sense of the honour conferred upon him and of the responsibility which he had incurred, Mr. Barcroft said:

The lecturer on physiology whose classes consist largely of medical students necessarily and inevitably spends a large part of his time in pointing out antitheses between the normal and the abnormal—contrasts between the physiological and the pathological.

A simple example of what is in my mind may be furnished by the constituents of urine. One of the most notorious items in a physiological education is the fact that sugar is absent from normal urine. This is not emphasized because of the interesting philosophical problem which it involves, but because of the practical issue which the presence of sugar under abnormal conditions presents. Yet no one of a reflective turn of mind can be satisfied with a physiology which consists of such antitheses, for they are essentially superficial, and if in lecturing to students I have to enforce and even exaggerate them, I may to-day perhaps claim the luxury of turning the medal over and discoursing for a little on the essential similarity of the normal and the abnormal rather than of the difference between them.

A cell in the animal body is from one point of view a chemical complex, it is capable of certain reactions and these reactions are limited by the properties of the molecular groupings of which it is composed. How comes it, then, that these reactions are at one time of one description and at another time of another description? Usually, or as we say "normally," the reactions are of one character, but sometimes, that is "abnormally," they are of another. Does the leopard really change his spots? or is there underneath this apparent contrast some principle of unity which we can discern?

Let me return to the sugar in the urine. I do not know from what substance the kidney derives its energy, but this I do know, that if this substance were sugar the kidneys of the rabbit would require about a quarter of a gram of sugar daily. Now, the rabbit secretes about 100–200 c.cm. of urine in the twenty-four hours. This fluid by some means parts with about half that quantity of sugar, or rather more, before the kidney has turned it out as urine. It seems to me eminently probable that as this fluid traverses the kidney the sugar is utilized. But if the percentage of sugar in the blood were to rise considerably, the amount traversing the kidney cells might easily exceed what suffices for the needs of the organ and the balance would then appear in the urine. Such a condition would occur if excessive quantities of carbohydrate were eaten. If these be the facts there is no real antithesis between the kidney that is not secreting sugar and the kidney which is secreting small quantities of that substance. The difference is in essence one of degree, not of kind.

This very simple example has been chosen to indicate the direction in which my mind is running, but the topics of which I am about to treat are much more complex. For when we speak of the normal metabolism of the cell, or of the organism, we are speaking of something which presents a considerable range of variety in different directions.

Alterations in the circumstances under which the organism finds itself are of constant occurrence. The organism is not merely a "passive resister" of these changes, but ages of evolution have endowed it with the power of producing some efficient adaptation to each alteration of circumstance. It can adapt itself to rest, it can adapt itself to activity, it can adapt itself to oxygen want, and so on. It is of these adaptations which I wish to treat, and in the treatment it will appear that every one has its reflection in some pathological condition of common occurrence.

I. THE PYREXIA OF EXERCISE.

On the ordinary clinical thermometer there is a little mark pointing to 98.4° F. This mark is the outward and visible sign of one of those antitheses of which I have already spoken—the antithesis between the normal and the abnormal body temperature. The whole of recent research has tended to limit the use of the word "normal" with regard to this temperature and to emphasize the physiological variations which the body temperature undergoes.

Of these the most noteworthy is the rise of temperature which takes place during physical exercise. Much information on this subject has been collected by Pembrey [1] and others; this I will not rehearse. Let it be clear, however, that the pyrexia of exercise is a true physiological phenomenon. It is not, as might at first sight appear, a breakdown of the heat-regulating mechanism—a sort of physico-chemical lesion. It is to the benefit of the body, and this in more than one way. It is a response to the circumstance of muscular exercise, just as a pathological pyrexia is a beneficent response to bacterial invasion. The pyrexia induced by the same piece of work is very different in different individuals, but rather constant in any one person. In support of this statement are some data which I obtained from one of the boats [2] of my own college (King's) at Cambridge. The rectal temperatures of the men were taken on successive evenings, before and after practice. The data from "bow" are typical of most of the men.

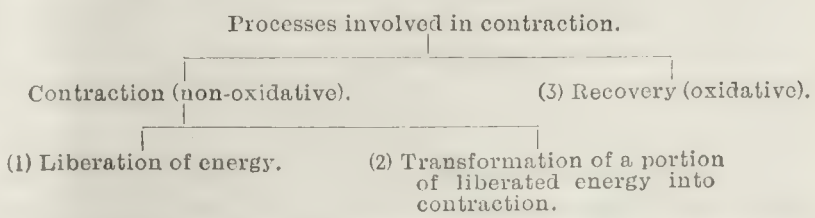
Rise in Rectal Temperature as the Result of Rowing Practice lasting for about One and a Quarter Hours (in Degrees F.)

	May 29.	May 30.	June 1.	June 2.	June 3.	Mean.
Bow ...	0.8	0.6	—	0.6	0.9	= 0.7
No. 5 ...	1.1	1.6	2.1	1.7	1.1	= 1.5
Stroke ...	−1.6	−1.1	−0.5	0.0	−0.4	= −0.7

Whilst this case of "bow" may be regarded as an average one, the extreme cases are those of stroke and five. The case of stroke is of considerable interest, for be the explanation of the thermometer readings what it may, the readings go to show that the exercise was not such as would have strained the power of the thermotaxic centres in the other individuals to keep the temperature normal had such a consummation been desirable.

The benefit which the muscular economy derives from the rise of temperature is at least twofold.

1. A. V. Hill [3] has shown that the efficiency of frog's muscle is increased about 100 per cent. for every rise of temperature of 25° C. By efficiency in this connexion is meant the tension set up for a given output of heat in the muscle. More recently Weizsäcker [4] has come to the same conclusion. "The efficiency," he says, "of muscle in developing tension rises as the temperature rises, and at the higher temperature the rise may be quite obvious." This rise of efficiency does not seem to mean a reduction in oxidation. Unfortunately Weizsäcker's experiments on muscle had not been extended to the investigation of this point when he left Cambridge shortly before the war; but we may fill in the gap from similar experiments on the metabolism of cardiac muscle which he performed at Heidelberg.[5] Following the conception of the Cambridge school of myologists based on the work of Fletcher and Hopkins,[6] he would classify the processes involved in contraction in the following way:



At the higher temperature a greater proportion of the energy liberated—(1) supra—is converted into mechanical work (2). Though both (1) and (2) may be increased absolutely, involving a corresponding increase in the subsequent oxidative process (3).

2. The second benefit conferred upon the muscle by the

rise in the body temperature has to do with a subject upon which I can speak with greater authority—namely, the opportunity presented to the muscle for the acquisition of the oxygen necessary to maintain this exaltation of the oxidative processes.

The oxygen comes, of course, from the blood, and the readiness with which the blood adheres to its oxygen is a function of its temperature. This matter has in recent years formed the subject of researches by Loewy and Caspari[7] and of several workers in Cambridge. Let me quote the figures of Oinuma[8] in this connexion; they show that a rise of temperature scarcely affects the rate at which oxygen is taken up by the blood, whilst it greatly facilitates the ease with which it is given off. A stream of gas free from oxygen was passed through blood, reducing it from the arterial to the venous conditions. The same degree of reduction was effected as follows:

Temperature.	Time taken for Reduction from 90 to 40 per cent. Saturation.
37° C.	8 minutes
27° C.	16 ,,
17° C.	32 ,,

A rise of 10° makes a difference of about 100 per cent. in the rate at which blood parts with its oxygen.

II. Inflammation and Functional Activity.

Leaving the body as a whole, I wish now to draw your attention to another comparison—one which is connected with localized areas or particular organs. This comparison is between the effects following upon functional activity and those which are associated with the earliest stages of local inflammation.

Bearing in mind that the cardinal symptoms of inflammation are "rubor, calor, tumor, and dolor," I wish to put before you the condition of two organs—a condition which I think is typical of others—after they have been subjected to considerable degrees of functional activity. The figures which are at my disposal were those obtained on dogs by my colleague, Dr. Toyojiro Kato,[9] Professor of Medicine in Sendai University, and myself. In all cases the dogs were anaesthetized with A.C.E. mixture and urethane.

1. *The Submaxillary Gland.*

The submaxillary gland is the first organ of which I propose to treat.

Redness.—The gland was thrown into activity by intravenous injection of 10 mg. of pilocarpine. The flow of saliva was at first rapid, and gradually became more slow, and at the end of three hours it had almost ceased; but the flow of blood through the vessels was about three times as great as at the commencement of the experiment, and, indeed, at the end of four and a half hours there was still a marked hyperaemia. The flushing of the submaxillary gland during secretion is a very old observation; it is only in part, however, to be accounted for by the increased quantity of blood in the gland, but the nature of the blood has a share in producing the red appearance of the gland. In this experiment the blood which emerged from the gland during its activity contained considerably more oxygen, and was therefore much redder than during rest.

Heat.—Not only was the blood flow through the gland greatly increased, but there was profound chemical activity which persisted when the salivary flow had ceased (or nearly so), and which must have had its expression largely in the formation of heat. The difficulty of measuring this has a literature of its own, to which Professor Bayliss and Professor Leonard Hill have been the principal English contributors. But whether one interprets "calor" in the sense of a rise of temperature due to increased blood flow through the gland, or in the more literal and scientific sense of heat production measurable in calories, there can be no doubt of its existence.

Swelling.—The phenomenon which underlies swelling is that of the increased exudation from the blood vessels. In the case of the salivary glands this fluid, which traverses the vessel walls, forms the basis of the saliva. More fluid, however, is lost from the blood than appears as saliva, and the balance either flows away from the gland as lymph or remains in it as "swelling." The following table gives the blood flow, the degree of oxidation, and the exudation and the saliva during the course of the experiment.

Before Injection.		After Injection of 10 mg. Pilocarpine.					
Time after injection (minutes)	—	6	27	56	80	140	181
Blood flow (c.cm. per minute)	1.4	8.9	4.6	6.8	5.1	4.3	3.9
Saliva flow (c.cm. per minute)	0	1.04	0.63	0.54	0.28	0 21	0.13
Exudation (c.cm. per minute)	0	0.37	0.15	0.26	0.21	0.28	0.27
Oxidation (c.cm. of oxygen per gram per minute)	0.19	0.68	0.52	0.52	0.52	0.48	0.36

2. *Striated Muscle.*

The measurements of muscle differ essentially from those given above in one important respect, namely, that the whole of the fluid which traverses the capillary walls finds its expression either as lymph or swelling. With this preface let me pass to a description of the experiments which we performed. They were either on the gastrocnemius or the anterior belly of the digastric in the dog. The exercise, rhythmic in character, was a short tetanic contraction each second for fifteen minutes; the results were as follows:

Redness.—The blood flow reached a maximal value six times the flow through the resting muscle. For six hours after the exercise ceased the blood never dropped below a threefold increase of its "resting" value, and even after seven hours and three-quarters the blood flow was still twice what it had been to start with. Moreover the venous blood was quite arterial in its brightness, being at times about 90 per cent. saturated with oxygen.

Heat.—The increased oxidation in the muscle was sustained for three and a half hours after the exercise. It was then over twice the resting value. Here again the oxidation represents heat formation with some storage of potential energy.

Swelling.—The increased exudation from the capillaries lasted for three and a half hours and probably longer, and about 50 c.cm. of lymph were secreted as the direct result of the exercise. Of this about 7 c.cm. appear to have remained in the muscle, swelling it out, for the muscle which had been exercised weighed 38 grams, whilst that of the other side weighed but 31 grams. The counterpart of this change in weight was to be found in the specific gravities of the two muscles, the heavier muscle having the lesser specific gravity, and thus showing that its gain in weight was due to the imbibition of water. Their specific gravities were 1061 and 1070 respectively. These phenomena, which may easily be repeated in the frog,[10] recalled an old observation of Ranke on this subject.

Pain.—Amongst the remarkable features of this exercised muscle was its "feel" to the fingers. Shorter, and of much greater circumference than its fellow, it felt distended somewhat after the fashion of a Rugby football—in fact, it felt stiff. What precise relationship there may be between this objective sensation of stiffness and the subjective sensation which bears the same name is not easy to determine, but that this distension is an important factor in muscular stiffness I have no doubt. Even with a minor degree of inflation I should fancy it would feel stiff, and by the time the swelling amounted, as in this case, to 20 per cent. of the size of the muscle, the stiffness likely enough drifted into something which might be as correctly described by the word "pain."

Further than this I have not been able to follow the analogy. In muscle, at all events, it appears that the symptoms never are pushed to the point of diapedesis taking place; with rest they go as they came.

Conclusion.

Now that I have finished the drawing of comparisons I wish to raise a question which you may think that I should have raised at the commencement, rather than at the end, of my lecture. Are such comparisons worth drawing? Does any scientific reality underlie them, or are they a mere ringing of the changes on familiar facts, and like other comparisons—essentially odious? To me they have had at least this value—having been founded on cruder observations which I had previously considered, they have elicited the much more striking data which I have put before you in the latter part of my lecture. But the real answer to my question depends upon factors as yet undetermined. The cause of the redness, the swelling, etc., which take place as the result of

activity is no doubt the presence of bodies which we call metabolic, which are shed into the tissue spaces by the active cells; the cause of the similar phenomena in the case of inflammation is the presence of bodies which we call toxic in these same spaces. Whether a scientific truth underlies the apparent similarity depends upon the, as yet unascertained, relation of these two classes of bodies. In the meantime so long as we have anything to learn from such comparisons they are worth drawing, and I hope in my next lecture to deal with a comparison which is at least something more than a coincidence.

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EPIDEMIC CEREBRO-SPINAL FEVER:

THE PLACE OF THE MENINGOCOCCUS IN ITS ETIOLOGY.

A BACTERIOLOGICAL STUDY.

(Interim Report.)

BY

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IN a preliminary note on the bacteriology of epidemic cerebro-spinal fever we recently recorded the following facts:[1]

1. That from the blood, cerebro-spinal fluid, and urine of acute cases we had frequently isolated, and as far as possible identified, the so-called meningococcus of Jaeger.
2. That from the filtrate of a fresh catheter specimen of urine from a severe case we had obtained a slight growth, a single colony of which was composed of the following morphological types:
   - (*a*) The meningococcus of Jaeger.
   - (*b*) The meningococcus of Weichselbaum.
   - (*c*) A Gram-negative rod-shaped granulating organism, each granule consisting of a pair of cocci with flattened opposed surfaces. This organism for convenience of reference will be referred to as the "biscuit bacillus."
   - (*d*) Various Gram-positive forms.
3. That in stained preparations from deposits of fresh catheter urine from acute cases with fever we had sometimes found:
   - (*a*) Gram-negative cocci, lying free in pairs and tetrads, and morphologically indistinguishable from the meningococcus of Weichselbaum.
   - (*b*) Clusters of much smaller Gram-negative diplococci.
   - (*c*) Minute and large Gram-negative bacilli.
   - (*d*) Various Gram-positive forms.

In the same note we also discussed the unsatisfactory nature of the epidemiological and bacteriological evidence usually relied on by those who consider that the meningococcus of Weichselbaum is the primary infective agent in epidemic cerebro-spinal fever.

As a result of these observations, themselves suggested by recent bacteriological work in typhus fever, it was suggested by one of us (E. C. H.) that the *Meningococcus intracellularis* might prove to be merely a late non-infective phase in the life-history of the true infective agent, and that for reproduction of the disease this must be present in its earliest forms.

According to this theory the earliest phases might lie outside the range of vision, in which case their morphology would be indeterminable, and it would be impossible to say whether the meningococcus of textbook fame is derived from a coccal ancestor or not. On the other hand, the earliest phases of the causal organism might lie within the range of vision, in which case it should be possible to determine whether the meningococcus is always a coccus, or whether it is derived from bacillary ancestors. In the latter event only could true pleomorphism be proved, though as regards infectivity it would be immaterial whether the earliest phases were coccal or not, provided that the relatively large diplococcus of Weichselbaum were incapable of reproducing the disease. And this appears from animal experiments to be the case.

Since the publication of our first note we have repeated in other cases the observations there quoted, and have obtained the same essential results. We now, however, wish to record further experiments, with special reference to the question whether a filter-passing organism is or is not present in the blood, cerebro-spinal fluid, urine and naso-pharyngeal secretion of acute cases, leaving the question of its infectivity to animals to a later occasion.

The following observations are selected from a large number of experiments, and are admittedly incomplete owing to the absolute necessity for control microscopical examinations at every step, and the heavy expenditure of time and labour involved.

CEREBRO-SPINAL FLUID.

Case I (E. C. H.).

A specimen of cerebro-spinal fluid was obtained from an acute case, death ensuing forty-eight hours after lumbar puncture. A slope of inspissated serum was inoculated from the centrifuged deposit of the fresh fluid, and gave, after incubation for forty-eight hours, a good growth of Gram-negative meningococcal organisms. Further identification was not possible owing to pressure of work, but *post-mortem* examination by one of us (C. E. L.) proved the case to be one of sporadic cerebro-spinal fever with meningitis.

Post-mortem Notes.

An examination of the body was made twenty hours after death, and showed the characteristic appearances of a case of cerebro-spinal fever. A swab taken from the nasopharynx by West's method showed the presence of a Gram-negative coccus, but whether this was the meningococcus or *Micrococcus catarrhalis* was not determined. On removal of the calvaria the dura mater exhibited a slight degree of vascular injection, and when this membrane was stripped off creamy pus was found ascending to the vertex along the course of the cerebral vessels and extending between the convolutions of the brain. At the base the exudate was collected around the optic chiasma, the tuber cinereum, the crura, and the ventral aspect of the pons, while posteriorly it was found upon the upper surface of the cerebellum. The tympanum on each side and the ethmoidal sinuses were laid open, but no sign of disease was disclosed.

On cutting into the lumbar portion of the spinal dura mater a quantity of purulent fluid escaped, and a creamy purulent exudate was observed lying upon the posterior aspect of the cord in the dorsal and lumbar regions. No pus was found upon the cervical portion of the cord. It was noticed that while the consistence of the lumbar and dorsal segments of the cord was markedly diminished, that of the cervical portion was still firm.

Examination of the viscera afforded little indication of morbid change. There was slight cloudy swelling of the kidneys, and fatty change was commencing in the liver. The lungs were congested. The spleen was not enlarged; its cut surface was smeared over two nasgar plates, and from these a growth was obtained of *B. coli*, streptococci, and a Gram-negative coccus.

The remainder of the fluid not required for centrifuging was incubated for one night, and films made from loopfuls of the uncentrifuged incubated fluid showed a few Gram-negative cocci, both free and intracellular, a film from the deposit of the fresh unincubated fluid showing intracorpuscular organisms only. Three c.cm. of the cerebro-spinal fluid which had been inoculated for one night were then diluted with twice the volume of autoclaved normal saline made with water previously filtered at low pressure through a new Chamberland bougie. After sterilization in the autoclave the saline was again thoroughly boiled. The diluted cerebro-spinal fluid was then passed, by the aid of a medium exhaust, through a new Berkefeld filter. (The methods employed for assembling, sterilizing, and testing all filters used in these experiments will be detailed in a separate note.) On the completion of filtration, which lasted twenty minutes, the filter was removed from the filter flask through a large spirit flame, and 2.0 c.cm. of the filtrate were taken up, still through flame, in a sterile Pasteur pipette guarded with wool. The point of this was again flamed, and the contents of the pipette were slowly discharged under the lid of a

nasgar plate, tested for sterility by previous incubation for three days. The inoculum was finally spread over the surface of the medium with a sterile glass rod. Examined after incubation for forty-eight hours the plate showed isolated semitranslucent colonies of a greyish colour, with stippled surfaces and well-defined margins, as seen under a low-power lens. One of these colonies contained Gram-negative diplococci resembling meningococci and Gram-negative "biscuit bacilli." After incubation for another period of twenty-four hours a fine semiconfluent growth of extremely minute transparent colonies was also seen, the growth giving a bluish haze. Under the lens each colony near the edge of the growth was greyish in colour, showed a stippled surface and was irregular in outline. Stained films from the central bluish haze, in which the colonies were too small to be seen with the naked eye, showed

(*a*) Gram-negative diplococci indistinguishable from the meningococcus of Weichselbaum.
(*b*) Slender Gram-negative bacilli.
(*c*) Gram-negative "biscuit-bacilli."
(*d*) Gram-negative and Gram-positive diplobacilli. Many of these were oat-shaped; in others one-half of the organism was coccal, the other half being bacillary in form.

Attempts to isolate individual types (*a*), (*b*), (*c*) by the method of dilution failed. In first subculture Gram-negative forms were seen, but disappeared in subsequent cultures. On the original plate the growth was easily detached, and emulsified freely. The organisms cultivated from the filtered cerebro-spinal fluid in this case corresponded well with the organisms found in a single colony cultivated from the filtered urine of the case we described in our last note.

We now return to the unfiltered cerebro-spinal fluid, the various events in its laboratory history being tabulated as follows:

Examination of Cerebro-spinal Fluid.	Examination of Solid Media.
Fresh Fluid. Deposit shows: (*a*) Intracorpuscular Gram-negative diplococci. (*b*) No free organisms.	Inspissated serum inoculated from centrifuged deposit.
Incubation 24 Hours. Film from uncentrifuged deposit shows: (*a*) Intracorpuscular Gram-negative diplococci. (*b*) A few free organisms of the same morphology.	Inspissated serum shows slight growth. Nasgar plate A inoculated from incubated cerebro-spinal fluid.
Incubation 48 Hours. Film from uncentrifuged deposit shows: (*a*) Enormous numbers of free Gram-negative diplococci. (*b*) Pus cells undergoing autolysis.	Inspissated serum shows good growth of Gram-negative diplococci. Nasgar plate A no colonies. Nasgar plate B inoculated from incubated cerespinal fluid.
Incubation 72 Hours. Film from uncentrifuged deposit shows: (*a*) Large numbers of free Gram-negative diplococci. (*b*) A few small clusters of extremely minute Gram-negative organisms of indeterminable morphology. Some clusters contain one or more well-stained normal sized diplococci. At first sight these clusters suggested masses of degenerated meningococci. Further examination, however, suggested minute organisms on the point of growing into the range of vision.	Nasgar plate A shows minute greyish colonies, single colonies showing small Gram-negative and Gram-positive diplobacilli. *Note.*—After incubation of the cerebro-spinal fluid for 48 hours a slope of ascitic-glucose-agar was inoculated. This gave a growth of a Gram-negative bacillus, behaving in a similar manner to the organism described in Case vi (*v.* below). Nasgar plate B no colonies. Nasgar plate C inoculated from incubated cerebro-spinal fluid.
Incubation 116 Hours. Film from uncentrifuged fluid shows a large number of large clusters composed of definite Gram-negative organisms, minute coccal and bacillary forms being seen with a 1.5 apochromatic lens.	Nasgar plate B no colonies. Nasgar plate C no colonies. Nasgar plate D inoculated from incubated cerebro-spinal fluid.
Incubation 168 Hours. Observations of incubated cerebro-spinal fluid now discontinued.	Nasgar plates C and D found to be contaminated with spore-bearing organisms covering the medium. Nasgar plate B ($?B_2$) shows extremely minute colonies, invisible to the naked eye, which were easily detached and emulsified. Films showed: (*a*) Gram-negative diplococci; (*b*) Gram-negative "biscuit bacilli"; (*c*) clusters of minute coccobacillary organisms; (*d*) Gram-positive forms.

Unfortunately, no normal cerebro-spinal fluid was available for subculture from the incubated infected cerebro-spinal fluid; and in this case, therefore, complete evidence could not be obtained by subculture of multiplication of the minute cluster-forming organisms seen in films prepared from the unfiltered unincubated fluid.

Case II (E. C. H.).

Cerebro-spinal fluid from a severe case, which subsequently proved fatal, was incubated for forty-eight hours and a film was then prepared from loopfuls of the uncentrifuged fluid. This showed:

(*a*) Enormous numbers of Gram-negative diplococci, morphologically indistinguishable from the meningococcus of Weichselbaum, the flattening of the opposed surfaces being unusually distinct.
(*b*) A few Gram-negative bacilli.
(*c*) Gram-positive organisms, otherwise meningococcal in form, the flattening of the opposed surfaces being again very distinct.

In a film prepared after another twenty-four hours the same appearances were seen, except that only a few Gram-negative bacilli were found in the incubated fluid. A nasgar plate inoculated after incubation for the first period of twenty-four hours showed in seventy-six hours yellow colonies and a bluish haze composed of colonies invisible to the naked eye. With a low-power lens these small colonies were greyish, with stippled surfaces and slightly irregular outlines. A film from a single large yellow colony showed Gram-negative rounded diplococci of the *cinereus* type, whilst a film prepared from the bluish haze showed extremely minute Gram-negative diplococci mixed with larger Gram-negative organisms indistinguishable from the meningococcus. Attempts to isolate these completely failed. Gram-positive forms were also present.

After incubation of the cerebro-spinal fluid for eleven days no meningococci could be seen, in accordance with our general experience that the first crop of meningococci disappear from incubated cerebro-spinal fluid within four to five days of its collection. Examined, however, on the twelfth day, large numbers of extremely minute, well staining Gram-negative cocci and diplococci, mixed with Gram-positive members, were to be seen in films prepared from the uncentrifuged fluid. Many of the forms were so minute as to be scarcely recognizable as organisms without the aid of a 1.5 mm. apochromatic lens and a No. 8 ocular.

Examination of the next three cases, which are still being studied, was carried out in the following manner. From the centrifuged fluid, as soon as possible after recovery from the body, films were made, and nasgar, blood-agar, and glucose-ascitic-agar were inoculated from the deposit. The remaining uncentrifuged cerebro-spinal fluid was then incubated for twenty-four hours, after which time further films and cultures were made, the whole process being repeated on successive days.

Case III (T. H. C. B.).

Films direct from the Fluid.	Cultures from the Fluid.
(*a*) *Fresh Fluid.* Many leucocytes show intracellular Gram-negative organisms resembling meningococci; also a few Gram-negative organisms of diplobacillary form.	Typical meningococci in culture and in films.

FILMS DIRECT FROM THE FLUID.	CULTURES FROM THE FLUID.
(*b*) *One Day's Incubation.* Same as above, but meningococci much more numerous.	A few scattered colonies of typical meningococci in culture and in films.
(*c*) *Two Days' Incubation.* Gram-negative débris; no formed elements seen.	No growth.
(*d*) *Three Days' Incubation.* Degenerating pus cells and Gram-negative diplococci seen.	No growth.
(*e*) *Four Days' Incubation.* Gram-negative débris seen; no formed elements seen.	No growth.

Case IV (T. H. C. B.).

(*a*) *Fresh Fluid.* Many leucocytes and numerous Gram-negative, intra- and extra-cellular diplococci.	Abundant growth of typical meningococci.
(*b*) *One Day's Incubation.* Enormous numbers of meningococci, principally extracellular. Pus cells degenerating.	Free growth on glucose-ascitic-agar. Films show a small Gram-negative coccus in pairs and groups.
(*c*) *Two Days' Incubation.* Gram-negative granular substance in clumps.	No growth.
(*d*) *Three Days' Incubation.* Gram-negative granular material. Also (*a*) A few definite Gram-negative diplococci. (*b*) Large Gram-positive cocci in groups.	Abundant white growth on glucose-ascitic-agar of Gram-positive cocci in groups and masses; often in pairs and definitely flattened. One or two Gram-negative forms.
(*e*) *Four Days' Incubation.* Gram-negative granular material, and degenerating pus cells. Also (*a*) Gram-negative diplococci. (*b*) A group of large Gram-negative cocci.	Same as in (*d*).

Case V (T. H. C. B.)

(*a*) *Fresh Fluid.* Pus cells and numerous meningococci, both intracellular and free.	Typical meningococci; abundant growth.
(*b*) *One Day's Incubation.* Appearance as in (*a*).	A few colonies of meningococci (? films).
(*c*) *Two Days' Incubation.* Débris entangling meningococci.	No growth.
(*d*) *Three Days' Incubation.* Gram-negative débris entangling a few meningococci. Also Gram-positive bacilli suggesting diphtheroids.	Growth of Gram-positive organisms suggesting diphtheroids.
(*e*) *Four Days' Incubation.* Gram-negative débris. Also (*a*) Clumps of Gram-negative cocci; several of the cocci are typically flattened in their opposed surfaces, when in pairs. (*b*) Numerous Gram-positive organisms suggesting diphtheroids.	Growth same as in (*d*).

Case VI (T. H. C. B.)

In this case films from centrifuged fresh cerebro-spinal fluid showed pus cells containing Gram-negative cocci. These were also lying free in pairs and groups. There were also present numerous small, slender Gram-negative bacilli. Cultures on blood-agar showed numerous dew-drop colonies. In film preparation from these only meningococcal forms were present. The uncentrifuged remainder of the cerebro-spinal fluid was incubated for three days. The centrifuged deposit of this now showed short Gram-negative bacilli, each bacillus presenting a central constriction, which in many cases gave the impression that the organism was an elongated diplococcus. There were also numerous single Gram-negative cocci and a few Gram-positive larger diplococci. Cultures from this deposit on nasgar produced a growth of small, rounded colonies with irregular margins and finely granular surfaces, when viewed with a low-power lens. These colonies gave a marked bluish sheen by transmitted light. Films showed short, stout, Gram-negative bacilli, with a central constriction; where two lay side by side the appearance was that of a tetrad. This organism gave slight acidity in glucose, but did not ferment lactose, saccharose, maltose, or mannite. It did not alter litmus milk, did not grow on gelatine at 22° C., and gave a very slight, pale growth on agar. The organisms showed marked oscillatory movements in a hanging-drop preparations. From a second specimen of cerebro-spinal fluid withdrawn from the same case one week later, an organism with identical morphological, cultural, and biochemical reactions was obtained.

BLOOD.

First Case (E. C. H).

Six c.cm. of venous blood were collected from a severe case of cerebro-spinal fever in which a successful cultivation of Weichselbaum's meningococcus had been made from the cerebro-spinal fluid. The blood was discharged direct from the collecting syringe into a sterile flask closed with a rubber cork, and containing 50 c.cm. of a sterile 1.2 per cent. solution of sodium citrate in filtered tap water. The flask and its contents were autoclaved before use. Within two hours of collection 6 c.cm. of citrated blood were withdrawn from the flask by perforation of the rubber cork, the collecting needle and syringe being thoroughly sterilized before use. The specimen of citrated blood abstracted from the flask was then diluted with five to six times its volume of autoclaved normal saline, and about 5 c.cm. of the mixture were then filtered through a new Berkefeld bougie. The filter flask and its contents were then incubated for forty-eight hours. At the end of this time the previously clear filtrate was markedly turbid, and films prepared from the uncentrifuged filtrate showed great numbers of Gram-negative diplococci, indistinguishable from the meningococci of Weichselbaum. A nasgar plate previously tested for sterility was inoculated with the filtrate, but in spite of the heavy infection of the filtrate the plate showed no growth within the limits of observation (six days). A second nasgar plate inoculated from the filtrate after another twenty-four hours of incubation also remained sterile, as did a third plate inoculated from the filtrate after forty-eight hours. A fourth plate, however, inoculated after seventy-six hours' incubation of the filtrate, showed numerous minute colonies. These colonies contained minute Gram-negative diplococci and small Gram-negative bacilli. The bacilli readily took up the counter-stain (neutral red), but the cocci refused this, as well as a counter-stain of dilute fuchsin, being only brought into view in fresh films after counter-staining with carbol fuchsin. The fresh urine of this case was inoculated on to nasgar plates, and after incubation for five days numerous minute colonies were seen, containing Gram-negative diplococci mixed with Gram-negative bacilli, resembling the "biscuit bacilli." In subculture these did not survive.

Second Case (E. C. H.).

A specimen of venous blood from a fatal case was collected two days before death, and was received into citrate and filtered as described above. The filtrate was clear, and remained so for twenty-four hours at blood temperature. After incubation for an additional twenty-four hours the filtrate was turbid, and became progressively so. Stained films from loopfuls of the filtrate showed, however, no organisms, even after centrifuging. Only Gram-negative débris was present, suggestive of broken-down organisms. A nasgar plate, tested for sterility by previous incubation, was inoculated with 2.0 c.cm. of the filtrate, and was incubated for forty-eight hours. The plate then showed a small number of isolated semitransparent colonies. Single colonies gave in stained films a mixture of minute Gram-negative bacilli. A subculture from one of these gave on the following morning a good growth of small colonies, single colonies now showing Gram-negative and Gram-positive bacilli. Meanwhile the filtrate had been continuously incubated, and on the fourth day film preparations showed large numbers of clusters of what appeared to be very minute Gram-negative organisms of indistinguishable morphology. A subculture of this

into a filtered specimen of normal human blood in saline showed in forty-eight hours a growth suggesting involution forms, which were rounded, ovoid, and dumb-bell shaped. Gram-negative and Gram-positive forms were both present. A control specimen of filtered normal blood in saline gave no organisms. During this period of forty-eight hours the incubated filtrate was examined twice, and the clusters of indeterminable morphology at the end of this time appeared to have broken up into very minute Gram-negative diplococci, many of them showing flattened opposed surfaces. They refused, however, to stain with dilute fuchsin, and could only be demonstrated by immersion in carbol-fuchsin. After incubation for a further period of forty-eight hours enormous numbers of Gram-negative diplococci of varying size were present in the filtrate, and now stained readily with dilute eosin or fuchsin or neutral red. A subculture on nasgar, inoculated at the beginning of this period of forty-eight hours, gave after incubation a profuse growth of extremely minute greyish colonies, with stippled surfaces and irregular margins. In film preparations minute Gram-negative diplococci were seen in pairs and tetrads mixed with Gram-positive forms of the same small size. In both flattening of the opposed surfaces was well marked. At the end of this period of forty-eight hours fresh subculture from the filtrate was made, the plate showing after forty-eight hours in the incubator a thin bluish haze and large numbers of semi-confluent greyish colonies. Films made from the haze and from the isolated colonies showed Gram-negative diplococci with flattened opposed surfaces, Gram-positive forms being also present. The fresh urine of this case was also filtered, but through a new Chamberland F bougie, the filtrate being enriched by secondary filtration through the same bougie of normal human blood in saline. After incubation for one night films prepared from the filtrate showed minute Gram-negative organisms of indeterminable morphology, rounded Gram-negative diplococci, Gram-negative bacilli, and Gram-positive forms.

We are fully alive to the fact that all bacteriological experiments involving the use of filters must be scrutinized with the greatest care, whether the primary object of experiment is determination of the presence or absence of filter-passing organisms, or of the occurrence of a genuine pleomorphism. And we also recognize that to establish a true relationship between the various organisms (excluding the gonococcus) which present a family likeness to the meningococcus of Weichselbaum, itself no fixed type, is an extremely difficult matter. Finality in attempting to bring into line the various types of organism we have constantly met with in our meningitis work is, in fact, impossible at present. And this particularly applies to the thesis whether a particular type may present both Gram-positive and Gram-negative phases, as appears to be the case with the meningococcus of Jaeger.

Contaminations, in short, in experiments of this nature are a perpetual menace to accurate observation, and it is well to remember that their presence or absence is always easier to assert than to prove. None the less, the consistent employment of a scrupulous technique justifies, we believe, an appeal for independent and searching inquiry. And in the meantime we think we have produced sufficiently good evidence to justify further study, with particular reference to the following points:

(*a*) The presence or absence of a filter-passing organism in the body fluids of acute and subacute cases of cerebro-spinal fever.

(*b*) Its relationship to the disease.

(*c*) Its relationship to the meningococcus of Weichselbaum and to the various types of organism we have isolated from the body fluids, especially when these are incubated before subculture.

(*d*) The reciprocal relationship of these latter organisms to each other.

We desire to record our thanks to the following for their generous assistance in our work: Dr. F. Foord Caiger, Dr. W. J. J. Stewart, Dr. T. R. C. Whipham, and Dr. Romanes.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, March 27th, 1915.

CLINICAL LABORATORY METHODS IN METABOLIC DISEASES.*

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NOTES ON DUFF HOUSE.

DUFF HOUSE was built by the first Earl of Fife in 1745. The architect was William Adam, and the house is designed in the same style as Wentworth Woodhouse, but in Duff House the wings planned were never built, owing, it is said, to a dispute between the Earl and his architect. The house was the residence of the Fife family until a few years ago, when the late Duke presented it, with its park of 165 acres, to the twin burghs Banff and MacDuff. The municipal authorities of these burghs let the mansion to a syndicate which opened it as a hotel. This hotel was not successful, and in 1913 the building was taken by some gentlemen who were anxious to open in Great Britain an institution for the study and treatment of certain diseases of metabolism on lines similar to those of some well-known Continental sanatoriums.

Duff House is just outside Banff, a town 50 miles from Aberdeen on the Moray Firth.

No systematic weather records except those of rainfall were taken until 1914, when Mr. A. J. Leigh, B.Sc., was appointed Meteorological Observer, but since then daily reports of rainfall and sunshine have been telegraphed to South Kensington. From these reports it would appear that the climate is decidedly good. The sunshine is the highest in Scotland, reaching in the summer as high as 37 per cent. of the possible. The number of hours of bright sunshine recorded in 1914 was 1,400. The rainfall amounted to 27.5 inches in that year, and I can testify to the fact that whilst I was in Banff, during December, 1914, and January, 1915, the weather contrasted very favourably with reports which reached me from other places. It is remarkable that the mean temperature is only 3° F. lower than that of places on the south coast, though Banff is over 600 miles north of them.

The scenery, both river and sea, is interesting, and specially brilliant sunsets were frequent during my visit. The facilities for sport are good. The shooting was excellent, and the fishing on the River Deveron is said to be good. There is an eighteen-hole golf course in the park, the soil of which is sandy, and the course, though not a first-class one, has the merit of drying quickly. Indoors the patients have the use of a full-sized billiard table, and can play card games in the lounge, and one way or another time passes very quickly there.

To the naturalist the district is specially interesting, owing mainly to the variety of bird life. The Scottish naturalist Edwards, whose interesting life was written by Smiles, lived in Banff, and made his wonderful natural history collections in the neighbourhood.

The management was fortunate in obtaining the services of a well-known and experienced chief medical officer, who has gathered round him a very keen and able staff, consisting of chemists, an *x*-ray specialist, masseurs, matron, and nurses.

The chemical laboratory struck me as very complete, and Mr. Leigh and his assistant, Mr. Sanders, seemed to find plenty of work to do in conducting the analyses required. The chemists have done very useful work in making analyses of many of the foods sold as suitable for diabetes. It is greatly to be hoped that this work will be published for the general information of the profession, as I know that some quite unsuitable articles of diet are often recommended for such cases.

The *x*-ray department, under the direction of Mr. Marxer, is also well equipped. The work done in this department is mainly screen work on patients who were having bismuth or barium meals, but a great many negatives are taken, and already a most interesting collection of plates has accumulated, showing unexpected and unusual causes of intestinal trouble, and sometimes unwished-for results of gastro-enterostomies and other short-circuiting operations. The diagrams indicating the position of the barium meal become part of the dossier of the patient.

* A paper read at Harrogate Medical Society on March 26th, 1915.

The majority of the patients treated at Duff House are cases of diabetes or obscure gastric and intestinal trouble, with or without intestinal stasis.

Urine is collected in a Winchester quart, fitted with a suitable funnel and glass stopper. The faeces are collected by placing an enamel vessel in the pan of the w.c. When used, a well-fitting lid, with the number of the patient's room, is placed on the vessel, and it is sent to the laboratory.

The urine of diabetics is analysed every day quantitatively, both for sugar and diacetic acid. The method used for sugar estimations is gravimetric. The cuprous oxide is oxidized and weighed as cupric oxide in a Gooch crucible. I published a note in the BRITISH MEDICAL JOURNAL of March 7th, giving the result of a comparison with the gravimetric method of fifty estimations made by me by Dr. Parnell's method. The mean difference between the two methods over the series of fifty was only 0.19 per cent. The blood is also examined for sugar at least twice a week. The diet is generally at first quite strict, but when the percentage of sugar in blood and urine has been brought down, weighed quantities of farinaceous foods are added, and the effect on the sugar and diacetic acid in the urine and on the sugar percentage in the blood carefully noted. By these means the diet proper to the individual case is gradually discovered, and experience often shows that one form of starch is better digested than others. The "chief" orders so many calories daily, and decides in what particular form the required number are to be taken He also decides on the amount of exercise necessary and the time to be occupied in rest and the hours at which the rest is to be taken.

All the food supplied to the patients is weighed, and anything the patient leaves is also weighed and subtracted from the quantity given. All this appears on the report sent to the "chief" daily. A nurse visits the patient twice a day, taking pulse and temperature. This seemed to me to be a little unnecessary in these chronic cases, but it is part of the routine observation. Patients are weighed twice weekly before breakfast.

The treatment at Duff House is mainly dietetic, but in many cases ordinary medicinal treatment is given. Many patients were having massage—a few dry, but the majority were treated by a form of Vichy douche with much more abdominal massage than is given at Harrogate.

The bath installation consists of the Vichy douche, the Plombières douche, the electric cabinet bath, the sitz bath, the effervescent recumbent baths, and others.

I can imagine some objections to such an institution as Duff House.

1. That the amount of time and attention given to the patient might tend to make that patient introspective and be likely to turn him or her into a neurasthenic. This objection, I consider, has a good deal in it, and I expected that there would be a great deal of conversation amongst the patients about their health, but this was not the case. I found there was little talk of health or treatment, the reason being that the "chief" is fully alive to the danger, and explains to every patient that it is contrary to the rules of the establishment and the interest of the patient to talk to his fellows about his ailment or the treatment thereof.

2. A second objection is to the situation of Duff House. It is said that it is too far away from the large centres of population and too difficult of access. It is quite likely that these facts tend to limit the number of patients willing to go to it, but I believe the isolation is a decided advantage to those who do go. There is no temptation to break the rules laid down for guidance, and, in point of fact, I was much struck by the loyal obedience to every regulation on the part of my fellow guests and envied Dr. Spriggs his power of seeing that all his instructions were carried out. I am aware that all this care and attention can be and is given in nursing homes in London, but there must be a great many people who would be happier and better at a place like Duff House. The fact that the majority of my fellow-patients had been sent by London physicians of the highest rank confirms me in this opinion.



DUFF HOUSE, BANFF, SCOTLAND.

3. A third objection has been raised to Duff House, and, being an ethical one, I am loth to deal with it, but feel that I am bound to do so, as several medical friends have spoken to me about it. The objection is that the institution is probably financed by laymen. I do not know myself who found the money; but even if the financial managers were entirely composed of laymen, I do not see how it can be helped. Given that such an establishment is desirable, surely it is better to have it financed by laymen than that it should not be founded at all.

Ethical objection might more reasonably be taken if any of the shares were held by practising medical men, but I am assured that no shares are so held. In such an establishment as this I feel sure it is not right that any man having the power to send patients should have a personal interest in the financial welfare of the institution. Also it is to be remembered that the same objection applies to many other recognized institutions, such as some hydropathics, homes for inebriates, sanatoriums for tuberculosis, and asylums other than public, and others. The point, to my mind, is not so much how it was founded as how it is conducted, and on this point I have no doubts. The patients are sent by doctors, and the staff keep in touch with them. A very full report is sent to the medical man or men on the patient's departure, and, contrary to the very bad practice in many Continental spas, the patient is told very little; for instance, he is not supplied with an elaborate analysis of the urine, which is often alarming to

him, because he does not know what is normal and what is not.

An excellent point in the management of Duff House is that all the patients pay the same fee, quite irrespective of the methods of investigation or treatment.

I have brought this subject under your notice because I think it has special points of interest for Harrogate and other health resorts in Great Britain and Ireland, specially now, when so many Continental spas are not available.

For years past I have been endeavouring to get better facilities for *x*-ray investigation here, particularly in the field of abdominal work. Our late manager, Mr. Buckland, agreed to get a suitable installation, as the difficulty was not want of skill on the part of the operator; it was entirely due to inefficiency of the apparatus, and our present manager, Mr. Broome, is quite willing to carry out Mr. Buckland's intentions, and I am now pleased to hear that an *x*-ray specialist is likely to settle amongst us very shortly, and that it will no longer be necessary to send cases to Leeds for the *x*-ray investigation of abdominal conditions. The nursing homes here are quite willing to give the barium meals at a moderate charge, even if the patient does not reside in the home. I also urged on our late manager the importance of having a chemical laboratory here, but nothing came of it, so that we still have the bother and delay of sending specimens of urines in difficult cases away for an authoritative analysis. This is also probably about to be remedied, as the chemists in the town, if assured of medical support, are likely to join together and found a central laboratory under the care of a skilled analyst. Should this be done, arrangements will be made to distribute the Winchester and faeces pans and collect them when filled.

In conclusion, I would like to say that I left Duff House fully convinced of the importance of this pioneer institution, and with the greatest admiration for its methods of investigation. I do not think it practicable to have such a place here, nor do I think it necessary, but I do believe that it is very desirable for us to imitate in some degree the thorough methods of Duff House and the improved *x*-ray facilities, and the chemical laboratory will help us to do so.

An Address
ON
WOUND INFECTIONS;
AND ON
SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

DELIVERED BEFORE THE ROYAL SOCIETY OF MEDICINE ON MARCH 30TH.

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(*Continued from p. 668.*)

WE may, with such new knowledge as we have won from the experimental methods I have described, now revert to the consideration of those three methods of combating wound infections which were enumerated earlier in this discourse. It will be remembered that these were: *Treatment by antiseptics*, *treatment by physiological methods*, and *vaccine therapy*. We will take them one by one.

TREATMENT BY ANTISEPTICS.

If we were to adopt the Socratic method, and were to inquire of the first man whom we might find engaged in washing out a wound what were the grounds for his confidence in the utility of his procedure, he would probably make some such answer as the following: "I know that the antiseptics which I am bringing into application are agents which directly kill and inhibit the growth of microbes. There is no other agency known which would be competent to do the bactericidal work that these antiseptics do in the wound. And, again, it is everybody's knowledge that Lister, by bringing in his antiseptic treatment, extirpated those septic infections of wounds, which before the advent of his method devastated the surgical wards of every hospital."

And if we were to push our question further, and to ask of the surgeon what was the particular end and object to which his procedures were directed—whether it was the sterilization of the wound; or the killing off of a large proportion of the microbes; or the imposition of a check upon the survivors; and if we were further to ask, whether the particular antiseptic in the particular strength in which he was employing it could be relied upon to achieve the end in view; we should probably be told that, supposing that the antiseptic did not completely sterilize the wound, it would inevitably kill a large number of microbes; and it would probably also inhibit the growth of any survivors. And, inasmuch as one or other of these objects would be sure to be achieved, there could be no question but that advantage would be accruing to the patient.

We should, in short, get an answer which proceeded upon at least one erroneous premiss, and which betrayed loose and inconsequent thinking, and a reluctance to come to close quarters with the question. But the reasonings of the larger part of humanity are neither better nor worse than this, and it is not for that less necessary to take them into very serious account, and to do our best to correct them when they mislead.

Let us begin, since Lister is the fount and origin of all antiseptic treatment, with what relates to his work. Lister's name is associated with two discoveries. The *first* of these is the discovery that we can, by an *anticipative prophylactic application*, hold off microbes from surgical wounds, and so avoid wound infections. The *second* is that in cases of compound fracture where the wound is already infected we can still, by what I may perhaps call a *retrospective prophylactic application of antiseptics*, stave off the wound infection. The first of these is a discovery of absolutely universal application, and it will carry the name of Lister down to remotest posterity. The second discovery has reference only to a particular kind of traumatic wound, and shows that prophylactic applications of antiseptics can be usefully employed also in connexion with some wounds which are already infected.

It is clear that neither of these discoveries finds any direct application either in connexion with prophylaxis or the treatment of the wound infections which occur in projectile wounds.

What it is necessary to say on the possibility of preventing septic infection by sterilizing projectile wounds can be said in a very few words. The principle that microbes can be held off from wounds by an antecedent employment of antiseptics has no application to projectile wounds, for these are infected before they are seen by the surgeon. Nor, again, is the Listerian discovery that prophylactic applications of antiseptics can in the ordinary compound fractures of civil life stave off wound infection a discovery which relates to conditions such as obtain in projectile wounds. Retrospective, or as we may also call them *ex post facto*, prophylactic applications of antiseptics will give good results only when the microbes are accessible. In the case of the ordinary compound fracture of civil life this is the case. For here the microbes lie exposed on the external surface of the bone which has been thrust through the skin. The contrary holds for projectile wounds. Here the microbes are inaccessible. They have been carried down deep into the tissues, and lie on the inner face of a torn and ragged track; and that track is blocked by blood clot and hernia of muscle.

It is clear that the utmost that prophylactic applications of an antiseptic could under such conditions achieve would be an incomplete sterilization. And an incomplete sterilization would leave us with a wound infection, and in a few days with as bad an infection as before. Coming now to actually subsisting wound infections, we see that exactly the same thing would apply. We are not entitled to infer from the fact that the method of Lister is within its limitations an effective method of prophylaxis that it is also an effective method of treatment. That is clearly a question which must be determined as an independent issue.

When we approach the question in this way we see that the first point which has to be determined is: What particular concentration of each particular antiseptic will,

when applied to the wound, exert there a bactericidal action on the microbes? In connexion with this we must beware of the fallacy of taking the figures for an antiseptic acting on microbes in watery suspension and seeing in these an all-round formula of efficacy for that particular antiseptic.

A formula of efficacy of this sort might of course find a useful application where the sterilization of skin surfaces and instruments was concerned. For here the antiseptic comes into operation on exposed microbes in full strength. In practically every other case the conditions would be entirely different. The antiseptic would have to come into operation in a medium which quenches its antibacterial action.

I have recently, in dealing with internal medication by antiseptics in pneumonia, brought forward[1] an array of experiments which show that the quenching of the antibacterial power of antiseptics by the medium in which these come into application, is the essentially important factor to be considered in connexion with their therapeutic use. In particular I have shown in connexion with drugs like creosote and guaiacol, that doses which would almost certainly be lethal would have to be administered before these could come into operation in blood.

The same sort of thing holds true of pus. But here the situation will be different in two respects. It will be different in respect that, as compared with serum, pus exerts a greater quenching effect upon antiseptics. It is, if I may put it so, more *antisepticotropic*. This will prevent us taking the antisepticotropic values for the serum and applying them to the pus in the wound. Again, the conditions under which an antiseptic will come into application in a wound will contrast with those which come into application in internal medication. In connexion with internal medication we have to take into consideration the quenching influence which would be exerted by the totality of blood. In applying antiseptics to the wound it lies with us to make the conditions much more favourable to the antiseptic. We can, if it is a question of washing out a wound with antiseptics, make the relation of antiseptics to pus anything that we please. And where it is a question of leaving an antiseptic behind in the wound for the purpose of inhibiting growth, we can also, within limits, lay down our own conditions, and make provisions which will prevent the conditions becoming too unfavourable to the antiseptic.

If there are, in the published literature on antiseptics, any papers dealing with the investigation of the efficacy of antiseptics from this point of view, they have escaped my observation. I have accordingly, in conjunction with my fellow-workers, Dr. W. Parry-Morgan and Dr. A. Fleming, set to work to supply the missing data. To find out what concentrations of antiseptic ought to be brought into operation in washing out a wound we took nine volumes of antiseptic to one of pus. To determine what inhibitory effect would be exerted by an antiseptic left behind in a wound we took one portion of the antiseptic to—as the case might be—two or four volumes of pus. It will be seen that by this plan of operation we conduct our experiments directly on the microbes and pus furnished by the wound; in other words, instead of dealing with any abstract question, we deal with the concrete question which presents itself in the particular wound infection which happens to lie before us.

The general results obtained in this investigation will be separately set forth. At the moment it will suffice to call attention to the fact that when employing nine volumes of the antiseptic solution to one of pus from the infected wound, and leaving the antiseptic in application for ten minutes, a strength of 1 in 40 of carbolic acid, and strengths of 1 in 400 of biniodide of mercury, and 1 in 500 of tincture of iodine all failed to sterilize. Again, in experiments on inhibition, one volume of a 1 in 30 dilution of lysol, and 1 in 400 of tincture of iodine, and 1 in 200 solution of biniodide of mercury did not avail to prevent bacterial growth in four volumes of pus. But I must not delay over the question as to what will with a particular antiseptic be the particular concentration required for the attainment of a particular antibacterial effect. Let us revert to our task of trying to bring the whole question of the employment of antiseptics in wounds into some sort of proper perspective. It will help us to do this if we consider the following questions:

(1) *Is there any reasonable prospect of sterilizing the wound by an application of antiseptics?*

So far as the pus which is brought into intimate contact with the antiseptic is concerned, it would probably be possible to sterilize this by methods which will elsewhere be explained. But we have in the wound not only pus which can be reached by our antiseptic washings but also pus which is locked up out of reach in blind alleys and pockets. And, again, we have in the infected wound not only a microbic infection of discharges, but also a microbic infection of the granulation tissue. And assuredly the really formidable difficulty in connexion with the sterilization of the wound is that of getting sufficient penetrating power to deal with these sheltered microbes.

Now the ordinary antiseptics which we employ in wounds have as good as no penetrative power, and, though it is possible to undertake comparative experiments, and as an interesting academic exercise to determine for a series of antiseptics how far their antibacterial influence may extend in agar or any other artificial medium, academic exercises like this ought not to divert our attention from the fact that there is not, among all the competing antiseptics, one which can penetrate into and sterilize the walls of an infected wound. In fact, if it were ever to come about that an antiseptic sterilized heavily infected wounds, that would be a matter to announce in all the evening and morning newspapers. Nor is it matter for surprise that antiseptics should not be able to penetrate into granulation tissue. Let us call to mind the fact that this is composed of continuous layers of cells; that the cell wall is a quasi-impenetrable membrane; further, that we have in the granulation tissue a very developed system of capillaries, capable of absorbing and carrying away any antiseptic that might penetrate; and, lastly, that we have also in the granulation tissue an outflowing lymph current. Having realized the inefficacy of antiseptics for the purpose of sterilizing an infected wound, let us now pass to the next question. It may be formulated thus:

(2) *Is there, in point of fact, any ground for the confident belief that a reduction in the number of microbes such as would be obtained by washing out of the wound with antiseptics, must carry advantage to the patient?*

We have realized that it is a firmly established conviction that every procedure which leaves behind in the wound fewer microbes would, like a smaller sowing of seed, sensibly reduce the ultimate crop, and so sensibly advantage the patient. The bacteriologist does not see in this a matter of course. He thinks not only of the sowing, but of the soil. He reflects that when we are dealing with a microbe which reproduces itself rapidly on a particular medium—let us say the typhoid bacillus in peptone broth—the lightness or heaviness of the sowing would after the lapse of a comparatively short time, hardly come into account. Again, in the case of a microbe which multiplied itself very slowly in a particular medium the sowing would, unless the incubation period were indefinitely extended, make very little difference to the result. Finally, where a microbe grows very slowly on a particular medium, but very rapidly as soon as this undergoes transformation, the population of microbes found in the culture would clearly depend less on the number implanted than on the time taken to convert the nutrient substratum from a bad into a good cultivation medium. It is, in the light of what has gone before, quite easy to see the application of this to the wound. Whether few or many serophytic microbes are left behind in the wound will make comparatively little difference to the number found in the uncorrupted lymph. For serophytes will, unless constantly kept down by phagocytosis, multiply rapidly. Again, in the same way, whether few or many sero-saprophytes are left behind, would not make much difference to the number found in the uncorrupted discharge. For sero-saprophytes grow very badly on this medium. But the factor which will readily exercise a determining influence on the result will be the rate at which the lymph becomes corrupted. And the practical conclusion emerges that what is really difficult in dealing with an infected wound is not to thin out the microbes; but afterwards to keep down their numbers. We are here carried along by our train of thought to the "dressing of

the wound"; and in connexion with this we may put the following question to ourselves:

(3) *What conclusions can be drawn from the fact that the frequent re-dressings are, in connexion with the treatment of infected wounds by antiseptics, indispensable?*

This is one of those questions of which we realize the fundamental significance as soon as they formulate themselves in the mind. When our treatment has miscarried, and the wound has filled up again with pus, and this has become tryptic and has begun to digest the granulations and skin surfaces with which it comes into contact, and when bacterial poisons are being absorbed into the system, we are compelled to re-dress the wound. In other words, when we have been falling away we have to try to get back to the position which was reached at the previous dressing. And let us in this connexion note that it is one thing to be able when unsuccessful to fall back upon dressing, and to make of this a point of departure for trying a new way; and quite another thing to accept dressing as a necessary and inevitable element in our programme of treatment, and then not even to propose to make it a point of departure for a new therapeutic effort, but calmly to contemplate an everlastingly repeated setting out into a blind alley, and an everlastingly repeated return to our point from which we started. If grace had been given to us to see things with unsophisticated vision, it would be clear to us that to make constant re-dressing an integral and indispensable element in our programme of treatment is really as much of a confession of failure in the case of an infected wound as in a surgical operation. It is equivalent to saying that our method of treatment leaves the wound in a condition which makes healing impossible. And, finally, this leads on directly to the question—

(4) *How are we, in view of all the above, to account for confidence in the utility of the antiseptic method of treatment?*

We may here begin by bringing out that in all probability the antiseptic method, considered as a method for preventing the importation of foreign germs into the wound, has deserved everything in the way of praise that may have been said of it. For it is no doubt owing to the fact that antiseptic solutions have everywhere been employed for washing out the wounds, that there have not developed in the military hospitals in this war any of those graver forms of infection which in pre-Listerian days never failed to put in an appearance. When, however, we pass from prophylaxis to treatment; and from the consideration of the effects in connexion with the patients, taken as an aggregate, to the effects which manifest themselves in the individual who is under treatment; it is then that we come face to face with the problem as to how it has come about that the obvious non-success of the antiseptic treatment is not generally appreciated. It seems to me that this also must be put down to sophisticated vision and to the effects of education. We must remember that the practitioner of to-day has been educated up to expect to find, within a few hours after washing out an infected wound with antiseptic, as much pus and as many microbes as when he last came to dress it.

We now pass to

TREATMENT BY PHYSIOLOGICAL METHODS.

We shall do well to begin by putting quite away from us the current preconception that to abandon antiseptics would be equivalent to abandoning the programme of killing microbes in the wound. A moment's reflection will show that Nature has from the very beginning of things been bringing to bear her own antibacterial agents on infecting microbes; and that we have in antiseptics merely a recent substitute for these. Moreover, the surgeon, in treating wounds, has all along, though not with conscious aim, been bringing the antibacterial agencies of the body to bear on the infecting microbes.

In treating a wound infection by physiological methods we have therefore only to follow the surgeon's lead. But we may hope, as we go along, to improve upon his methods. For we shall fix our attention on the guiding principle which he has missed.

The chief points which the surgeon has insisted upon in connexion with the treatment of infected wounds and tissues are the following: Where there is an abscess sac or a closed cavity containing pus, this must be laid open, and an outlet for the discharge must be provided—if possible in the most dependent part. Where an infection has spread diffusely in the tissues, free incisions must be made; and where these incisions pass through infiltrated tissues they must be carried from sound skin to sound skin, and all the way down to the healthy structures underneath, and here hot fomentations should afterwards be applied. Lastly—and this is one of the teachings of the present war—when amputating through infected tissues unrestricted drainage must be provided: either by leaving the wound unsutured, or (in cases of gas phlegmon) by reverting to the mediaeval method reintroduced by Fitzmaurice Kelly, of cutting the limb squarely across, and dispensing entirely with flaps.[2]

Let me now try to show you that all these procedures—and it will not be necessary to consider them all in detail—will in the ordinary case bring the antibacterial agencies of the body into play. And let me further try to show you that when they fail to do this satisfactorily, they never, even when they accomplish all that the surgeon asks, do any effective good in combating the infection.

I shall begin by considering the *rationale* of the opening up the abscess sac. The popular explanation accounts for the utility of this procedure by telling us that it provides issue for the infected discharges. But that is quite inadequate. For not only does the operation provide issue for the infected discharges, but when it succeeds it brings about the destruction of the microbes which are embedded in the walls of the abscess sac. In reality it alters the whole situation. In the unopened abscess the antibacterial agencies of the body are overborne by the mass effect of the infecting microbes. The white blood corpuscles in the abscess sac are paralysed, or killed; and all the antibacterial power of the lymph has gone. In the abscess that has been laid open and emptied, the infected bacteria are overborne by the mass effect exerted by the antibacterial agencies of the body. Fresh antibacterial lymph is streaming in through the walls; and phagocytically active leucocytes are emigrating into the empty cavity. But for all that the infecting bacteria are overborne, the infection is not necessarily extinguished. The laying open of the abscess does not always put everything right. The mechanical conditions may leave much to be desired. It may be necessary to obtain a larger outpouring of lymph to wash the embedded bacteria out of the walls of the wound, and to prevent them accumulating in the abscess cavity and effluent channel. Again, the antibacterial agencies of the body may require to be brought into more effective operation. It may be desirable to bring to bear on the microbes both a greater volume of antibacterial lymph and a larger force of phagocytes; or it may be proper to repress the emigration of leucocytes so as to prevent any breaking down of these in the wound.

Now the supplementary surgical procedures which were enumerated above all contribute, more or less effectively, to the accomplishment of one or other of these ends.

Drainage tubes are devices for preventing the accumulation of infected discharges. But they do not really keep down bacterial growth in the walls of the abscess cavity. There ought to flow out from a wound not a pus composed of disintegrated leucocytes and microbes, but a lymph which is inimical to microbes, and favourable to phagocytic activity; and things do not begin to clear up in a wound till its effluent runs clear.

Free incisions carried down into infiltrated tissues are intended to furnish an ample outlet. But in reality the dimensions of the outlet do not necessarily correspond to the superficial area of the incisions. In point of fact the effective outlet will in infiltrated tissues correspond only to a small section of that area. For the lymph spaces are blocked with leucocytes and fibrinous exudation. And there will, moreover, ooze out from the cut surfaces a highly coagulable lymph, which very quickly seals up any open pores.

Hot fomentations, in addition to macerating and bringing away the inflammatory exudate, will induce active hyperaemia, and so increase the outflow of lymph.

Leaving operation wounds unsutured and dispensing with flaps will, as already explained, give unrestricted

drainage—so far at least as the mechanical conditions are concerned.

We have now arrived at some sort of a general idea as to what would be embraced under the term "Treatment by Physiological Methods," and we have realized that the empirical procedures of the surgeon furnish us with something to work with, and improve upon.

It will be taking a first step to the improvement of these methods if we draw up for ourselves a complete list of desiderata. We shall in setting these out have to bring them into relation with the actual types of wound infection which come up for treatment.

In reality our infected wounds conform, nearly all of them, to one or other of two types: In the *first* type, we have an infection of either the unclothed internal surface of the wound, or of the granulation tissue lining it. Examples of this type of infection are furnished (*a*) by recent projectile wounds whose walls are implanted with microbes; (*b*) by suppurating cavities which have just been opened up and evacuated; and (*c*) by old-standing suppurating wounds which have just been washed out and left clean. In our *second* type of wound we have an infection in a dry and infiltrated wall of an infected cavity and in the tissues contiguous to this.

In the former type of wound infection it would be a desideratum to wash the infecting microbes out of the walls of the wound by means of a powerful outgoing current of lymph; and it would be desirable in connexion with this lymph that it should carry in with it into the infected cavity whatever force of phagocytes might be required; that it should furnish a favourable medium for, and directly assist, phagocytosis; that it should repress bacterial growth; and that it should not suffer any sensible diminution of antitryptic power if, after ineffective phagocytosis, a certain number of leucocytes broke down in it.

In the second type of infection, while everything that applies to the first type would apply, it would probably be desirable, as special measures, to repress further emigration of leucocytes, and to render the lymph incoagulable so as to prevent any stanching of the lymph outflow.

For the complete realization of these desiderata we should require to have at disposition an agency for powerfully increasing the outflow of lymph. (I propose almost immediately to show that we have this at disposal.) Further, it would probably be necessary to have at disposition—but till further research has been carried out it is impossible to speak with certainty on this subject—means for promoting and repressing emigration. And lastly, it would almost certainly be necessary to be in a position to increase at need not only the antibacterial power of the lymph with respect to the infecting microbes but also its general power of repressing the growth of sero-saprophytes. This, however, will come up for consideration in connexion with treatment by vaccine therapy.

As just announced, I pass now to consider what agents we have at disposal for increasing the outflow of lymph. In this connexion we have already seen that the lymph flow from the wound can be increased by the application of hot fomentations. It can be increased also by introducing ether into the wound—the ether, like the hot fomentations, no doubt acting by inducing active hyperaemia.

But I think that better than either of these, because it is more continuous in its action, and because it renders the lymph incoagulable, and also perhaps because it represses emigration, is the lymphagogic application which I have been recommending now these many years back. This consists of a 5 per cent. solution of common salt, mixed with ½ per cent. of sodium citrate. This brings into play osmotic forces, and "draws" the lymph out of the walls of the wound by a *vis a fronte*. The sodium citrate is added with a view to decalcify and render incoagulable the outflowing lymph.

I may perhaps be allowed to say with regard to this lymphagogic solution—or, rather, with regard to the simple 5 per cent. salt solution, which I find works in most cases equally well—that it has in this war proved itself pre-eminently useful. When brought into application upon a dry and infiltrated wound, or a wound that is foul and covered with slough, it resolves the induration, brings back moisture to the surfaces, and cleans up the wound in a way that no other agent does. Applied in gaseous gangrene in the form of a wet dressing to incisions which have been carried down into infected tissues it causes lymph to pour out of the wounds, and arrests the spread of the infection. And, again, applied in gaseous gangrene to an amputated stump in cases where it has been necessary to leave infected tissues behind, it reverses the lymph stream and draws out the infected lymph—saving life in almost desperate conditions.

What would be the proper culmination and end to the treatment of wound infections by physiological methods?

We have now arrived at a point when it will be proper to keep our eyes somewhat less closely upon the ground, and to ask ourselves what kind of a coping-stone is to be placed upon our edifice of physiological treatment. For it is clearly unthinkable in connexion with such treatment carried out on scientific lines that it should conduct to nothing better, than to that everlasting dressing and redressing of the wound into which all antiseptic treatment seems to run out. I am convinced that, when once we shall have learned exactly how to regulate the outflow of lymph, and to control emigration and phagocytosis, it will be practical policy to make an end once for all to a wound infection, and to close up the wound.

Even as we stand at present that seems to me to be to some extent a realizable ideal. While it would lead too far to follow up this question in detail, it will, perhaps, not be amiss to direct attention to the following points.

It will always and ever be impossible to sterilize a wound within the space of a few minutes. To wash out microbes from the granulation tissue will always take time. And we shall always have to allow time for the leucocyte to find the microbe; and for phagocytosis; and for the digestion of the microbe in the interior of the phagocyte. And, again, and above all, we shall always have to allow a very large margin of time for the miscarrying of lymph lavage, emigration, phagocytosis, and the intracellular destruction of the microbes, and for the necessary going back over all these processes.

In view of this it will be clear that when we embark upon physiological treatment we ought to carry it out unremittingly. And our treatment will perhaps best take the form of continuous irrigation or continuous baths.

When by these means we think we have rendered our wound sterile, or nearly sterile, we must, in closing up the wound, or giving it an opportunity of healing up under a scab, always proceed by the method of trial and error and provide for the possibility of the microbes again taking the upper hand.

REFERENCES.

1 *Drugs and Vaccines in Pneumonia*, Constable, 1914. *Lancet*, January 2nd, 1915, p. 15.

(To be continued.)

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FOREIGN BODY IN BLADDER.

W. McK., aged 12, was admitted to Auckland Hospital on January 15th, 1915, suffering from pain in the bladder and difficulty in passing urine. There was some blood and pus in the urine. He told me that he had passed a piece of grass up his penis two days previously. No foreign body was felt in his urethra, but when the catheter reached the bladder there was a "gritty" sensation. I opened his bladder suprapubically and extracted a long stalk of rush grass in its entirety. It lay bunched up in his bladder in an angular way. It measured 24½ in. long.

G. GORE GILLON,
London, W. Consulting Surgeon, Auckland Hospital, N.Z.

SEPTICAEMIA OF OTITIC ORIGIN.

D. R., aged 9, was admitted with pyrexia. She had been operated on elsewhere for mastoiditis, which was considered to be of tuberculous origin, and on admission there was a vertical elliptical wound 2 in. long, exposing the antrum and mastoid cells. There was no otorrhoea; no giddiness, headache, nystagmus, alteration in gait, cervical stiffness, Kernig's sign, or alteration in pupils. The mental condition was clear and not excited; she had not vomited. The chest and abdomen were normal. The temperature

from 98° to 99.4° F. by day, rose at nights, once to 101°, twice to 104.6°, and once to 105°, always without rigor.

On the sixth day I exposed the middle and posterior fossae of the skull by the mastoid route, exposing the whole of the sigmoid sinus and removing the roof and inner wall of the antrum. No extradural pus could be found, and the sinus wall and dura of both fossae appeared so entirely healthy that I did not feel justified in opening either.

While the patient was in the theatre I did a lumbar puncture. The fluid was clear and dropped out at a normal rate. On culture nothing grew. From the time of operation the temperature and other symptoms became and remained normal, and the patient convalesced.

Clinically the case was one of septicaemia. The question is, What relief could have resulted from the operation? And why did she thenceforth recover? It might be thought that the operation relieved pressure by decompression. But there had been no clinical signs of pressure; not only had the temperature run high, but the pulse had ranged from 112 to 160, and respirations from 24 to 32. Moreover, at operation, the dura pulsated without bulging, and lumbar puncture revealed no pressure.

The case seems worthy of report simply because inexplicable.

H. LAWSON WHALE, M.D., F.R.C.S.,
Surgeon for the Ear, Nose, and Throat to the Hampstead General Hospital, and to the London Temperance Hospital.

Reports of Societies.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a clinical meeting on April 9th, the Past-President, Dr. F. S. PALMER, who was in the chair, showed: (1) A case of *Progressive muscular atrophy*, spinal type, in a male aged 39; (2) a case of *Mongolism* after three years' treatment with thyroid extract and calcium salts, showing much improvement mentally and physically. Mr. W. MCADAM ECCLES showed a case of a *Bullet in the heart muscle*, the patient being at the present time little the worse for its presence. It was shown to the members present by Dr. REGINALD MORTON in the adjoining *x*-ray department. The object was plainly seen, moving with the heart, just above the diaphragm and slightly to the right of the middle line. The patient was wounded on November 4th, 1914, the bullet striking him on the left shoulder. He walked a mile and a half to the hospital in Ypres, where first aid was given, and within less than forty-eight hours from the time he was wounded he was lying in St. Bartholomew's Hospital, his condition by that time being somewhat critical. The general opinion of the members was that the bullet was in the right heart, close to the septum. Dr. GEORGE PERNET showed a case of late *Congenital scrofulo-syphilide*. Dr. J. M. BERNSTEIN showed a single woman, aged 26, who for four months had suffered from *Spastic paraplegia* affecting both lower extremities. Dr. REGINALD MORTON showed skiagrams of two cases of *Oesophageal pouch*, two cases of *Malignant stricture of the oesophagus*, and a series of radiographs from a case of *Organic hour-glass stomach* taken at hourly intervals. Mr. H. S. SOUTTAR showed (1) a case of *Injury to the circumflex nerve resulting in complete paralysis of the deltoid*. Ultimately the distal end was anastomosed with the posterior cord of the brachial plexus; the muscle had recovered. (2) A *Child of 11 months who had swallowed an open safety pin*, 1 in. long. It had remained stationary in the duodenum for five days. It was removed by pushing the point through the wall, and making a minute incision for the passage of the head. Mr. O. L. ADDISON showed a case of *Fracture of both patellae* after twenty-five years. Skiagrams showed that the union was obviously fibrous; the case had been treated without operation. The patient suffered no inconvenience at the present time. Dr. ARTHUR SAUNDERS showed cases of *Pulmonary tuberculosis*, and one of *Bilateral thickening of the tibial periosteum*. Dr. SYDNEY OWEN showed a case of (?) *Toxaemic jaundice* with hepatic and splenic enlargement. Dr. F. S. PALMER, in opening the subsequent discussion, referred to the continued and regrettable illness of the President, Mr. Aslett Baldwin, but there was every hope that he would be able to be present at the reception it was proposed to hold on April 23rd. This reception called for the general support of all the members of the Society and their friends, since, after paying expenses, the proceeds of the sale of tickets would be handed over for the benefit of those Belgian doctors and pharmacists who were in such sore straits from the devastation of their homes and country. Referring to Dr. Bernstein's case, he considered it to be one of disseminated sclerosis, and quoted a case supporting this view. Dr. Sydney Owen's case was discussed by Dr. ARTHUR SAUNDERS. Mr. MCADAM ECCLES made some observations on the general question of fractures of the patella, including methods of treatment and some of the difficulties in the way of securing bony union.

Reviews.

THE TUBERCULOSIS DISPENSARY, AND THE AFTER-CARE OF CONSUMPTIVES.

THE adoption of the tuberculosis dispensary as the first step in the detection and control of tuberculosis by public bodies has now been generally recognized. Results are beginning to accrue, and there is danger lest hasty conclusions should be drawn from insufficient data.

A critical and analytical work, dealing with the experience gained during the same period of time at a country dispensary at Street in Somersetshire, and in a town dispensary at Portsmouth, has recently appeared from the pen of Dr. HILDA CLARK, who has served as Tuberculosis Medical Officer in that borough. It bears the title, *The Dispensary Treatment of Pulmonary Tuberculosis*,[1] and is a large work dealing with a very considerable number of case records and analytical tables, with especial reference to home conditions and general environment. The writer has been on service in France during the war, and the final revision and publication of the book have been left to others. In some respects it would have gained by compression and the avoidance of overlapping—a defect that may well be excused in the circumstances. Of all diseases which come under the purview of public authority, tuberculosis is the most influenced by the habits and social relations of the people. The series of cases which Miss Clark has examined occurred in the two dispensaries referred to, during the period 1910 to 1913. In neither of them did the social factors of poverty or overcrowding play much part. All the cases appear to have been fairly well-to-do. Owing to the stable conditions of life in both places, no difficulty was experienced in following the cases up or in estimating their capability for work. Treatment consisted for the most part in the administration of tuberculin, and it is upon the results thus obtained under varying conditions of environment that the chief interest of the reader will be centred. The tabulated records of 264 patients are set forth in an appendix, and comparative tables are used very freely throughout the work.

When and how to use tuberculin, and when to refrain from it, are points of the utmost practical importance, but it is clear that from the writer's point of view it may be relied upon to produce an apparently good effect in almost every case in which the clinical features of the disease permit of a reasonable hope of recovery. Criticism of tuberculin generally rests upon the consideration that the patient might have done equally well without it. While recognizing the possible truth of this, Miss Clark holds the opinion that the use of tuberculin will generally hasten such recovery. The very great preponderance of successful cases in her series and the general consensus of opinion in favour of its employment in early cases must be allowed to weigh more heavily than the occasional failure which is bound to occur in a few instances. She maintains that no case has occurred in her experience where an old healed focus has broken down as a result of tuberculin injection. The whole work, interesting as a careful study of well-

[1] *The Dispensary Treatment of Pulmonary Tuberculosis*. By Hilda Clark, M.B., B.S.Lond. London: Baillière, Tindall and Cox. 1915. (Roy. 8vo, pp. 279; 20 fold-in tables. 15s. net.)

observed facts, may be said to confirm rather than to advance the sum of modern knowledge on the subject. The writer's comments represent a vast amount of careful study and thought, which must appeal to every earnest student of the subject.

A small work, entitled *The Inevitable Complement*,[2] dealing with the care and after-care of consumptives, has appeared from the pen of the Chief Clinical Tuberculosis Officer, Bradford. The crusade against tuberculosis has been pushed vigorously in Bradford for some years, and the clinical experience which has been gained should command attention. Dr. HAROLD VALLOW has been able to form some definite opinions which he here presents; foremost amongst these is the need for carrying the methods of the sanatorium into the home, so that the patient may not relapse into former hygienic errors on his return after institutional treatment. The home can only be got at by personal influence of members of after-care committees, and funds are needed to effect any material reforms. Hence a combination of municipal and voluntary service is suggested, whereby such funds may be obtained and utilized in the most economical manner. Working on strictly business lines with the tuberculosis officer and his clerk, such a committee has proved most effective. The difficulty of finding suitable employment for the patient with arrested disease is considerable. Outdoor work has proved to be the best, but the lack of special training for many such forms of labour has been found to be a serious obstacle. In the home it may be possible to improve conditions by the supply of suitable and sufficient food, fresh bedding, etc., but the cured consumptive is too often inclined to degenerate into a loafer, and employers are only too ready to refuse a job to anyone with the suspicion of tuberculosis attached to him. The whole question of after-care is, as the writer observes, as yet in its infancy, and further study of the demand may considerably augment the supply of practical knowledge on the subject.

THE CHEMISTRY OF COLLOIDS.

ALTHOUGH much research has been carried out in recent years on the chemistry of colloids, this department of physico-chemistry remains little known except to those who specialize in the subject. This is probably partly due to the fact that information in regard to recent investigations is but lightly sketched in most textbooks, while there does not appear to have hitherto been any textbook in English devoted solely to this branch of work. *The Chemistry of Colloids*,[3] by Dr. W. W. TAYLOR, now fills this gap. Based on lectures delivered to advanced students in the University of Edinburgh, the work deals with both the theoretical and practical aspects of the matter; it is not at all a book for the general reader, or for any one entirely unfamiliar with the subject, but assumes a fair degree of knowledge in regard to it, and to the related departments of scientific work. The general properties of colloids are first dealt with, this section occupying about half the book and being largely concerned with theory; in a second part methods of preparation are described, including the production of the various colloidal metals or metallosols which have been used to some extent in medicine lately; the important and intricate subject of adsorption is discussed in a third part, and a fourth is devoted to a slight outline of the applications of colloid chemistry. The last section is naturally that of the most general interest; use has long been made empirically of the properties and peculiar behaviour of some colloids, as in dyeing, tanning, the employment of soap, the purification of sewage, etc.; progress in such work, of course, necessitates an adequate theoretical knowledge, and in modern biological work an understanding of the reactions of toxins and antitoxins and many other matters demands a knowledge of the special characters of colloids.

The opinion originally held by Graham, who laid the foundations of the science, that there are two kinds of matter which he designated as crystalloids and colloids, has long since given place to the view that these are not different kinds but rather different states of matter, the same chemical substance being obtainable in one state or the other, according to the condition under which it is produced. Large numbers of substances which might be regarded as typical "crystalloids" have been produced in the colloidal state, and their properties when in this condition investigated.

Perusal of Dr. Taylor's work shows very clearly that, though much has been done, the subject is still in its early infancy; already, however, it gives promise of yielding results of the greatest theoretical and practical value, and the existence of this textbook will doubtless be of material assistance in promoting its further study.

DEATH IN ART.

AT the present time, when, in John Bright's famous phrase, "the angel of death is abroad in the land; you can almost hear the beating of his wings," Dr. PARKES WEBER'S book, *Aspects of Death in Art and Epigram*,[4] will appeal to many who in ordinary circumstances, like Falstaff, do not care to be reminded of their end. The first edition was reviewed in the BRITISH MEDICAL JOURNAL of February 18th, 1911. The present edition has been in part rewritten and so greatly enlarged—from 160 to 461 pages—that it is somewhat amusing to find the author in the preface alluding to it as a "little volume." The work is intended as an essay on the mental attitude towards the idea of death, and the various ways in which from ancient Greek and Roman times it has or may be supposed to have affected the living individual. The subject is illustrated by epigrams and works of art, especially medals, engraved gems, jewels and pictures. Dr. Parkes Weber has made an exhaustive search through ancient and modern literature, and his book is a quarry of quotations which, within the limits of its special province, may be compared to Burton's *Anatomy of Melancholy*. There is one remarkable omission. Although he quotes several passages from Shakespeare, to whom the thought of death in one aspect or another seems to have been constantly present, the most pregnant of his utterances, the outburst of Claudio in *Measure for Measure*, which is a concentrated expression of all the fantastic horrors with which the mind of the average sensual man has surrounded the grave, finds no place. We make no excuse for supplying the omission:

> Aye, but to die and go we know not where
> To lie in cold obstruction, and to rot,
> This sensible warm motion to become
> A kneaded clod; and the delighted spirit
> To bathe in fiery floods, or to reside
> In thrilling regions of thick-ribbed ice;
> To be imprison'd in the viewless winds
> And blown with restless violence roundabout
> The pendent world; or to be worse than worst
> Of those, that lawless and uncertain thoughts
> Imagine howling!—'tis too horrible!
> The weariest and most loathèd worldly life,
> That ache, age, penury, and imprisonment
> Can lay on nature, is a paradise to what we fear of death.

Nor is there any reference to Newman's *Dream of Gerontius* where the dying man gives the wonderful description of the last "agony":

> That sense of ruin which is worse than pain,
> That masterful negation and collapse
> Of all that makes me man . . .
>
> * * * * * *
>
> As though
> Down; down for ever I was falling through
> The solid framework of created things.

On the other hand, Dr. Parkes Weber repeats quotations and thoughts expressed almost in the same words, sometimes within a page or two, to an extent that adds appreciably and unnecessarily to the size of the book. When he is called upon to prepare a third edition he should trim his pages of superfluous matter with a ruthless hand.

Incidentally he refers to medals commemorating expected events which failed to come off. Among these the

[2] *The Inevitable Complement: The Care and After-care of Consumptives.* By H Vallow, M D London: John Bale, Sons, and Danielsson, Ltd 1915. (Cr. 8vo, pp. 72. 1s 6d. net.)

[3] *The Chemistry of Colloids and Some Technical Applications.* By W. W. Taylor, M.A., D.Sc. London: E. Arnold. 1915. (Cr. 8vo, pp. 336; 22 figures. 7s. 6d. net.)

[4] *Aspects of Death in Art and Epigram, Illustrated especially by Medals Engraved from Gems, Jewels, Ivories, Antique Pottery, etc.* By F. Parkes Weber, M.A., M.D. Second edition, revised and much enlarged. London: T. Fisher Unwin and B. Quaritch. 1914. (Demy 8vo, pp. 489; 126 figures. 10s. 6d. net.)

most interesting to us, at least at the present time, is a medal of Napoleon I, when he was preparing to invade England, with the inscription *Frappée à Londres en 1804*. This is in the exergue; the reverse dyes were afterwards altered to be used for the reverse of a Napoleonic medal of 1806 commemorating the blockade of the British Isles. For the inscription *Descente en Angleterre* on the original medal was substituted *Toto divisos orbi Britannos*. History repeats itself. It might not be rash to conjecture that medals commemorating the invasion of England, the capture of London, to say nothing of Calais, Paris, Warsaw, and Petrograd, have within the last eight months been struck in Germany. Doubtless the unintelligent anticipation of coming events which has so far marked the plans of the Kaiser and his general staff will go on, with more and more frequent changes of date, until the supply of metal gives out.

Although we have hinted that Dr. Parkes Weber's book would be improved by unsparing compression, it is a monument of learning which does great credit to the author. It is beautifully printed, and the abundance and beauty of the illustrations are by themselves sufficient to make it a work of permanent value.

MEDICAL HISTORY OF THE WAR.

WITH a view to the compilation of an adequate medical history of the present war, it has been considered desirable that a consultative body should be formed to consider the lines upon which the history should be laid down. It is hoped that the work will be upon a scale commensurate with the importance of the campaign and that it should contain, in addition to the historical and statistical details of the work of the Army Medical Service and its adjuncts, an account of the various experimental researches which are now being carried on in connexion with the maintenance of the health of the military forces, the treatment of the wounded, and the diseases of military importance.

A committee, under the presidency of the Director-General, Army Medical Service, has accordingly been formed to provide the necessary co-ordinating authority for the proposed work.

In connexion with each of the chief subdivisions of the work, military and civilian members have been appointed, except in the case of the Section of Hygiene, for which both members are military.

The constitution of the Committee, under the presidency of the Director-General, is as follows:

Medicine.
Lieutenant-Colonel O. L. Robinson, R.A.M.C.
Professor Sir William Osler, Bt., M.D., F.R.S.

Surgery.
Lieutenant-Colonel E. M. Pilcher, D.S.O., M.B., F.R.C.S., R.A.M.C.
Colonel F. F. Burghard, M.D., M.S., F.R.C.S.

Pathology and Bacteriology.
Colonel Sir William B. Leishman, C.B., F.R.C.P., K.H.P., F.R.S.
Captain F. W. Andrewes, M.D., F.R.S.

Statistics.
Lieutenant-Colonel H. P. W. Barrow, R.A.M.C.
John Brownlee, M.D., D.Sc.
Lieutenant-Colonel W. N. Barron, M.V.O., R.A.M.C.

Hygiene and Sanitation.
Colonel W. H. Horrocks, M.B., K.H.S.
Lieutenant-Colonel W. W. O. Beveridge, D.S.O., M.B., R.A.M.C.

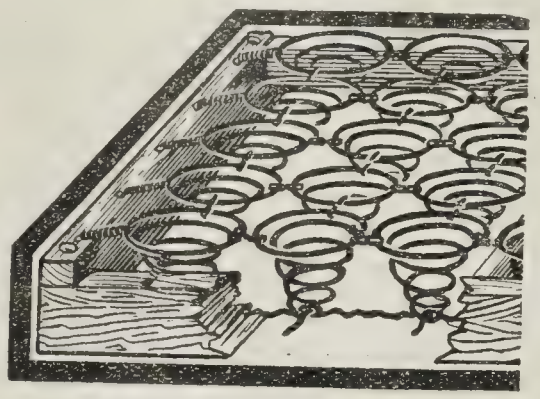
Historical and Secretarial.
Captain F. S. Brereton, R.A.M.C.
W. M. Fletcher, M.D., Sc.D., F.R.S.

In each section the members of the Committee have been given authority to co-opt for the purposes of the section other persons, and it is hoped that in the various sections the best results of the varied experience now being gained will be selected and arranged for publication in the medical history, and not left to be distributed in scattered communications published independently by individual observers.

MEDICAL AND SURGICAL APPLIANCES.

The Staples Hospital Bed.

PERHAPS the commonest form of mattress in present-day use consists of a network of woven wire tightly stretched on a wooden or iron frame. This design has superseded, as was intended, the older construction of coil springs; neverth less this latter, in spite of some drawbacks, had advantages which merit attention from the hygienic point of view. The advantage of the coil spring mattress in principle is that it gives equal support to the recumbent figure at all points, and thereby makes for naturalness in repose. In certain other types of mattress it is the figure which has to mould itself to the bed, and this would involve no cause for complaint if the human frame, instead of being a thing of vital curves, were a shapeless sack. The Staples hospital bed, which we have had the opportunity of examining recently, is an interesting reversion to the old type of elastic couch, but is free from the obvious disadvantages associated with a closed-in spring mattress. The mattress in this instance consists (in the smaller sizes) of some fifty coils of wire, each of them tapering downwards, arranged closely together from head to foot of the bed in ten horizontal rows. On the upper surface they are interlooped by metal attachments, and supported at the base by cross lines of stouter metal. About a yard of wire is used in each spiral, which consists of five or six volutions, and has a depth of, perhaps, 8 or 9 in. The wire is of medium gauge, and extremely resilient—so much so that, happening to see the spirals being fastened flat for dispatch to South Africa, we were assured, on the evidence of previous consignments, that they at once take their normal elasticity on being released at the end of the journey. The hygienic value of such a mattress lies in the fact that it suits the curve of the body. The recumbent figure makes two principal indentations in the material on which it lies, one at the shoulder, and a deeper one at the hip. The woven mattress, supported only at the two ends, is inclined to sag at the point of heaviest pressure, with the result that the bed gradually assumes a hammock form, involving a bending of the spine. A spring mattress of the kind just described, on the other hand, has the requisite amount of "give" at the points where comes the chief pressure of the body for each person who lies upon it. It is resilient but firm. Apart from the arrangement of the coiled springs, this hospital bed has further claims to attention. An important point is that the mattress is unenclosed, and the insanitary padding or casing of the old type of box springs is done away with. The whole structure is of metal, and there is no cloth, string, or fibrous material of any kind to harbour dust. So far as the exterior fittings are concerned, the tubular sides, smooth rubber castors, rubber-tipped wall buffers, and removable head-end to allow for the administration of anaesthetics, add to its conveniences. We understand that the mattress has been manufactured for some time past for domestic purposes, but it is only comparatively recently that its special value for hospitals and nursing homes has been appreciated by the manufacturers. The beds are now installed in many such institutions, both civil and military. The old type of coil mattress had the demerit of being somewhat expensive, and, although cheapness is not a claim urged on behalf of the Staples bed, we find on going into the question of the prices for hospital equipment, quite independently, that it compares favourably with other types. The bed is manufactured by Staples and Co., Chitty Street Works, near Tottenham Court Road, London, W., and obtainable through any leading retail shop.



IT has already been announced in the BRITISH MEDICAL JOURNAL that, owing to the war, the third International Congress on Occupational Diseases, which was to have taken place in Vienna in September next, would not be held. We have now received a formal intimation to that effect from the Secretary.

British Medical Journal.

SATURDAY, APRIL 24TH, 1915.

THE GENERAL PATHOLOGY OF WOUND INFECTIONS IN THE PRESENT WAR.

THE surgeons who have been engaged in the treatment of wounds received by our soldiers in France and Belgium have undergone a novel experience. This has been more especially the case at the base hospitals on the Continent. At the very front the striking feature has been the severity of the wounds and of the surgical shock accompanying them, but the cases are for the most part so quickly drafted back to the base hospitals that it is only in these that the peculiar characters of the wound infections have become apparent. Again, in those cases passed back to this country the peculiar features have in large part disappeared, and we see wounds, often of great severity it is true, but usually behaving much as such grave injuries do in civil life.

The novel feature to which we allude depends upon extensive implantation of faecal bacteria deep into the tissues from polluted soil, water, and clothing. This has been the rule, and the results attain their maximum during the period which elapses before the wound is efficiently opened and drained—in other words, while anaërobic conditions prevail in it. During the fighting at Ypres the hospitals at Boulogne were crowded with wounded, and nearly every wound exuded a foul brownish frothy discharge not unlike faeces. So unlike have been the conditions to any seen in other modern wars—notably so unlike those which prevailed in South Africa—that the pathology and treatment of these faecally-infected wounds have demanded close study.

Amongst the consulting physicians and surgeons appointed by the War Office to the Expeditionary Force was Sir Almroth Wright; he established himself in the research laboratory of one of the base hospitals at Boulogne, and proceeded to carry out a scientific study of the conditions presented by these septic wounds. The detachment of mind with which, amid the turmoil of war, he has endeavoured to solve the new and important problems which have arisen must compel our admiration, and it was not surprising to find a crowded audience at the address on wound infections which he delivered on March 30th at the Royal Society of Medicine.

In to-day's issue we print the third instalment of this address, the publication of which in full will be welcomed both by those who heard it and those who were unable to be present. Whether or not all the lecturer's conclusions be accepted, the address merits careful and judicial study. In our judgement, it forms an important contribution to scientific surgery no less than to general pathology. Much of the lecture dealt with technical details of more interest to the laboratory worker than to the general surgeon, and with these we cannot here deal, but it may be convenient now to consider some of its more important conclusions.

Sir Almroth Wright classifies the stages of an infected wound in a convenient manner—(1) The stage of imprisoned discharges before surgical aid has provided a proper outlet for the blood and lymph: the conditions are here anaërobic and a large number of bacterial species, mostly of faecal origin, are able to multiply; it is at this stage that such anaërobes as the bacilli of tetanus and of gas gangrene are best able to exert their pathogenic powers. (2) The stage of granulating wound surfaces and flowing discharges, after adequate surgical treatment has provided free exit for the fluids: the conditions should now be aërobic, and, if so, a rapid change occurs in the bacterial flora; ordinary pyogenic infection gains the upper hand and the wound begins to granulate. (3) The stage of healing, during which the pyogenic infection is gradually overcome.

The methods of treating such wounds were divided by Sir Almroth Wright into three categories: (1) Treatment by antiseptics; (2) treatment by physiological methods, including opening and draining, in such fashion as to bring the antibacterial powers of the blood and lymph into full play; (3) re-enforcement of the antibacterial powers of the body by vaccine therapy. Of these three he considered the second as by far the most important, and he devoted the greater part of his address to an account of the physiological processes going on in wounds, for these clearly lie at the root of the whole matter.

He propounded certain fundamental problems in this connexion and described in detail the technical methods which he had devised for their solution. The methods employed must be studied in the address itself; many of them are novel and highly ingenious. The answers to the questions, which again contain much that is novel, are shortly as follows:

The first question is: "Can the microbes which are found in wound infections live and multiply in the unaltered blood fluids?" The answer is that there is one organism which can thus flourish—namely, the streptococcus. Certain staphylococci and a diphtheroid organism were also found able to do so, but to a limited extent; other wound microbes were found incapable of growth in normal undiluted serum.

The second question is akin to the first: "Does the lymph which pours into the wound provide a favourable nutrient medium for the microbes which have been growing in that wound?" The answer is that the lymph, as it enters the wound, is as unfavourable a medium, save for streptococci, as blood serum, but that in the wound itself the lymph undergoes changes which render it a most favourable medium for the growth of numbers of different species.

Hence arises a third question. What is the cause of that "corruption" of the lymph which thus alters its properties? The answer here is more or less tentative. Sir Almroth Wright suggests that the antitryptic powers of the blood, which normally inhibit the fermentative action by which saprophytes obtain their nourishment in assimilable form, are overborne either by the mass action of bacteria within a limited area, or by the trypsin liberated from disintegrating leucocytes.

The fourth problem attacked was, "What are the factors which influence the emigration of white blood corpuscles into the wound?" In order to answer this question ingenious methods for studying leucocyte emigration were employed, and will be found described and illustrated in our last week's issue. The emigration which is of importance in wound infections is the positive chemiotaxis due to a definite chemical stimulus; by the methods devised it was found possible to measure it quantitatively. It was found that emigration occurred more freely under anaërobic than under aërobic conditions and more freely at febrile than normal body temperature. Physiological salt solution induces vigorous emigration, water a

slighter degree, while 5 per cent. saline inhibits it. Concentrated sterilized bacterial suspensions tend to suppress emigration, while such suspensions, diluted ten to a hundredfold, encourage it. The blood of different normal persons varies in the readiness with which emigration occurs, and the blood of those inoculated with streptococcus vaccines usually shows an enhanced emigrating response to the streptococcus.

Similar experiments with living bacteria yielded results of exceptional interest. In the presence of a large dose of microbes emigration is suppressed, and abundant colonies arise everywhere. A sparser inoculation shows that the development of the bacterial colonies bears a close inverse relation to the leucocyte emigration: colonies are abundant in the regions free from leucocytes, while in those areas where the leucocytes are beginning to arrive the actual struggle between the opposed armies can be witnessed in operation. The fight is at its best after three to six hours' incubation; after twelve hours, one or the other side has won, and either the leucocytes or microbes are left masters of the field.

Such is a short summary of the experimental results on the general pathology of wound infections achieved at Boulogne by Sir Almroth Wright and his fellow-workers. It is with this laboratory side of the question alone that we have been able to deal in the present article. It is plain that the questions dealt with in this technical part of Sir Almroth's address are of the very highest importance, and, indeed, lie at the very root of the response of the body to infective processes in grave surgical injuries. They must equally lie at the basis of sound treatment.

No one who will judicially weigh the laboratory evidence presented in the first part of the address can fail to appreciate the thoughtfulness, ingenuity, and impartiality with which a very difficult subject has been attacked, under conditions which can hardly be said to make for the successful solution of abstract scientific problems. The results, as the author modestly says, are only a beginning; the methods are novel, and the full conclusions to which their application may lead require much more prolonged research. Nevertheless, the work is full of promise, and may already be said to have no small bearing on the treatment of wounds in the present war.

Elsewhere in this number of the JOURNAL we print a memorandum on the treatment of the bacterial infections of projectile wounds, signed by Sir A. E. Wright, Sir W. B. Leishman, and some, but not all, of the consultant surgeons attached to the Expeditionary Force. This memorandum, which we print with the consent of the Director-General of the Army Medical Service, though it has not yet been generally circulated, will be read with interest in connexion with Sir Almroth Wright's address, for the principles on which certain lines of treatment are based are derived directly from the physiological work described in this article.

We hope next week, with the conclusion of Sir Almroth's address, to deal in another article with its second portion and with the general practical conclusions which emerge from it.

THE SCIENTIFIC TREATMENT OF METABOLIC DISORDERS.

THE importance of the dietetic treatment of disease is often underestimated by medical practitioners in this country. There is no doubt that the spiritual home of the cult of Little Mary, from both the social and the medical point of view, is in Germany. In Germany this cult is overdone; dietetic cures uncontrolled by scientific regulation exist in that country by the dozen, often degenerating into fads, not rarely passing on from faddism into quackery and actual fraud. The result has been that the dietetic treatment of disease has become unduly suspect in Great Britain, and has fallen, speaking generally, into a wholly undeserved disrepute. We therefore welcome the establishment of a residential institution like Duff House, where the disorders of metabolism can be investigated and treated on sensible and scientific lines. Dr. Mouillot, in the course of a paper read at a meeting of the Harrogate Medical Society last month, and printed on another page of this issue, gives an interesting account of its general aims and equipment.

The disorders of metabolism are many, and, thanks to the progress of physiological and pathological chemistry, are coming to be better understood, with the result that the importance of exact regulation of the diet in these diseases is now being more generally realized. In many of the obscurer forms of gastric or intestinal digestive disturbance, for example, the diet cannot properly be controlled without the use of careful examinations of the faecal residues, or, in other instances, without the skiagraphic study of the progress of bismuth meals through the alimentary tract. Still more important is the use of exact chemical methods of analysis in the case of patients with glycosuria or diabetes. Here, as every medical man knows, the importance of dietetic treatment is supreme. But one may doubt whether every medical man realizes the certainty with which the diet in diabetes may be regulated by the results of the skilled chemical analysis of the patient's urine day by day. These analyses demand the services of a trained pathological chemist, such as are available at Duff House. Experience shows that when the effects of taking different articles of diet can thus be followed out chemically, it is often found that some foods which the diabetic patient would have been forbidden on general grounds can actually, due trial having been made, be given to him with advantage. It is clear that such careful and comprehensive analytical work as has been indicated above can be undertaken only in an institution where the patient resides under constant medical supervision, and where, in addition, his daily diet, regimen, and exercise can be accurately controlled. For many years the establishment of such an institution in the United Kingdom has been desirable, and Duff House is the first of its kind. It is excellently staffed and organized on thoroughly sound lines, and has at its disposal all the modern means of exact analysis and investigation essential for the performance of good work in the treatment of so many of the chronic constitutional or nutritional disorders.

The diseases in which the treatment should largely depend on, and be modified by, the results of individual analytical investigations, are far from uncommon. In the case of the alimentary tract, many forms of dyspepsia, colitis, and chronic constipation may be particularly mentioned. Among the constitutional disorders likely to gain benefit particularly from the dietetic treatment controlled by analysis of the excreta are first and foremost, of course, diabetes and glycosuria, as has been pointed out already. In addition—gout, obesity, grave cases of anaemia or exophthalmic goitre, obscure or obstinate cases of emaciation, and instances in which thorough and prolonged examination is required for the establishment of a diagnosis, all suggest them-

selves as suitable material for treatment and study at such an institution as Duff House. The organization and equipment of the establishment appear to have been well thought out, and to be singularly complete. Its inmates will find themselves housed in a fine early Georgian ducal mansion, situated in a northerly climate tempered by close proximity to the Moray Firth, and with a private park, golf links, shooting, and fishing at their door. What further adjuvants to recovery could they have? Duff House clearly supplies a long-felt want, and we wish it the success and prosperity it deserves.

MUNITION FACTORIES.

At the Enfield Lock small arms factory, which is under Government control, the men work in two shifts—a day and a night. The day shift works out at fifty-four hours a week, and the night shift at seventy-five hours. The men are allowed an alternate Sunday off, and the whole factory takes a Sunday holiday once a month. At the Easter holiday a rest of four days was given. The men are paid by piece work, and are impelled by the high rate of pay to a maximum output; extra pay is given for night work, and bonuses are granted, so that the men who work up to the standard make from £5 to £5 10s. a week. The catering is good; the public-house is allowed to remain open to midnight, so that the night shift men can get a drink with their supper. On the ordinary peace footing the number of men employed was 2,000; there are now some 6,000 men engaged. Many of the new hands are carpenters, mechanics, and others from the surrounding districts, who have worked all their lives in village workshops, in garages, in house building, and generally in open-air conditions. The health of some of these men who have come under our observation has been deteriorating. They are looking thinner, their faces are pale, and some show a highly coloured patch of venules on each cheek. The appearance of the men suggests that the conditions of their occupation will lead to an increased incidence of phthisis. They complain of the heat and closeness of the factories; when the windows are opened draughts arise, and the old hands, by complaints to the foremen, ensure the closure of all doors and windows. The factory windows are said to be so arranged that they cannot be opened without causing draughts, and it is alleged that steam is sent into the steam pipes which run through the factory not when there is need for artificial heating, but when there happens to be a superfluity of steam in the boilers of the engines which supply the motive power of the factory—an extraordinarily bad arrangement if the report be true. The orders are that windows should be thrown open and the factory ventilated at the dinner hour and between shifts, but it is said that these orders are often neglected or imperfectly carried out.

The management ought to take full advantage of the hours of daylight, and not put on the larger shift at night when artificial lighting must be used, when the factory is closer and hotter, and when the men are naturally less able to bear fatigue. A night shift of eleven hours is too long a strain for men, impelled as they are by patriotism and money, to work against time. The over-warm, close atmosphere diminishes the tone and vigour of the workers, and lowers their metabolism. The exhausting effect of factory labour is largely due to its monotonous nature; one set of neuro-muscular mechanisms is continually used and fatigued. An ample diet is required from which the body can select an adequate supply of the rarer "building-stones" it requires for the synthesis of adrenalin and such-like active principles which maintain the tone of the nervous system. Owing to the greatly diminished loss of body heat in the confined, warm factory, the need of the whole body for food is lessened; at the same time the exhausted nervous system craves for restitution. It must be remembered that only a very small proportion of the daily calorie worth of the diet is spent in the performance of external work. From the atmospheric conditions mentioned arises the need for stimulants and an impulsion to eat too much food, more than the body metabolizes, in the warm, windless atmosphere. The result is alimentary disorder. Hence the whole train of an impoverished metabolism is started which leads to diminished vigour and lessened joy in life. The confined atmosphere at the same time exposes the workers to massive infection from the carriers of the germs of tuberculosis, influenza, and other infections.

Existing amenities of indoor life are founded on the erroneous belief that cold is the cause of many bodily ills. The man who feels a draught assumes the right to shut up the window, and considers his discomfort a measure of the risk to his health. The medical profession can do the greatest service to the nation by combating this belief in every possible way. The experience of army hospitals shows that septic wounds and all fevers do far better in tents and verandah wards than in closed hospitals. The evidence of open-air schools, established for ill-nourished children, shows that open-air treatment, combined with wisely-controlled rest and feeding, makes the children grow at such a pace that their weight curves quickly run out of the limits of the squared sheets provided for taking statistical records at ordinary schools. The experience of our new armies demonstrates the vast improvement in physical health and enjoyment of life produced by open air and vigorous exercise, in spite of exposure to damp and cold. The epidemics of influenza, catarrh, sore throats, and so on, which so frequently run through the community, are the cause of the larger part of the sickness notified on the insurance cards, and they occasion vast economic loss.

These epidemics least affect open-air workers; they do not result from chill due to bad weather; the bad weather is only the indirect cause by impelling the community to shut up windows. The shutting of windows favours massive infection by the carriers of these diseases, while at the same time the natural immunity is lowered by the depression of the metabolic processes brought about by the confinement in windless, over-warm atmospheres.

"Our textbooks ascribe some eighty odd diseases and conditions directly or indirectly to exposure to cold and draughts," but there is no experimental evidence in favour of this traditional view, which has become almost an article of faith with many members of the community. The diseases commonly ascribed to chill do not attack those who are exposed to the extremities of cold. Arctic travellers escape and shipwrecked men—as, for example, the survivors from the *Formidable*, who were exposed to the winter wind, wet through for twenty hours in an open boat. They may die from actual chilling of the body below a viable temperature, but they do not have pneumonia if they survive. A sailor warmed and licked to life by a dog was able, two or three days later, to travel to London. Those who are experimentally exposed to chilling from fans after exposure to a heated atmosphere feel relief and do not suffer from draught.

It is true that chilling of the skin, particularly of the feet, produces congestion of the mucous membrane of the nose, that this in itself may start a watery effusion and sneezing in some who have a pathological susceptibility comparable to that of sufferers from hay fever, and that this nasal congestion may lower the immunity to infection, but infection is the cause of the epidemic catarrhs, and it is confined, crowded atmospheres that bring about infection. The extra pollution of the atmosphere with dust or with the products of imperfect combustion of coal in cold misty weather may also help to overtax the defensive powers of the nasal mucous membrane. To repel these epidemics we must keep the atmosphere pure and moving, and teach the carriers to sneeze and cough into handkerchiefs.

The custom of working in over-warm rooms is a matter of habit. Men can do skilled handiwork when exposed to extremes of cold—sailors, for example, and the line men who mend the telephone wires, divers who carry out mechanicians work in cold water, and carpenters and mechanics who work on the scaffoldings of new buildings; the natural means of keeping warm is to take exercise; the stimulus of cold stimulates to activity, increases metabolism, deepens the ventilation of the lungs, makes the blood swirl in more ample streams through the viscera, excites the appetite and ensures the perfect action of the digestive system. Artificial warmth is necessary for our comfort in sedentary occupations, but it should be kept to the lowest level, and compensated for by active exercise in the open air. Warm rooms should be reserved for the old and infirm, and those returned from tropical climates. The young and vigorous should not be coddled, but trained to work in cool atmospheres. The tendency of recent years has been to over-clothe the body and over-heat the dwelling, school, and factory, and thus reduce metabolism and health. It is of supreme importance that factories should be provided with a circulation of pleasantly cool, moving air sufficient to prevent massive infection, and maintain the tone and vigour of the workers. The management of the small arms factory at Enfield ought at once to obtain the skilled advice which physiologists would be glad to give. The ventilation no doubt can be greatly improved by the use of simple methods to break up the draught from the windows by means of screens and other devices. The men who feel a draught must be persuaded to put on hat or coat, or gathered into a workshop set aside for "tender-feet." The old must not be allowed to control the air freedom required by the young.

THE DOCTOR'S HOLIDAY.

THE Bury Local Medical and Panel Committees have made a very interesting arrangement by which the local practitioners will be able to secure a holiday during the forthcoming summer. A circular was issued to all members of the profession, saying that it was proposed to draw up a scheme on a co-operative basis to allow practitioners in turn to have a fortnight's holiday, their work being undertaken in their absence by the other practitioners participating in the scheme. Doctors were asked (1) whether they were willing to assist; (2) to give three dates in order of preference on which they would like to take their holiday; and (3) to state whether the deputy should receive a percentage of the fees he booked or not. About 90 per cent. of the profession expressed their willingness to take part in the scheme. A list will be printed, and the patient of a doctor on holiday will have his choice of the doctors on the list. Certain of the doctors have partners, and are therefore able to leave their work in their hands, but nevertheless they have all offered to go on the list. Each doctor will have a stock of cards, one of which will be handed to each of the patients on his list before he leaves for his holiday. On one side of the card is printed: "Dr. ..... requests one of the following (here follows the list of doctors) to attend ..... till ....." The other side of the card is ruled for a record of attendances. On the date of the doctor's return, a postcard reminder is sent round to ask the doctors who have been acting as deputies to return the cards and their reports on the patients. As the scheme is a mutual one, it has been decided that no remuneration will be given except for midwifery, for which half-fees will be retained by the deputy. The action taken in Bury is evidence of the growing desire among medical practitioners to readjust the conditions of practice hitherto prevalent, so that they, like the members of other professions, may have reasonable holidays and a reasonable amount of leisure during the working part of the year. A letter from Dr. Wishart of Newcastle, printed this week, contains suggestions on the latter head, which may be worthy of individual consideration, because he says that he has found his plan work well. But it almost implies co-operation, and we think that the spirit shown among the Bury practitioners is not only exceedingly creditable to them, but may well be copied in other areas. At the same meeting in Bury, arrangements, noted in the SUPPLEMENT in the reports of meetings to consider the war emergency, were made to allow two medical men in the district to accept temporary commissions in the R.A.M.C.

MEDICAL PRISONERS IN GERMANY.

M. HENRI GALLI, one of the deputies for Paris, recently called the attention of the Government to the fact that a certain number of medical officers of the French army were still held as prisoners of war in Germany notwithstanding the provisions of the Geneva Convention. M. Delcassé, Minister for Foreign Affairs, replied that he had several times, through the mediation of the Spanish ambassador at Berlin, protested against the frequent violation by Germany of the clauses of the Convention relating to medical officers. By way of practical reinforcement of these protests the French Government had provisionally detained German doctors captured by the troops. He went on to state that although the German Government had not replied directly to his protests, it had taken steps to remedy the breaches of the Convention complained of by sending home some convoys of medical officers and other members of the sanitary department of the French army. On the other hand, on the pretext that certain clauses of the Geneva Convention were open to differences of construction, Germany had lately suggested through the United States ambassador in France, as well as to the Russian and British allies, rules for the application of the Convention. Those proposals, M. Delcassé concluded, were the subject of an exchange of views which it was hoped would lead to the liberation of the medical officers who were still wrongfully detained in Germany as prisoners of war. M. Pasqual, another deputy for Paris, who served as a captain in the Chasseurs à pied, and was taken prisoner at Maubeuge, has recently been liberated. He was kept at Torgau, and his account of the manner in which the Germans treat their prisoners confirms that given by Englishmen and others who have had the like experience. He has been liberated apparently in order to induce the French Government to comply with a request from Germany that there should be an exchange of civilian prisoners between the ages of 17 and 60, and of Red Cross personnel. Captain Pasqual is now actively engaged in the discharge of his mission. We have with regret to record this week the death from typhus fever of Captain Archibald Alfred Sutcliff, R.A.M.C. This medical

officer, of whose career a brief account is given elsewhere, appears to have been detained a prisoner in Germany since September last.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

THE current section of the *New English Dictionary*[1] traverses a part of the alphabet which contains few strictly medical terms; it passes from *spring* to *standard*, and with the exception of *sprue*, *sputum*, *squamous*, and *squill*, it lies barren of words used exclusively in the language of the healing art. There are, however, several words of much interest which lie just on the borders, as it were, between lay and professional terminology. There is *stamina*, for instance. It is derived from the word *stamen*, and this in English had two meanings, both of which enter into the plural form *stamina:* one was (for it is now obsolete) the warp of a textile fabric, and the other, it is interesting to know, was the thread spun by the Fates at a person's birth, on the length of which the duration of his life was supposed to depend. "Hence," continues Dr. Bradley, who is responsible for this portion of the quarterly instalment of the *Dictionary*—"hence, in popular physiology, the measure of vital impulse or capacity which it was supposed that each person possessed at birth, and on which the length of his life, unless cut short by violence or disease, was supposed to depend." *Stamina*, therefore, used to mean the congenital vital capacities of a person or animal on which, other things being equal, the duration of life was supposed to depend. An interesting quotation from Bishop Burnet's *History of His Own Times* illustrates this usage; it tells how Dr. R. Willis, "being called to consult for one of his (the Duke of York's) sons gave his opinion in these words *Mala stamina vitae*, which gave such offence that he was never called for afterwards." Another illustrative quotation is from Boswell's Johnson: "It was the bad stamina of the mind, which, like those of the body, were never rectified." Again, "if the stamina are not sound, disease will soon ensue," occurs in a book published in 1823; but since that date this signification of stamina has become obsolete, and now it has taken on the meaning (being used mostly as a singular) of vigour of bodily constitution or staying power—the power of recovery from illness or of resistance to debilitating influences. This meaning has also been extended to include intellectual or moral robustness and capacity for perseverance. Another obsolete meaning has its modern equivalent in rudiments, for the writers of the eighteenth century spoke of the first *stamina* of the embryo and the *stamina* of the teeth. Certainly stamina is a term with a history. *Stammering*, of course, is not a particularly medical word, but Dr. Bradley shows the completeness of his lexicographical knowledge when he adds that it is employed in certain pathological senses, as when one speaks of stammering of the fingers or of the bladder (urinary stammering). *Stale* in the sense of urine or to micturate is also carefully defined and illustrated by quotations; it is probably connected with the Dutch or German word *stallen*, to make water. Quite a short chapter in comparative pathology appears under the word *staggers*, and such varieties as *blind*, *grass*, *mad*, *sleepy*, and *stomach staggers* are referred to. Another non-medical term with occasional medical meanings is *staff*, which may mean either a grooved steel instrument used to guide the knife in lithotomy or the piston of a surgical syringe. *Squirt* is given as still sometimes used as a dialectical term for diarrhoea, and under *squirter* one finds "one who has or suffers from diarrhoea." The *squirting cucumber*, too, from which comes elaterium, is not forgotten by this most comprehensive and compendious of dictionaries.

[1] *A New English Dictionary on Historical Principles.* Vol. ix. *Spring* to *Squoyle*, by W. A. Craigie; *St-* to *Standard*, by Henry Bradley. Oxford: At the Clarendon Press; and elsewhere: Humphrey Milford. April 1st, 1915. Double section. Price 5s ($1.25).

FULMINATING CEREBRO-SPINAL FEVER.

DR. H. H. SCOTT of Kingston, Jamaica, describes in the *Interstate Medical Journal*, St. Louis, 1914, xxi, No. 6, a number of cases of acute cerebro-spinal meningitis that ran so rapid a course as to merit the term "fulminating," ending fatally in as few as eight hours from the onset. In such cases the patient, usually a child, goes to bed apparently in its normal state of health. During the night he becomes restless, wakes, feels ill, and vomits, usually without effort. Then he drops off to sleep again, or perhaps is restless for three or four hours, when he suddenly sits up and vomits again. More alarming symptoms rapidly ensue—convulsions with rigid limbs and head drawn back, and coma, soon followed by death. On inquiry it may appear that for a day or more before the onset described above the child may have had a cold in the head, loss of appetite, and a tendency to lie down instead of playing about as usual. The temperature rarely rises above 102° F., the pulse-rate is 90 or 100; the convulsions are not as a rule localized. Kernig's sign may or may not be present, and rigidity of the muscles at the back of the neck is nearly always present, though opisthotonos may be absent. The pupils are usually equal, and react normally unless there is deep coma. In cases that do not end fatally, vomiting, convulsions, and headache are observed, but the stage of coma is not reached, and recovery may be very rapid. The cerebro-spinal fluid obtained by lumbar puncture is clear, or faintly opalescent and iridescent, giving only a faint albumin reaction. It contains mononuclear leucocytes and a relatively large number of extracellular meningococci. If the fluid is turbid the proportion of polymorphs is raised. Occasionally Scott has seen a slight herpetic eruption round the mouth, but no other rash. In one family of seven children four died of this hyperacute cerebro-spinal meningitis in one day; a fifth was attacked next day but recovered, while a sixth, though harbouring the organism in the posterior nares, showed no symptoms.

"CRAIGLEITH HOSPITAL CHRONICLE."

AMONG the lighter, semi-medical periodical literature to which the war has given origin the *Craigleith Hospital Chronicle* must be given a prominent place. It is always interesting and readable; now and again there is a touch of genius in it; sometimes it is gently humorous, sometimes a little pathetic; and "all profits derived from its sale are devoted to extra comforts for the sick and wounded." What more can be asked of a military hospital in war time? The fourth number is quite up to the standard of its predecessors. It has as frontispiece a portrait of Lieutenant-Colonel J. M. Cotterill, and there is an article, too, from his pen, entitled "A Red-letter Day." Therein he tells us how he shot "four roedeer in a space not bigger than a large bedroom," landed a thirty-five pound salmon, shot his first stag—a nine-pointer—and asks the reader whether his "Tag" doesn't knock spots out of the Kaiser's. In some "Notes on the Military Situation" J. Storer Clouston hits off the little ways of the Censor—the newspaper Censor, not the cloudy cerebral one of the new psychiatry; the notes are prefaced by the reassuring statement that they are contributed by "our own military expert, a gentleman as intimately in touch with the Headquarters' Staff as any other expert who fills an armchair." Dr. Fordyce's poem, "The Oracle, 1914," is reprinted from the *Edinburgh Medical Journal* for last December, and it is well worth reprinting with its clever and of course ambiguous Delphian responses. It can be learnt from the *Chronicle* that the Orderly Officers beat the Resident Staff in a curling match on February 20th, notwithstanding the dashing display of Mr. Gunn with his "forty-niners," who carried all before him, including chips from the stones and the back of the rink! There are "Experiences of a Belgian Patient," illustrated by a picture showing

three soldiers (Belgian, French, British), with broadly smiling faces, above the interrogative, "Est ce que nous avons le coeur brisé?" More distinctly medical articles deal with the Deaconess Hospital, the first in Edinburgh to receive military patients (on August 9th); with "Feeding a Hospital"; with "Notes on the Army," by Major D. J. Graham, R.A.M.C.(T.); and with the Scottish Hospital in Kragujevatz, Serbia. It is a bright little periodical, and as its editor says, it will be interesting in future years to look through a worn volume of it, "turning the leaves with fingers trembling with reborn memories," and saying, "Here is the *Craigleith Hospital Chronicle*, which is a record of the formation and the work of the 2nd Scottish General Hospital." One hopes, however, that the duration of the war will not allow of the appearance of many volumes.

RED TAPE FOR WOUNDS.

UNDER this title there was given in the BRITISH MEDICAL JOURNAL of November 14th, 1914, an amazing example of the pedantry of the official mind even when it has to deal with men wounded in the service of their country. A non-commissioned officer in a French regiment was struck in the neck by a splinter of shell; this he managed to extract, and, as all the officers of his company were killed or wounded, he insisted on remaining in command of his men in the fighting line. Some time later a severe attack of furunculosis around the wound compelled him to go to hospital. In time he rejoined his dépôt, where he was informed that, as he had not reported himself wounded he must forfeit his pay while he was on the sick list, and also defray the cost of his maintenance and treatment during the time he was in hospital. Falstaff says that honour is "air," which he scoffs at as "a trim reckoning." What would he have thought of an honour which, though it could not take away the grief of a wound, was treated as a thing to be paid for by the injured man? Doubtless the French soldier took a more heroic view of the situation, but even he, we imagine, must have felt that red tape had been too freely used in his case. The Paris *Journal* of April 12th gives another instance of the administrative formalism characteristic of French officials. A sergeant, who lost a leg in one of the battles fought in August, applied, on his discharge from hospital, for his certificate of invaliding. He was informed that he must get a document from his captain or one signed by three men of his company, testifying that he was wounded in the execution of his military duty. He pointed out that his captain had been killed, together with the comrades who knew the facts, and that since then his regiment had been re-formed five times; it was impossible, therefore, for him to procure the required documents. The reply was a demand for the production of a certificate of incurability. The "*sous-off.*," with natural indignation, asked if he was suspected of malingering and whether he was bound to prove that his leg would not grow again. But the officials maintain their attitude of *non possumus*, and the unfortunate man gets no pay. Hundreds of other soldiers are said to be in the same position. We have said that this kind of thing is characteristic of the French official mind. But we have no cause to boast of our freedom from the trammels of red tape. There is plenty of it here, and it has caused a large amount of unnecessary suffering to the dependants of men who have given their lives for their country, besides hindering recruiting and impairing in almost every direction the efficiency of the work of national defence. Examples could be quoted, but we have the fear of the Censor before our eyes. It is safer to quote the following story from Southey's *Life of Nelson*: "Not having been in England till now since he lost his eye, he went to receive a year's pay, as smart money; but could not obtain payment, because he had neglected to bring a certificate from a surgeon that the sight was actually destroyed. A little irritated that this form should be insisted upon, because, though the fact was not apparent, he thought it was sufficiently notorious, he procured a certificate at the same time for the loss of his arm, saying, they might just as well doubt the one as the other. This put him in good humour with himself, and with the clerk who had offended him. On his return to the office, the clerk finding it was only the annual pay of a captain, observed he thought it had been more. 'Oh!' replied Nelson, 'this is only for an eye. In a few days I shall come for an arm; and in a little time longer, God knows, most probably for a leg.' Accordingly, he soon afterwards went, and with perfect good humour exhibited the certificate for the loss of his arm."

SANATORIUM TREATMENT IN THE STATE OF NEW YORK.

BY way of comparison with the numerous reports reaching us from British sanatoriums, it is of interest to examine an account, recently published, of the work carried on with ever-increasing vigour during the past thirty years at the Adirondack Cottage Sanitarium in the State of New York. Situated on the Saranac Lake, in the Adirondacks, it is essentially a local institution, although receiving patients from all parts. With a good endowment, it is partially self-supporting, having abundance of land available for extension on which administrative buildings of more than ordinary comfort and completeness have been and are being erected. Of 329 patients admitted during the year 1913, only 31 were treated entirely free; all the others had contributed towards their maintenance. The results of in-patient treatment do not appear to have justified the high percentage frequently claimed by kindred institutions. Only about 20 per cent. could be regarded as cured; in about 44 per cent. the disease appeared to be arrested. Tuberculin was used in about 50 per cent. of the cases, with markedly good results in some instances, although many seemed to improve no more rapidly than without the treatment. Artificial pneumothorax in advanced or haemorrhagic cases had proved of great value. Starting from small beginnings and with inadequate equipment, the Adirondack Sanitarium has now become a centre not only for special treatment but also for instruction of physicians, nurses, and patients. Many nurses who have themselves been patients are thus enabled to complete their cure and their course of instruction, while maintaining themselves by the services which they can render to others. Apart from the residential cases, the examining office has fulfilled the functions now allotted to the tuberculosis dispensaries, and has given advice and assistance in 1,434 instances. The cost of working the sanatorium would appear to be somewhat high. The average cost of each patient works out at approximately £2 10s. a week, with a total expenditure during the twelve months of £16,735, of which about £4,230 has to be met out of annual contributions, apart from endowments and patients' payments. The fact that the patients are accommodated in scattered cottages, instead of in a central building, may perhaps account for some of the heavy cost. The latest report goes to prove that no effort or expense is being spared to maintain the work of the institution at the highest possible standard.

APPENDICITIS IN JAVA.

APPENDICITIS is quite a common complaint among Europeans living in the East Indies, but comparatively rare among the native inhabitants. This fact is illustrated and discussed by the Director[1] of the Medical School at Surabaya (Dutch Soerabaja), the largest commercial town in Java, with perhaps 200,000 inhabitants, of whom over 10,000 are Europeans. At the medical clinic in Surabaya, out of over 6,000 native patients seen in ten years, only 6 individuals had appendicitis; while among 800 European patients, 3 had the disease. At the mission

[1] A. E. Sitsen. *Nederl. Tijdschr. voor Geneesk.*, Amsterdam, 1914, ii, 962.

hospital in the town of Modjowarno there were only 4 cases of appendicitis among 7,325 patients treated. Sitsen himself has examined the appendix *post mortem* in 55 convicts, adult males, many of them past middle life, and found evidence of old obliterative appendicitis in 3—at the rate, that is to say, of 55 per 1,000; in Europe the incidence of appendicular obliteration is given as from 200 to 250 per 1,000. Sitsen remarks that tonsillitis occurs very frequently among the Javanese, and he is loath to believe that appendicitis is in any way connected with the occurrence of tonsillitis. In the same way he doubts whether the Javanese exhibit any racial immunity to inflammation of the appendix. The length and mobility of the appendix appear to be much the same in Java as in Europe; Sprengel (1906) gives 8.5 cm. as the average length in Europeans, and Sitsen found 8.0 cm. to be the average length in forty-two Javanese. He concludes that the presence or absence of faecal concretions in the appendix will not explain the difference between the incidence of appendicitis in the two races; nor, he thinks, will the use of ice-cold drinks or alcoholic beverages. The question of diet he believes to be of the greatest importance; the richer and more complex the diet becomes, the greater is the tendency to the production of appendicitis. The normal Javanese may eat every day a catty—twenty-two ounces—of rice, with a little meat, dried fish, shrimps, and the like; he takes more animal food as his wages increase, and by thus ceasing to be mainly a vegetarian increases the likelihood of appendicitis. Sitsen doubts whether purgatives or the use of spices and pepper tend to the production of appendicitis, or the intestinal parasites (particularly *Trichocephalus dispar*) that are so often to be found in the Javanese caecum. His general conclusions are, in fact, not at all unlike those reached by Dr. Wilkie in a recent number of this Journal.[2] He would say that an animal diet increases the susceptibility to appendicular inflammation, but does not directly cause it; for while the fats and carbohydrates of the food are mainly absorbed in the large intestine, much of the protein passes on into the caecum and there exercises an irritating action, or causes even a mild inflammation. This is shared by the appendix, and should the lumen of that tube be partially blocked or obliterated it is likely that an attack of appendicitis may follow. Sitsen recognizes that there may be other causes of appendicitis as well as this enterogenous infection, but comes back to an excess of animal food as the precipitating cause of the majority of the attacks.

MEDICAL BORDEAUX IN WAR TIME.

During the holidays the buildings of the Bordeaux Faculty of Medicine were occupied by the Ministry of Finance, but the return of the Government to Paris allowed the Faculty to open its doors as usual in November. Since then, according to the *Gazette hebdomadaire des Sciences Médicales*, study and teaching have been resumed; sixty students have entered their names for the first year and up to April twelve graduation theses had been presented. Among the surgeons in charge of the local military hospitals are Professors Bergonié, Denucé, Lagrange, Pousson, Moussous, Pitres, and Sabrazès. Owing to the mobilization of students there is a lack of junior assistants and in some clinics anaesthetics are given and dressings applied by nuns. Notwithstanding the absence of thousands of men called away by their duty to their country, the numbers of male patients in the clinics, outdoor and indoor, shows no diminution. The Société de Médecine et de Chirurgie de Bordeaux resumed its sittings in October. Many communes in the neighbourhood of Bordeaux are without a doctor; in some of them Belgian practitioners find a sphere of work, while others are visited on certain days by a doctor from Bordeaux or some commune in the district.

[2] British Medical Journal, 1914, ii, 959.

SICK CERTIFICATES TO SOLDIERS ON LEAVE.

A senior medical officer of the Territorial Force suggests that the attention of civilian medical practitioners should be called to the need for care in granting medical certificates to soldiers who have been allowed leave from their units to go home to see their families. He says that a good many cases come to his notice in which men have got medical certificates enabling them to stay at home when they were quite fit for duty. This, he says, entails a great deal of unnecessary labour on the part of R.A.M.C. officers, who are still working at very high pressure, and depreciates the value attached to medical certificates by commanding officers. It is not necessary to assume that the men who ask for medical certificates without sufficient medical cause are scrimshankers, for the furlough granted is often very short, and the temptation to get it extended if possible is very great. Moreover, it is to be feared that the average soldier looks upon the civilian medical man as fair game, and is rather pleased with himself as a sportsman if he has hoodwinked the doctor. It is a humiliating position for the doctor, and no doubt he only needs to be warned of the risk to avoid falling into the trap. The necessity of preserving the status and repute of the certificate of the registered medical practitioner should need no emphasizing.

The Executive Committee of the Imperial Cancer Research Fund has appointed Dr. James Alexander Murray to be general superintendent and director of the laboratories.

A monument in memory of Jerome Fabrizi, commonly known as Fabrizio d'Acquapendente, is to be erected on the Monte Pincio in Rome. The monument is from the chisel of the Roman sculptor, Count L. Cozza. Fabrizi, who was professor of anatomy and surgery at Padua, where he had William Harvey as a pupil, was born at Acquapendente in 1537, and died at Venice in 1619. His chief title to fame rests on his description of the valves of the veins, which gave Harvey the idea of the circulation.

Medical Notes in Parliament.

Special Assistance to Universities, Colleges, and Medical Schools.

On several occasions we have referred in these notes to the inquiries which have been made by the Board of Education in colleges and universities with respect to the diminution of income it is estimated they have sustained through the loss of fees of students who have joined the forces. We expressed the hope that this indicated that some special assistance was to be given to them in this time of difficulty, for it is evident that it is impossible for these institutions, with any regard to their efficiency in the future, to reduce the salaries of their teachers or to dismiss members of their staffs who might be difficult to replace. We are glad to see that the inquiries conducted by the Board of Education indicate that the Government is prepared to recognize their difficulties and to give extra assistance to our universities, colleges, medical schools, and agricultural institutions, to help them to tide over the present emergency.

In the Civil Service Estimates which have now been published a sum of £145,000 is set aside to cover these purposes. The following note is appended to the vote:

> Certain of the universities, colleges, and other similar institutions which are in receipt of parliamentary grants have been adversely affected by the war, more especially by the loss of fee income arising from the widespread response among men students to the call for recruits. The special grants in aid will be used to give such assistance as may be necessary to save the institutions in question from suffering serious permanent detriment from the temporary emergency.
>
> The expenditure of the universities, colleges, and other institutions out of the grants will not be accounted for in detail to the Comptroller and Auditor-General, nor will any unexpended balances be surrendered by the payees at the close of the financial year.

Total Casualties.—Mr. Hogge asked the Prime Minister whether he could state the number of casualties to the latest possible date; and whether he had considered, as promised, any scheme whereby the country could be informed at more regular intervals of the total losses in the field. Mr. Tennant: Total figures of casualties may be given when the exigencies of the military situation permit, but lists of names are continually being published; they are issued as soon as possible after verification of the names and notification to the next of kin. The latest total, reported up to April 11th inclusive, is 139,347.

Intoxicants at Westminster.—On Thursday, April 15th, as indicated in our notes last week, the House was occupied in discussing the contract for timber made by the Office of Works. On Tuesday, April 20th, a short and somewhat abortive discussion took place on the proposals of Mr. Wing that the sale of intoxicants should be prohibited within the precincts of the Palace of Westminster. It was contended in opposition by Mr. Bonar Law and others that the resolution, if passed, might give a false impression, as members would still be able, if they wished, to obtain what they wanted in their own homes or in their clubs, and that it was better for the members either frankly to declare their intention of taking the war pledge or of submitting themselves to the same restrictions which the Government might possibly propose to impose on the country generally, so that there should be no distinction of class. This suggestion seemed, on the whole, to commend itself to the House, and the debate was accordingly adjourned. An interesting statement, however, was made by Sir Arthur Markham, who said that during the two days which the House met last week—one of them certainly only a very short day—no more than 4s. had been spent in the members' smoke-room of the House on intoxicants.

Cerebro-spinal Fever.—In reply to Sir J. D. Rees, the Parliamentary Secretary to the Local Government Board said Dr. Newsholme's recent memorandum on cerebro-spinal fever was sent on February 22nd to the sanitary authorities of all districts in England and Wales, with a circular in which the Local Government Board expressed its expectation that the council and the medical officer of health would take such steps as might be necessary, on the lines indicated in the memorandum, should any cases of the disease occur in their district. The memorandum stated that, in view of the well-known association of cerebro-spinal fever with overcrowding, insufficient ventilation, and uncleanliness, the avoidance of these conditions became a matter of prime importance. A copy of the circular and memorandum were also sent to each medical officer of health.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE EXECUTIVE COMMITTEE.

A MEETING of the Executive Committee was held on April 15th, when the treasurer, Dr. Des Voeux, reported upon the financial position of the fund, and presented the audited statement of accounts up to March 31st:

STATEMENT OF ACCOUNTS UP TO MARCH 31ST, 1915.

Receipts.

	£	s.	d.
Donations	8,104	1	2
Loan repaid	5	0	0
	8,109	1	2
Donations received from March 31st to April 14th	1,903	10	0

Payments.

	£	s.	d.	£	s.	d.
Relief				964	10	0
Loans to be repaid				75	6	0
Drugs purchased				245	4	2
Clothes purchased				22	18	0
Administration expenses				36	16	3
Balance—						
Cash at bank	266	9	0			
On deposit	6,500	0	0			
	6,766	9	0			
Less due to Treasurer ...	2	2	3			
				6,764	6	9
				8,109	1	2
Relief since March 31st				14	0	0
Clothes				7	16	6

Dr. Des Voeux gave particulars of the relief granted since March 31st, and stated that clothes continue to be purchased in suitable cases, the outlay in this direction being carefully scrutinized by Mrs. Colebrook.

It will be remembered that at the meeting of the Executive Committee held on March 25th it was unanimously agreed to send money at once to Belgium to meet the urgent needs of Belgian doctors and pharmacists remaining in their own country. This course was adopted after the committee had received detailed information as to the cases, and as to the machinery for distribution adopted by the committee "Aide et Protection aux Médecins et Pharmaciens Sinistrés," which meets in Brussels. Documents were submitted showing the way in which the information as to the individual instances had been compiled, the extremely sad plight of many of our Belgian *confrères*, and the efficacy of the methods adopted by pharmaceutical inspectors, both in medical and pharmaceutical cases, for testing the correctness of the sad stories. The Executive Committee had not previously been able to send money because there was no official body ready to receive it or to account to the committee for its employment, but it then resolved immediately to send a sum of money to the committee in Brussels. It was sent through the medium of certain banks and with the help of Mr. Herbert Hoover, the Chairman of the National Relief Fund. An eloquent letter of thanks has been received from Dr. Pechère, the Chairman of the Aide et Protection aux Médecins et Pharmaciens Sinistrés. The Executive Committee proposes to continue this definite scheme of expenditure if the course is justified by reports received from Dr. Pechère's committee as to the employment of the money.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Voeux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by the Scottish and Irish funds, are as follows:

Twenty-first List.

	£	s.	d.
Danish Union of Doctors (per Dr. Christopherson, Hon. Sec.), (2nd donation—total, £111 17s. 5d.)—"Some Young Doctors from the State Hospital"	8	9	9
Dr. R. Ashleigh Glegg ...	1	1	0
Lieut.-Col. W. E. Scott-Moncrieff, I.M.S. ...	2	2	0
Dr. A. W. Hare	1	1	0
Mrs. Howard, Maidenhead, collected by (per Dr. H. Macnaughton Jones)...	8	8	0
Birmingham Local Committee (per Dr. R. Saundby, Hon. Sec.), (16th donation—total, £377 12s. 3d.)—			
Dr. J. Jameson Evans	2	2	0
Bournemouth Division, B.M.A. (per Dr. Eleanor C. Bond, Hon. Sec.), (2nd donation—total, £109 12s. 6d.)—			
Mr. Frank Belben ...	3	3	0
Dr. W. H. Fawcett ...	2	2	0
Dr. F. Heasman ...	3	3	0
Dr. R. L. Legate ...	1	1	0
Dr. C. R. Willans ...	1	1	0
Southern Branch, B.M.A. (per Dr. Jas. Green, Hon. Sec.), (4th donation—total, £48 19s. 6d.)—			
Dr. Thos. Wright ...	1	1	0
Dr. P. H. Green ...	1	1	0
Dr. A. E. Bodington ...	1	1	0
Dr. C. Peterson Weekes	1	1	0
Major E. H. Myles, R.A.M.C.	1	1	0
Dr. J. Ghosh	0	10	6
"For a Belgian Chemist's Little Girl," from Betty Mortimer, an English Chemist's Little Girl (A. Mortimer)... ...	0	5	0
Mr. W. F. Beeny ...	1	0	0
Mr. N. H. Martin ...	5	5	0
Professor H. D. Greenish	5	0	0
Mr. A. Haynes, collected from a number of Derby Pharmacists	5	0	0
Notts County Pharmacists' Association (per Mr. A. H. Bell)... ...	2	2	0
Collected by Birmingham Pharmaceutical Association (per Mr. F. Smith) (7th donation—total, £129 13s.)—			
Mr. F. W. Smallwood...	1	1	0
Manchester Pharmaceutical Association, collected by (per Mr. T. Miller)...	2	15	6
Shropshire and Mid-Wales Branch, B.M.A. (per Dr. A. G. Mackenzie, Hon. Sec.), (7th donation—total, £46 3s. 6d.)			
Dr. Mathewson ...	1	1	0
Dr. Frederic Barker ...	1	1	0
Mr. Herbert Tilley ...	10	0	0
Association of Certified Dispensers (Society of Apothecaries of London), (additional—total, £16 11s. 6d.)	0	7	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors since the publication of the last list:

Dr. H. W. Gardner, Shrewsbury.
Dr. A. G. Mackenzie, Shrewsbury.
Mr. J. E. Burton, Minshull Vernon, Cheshire.

THE WAR.

MEMORANDUM ON THE TREATMENT OF THE BACTERIAL INFECTIONS OF PROJECTILE WOUNDS.

BY

COLONELS F. F. BURGHARD, SIR W. B. LEISHMAN, F.R.S., SIR B. MOYNIHAN, and SIR A. E. WRIGHT, F.R.S.,
ARMY MEDICAL SERVICE.

OBJECT OF THIS MEMORANDUM.

IT is proposed in this Memorandum (*a*) to synopsize the experience obtained in connexion with wounds in this war; (*b*) to supplement this by setting out the chief data which have been furnished by a bacteriological study of the wounds; and (*c*) to lay down certain broad principles of treatment for the guidance of those who have not seen the conditions in the present war, or who have seen only an early or a late phase in the history of the wounds.

The present Memorandum will be followed up, as soon as certain researches are completed, by Memoranda on the employment of antiseptics and vaccines respectively.

I.—CHARACTERS OF PROJECTILE WOUNDS AND BACTERIOLOGY OF THE INITIAL INFECTION.

The wounds made by projectiles are not in any respect comparable to clean-cut, swabbed out, aseptic operation wounds, or to any of the accident wounds seen in civil surgery.

Special Characters of Projectile Wounds.

Where the projectile has passed through the flesh there will, in the ordinary case, be a torn and ragged track with an irregular surface of heights and hollows produced by the hernia of muscle and the retraction of the severed fibres. Where the projectile has come against bone this will be generally splintered, and the track will lead down into widely ramifying crevices between comminuted fragments.

There will also in practically every artillery wound be included foreign matter: a projectile, or shreds of clothing, or fragments of bone, and with these lacerated muscular and connective tissues which will slough. In addition, the wound will be full of blood clot and effused lymph. And lastly, the projectile, when it has traversed soiled clothes or a soiled skin surface, will have carried in microbes, and these will have been sown all along the track.

This deep sowing of microbes, taken together with the blockage of the wound by blood clot, and the not infrequent obliteration of a section of the track by hernia of muscle, will, in the case of any deep or perforating wound, make the effective sterilization of the wound by antiseptics impossible.

Enumeration of the More Important Microbes which are Carried into the Wounds.

Of the microbes which are carried into the wound the most formidable are the anaërobes and facultative anaërobes. These are found in very large numbers in practically every case arriving at the base from the Front.

Three species of microbes here come into consideration. The *streptococcus*, the one microbe which is, one may say, invariably present, is primarily responsible for the suppuration which will supervene in the wound. The *tetanus bacillus*, or a bacillus which is morphologically indistinguishable from this, is present in the pus from a certain proportion of cases. And in practically all the wounds we have also the *Bacillus aërogenes capsulatus* of Welch (*Bacillus perfringens*). This produces a characteristically offensive, thick, frothy, rusty brown, sometimes almost faecal, discharge.

Probable Derivation of these Anaërobic Microbes.—All these microbes would seem to be of faecal derivation. The *Bacillus perfringens* in particular is an inhabitant of the alimentary tract, and it can (by implanting in boiling milk and anaërobic cultivation) be readily recovered from the faeces of men and animals, from earth soiled with faeces, and from the soiled uniform of the soldier.

Disorders Produced by the Anaërobic Infection.

The anaërobic infections of the imprisoned discharges which are here in question, may, if unchecked, lead to graver consequences. The streptococcal infection may lead to an infection of the tissues in the form of erysipelas or deep cellulitis, and it may culminate in septicaemia. The tetanus infection will, if the microbe cultivates itself sufficiently freely, and elaborates enough toxin in the wound, give rise to tetanus. And the bacillus of Welch, when it manages to invade the tissues, will generate gas producing a gas phlegmon, and also an obstructive gangrene in the affected limb (so-called *gaseous gangrene*).

II.—MEASURES FOR CHECKING THE ANAËROBIC INFECTION OF DISCHARGES AND PREVENTING THE DEVELOPMENT OF TETANUS, GAS PHLEGMON WITH GANGRENE, AND STREPTOCOCCAL INFECTION OF THE TISSUES.

The rational line of treatment for the prevention of the grave sequelae which are here in question will be to check at the earliest possible moment the anaërobic infection of the discharges.

Opening Up, Cleaning, and Draining of Wounds.

The wound ought to be freely opened up. It ought then to be carefully cleansed with an antiseptic solution (*vide* Memorandum on Antiseptics—Therapeutic Employment); all foreign bodies, sloughs, and blood clot (as far as this is possible without risk of haemorrhage) being carefully removed. Then a very wide drainage tube, which will admit air to the interior, ought to be inserted, and, especially in those cases where there is much laceration, steps ought to be taken to promote the outflow of lymph from the walls of the wound (*vide infra*, Section IV).

By such steps we may hope to put an end to the anaërobic infection, and to obtain, instead of foul-smelling, gas-impregnated, decomposing discharges, a more or less "laudable pus."

Precautionary Measures to be Taken Where the Above Treatment Cannot be Carried Out.

Where, owing to the exigencies of war conditions, it is for the moment impossible to carry out the required surgical measures, or where from the nature of the case the wound cannot be effectively drained, it will be specially important to abstain from doing anything which might still further favour the anaërobic infection.

(*a*) *Points to be Attended to in the Interim Treatment of Wounds.*—Wounds should not be sewn up after operation. We can never be sure that the projectile has not carried in infection, and we cannot under war conditions and during transport count upon the patient being kept, as he should be, under continuous observation. Plugs, except where there is actual risk of haemorrhage, should never be left behind in the wound. For they bank back the discharges and establish anaërobic conditions. For the same reasons it will be necessary to see that the wound is not wrapped up air-tight; that discharges are not allowed to dry upon the bandages; and that the mouths of drainage tubes are not blocked by the pressure of the dressings.

(*b*) *Prophylactic Inoculation of Antitetanus Serum.*—Moreover, it will, pending the opening up and cleansing of the wound, be very desirable to take certain specific prophylactic measures. By an injection of antitetanic serum we may hope to neutralize any tetanic poison which may be absorbed from the wound.

(*c*) *Prophylactic Inoculation of Antigangrene and Antisepsis Vaccine.*—Further, by the injection of a prophylactic dose of a vaccine containing the bacillus of Welch and the streptococcus (issued as *Combined Antigangrene and Antisepsis Vaccine*), we may hope to stave off an invasion of the tissues by these micro-organisms (*vide* Memorandum on the Employment of Vaccines). It must, however, be clearly realized with regard to these measures that they are only temporizing methods, and ancillary to such cleansing and drainage of the wounds as may in a particular case have been for the moment practicable.

III.—TREATMENT OF STREPTOCOCCUS INFECTIONS OF THE TISSUES AND "GAS PHLEGMON."

When, by an unchecked anaërobic infection of the discharges, the resistance of the tissues has been lowered, and these have been invaded by microbes, it will be necessary to take immediate steps to stem that invasion.

We have at disposal two different methods of procedure. (*a*) We may take steps to increase the antibacterial powers of the blood fluids. (*b*) We may lay open and effectively drain the tissues (*vide infra*, Section IV) and so bring back to these their normal resisting power. These methods will be applicable according to circumstances, separately or in combination.

Erysipelas.—A streptococcal infection which takes the form of erysipelas can practically be always promptly extinguished by an injection of streptococcus vaccine (*vide* Memorandum on Employment of Vaccines) without recourse to any surgical measures.

Cellulitis.—When a streptococcal infection takes the form of a diffuse cellulitis, vaccine therapy will rank only as an auxiliary measure, and the laying open of the infected tissues and the establishment of effective lymph lavage by the method indicated in the next section will be the essential.

What applies to the case of streptococcal cellulitis applies *a fortiori* to all infections of the tissues by the *bacillus of Welch*. In every case these must be opened up and effective lymph lavage induced.

Gas Phlegmon.

In connexion with the actual surgical measures we have two cases to consider:

(*a*) *Gas Phlegmon Affecting the Subcutaneous Tissue.*—Where the infection follows a superficial course, manifesting itself in dusky blotchings of the skin and gaseous emphysema in the subcutaneous tissue, it will suffice to open this up freely by incisions carried down to the plane of the muscle. (And it is here thrown out as a suggestion that a more efficient evacuation of the lymph would be obtained if the incisions were disposed transversely instead of axially to the limb.)

(*b*) *Gas Phlegmon Affecting the Deeper Tissues.*—Where the deeper tissues are diffusely invaded, and where the limb, owing to the internal tension, has assumed a blanched wax-like appearance, incisions into the subcutaneous tissue would not relieve matters, for the underlying muscle would protrude into and block the wounds. In these eminently dangerous cases it will generally be necessary to amputate. But it may sometimes be possible to save the limb by the free opening up of the deeper tissues and the introduction of large drainage tubes. In amputating for diffuse infection of the deeper tissues, or, as the case may be, for a progressive infection of the subcutaneous tissue, it is advisable, inasmuch as it is in these cases essential to obtain an absolute maximum of drainage, to do the flapless amputation—that is, to cut across all the tissues at one and the same level, and to leave the wound completely open.

IV.—General Considerations in Connexion with Drainage, and Measures for Promoting the Outflow of Lymph from an Incision or the Infiltrated Wall of a Wound.

The primary object of all opening up of wounds, and infected tissues, in short of all drainage operations, is, of course, to provide issue for pus and infected discharges.

The Mere Provision of an Outlet does not Satisfy Requirements.

But the mere provision of an outlet is not enough; nor is it enough to see the outlet so disposed as to allow of gravity carrying off accumulated discharges.

Lymph Lavage must be Superadded.

What we are seeking to secure will not have been attained until such lymph as may have become poisonous to leucocytes and impotent upon bacteria has been extracted from the tissues; until that lymph has been replaced by a lymph which is favourable to phagocytic activity and inimical to microbes; and until this last is being "drawn" into the wound and is establishing in it conditions which are favourable to healing.

When anything less than this has been achieved by the use of the knife, and in particular in the case where, in despite of incisions, the infective process has advanced, our drainage operation will have failed in its object, and our failure will be attributable to a sealing up of the fenestrae in the tissues, and a stanching of the lymph outflow.

Hypertonic Solutions of Salt will Promote the Outflow of Lymph from the Walls of a Wound.

The remedy for this is to apply to the wound a hypertonic solution of salt to promote the outflow of lymph.

For ordinary use the best application will be a 5 per cent. solution of common salt combined with ½ per cent. citrate of soda to render the lymph incoagulable. Where citrate of soda, or a similar decalcifiant, is not available, a simple 5 per cent. solution of salt will serve. Sea-water, this being equivalent to a 2.5 per cent. solution of salt, may also be employed. In dealing with dry and infiltrated wound surfaces stronger solutions of salt (up to 10 per cent.) will be found to resolve the induration and to clean up the wound surfaces much more quickly than weaker solutions.

In the case of deep wounds the simplest procedure will be to pour in the hypertonic solution and then plug lightly with gauze. Superficial wounds may be dealt with by laying on gauze thoroughly soaked in the solution. The limb should then be wrapped in waterproof material to prevent the bed becoming soaked with the very copious discharge; and an application of vaseline will prevent irritation of the skin and stinging on freshly cut skin surfaces.

When the "Drawing Agent" has Cleaned up Wound it is to be Discontinued.

The "drawing agent" has done its work as soon as it has checked the spreading invasion of the tissues; or has cleaned up the dry and indurated wound surface, and this last has clothed itself in bright coral red granulations. The hypertonic salt solution may then be replaced by some simple dressing (*vide* the final paragraph of this Memorandum.)

V.—Treatment of the Suppuration which will Supervene upon the Laying Open of Wounds and Infected Tissues.

The laying open of the wound or the infected tissue effects, as consideration will show, only the conversion of a more, into a less, dangerous form of infection; and we are, after our operative procedures, faced with a suppurative infection of our open wound, and of our superadded incisions; and have now to check that infection.

It will in practically every case be an infection by the streptococcus combined with the staphylococcus. And in very many cases there will be a superadded infection by coliform organisms, in particular by the *Bacillus proteus*.

The therapeutic methods which we have here at disposal are the following:

(1) Provision of Satisfactory Drainage and Lymph Lavage.

The first and most important thing will be to provide in the dependent portion of the wound a free outlet for the discharges, and to secure, when we are dealing with infiltrated wound surfaces, a free outflow of lymph (*vide* Section IV).

If, by either of these methods, or by a combination of the two, we succeed in providing effective lymph lavage for our wound, we shall have very little difficulty with the infection.

But it will in a very large proportion of cases be quite impracticable to obtain all that would be desirable in the matter of drainage; and it is all-important to recognize, in connexion with these cases, that "conservative surgery," as applied to the wounded, means making, for the purpose of conserving a limb, legitimate sacrifices with respect to drainage. The question, and it is the most anxious and responsible question in all surgical procedures, as to how far one may sacrifice drainage, can only be arrived at by balancing in each particular case the advantage of preserving a limb against the risks of long-continued suppuration and eventual septicaemia.

We require here to have clear conceptions as to what amount of help is obtainable, on the one hand from *vaccine therapy*, from the employment of *antiseptics* in the wound, and from *frequent dressings*.

(2) VACCINE THERAPY IN ITS APPLICATION TO SUPPURATING WOUNDS.

It is important in connexion with this method of treatment to realize (*a*) that it aims at increasing the antibacterial powers of the blood, and (*b*) that the conditions which determine our success or failure are essentially the same when we employ vaccines as when we set ourselves to combat infections by the aid of the antibacterial power of the normal blood.

Ideally favourable conditions for the successful employment of a vaccine will be given when this is employed in treating a perfectly well-drained wound (let us say such a wound as that furnished by a flapless amputation); or again, in treating an incursion of a microbe into a tissue where there is a very free lymph flow (let us say, such an infection as erysipelas). Here, by the use of an appropriate dose of the proper vaccine or vaccine mixture, successful results may be confidently expected.

The most unpromising cases for vaccine treatment are those where we are dealing with an unopened abscess sac, or a quite undrained wound, or an old-standing cicatrized tissue infection. Here the microbes are shut off from the blood fluids, and in these cases the utmost we have any right to expect is to prevent an extension of the infection and to ward off septicaemic complications.

In the case here specially in view, that of the imperfectly-drained wound, we may expect to obtain by the repeated inoculation of the appropriate dose of the proper vaccine or vaccine mixture, not anything in the nature of dramatic results, but a certain improvement in the local conditions, together with a certain protection against septicaemia.

We may, in short, expect from vaccine therapy results which will make it possible to employ conservative methods in a larger proportion of cases; to hold on longer to these methods; and to carry them oftener to a successful issue. It would therefore be advisable to carry out vaccine therapy as part of the routine treatment of suppurating wounds. (*Vide* Instructions issued with Antisepsis Vaccine.)

(3) EMPLOYMENT OF ANTISEPTICS IN WOUNDS.

Therapeutic Employment of Antiseptics has given Disappointing Results.

It is notorious that the results of the treatment of suppurating wounds by antiseptics are disappointing, and that the reasoning which led to the universal adoption of this therapeutic method was, in point of fact, too unsophisticated.

It was tacitly assumed of chemical agents which acted as antiseptics in watery solution that they would do so also in blood fluids and pus; and that they would also penetrate a certain distance into the tissues and into blood clots. We now know that antiseptics do in these respects very much less than was anticipated.

It was further tacitly assumed that an antiseptic which gave good results with one particular microbe or group of microbes ought to give good results indiscriminately with all. But it is possible that particular antiseptics may be appropriate to particular microbes and groups of microbes; that, for instance, such an antiseptic as peroxide of hydrogen, which has very little effect on ordinary pyogenic microbes, may be specially effective on anaërobic micro-organisms.

Importance of Selecting the Appropriate Antiseptic for Each Class of Case.

But, at any rate, the principle has emerged that, in choosing our antiseptics and the strength in which these are to be used, we ought to guide ourselves by actual experiments on wounds and on the microbes which come into consideration in connexion with those wounds. And it would be clearly inadmissible in choosing antiseptics for employment in projectile wounds to leave out of sight the fact that anaërobic microbes and their spores have to be dealt with, and that the antiseptics we employ ought to be competent to kill these.

Discussion of Advantage Expected from a Partial Sterilization.

Again it is still tacitly assumed by practically every one who employs antiseptics that, even if treatment with an antiseptic effects only a partial sterilization, such partia sterilization will always be something to the good.

This amounts in point of fact to the assumption that by substituting a smaller for a larger sowing the number of microbes in a culture will always be sensibly reduced.

In reality this will depend upon two factors, (*a*) the nature of the culture medium, and (*b*) the shorter or longer period allowed for the cultivation.

When we are dealing with a culture medium which is ideally favourable to the multiplication of microbes, the smaller sowing will, after a short space of time, give exactly the same number of microbes as the larger.

When we have a culture medium in which microbes develop very slowly, the smaller sowing will for a very long time give a correspondingly smaller number of microbes.

When a cultivation medium which is unfavourable to microbes is after a certain lapse of time converted into a medium which is favourable to them, it will not be the larger or the smaller sowing, but the date at which the character of the fluid changes, which will govern the result.

Evolution of Events in an Infected Wound Rhythmically after each Dressing.

We have now to apply these general principles to the case of the cultivation of microbes in wounds; and we may consider first the evolution of events in wounds treated without antiseptics, and then inquire in what respect the use of antiseptics could modify this evolution.

There will, after washing out, remain behind in every wound a certain quantum of pus. In one case it will be a question of minimal collections left in the shallow depressions of a granulating surface; in another a question of quite large collections held up in inaccessible pockets.

This residual pus will furnish the sowing of microbes, and a culture will be set going as soon as lymph begins to trickle into the wound.

But the new culture will start off very slowly, and for two reasons: *First*, because the lymph in the condition in which it exudes inhibits nearly all the microbial growth; *secondly*, because we have in the lymph phagocytically active leucocytes.

For a certain time these natural checks or microbial growths will be maintained. The conditions will, however, when the lymph is fouled by an appreciable mixture of residual pus, change rapidly. Phagocytosis will be arrested, and the effused lymph will be transformed into a medium which will be eminently favourable to the multiplication of all manner of microbes. If we now wait for only a few more hours we shall have in the wound a very luxuriant growth.

Coming now to the question how good could come of the employment of antiseptics in wounds, we recognize, in the first place, that we might by these means achieve an appreciably smaller sowing of microbes. *Further*, it is conceivable that, if we were to leave behind in the wound a sufficiency of antiseptic, we might obtain from it such a reinforcement of the growth-inhibiting power of the lymph as should more than offset the set-back inflicted by the antiseptic in paralysing the phagocytic action of the leucocytes. *Lastly*, it is possible that an antiseptic, left behind in the wound in sufficient quantity, might prevent the residual pus converting the lymph into a good nutrient medium.

Smaller Sowing of Microbes probably not a Factor of Dominating Importance.

In reality these possibilities do not amount to much. It is clear that that appreciably smaller sowing of microbes which we are working for would be realized only where the whole wound surface can be thoroughly washed with an antiseptic. But these are precisely the cases where the effect of a smaller sowing of microbes would not make itself very much felt; for where the wound is left practically free of residual pus, the natural checks of microbic growth would be longest maintained.

With regard to the other possibilities, all that is necessary to say is that they must rank only as possibilities, and that up to the present experiment has not furnished anything in confirmation of the idea that the introduction of antiseptics into wounds would be likely to contribute to the arrest of suppuration.

Utility of Antiseptics in the Prevention of Outbreaks of Serious Septic Infection.

It must, however, be emphasized, in conclusion, that in the treatment of the wounded in hospital it is essential to look beyond the individual to the aggregate. And even if it were finally to emerge that the employment of antiseptics did not do anything towards the arrest of suppuration in an infected wound, the taking of careful antiseptic precautions, and the washing out of the wound by antiseptic solutions would none the less be indispensable. For if such precautions were omitted, infective microbes would inevitably be carried from one wound to another, and there would inevitably, by such "passaging," be bred out in hospital very virulent strains of microbes, which would, as in pre-Listerian days, induce all manner of fatal septic infection.

(4) FREQUENT AND EFFICIENT DRESSING OF THE WOUND.

Importance of Frequent Dressing of Wound.

Coming back from this general consideration to the question of the treatment of the individual infected wound, it will be clear from what has been said above that the frequent and efficient washing out and dressing of the wound will be a factor of dominating importance in the treatment of the infection. Where comparatively long intervals intervene between the dressings, where pus is left behind in the wound, where the discharges are confined by plugs or multiple folds of dressing, and where, in the case of a deep wound, too small drainage tubes are employed, little or no progress will be made. Where large drainage tubes are employed, where the wound is frequently washed out, where no pus is left behind, and where only a very light dressing is employed, we shall be making progress.

Continuous Immersion or Irrigation for Heavily Infected Wounds.

And clearly, so long as a wound is heavily infected, the ideal method of treatment, if only it were always practicable, would be immersion in a bath or continuous irrigation with some aseptic, or mildly antiseptic, fluid.

Exposure to Air and Drying Off of Wounds after Infection has been Brought under Control.

When the continuous bath or, as the case may be, lymph lavage induced by hypertonic salt solution, has brought the infection under control, what remains of that infection may very often be extinguished by freely exposing the open wound to the air. The part which the drying off of the wound surfaces and the concentration of the discharges plays in the killing off of the residual microbes has not yet been investigated.

NOTE.—The recommendations with regard to surgery which are put forward in the memorandum have been formulated in consultation with Colonel Sir B. Moynihan and Colonel F. F. Burghard.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

SENSORY PHENOMENA IN HEAD INJURIES.

ON a recent occasion M. Delorme, Medical Inspector-General of the French Army, mentioned to me certain facts he had observed in regard to head injuries since the beginning of the war, and he has since made them the subject of a brief communication to the Academy of Medicine in Paris. In the course of his visits of inspection to various hospitals and ambulances he had, he said, seen a very large number of cases of gunshot wound of the head at all stages of their progress, early and late; when the condition of the patient had permitted it, the state of the organs of special sense had been tested, and it had been found that, while lessened acuity of perception of sound, of smell, and of taste were all more or less common, visual defects were very much more frequent. They seemed, in fact, to be commoner even than sensory and motor nerve troubles affecting the trunk and limbs. Diminished visual acuity, with or without accompanying contraction of the field of vision, was the condition most often observed. When the latter existed, it was usually concentric; hemianopia was exceptional. Usually on ophthalmoscopic examination of these cases no structural changes had been found, but occasionally there was present commencing or established optic atrophy, and sometimes papillary oedema. He had also at times noted evidence of disturbance of the innervation of ocular muscle; this was revealed sometimes by partial paralysis of one or more of the external muscles, but usually merely by dilatation of the pupil. There was another circumstance which Inspector-General Delorme regarded as of much interest, namely, that the frequency of the occurrence of these disorders did not seem to depend on the position of the head injury. They were to be found quite as often in cases of injury of the vertex, or of the parietal, or temporal, or upper frontal regions, as in those in which the wound was in the neighbourhood of the occiput or the lower frontal region. Furthermore, when, as was often the case, the visual defect was unilateral, this characteristic bore no definite relation to the seat of the wound. Sometimes this was on the same side as the unilateral defect, sometimes on the other. Another observation of interest is that though these visual defects sometimes make their first appearance at a comparatively late stage, they would appear, as a rule, to be one of the earliest consequences of head injuries. Together with lessened perception of sound they have been observed immediately on their arrival in men who after a short period of unconsciousness when struck by a missile in the head have found their own way to an ambulance. In regard to the causation of these disorders of the special senses, M. Delorme is of opinion that when they occur late they are probably one of the minor results of cerebro-meningeal infection, but when, as is seemingly more common, they immediately follow the reception of the wound, the method of causation is probably not in all cases identical. In some the observed phenomena may be due to direct injury of the nerve concerned, or of its cortical connexion, by the missile itself; while in others, and perhaps most frequently, the primary cause is probably hydrodynamic. M. Delorme appears to have been induced to look into this subject from his recollection of the observations of Duret, who pointed out that in commotio cerebri the symptoms were most often observed in the nerves at the base, particularly when the lesion was in the neighbourhood of the vertex. The fact that when the sensory disorders occur forthwith, but are not very severe, they tend to pass off comparatively quickly would, so far as it goes, seem to support the view that they are one of a species of hydrodynamic shock. A final point that should be noted is that M. Delorme found that, until he drew attention to it, the existence of any visual defect was often quite unrecognized either by the patient himself or by those in attendance on him; in many cases this was probably due to the defect being unilateral. In the course of his brief communication to the Academy M. Delorme quoted a few illustrative cases, but for the most confined himself to general observations, his purpose being to draw attention to the subject and to promote its study by those through whose hands pass any considerable number of cases of head wounds. He urged that the record made of the site of the primary injury should be precise, and that when visual or auditory defects were in question special care should be taken that they were not confounded with previously existing non-traumatic defects of a somewhat similar kind.

In regard to these cases as a whole, I am able to state that the occurrence of sensory defects has not been overlooked by British medical men now at work in France. More than one of them I know has been collecting carefully recorded data in regard to visual phenomena, and it will be interesting to learn eventually how far their conclusions coincide with those of M. Delorme. Whether any one of them is extending his observations to the olfactory, gustatory, and auditory nerves has not yet been ascertained. Meantime it may be noted that on this, as on many other subjects which seem new in this war, information is to be found in the second edition of Sir George Makins's *Surgical Experiences in South Africa*, 1910, though the point of view from which he deals with it is somewhat different from that of Inspector-General Delorme.

CANADIAN HOSPITALS AND CONVALESCENT HOMES.

With reference to the paragraph under this heading published in the Journal of April 10th, pp. 640–41, Colonel C. A. Hodgetts, of Canadian Army Medical Corps, and Canadian Red Cross Commissioner, informs us that the Canadian hospitals at work in France, as mentioned in the paragraph, are under the direction of the Canadian Army Medical Corps, and not of the Canadian Red Cross Society. This applies to all the Canadian hospitals now in France, and to those being established to accommodate the personnel sent over by the University of Laval, Quebec, the McGill University, Montreal, and by the University of Toronto. The Canadian hospitals now in France comprise one at Wimereux, containing 300 beds, under the command of Major McKee; one at Le Touquet, under Colonel A. T. Shillington; and one at Le Tréport (1,014 beds) under the command of Lieutenant-Colonel Bridges. Accommodation for 3,000 beds is being provided at Étaples for the hospitals to be staffed by the Universities Contingent. There are in addition the Canadian hospitals on the lines of communication. The sphere of the Canadian Red Cross Society is to supplement the supplies to the hospitals and field ambulances of the Canadian Army Medical Corps, and to this end it works as a branch of the British Red Cross Society. Its principal officers are detailed for duty with the Red Cross by the Canadian Army Medical Corps. The funds are practically all collected in Canada, and the Dominion has contributed to date about £25,000 in money besides supplying a division of twelve motor ambulances and stores and clothing amounting to tens of thousands of items.

It is not, as our correspondent was given to understand, proposed to establish a hospital in Derbyshire; the Canadian Red Cross hospital at Cliveden, Bucks., is being extended to accommodate 500 patients, and £25,000 has been received from Canada to cover the cost of enlargement and equipment. This hospital is officered from the Canadian Army Medical Corps both as to the medical and nursing staffs and the requisite non-commissioned officers and men. The Canadian Red Cross Society is responsible for the upkeep and equipment of the hospital.

The Canadians training in this country having been moved from Salisbury Plain to Shorncliffe, the hospital at Bulford is being closed gradually, and another has been established at Shorncliffe. In addition, Surgeon-General Carlton Jones is establishing at Shorncliffe a convalescent home for Canadian soldiers and another in Kent. The Canadians, of course, cannot be given two weeks' furlough during convalescence—the practice adopted in the case of British soldiers—and if they went to private homes in this country, which no doubt would be readily open to them, the supervision exercised might be lax. The two convalescent homes will accommodate 700 or 800 men, and will be officered by personnel from the Canadian Army Medical Corps.

A contribution of £2,500 has been made by the Canadian Red Cross Society towards the equipment of a Canadian ward in the hospital at the front now being provided by the Order of St. John of Jerusalem. The medical and nursing staffs of the ward will be drawn from Canada; the cost of their salaries and transportation will be met by the Canadian Red Cross organization. Fifty fully qualified nurses will be allotted to the Order of St. John, and the first unit left Canada on April 21st. The Canadian Red Cross Society is about to establish a rest home for nurses in Cheyne Walk, Chelsea, a house having been generously placed at its disposal by an English lady.

CASUALTIES IN THE MEDICAL SERVICES.

Army.

Died.

Captain Archibald Alfred Sutcliff, R.A.M.C., died of typhus fever at Wittenburg, in Germany, on March 12th. He was born on December 17th, 1881, educated at St. Thomas's Hospital, and took the degrees of M.B. and B.S.Lond. in 1905, and the diplomas of M.R.C.S. and L.R.C.P.Lond. in the same year. He entered the army as lieutenant on January 30th, 1906, becoming captain on July 30th, 1909. Previous to the war he was stationed at Singapore. He was reported as missing in the retreat from Mons, in one of the first lists of casualties published, that of September 1st, 1914; on September 18th he was reported to be a prisoner, along with seven other medical officers of No. 4 Field Ambulance, with which he was serving.

Wounded.

Captain D. C. M. Church, I.M.S. (Turkish Arabia).

NOTES.

Serbia.

It is stated in the *Medical Record* of April 10th that the American Red Cross Sanitary Commission, to which reference was made in the British Medical Journal of last week, sailed from New York on April 3rd on the *Duca d'Aosta* for Naples, whence they will proceed to Serbia. In the party are Dr. Thomas Wright Jackson, chief sanitary inspector; Dr. Hans Zinsser, professor of bacteriology at Columbia; Dr. B. W. Caldwell of the Canal Zone; Drs. A. W. Sellards, George C. Shattuck, and F. B. Grinnell of Harvard; and W. S. Standifer and Luis de la Pena. The last two were members of General Gorgas's staff in the sanitary campaign which rid the Isthmus of Panama of yellow fever. Professor Richard P. Strong of Harvard, the head of the Commission, is already in Europe. The commission will work in co-operation with others sent by England and France, under the general direction of an executive committee composed of Dr. Strong, Sir Ralph Paget, and Dr. Joubert of Paris. Of the American Red Cross units sent to Serbia four physicians and twelve nurses have had the fever, and two doctors, Dr. Donnelly and Dr. Ernest Magruder, of Washington, have died of it. Of the Serbian army and volunteer surgeons nearly two hundred have died of typhus.

Sir Thomas Lipton, who has done much to arouse interest in the sufferings of Serbia and who has lent his yacht Erin to the British Red Cross, will soon take out personnel and stores to Salonica. Writing in the *Daily Chronicle* of April 15th of the prevalence of typhus, he says that in the view of Dr. Ryan, the chief of the American Red Cross now in that country, half the population will be swept away if help does not come quickly. Serbia is quite unable to cope with the situation.

> There is not a tithe of the hospital accommodation necessary; Serbia has no trained nurses, though the ladies of the country are almost without exception helping in the hospitals. It has not a tithe of the drugs or disinfectants required. It is short of sheets and blankets. It cannot provide clothes for the hundreds of thousands who are wearing garments that should be burned. Its supply of doctors is nearly exhausted. And the infection spreads and spreads. The disease is taking off more of the population than a war. . . . As many as twelve dead bodies have been seen piled up in a cemetery at Kragujevatz awaiting men to dig graves in which to bury them. In every town and village almost every family is directly or indirectly a sufferer.

Sir Thomas Lipton adds that the Serbians are a proud people, and it is hard to make them confess that their country is short, not only of food, but of all kinds of hospital comforts. But he had seen the fever patients lying on the floors of crowded hospitals, and the want of drugs, linen, and food. He concludes with an appeal for hospital necessaries and comforts and especially money for the purchase of stores. All gifts should be addressed to the British Red Cross Society, 83, Pall Mall, S.W., marked "For Serbia."

At a meeting held at the house of Lady St. Helier on April 19th, Miss Christitch, a Serbian lady, in charge of a hospital at Valjevo, made an appeal for help for her afflicted compatriots. She said the Austrian prisoners, of whom there were 70,000 in Serbia, were spreading typhus throughout that country. Valjevo, where the Austrians in their retreat left over 30,000 sick and wounded, was a huge hospital, and beds, sheets, and other necessaries were wanted. Shirts and sheets should be sent to Miss Christitch, care of Mrs. Carrington-Wilde, 5, Cromwell Road, S.W.

Particulars as to the work of the Scottish Women's Unit in Serbia were given at a meeting of the Association of Registered Medical Women, a report of which will be published in a later issue.

It is announced that the Wounded Allies' Relief Committee (Sardinia House, Kingsway) has received a telegram

from the advance party of the typhoid hospital unit recently sent by it to Serbia. The members have arrived at Nish, and, at the request of the Serbian Government, are proceeding to Kragujevatz, where the hospital, which will consist of 100 beds, will be established. Ten other nurses, headed by Miss Edith Mackenzie, Home Sister of the City Fever Hospital, Birmingham, will shortly follow.

THE FRENCH RED CROSS.

Mr. JAMES DONELAN, M.Ch., M.B. (Medical Referee, Comité de Londres, 9, Knightsbridge, Hyde Park Corner, S.W.), writes: Having had the opportunity during last September of observing the shortage of surgeons in some of the base hospitals and clearing houses under the French Red Cross I started, in conjunction with the old London Committee, a system of voluntary service by surgeons for short periods. The appeal made at that time was largely responded to by all ranks of the profession, and the system has been successfully worked up to the present date. Within the last week or two several surgeons have expressed to me the opinion that the existence of this service should be more widely known, as a great many men would be willing to seek the opportunity of the great practical experience afforded. The Committee are not in a position to offer fees, but travelling expenses and maintenance are provided. Any surgeons who would like to offer their services for a month or more should communicate with the honorary secretary at the above address or with me. We shall be happy to render them every assistance possible in the matter.

MILITARY HONOURS.

Lieutenant (temporary) James Robertson C. Greenlees, M.B., 22nd Field Ambulance, R.A.M.C., has been appointed to be Companion of the Distinguished Service Order for his gallantry and devotion to duty at Neuve Chapelle from March 10th to 14th in attending on the wounded under very heavy fire. Lieutenant Greenlees has been twice previously brought to notice for similar acts of gallantry.

Lieutenant J. G. Priestly, M.B., R.A.M.C., has received the Military Cross for gallantry and devotion to duty at Neuve Chapelle on March 13th, when he continued attending on the wounded with great gallantry although himself badly wounded.

KING GEORGE HOSPITAL.

Vacancies for Resident Medical Officers.

The King George Hospital is steadily advancing towards completion, and is at present occupied by an army of something over 1,000 workmen. Wind shelters are already in position upon the roof, but the conversion of the roof into a garden, which Mr. Reginald Blomfield, R.A., has undertaken to supervise, has not yet been begun. The roof garden and exercising ground of one and a half acres in extent will be a great feature of the new building. The roof is above the region of smoke and smuts, and on a clear day the view over the Thames and to the Surrey downs is delightful. The honorary visiting staff is complete, but there are still a few vacancies for resident medical officers. The positions will afford valuable experience in practical work in medicine and surgery, and will involve responsibilities greater than those of house-surgeons in civil hospitals. It is desired that the vacancies should be filled by men who have already held a resident post in a hospital. Women practitioners will not be eligible. The remuneration is £1 a day, with board and lodging; the appointment carries no military rank, nor will uniform be worn. Sir Frederick Treves and Mr. Edmund Owen will be glad to hear, at 83, Pall Mall, S.W., from qualified British practitioners who would like to make application for the remaining vacancies.

MEDICAL OFFICERS WANTED.

Glamorgan Yeomanry.

Two medical officers are urgently wanted for the Glamorgan Yeomanry. Applications to be made to the Secretary, Glamorgan County Territorial Force Association, 6, St. Andrew's Crescent, Cardiff.

2nd and 3rd Line Welsh Border Mounted Brigade Field Ambulances.

There are vacancies for five medical officers, prepared to serve abroad, in the above units. Pay and allowances as in the regular army, together with outfit and camp kit grants. Full particulars can be obtained on application to Major D. C. Leyland Orton, Officer Commanding 2nd Line Welsh Border Mounted Brigade Field Ambulance, Thomas Street, Chester.

DR. ETHEL CASSIE, M.B., Ch.B.Edin., D.P.H., has been appointed temporary medical officer of health and schools medical officer for Clackmannanshire in the room of Dr. Finlator, who has joined the R.A.M.C.

Ireland.

THE FIRST HONORARY DEGREES OF THE NATIONAL UNIVERSITY.

FOR the first time in the history of the National University of Ireland, honorary degrees were conferred at a meeting of the senate on March 30th. The registrar, Sir Joseph M'Grath, read the following resolution of the senate:

> The following having during their student days, for conscientious reasons, refrained from attending institutions where they could have obtained university degrees, and in place thereof having resorted to the Catholic University, which was unable to grant them that privilege, were awarded honorary degrees by the National University of Ireland, whose institution, to some considerable extent, was due to their action in the past.

The Pro-Vice-Chancellor said that the work of the Catholic University of Ireland and the objects it was established to achieve formed part of the great historic movement of the Irish people for the attainment of equality of rights and privileges; but it was nevertheless a truly national effort, having as its basis the desire of the race for a place in the world of intellect worthy of its remarkable varied talents, and stamped with its own spiritual ideals. Although the particular solution of the university question expressed in the idea of a Catholic University was not ultimately attained, its work resulted after the trial of an imperfect and inadequate establishment in the settlement of the whole Irish University question in a manner to remove all inequality, to destroy privilege, and to admit the Catholics of Ireland to a university national in its constitution, free in its government, and animated with a spirit of enthusiastic co-operation with the other universities of Ireland in working for the betterment of the Irish people, and the intellectual name and fame of old Ireland. Looking back over the span of forty years, the National University of Ireland offered the highest recognition in its power to a number of the men who were participants in the work of the Catholic University in the old days which preceded the first attempted adjustment of the university question in Ireland. All were men eminently representative of the students of that period, when the Catholic youth of Ireland suffered many material disadvantages by their conscientious devotion to a cause, and all of those receiving degrees were distinguished students in their respective spheres. On the part of the university, and, he might add, on the part of the members of University College, Dublin, who still worked in the halls which witnessed the world renown of Newman, and the high eminence of long-departed professors, as well as of some who were still living, they welcomed them to the place in the National University, which would confer upon that university the honour of the happiest association with them and their comrades of old times, through whose work the National University came eventually to be established.

Among the recipients of honorary degrees were the following members of the medical profession:

LL.D. (HONORIS CAUSA).

Crean, Lieutenant-Colonel John Joseph, L.R.C P. and S.I.
Macnamara, George Unthank, L.R.C.P. and S., L.A.H.
Maunsell, Surgeon-General Thomas, C.B.
O'Carroll, Joseph Francis, M.D., M.Ch., F.R.C.P.I.
Rooney, Colonel James Patrick, F.R.C.S.I.

In Absentia.

Connolly, Nicholas Thomas, L R.C.S.I.
Cox, Right Hon. Michael Francis, M.D.
Creagh, William, L.R.C.P.I., L.A.S.
Cuffe, Surgeon-General Sir Charles MacDonagh, K.C.B.
Jennings, Lieutenant-Colonel Charles Boromeo, L.R.C.P. and S.I.
O'Farrell, Lieutenant-Colonel Ignatius, L.R.C.P. and S.I.
Stafford, Major Patrick Walter, M.R.C.S.Eng., L.R.C.P.I.

M.D. DEGREE (HONORIS CAUSA).

Crean, Thomas Joseph, L.R.C.S. and M.R.C.P.I.
Furlong, Nicholas, L.R.C.P. and S.I.
Laffan, Thomas, M.R.C.S.Eng., M.R.C.P.I.
M'Cullagh, John, F.R.C.S.I, L.R.C.P.I.
Redmond, Charles Stennett, L.R.C.P. and S.I.
Redmond. Sir Joseph Michael, F.R.C.P.I., L.R.C.S.I.
Ronayne, Charles O'Lomasny, L.R.C.S. and L.R.C.P.E.
Ryan, John, L.R.C.P I., F.R.C.S.I.
Walshe, Denis, L.R.C.P. and S.Edin., L.R.C.P.I.

In Absentia.

Cannon, Richard, L.R.C.S. and P.I.
Kearney, Matthew, L.R.C.S.I.
Kilbride, John, L.R.C.P.I. and S.I.
M'Carthy, Charles William, F.R.C.S.I., L.R.C.P.I.
MacGuire, Constantine Joseph, L.R.C.P. and S.I.
M'Kenna, Thomas, L.R.C.P.Edin., L.F.P.S.Glasg.
O'Sullivan, Daniel Aloysius, L.R.C.S.I. and L.R.C.P.Edin.
Quirke, Joseph, M.R.C.P.Edin., L.R.C.S.I., L.A.H.
Ryan, James Patrick, L.R.C.P., and S.I.
Stephenson, Edward Aloysius, L.R.C.P. and S.I., L.Med.Dub.

Scotland.

EXPECTATION OF LIFE IN SCOTLAND.

To a recent meeting of the Faculty of Actuaries in Scotland, when Mr. William Hutton, president, was in the chair, a paper entitled, "The Expectation of Life in Scotland in the Year 1911," was contributed by Dr. J. Cranfurd Dunlop, superintendent of statistics in the office of the Registrar-General; and Mr. Robert M. Hunter, F.F.A., of the Scottish Provident Institution. The authors submitted what may be termed "The Life Tables for Scotland, 1911," based on the results of the census taken in Scotland in 1911, and the numbers of those dying in the three years 1910, 1911, and 1912. These tables showed, for males and females separately, the rates of mortality prevailing in Scotland at a date approximating to the middle of the year 1911. The chief interest in the new tables, however, lay with the expectation of life—that is, the average after-life time, which it was the purpose of the authors to ascertain, and which they compared with the figures of two previous censuses in Scotland, and with figures relating to other countries. The expectation of a male child born in Scotland in 1911 was 50 years, or ten years more than in 1871, and five years more than in 1891; the expectations of males aged 20 and 40 were 43 years and 27 years, showing increases during forty years of five years and two years, and during twenty years of three years and two years respectively. If anything, the increases in female expectation were slightly more favourable, but the improvement in expectation in both sexes was chiefly confined to early and middle life. Female expectation was throughout life greater than male expectation—a characteristic of all life tables—the difference being at first about three years, and gradually decreasing thereafter. In England the expectation of life was in 1911 slightly better than in Scotland, especially during early life; the difference was more marked among females than among males. Comparisons were also made with figures relating to Sweden, in which country the national death-rate for many years past has been exceptionally low. Sweden showed at a corresponding period expectations at birth in both sexes of about four and a half years more than in Scotland, and from two to three years more than in England. Comparisons with several standard and other tables were also made. The authors expressed the opinion that the expectation of life in Scotland generally was satisfactory, but that further improvement was possible.

EDINBURGH ROYAL INFIRMARY.

At the meeting of the managers of the Edinburgh Royal Infirmary on April 12th (Lord Provost Inches presiding), the usual business was transacted, and the results of the special appeal were announced. On March 12th, 14,702 copies of the appeal had been sent out, but up to April 12th only 646 responses had been received. The majority of the contributions sent in showed increases, the total increase in round figures being £2,250, including six special donations of £100 each. Special letters (56 in number) had been addressed to the coal-masters and other mine-owners in Scotland, in response to which the Fife Coal Company (Limited) had sent a contribution of £100, while replies had been received from others intimating that the application would be considered. An appeal for support had also been sent to seventy-two co-operative societies throughout the country which had not hitherto subscribed, and a number of contributions had already been received. A pleasing announcement was the report that a cheque for £50 had been received from a grateful naval officer who had been treated in the infirmary, and who wished to remain anonymous.

ROYAL SOCIETY FOR HOME RELIEF TO INCURABLES.

The annual meeting of the Royal Society for Home Relief to Incurables took place in Edinburgh on April 15th, when the Lord Provost presided. It was reported that during the year very many applications had been received, and seventy-three new names had been put upon the annuity list. The expenditure had exceeded the revenue from ordinary sources by £434; the deficit had been made up out of legacies. There had also been thirty-nine applications during 1914 for a grant from the Dunlop Cancer Fund, and these had all been most clamant and necessitous. The society was founded as long ago as 1805, for the assistance of those suffering from incurable disease and so rendered incapable of gaining their own livelihood, by Mrs. Keir, the widow of a London surgeon, and had been incorporated by Royal Charter in 1903.

England and Wales.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE annual meeting of the Governors and General Council of King Edward's Hospital Fund for London was held at St. James's Palace on April 19th, when the Speaker of the House of Commons was in the chair. A letter was read from the King, expressing His Majesty's deep sense of the great loss which the fund had sustained by the death of Lord Rothschild, its honorary treasurer and chairman of the Finance Committee. The meeting, by resolution, placed on record its feeling of regret and its sense of the debt the fund owed to Lord Rothschild for the skill and care he devoted to the ever-growing responsibilities of his office. It was reported that the governors had appointed Lord Revelstoke to be Lord Rothschild's successor, and that this action had been approved by the King as Patron of the fund.

The annual report showed that the total receipts for the year 1914 were £529,885 14s. 3d., of which £315,093 10s. 11d. were contributions to capital, and £214,792 3s. 4d. receipts on general account. The amount distributed was £140,000, as against £157,500 in the previous year, but this diminution was entirely due to the postponement by hospitals at the outbreak of the war of all building schemes not actually in hand or particularly urgent. Of the total distributed £6,500 was allotted among consumption sanatoriums, and convalescent homes taking London patients. The contribution of the League of Mercy had again been £14,000, a result which, it was observed, reflected great credit on the efforts of the members of the League to secure recognition of the claims of hospitals at the present time. The council of the fund regarded with particular satisfaction the bequest of one-twelfth of the residue of his estate by Sir Julius Wernher, who had been a member of the council, not only on account of the large amount, which already totalled £313,715, but also because such a bequest should have come from a member of the council. The total amount received from annual subscriptions and donations showed a decrease of £750 as compared with 1913, but the council expressed the confident belief that the nation would realize that the work done by the hospitals, both in the treatment of the wounded, and in the providing and training of doctors, nurses, and administrators in the medical service of the army and navy, gave them a special claim on the generosity of the public. The hope was further expressed that, notwithstanding the increased demands made by the war and the special funds arising out of it, the needs of the hospitals and the importance of maintaining the annual distribution of the fund would continue to be recognized. The Speaker, in moving the adoption of the report, said that one of the most gratifying incidents of the year was the completion of the amalgamation of the Hospital for Diseases of the Throat, Golden Square, with the London Throat Hospital in Great Portland Street. The amalgamation of small hospitals, he said, when there seemed to be no special reason for continuing their separate existence, had long been favoured by the fund, and this was particularly the case when new building schemes were contemplated. The expiration of the lease of the London Throat Hospital coincided with the acquisition of space for the extension of the Golden Square Hospital, and the amalgamation had every form of advantage; the

patients and the medical staff would benefit by the improvements which were more easily introduced in a large hospital, economy of management would be facilitated by the concentration of the work, and there would be only one building scheme instead of two. The motion of the adoption of the report was seconded by Dr. Frederick Taylor, President of the Royal College of Physicians, and carried unanimously; and a vote of thanks to the Speaker for presiding was proposed by the Right Hon. C. Stuart-Wortley, M.P., seconded by the Hon. Arthur Stanley, M.P., and carried unanimously. The Speaker briefly acknowledged the vote and the proceedings terminated.

Correspondence.

"A LITTLE PLEASURE IN LIVING?"

SIR,—In view of the call to offer our services for part-time military work, many of us will have to make alterations in the conduct of our practices. In doing so would it not be wise to make them permanent, so that instead of existing as slaves we might have a little pleasure in living? May I suggest the two following changes, which I have proved to work well:

1. Cease dispensing entirely, and make patients bear the chemist's charges.

2. Consult at home by appointment only on Tuesdays, Thursdays, and Saturdays, from 2 to 8 p m.

The rest of the week is left for visiting and for pleasure as best one can arrange. The British public are in a mood to fall in with changes at the present time, even although they do grumble at having to pay the chemist a reasonable fee.—I am, etc.,

Newcastle-upon-Tyne, April 20th. JOHN WISHART.

FEES OF LOCUMTENENTS.

SIR,—May I add a few lines to your excellent annotation in last week's issue on this important subject?

Before the war broke out the fees for substitutes were mostly 5 and 6 guineas, the increase in a great measure being due to the extra amount of work involved and the higher incomes earned owing to the Insurance Act. When the war broke out a large number of those who had been acting as locumtenents at once offered their services, and were accepted and given commissions at a remuneration of, roughly, 7 guineas a week, and consequently the fees paid to those remaining automatically went up to about the same figure, and at the present time a large number of men unable from one cause or another to serve their country abroad are doing so by taking duty at home for those who have gone on active service, and at moderate fees. Personally, I have not come across a single instance of 12 guineas being paid, and my register shows that out of a list of over 600 engagements that have passed through my hands during the last six months (mostly war ones) no fewer than 300 have been at 6 guineas, 235 at 7 guineas, 16 at 8 guineas, and the remainder at lower fees, on hospitality terms or other special reasons.

I may say that early in the war, through letters in the medical papers, I invited all able and willing to help to communicate with me, and have met with a most loyal response from medical men up to 70 years of age, who are doing their best in their country's need. Many of our allies are also helping, including Egyptians, Indians, Belgians, French, Russians, Japanese, and Greek.—I am, etc.,

London, W.C., April 19th. PERCIVAL TURNER.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

SIR,—I must first of all thank you for the conditions under which you published my letter last week, but I must state again that, in view of the accidents which have occurred, it is in the public interest that the memorandum of the National Medical Research Committee should be criticized.

The arsenic in the salvarsan molecule is in a colloidal condition and acts as a non-metal; any arsenic not in combination, existing as an oxide, or in the form of another salt, which has not yet been verified, is non-colloidal and acts as a metal. The arsenic in the latter state is highly toxic; the amount present is difficult to determine and depends upon the method of reduction employed. There are several methods of carrying out this reduction step, and the method used in the German manufacture is not stated in the patents. Furthermore, I have reason to believe that the method has been changed since the last patent was taken out.

As not only the degree of toxicity but the yield of the drug is dependent upon the reduction method instituted, this step in the manufacture of salvarsan is important, if not the most important. The Medical Research Committee was not justified in saying that the preparation of the drugs in question is the same as that employed in Germany. If biological controls are sufficient to allow one to say whether the drug can be safely used on man or not, why did Ehrlich deem it necessary to have the reports of certain medical men before allowing the drug to come upon the market? Ehrlich took the same precaution in 1912 with neo-salvarsan, although he was fully aware on *a priori* grounds that the preparation was less toxic than salvarsan. He must have been fully alive to the limitations of animal experiments; and, as stated in my letter last week, dioxydiaminoarsenobenzol, "ideal" and "hyper-ideal," which had passed the biological controls, were shelved because they proved too toxic to man.

Therefore the most conclusive tests which should have been insisted upon by the National Medical Research Committee have been omitted. The English and French substitutes have, we are told, passed the strictest biological controls, but in spite of this the following mishaps have occurred.

I have seen six cases of dermatitis exfoliativa, and two of jaundice. One of the former terminated fatally, three lost all their hair and developed hyperkeratosis of all their nails, and every case must be ill for months. None of the cases referred to had more than two injections, two had had only one, and in one case the dermatitis did not come on for nine weeks after the last injection was given. Having prescribed some thousands of injections of the German products, and sometimes as many as sixteen injections to one patient, I have only come across one case of dermatitis exfoliativa, and that occurred after the seventh injection of neo-salvarsan, when the drug first came in, and when it was advised to give the injections every other day and to increase the dose gradually up to 1 gram and over.

Again, we have now proof that the Medical Research Committee was not justified in saying that the products prepared in England and France were fully up to the standard of the best German samples previously sold.

The remarks made upon salicylic acid and adrenalin, with which I do not agree, distinctly support the truth of my contentions. If a perfectly pure sample of salvarsan and neo-salvarsan was obtained it would not produce the toxic symptoms which I have just described. The last paragraph in the postscript does not show that the evil I pointed out does not exist.—I am, etc.,

London, W., April 17th. J. E. R. MCDONAGH.

SIR,—In your issue of April 17th you publish a letter from Mr. J. E. R. McDonagh, in which he adversely criticizes the new brands of dioxydiamido-arseno-benzene. The editorial paragraph fortunately appended to Mr. McDonagh's letter successfully disposes of most of Mr. McDonagh's contentions; in fact, the only point which requires in the meantime any further consideration is his statement that he has seen "several very toxic effects follow the use of the new products, and that the medical profession would be well advised to await the reports of clinicians before using the products." It is much to be desired that Mr. McDonagh should publish in detail those cases which have shown toxic symptoms, unless he should find, on further consideration, that the poisoning was evidenced in patients showing an unusual intolerance or that it was due to excessive dosage.

My own experience of the new brands is limited to kharsivan and neo-kharsivan. Of the former I have been responsible for 180 injections, of the latter 20; but neo-kharsivan has been too recently introduced to allow me to make any statement of its properties. I have been using kharsivan coincidently with salvarsan, and have thus been able to compare the results, and my experience convinces

me of the close clinical resemblance, if not identity, of the effects of kharsivan and salvarsan. The full dose of 0.6 gram of either of these drugs should rarely be employed, otherwise, in every considerable series of cases, some patients will be found who will give evidence of over-dosage.

Just as I have found the toxicity of salvarsan and kharsivan closely comparable, so their curative effects on syphilitic lesions have been indistinguishable. I am, therefore, quite content to be deprived of salvarsan so long as a sufficient supply of kharsivan is available, and I have no hesitation in saying that, so far as my experience carries me, the new brand is not subject to any risks or limitations which do not apply with equal force to the original product.—I am, etc.,

Glasgow, April 17th. DAVID WATSON.

"TRENCH FOOT."

SIR,—As regards the etiology and pathology of trench gangrene, it appears that the beginning of the trouble is always more or less long-continued exposure to wet; hence its other name of "water-bite." It is also commonly spoken of as "frost-bite," although apparently a temperature below freezing-point is not necessary for its production.

I think it is most likely that, with the legs immersed in water or surrounded with wet garments, the process of osmosis comes into play as soon as the superficial horny layer of the skin is dissolved or rubbed away, the cutaneous and subcutaneous tissues becoming distended with diluted plasma. The pressure thus initiated (if this theory is correct), combined with enfeebled circulation in the parts, caused by vasomotor spasm due to the cold, would in certain cases cause death of the superficial structures through malnutrition and pressure. In this way the functions of sebaceous and sweat glands and ducts would be interfered with. Thus the natural protection of the skin (sebum) would be wanting, and accumulation of excretory poisons would occur in the deeper layers of the skin and subcutaneous tissues, further endangering their existence. Also the pressure, accumulation of toxins, and malnutrition would in severe cases act fatally on sensory, trophic, and vasomotor nerves. In an advanced case, where the vasomotor nerves were thrown out of action, blood pressure—one of the necessaries of circulation of the blood—would be absent. This, in its turn, would lead to death and thrombosis of the affected vessels, and therefore of all parts supplied by them. The spread of the thrombotic process would vary in different individuals, and under different conditions. Thus, in a person whose tissues were already below par, due to sapraemia (for example, chronic constipation, badly healed wounds, etc.), or circulation of waste products in excess (due to overexertion, possibly combined with faulty metabolism—due to bad teeth, etc.), we should expect extensive death of the parts. In arterio-sclerotic cases also we should expect the results of "water-bite" to be severe. In the cases where only one leg is affected it is quite likely that the main vessels of the affected limb are not equal in calibre to those of the unaffected limb, as it is well recognized that corresponding vessels in a person are frequently unequal in size.

As to prophylaxis, I would recommend, besides the adoption of dry, roomy boots and garments whenever possible, the plentiful and frequent use of goose grease well rubbed into the skin. Your research scholar found that this grease penetrated further into the skin than other fats. It would check the rapid and excessive loss of body heat from the parts protected (and indeed it would be well to rub the whole body) and would prevent the process of osmosis occurring, with its disastrous train of consequences. —I am, etc.,

ANDREW S. MCNEIL, L.R.C.P.S.Edin.

Liverpool, Feb. 20th.

COLOUR VISION THEORIES.

SIR,—Those who have studied the trichromatic theory know well that v. Helmholtz dissociated himself from the well-known valency curves; his theory is expressed fully and completely by the colour equation, and by the threefold functional relationships of the factors expressing the magnitudes of the three standard stimuli, as given by Mr. Major Greenwood on March 27th. The graphic representations of the three standard stimuli found in all the physiology books are pretty pictures, which give to the unlearned and to the non-mathematician a hint, but only a hint, as to the meaning of v. Helmholtz's equations. Dr. Edridge-Green again and again makes the assertion that what he infers from these diagrams is an integral part of the trichromatic theory.

On April 10th Mr. Major Greenwood referred to p. x of the preface in the second edition of v. Helmholtz's treatise, where it is specifically stated that the revision of the whole of the text up to p. 645 was undertaken by v. Helmholtz himself. Unfortunately the great master died two years before this edition was published. Now the discussion of colour vision theories occupies pp. 341–354. In the face of this explicit statement I hoped that Dr. Edridge-Green would apologize for his mistake; but no; he actually repeats his assertion that the description of the Young-Helmholtz theory, given in the second edition, is an interpolation. Discussion with such a controversialist is impossible.—I am, etc.,

Newcastle-on-Tyne, April 20th. A. S. PERCIVAL.

*** We cannot continue this correspondence.

AFTER-TREATMENT OF SOLDIERS AT HEALTH RESORTS.

SIR,—Your allusion last week to the facilities for treatment available for soldiers at the various spas is, at any rate, somewhat unfair as far as Bath is concerned.

Four days after war was declared the Royal Mineral Water Hospital, Bath, was placed at the disposal of the War Office, and was accepted for cases needing hydrotherapy, massage, etc. The first soldiers were admitted in September, and since that date they have come here in increasing numbers, the daily average in our wards for some time past exceeding 120.

To meet the special needs of these cases a considerable increase in the staff of masseurs has been made, and additional modes of treatment are being provided.—I am, etc.,

LLEWELLYN JONES LLEWELLYN,
Senior Physician, Royal Mineral Water Hospital, Bath.

Bath, April 21st.

Universities and Colleges.

UNIVERSITY OF GLASGOW.

GRADUATION CEREMONY.

THE following were among the degrees conferred at the graduation ceremony which took place in the Bute Hall on April 20th:

M.D.—J. B. Alexander, J. Smyth, F. E. Stokes.
M.B., CH.B —*D. F. Macdonald, J. Anderson, Wm. E. A. Buchanan, W. Combe, R. Forbes, P. O. Moffat, J. Smith, N. M'G. Smith.
B.Sc. (*in Public Health*).—D. O. Taylor.

* With commendation.

On the same occasion the following prizes were also presented to the winners: The Arnott Prize for Physiological Physics, J. S. Martin; the Bellahouston gold medals for eminent merit in thesis for M.D., G. H. Clark, J. W. M'Nee, J. B. Orr; the Straits Settlements Gold Medal in Tropical Medicine, Wm. D. H. Stevenson.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE, *Part I (Chemistry) and Part II (Physics)*.—*F. T. Allen, *W. E. Barnes, J. G. Barrie, L. M. Billingham, K. R. Chapple, B. Y. H. Christmas, C. B. Dix, T. H. Dobrashian, J. E. H. Duckworth, W. C. Faull, *A. Foster, *W. Girgis, *D. P. Guilfoyle, E. F. J. Jones, F. W. Kemp, *T. D. Llewelyn, *Eva Morton, Elizabeth O'Flynn, A. G. Ord, M. A. Ragy, *G. F. Smith, J. H. Sullaiman, †Ina V. Vincent, H. W. M. Williams. *Part III (Elementary Biology)*.—A. Abelson, F. Barker, W. E. Barnes, W. Beaumont, L. M. Billingham, Frederica M. Bradley, Anna B. Broman, J. F. E. Burns, N. E. D. Cartledge, Marjorie C. Chappel, K. R. Chapple, B. Y. H. Christmas, P. C. Collyns, I. J. Corbett, I. J. Cruchley, T. H. Dobrashian, A. Duffy, F. E. Edwards, G. P. Evans, W. C. Faull, S. Finkelstein, J. E. Fishburn, S. Hazeldine, A. R. Hill, T. James, E. F. J. Jones, F. W. Kemp, J. Kendall, G. B. Kirkland, P. Lindsey, T. D. Llewelyn, Eva Morton, A. R. Neckles, A. G. Ord, P. F. Petersen, Eleanor M. Reece, C. E. Roach-Smith, P. E. Williams, G. B. Withers, S. Wolff.

* Passed in Part I only. † Passed in Part II only.

SECOND COLLEGE (*Anatomy and Physiology*).—H. D. Apergis, E. H. Bryant, C. H. Carroll, J. C. Collins, E. Croft, G. M. Dominick, N. G. El-Gawly, M. Elias, F. J. Harrington, G. R. Hubbard, J. P. J. Jenkins, Florence M. Kerruish, R. T. McRae, W. H. Maudling, Elizabeth O'Flynn, May Olivera, A. Othman, A. Pastel, E. R. Pearce, W. I. FitzG. Powell, R. E. Rampling, Florence M. Rhodes, K. J. Rustomjee, G. E. Spero, H. B. Troup, R. H. Turner, H. P. Warren, F. E. G. Watson, H. G. Watters.

Obituary.

SIR THOMAS SMITH CLOUSTON, KT., M.D.EDIN., LL.D.EDIN. AND ABERD.,

FORMERLY MEDICAL SUPERINTENDENT, ROYAL ASYLUM, EDINBURGH.

SIR THOMAS SMITH CLOUSTON, whose death took place suddenly at his residence in Edinburgh on the morning of April 19th, would have been 75 in a few days, for he was born on April 22nd, 1840. Sir Thomas, who may fairly be termed the *doyen* of British alienists, was an Orcadian, the younger son of the late Robert Clouston of Nist House, Orkney, and among the many honours he received there was none he valued more highly than the freedom of Kirkwall, which was bestowed upon him in 1908. He was educated at Aberdeen (West End Academy) and afterwards at Edinburgh University, where he graduated M.D. in 1861, receiving a gold medal for his thesis. It is interesting to note that the two fellow graduates who shared this graduation honour with him were James Bell Pettigrew, the anatomist, and John Anderson, the naturalist. Clouston had already in 1860, before he was 21 years of age, gained the licence of the Royal College of Surgeons of Edinburgh; he was elected a Fellow of the Royal College of Physicians of Edinburgh in 1873. He was Fothergill Gold Medallist in 1870.

There was no Ettles Scholarship in Clouston's time to mark out the best man of the year at graduation, but it was almost, if not quite, an equivalent to be offered the assistant physicianship at Morningside Asylum, and this came to the young and distinguished Orcadian. After being for four years at Morningside under the late Dr. Skae, Clouston was appointed medical superintendent of the Cumberland and Westmorland Asylum at Carlisle, and there he continued, doing excellent work, till 1873, when he was elected to succeed his former chief at Morningside. This appointment was Sir Thomas Clouston's great opportunity, and right well he availed himself of it. From 1873 till 1908 he presided over the fortunes of Morningside Asylum, and saw one after another the reforms, with which his name is associated, introduced and made effective. Great rebuilding schemes were planned and carried through, the directors expending the sum of £180,000 in the thirty-five years during which Clouston acted as physician-superintendent; Craig House was opened about fifteen years ago, and proved a complete success, the income from the better class of patients increasing during his administration from £6,000 a year to £35,000. In a word, the Royal Asylum, Morningside, came to stand for all that was good scientifically and medically, as well as for all that was humane and efficient, in the treatment of mental diseases and in the management of the inmates. Many prejudices were overcome in Clouston's time, and many irrational practices swept away for ever. It is no exaggeration to say that the superintendent's annual report was always awaited with interest and perused with profit by the profession, whilst the ideas of the public, not only of Edinburgh but of all Scotland, with regard to insanity were so greatly modified as to be recast.

Meanwhile Clouston had been training younger men in the methods he had himself found so successful, and ere long there set in a steady flow of young alienists from Morningside to fill, and to fill well, the posts of medical superintendents in similar institutions in many parts of the British Empire. More than this, the teaching of insanity was extended to undergraduates in a more direct fashion, when the University of Edinburgh appointed Dr. Clouston its first lecturer on mental diseases in 1879, although previous to this date the professors of the practice of medicine and Dr. Clouston himself had given lectures on the subject. It is noteworthy, too, that the lectureship on mental diseases was the first of the appointments of this kind made by the university; it was soon followed by that on diseases of the eye, and now there are many others. By his writings also he was doing much to spread the knowledge of an enlightened conception of the causes and nature of insanity and of the proper ways of dealing with the insane. Whether by his oral or clinical teaching, or by his books, he was always an inspiring and stimulating guide to students. His lectures had a freshness of outlook and a novelty of phraseology which were very attractive and served well to put the new ideas regarding mental diseases which they contained in a form acceptable to students approaching the subject for the first time. Sir Thomas had a vocabulary rich in appropriate adjectives, those touchstones of effective speaking and teaching, and many a time the present writer discovered that his note-taking had suffered through a too enthusiastic interest in the apt language in which the lecturer was clothing his pronouncements; his mind was so occupied by the teacher's fine periods that his pencil for the time being failed to work. Not a little of the charm of the spoken lectures reappeared in the printed book—*Clinical Lectures on Mental Diseases*—which served to make Clouston's name known all over the world. The first edition, published in 1883, was followed by five other editions in this country and by two in America. Possibly no other single work has done so much to popularize modern conceptions respecting the true nature and the enlightened modes of treating mental diseases. Other memorable volumes which came from his pen were *The Neuroses of Development*, *The Hygiene of Mind*, and *Unsoundness of Mind*, and for many years he was editor of the *Journal of Mental Science*.

But from the early days in 1863, when Clouston first appeared in print with his little book on the *Minute Anatomy and Physiology of the Nervous System in the Lobster*, right on to the past few months, when his *Morals and Brain* (reviewed in this JOURNAL (p. 717) on October 24th, 1914) was published, he never ceased to appeal to the earnest student of psychiatry and of the many moral and social problems which are so closely bound up with it. He was ever a pioneer in the teaching and practice of a sane and reasonable mental therapeusis. Reference has been made to his interest in the social and moral problems with which the work of the alienist is so closely associated; of these it will suffice to name education and alcoholism, in order to realize his influence on the current views which obtain on these matters. Marriage, too, and eugenics attracted his attention and engaged his pen, and his book, *Before I Wed*, contained sound advice delicately and yet forcefully presented. He played an important part in the establishment of a council of public morals in Scotland, and in the years which followed his retirement from the active work of Morningside Asylum he was ever ready to lecture to educationalists and the general public on questions affecting the morality and mental health of the nation, and his lectures were fertile in practical results. He gave evidence on behalf of the British Medical Association before the Royal Commission on Divorce and Matrimonial Causes in 1910. In his cultivation of the *mens sana* he never forgot the healthy body; indeed, he was himself an instance of both, and he greatly loved his fishing, shooting, and golf.

In later years honours were showered upon Clouston. He was President of the Edinburgh Medico-Chirurgical Society and of the Medico-Psychological Association; for two years he acted as President of the Royal College of Physicians of Edinburgh; Aberdeen (in 1907) and Edinburgh (in 1911) conferred upon him the honorary Doctorate of Laws; and in 1911 the King bestowed upon him the honour of knighthood. He was vice-president of the Section of Psychology of the annual meeting of the British Medical Association in Edinburgh in 1875 and president of the section at the meetings in 1886 at Brighton and again in Edinburgh in 1898.

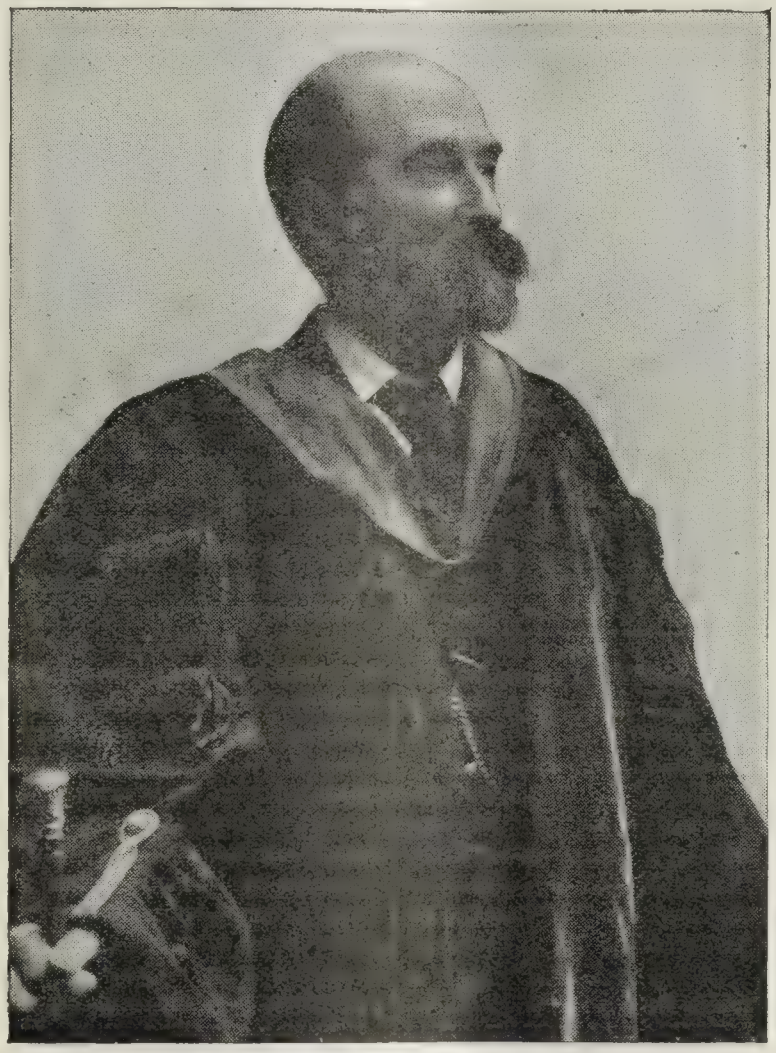
Sir Thomas Clouston married Harriet Segur, the daughter of William Storer of New Haven, Connecticut, U.S.A.; and he is mourned by Lady Clouston, by two sons, one of whom, J. Storer Clouston, has inherited the facile pen of his father, and has made a name for himself in fiction with *The Lunatic at Large*, *Count Bunker*, and *The Peer's Progress*, and by one daughter, the wife of Mr. David Wallace, C.M.G., the well-known surgeon.

It is hard to say in which sphere of professional activity Sir Thomas Clouston's influence has been most felt; certainly he has brought a breath of freshness into every department with which he has had to do, and has left a deep and lasting impression upon the minds of all who have worked with or under him. Possibly the palm must be given to his many productive years as physician and administrator at Morningside; but his influence and inspiration as the teacher of many hundreds of alienists must be regarded as nearly of equal value. By the

impact of his mind, ever alert and resourceful, as well as by his ready sympathy and clear vision of the future, he has made many contributions of high importance to the understanding and forwarding the movements in support of mental hygiene in education, of purity in morals, and of thoughtful reform in connexion with the evils of intemperance. He was a man of many interests and of wide influence, and the influence has always been on the side of medical, mental, and moral improvement of the race as well as of the individual.

Dr. JOHN MACPHERSON, Commissioner in Lunacy for Scotland, writes:

It is only those who can recall the position of psychiatry in this country more than thirty years ago who can appreciate fully our indebtedness to Sir Thomas Clouston. The history of psychiatry is the history of a struggle against abuses—physical, moral, and intellectual. The first two had been largely overcome when Clouston appeared upon the scene, but he found his life's work in combating an attitude of pessimism and agnosticism towards mental diseases which was too all prevalent, even among a large section of alienists. His method of warfare was the "gospel of work" indefatigably pursued in the clinical study of his patients. During the ten years he spent in the Carlisle Asylum he scarcely ceased to observe and to publish his observations, and although his work attracted little attention outside the speciality, it had its reward in helping him to attain a larger audience and a wider sphere of influence when he returned to Edinburgh in 1873. At Morningside he continued to pursue his clinical studies and such pathological researches as the comparatively crude knowledge of that time permitted. But it was in lecturing to students that he found an outlet for his gifts. In the early seventies mental disease was neither interesting nor attractive to medical students. The scintillating genius of such a mind as Laycock's (about this time Professor of Medicine in the university) might, so it was believed, shed occasional startling light upon this as upon other abstruse subjects; but the medical curriculum was too serious an undertaking to justify excursion into such unproductive bypaths. The revelation opened to the students who attended Clouston's earlier lectures completely overthrew these prejudices. The vigour of the lecturer's personality, the glamour of the subject which opened out a new world of scientific study, and the lucidity of exposition, captivated the imagination of those future members of the profession. When he ceased to lecture, thirty-five years later, psychiatry had become incorporated, as an ordinary subject, into the medical curriculum.



SIR THOMAS SMITH CLOUSTON, KT.
(Photograph by Jas. C. H. Balmain, Edinburgh.)

The publication of his *Clinical Lectures* in 1883 brought him deserved reputation, yet the book hardly did its author justice. Superficially regarded, it was more popular than scientific, and many of its most valuable ideas were overshadowed by what may be termed its propagandist character. I use the term advisedly, for it was one of his ruling purposes to convert the medical profession, and through them the public, from unworthy conceptions of mental disease into broader, more scientific views of its nature and origin. In the book there is to be found, for instance, a full exposition of his great conception of adolescent insanity, which he further elaborated in his Morison lectures on the "Neuroses of Development." This description forms the basis of all subsequent theories, including Kraepelin's dementia praecox, and had he published nothing else it would have been sufficient to ensure him a place among the great alienists.

By reason of his sterling worth he obtained a larger share of the public confidence than most men can boast of, and for the same reason, and on account of his high professional attainments, he enjoyed an extensive consulting practice. He welcomed new views and new theories sympathetically but he was seldom carried away by them, and was extraordinarily tenacious of his own earlier scientific opinions. We, his assistants, often differed from him profoundly, but we, one and all, regarded him as our master to whom we owed more than we could ever hope to repay.

Dr. H. HAYES NEWINGTON writes:

I offer, as an addition to the fuller account of Sir Thomas Clouston's work which you will doubtless provide, a few remarks on what I think to have been the critical period of his professional life. I refer to his appointment to the charge of the Morningside Asylum in 1873. I was then in residence there as assistant physician, and there is no one else who can speak of those times from personal knowledge. I have used the term "critical" because though Dr. Clouston (as he then was) had had ten years of asylum life, and had already made a name for himself by his many writings, especially on drugs and modification of temperature found with varying phases of insanity, his experience had been gained in an asylum of very moderate size in a quiet country district. He had yet to face the public of a metropolitan city and the judgement of a great university. In addition, he had to take up office under difficulties incident to want of a "chief's" supervision during the prolonged absence, from wearing and subsequently fatal disease, of his distinguished predecessor, Dr. Skae. The Scottish lunacy system was then only a bantling, for it was but a few years before that Scotland had been forced by popular resentment of bad practices towards the insane to insist on a radical change, which resulted in the present admirable legislation and administration. Morningside had been founded fifty years before, a fine example of tentative altruism, but it had later become stagnant, as proved by the progress to be shown. It sorely needed some measure of regeneration. It was fortunate, therefore, when the opportunity for regeneration arose, that the necessary qualifications of ability and temperament were to be found in the person of Dr. Clouston. Those qualifications revealed themselves, in my opinion, by his immense courage, by a prodigious power of work, by originality, by capacity for organization, and, above all, in broad liberality of view on all things, men and matters. Clouston was the last man in the world to be tied down by precedent, and at first his ways caused surprise, if not consternation, among the many devoted and old-standing servants of Morningside. One such measure was the disestablishment of those semi-detached buildings which, *secundum artem antiquam*, had housed the noisy and violent. These patients were carefully distributed among the other wards, where dilution had a speedy effect on their behaviour. The buildings vacated were subsequently

adapted as infirmaries, with the best effect. Interested onlookers began to learn that it was possible for a patient, when properly guided, to do most of his own repression, in place of looking for it to be done by others.

Then came the need for structural alterations to meet more enlightened treatment. The elaboration of ideas to this end added considerably to the burdens of the superintendent. Finance, in which Clouston was an adept, needed much forethought and some daring; but all difficulties and doubts were borne down by fiery determination, with, as we know, the happiest results.

I cannot speak intimately of the outside work done at that time by Clouston in securing the confidence of the public in consultation work; that he did earn that confidence is a matter of public knowledge. But I can speak intimately of the lectures which formed his passport to academic approval, since I attended officially the early series he delivered to the students at Morningside. I had the advantage of being enabled to compare these with a similar course given by Dr. Laycock in a preceding session at Morningside, for many of which I prepared the clinical material. The difference between the methods of these two great men was indeed marked. Laycock appeared to me to be the most observant and philosophical student of mental error that one could wish to hear, but in spite of much practical instruction given, he was ever the ideal of a professorial academician. He lacked the living forcefulness of Clouston's clinicality, if one may coin such a term. But then for many years the one had been the professor, while the other had lived with his patients. It has sometimes crossed my mind that Kraepelin is a mixture of the two, and this especially with reference to his views on dementia praecox. Clouston led the way by many years with his *Insanity of Adolescence*, and then the academic ways of Kraepelin were grafted on, not with universal acceptance.

As a "chief" Clouston was a good man to serve under. In addition to his intense earnestness he had, as said above, a most liberal view of insanity, which led one to see where risks could be run justifiably. He had a philosophical way of estimating and meeting trouble, while on suitable occasions he could demonstrate the usefulness of righteous wrath. He would never be "done" by anyone. He proved to one the need for ceaseless personal acquaintance with everything relating to his charge. Finally, he was truly loyal to his subalterns. This is not such a simple qualification as it might appear at first sight. It requires, in such places as asylums, a lively sense of altruism to prevent the chief giving his junior away by thoughtless or undue exercise of his prerogative and superior knowledge. Clouston had this sense.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. A. M. Amadou, sometime lecturer on otology at the Harvard Medical School and author of numerous writings on the pathology of the ear, aged 47; Dr. Julius Arnold, retired professor of histology and pathology in the University of Heidelberg, aged 90; Dr. H. C. Baldwin, for many years a member of the staff of the Massachusetts General Hospital in the department of nervous diseases and one of the leading neurologists of New England, aged 55; and Dr. Albert Blum, *professeur agrégé* in the Paris Faculty of Medicine and author of numerous writings on surgical subjects.

WILLIAM THOMAS EDWARDS, M.D., F.R.C.S.,

CONSULTING PHYSICIAN, CARDIFF INFIRMARY; PAST-PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.

DR. W. T. EDWARDS, of Cardiff, a brief announcement of whose death appeared last week, was born in 1821 at Caerphilly, where his father practised. His grandfather was a well-known contractor, who designed and constructed the picturesque bridge at Pontypridd.

The elder Dr. Edwards had an extensive country practice, which he conducted on horseback; he was proud of his stable, and his son had the advantage of an active outdoor life in his boyhood and after his apprenticeship to his father. He pursued his medical studies at University College, London, and took the diplomas of M.R.C.S.Eng. in 1842, and L.S.A. in 1843. In 1844 he graduated M.B.Lond., gaining the gold medals in anatomy and physiology, materia medica, and midwifery. In the same year, after a brief period of practice at Llanfabon, he settled in Cardiff, then a small town with little more than 10,000 inhabitants, possessing neither docks nor railways. In 1849 he was appointed out-patient medical officer to the infirmary, than a very small institution, admitting 113 in-patients and 2,360 out-patients during the year. In 1851 he became honorary surgeon, a position which he resigned in 1860. Two years later he was appointed physician to the infirmary, and his connexion with the institution was maintained after his retirement from the active list by his appointment as consulting physician. He proceeded to the degree of M.D.Lond. in 1850, and in 1879 he was elected a Fellow of the Royal College of Surgeons of England.



WILLIAM THOMAS EDWARDS.
(Photograph by Alfred Freke, Cardiff.)

From an early period of his residence in Cardiff Dr. Edwards showed a keen interest in education. Beginning in a small way and assisted by a few friends he, in 1847, built a substantial single-story building known for many years as the British School. It provided elementary education for children of the working classes, the only other school in the town being one maintained by the Church of England. When school boards came into existence he became a member of that for Cardiff, and in 1890 was elected its vice-chairman. He was also governor of the Craddock Wells Charity until it was absorbed under the provisions of the Technical Education Act; Dr. Edwards went on to take as strong an interest in higher education. In 1872, when the question of founding a university college in South Wales was under consideration, he strongly supported the scheme and urged that the college should be established at Cardiff. When this was decided upon he made a donation of £500, and as a life-governor and in other capacities he ever afterwards laboured loyally and unostentatiously for the college, of which he was eventually elected vice-president.

When the British Medical Association accepted the invitation to hold its annual meeting in Cardiff Dr. Edwards was elected president, and he chose that occasion for giving effect to his long-felt desire for the establishment of a medical school in Cardiff. He offered £1,000 to found such a school in connexion with the University College, and his pupil and friend, Dr. William Price, also of Cardiff, made a gift of the same amount. Other contributions followed, and it was one of Dr. Edwards's proudest memories that he had been instrumental in bringing the school into being, as he foresaw that it would be one of the most useful and distinguished parts of the University of Wales.

Dr. Edwards was for many years a member of the Cardiff Town Council, and was a justice of the peace for the borough as well as for the county of Glamorgan. He was a Liberal in politics and vice-president of the Liberal Association. One of the movements in which he took a considerable part was the establishment of the English Congregational Union of Wales, which has erected chapels for English services throughout the area. He lived long enough to join in the celebrations of the jubilee of the union last year.

The interment took place at Caerphilly on April 14th, and was marked by many tokens of the respect and affection with which Dr. Edwards was generally regarded both by his own profession and by leading members of the community among whom he had lived.

JOHN ESMONDE, M.P.

WE regret to have to record the death from pneumonia, after a short illness, of Dr. John Esmonde, M.P. for North Tipperary. He came of a family well known in the counties of Tipperary and Wexford, and was the son of Mr. James Esmonde, Deputy Lieutenant for Tipperary, and a cousin of Sir Thomas Esmonde, M.P. for North Wexford.

Dr. Esmonde was born in 1862, and received his early education at Stonyhurst and Oscott. He was a student in the school of the Royal College of Surgeons in Ireland, and took the diploma of L.R.C.S.I. in 1884, and that of L.A.H.Dubl. in 1891. He first practised in Cheshire, but afterwards removed to Walthamstow, where he had a large and exacting practice. Subsequently he settled at Thurgoland, near Sheffield, and while there held the appointment of medical officer of health to the Penistone Rural District Council. Some six years ago, on the death of his mother, he inherited the family property at Drominagh, Borrisokane, co. Tipperary. Shortly afterwards he gave up practice and went to reside at the house on the estate, beautifully situated, overlooking Lough Derg.

In 1910 he became M.P. for North Tipperary. He was a Nationalist in politics, but his chief appearances in Parliament were in connexion with the debates on the National Insurance Bill. He was in favour of the principle of the measure, but used his influence to improve the terms offered to the medical profession.

From the beginning of the war he took an ardent interest in recruiting. His two elder sons joined the Munster Regiment, and a few months ago he himself accepted a commission as Captain in the Royal Army Medical Corps, and was stationed with the Irish Brigade in county Tipperary. His exertions in stimulating recruiting and as a military medical officer probably exceeded his strength, and he returned home a few days before his death feeling very indisposed. His illness, however, was not regarded as serious until pneumonia declared itself. He died on April 17th, and the funeral took place on April 20th.

Dr. Esmonde was twice married. His second wife was the daughter of Dr. D. A. O'Sullivan, formerly an active member of the Lancashire and Cheshire Branch and a member of the Council of the British Medical Association. By his second wife, a lady of great literary talent and the authoress of a number of songs and poems, Dr. Esmonde leaves a family of seven children.

SIR GERALD BOMFORD, K.C.I.E.,

LATE DIRECTOR-GENERAL, I.M.S.

SURGEON-GENERAL SIR GERALD BOMFORD, K.C.I.E., Bengal Medical Service (retired), died in London, after a severe operation, on April 12th. He was born on July 19th, 1851, educated at King's College, London, and obtained the diplomas of L.S.A. in 1872, and those of M.R.C.S., L.R.C.P.Lond., as well as the degree of M.B.Lond., in 1873; he graduated M.D.Lond. in 1874. He entered the Indian Medical Service as surgeon on September 30th, 1874, became surgeon-major on September 30th, 1886, surgeon-lieutenant-colonel on September 30th, 1894, and was placed on the "selected list" on March 29th, 1900. On January 1st, 1905, he was appointed Director-General of the Indian Medical Service, in succession to Sir Benjamin Franklin, K.C.I.E., while still holding the rank of lieutenant-colonel, stepping over the rank of colonel altogether. He retired, after five years' tenure of that office, on January 1st, 1910. He was decorated with the C.I.E. on January 1st, 1903, with the K.C.I.E. on January 1st, 1909, and in 1905 received the honorary Fellowship of the Edinburgh Royal College of Surgeons.

Soon after entering the Indian Medical Service he served in the Perak war of 1875-6, in the Malay Peninsula, receiving the medal and clasp. After the war he was posted to famine duty in the Madras Presidency, during the Madras famine of 1877. On his return from Madras he was appointed to the important post of civil surgeon of Simla, which he held for the usual period of two years, after which he became garrison surgeon of Fort William, Calcutta. Vacating that appointment on his promotion to surgeon-major, he was posted to the newly raised second battalion of the 2nd Gurkhas, but soon after was appointed to act as secretary to the Surgeon-General with the Government of India. That appointment he held, off and on, for about eight years, spending part of that time as civil surgeon of Nagpur, the capital of the Central Provinces. In 1893 he was appointed professor of medicine and principal of the Calcutta Medical College and first physician to the college hospital. These posts he held for over ten years, with a long spell of furlough to Europe (1898–9), the first he had taken. In 1904 he was appointed to officiate as Inspector-General of Civil Hospitals in the Punjab. He became Director-General of the Indian Medical Service on the same day that Sir Alfred Keogh, K.C.B., took up the same post in the Royal Army Medical Corps, both being lieutenant-colonels when promoted, and both passing over the whole of the administrative grades. Sir Gerald's successor as Director-General of the Indian Medical Service, Sir Charles Pardey Lukis, the present holder of the post, had also served as civil surgeon of Simla, also held the post of principal of the Calcutta Medical College when appointed, and also was promoted from lieutenant-colonel to surgeon-general and director-general at one step.

After his retirement Sir Gerald settled at Dover. He married the daughter of the late General Eteson, of the Indian army, and leaves two sons—the elder in the Indian Civil Service, in the United Provinces, the younger a boy at Marlborough—and two daughters.

WILLIAM SANDILANDS HARRISON, M.B., C.M.GLASG.,

LIEUTENANT-COLONEL R.A.M.C.

LIEUTENANT-COLONEL WILLIAM SANDILANDS HARRISON, R.A.M.C., died at Haslingden, Lancashire, on April 12th. He was born on March 15th, 1872, and educated at Glasgow, where he took the M.B. and C.M. in 1893. He entered the R.A.M.C. as surgeon-lieutenant on January 29th, 1895; became surgeon-captain on January 29th, 1898, major on July 29th, 1906, brevet lieutenant-colonel on July 4th, 1914, and lieutenant-colonel on March 1st, 1915. He served in the Tirah campaign, on the North-West Frontier of India, in 1897–98, receiving the medal with two clasps. He had recently held the post of assistant professor of pathology at the R.A.M. College, Millbank, and afterwards that of senior medical officer in Jamaica.

Colonel Sir W. B. LEISHMAN, F.R.S., now serving with the British Expeditionary Force, sends us the following tribute to his memory:

By the death of Lieutenant-Colonel W. S. Harrison the Royal Army Medical Corps has lost an officer whom it could ill spare, and for whom, had he lived, high honours and distinctions would most certainly have been in store. There can have been no officer in the corps of his standing who was more universally respected and liked both for his exceptional professional qualifications and his sterling character. A sense of personal bereavement must be strong in all who knew him and read of his death. The writer had the privilege of the closest association with him as a fellow worker in the Royal Army Medical College for many years, and was under a heavy obligation to him for loyal and untiring co-operation, both in research and in teaching; the passing years served but to strengthen a feeling of admiration and respect for a character and intellect of exceptional strength. The research work accomplished by Lieutenant-Colonel Harrison in many lines is of great and permanent value, notably his important share in establishing typhoid inoculation upon a firm and scientific basis; the benefit resulting from this work are being reaped to-day by the army in France. His appoint-

ment to the Chair of Tropical Medicine at the Royal Army Medical College proved an immense success, and furnished an instance of that rare but admirable combination —a clinical observer of exceptional experience and insight armed with a full practical knowledge of modern laboratory methods. The number of puzzling and difficult cases on which he was able to throw light and initiate a successful treatment must have been a reward itself, but those who benefited by his skill, such as the writer and many another officer and man in the army, have good cause to keep his memory green. It was a hard stroke of fate which denied to him the chance of serving his country at this time, and one which he felt bitterly, but the fortitude and calm courage with which he endured his painful illness and faced the inevitable will not readily be forgotten by those whom he honoured with his friendship.

THE death is announced of Professor FRIEDRICH LOEFFLER, director of the Koch Institute for Infectious Diseases in Berlin. Loeffler was born in Frankfurt-on-the-Oder in 1852 and educated at the universities of Würzburg and Berlin. About 1881 Klebs had noted the presence of a peculiar bacillus in the diphtherial membrane, but it was Loeffler who first isolated and cultivated the organism. His description of what is now known as the Klebs-Loeffler bacillus was published in 1884. He also conducted an investigation into the diseases spoken of as the diphtheria of calves and pigeons, and was one of the earliest investigators of the value of aniline dyes for the staining of bacteria, his methylene blue process being still in general use. In 1888 Loeffler was appointed Professor of Hygiene and Director of the Institute of Hygiene at Greifswald. In 1895 he was appointed to the Koch Institute at Berlin, and with Koch and Gaffky carried out investigations on disinfection by steam. Working with Schutz, he investigated a number of infectious diseases of animals, and showed reason for the belief that the causative organism of foot and mouth disease was a filter passer, then a new idea.

Medical News.

MR. M. E. MACGREGOR will give a demonstration at the Wellcome Bureau of Scientific Research, 10, Henrietta Street, Cavendish Square, W., on lice and their prevention on Tuesday next between 3 and 5 p.m. All interested are invited.

AT a meeting of medical practitioners on Glasgow and West of Scotland panels held last week it was proposed to form a Glasgow branch of the Medico-Political Union. The proposal, which was supported by Dr. Salter of London, was strongly opposed, but eventually carried by 15 votes to 10.

THE new buildings of the College of Domestic Science, Glasgow, now nearly completed, will by arrangement with the War Office and the Board of Education be taken over by the Scottish Branch of the British Red Cross Society for the purpose of a relief military hospital. The work of the college will be carried on at the temporary premises it now occupies.

MILITARY medical officers, among whose duties it may be to address the men in their units on antityphoid inoculation, may be glad to be reminded that copies of the address, entitled *Bacilli and Bullets*, delivered by Sir William Osler to the officers and men in the camp at Churn last September, can be obtained from the Oxford University Press, Amen Corner, London, E.C., price one penny each, postage extra. The address was published in the BRITISH MEDICAL JOURNAL of October 3rd, 1914, p. 569.

ON April 18th there was a large attendance at the Greek Church in the Rue Daru, Paris, to witness the blessing of a new fleet of automobiles for the transport of sick and wounded, which has been organized under the patronage of the Empress Alexandra. Among those present were the principal members of the Russian Embassy, and delegates of the sanitary service and of the British and French Red Cross Societies. Immediately after the ceremony, which was very impressive, the motors started for their various destinations.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INCOME TAX.

J. B. T. writes that he has been refused the assessment of hospital fees, under Schedule D, as part of his general practice profits, by the surveyor of taxes, who states that such a course would be contrary to the law.

*** Unless there are very exceptional circumstances in the case, the attitude taken up by the surveyor is a distinct departure from a well-recognized practice of some three or four years' standing. If he declines to reconsider the matter, our correspondent might communicate with the Board of Inland Revenue on the subject. In the event of his doing so, we should be glad to learn the result, as it might be of interest to other practitioners.

ANSWERS.

RED CROSS.—Sir Frederick Treves informs us that there can be no question of a regular ration of beer with dinner being discontinued in any Red Cross hospital, because it has never been issued. No part of the money contributed for Red Cross work is expended upon beer.

LETTERS, NOTES, ETC.

COMMON COMFREY IN THE TREATMENT OF STOMACH COUGH.

DR. WM. BRAMWELL (Liverpool) writes: A lady of 75 years developed a cough which steadily increased in severity until there appeared to be considerable risk of cardiac and general exhaustion. By process of exclusion I diagnosed stomach cough and prescribed several different stomachics, but neither these nor careful dieting had the desired effect. I accordingly decided to try *Symphytum officinale*, or common comfrey, and ordered a simple infusion of the root to be given in teaspoonful doses every half-hour. The effect was certainly remarkable, the cough beginning to subside in a few hours, and within a week had completely ceased. The cell-proliferating properties of comfrey, which have been investigated by Dr. Macalister, will probably account for the repair of what seems likely to have been a patchy denudation of the gastric or oesophageal epithelium, the point of irritation appearing to indicate the lower extremity of the latter as the chief seat of the lesion; such location probably accounting for the rapid improvement under the influence of the infusion, which would naturally come into immediate contact with the contiguous surfaces of the oesophagus, its beneficial effects being unretarded by any untoward influence of the gastric secretions, as would have happened in the stomach.

THE INSURANCE ESTIMATES.

OWING to an accident in printing, some of the figures in the table published last week (p. 682) are illegible. The following appear to be the most indistinct: In column 1, under "England," section F, the amount is £106,900; in the same column, section G, "Medical Benefit," £195,050; in the second column, section J, "Insurance Committees," the amount is £30,250.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

POST-GRADUATE TEACHING OF SURGERY.

THE INAUGURAL ADDRESS FOR 1914-15 DELIVERED BEFORE THE MIDLAND MEDICAL SOCIETY.

BY

RUTHERFORD MORISON, F.R.C.S.ENG. AND EDIN.,

PROFESSOR OF SURGERY, DURHAM UNIVERSITY.

TWENTY-FIVE years ago registration was the trade-mark of lifelong efficiency to a medical practitioner. For centuries advances in medicine and surgery had been so slow that a good medical education then sufficed for a lifetime. But, on the other hand, progress has since been so rapid that Sir William Osler has said with truth that in five years the isolated practitioner requires a month of hospital work to bring his knowledge up to date, that in ten years he requires a year of study, and that at the end of twenty years he is in such depths of ignorance as to be hopeless. The consequence of this rapid advance is that post-graduate study is a necessity of to-day, and my object now is to offer views as to how post-graduate teaching of surgery may be made most useful to the practitioner.

In my early days physicians and medical practitioners occupied a much more important position than they do at present, and surgeons were accustomed to be used as an unpleasant form of treatment, on their advice. For the present surgeons are pre-eminent, but this is only a temporary phase, because the general practitioner, as soon as he realizes the position, will again become, as he always has been heretofore, the backbone of the profession. The position is this: It is essential to recognize that diagnosis and treatment of any but the simplest case may be beyond the capacity of the most capable single man, and may require the combined aid of a bacteriologist, a pathologist, specialists, a physician, and a surgeon. The fashionable demand for further advice (which should always be forestalled by the practitioner) is generally a reasonable one, though apt to follow unreasonable channels. It must be better guided, controlled, and considered by the practitioner if he is to recover his lost prestige.

My suggestions to-night refer only to the post-graduate teaching of surgery. Surgical advances have forced surgeons to become specialists, so that surgical details are out of place in such a course, and the principles of surgery should have been learned at an earlier date. The chief object of it should be to emphasize practical points in diagnosis, to suggest means of avoiding serious mistakes, and to draw special attention to any definite surgical advance which has a bearing upon treatment. It will be my endeavour in the time at my disposal to suggest directions in which I think such teaching may be made useful.

Diagnosis, every one admits, is the most difficult problem in either medicine or surgery, and the greatest authorities are too often made to realize their impotence when faced by anything beyond the ordinary. It is fortunate that in practice the most important question for the practitioner is: Does this case require surgical treatment or not?

Treatment cannot be satisfactory where diagnosis is faulty; hence the importance of the latter. More and more diagnosis is becoming based upon proof—the discovery of a bacillus, hooklets, spirochaetes; *x* rays, and other illuminations; laboratory tests; instruments of precision, etc. But, for ever, a great part of diagnosis will remain an art dependent upon the "clinical instinct" and the proper interpretation of history and physical signs. The art of diagnosis is the stronghold to be specially cared for by the practitioner, because it is yet the most useful and often the only guide.

The general appearance and behaviour of a patient, if rightly interpreted, may afford the clue to a diagnosis by suggesting that some organic cause is at the bottom of the disturbance in health. A first striking impression of something seriously wrong should never be neglected or forgotten; the insatiable, irritable restlessness preceding a fatal termination in many serious illnesses is not likely to mislead the experienced; the chronic anaemia of small repeated haemorrhages; the sallow, hopeless face of cancer patients; the pallid transparency consequent on tuberculous infections; or the muddy anaemia of syphilis, may be more useful than any other guides.

Symptoms such as pain, loss of weight and condition, repeated chills, frequent micturition, recent development of irregularity of the bowels, rises in the temperature, and other common complaints, should no longer be regarded simply as conditions requiring treatment, but as danger signals of something wrong and calling perhaps for frequent and difficult investigations in order to discover their cause. The time has passed when decision as to treatment was a choice between castor oil and opium, becauses advances in surgery have made the first consideration a surgical one.

Nothing that is too strong can be said against indiscriminate operations for diagnostic purposes, but if there are doubts which cannot be cleared up, and at the same time reasonable possibilities of an operation doing good, patients should not be deprived of the chance operation offers. This statement is devoid of real meaning unless we know who entertains the grave doubts, but an example will make my meaning clear. A physician of scientific repute has made a diagnosis of pyloric stricture, probably malignant. Local examination shows a pyloric lump and a dilated stomach. There are no signs of secondary deposits in the peritoneum either by abdominal or rectal examination, no discoverable deposits in the liver, no enlarged supraclavicular glands, and the general condition of the patient is good enough to justify an operation. All will agree that it should be done.

In a similar case an enlarged supraclavicular gland is discovered. If this is cancerous, abdominal exploration would be a useless cruelty. By excising this gland with a local anaesthetic and submitting it to microscopic examination I have more than once saved patients from further operation for hopeless cancer.

Public and professional faith in "exploratory operations" has, however, been so strong that I have known patients with cancer of the stomach, who had cancerous neck glands and the "rectal shelf," characteristic of cancerous invasion of the pelvic peritoneum, both evident to any careful observer, submitted to operation "to ascertain whether anything could be done." It is often said of exploratory operations that they "do no harm," but nothing could be further from the truth; at the best they are a confession of ignorance, and their failure does harm to the patient, harm to the surgeon, and harm to the progress of surgery. My endeavour, then, will be to offer some examples of the sort of information which I think should be given in post-graduate teaching.

FRACTURES AND DISLOCATIONS.

Scarcely anything in my experience has been the cause of so many troubles to practitioners as the diagnosis and treatment of fractures. These can only with certainty be avoided by insistence upon a rule to have an *x*-ray picture in every case of injury where any doubt is possible. The revelations will many times come as a surprise (Figs. 1, 2, 3, 4). No medical man who values his reputation, unless obliged by extraordinary circumstances to do so, should undertake the treatment of a fracture unless he can be guided throughout by *x* rays.

The rules I give my students for their guidance in the treatment of fractures are:

1. Apply first aid.
2. Examine for complications—local and general.
3. Reduce deformity.
4. Keep it reduced.
5. Restore function.

Each of these rules should be borne in mind and acted upon if damaging mistakes are to be avoided.

The indications for operative treatment in fractures may be summarized by saying that they are such as imply failure to satisfy any of the rules for treatment. For example, recently I have had to operate because first aid failed to prevent gangrene of a patch of skin over a displaced tibia; because a fractured humerus had ruptured the musculo-spiral nerve; because deformity could not be reduced; because reduction could not be maintained; and because a fractured astragalus left a useless foot.

The mention of fractures would be incomplete if emphasis were not laid on the importance of attention to bandaging. A bandage should *never* be put under a splint. It should *always* be taken off and readjusted if the patient says it is too tight. Provision should be made for observation of the peripheral circulation beyond the bandage. It is only by this care that ischaemic contractions, ulcerations, sloughing, and gangrene from bandage pressure can be avoided.

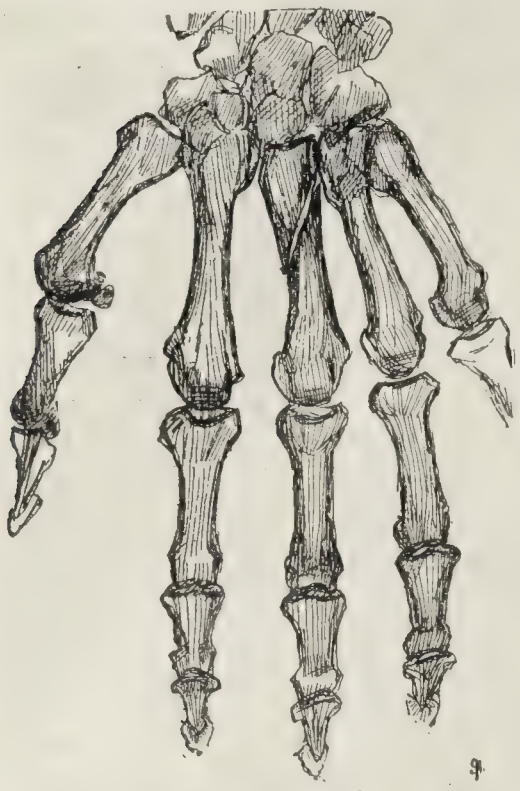


Fig. 1.—"Bad sprain of hand." Skiagram shows fracture of third metacarpal.

Dislocations.

The same need of *x*-ray examination is evident in cases of dislocation, for a year never passes but that I see cases of dislocation of the shoulder and of the hip missed, and missed for the lack of such examination. (Figs. 5 and 6.)

INJURY TO NERVES.

One of the most serious complications of injuries and wounds, and one which has been forcibly impressed on me through legal actions arising from the overlooking of it, has been injury to nerves. These have occurred most frequently from fractures affecting the lower two-thirds of the humerus, from dislocation of the shoulder, and from wounds over the front of the wrist. The result of a serious injury to nerves is, at the best, incapacity for ordinary work for a period of from one to two years, and neglect may mean lifelong incapacity. Fortunately, rough and easily applied tests indicate whether important nerves have been injured or not, and they should never be forgotten or neglected in cases of accident. The sensibility of the skin should be tested by a series of pin-point contacts, and it is wisdom to strengthen the position by asking the patient to move the muscles and tendons below the seat of injury. Deep pressure, it is well to remember, may convey erroneous information, because the patient may feel this even after complete nerve division.

WOUNDS AND SEPSIS.

Every one admits the danger of sepsis, but it still holds first place as the cause of death and delayed convalescence in surgical cases. The importance of its prevention is not yet sufficiently realized. Perhaps the usual treatment of scalp wounds is the best evidence of this.

Scalp Wounds.

Very few of these are dealt with in such a manner as to satisfy the requirements of present-day surgery. Excepting those arising from a trifling cause, and certainly superficial, all should be regarded as serious happenings and dealt with accordingly. If there is pulsation of blood, discharge, or lotion lying in the wound, it is evident that the skull is fractured, but it has surprised me to note how frequently this striking sign can be overlooked. In dealing with a scalp wound, it should first be packed with gauze wrung out of antiseptic, and the hair surrounding it should be completely removed with scissors or a razor. The wound should then be fully explored with the help of retractors or by a sterilized gloved finger, or, if a punctured wound, by a sterile probe, to exclude the possibility of a foreign body being left in it or of a fracture of the skull being missed. Many times I have removed foreign bodies over which the divided scalp has been carefully sutured (Figs. 7 and 8), and at others have heard when the patient was hopelessly ill from septic meningitis, or at *post-mortem* examination after he had died of it, that no suspicion had been entertained of anything seriously wrong, "because he was so fit" after the injury. It is only possible to guard against such occurrences by making it a rule to explore thoroughly every scalp wound, and, if this cannot be done without enlarging it, to perform this operation. The same rule should be applied to most other wounds, especially those of the abdominal parietes. In all wounds soiled with earth or occurring in connexion with stables the possibility of tetanus resulting is so real that extra precautions should be taken and an injection of antitetanic serum given. There is abundant proof of its usefulness as a prophylactic, but no convincing evidence that it does any good when tetanus has developed.



Fig. 2.—"Sprained elbow." Skiagram shows a longitudinal fracture of the head of the radius.



Fig. 3.—"Sprained hip." The patient walked into hospital. Skiagram shows impacted fracture of the neck of the femur.

Head Injuries Requiring Operation.

If a depressed fracture, or one over important blood vessels, is found underlying a scalp wound, most surgeons agree that the patient should be trephined. Most would also agree that a depressed fracture, whether compound or not, should be trephined. It is when these local indications are wanting that difficulties and doubts arise, and these require grave consideration. In the past indiscriminate operating for serious head injuries and the many consequent failures have brought disrepute on cranial surgery, but lives are

now lost which might be saved by a timely operation. I have had the opportunity of seeing *post-mortem* examinations when death has followed extradural and menin-



Fig. 4.—"Sprained neck." The skiagram shows fracture dislocation.

geal haemorrhages which have not been successfully dealt with because there was no other serious damage. I have also seen oedema, consequent on bruising of the brain over a limited area, the cause of a fatal result.

An operation is not likely to be useful if the injury is a very serious one, as when a fall from a great height, or an overwhelming blow, or a serious crush, is the cause of it. On the other hand, an unexpected calamity may follow an apparently trifling injury, as illustrated by a recent *post-mortem* examination I saw. A healthy miner, aged 40, struck his head against the roof while at work on Friday. He did not lose consciousness, and after a rest returned to work. He worked on Saturday, played on Sunday, worked again on Monday, and on Tuesday morning at 11 o'clock was found lying unconscious in the mine. Next morning, after a series of general convulsions, he died. *Post-mortem* examination showed a bruise on the scalp over the anterior superior parietal region, with indentation of the skin over its centre. Bruise-staining extended to the skull, which was not fractured. There was a large subdural haemorrhage covering the left hemisphere, the base of the brain, and the lower half of the right hemisphere. There was no other sign of injury or disease.

In determining whether an operation is or is not desirable, the next aid, after consideration of the character of the injury, is afforded by the progress of events. A bruise on any part of the body is followed by swelling around the injured area, and the brain furnishes no exception. The swelling, by causing increased intracranial tension, may cause death. Rupture of an insignificant intracranial blood vessel may cause death in a similar fashion. In either case relapse of unconsciousness may occur after a partial or entire recovery. If, after a period of improvement in the symptoms, there is relapse, a decompression operation should be performed without delay, and this may the more readily be undertaken since Dr. Harvey Cushing has shown us how it can be done quickly and with safety.



Fig. 6.—"Bruised hip." Skiagram shows dislocation of the hip.

In spite of exceptional instances, it is a rule that, if a serious head injury is immediately followed by profound unconsciousness, and there is a quickening pulse and rising temperature, an operation will do no good, because the injury is a fatal one.

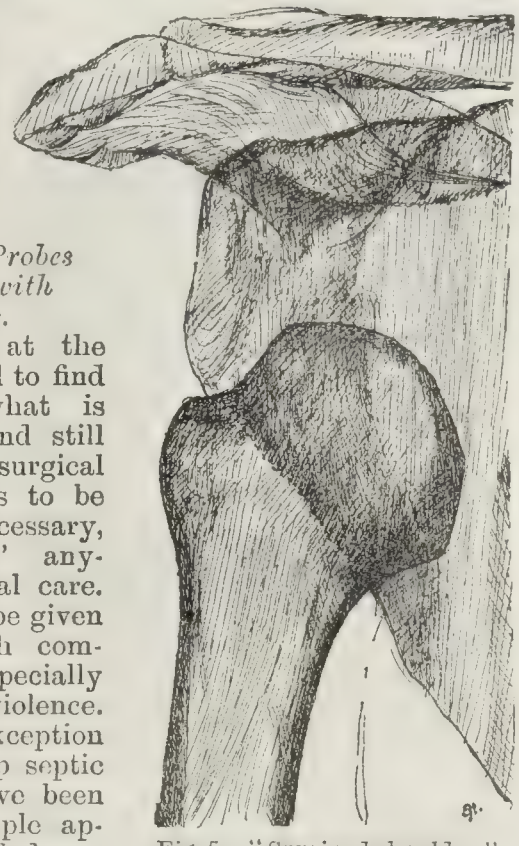


Fig. 5.—"Sprained shoulder." Skiagram shows subglenoid dislocation of the shoulder.

The Danger of Probes and Interference with Septic Tracts.

A desire to get at the bottom of things, and to find out "exactly" what is wrong, has been, and still is, a cause of surgical calamity. If this is to be avoided it is necessary, before "exploring" anything, to take special care. In illustration may be given our experience with compound fractures, especially those due to indirect violence. It has been the exception to see them develop septic infection if they have been treated by the simple application of a first-aid dressing; they have rarely failed to "become septic" after being explored by finger or probes before coming for treatment.

Two painful experiences of my own are examples of this, and emphasize, what every surgeon knows, the danger of interference in septic areas.

A gentleman consulted me regarding an anal fistula of eleven years' duration. After an illness associated with the original abscess, he had never been ill or off work for a day with it, though occasionally when it did not discharge he had some discomfort until it did so. I entertained no reasonable doubt that there was an internal as well as an external opening, but, as my finger in the rectum could not discover it, I introduced a probe easily, without causing pain, and arranged to operate at his convenience. He then went to his office, developed a rigor, and passed through a dangerous illness of some weeks' duration from diffuse inflammation followed by suppuration round his rectum.

A young man consulted me regarding a sinus in his groin. He looked the picture of health, and only complained of a small escape of watery discharge which necessitated a daily dressing. From the history it was clear that a year previously a large tuberculous abscess had discharged spontaneously in the position of the sinus, but the discharge had been steadily decreasing, and his health had been restored. No one had been able to tell him the cause of this, and to discover it I injected the sinus with bismuth paste, and had him *x* rayed. A narrow track could be seen running up to the front of the sacrum, and every one concerned was much pleased that the source of the mischief had been so painlessly discovered. The same evening he had a rigor, for some weeks was dangerously ill from sepsis, and only recovered with difficulty. If he had been left alone, his sinus would have healed without further trouble in the course of time.

ABDOMINAL EMERGENCIES.

A differential diagnosis of the cause of a sudden pain in the abdomen may occasionally be impossible, but it is of urgent importance to know whether it is of a serious character or not. The most serious causes are visceral perforations (Fig. 9), intra-abdominal haemorrhages, and colics, of which the variety due to intestinal obstruction is of the greatest danger.



Fig. 7.—Boy who fell off a hay cart and wounded his face. The wound was cleansed and sutured, and healed by first intention. Two years later it "began to gather," and the prong of a steel fork (Fig. 8) was found to be the cause.



Fig. 8.

By watching the development of diagnostic skill in my house-surgeons, who were changed every six months, I soon learned that they had developed faith in only a few points, and that under ordinary conditions they were seldom wrong.

In the presence of an abdominal emergency it is a good rule to exclude, by examination of the hernial sites, a strangulated hernia, which is still too often missed.*

The appearance and conduct of the patient are above every other sign in estimating the serious or trifling nature of the condition.

Sex is a useful guide, because in women ovarian cysts (Fig. 10) and fibroids with twisted pedicles (Fig. 11), or ruptured ectopic gestations, have to be reckoned with, and in the male they may be excluded. In both sexes it is good to remember that acute appendicitis is the most common, and therefore the most likely, cause of an abdominal emergency.

The most important aids in forming a diagnosis are: (1) The history preceding and immediately following the attack—for example, in perforating gastric and duodenal ulcers, a preceding history of "indigestion," and accompanying the attack a sudden "deadly" pain which continues; in appendicitis, a history of similar attacks, though perhaps short and trifling, with, during the attack, at first a diffuse or epigastric or umbilical pain, not so sudden as that of duodenal perforation, later tending to localize in the right iliac fossa, and sickness, generally followed by a rise in temperature; in ruptured ectopic gestation a history of menstrual irregularity and previous threatening cramp, followed by a haemorrhagic vaginal discharge; in gall-stone colic, violent epigastric pains which "caught the breath," possibly followed by jaundice; in renal colic, frequent micturition during the early part of the attack, possibly macroscopic or microscopic haematuria later on; in acute intestinal obstruction pains of a more paroxysmal character, wind retention, and urgent sickness. For each variety a special previous history and a particular type of onset.



Fig. 12.—Appendicitis: Acute inflammation. First stage: Shock and colic from efforts of appendix to empty itself.

All of them are apt to progress in three stages:

1. Shock (Fig. 12).
2. Reaction (Fig. 13).
3. The stage special to each variety.

It is often of supreme importance to remember this sequence, because after the shock stage has passed a patient with ruptured stomach, intestines, liver, or spleen, with stab or gunshot wounds of any or several of the viscera, may soon have so complete a reaction as to enable him to pull himself together and walk home, and so otherwise conduct himself as to lead any but the most careful observer astray. Now, if operations could be performed in every acute abdominal case during the first or second stages, the mortality would not be more than 5 per cent. The present large fatality is due to delay, chiefly arising from uncertainty in diagnosis, and has diminished with each decade, though not so quickly as it should have done. The physical signs during the second stage, to which we have learnt to attach great importance, are two in number—namely, tenderness around the seat of the lesion, and rigidity of the muscles overlying it. A third sign—shifting dullness in the flanks—has so often aided me that I attach considerable importance to it also.



Fig. 13.—Appendicitis: Total destruction—gangrene. Second stage. Reaction = cessation of afferent impulses because the nerves are destroyed.

All available evidence has proved—

1. That the fate of a patient, the victim of an abdominal emergency, chiefly depends upon the skill and promptitude of his doctor, and that very special surgical skill is of altogether secondary consequence.

2. That when the history and the signs suggest a possibly serious abdominal lesion, the patient should be sent at once into a properly equipped hospital for observation, and, if necessary, operation.

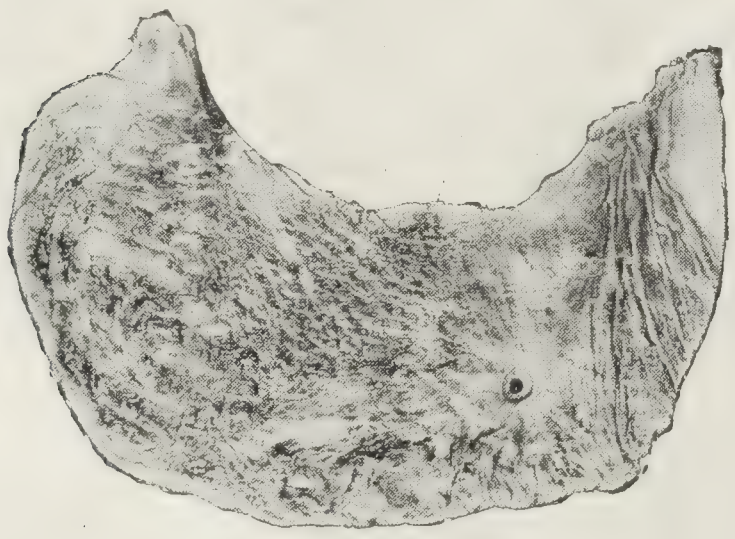


Fig. 9.—Acute perforating gastric ulcer.

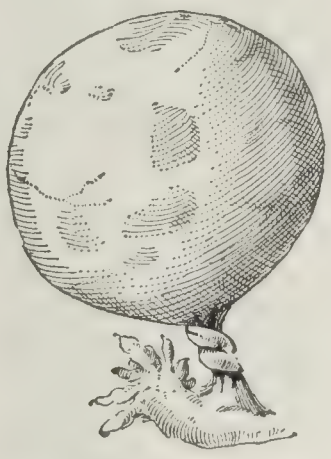


Fig. 10.—Volvulus of ovarian cyst.



Fig. 11.—Volvulus of subperitoneal fibroid.

* Since this address was delivered I have seen two such cases.

DIAGNOSIS AND TREATMENT IN URINARY DISEASES.

All of us know the great importance of surgical cleanliness in using a catheter, but some lives are lost, and the health and happiness of many more are still ruined yearly, for want of a small employment of skill and a large use of scrupulous care. For surgical purposes it is well to regard the urinary tract as often in fact, and always potentially, a septic one. The dangers of probing and of explorations will then be appreciated. No such alarming surprises can be experienced as here, where the most painless and apparently simple manipulations may be followed by most serious consequences.

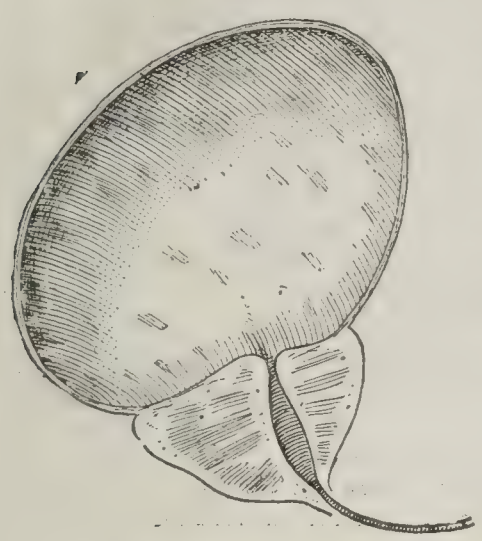


Fig. 14.—Dilated urinary bladder with enlarged prostate and "incontinence."

The disturbances produced by an attack of acute urinary retention can scarcely be misunderstood, but it is sometimes forgotten that the bladder, like all other hollow viscera, soon ceases to respond to ordinary stimuli when it has to deal with an unsurmountable obstacle. The forcible contractions which have caused the early pains abate, passive dilatation of its wall occurs, and a painless distension of its cavity with pressure overflow of its contents follows. This is well illustrated in elderly men with prostatic retention (Fig. 14). After hours of suffering their retention is relieved by dribbling, and patients in this condition are apt to complain chiefly of "disturbance of their stomachs," and possibly forget to mention their "incontinence."* It is a good rule to remember that in adults "incontinence" generally means retention and overflow. This knowledge, however, requires careful application, as a painful experience, early in my surgical career, taught me. I was consulted by an elderly gentleman in regard to his stomach. He had no appetite, was always thirsty, often sick, occasionally troubled by hiccough, and looked sallow and ill. On examination, I discovered a urinous odour and that his clothing was wet. The incontinence had followed and relieved an attack of retention three months before. The distended bladder formed a distinct prominence reaching to his umbilicus. I passed a large silver catheter, and to his surprise withdrew more than a quart of urine. Next day I found that he had passed no urine, and an instrument withdrew only a few drops of blood-stained fluid from his bladder. From that time his kidneys excreted no more, and in three days he died. I now know that if his bladder had been emptied slowly through a very small instrument during a period of some days and with scrupulous care he would have recovered. This knowledge is even more important now than it was then, because it would now be possible to remove the prostate successfully at a later stage. Prostatectomy represents one of the greatest recent advances in surgery. It is not even yet appreciated at its full value, and Freyer has made the whole world his debtor by his strenuous advocacy of its indubitable claims.

In women equally dangerous mistakes may be made in these chronic retention cases. I have had young women with backward displacement of the pregnant uterus and elderly women with fibroids sent to me for operation for ovarian cysts, the passage of a catheter revealing a distended bladder.

Another of the greatest surgical advances has been made in urinary work by the introduction of the cystoscope and ureter catheter, which have revolutionized this branch of surgery. (Fig. 15.) The discovery of blood or pus in the urine followed by immediate cystoscopic examination may lead to the discovery of an early cancer or tuberculosis of the bladder or kidney, both curable by operation. Two patients from whom I excised the kidney for tuberculous pyonephrosis, the first twenty and the second fifteen years ago, are still alive and well. It is not yet common knowledge that genito-urinary tuberculosis is not at all rare, that it is frequently due to infection from a single kidney, that diagnosis is possible when it is thus limited, that the disease can be permanently arrested by excision of the diseased kidney, and that nephrectomy, in competent hands, is an operation of small danger. Without operation many of these cases live for prolonged periods. One patient of mine did so for at least fifteen and another for eight years, the diagnosis in both cases being verified by *post-mortem* examination. Death, however, after prolonged misery is the only reasonable expectation, and exceptions are so rare that many experienced surgeons deny their possibility. An early diagnosis, followed by nephrectomy, is the only known means of averting this.

* In some cases the bladder may be distended to the umbilicus and the patient still has control.

THE SIGNS OF MALIGNANT DISEASE.

It is the accepted general belief that cancer in its earliest stage is a local disease, and is then curable by excision. It is also becoming increasingly recognized that cancer seldom develops on or in a healthy part, but is preceded by some chronic change to which the name "precancerous" has been given. Recognition of these changes and excision of the diseased area are the most promising advances in the prevention of cancer. The importance of an early diagnosis in developed cancer cannot now be over-estimated, because recent surgery holds out not only hope, but a good prospect of cure.

Unfortunately there are often no early characteristic physical signs and nothing to cause the patient serious pain or any alarm. The textbook description of cancer is based upon examples of advanced disease, more often than not complicated by septic infection, and patients often relate how a lump or an ulcer which had been discovered months earlier occasioned neither their doctor nor themselves any alarm, because there was no pain in it and no

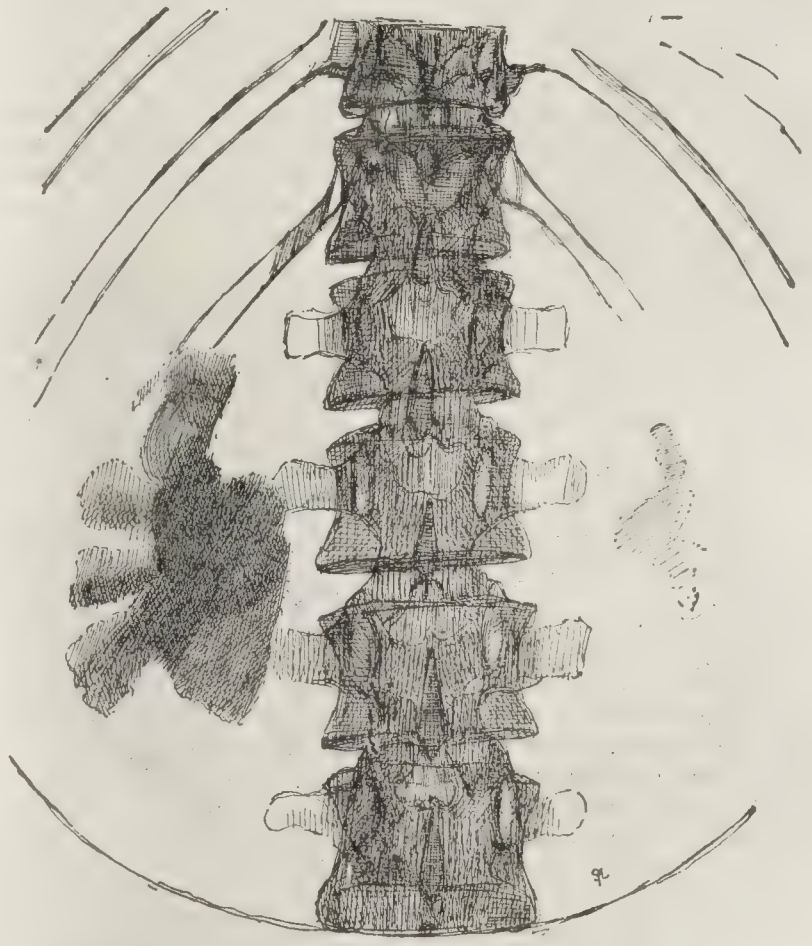


Fig. 15.—Hydronephrosis demonstrated by ureter-catheter injection of collargol and *x* rays. (R. J Willan.)

symptoms to cause uneasiness. There are, however, certain symptoms and signs so suggestive of malignant disease that, in the elderly especially, this should be excluded if possible, first, by a complete and thorough examination.

These symptoms and signs are:

Haemorrhage.

Bleeding from the stomach, from the bowel, from the genito-urinary tract, from nasal polypi, especially in elderly patients, should always suggest the possibility of cancer, as it is the most common cause.

The Discovery of a Tumour.

If a tumour is hard in consistency, nodular on its surface, has an indefinite edge, and is infiltrating the parts in its neighbourhood, there can be no difficulty in the diagnosis. But in patients over 35 especially it should be a rule that any tumour which does not offer a definite history and present symptoms and signs of its benignity must be widely excised for microscopic examination. A favourite situation for such tumours is the female breast, where, above this age, 50 per cent. are cancers. A fibro-adenoma of the breast, its ordinary simple tumour, is never in my experience seen in women over 30 years of age. It is simple and benign from 15 to 25, and if left alone may not grow larger for some years. Eventually fresh development occurs, it becomes more cellular, less fibrous, and in the end sarcomatous. Consequently, these tumours should always be removed.



Fig. 16.

The swellings most resembling cancer are due to chronic abscess and fibrosis from sepsis and tubercle, to cysts, and to the condition known as chronic localized interstitial mastitis. The difficulties of diagnosis are usually so great that no doctor should be found willing to take the responsibility of it. If action is postponed till a clinical diagnosis of cancer is possible, only 25 per cent. of cures follow the most radical operation. Bloodgood, of Johns Hopkins Hospital, reports cure of at least 90 per cent. of cases in which removal of the tumour for pathological diagnosis, before a clinical diagnosis of cancer could be made, was followed by *immediate* radical operation.

In adult males eight out of ten abdominal tumours, recently discovered, are malignant.

Polypi in the rectum and colon, and papillomata there, and in the bladder and larynx of adults, frequently hide a cancer.

Symptoms of obstruction in the hollow viscera suggest cancer. Twenty-nine out of thirty adults who, without a known cause, develop difficulty in swallowing due to oesophageal stricture, have cancer. The diagnosis of oesophageal stricture is usually easy if the patient be watched while taking fluid or liquid nourishment: it is made certain by skilled examination with *x* rays. It should be borne in mind that, when the stricture is at the lower end of the oesophagus or at the cardiac orifice of the stomach, patients complain of "vomiting," because I have found that doctors are often misled by this story. In these cases the "vomiting" is regurgitation of oesophageal, not of stomach, contents, and, as the oesophagus dilates above the stricture, food may even be retained for a short time before it is expelled. "Vomiting" immediately after food is taken, or the finding that the "vomited matter" is not acid in reaction, should suggest the probability of stricture of the oesophagus. The discovery of a stomach tumour in an elderly patient, especially if "indigestion" is a recent development, and if there is rapid loss of condition, is almost conclusive evidence in favour of cancer. If the tumour involves the pylorus it causes obstruction, and dilatation of the stomach follows. Chronic intestinal obstruction in the elderly is in the very great majority of instances due to cancer. This is most common in the sigmoid loop, and the history of greatest value is one of increasing constipation, with loud wind rumblings, increased by aperients, and spasmodic pains accompanying the flatulence. Cancer in the ileo-caecal neighbourhood often causes attacks of obstruction with spasmodic pain, wind rumblings, and vomiting, with alternating diarrhoea and constipation. Cancer of the rectum should always be suspected when alternate "diarrhoea" and constipation demand frequent attempts at evacuation with small result.

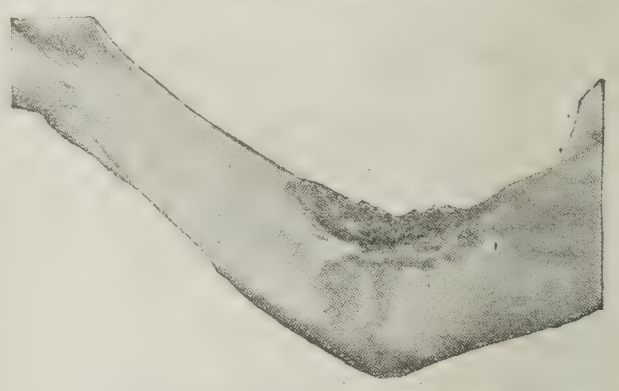


Fig. 17.—Burn scar which developed epithelioma.

Chronic Jaundice.

Painless chronic jaundice in adult patients is seldom due to anything but cancer. If the jaundice is steadily increasing, and the gall bladder is distended, it is so almost without exception. When I say painless this refers to the commencement of the illness, and put in the form of an aphorism the position will be this: *Jaundice, preceded by pain, is most likely due to a gall stone, but commencing painlessly is due to cancer.* Though operation in these cases has exceptional risk, my view is that if there is no general contraindication it should be taken. Cholecystenterostomy will relieve the jaundice and the itching in most of them.

Chronic Hoarseness.

In patients past middle age changes in the voice demand laryngoscopic examination. This is all the more important since cancer of the vocal cords, the most frequent cause of chronic hoarseness, has been proved to be one of the least malignant types of cancer, and, when limited to the cords, curable by a simple and safe operation—thyrotomy and excision of the cords.



Fig. 18.—Epithelioma on old burn scar of leg.

Chronic Irritation.

The most important predisposing cause of cancer known is chronic irritation, but this knowledge is yet not sufficiently acted upon. Irritated ulcerated warts, moles, or naevi in adults are either cancerous already or so likely to become cancerous that they should be removed without delay.

Ulcers of the tongue which do not heal promptly after any source of irritation has been removed, or which have not healed after a few days of treatment with iodide and mercury, should be excised for microscopical examination. Patches of leucoplakia on the tongue (Fig. 16) or cheek, penis or vulva, require constant supervision, and when irritable or ulcerated should be promptly and widely excised, as they are frequent precursors of cancer. Cracked and irritated scars from burns or scalds, if neglected, always develop cancer (Figs. 17 and 18). Raised pigmented rough patches on the skin of elderly patients, scaly thickened patches, obstinate cracks (Fig. 19) or warts on the

lips (Fig. 20), sores on the nipple which resist ordinary treatment, are all likely to become cancerous, if not so already, and should be excised. The irritation effects of *x* rays, paraffin (Fig. 21), soot, etc., are so well known as predisposing causes of cancer as to require no further mention. Not so well recognized are the irritation of gall stones and of chronic gastric ulcer. The best surgeons are unanimously in favour of operating for gall stones as soon as the diagnosis can be made, because they recognize that gall stones are a serious possession and cannot be removed by any other means, that operation is safe and satisfactory if performed when the stones are still in the gall bladder, but neither safe nor certain in results when stones have escaped into the ducts, or when such septic changes have been set up as to preclude the possibility of complete recovery. They also recognize that cancer of the gall bladder follows the irritation of gall stones with sufficient frequency as to make their removal advisable for this reason alone.

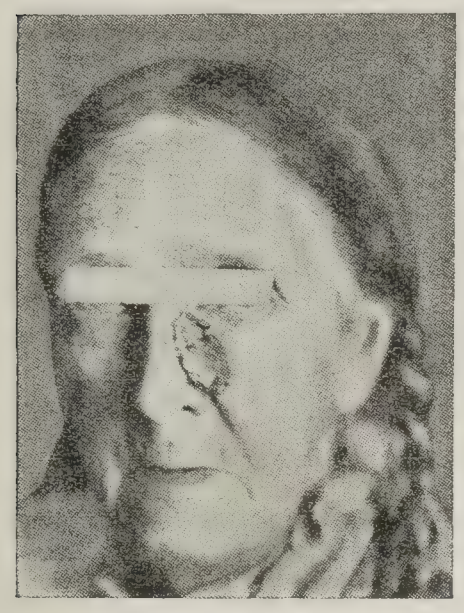


Fig. 19.—Skin cancer; old field worker. Area where tears trickle.

The irritation of a chronic gastric ulcer is now accepted as a predisposing cause of cancer, so that, apart from the fact that the dangers of haemorrhage and perforation are greater than those of operation in competent hands, the predisposition to cancer is—without attaching too great importance to it—an additional reason for the recommendation of operation in ulcer cases. The diagnosis of stomach cases has been hindered rather than helped by chemical and laboratory advice, though all recognize that these may be useful aids. If a patient has been a long sufferer from "indigestion," and the pain, of which there has been most complaint, has been definitely related to meals, if spells of good health have alternated with bad turns, and if during the bad times the hours between 2 in the morning and before breakfast have been the best of the twenty-four, then any experienced surgeon will suspect a chronic gastric or duodenal ulcer, and advise operation. The operation might—though in my opinion it rarely does—disclose a cancer, the symptoms of which, unless it is causing obstruction, are less definite. They may be shortly described as "indigestion" which does not quickly yield to simple remedies, the patients being, moreover, elderly people.



Fig. 21.

In gastro-intestinal diseases *x* rays and barium or bismuth feeding or enemata have recently proved such important advances it is likely that very early cancers and strictures will be discovered and the presence of ulcers confirmed, so that useless exploratory operations can be avoided.

Certain tumours are precursors of cancer so frequently that special attention should be paid to them and endeavours made to remove them.

Multiple polypi in the rectum and colon, even in young patients, have so often in my experience preceded cancer that I have a special dread of them. The only case I have cured was by an operation suggested to me by my house-surgeon, Mr. Saint. The patient, a boy, had multiple polypi in his rectum and lower sigmoid, many of which had already been excised. He was cured by an inguinal colostomy in the upper sigmoid, kept open for one and a half years. This was in 1910, and the boy remains perfectly well.

Papillomata in the rectum, colon, bladder, or larynx of adults have an equally serious tendency, and predispose to cancer, if they are not already cancerous.

Patients with molluscum fibrosum and neuro-fibromatosis, in my experience, nearly all die of sarcoma.

Tumours of bone are frequently malignant, and *x* rays are of special service in their early diagnosis.

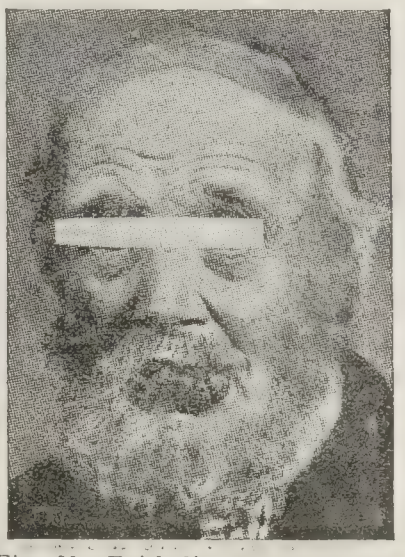


Fig. 20.—Epithelioma of lip; clay pipe smoker.

Appearance of Patient.

The general appearance of a patient with cancer may be that of rude health, though in the majority observant friends or relations have noticed before any local signs developed that there had been some "falling off" or deterioration in condition, some loss of weight, or anaemia, or decrease in vigour, sufficient to suggest something wrong. The "cancerous cachexia" is too late a sign to be of practical use, and there is yet no reliable laboratory test, such as tuberculin or the Wassermann test, for cancer.

"NEUROTICS."

The most difficult problem for the practitioner is to discover what is best for the unfortunate patients who are called "neurotics." We all admit that the title is one which covers a multitude of sins and serves as a cloak for medical ignorance, but the attitude taken is a more satisfactory one than by teaching that underlying every such case there is some condition serious enough to require an operation for its treatment. The gynaecologist has had his turn and has discovered that a weird variety of plastic operations inside and out, and even the removal of the chief pelvic contents, have been a signal failure in effecting the cures promised and hoped for. The general surgeon, by the turn of fashion, is now having these unfortunates handed over to him. Some enthusiasts effect a cure by making, and others by removing, adhesions, and it is difficult, in reading their records—each equally brilliant—to discover a reason for their remarkable results. It appears as if the movable kidney had only to be fixed, or the immovable intestines to be released, to secure that health and happiness are restored, but the choice between the two presents insuperable difficulties. An early experience of my own concerning movable kidney made a lasting impression on me, and gave a bias against the operation of nephrorrhaphy which I cannot yet shake off. More than twenty-five years ago a thin, ailing, intelligent, "neurotic" woman came under my care, and I discovered what I thought was a movable kidney, and told her so. She had all the distressing symptoms then believed to arise from that condition. One day, after finding her unusually ill, I read a paper by the late Lawson Tait, saying, in the convincing manner of all he wrote, "there is no such thing as a movable kidney. All the lumps mistaken for this are distended gall bladders with gall stones in them." I went to the patient, told her what I had read, apologized for the mistaken diagnosis I had made, and offered to remove her gall stones by operation. She entirely approved of an operation, and said she did not know whether Mr. Tait was right or not, but she *did* know that the whole of her suffering came from the lump in her right side, and if it could be taken away she felt sure she would be cured. With this opinion I agreed. On opening the abdomen I found the gall bladder healthy, and the lump a freely movable right kidney, which I excised, as the operation of nephrorrhaphy had not been invented then. Careful macroscopic and microscopic examination proved it to be a healthy kidney, and for a few days after the operation I went about with the unhappy feeling that I had performed a criminal act. The end seemed to justify the means, because, as soon as the patient was well

enough, she declared that all her old symptoms had disappeared, that her health had been completely restored by the operation, and that she owed everything to my skill. This happy state of affairs continued for many months, then all her old symptoms returned, and for many years I was glad to go a long way round to escape an interview with her.

On many occasions I have undone adhesions in the abdomen, and seen cases operated on by others, for abdominal discomforts difficult to assign to any definite cause. Omitting those causing definite obstruction or associated with gross pathological change, I have never been able to satisfy myself that any benefit followed these operations, and patients are often worse after them. It is of interest in this connexion to note that Sir Arbuthnot Lane, whose brilliant work has attracted the attention of the whole surgical world, has abandoned attempts to deal directly with adhesions because he has found these operations useless.

In conclusion, then, allow me again to offer a reason for my attempt to give an example of the type of post-graduate teaching that I consider ought to be offered in surgery.

The principles of surgery should be taught to students so thoroughly that they can never forget them. In the limited time at the disposal of practitioners they ought to be given as much information as possible, and their surgical teachers should give the results of their experiences in so practical a form as to serve as a safe guide to a diagnosis which suggests the need for surgical treatment.

Clinical Notes

ON

EPIDEMIC CEREBRO-SPINAL MENINGITIS;

WITH OBSERVATIONS ON TREATMENT.

BY

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AT the present time cerebro-spinal meningitis is a disease of the greatest moment, because of its intense virulence and great rapidity of progression, and also because of its infectious nature.

An early diagnosis is of the greatest importance, for it gives better hope of recovery to the patient, and also lessens the danger of the spread of infection, as it enables immediate attention to be given to the disinfection of quarters and isolation of contacts—matters of vital urgency where moving troops are concerned.

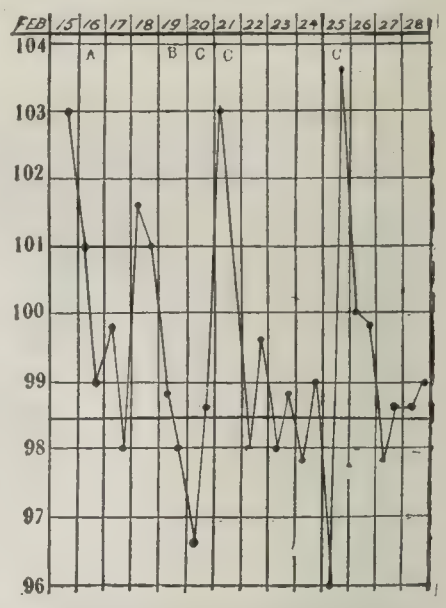
Four cases of this disease having come under my care, some clinical notes, and some observations on treatment, may be useful to army medical officers and civilian practitioners, as cases of this form of meningitis have recently occurred both in the military and civil population, and in some instances a fatal termination has resulted, almost before diagnosis was made.

CASE I.

Trooper G. M., aged 19, was taken ill on February 12th, complaining of severe headache; he was admitted into the infectious hospital on February 15th. He was then very delirious at night and rambling all day, and complained of severe headache. Retraction of the head was well marked, and there was also some rigidity of arms and legs. Kernig's sign was very pronounced. Some pink spots were found scattered over his body, and some haemorrhagic blotches were present about the ankles and knees. *Tache méningitique* and pressure erythema were very well marked. The temperature on admission was 103°.

On February 16th 30 c.cm. of turbid cerebro-spinal fluid were withdrawn and 20 c.cm. of anti-meningococcic serum injected. On February 19th 64 c.cm. of turbid fluid were withdrawn; on examination the fluid was found to contain the *Diplococcus intracellularis;* 10 c.cm. of serum were injected.

On February 20th 48 c.cm. of clear fluid were withdrawn, and 15 c.cm. of serum injected. By this date the delirium had decreased, the headache had gone, and he was sleeping well, but his neck was still very rigid, and his head retracted. Kernig's sign was still very marked. On February 21st 64 c.cm. of clear fluid were withdrawn and 15 c.cm. of serum injected. On February 22nd he had no headache and no pains, and his delirium had decreased, though still present at night. There was less rigidity of his neck and less general rigidity, but Kernig's sign was still well marked. Pressure erythema was also still very evident, but the subcuticular mottling was fading and there were only a few scattered pink spots on the back and buttocks. He never had any hyperaesthesia. On February 24th patient had slept well, and had had no delirium during the night; he looked better and there was more movement in his neck, but Kernig's sign was still very definite. On February 25th movement of his head was better, but as Kernig's sign was still well marked, 48 c.cm. of clear watery fluid were removed at pressure. No diplococci were found in this fluid; 15 c.cm. of serum were injected. On March 1st his general condition showed considerable improvement, but there was evidence of cardiac weakness; the pulse was soft, of low tension, and inclined to be intermittent, and the heart sounds were feeble and weak. This continued until March 4th, when 2½ minim doses of liquor strychninae were ordered every six hours. Since that date there has been steady improvement of the heart's action, and also an abatement of the remaining nervous symptoms; all rigidity of the neck has gone, Kernig's sign has disappeared, and the skin eruption and *tache méningitique* have subsided. The temperature has remained normal since February 27th, and on March 19th he was able to get up and walk about the ward.



Case I.—A, 20 c.cm. serum; B, 10 c.cm. serum; C, 15 c.cm. serum.

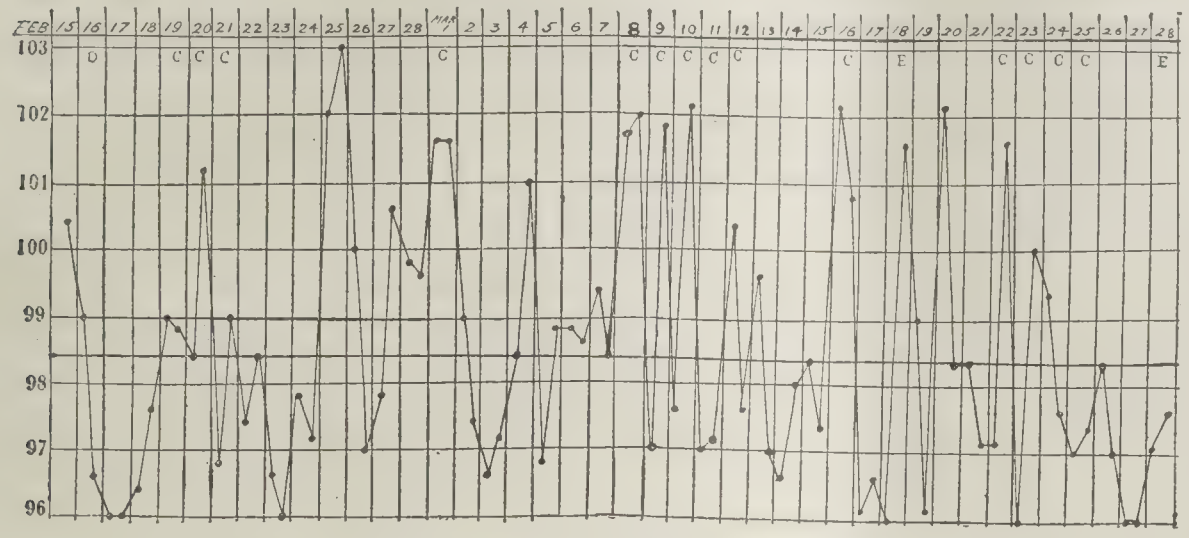
CASE II.

Private H. H., aged 19, complained of feeling slightly unwell on February 14th. The following morning he reported sick, and complained of pains all over his body. As influenza was prevalent, he was treated with sodium salicylate, and kept in his billet. During the day he became much worse, severe headache, vomiting, and delirium supervening; the temperature rose to 102°. On further examination, some stiffness of the muscles of the neck, Kernig's sign, and *tache méningitique* were found to be present. The diagnosis of cerebro-spinal meningitis was made, and he was at once removed to the Isolation Hospital. The following morning the rigidity of his neck was more marked, and there was also retraction of his head, with hyperaesthesia of the calves, and a few pink spots on the upper part of his chest, left ankle, and neck.

Lumbar puncture was then performed; 30 c.cm. of turbid fluid were withdrawn and 28 c.cm. of antimeningococcic serum injected. The spinal fluid was found on examination to contain the *Diplococcus intracellularis*. The following day his condition had improved, the headache and delirium were less marked, and the temperature was below normal, but the retraction of the head and Kernig's sign still persisted. On February 19th another dose of antimeningococcic serum (15 c.cm.) was given after 48 c.cm. of clear fluid had been withdrawn. On February 20th 48 c.cm. of clear fluid were withdrawn and 15 c.cm. of serum injected. The same treatment was adopted on the following day, the same amount of fluid being withdrawn and the same quantity of serum injected. The delirium left him on the night of the 18th, and he slept well after this. A marked eruption of supraorbital herpes occurred on the right side on February 20th, and pressure erythema was very marked about the knees, ankles and hips. On February 22nd the erythema was still marked, but Kernig's sign had lessened, the head was less retracted, he had no headache, and no delirium, but some pink spots were still present on the left buttock. This improvement was maintained, but on February 24th he had an attack of urticaria all over his body.

The following day the temperature rose to 102°, and he complained of headache, but had no delirium. The rash was more marked on February 26th, and the temperature rose to 103° in the morning but steadily fell during the day. The other symptoms all improved until March 1st, when, as his temperature was on the upward grade, lumbar puncture was again made; 48 c.cm. of clear fluid at pressure were withdrawn and 15 c.cm. of serum were injected. On examination this fluid showed the *Diplococcus intracellularis* to be still present. On March 4th the patient had slept well, and had no delirium or headache, but the temperature at 10 a.m. was 102.6° and the urticaria, which had completely disappeared, recurred. There was no rigidity of the neck and Kernig's sign was only slightly marked. On March 8th Kernig's sign was more in evidence, and as his temperature had risen to over 102°-with a rigor, 64 c.cm. of turbid fluid were removed and 15 c.cm. of serum injected. On March 9th patient was very restless and delirous during the night; lumbar puncture was again done and 64 c.cm. of turbid fluid withdrawn and 15 c.cm. of serum injected. On March 10th and 11th 64 c.cm. of turbid fluid were removed and 15 c.cm.

of serum injected on each occasion. On March 12th 72 c.cm. were removed and 15 c.cm. of serum again injected. As a result of this treatment the temperature came down to below

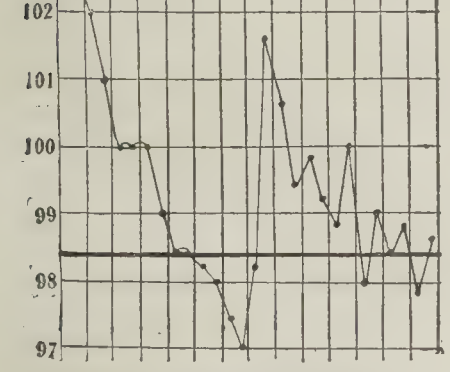


Case II.—C, 15 c.cm. serum; D, 28 c.cm. serum; E, 30 c.cm. serum.

normal for three days; he had no headache, no delirium, he slept well, there was no rigidity of the neck, and Kernig's sign had almost disappeared. At 6 a.m., however, on March 16th, his temperature ran up to 102°, delirium returned, with some stiffness of the neck, the erythematous rash was again present, together with marked *tache méningitique* and Kernig's sign, which had almost disappeared, was slightly more marked; 80 c.cm. of turbid fluid was therefore withdrawn and 15 c.cm. of serum injected.

CASE III.

Private A. H., aged 26, complained of feeling seedy on February 14th, and the following day remained in bed. On February 17th he complained of intense pain in the head and back, and stiffness of the neck and Kernig's sign were detected. He was admitted to hospital on February 18th. He was then slightly delirious and complained of intense headache; Kernig's sign and hyperaesthesia were well marked, his head was retracted, and a few pink spots were found and *tache méningitique* was readily obtained. His temperature was 102.4°. Lumbar puncture was performed and 64 c.cm. of turbid fluid withdrawn and 27 c.cm. of serum injected. The fluid removed contained *Diplococci intracellularis*. On February 19th 64 c.cm. of very slightly turbid straw-coloured fluid were withdrawn, and 20 c.cm. of serum injected. On February 20th 56 c.cm. of turbid fluid were withdrawn and 15 c.cm. of serum injected. On February 21st 36 c.cm. of slightly turbid fluid were withdrawn and 15 c.cm. of serum injected. On February 22nd his temperature had gradually reached normal, the rigidity of his neck was much less marked, and hyperaesthesia of the calves had disappeared,



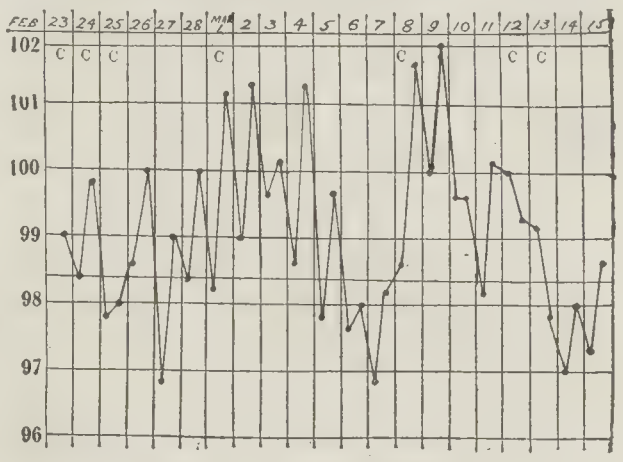
Case III.—A, 20 c.cm. serum; C, 15 c.cm. serum; F, 27 c.cm. serum.

he had no delirium or headache, but some spots were still present on his back, Kernig's sign and *tache méningitique* were still well marked, and pressure erythema was present on the ankles and knees. On February 25th, as his temperature showed a tendency to rise, another lumbar puncture was made, and 48 c.cm. of clear fluid at pressure were withdrawn, which was found not to contain any organisms; 15 c.cm. of serum were injected. His temperature during the next few days subsided, he steadily progressed towards recovery, Kernig's sign gradually diminishing. On March 19th he was up in the ward.

CASE IV.

Private H. B., aged 21, was taken ill on February 23rd complaining of pains and chilliness. When seen by the medical officer, Kernig's sign was well marked, and there was marked rigidity of the neck and of all extremities, together with well-marked retraction of the head, and his general condition was that of semi-coma, with a certain amount of rambling delirium. Pink spots were found scattered over his body. He was admitted to hospital, and lumbar puncture was performed; about 19 c.cm. of blood-stained, cloudy fluid were withdrawn, and 15 c.cm. of serum injected. On February 24th the general rigidity and Kernig's sign were less marked, but hyperaesthesia was present in the calves; he was quite sensible, though he had been somewhat delirious during the night; 20 c.cm. of blood-stained fluid were removed, and 15 c.cm. of serum injected. On February 25th the patient had improved. He had no delirium during the night, and no headache after the second lumbar puncture; 48 c.cm. of only slightly blood-stained fluid were withdrawn, and 15 c.cm. of serum injected. Though the fluid was examined on all occasions, the meningococcus was not found until this specimen. On February 26th the rigidity of the neck was less, though retraction of the head was fairly well marked and Kernig's sign was still present. His facial appearance was good; he had no headache, and had slept well. On March 1st 40 c.cm. of a straw-coloured fluid were withdrawn and 15 c.cm. of serum injected. He showed signs of improvement, but Kernig's sign was still well marked, and some rigidity of the neck was present. On March 4th he complained of severe pains in the left shoulder and right elbow, and both joints had considerable effusion. He also complained of pain in the back, in the renal region, and not in the middle line. He had no headache, had slept well, but had general urticarial rash, and marked herpes on the upper lip. He had some difficulty in passing urine, and this was found to be blood-stained and to contain a considerable quantity of albumin.

During the next few days some delirium and restlessness recurred at night, and, though the rigidity of the neck had disappeared by March 8th, Kernig's sign was more marked, and therefore another lumbar puncture was made; 64 c.cm. of straw-coloured fluid, which showed no meningococci, were withdrawn, and 15 c.cm. of serum injected.



Case IV.—C, 15 c.cm. serum.

During this period, though the urine contained a considerable amount of albumin, and was always either smoky or blood-stained, his condition somewhat improved; but as some nocturnal delirium and severe headache, with persistent Kernig's sign, again developed, lumbar punctures were made on March 12th and 13th, when 60 c.cm. and 20 c.cm. of clear fluid were withdrawn and 15 c.cm. of serum injected on each occasion. Since that date his temperature has remained normal and his general condition has steadily improved. He sleeps well, and his Kernig's sign is diminishing. The renal condition has much improved, and all joints affected have recovered.

All these cases occurred in healthy, well-built, robust soldiers. None of the men were recruits. Case III had the shortest length of service—four months—and he is an athlete, and had never felt fagged by training. Cases III and IV could be traced to contact with a previous case of this infection, the incubation period being, as nearly as can be calculated, *eighteen to twenty-five days*. Case III also slept in the same corner of a billet immediately after it had been vacated by a man who later showed evidence of this disease.

Diagnosis.

As in all medical disorders, the diagnosis depends on the sum totals of the symptoms, and this in cerebro-spinal meningitis is clinched by lumbar puncture and the withdrawal of a turbid fluid, which is found to contain the *Diplococcus intracellularis*. In its earliest stages cerebro-spinal meningitis is sometimes simulated by cerebral influenza, especially (as is rarely the case) if the latter disease has stiffness of the neck. Such a case was recently admitted into the field ambulance, but on examination no Kernig's sign was present, there were no rashes, and no *tache méningitique*, and the soldier rapidly recovered with sodium salicylate.

Intense headache and delirium invariably occur, and rigidity of the neck with retraction of the head is very characteristic. Kernig's sign appears to be one of the most valuable indications of the disease; it is invariably

present, as far as my experience goes, and is one of the last symptoms to disappear as the patient recovers. Its disappearance is a good sign, its reappearance is an indication of a recrudescence of the disease.

Unfortunately the disease is very treacherous, and recrudescences or relapses are very liable to occur.

The rashes are very useful aids to diagnosis.

1. The pink spots are not unlike those of typhoid, but are not usually raised. They are more frequently found on the back and about the joints.

2. Pressure erythema is almost invariably present after the first few days, occurring on the part of the body exposed to pressure.

3. *Tache méningitique* is always present, usually well marked.

3A. Three of these cases had urticaria; Cases II and IV severely, and Case III only slightly.

4. Herpes occurred in Cases II and IV.

5. Haemorrhagic eruption occurred only in Case I. This is sometimes very evident.

Hyperaesthesia is sometimes very marked, at other times it is absent. In only two (Cases III and IV) was it present, and then only for a few days, and only well marked in Case IV.

Photophobia was also present in Cases III and IV, but only slightly for a short period.

The temperature in this disease is by no means constant; in fact, its irregularity is characteristic. A high temperature is generally found at the onset, but a fall is only a good sign if it remains below normal for several days.

The joint affection which occurred in Case IV is a fairly frequent complication of the disease, but the attack of nephritis which occurred in the same patient is an unusual one. Both these conditions are due to the diplococcus or its toxins.

Treatment.

As stated, these cases were treated by lumbar puncture together with injections of antimeningococcic serum. Previously I have had some cases recover with lumbar puncture alone, and I am confident that it is a most valuable aid to the patient's recovery. On this account on every occasion when a lumbar puncture has been performed as much fluid as possible has been withdrawn without applying suction, and even as much as 2 to 3 oz. has been withdrawn.

In the early summer of 1914 I had a lad of 19 in my wards at the Liverpool Stanley Hospital suffering from cerebro-spinal meningitis. He progressed most satisfactorily for about five weeks under the treatment of lumbar puncture alone; indeed, so well did he progress that, though the advisability of giving serum was considered, it was decided that it was unnecessary. Suddenly, however, a recrudescence occurred, his temperature rapidly rose, he became comatose, and died in a few hours. Having this case fixed in view, the treatment in these four cases has been that of lumbar puncture *plus* antimeningococcic serum, and the result has been eminently satisfactory. There is no doubt that the serum has been beneficial in its effects; the symptoms abated more rapidly and constantly. In nearly all instances the puncture has been made under local anaesthesia (ethyl chloride spray), and the injection given by an ordinary serum syringe, the serum being injected very gradually. It has been noticeable that patients invariably complain of pains in the legs if the injection is hastened. There is occasionally some numbness in the legs after injection, but this passes off in about half an hour.

The pulse throughout the injection was always good, and the necessity of taking blood pressure was never evident. At the first injection 20 to 30 c.cm. of serum are generally given, and daily doses of 15 to 20 c.cm. for the following three or four days. After an interval of about three days another injection is given, and further injections at intervals if the cerebro-spinal fluid still shows the diplococcus, and Kernig's sign still remains marked, or the temperature still shows a tendency to spiking. Daily injections appear necessary so long as the cerebro-spinal fluid remains turbid; and even when the fluid becomes clear and shows no diplococci, persistent Kernig and irregularity of temperature are, in my opinion, indications for further injections at intervals.

The importance of prophylaxis cannot be over-estimated. In all cases, disinfection of billets, and the isolation of contacts, and the treatment of their naso-pharynx by an antiseptic spray, was rigorously carried out. Naso-pharyngeal swabs were taken and examined for the diplococcus in all contacts, and isolation of contacts was persisted in for twenty-two days, and it is gratifying to report that no case of the infection has been reported from these four cases.

Since this paper was prepared for press Case II had a further recrudescence, and died on April 2nd; the other cases are convalescent.

FURTHER REMARKS ON THE MIXED TYPHOID + PARATYPHOID A + PARATYPHOID B VACCINE.

BY

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From the Institute of Pathology, University of Naples.)

So many inquiries have recently reached me concerning the mixed typhoid + paratyphoid A + paratyphoid B vaccine—especially on its preparation—that a further note on the subject will perhaps be found useful.

First of all, as regards the amount of immunization induced, the technical method of preparation of typhoid vaccines is—within limits, of course—not, in my experience, of paramount importance: vaccines killed by heat or by various chemicals may be used; or live attenuated vaccines, sensitized vaccines, etc., with almost equally satisfactory results. The important point is that, whatever the method of preparation, the antienteric vaccine should not be a simple typhoid vaccine, but should contain the three species of germs—typhoid, paratyphoid A, and paratyphoid B.

The simplest and most practical types of the mixed typhoid-paratyphoid vaccine, are, according to my researches, the following two:

1. Dead mixed vaccine, with germs killed by heat.
2. Dead mixed vaccine, with germs killed by carbolic acid.

I have described in detail the technique of preparing them in previous papers,[1] but it may be here again briefly summarized.

Mixed Vaccine (Heated).

This is a mixture of the three vaccines—typhoid, paratyphoid A, and paratyphoid B—each of which is prepared according to the technique used by Wright and Leishman in the preparation of their simple typhoid vaccine.

1. Prepare broth cultures of *B. typhosus*, broth cultures of *B. paratyphosus* A, and broth cultures of *B. paratyphosus* B, from recent agar cultures, inoculating two normal loopfuls per tube, into tubes containing 10 c.cm. of broth.

2. Incubate at 37° C. for eighteen hours.

3. *Standardization.*—Count the number of bacilli by using a Thomas-Zeiss blood counter, and, by dilution, bring the number down to approximately 1,000 millions per cubic centimetre.

4. If the germs are very motile they are immobilized, as done by Leishman, by adding a trace of formalin. Keep the standardized cultures at 53° C. for an hour in a water bath. Leishman has shown that 53° C. is the minimal thermal death point for typhoid bacteria, and that the lower the temperature at which the germs are killed the greater is the immunizing power of the vaccine.

5. Mix in the following proportions:

Typhoid	2 parts
Paratyphoid A	1 part
Paratyphoid B	1 ,,

To this mixture, when cooled, add 0.25 per cent. lysol, and shake thoroughly. Twelve hours later inoculate some agar slopes to test for sterility. The mixed vaccine will contain per cubic centimetre:

Typhoid	500 million
Paratyphoid A	250 ,,
Paratyphoid B	250 ,,

Of this vaccine 0.5 to 0.6 c.cm. is inoculated subcutaneously in the arm the first time, and the second time,

a week later, 1 to 1.2 c.cm. If a third inoculation be possible the same dose as the second may be given two weeks after the first.

Carbolized Mixed Vaccine (Not Heated).

Agar cultures twenty-four hours old are used. The growth of the typhoid agar cultures is washed off with sterile 0.85 per cent. salt solution, to which 0.5 per cent. carbolic acid has been added; the emulsion so obtained is stored at room temperature (18° to 20° C.) for twenty-four hours and then tested for sterility* and standardized. To standardize it the germs are counted by using a Thomas-Zeiss apparatus, and sufficient carbolic salt solution is added to bring the number of germs down to 1,000 millions per cubic centimetre. The standardized emulsion is again tested for sterility. The same procedure is carried out with paratyphoid A and paratyphoid B cultures, these two emulsions being also standardized to contain 1,000 million germs per cubic centimetre. The three standardized emulsions, when found sterile, are mixed together in the following proportions:

Typhoid	2 parts
Paratyphoid A	1 part
Paratyphoid B	1 ,,

The mixed vaccine will therefore contain per cubic centimetre:

Typhoid	500 million
Paratyphoid A	250 ,,
Paratyphoid B	250 ,,

Of this mixed vaccine 0.5 to 0.6 c.cm. is given under the skin of the arm the first time, and 1 to 1.2 c.cm. the second time, a week later. It produces, perhaps, a slightly less severe reaction than the heated broth vaccines.†

Experimental Work on which the Preparation of Mixed Vaccines is Based.

The preparation of the typhoid + paratyphoid A + paratyphoid B vaccine, as well as other combined vaccines, is based on the experimental work I carried out in 1901–1902 in Professor Kruse's laboratory,[2] when I was able to demonstrate that if an animal (rabbit) were inoculated with two or three species of bacteria agglutinins and immune bodies for all the germs were elaborated, provided a sufficient minimum quantity was given, the amount of agglutinins and immune bodies elaborated for each germ being nearly the same as in control animals inoculated with only one species. I demonstrated also that when immunization is obtained by a single inoculation the amount of agglutinins and immune bodies elaborated is not in proportion to the amount of cultures injected, provided a sufficient minimum dose be used. A series of rabbits inoculated with 2 c.cm. of typhoid culture will give the same average agglutination limit and the same amount of immune bodies as a series of rabbits inoculated with 4 c.cm. In rabbits no good results are obtained, as a rule, by inoculating more than three species of bacteria; in man, however, certain vaccines containing four species of germs (tetravaccines)—as, for instance, typhoid + paratyphoid A + paratyphoid B + cholera—may give good results.[3] In fact, I have used with good results a vaccine containing five species of germs: Typhoid + paratyphoid A + paratyphoid B + cholera + plague.[4] In most cases, however, when more than four species are used, protective substances are apparently developed for three or four species only, and may suddenly disappear.

Objections Made to the Use of the Mixed Vaccine.

The usual objection raised against the use of the mixed vaccine (typhoid + paratyphoid A + paratyphoid B) is that it will probably give a much smaller amount of immunization than simple typhoid vaccine, and that paratyphoid A and B, being diseases of less importance than true typhoid, it would be a mistake to run such a risk. This belief is not supported by the experiments quoted above. I would also call attention to the tables I published in the BRITISH MEDICAL JOURNAL, 1913, vol. ii, p. 1577,[5] in which I collected, with the assistance of Mr. E. Burgess, the results—as regards agglutinins—of the examination of the blood, carried out regularly for many weeks, of individuals inoculated with simple typhoid vaccine, simple paratyphoid A vaccine, and simple paratyphoid B vaccine, in comparison with individuals inoculated with the mixed typhoid + paratyphoid A + paratyphoid B vaccine.

The individuals inoculated with simple typhoid vaccine, those with simple paratyphoid A vaccine, and those with simple paratyphoid B vaccine had two injections at one week's interval—0.5 to 0.6 c.cm. the first time and 1 to 1.2 c.cm. the second time, the vaccines containing 1,000 millions per cubic centimetre. The individuals inoculated with the mixed vaccine had two injections at one week's interval—0.5 to 0.6 c.cm. the first time and 1 to 1.2 c.cm. the second time. The mixed vaccine contained per cubic centimetre—

Typhoid	500 million
Paratyphoid A	250 ,,
Paratyphoid B	250 ,,

These individuals, therefore, had only half the amount of the typhoid germs and a quarter the amount of the paratyphoid germs inoculated in the control individuals injected with simple "one disease" vaccine. Still, the figures collected in the tables clearly show that in individuals inoculated with mixed vaccine the amount of agglutinins developed for each germ was nearly the same as in the control individuals inoculated with typhoid vaccine only, paratyphoid A vaccine only, and paratyphoid B vaccine only.

Conclusion.

The mixed typhoid + paratyphoid A + paratyphoid B vaccine may be prepared according to various methods. The simplest mixed vaccine consists of an emulsion of typhoid + paratyphoid A and B bacilli killed by heat, or by adding ½ per cent. carbolic without heating, and standardized so that 1 c.cm. contains approximately 500 million of typhoid bacilli and 250 million each of paratyphoid A and B. Of this vaccine, 0.5 to 0.6 c.cm. is given the first time, and 1 to 1.2 c.cm. the second time, a week later. The mixed vaccine is harmless, does not give a severer reaction than simple typhoid vaccine, and the inoculated persons develop protective substances for the three diseases.

In my opinion, as I have stated in all my previous publications on the subject,[6] in countries where in addition to typhoid, paratyphoid A and B occur, the mixed vaccine should be used as a matter of routine instead of the simple typhoid vaccine. This has been done in Ceylon since 1905 with good results.

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Cummins and Cumming: *Journal of the Royal Army Medical Corps*, 1913, p. 282.

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* In some rare cases, when the emulsion is very thick, this period of time (twenty-four hours) may not be sufficient for the small amount of carbolic present to sterilize it completely; the germs, however, will be non-motile, easily counted, and the addition of the amount of carbolic salt solution necessary to standardize the vaccine to 1,000 millions per cubic centimetre will quickly kill all the germs.

† The mixed vaccine (both types) is prepared according to my instructions at the Serum Institute of Berne (Switzerland) since 1913. It is also prepared now at the Instituto di Patologia Generale of the Royal University of Naples.

DR. E. BALLERINI, President of the Order of Medical Practitioners of Rome, in transmitting to Professor Jacobs a sum of money subscribed by them in aid of their Belgian brethren, apologizes for the smallness of the amount, which is explained by the demands on the doctors of Rome by the sufferers from the recent earthquake. He asks that it may be accepted as a sign of their affection for their colleagues in Belgium; as a proof of sympathy with them in the misfortunes which have fallen upon them; and as an expression of their fervent hopes for the resurrection of their heroic country. Professor Jacobs in acknowledging the gift says: "The hope of seeing ourselves one day free again remains fixed in our hearts. We shall fight to the death, but never as long as there remains a Belgian alive shall the hateful invader be able to boast that he has annihilated us. Robbed, yes! murdered, yes! burnt and pillaged, yes! conquered, never!"

A COMPARISON BETWEEN SOME PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS.

THE OLIVER-SHARPEY LECTURES, DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

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LECTURE II.

(*Abstract.*)

RENAL OXYGEN WANT AT HIGH ALTITUDES AND IN THE WARDS.

AT the conclusion of my first lecture I pointed out that the scientific value of the two comparisons, which formed the subject of the lecture, depended upon the identity or otherwise of the causes which gave rise to them. Further, I mentioned that we were still in the dark as to these underlying causes. The comparison of which I wish to treat to-day differs from those, since not only the physiological and pathological aspects of the comparison can be discussed, but a common cause can be suggested. I wish to put before you: (1) The physiological adaptations which take place in rarefied atmospheres; (2) a similar complex of phenomena which may be seen in the wards, and (3) to suggest that in both cases the root of the condition is to be found in the fact that the kidney cell lacks its usual facility for obtaining oxygen.

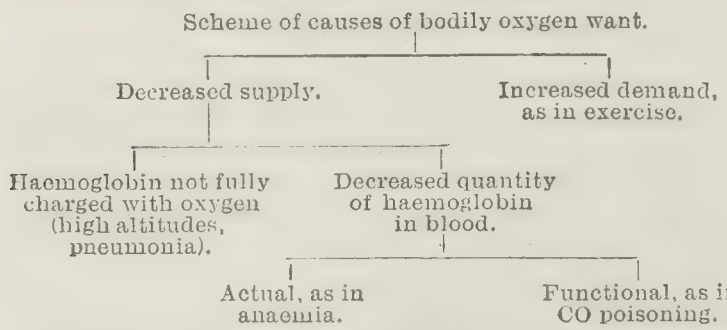
Oxygen Want Generally.

I must preface my discussion of these subjects by some remarks upon the general subject of oxygen want.

The whole or part of the body may suffer from oxygen want as a result of any one of a number of causes.

These causes group themselves under two main headings, just as the causes of want of money in the pocket may be classified according to the side of the ledger on which they are to be found. Impecuniosity may result from too lavish expenditure or too slender income, and is, of course, intensified when the two take place simultaneously. Oxygen want may similarly be the result of excessive demand or insufficient supply.

Scheme of causes of bodily oxygen want.



The most obvious and frequent cause of oxygen want is muscular exercise; its most immediate effect is the flooding of the system with carbonic acid. Gradually the carbonic acid in the blood gets replaced to some extent by lactic acid, so that there is an actual diminution of the pressure of carbonic acid, though the combined effect of the two acids—carbonic and lactic—is sufficient to make the blood less alkaline than before; or, in other words, to increase its hydrogen ion concentration. This change in the acid direction causes breathlessness. Probably essentially the same changes in the blood take place from muscular oxygen want caused in any other way. Thus we may take lactic acid in the blood and urine in excessive quantities as the index of this condition.

The Reaction of the Blood at High Altitudes.

The observations of which I am about to speak were carried out in two localities—the island of Teneriffe and the mountain of Monte Rosa; in the former case the sea-level control observations were made at Orotava, and these were checked at Cambridge, Oxford, and Berlin; whilst in the latter case the party did control experiments in the ancient and historic University of Pisa, and checked these at Carlingford. I cannot let slip this opportunity of expressing my thanks to Professors Pannwitz and Zuntz for the remarkable facilities and unfailing goodness which they showed us in Teneriffe and Berlin; for the like courtesy extended to us by Professor Aducco and Dr. (now Professor) Camis at Pisa; and by Professor Agazzotti in the Monte Rosa laboratories.

The changes which we sought to investigate in these regions may be classified as follows:

(*a*) The alteration in carbonic acid in the air cells of the lung.
(*b*) The extent and nature of the increase of fixed acids in the blood.
(*c*) The change in reaction of the blood, consequent on a combination of changes (*a*) and (*b*). Our observations may be summed up as follows:*

(*a*) We confirmed the observations of previous observers[1] who had found a lowering of the alveolar carbonic acid, which, of course, is an index of a similar lowering of the carbonic acid pressure in the arterial blood, with which the alveolar air is in approximate equilibrium.

(*b*) We confirmed the observations of previous observers[2] who found in the blood an increase of fixed acids relatively to bases, and to this we added evidence of a negative but important nature with regard to the character of the acids in question.

The most careful observations made by Dr. Ryffel, of Guy's Hospital, who was detailed to carry out this part of the work, failed to show evidence of increased lactic acid commensurate with the total increase of fixed acid radicles. Both the blood and the urine were investigated at an altitude of 10,000 ft. and also at 15,000 ft., and at both situations was this the case; though the rise in lactic acid at the latter station was appreciable. Nor was he more successful in obtaining evidence of any other acid abnormal in kind—for example, β-oxybutyric or diacetic.

(*c*) As regards the ultimate change in the reaction of the blood, it is the balance of (*a*) and (*b*), the loss of CO_2 tending to make the blood more alkaline, the gain in fixed acids tending to make it more acid. The resultant is a trifling change in the acid direction, but sufficient to account for the degree of breathlessness which takes place.[3]

Quite recently a parallel series of observations has been published by Hasselbalch and Lindhard.[4] This is doubly valuable. (1) The experiments were done in Copenhagen, the mountain having been brought to that city in shape of a chamber in which the observer could live in a rarefied atmosphere which exerted any desired pressure of oxygen, thus showing that the changes observed by us were not caused by any accessory factor in the Alps, but were certainly due to low oxygen pressure. (2) By the very beautiful electrical methods which have been introduced by Hasselbalch, he came to precisely the same quantitative change in the reaction of the blood which we had observed by methods of a widely different character. The leading facts, therefore, do not rest on the work of any one observer or any one type of technique.

Having arrived, therefore, at a statement of the principal changes wrought in the blood by oxygen want not aggravated by exercise we are forced to ask, How are these brought about? Here again there is fortunately considerable unanimity. At the time of our Monte Rosa expedition a party consisting of Haldane, Douglas, Henderson, and Schneider were at Pike's Peak (14,000 ft.); their researches were primarily concerned with the respiratory exchange; they, however, verified the principal observations which I had made at Teneriffe and arrived at the same opinion as regards the cause, which we formulated at Col d'Oleu, namely, that the change in reaction of the blood was the work of the kidney. This view is founded partly on the exactness with which the kidney maintains the reaction of the blood under normal circumstances and partly on the absence of acids, such as lactic acid, which would be present if the system was being flooded by the products of oxygen want of other organs such as the muscles. We conceive, therefore, that at 10,000 ft. altitude, and even as low as 7,000 ft., the kidney, by a process of excretion of bases or retention of acids, reacts to oxygen want by increasing the hydrogen ion concentration of the blood.

The advantages which the body derives from this

* The detailed account of these experiments will be found in the *Phil. Trans.* of Royal Society, B, 206, p. 49. A less technical statement of them is given in *The Respiratory Function of the Blood*, Cambridge University Press, 1914, in which an account is also given of the methods employed and the principles on which these methods are based.

change are clear: the fall of carbonic acid in the pulmonary air cells means a relatively greater quantity of oxygen than would otherwise be the case. The change amounts to perhaps 12 mm. pressure. At the top of "the Peak" the adjustment which I have discussed means the difference between 48 and 60 mm. oxygen pressure in the air cells, and this is a great asset. Not only does oxygen enter the lung more easily, but it leaves the blood more quickly when the red corpuscles reach the kidney or any other destination. The whole process is, therefore, a true physiological adaptation. It is "making the best of a bad business." The body is not in so strong a position as it normally is at the usual barometric pressure, but it is in a stronger one than it would otherwise be at a pressure of 450 mm.

A Pathological Type of Dyspnoea.

My introduction to the pathological cases which I wish to bring to your notice was of the following kind: My friend, now also my colleague, Dr. Thomas Lewis, wrote to me of certain cases which he had from time to time. As he described them to me, their leading symptom was their breathlessness; this, however, was unaccompanied by vascular or pulmonary lesions adequate to explain completely the degree of dyspnoea present. In the most characteristic cases there is no cyanosis, whilst in others the cyanosis is relatively slight.* In two words, Dr. Lewis, finding no sufficient evidence of an actual lesion, asked whether I could find evidence of what I have already termed an adequate "chemical lesion."

I am presenting this matter to you in this way because I do not wish to involve myself at the outset in some such term as uraemic dyspnoea or cardiac or renal asthma. First let me deal with the facts, then I will say what I can about the phrases.

So far as the results are concerned, I need not go into very minute particulars; they would be a repetition of the picture I have already drawn. In the graver cases, of course, all the symptoms were much exaggerated. I will simply say, therefore, that the dyspnoea was often very urgent, and in some patients—but not in all—it was of the Cheyne-Stokes type; that the blood showed an appreciable addition of fixed acid; that this was accompanied by a fall in alveolar CO_2 pressure. But the fall in carbonic acid was not equivalent to the rise in fixed acids, and therefore the blood in the body became less alkaline in reaction.

I can best illustrate the point by a single case, that of M. P. I choose this case not because it was a grave one—quite the contrary—but because the patient got better; I will not say well. The grave cases proved fatal. This one, however, recovered sufficiently for the symptoms to pass off, and therefore we had the opportunity of testing the condition of this patient both with and without the symptoms.

Case 1.—M. P., aged 61, was seen on May 23rd, 1913, and showed the following symptoms: The heart was enlarged; no murmurs. The arteries were thickened. The urine contained albumin; no casts. Respiration was irregular, rate 30 to 40; there was orthopnoea; not much distress; nocturnal attacks. There was very slight cyanosis. Alveolar CO_2: 35 mm. The degree of acidosis in the blood was equivalent to 0.02 per cent. lactic acid. Quantity of oxygen with which 1 c.cm. of blood unites when exposed to 31 mm. O_2 pressure, and CO_2 as in the body: 0.094 c.cm.†

A month later (June 24th) the respiration was regular—rate 24; there was no orthopnoea, and the patient could walk without dyspnoea. There were no nocturnal attacks. There was still very slight cyanosis. There was no acidosis in the blood. Quantity of oxygen with which 1 c.cm. of blood unites when exposed to 31 mm. O_2 pressure, and CO_2 as in the body: 0.109 c.cm.†

As between May 23rd and 24th the blood in the former case was abnormally acid in reaction, there was increase in fixed acids, lowering of alveolar CO_2, and dyspnoea.

The contrast between this case and one of pure cardiac origin is shown in the following table. In the cardiac case there are *high* CO_2 presssure, no increase of fixed acids, and a slightly abnormal departure in reaction in the acid direction:

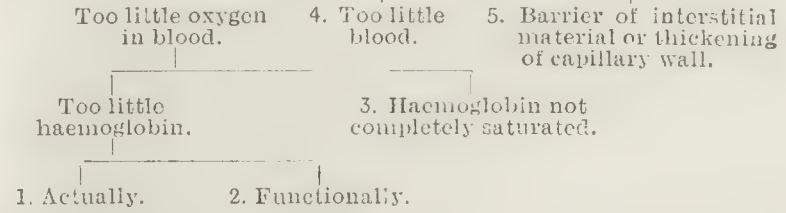
	Case 1. M.P.	Case 11.
Age	61	29
Heart	Enlarged; no murmurs	Much enlarged; mitral stenosis
Respiration	30 to 40	33
Urine	Albumin; no casts	Albumin; no casts
Cyanosis	Very slight	Deep
Alveolar CO_2	35 mm.	43 mm.
Degree of acidosis in blood	= 0.02 per cent. lactic acid	Nil
Reaction of blood to CO_2 at "proper" concentration	1 c.cm. blood at 31 mm. O_2 unites with 0.094 c.cm. O_2	1 c.cm. blood at 31 mm. O_2 unites with 0.097 c.cm. O_2

So far the chemical analogy between the cases of dyspnoea of unascertained origin and those of the mountain dweller is complete, but the analogy does not end at this point, for a systematic effort was made to discover the nature of the acid or acids involved. These tests again yielded negative results, there being no excess of lactic, diacetic, or β-oxybutyric acids present, and nothing to indicate excessive amino-acids in the blood. These matters formed the subject of investigation by Drs. Ryffel and Wolf, whilst the urea in the blood was tested in different ways by Dr. C. G. L. Wolf and Dr. Cotton. Only in the later phases of some cases was the amount of urea in the blood abnormally high, and then also lactic acid was sometimes in excess. I should here point out that definitely uraemic cases (in the sense of having excessive urea in the blood) were studied independently at Guy's Hospital by Ryffel and Poulton, their work linking up to our own at that point.

Since the "chemical lesion" in Lewis's cases was precisely the same in kind as the "physiological adaptation" to high altitudes, the question may reasonably be asked: Is not the underlying cause the same in both cases? If it be granted that the one is the result of oxygen want in the kidney cell, cannot the other be explained in the same way? *A priori* there is no difficulty in supposing that such was the case, for in all the cases which reached the *post-mortem* room there was this in common—considerable quantities of interstitial material existed. In other words, a barrier appeared between the blood vessels and the kidney cells. This interstitial substance often showed signs of containing many white corpuscles, which, like all nucleated structures, would tend to take their share of oxygen as it passed. Such a screen of material would decrease the rate at which oxygen could diffuse to the cells from the blood vessels, and would probably mean a lower pressure or concentration of oxygen in the cells, and would, from their point of view, be equivalent of too low a pressure of oxygen in the blood.

Perhaps the principal criticism which may be brought against my theory is that it is too comprehensive. Are there not numerous other conditions which cause want of oxygen in the kidney? Do they produce the symptoms of which I have been speaking?

The following table gives a rough idea of some of the ways in which the kidney cell may conceivably suffer from oxygen want:



If the terminal branches of this tree be labelled 1–5, the question arises, Do all five causes of oxygen want produce this particular chemical lesion? This matter has only partially been investigated. The type of case which has been investigated most completely from this point of view is pneumonia.[5] Here, for some time after the crisis, the symptoms which I have described are present. They abate gradually. Pneumonia, like exposure to rarefied air, falls into position 3. Moreover, positions 3 and 5 agree in that the failure essentially lies in the fact that the oxygen

* The read r is referred to Dr. Lewis's own description, *Heart*, vol. v, p. 45; also *Lectures on the Heart*, by Thomas Lewis, published by Hoeber, New York, 1915, p. 81.

† The normal quantity is 0.106–0.118 c.cm.; in proportion as the figure is below this the blood is abnormally acid.

reaches the cell at too low a *pressure*, and in this they perhaps differ to some extent from the, as yet, uninvestigated causes of oxygen want 1, 2, and 4.

CONCLUSION.

Let me now redeem my promise to say a word about nomenclature. If my argument proves anything, it proves that there is a type of dyspnoea to which the adjective "renal" may justly be applied. It is renal because this stimulus to the respiratory centre is the direct result of oxygen want in the kidney, the intermediary between the one and the other being the reaction of the blood. The degree of dyspnoea which will be produced by a given accomplishment on the part of the kidney will depend upon the irritability of the respiratory centre—for this, according to the admirable work both of Dr. Poulton[6] in this country and of Dr. Peabody[7] in America, seems capable of fluctuation in renal cases.

On the side of treatment there would seem to be a theoretical case for the consideration of oxygen, at all events when the patient is in great distress. That is to say, the distress might be alleviated whilst the patient was breathing the gas. The limitations of such treatment, however, are as great as the limitations of our present methods for the administration of the gas.

Such, then, is the last of my three comparisons; if, as I hope, it may contain something that is useful, a justification in practice would be found for the view on which the comparison is based—the view that in the "adaptations" of the body to special sets of circumstances there lies the germ of certain "chemical lesions," the view that the pathological is sometimes rather the exaggeration of the physiological than its antithesis.

REFERENCES.

[1] For literature see Haldane, Douglas Henderson, and Schneider, *Phil. Trans.*, B, vol. cciii, p. 310. [2] For literature see Barcroft, Camis, Mathison Roberts, and Ryffel, *Phil. Trans.*, B, vol. ccvi, p. 49. [3] Campbell, Douglas, Haldane, and Hobson, *Journal of Physiology*, xlvi, p. 316. [4] *Biochem. Zeitschr.* [5] *Quarterly Journal of Medicine* vol. viii, p. 97. [6] *Quarterly Journal of Medicine*, 1914. [7] *Archives of International Medicine*, August, 1914, pp. 236-262.

An Address

ON

WOUND INFECTIONS;

AND ON

SOME NEW METHODS FOR THE STUDY OF THE VARIOUS FACTORS WHICH COME INTO CONSIDERATION IN THEIR TREATMENT.

DELIVERED BEFORE THE ROYAL SOCIETY OF MEDICINE ON MARCH 30TH.

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(From the Research Laboratory attached to No. 13 General Hospital, Boulogne-sur-Mer.)

(*Concluded from p. 723.*)

TREATMENT BY VACCINE THERAPY.

I EMPHASIZED at the outset of this discourse that Treatment by Vaccine Therapy could take rank only as ancillary to Treatment by Physiological Methods. In *treatment by physiological methods* we take the antibacterial agencies of the patient just as they are, and do our best to bring them into more effective application on the infective microbes. In *vaccine therapy* we seek to reinforce those agencies. We endeavour to increase the bacteriotropic power of the blood, and to modify the chemiotropic sensibility of the leucocytes. And, now that we have come to appreciate its importance, we should seek to increase also the antitryptic power of the blood fluids.

Let us try to see how the case for vaccines and vaccine therapy stands—keeping always before us the great practical issue as to how much clinical benefit can in the particular case be secured for the patient, and arranging for the purposes of our survey the multifold applications of vaccines under six subheadings.

1. *Prophylactic Employment of Vaccines.*—This is not only from the theoretical point of view the best of all methods of employing vaccines, but it is also the method which gives in practice the maximum of advantage. We have only to look to the results obtained by prophylactic vaccination against small-pox, cholera, plague, and typhoid fever.

2. *Employment of Vaccines in the Treatment of Localized Bacterial Inroads.*—Next to prophylactic inoculations, this gives the best results. And the results, in the respect that they are almost immediately manifest to the eye, are even more dramatic than those of any preventive inoculation. Perhaps the most rapid and convincing results are those obtained by small doses of streptococcic vaccine in lymphangitis and erysipelas; by staphylococcic vaccine in furunculosis, when the boil is just beginning to develop; and by minimal doses of tuberculin in phlyctenular affections of the conjunctiva.

3. *Employment of Vaccines in Dealing with Unopened Abscesses and other Localized Infections where the Microbes cannot be Reached from the Blood Stream.*—Vaccines are here, so far as appears to clinical inspection, quite inoperative.

4. *Employment of Vaccines in the Treatment of Localized Infections Associated with Heavy Autoinoculations.*—The scientific application of vaccines in these cases is extremely difficult and laborious; and the results which are obtained—and those obtained in the treatment of developed phthisis by tuberculin supply a good example—are not very convincing.

5. *Employment of Vaccines in the Treatment of Undrained Wounds Infected by Sero-saprophytes.*—There is not yet a sufficient body of experience to decide the question as to whether benefit can be obtained from vaccines in these cases. The question will be further discussed below in connexion with the wound infections of the war.

6. *Employment of Vaccines in the Treatment of Septicaemic Infections, and in particular Streptococcic Septicaemias.*—Up to the present—except perhaps in certain series of experiments relating to typhoid fever—vaccines have on the whole given very disappointing results. But it will be obvious to consideration, that as we advance through the whole series of applications—from prophylactic application to the employment of vaccines in septicaemias, the conditions are becoming progressively more difficult; so that success in treatment of septicaemias, if it is ever achieved, will be the very final achievement of vaccine therapy.

We have now prepared the ground for considering what has been obtained by the use of vaccines in the treatment of wound infections in this war.

I have in connexion with this heard the opinion of a very distinguished French surgeon—pronounced after watching the effect of vaccines upon, I should think, undrained wounds and septicaemic infections—that they had never done any good. I shall, by my general survey above, at least have put you on your guard against generalizing from one class of cases to all other cases. Let us now take each class of case separately, and ask ourselves whether in this vaccines have rendered any service. I think we shall then see that things work out everywhere in accordance with scientific law.

1. *Prophylactic Inoculations of "Antisepsis Vaccines."*—If prophylactic inoculations of this kind have not been undertaken in our army, it has not been because a supply of antisepsis vaccines has not been at hand; but because the idea of undertaking such inoculations has not appealed to the individual medical officers who have given first aid to the wounded. And if any prophylactic inoculations have been undertaken, this can have been only on a very small scale; and the fact has not transpired. To be considered therefore here is only the question as to what we should on *a priori* grounds be justified in expecting from prophylactic inoculations against wound infections, undertaken upon the wounded. The answer is, I think, not doubtful. We might justifiably hope in a proportion of cases to sterilize the upper reaches of the wound, which would be less heavily implanted; and perhaps in isolated cases—those in which we have a comparatively light sowing of microbes — to sterilize the whole wound. Moreover, if we could employ vaccines in combination with *physiological drainage* (I mean by that: free outpouring of lymph obtained by the use of a lymphagogic solution) we might, I think, hope to stave off infection in

a fairly large proportion of cases. But—and I have already, though perhaps not emphatically enough, drawn your attention to this in connexion with prophylactic applications of antiseptics—it will, when we set out to sterilize a wound, nearly always be a question of achieving either all we want, or nothing. To leave behind, especially in the upper reaches of a wound, a few microbes, which immediately set to work and multiply, amounts, from the point of view of the future of the wound, to exactly the same as leaving behind alive the whole original population. If one really intends a war of extermination, there must be no remissions; and if our first effort with vaccines and physiological drainage fails, we must immediately follow up with further efforts.

2. *Employment of "Antisepsis Vaccines" in Cases where the Microbes make an Irruption into the Neighbouring Tissues.*—It is in connexion with projectile wounds not very uncommon to see the infecting microbes breaking bounds, and making an irruption into the neighbouring tissues. This will occur either in a wound which has not been laid open, or where the lymph flow has stanched, and the microbes have been imprisoned in an infiltrated wall. The bacterial irruption may follow the course of the lymphatics as a lymphangitis; or it may take the form of an erysipelas or cellulitis. In these forms of infection occurring in connexion with projectile wounds, vaccines give exactly the same dramatic effects as in the small wounds of civil life—the only difference being that when the irruption has been beaten back we have, in the case of projectile wounds, still the original focus of infection to deal with; and have, unless we improve the condition of the wound, always to be upon our guard against a renewal of the irruption.

3. *Employment of "Antisepsis Vaccines" in connexion with Well-Drained Wounds.*—When we have in a wound quite unobstructed mechanical drainage—such, for instance, as is provided by amputation without flaps—we have, from the point of view of the immunologist, conditions exactly parallel to those which obtain when microbes make a first irruption into healthy tissues. In other words, we have here—and probably also where we have good "physiological drainage"—brought to bear upon the microbes an ample force of phagocytes in conjunction with a rapid, percolating or outflowing, as the case may be, stream of lymph. As a consequence, vaccines give in these cases results which are so strikingly favourable as to arrest the attention of every beholder.

4. *Employment of "Antisepsis Vaccines" in Imperfectly Drained Wounds.*—An overwhelming proportion of projectile wounds which are under treatment in hospital would, regarded from the point of view of the mechanical conditions, come into the category of imperfectly drained wounds. And this is as it must be. The conservation of the wounded limb is clearly the first object of the surgeon; and the treatment of the bacterial infection is quite subordinate. For example, no one could ask that a leg which had been perforated by a bullet should be cut free from all its attachments to give better drainage to the infected track.

Now it might be legitimate to say that these undrained wounds were analogous to the unopened abscesses referred to above; were it not that this comparison would do much less than justice to the difficulties which confront the immunizator in the wound in which pus accumulates. Not only have we in the recesses and backwaters of such a wound conditions which make it impossible for the antibacterial agencies of the body to establish by their mass effect a position of superiority over the microbes; but we have in the corrupted discharges and the multiform bacterial growth which they harbour, obstacles to successful immunization such as are never encountered in an unopened abscess cavity. It is therefore not to be expected that we should in these cases see—and in point of fact we do not see—after the exhibition of vaccines any diminution in the pus which pours from the wound.

None the less we shall do well carefully to consider in connexion with the employment of vaccines in the treatment of imperfectly drained wounds certain questions. It is clearly a matter for consideration whether—despite the fact that the output of pus from the wound is not diminished—there may not be some useful clinical result from the vaccines. It is quite likely that there is such an effect; and that it takes the form of a "nibbling" at the infection in those parts of the wound lying above the ground level of the pus; a better entrenchment against the microbes; and behind this a massing of reserves which would be brought to bear if the microbes were to irrupt into the surrounding tissues. In short, it is not unreasonable to think that antisepsis vaccines might aid the surgeon in his conservative surgery, and might enable him to hold on longer when trying to save a limb.

Two further questions—questions which also cannot yet find answers—come up for consideration in this place. The one is the question whether it would not be possible in many cases to convert by physiological drainage an undrained, into a drained, wound, and then to obtain good results by the use of vaccines. The other is the question as to whether or no the bacteriotropic substances produced in response to antisepsis vaccines would come into operation upon sero-saprophytic microbes in corrupted discharges, and in lymph whose antitryptic power has been artificially diminished.

5. *Employment of "Antisepsis Vaccines" in Septicaemias supervening on Wound Infections.*—On this question there is nothing that can be usefully said other than that, until scientific knowledge has progressed much beyond where it is now, it might be well to act upon the suggestion made above with regard to the possible utility of antisepsis vaccines in staving off septicaemic infections.

We now at the end of our survey come to the summary. That summary would clearly be, that the results of the inoculation of "antisepsis vaccines" have conformed in everything to scientific expectation. Of the five possible applications of vaccine therapy, the *second* and the *third* have, according to anticipation, given strikingly favourable results. The *fourth* and the *fifth*—but perhaps certain reserves may be made in connexion with the *fourth*—have given, as anticipated, very unfavourable results. And that prophylactic employment of antisepsis vaccines, which has not yet been put to probation, would seem eminently deserving of an extended and careful trial, preferably in conjunction with physiological drainage.

EPILOGUE.

And now, except for a few concluding words, I have completed what I had to say. Up to this point we have considered only the scientific problems which confront us in wound infections. What we have now to consider is, how this, and similar researches, and all that new clinical experience which has been won in this war, can be made useful to the wounded.

This is a question of setting up machinery for directing and co-ordinating the work of the Medical Officers engaged in the treatment of the sick and wounded. And, I take it, on a question of that kind, the Medical Profession at home will have a voice, and, if unanimous, perhaps even have a deciding voice.

In order to enable you to judge what changes in the system would be required to give effect to the idea that Medical Officers should bring into application the latest lessons of experience and science, I will venture to remind you how the Medical Service of the Army is at present organized.

We have in the Army Medical Service, as it seems to me, three different and distinct services—a *Service of Administration*, a *Service of Hygiene and Sanitation*, and a *Service for the Treatment of the Sick and Wounded*.

The *Service of Administration*—and among the three services it comes easily first in order of importance—takes charge of the wounded man on the battlefield; conveys him first to the dressing station, field hospital, and clearing hospital, which are ranged one behind the other at the front; thence transports him in an ambulance train to the hospitals at the base; afterwards embarks him in a hospital ship; and, at the end of his journey, provides him with hospital accommodation at home. The Service of Administration has, further, to see to the feeding, clothing, bedding, nursing, and medical treatment of the man in hospital, and in transit; has to look after all manner of surgical and medical stores and equipment—besides providing in a thousand other ways for the proper working of the hospitals and hospital camps.

The *Service of Sanitation* has to protect the army against epidemic disease by attending to water supply, conservancy, and antityphoid inoculation. It has to keep a watchful eye on every case of infectious disease; to

detect carriers; to equip, and man, the bacteriological laboratories required for this purpose; and to intervene in ways too numerous to mention to prevent the dissemination of infection.

The duties in connexion with the aforesaid services devolve almost exclusively upon the permanent officers of the Royal Army Medical Service. Their work, as every one at the seat of war knows, has been quite marvellously well done. And what stands already very high in the esteem of all the world needs no more words of praise from me.

There remains the *Service for the Treatment of the Sick and Wounded.* After supplying all the multifarious duties just enumerated, there are very few Medical Officers of the permanent staff of the Royal Army Medical Corps left over. Hence nearly the whole care of the sick and wounded has fallen to the Civil Practitioners enlisted for temporary service with the Royal Army Medical Corps. For this, if for no other reason, it must be the special concern of the Civil Profession to do all that in it lies to help the Medical Staff of the Army to employ to the best advantage the Civil Practitioners now serving as Medical Officers in Military Hospitals.

What has been done in the way of regulating the work of these new-joined medical officers, has been to transplant practically unaltered into the military hospitals the organization under which medical practitioners work in civil life and in peace.

The treatment of the sick and wounded is committed, as it is in private and hospital practice at home, into the hands of individual practitioners, there being assigned to each a certain number of patients or a ward. And, just as at home, each medical man is in practically independent charge of his cases, and is free to follow whatever treatment appeals to him; so is it in the Military Hospitals. And just as at home the free exercise of private judgement carries with it an exclusive responsibility, saving only in those cases where a consultant is called in to advise; so also is it in the Military Hospitals.

Now, I submit that this unchartered freedom can work for good only in conditions such as those which surround us at home. At home, the practitioner finds himself practically always upon ground with which he is familiar. The cases which he deals with in his practice are similar to those he has seen treated in hospital. And if he should find himself upon unfamiliar ground he will, before he need take action, have time to inform himself. Moreover, though new science filters in slowly, it does filter in. And, finally, when the medical practitioner at home makes a new experiment in treatment, he—and this is the all-important point—does learn what results. He can therefore profit from the teachings of experience.

Now, the conditions in military hospitals abroad are quite different from these. The practitioner is there on quite unfamiliar ground. He has to confront unfamiliar problems—problems in connexion with projectile wounds and wound infections. He has to take immediate action. He has very little opportunity to find out what has happened in similar cases. And lastly—and you will see that upon this point everything pivots—he has very little opportunity of seeing the results of his work, and learning whether his treatment has been wrong or right. For the military hospitals in France, both at the front and also at the base, have now, through military necessity, become little more than clearing hospitals, from which cases, if at all fit to travel, are immediately sent forward upon their homeward journey.

There are thus lacking in the military hospitals in France all those provisos and safeguards which alone can make a system in which each medical man is a guide to himself successful. And carried out without those safeguards that system is unjust both to doctor and patient.

The doctor feels himself left in the lurch when he is not warned off from trying experiments in treatment which a hundred others have unsuccessfully tried. He fain looks for a lead where a successful treatment has been discovered. And, where there are a number of alternative treatments, he would be glad to see comparative experiments instituted to tell him which method is best. Nor is the doctor the only person interested. The patient, his relatives, and the whole nation would, once their thoughts were directed to the matter, feel that they had the vital interest in making the work of the medical officer as effective as possible.

If this is to be done it will, I believe, be necessary to make a fundamental change in the organization of the Medical Service—to break away from the principle of free arbitrament in treatment for the Medical Officer, and to provide that all treatment shall be regulated by orders and instructions.

These are, as you see, very big issues. It is a question of a conflict between our cherished professional tradition that every medical man must be quite unfettered in his choice of treatment; and the very foundation principle of the army, that every man shall work, not as he individually thinks best, but as part and parcel of a great machine.

The question as to which of these shall give way to the other must, of course, be decided by the balance of public advantage. And we cannot seriously doubt to which side that balance inclines. We have only to consider what has been achieved in this war by antityphoid inoculation, and the preventive injection of antitetanus serum, and to compare the brilliant results of these measures, carried out as they are by direct instructions from head quarters, with the results which would have been obtained if the carrying out of these measures had been committed to the individual arbitrament of medical men who had not had before the war any opportunity of convincing themselves by personal experience of the utility of either antitetanus or antityphoid inoculation.

If now, as we see is the case, considerations of public utility commend the control of treatment of the sick and wounded by orders and regulations, let me in conclusion very briefly consider with you how under such a system there might be obtained a maximum of advantage with a minimum of disadvantage. I shall, of course, indicate only in very broad outlines what would seem to me to be the requirements.

I believe there would require to be a Professional Head to the Service for the Treatment of the Sick and Wounded. He would, of course, be subordinated to the Director-General, and his duties would be to bring up the work of the medical officers everywhere to the highest standard, and to co-ordinate their work from hospital to hospital.

It would further, I think, be necessary to have an Advising Committee who should be charged with the duty of synopsizing the clinical experience won in the war; of finding out what results the various therapeutic procedures had given; and of drawing up on the basis of these inquiries general instructions and recommendations for the treatment of different categories of cases. On a Committee of this sort one would, of course, wish to see representatives of surgery, of medicine, of the various specialities, and of pathology and bacteriological science. But one would wish to see the membership restricted to those who were actually at work at the seat of war, and who were prepared to take full responsibility, and carefully to watch the working of the recommendations, and at any moment to revise them in the light of accumulating experience, or further laboratory experiments.

Finally, one would wish to see attached to such a committee a Research Department for the resolution of all bacteriological questions arising in connexion with hygiene, surgery, and medicine. And I may perhaps be allowed, in connexion with this last, to point out that the Medical Research Committee of the National Insurance Act, under whom I have the honour to serve as Director of Bacteriological Researches, has since the outbreak of the war been placing not only large funds but a carefully selected corps of skilled workers at disposal for the prosecution of researches directly contributory to the better treatment of the wounded. It is for you to see that the results, as they are obtained, shall be taken full advantage of.

THE British Fire Prevention Committee has, during the last ten years, made a series of reports, at the instance of Messrs. Pilkington Brothers of St. Helens, on the fire-resisting powers of wired glass as applied to windows and skylights. It has recently issued two additional reports: one of these shows that wired glazing, when used vertically in windows, has withstood temperatures gradually increasing to 1500° F. for ninety minutes, followed by the application of water from a steam fire engine at close range. When used horizontally in a skylight it has withstood a similar test in which the temperature reached 1600° F.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

EPILEPSY.

A YOUNG woman, over 20, who has had fits since she was about 2 years of age about once a week, burnt her hand. The burn seemed to have little effect on the fits. Under treatment they improved somewhat, but the interval remained about the same. Treatment of the burn was never altered and it progressed favourably. With the advent of influenza there came three fits a day. When the dullness over the lung cleared the fits assumed their old frequency. With a second attack there came a repetition of the three fits in twenty-four hours, and in less frequency with improvement.

Later an attack of mumps came, uncomplicated; and strange to say, although the fits were already overdue, there was no fit while the glands were enlarged. Perhaps some bacteriologist will cultivate the parotitis microbe and test the culture with epilepsy. Whether the influenza consolidation was due to pneumococcus or the influenza bacillus I cannot say.

The treatment for epilepsy was never altered, and no fresh treatment was adopted for the influenza or parotitis, except 5 gr. aspirin at bedtime after the second attack of influenza for a few days.

It is as difficult now as ever to distinguish disease from treatment!

London, W.C. J. REID.

HAEMATURIA COMPLICATING PREGNANCY.

THE rarity of this condition, as remarked upon by Sir Halliday Croom at the Brighton meeting of the British Medical Association and Dr. W. A. Caskie's report of a case in the JOURNAL of November 21st, 1914, prompt me to report another case.

Mrs. W., aged 30, in the ninth month of her fourth pregnancy, sent for me on February 24th, 1914. On the previous evening she observed that her urine was blood ved. On the morning of my visit she was suffering from scalding and frequency of micturition and a bearing-down pain. There was no other symptom. The urine was thick with blood, specific gravity 1020, neutral, and contained much albumin. Numerous blood corpuscles were seen in the sediment, but none of them as blood casts. There were a few pavement cells but no pus cells, nor any bacilli, tubercle or other. There was no tenderness of the urethra, of the base of the bladder, or of either kidney. Potassium citrate with belladonna and hyoscyamus was given and the discomfort disappeared in twenty-four hours, but the haematuria continued until ten days after her confinement, which was a normal one, and occurred three weeks later. The blood disappeared as suddenly as it came; the urine on the twelfth day was specific gravity 1016, acid, and free of abnormal constituent. My diagnosis was "pyelorrhagia haemorrhagica." The patient has continued to be in good health.

Wollongong, N.S.W. W. L. KIRKWOOD, M.B., Ch.B.

HERPES AND VARICELLA.

WHETHER there is a causal relationship between these diseases I am unable to affirm or deny. But I am convinced that herpes, like varicella, is a zymotic disease. It prevails chiefly in the summer and autumn. In the year 1913 I saw the following cases:

June 25th. A boy with herpes frontalis.

July 2nd. A lad with herpes over the right half of the abdomen midway between Poupart's ligament and the costal margin.

July 13th. An elderly man with herpes over the left half of the abdomen.

July 21st. A woman with herpes on the right lower abdomen.

August 2nd. A young woman with herpes around the left chest.

In June, 1914, I saw three cases of herpes within three weeks. Is not this the way that zymotic diseases assert themselves?

Exeter. J. A. W. PEREIRA.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

STAFFORDSHIRE BRANCH.

THE second general meeting of the session was held at Stafford on February 25th, when the President, Dr. JOHN RUSSELL, was in the chair.

Sex and Incidence of Children's Diseases.—Dr. JOHN PRIESTLEY explained the method of noting the ailments of school children in Staffordshire elementary schools, and referred to the precautions to be observed in drawing conclusions from statistics. When two sets of cases are compared, it was necessary to see that the same inspectors had worked to the same extent on both halves of the comparison. These conditions were fulfilled in the comparison of the relative incidence of diseases in boys and girls. He divided school ailments into groups: (1) in which boys and girls suffered equally, (2) in which boys always had a larger proportion of cases, (3) in which girls always had a larger proportion. In Class (1) the most interesting items were carious dentures, enlarged tonsils, and enlarged cervical glands, malnutrition, non-tuberculous catarrh of lungs. In Class (2) it appeared that boys always showed many more cases of mental and nervous defects—dullness, mental defect, stammering, epilepsy, paralysis, etc.—and more cases of mouth breathing. In Class (3) the diseases in which girls always had a preponderance were rheumatism, chorea, organic heart affections, defective vision, and nearly all simple eye affections, anaemia, pulmonary tuberculosis. The paper was based on the record of about 60,000 children, boys and girls in equal proportions. The paper was discussed by Messrs. DEANESLY and CARTER and Dr. KING ALCOCK, and Dr. PRIESTLEY replied.

Treatment of Malignant Disease by X Rays.—Dr. J. A. CODD read a paper on the treatment of malignant disease by *x* rays, which will be published.

Dinner.—The meeting was followed by a dinner, at which fifteen members were present.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

ANAESTHETIC SECTION.

AT a meeting on March 5th Dr. HAROLD LOW, President, in the chair, Dr. BLUMFELD, after referring to the previous discussion on the *Influence of preliminary narcotics on general anaesthesia*, four years ago, when the procedure was novel, said it was not a reasonable course of action to prescribe morphine and scopolamine for patients whom they had not seen beforehand. These remarks did not apply to atropine, which rendered convenient the free use of open ether. The advantages to be derived from the use of these narcotic drugs were, first, a quiet induction with a patient indifferent or asleep; secondly, a diminished consumption of anaesthetic; thirdly, diminution or absence of all deleterious after-effects. Scopolamine alone, or combined with morphine, was more potent, and gave great help in highly nervous individuals. Yet there were cases in which these drugs caused nausea or excitement. Again, these drugs, in his opinion, prolonged induction, and particularly delayed complete muscular relaxation. With regard to after-effects, the balance of evidence was in favour of the good results from scopolamine, with or without morphine. Sickness was sometimes delayed; more often it did not occur, or was slight. He preferred to use these drugs in highly nervous individuals, in all protracted nose and throat cases, and in all very muscular, plethoric, or alcoholic individuals. In the nose and throat cases a light degree of narcosis was possible with unabolished cough reflexes. Sir FREDERIC HEWITT said he had a high opinion of the use of preliminary narcotics, provided care and discretion were exercised. Whenever practicable, the anaesthetist should see his patient some time before the operation. Atropine was very valuable in preventing nasal and oral secretions. He had never seen any contraindications to

its use. He had of late become rather shy of scopolamine, except in cases where definite pre-anaesthetic stupor was indicated. Provided there were no contraindications, he was inclined to use morphine and atropine—$\frac{1}{4}$ grain for adult males, $\frac{1}{6}$ grain for women, with $\frac{1}{150}$ grain of atropine—practically before every operation. He preferred freshly prepared solutions to "tabloids." Morphine should not be given to patients suffering from respiratory difficulties, nor in throat, nose, and mouth operations in which bleeding was likely to occur unless a light anaesthesia was maintained. Dr. TATE was entirely in favour of the preliminary use of narcotics, either morphine and atropine alone or combined with hyoscine. Hyoscine was not advisable in old and feeble patients. Dr. JANE TURNBULL agreed with Dr. Blumfeld that the use of atropine alone was very satisfactory, and the use of morphine and atropine in operations on the nasal passages was of great value. Dr. MENNELL thought it must be generally allowed that scopolamine sometimes made difficult the complete relaxation in high abdominal cases. Mr. BOYLE said it was an important point that patient and anaesthetist should not be strangers on the morning of operation. He had found recently that a fairly strong dose of morphine and scopolamine with atropine had been of benefit during the induction of soldiers who, although outwardly calm, were one and all nervous. A great drawback was the intense thirst and dryness of the mouth. Dr. BARTON had practically adopted the administration of narcotics before anaesthesia as a routine method during the last three years. He thought solutions were better than "tabloids." Owing to the depression of the respiratory centre induction was slower than usual unless, as in his own practice, ethyl chloride were added to the chloroform or ether, or combinations of these agents, used for induction. Struggling was less marked. The best results during anaesthesia were obtained by a full dose of morphine and scopolamine—say gr. $\frac{1}{4}$ and gr. $\frac{1}{100}$ as a routine, with more morphine for strong, big men, with the subsequent use of the minimal dosage of open ether. He had practically given up strychnine or pituitrin saline infusion and artificial respiration. He deprecated the use of chloroform with narcotics. Dr. SHIPWAY said he was entirely in favour of preliminary narcotization whenever possible. He preferred morphine and atropine for the majority of cases, with the addition of scopolamine for very nervous patients. Small doses of morphine with atropine were an advantage in operations upon the nose, throat, and mouth. As regards after-results, patients made a better recovery if narcotics had been given. He thought that flatulence was not on the whole increased. Chloretone could be substituted for morphine in selected cases; he had found it useful sometimes for patients who had on previous occasions been much troubled by vomiting. The PRESIDENT said he was in favour of the use of morphine and atropine in skilled hands and in selected cases, but he was not so certain of scopolamine, the action of which was not always to be depended upon. Following the use of morphine and atropine, the patient was asleep or in a state of quietude, less anaesthetic was required, and post-anaesthetic sickness was rare.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

SCHOOL MEDICAL SERVICE.

AT a meeting of the School Medical Service Group of the Society of Medical Officers of Health held on April 10th the financial position of the past year was considered and officers were appointed. The reply of the council of the parent society to the petition of the group for the formation of a *School Medical Service Branch* was considered, and a resolution was passed with the object of improving the representation of the group on the council. A report, prepared by the National Union of Teachers and submitted by the British Medical Association, to regulate the work of medical officers in the schools, was considered, but on account of the disorganization caused by the war and the importance of the suggestions made, the report was postponed. The recent statement of Sir Alfred Keogh, Director-General, Army Medical Service, War Office, and the recent letter of the Board of Education as to the urgent need for medical officers, were considered, and it was unanimously resolved:

That the School Medical Service Group notices the grave appeal issued by the War Office for more medical officers, and urges members of the Service to respond to this appeal.

Members of the Service having any difficulty in obtaining leave of absence, or a substitute, should apply to the Hon. Secretary of Group, Dr. A. Ashkenny, 2, London Road, Basingstoke. A joint paper by Drs. C. W. HUTT and G. FINCH on *School medical service work and the British army* was read. The authors pointed out the relation of such work to the physique of the army.

Reviews.

CHRONIC INTESTINAL STASIS.

ELEVEN years have passed since Sir W. ARBUTHNOT LANE published in a book his views as to the part played by intestinal stasis in the production of chronic diseases. During that period they have been subject to criticism by many physicians and surgeons of repute, some of it hostile and sarcastic, and the treatment which they indicate has only been sparingly adopted. With the accumulation of experience in practice certain broad facts stand prominently forward, and a new edition of his former work on *Chronic Constipation* has been prepared by the author, who now adopts the title *The Operative Treatment of Chronic Intestinal Stasis*[1] as more fittingly descriptive of the condition he regards as the true source of so many obscure ailments.

The so-called third edition is practically a new work, and in it the author has given a clear exposition of the train of thought that led him to look to changes in the suspensory apparatus of the bowels in man for an explanation of the frequent occurrence of partial obstruction to the free passage of faeces through the intestines. He states how resistance to the natural tendency of the bowels to fall forward in the erect position is counteracted by the formation of lines of resistance in the mesentery, and how the bands and kinks are brought about which ultimately lead to partial constriction and delay of the passage through the large intestine. By comparing the manner in which the bones and joints display a power of adapting their chief lines of stress to meet the requirements of habitual occupations, such as shoemaking, coal-heaving, etc., he is able to explain the corresponding phenomena in the soft parts. A reprint of a paper written on this subject in 1887 is included in the book. The proposition enunciated by the author many years ago—that the large intestine should be regarded as a superfluous cesspool—has of late years found much support. The results of complete removal have been very convincing, and the details of many such cases will be found scattered through the present work. It is particularly advocated when a long and flabby mesentery is found in which no lines of resistance have appeared. Short-circuiting by union of the lower end of the ileum to the rectum has been used in very many cases, and throughout his practice Sir Arbuthnot Lane has kept the one object in view, namely, to provide a free effluent for the ileal residue. The catalogue of conditions which have been successfully relieved by such methods is somewhat astonishing, but operative measures are not always necessitated. The free use of liquid paraffin as a lubricant, elastic support to the abdomen, and careful abstinence from unsuitable protein food, have often relieved the condition of stasis when not too advanced. A kink at the duodeno-jejunal junction is stated to have been the cause of countless duodenal ulcers, and liquid paraffin alone has served to relieve them.

The author's views have received strong confirmation since the introduction of bismuth meals and constant observation by radiography. A short chapter by Dr. Jordan on this subject shows how these means may best be applied. The bacterio-chemistry of the small intestine is described in a separate section by Dr. Nathan Mutch.

That such serious operative procedures can be undertaken without risk, even in the most skilled hands, is not to be assumed, and they should not be attempted, except for the relief of conditions that have defied simpler means. The results recorded are of so striking a character that the

[1] *The Operative Treatment of Chronic Intestinal Stasis.* By Sir W. Arbuthnot Lane, Bt., M.S., F.R.C.S. Third edition. London: J. Nisbet and Co., Ltd. 1915. (Royal 8vo, pp. 210; 102 figures. 10s. 6d. net.)

immediate connexion between the disease and the intestinal stasis cannot be denied. To what extent the relief given has remained permanent, or in what proportion of cases further changes have arisen in consequence of the altered conditions within the abdomen, we are not in a position to state. A further publication of such results would add greatly to the value of the remarkable pioneer work with which Sir Arbuthnot Lane's name will always be associated.

OPERATIVE SURGERY.

THERE are so many excellent books on operative surgery within the reach of the practitioner and surgeon, that the issue of a new one can be justified only if some special claim for it can be made. In the preface of Professor EDWARD H. TAYLOR'S book, *Operative Surgery*,[2] we are told that it differs in certain respects from the ordinary treatise on the subject. In the first place the author has limited himself to the operative surgery of the head and neck, thorax and abdomen; and in the second he has described only such operations as he has found by personal experience to be most satisfactory, and such operations as he is accustomed to perform himself. The work naturally falls into three main sections devoted respectively to the three main branches of the subject. There is a preliminary section concerned with surgical technique. Surgical technique is now practically standardized, and not widely dissimilar methods of disinfection of hands, skin, instruments, preparation of dressings, personal and operating toilet are universally practised. Professor Taylor's methods are quite evidently those of every thorough modern surgeon; and the practitioner who follows his teaching will find himself always well within the safety zone. The third chapter on anaesthesia is concise and forcible. Many surgeons, however, will not agree with the dictum that "if chloroform were abolished, the advance of surgery would be hastened rather than retarded; chloroform should not be employed if a bottle of ether and a handkerchief are available." The Dublin school of surgery advocates strongly the general employment of ether, maintaining that the introduction of the open method of administration and intratracheal insufflation have made the position of ether practically unchallengable. With the Crile theories of anoci-association and his mode of conducting a shockless operation the author has comparatively little sympathy. He "cannot join whole-heartedly with him (Crile) in putting into practice conclusions of reasoning which is largely speculative."

In the description of operations a definite plan has been followed; a brief list of instruments required begins the story, and the successive stages are described from the first incision to the introduction of the stitches. These directions are given in lucid terse style with no waste of words. A notable feature of the book is the great wealth of original illustrations, certainly the finest both in artistic merit and anatomical accuracy of any work known to us in this country. These pictures are freely used to indicate the various steps of operations; they are the work of Mr. James T. Murray, and quite deserve the praise ungrudgingly bestowed by the author. Another notable feature of the book is the series of comments added at the end of each operation described. These contain many practical points, and are plainly a kind of device whereby the author can, so far as it is possible, communicate the benefits of his own experience to his readers.

It will thus be seen that the author's method is one which, while not dogmatic, is exceedingly suitable for teaching and for practising, and it leaves no opportunity for the reader's mind to become confused with multiplicity of operations, many of which are merely modifications of some older procedure, which any enterprising surgeon will adopt for himself and think no more of it. For example, in dealing with the subject on nephropexy, Albarrán's is the only operation described, and for cleft palate the old operation of Langenbeck only finds a place, though Brophy's method is mentioned, but only to be dismissed in a few lines. As Professor Taylor really aims at simplicity in description, so also in methods of examination we are relieved to find the same tendency. One example of this is his recommendation of the Luys's segregator rather than the ureteral catheter. We hesitate to point out what to us seem small clouds of fault where there is so great a brightness of excellence, but it may be worth while to notice that the dental burr which makes mastoid work infinitely easier and safer than the chisel is hardly mentioned, and in the picture illustrating Mitchell's haemorrhoid operation the ordinary transversely serrated forceps is shown rather than the long thin-blade forceps with longitudinal dovetailing, so much easier to slip out after the continuous suture has been applied. Then some surgeons may think that the question of iso- and anti-peristaltic disposition of the stomach and jejunum in posterior gastro-jejunostomy is too airily dismissed.

The book is very handsomely produced, and we have discovered only the most trifling typographical errors (page 267, tenth line from foot of page, and page 290, third line from top). On the whole, there can be no doubt that the Dublin surgical school is to be warmly congratulated on the production of a really splendid book.

[2] *Operative Surgery: The Head and Neck, the Thorax and Abdomen.* By E. H. Taylor, M.B., B.S.Dub. Univ., F.R.C.S.I. London: J. and A. Churchill. 1914. (Med. 4to, pp. 535; 300 figures from original drawings. 30s. net.)

NOTES ON BOOKS.

THE title *Field Hospital and Flying Column*[3] may give a false impression of the contents of the volume, for the field hospitals were stationary, and the flying columns were small parties of Red Cross nurses, but if it be understood to mean an account of nursing work as near the front as nurses can usefully be employed, then its selection will be justified. The authoress was sister-in-charge of a party of nurses sent out to Belgium, soon after the war broke out, by the St. John Ambulance Association to serve under the Belgian Red Cross. At first they were able to do a good deal of work under very trying conditions, chiefly in the neighbourhood of Charleroi, but as the grip on Belgium of the German bully tightened, they were gradually reduced to idleness, and were finally deported by a very roundabout route through Germany to Denmark, where they were most kindly and hospitably received. From there four of the party went to Russia, were sent to Warsaw, and eventually made members of a "flying column" consisting of the Russian head and his wife, two English and usually some Russian sisters, and an English surgeon, with Russian dressers and orderlies. A dressing station was opened in a school in Lodz during the bombardment; from it the wounded were evacuated to ambulance trains, and altogether, we are told, over 18,000 wounded were got out of Lodz in four days, proof of the remarkable efficiency of the Russian railway arrangements. The means of collecting the wounded from the field seem, however, to have been almost wholly improvised. High praise is given to the Russian nursing sisters, who are spoken of as Sisters of Mercy, but do not take vows; their course of training varies from two to three years, and includes dispensing. These trained women, however, were few, and the vast majority of those working in the military hospitals had had only a "war course" of two months. The book has been rather hastily put together, but we strongly recommend it as giving a graphic picture of nursing work in the immediate rear of the field of actual operations, and often under shell fire.

[3] *Field Hospital and Flying Column. Being the Journal of an English Nursing Sister in Belgium and France.* By Violetta Thurstan. London and New York: G. P. Putnam's Sons. 1915. (Cr. 8vo, pp. 191; 3 maps. 2s. 6d. net.)

MEDICINAL AND DIETETIC PREPARATIONS.

British-made Neo-salvarsan.

WE referred recently to the success which had been attained by Messrs. Burroughs Wellcome and Co. in the production of salvarsan and neo-salvarsan, and we have now received from that firm particulars of the form in which the latter is being supplied. The product is issued under the name of Neo-kharsivan, or Neo-kharsivan brand Salvarsan; it is put up in hermetically-sealed tubes containing doses of six strengths, namely, 0.15 gram, 0.3 gram, 0.45 gram, 0.6 gram, 0.75 gram, and 0.9 gram. At the present moment supplies are limited, but now that the difficulties of the manufacture have been fully surmounted the makers anticipate that they will shortly be able to supply the drug in sufficient quantities to meet the demand. Like the same firm's salvarsan, this neo-salvarsan is submitted to biological tests under arrangements approved by the Board of Trade, before being supplied for use.

THE DESTRUCTION OF FLY LARVAE IN HORSE MANURE.

MAJOR LELEAN, in one of the lectures of his course on military hygiene and the efficiency of the soldier, reported recently in the JOURNAL, said that experiments were being made in connexion with the present military operations by the application to manure heaps of 1 lb. of crude borax to every 15 cubic feet, and mentioned that kerosene and chloride of lime had been found too costly. Experiments with a large number of chemicals have been made by a scientific commission in the United States, containing representatives of the Bureaux of Chemistry, Entomology and Plant Industry, and the results were reported in Bulletin No. 118 of the United States Department of Agriculture published last July.

In the first place it is pointed out that stable manure is one of the most valuable fertilizers known, and is of such importance that experiments have been made to increase the economic value by chemically retarding the great loss in nitrogenous constituents from aërobic fermentation in the open. The data as to the development of the house-fly were discussed by Dr. Shipley in the JOURNAL of October 17th, 1914, when he showed that the times varied a good deal according to the temperature. Those taken by the American Commission were that the fly crawls an inch or so beneath the surface of the heap to lay its eggs, and that these hatch in a day; that the larval stage continues from four to five days, during which migration takes place to the sides in the direction of the base; that the pupae are to be found at the outer edges near the ground; and that the fly is matured in about ten days.

The manure experimented upon was placed both in specially constructed cages and in open piles on the ground, controls being established in all cases.

The cages were designed to treat 10 cubic feet of manure, to prevent escape of maggots or introduction of fresh contamination from outside, to allow drainage of superfluous liquid, and to secure the sole exit of flies into one of a pair of fly traps fixed to the top. This last was materially assisted by covering the sides with a black curtain at the period of maturing, so that the only light was admitted by the hole leading to the trap. The top could be moved for filling, and samples could be taken through a small door on one side. The manure in each series of experiments was taken from the same source, so that like samples could be placed in both experimental and control cages. The chemicals used were for the most part dissolved in 10 gallons of water, 2½ gallons being applied to each of four successive layers. An equal quantity of water was applied in like manner to the controls.

Although dead and living larval counts were taken with quart samples after a few days, the index of effectiveness was the difference in the total count of flies chloroformed in the traps during each experiment, this difference having to be well marked owing to there being no absolute security of equal infestation. To show the probable effect on fertilization properties, samples were taken at proper periods, with every precaution to ensure uniformity, for the purpose of bacterial counting and for chemical estimations of nitrogen, ammonia, amino-nitrogen, nitrates, nitrites, and reaction. The bacterial counts showed whether destruction or stimulation had taken place, and the chemical tests indicated whether valuable nitrogenous constituents had been diminished or increased.

The open pile experiments were carried out by treating 10 cubic feet of manure on each of four days, at the end of which period each heap measured 40 cubic feet. Eight or ten days after the last treatment the piles were searched for pupae and the numbers compared. Chemical and bacteriological examinations were also made in some cases.

Twenty-four different chemicals were tried in various concentrations, but only seven showed decided larvicidal action in the strengths used. In summarizing the results, the term "satisfactory" is used to indicate destructive action on fly larvae, non-injurious effect on manure, and lack of extremely poisonous properties. The "unsatisfactory" or "partially satisfactory" class includes some which have little or no larvicidal qualifications but may aid fertilization, some which require large amounts to be effective, and others which, though fulfilling the main purpose, either impoverish the manure, or have extremely poisonous properties. The latter class includes kerosene, kainit (potassium chloride and magnesium sulphate), Isthmian Canal Commission larvicide (prepared by heating carbolic acid, resin, and caustic soda, and highly effectual with mosquito larvae), iron sulphate, several proprietary disinfectants, potassium cyanide, formaldehyde, pyroligneous acid, common salt, copper sulphate, lime-sulphur mixture, Paris green, sodium fluoride, ammoniacal gas liquor, and calcium cyanamide. Further experiments are to be made with the last to find out if its known fertilizing properties will increase the value of the manure sufficiently to pay the cost of the large amount required to bring out its undoubted larvicidal properties.

The only chemicals which come under the "satisfactory" definition are borax and calcined colemanite, the latter being crude calcium borate, as mined in California, after subjection to a high temperature.

Of the two borates the ordinary commercial borax was found the most useful, owing to greater solubility, the smaller amount required for effective treatment, and its undoubted special toxic action on the eggs. That both borax and colemanite, however, are quite effectual in destroying larvae and pupae was shown by open pile experiments. Large numbers of black shrivelled pupae were found in some piles, and this excessive presence is explained either by cumulative action of the borates or the dosage being deferred until migration to the more saturated surface had taken place. That borates, when used with discretion, are not detrimental to the manure, but rather beneficial, was shown by the slight suppression of temperature in the piles, due it is thought to their preventing the growth of organisms which produce "firefanging," by the greater totals of bacteria found and by the increase in nitrogenous matter, extending even to the production of nitrites and nitrates, indicated by chemical analysis. In order to make certain of the effect of treated manure on plants, extensive experiments were carried out both in greenhouses and in the open. These showed that any detrimental action is due to overdosage, but that if the minimum effective larvicidal amount is adhered to, no injurious effects are produced. The proper proportion recommended in 0.62 lb. of borax to 10 cubic feet (8 bushels) of manure, which roughly means 1 oz. per cubic foot, and 0.75 lb. of colemanite to the same quantity, and it is suggested that manure so treated should be applied to land in a proportion limited to a safe one of 15 tons per acre, at any rate until more is known of the cumulative effect.

Powdered borax or colemanite should be applied by means of a flour dredger, in the proportions given, immediately the fresh manure is removed from the stable, and particular attention should be paid to the outer edges of the pile, for reasons already indicated. Two or three gallons of water are then sprinkled over the heap. This treatment is, of course, repeated with each addition of fresh manure. It should also be applied to floors and crevices in barns, stables, markets, etc., to street sweepings, and to domestic refuse heaps.

The concluding paragraph relates to the important question of cost, and is as follows:

> The amount of manure from a horse varies with the straw or other bedding used, but 12 or 15 bushels per week represent the approximate amount obtained. As borax costs from 5 to 6 cents per pound, in 100 lb. lots in Washington it will make the cost of treatment practically 1 cent per horse per day. And if calcined colemanite is purchased in large shipments the cost should be considerably less.

A previous paragraph mentions that calcined colemanite can be bought in large shipments at about 2 cents per pound.

POISONOUS GASES IN SUBMARINES.

A SURGEON R.N. has asked us where descriptions of symptoms of poisoning by carbon monoxide, petrol, and chlorine, can be found, with advice as to treatment of such accidents, which may occasionally arise in submarines. We have referred the question to Dr. F. J. Smith, who writes:

The three poisonous gases—chlorine, carbon monoxide, and petrol—are fairly discussed in the last edition of *Taylor's Medical Jurisprudence*, from which most of what

I have written for your correspondent's information has been taken, and to which I can add but little by way of general comment.

Summing the matter up, I would say that the danger of petrol is about equivalent to that of raw spirits of wine, both being the "essential article," and not mere dilutions. Chlorine is certainly very dangerous, owing to the suffocation produced by swelling of the mucous membrane of the air passages, for which there is little to be done; but there is not the rapid incapability of movement so frequently seen in the other two cases. Carbon monoxide is either rapidly fatal or of no consequence; but circumstances can be imagined in which the rapid unconsciousness might be of supreme moment, not only to the victim, but also to those who depend for their safety upon his activity.

Poisoning by Petrol.—Since the introduction of motor vehicles minor and even major attacks of this have become tolerably frequent. The symptoms in the minor cases are usually headache, soon followed by mental confusion and giddiness, not unlike the early symptoms of ordinary alcoholic intoxication, for which indeed many minor cases have been mistaken. With the giddiness there is an inability or disinclination to move. I cannot find any record of a fatal case, but a few are reported in which unconsciousness followed the giddiness. When the victim is returning from the unconscious condition he is apt to exhibit great irritability of temper and even to act somewhat violently if attempts are made to rouse him—another point of similarity between petrol poisoning and drunkenness.

As to treatment, there is little to be done beyond placing the victim in the fresh air and keeping the body as warm as circumstances will permit, thus allowing him as it were to "sleep it off." Warmth to the body is advisable as the loss of heat from the flushed skin may be serious.

Chlorine poisoning is not a common event outside chemical works. When chlorine is led into water, a certain small percentage of hydrochloric acid (HCl) is formed, as well as a simple solution of chlorine in water. The symptoms are due, first, to the irritating effects of simple chlorine as a gas on the bronchial mucous membrane; and, secondly, to the further intensely irritating, almost corroding, effect of the HCl. The symptoms are those of an acute laryngo-tracheo-bronchitis, intense fits of coughing, with their attendant asphyxial symptoms, amounting frequently to unconsciousness. These symptoms commonly grow worse and worse, till death ensues in twenty-four or forty-eight hours.

The victim must be, of course, at once removed from the gas, and then warm aqueous vapour is the best sedative; and, should the patient continue to live, the ordinary methods of treatment of acute bronchitis.

The symptoms of poisoning by CO in most cases may be said to be quite sudden unconsciousness without any preliminary manifestations, because, as a rule, the victim is suddenly exposed to a somewhat concentrated gas; the chief point about this unconsciousness is that the victim retains an exceptionally bright colour, due to the fact that COHb has a bright cherry-red tint, which, when seen through the skin, merely strikes the observer as a high colour. Unless aid is speedily rendered, this unconsciousness is very rapidly followed by death—so rapidly, indeed, that sudden unconsciousness and death constitute practically the whole picture. The records of cases of more gradual poisoning come chiefly from explorers in coal mines after an explosion who have met with the gas as the principal part of "after-damp." In these cases the symptoms described are those mainly of buzzing in the head and throbbing in the neck, coupled with the very important symptom of great muscular weakness (preventing or hindering escape), mental activity with confusion, and difficulty of connected attention. This stage may last, perhaps, a few minutes, during which the weakness increases, and then, if nothing is done, insensibility supervenes as in the sudden cases. In the air that is being respired a percentage of 0.17 is highly dangerous, and of 1 almost inevitably fatal.

The essential treatment is removal to fresh air (this at times seems for a moment to increase the symptoms), where artificial respiration should be performed. Strychnine hypodermically, or oxygen inhalations with a mask, should be tried in addition; the trouble is that COHb is a very stable compound dissociated with difficulty.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee thirty-nine cases were considered, and grants voted to thirty-five of the applicants. The following is a summary of the cases relieved:

Daughter, aged 59, of M.R.C.S.Eng. who practised at Long Sutton. Had worked as governess and housekeeper for many years, but owing to recent death of employer is now out of employment. Only income an investment bringing in £5 per annum, and age against obtaining fresh situation. Voted £12 in twelve instalments.

Daughter, aged 45, of M.R.C.S.Eng. who practised at Burgh-le-Marsh. Lives with mother, who has only a very small income. Applicant earned living as a teacher of music until the war commenced, but practically all her pupils have now given up. Voted £10, and referred to the Professional Classes War Relief Council.

Widow, aged 40, of M.B., Ch.M.Aberd. who died in 1914, and who practised at Manchester. Applicant left with seven children, aged 3 to 14 years; one son suffering from spinal disease. Only income a little from the sale of the practice. Requires help for the education of the children. Voted £5, and referred to the Guild.

Daughter, aged 57, of M.D. who practised at Kirkdale. Had earned a living at dressmaking until health became bad. Rent is paid by friends, but no income at present. Voted £12, in twelve instalments.

Widow, aged 44, of M.B., C.M.Glas., who practised at Lenton, and died in 1914 after a long illness, and was unable to provide for his widow. Earns a little as collector for a society, but not sufficient to keep her. Two children, 10 and 12. Voted £10 in two instalments.

Wife, aged 53, of M.R.C.S.Eng. who practised at Retford, but is now totally incapacitated from work, and is in a home. One son, who is being educated by a relative. Only certain income £8 per annum. Voted £5, with leave to apply again, and referred to the Guild for report.

Daughter, aged 68, of L.S.A. who practised at Christchurch. Has earned a living as an artist, but, owing to failing eyesight, unable to follow her profession, and unable to sell the few pictures she has on hand. Voted £18 in twelve instalments.

Widow, aged 42, of L.S.A. who died this year and had practised at Padstow. Husband was ill with general paralysis for four years before death. Has tried to keep her home together for some time by taking in boarders, but had none since the war commenced. One daughter, who is being educated at St. Ann's School. Voted £10.

Daughter, aged 33, of M.R.C.S.Eng. who practised at Whitechapel; lives with mother, who has an Epsom pension. Applicant worked in one situation for many years, but has been discharged owing to the war. Wants help to be trained as midwife. Training to be provided free, but outfit required. Appointment promised at end of training. Voted £12 through the Guild.

Daughter, aged 60, of M.R.C.S.Eng. who practised at Leeds. Applicant lives with her mother, who is a confirmed invalid. Lost all her capital in the Franklin frauds. Only income about £6 10s. per annum, and help from the Guild and the Fund. Previous help three times, £36. Voted £12 in twelve instalments.

Daughter, aged 53, of M.R.C.S.Eng. who practised at Rickmansworth. Suffering from arthritis and fibrosis. Only income £39 per annum from a relative. Quite unable to work. Relieved twice, £20. Voted £10 in two instalments.

Daughter, aged 58, of M.R.C.S.Eng. who practised at Peckham. Health very bad indeed. Only income £19 per annum from a sister. Relieved seventeen times, £197. Voted £12 in twelve instalments.

Widow, aged 59, of M.R.C.S.Eng. who practised at Maida Vale. Was left entirely without means, and suffering from chronic rheumatism and weak heart. Relieved twelve times, £118. Voted £15 in twelve instalments.

Daughter, aged 68, of M.R.C.S.Eng. who practised at Cranbrook. Very delicate and requires some one to look after her. Has an annuity from another benevolent fund, but not sufficient to maintain herself. Relieved sixteen times, £168. Voted £12 in twelve instalments.

(To be continued.)

The grants made at this meeting involve the Fund in an expenditure of £365 10s., to meet which there is only an available balance of £49. The claims on the Fund arising out of the war are increasing month by month, but the resources show a decrease. Immediate support is essential unless the reserves are to be seriously depleted. Subscriptions may be sent to the Hon. Treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

The Royal Medical Benevolent Fund Guild appeals for gifts of secondhand clothing, boots, and shoes in good condition, also household linen. The gifts should be sent to the Secretary, Royal Medical Benevolent Fund Guild, 43, Bolsover Street, W.

British Medical Journal.

SATURDAY, MAY 1ST, 1915.

A MEDICAL HISTORY OF THE WAR.

WE published last week an official intimation that it was intended to compile an adequate medical history of the present war, and that a committee had been appointed "to consider the lines upon which the history should be laid down." The committee is composed of military and civilian members in almost equal proportions, and is constituted in six subdivisions. It was announced in the addendum to the scheme of the Medical Research Committee, published last December, that the Army Council had approved of a proposal whereby the whole of the work of dealing with the statistical records of the war would be undertaken by the statistical staff of that committee, and it will be observed that Dr. W. M. Fletcher, the Secretary of the Medical Research Committee, is a member of the Historical and Secretarial Section for the medical history of the war, and Dr. John Brownlee, head of the statistical department of the Medical Research Committee, of the Statistical Section of that committee. The present scheme seems to go much further than that outlined in the earlier statement of the Medical Research Committee, inasmuch as it contemplates a complete history of the war, which, of course, would mean a good deal more than the accumulation and analysis of statistics. Indeed, the official information published last week appears to contain the suggestion that the best results of the varied experience now being gained should be reserved for publication in the medical history. This view seems to us to be far too academic—at least, so far as concerns clinical matters. During the last nine months valuable experience has been gained by surgeons and bacteriologists, much of which is immediately applicable to conditions which now exist, or must be expected to arise in the near future. This experience ought, during the currency of the war, to be placed at the disposal of all surgeons who may be in any way engaged in the treatment of wounded and sick men.

It would not be easy to overrate the importance of the work which the committee has been appointed to organize. Of the difficulty of the task there can be no doubt, for, if we consider the clinical data alone, it is evident that their proper collection and classification will involve an enormous amount of work; yet it is well worth while to undertake it, for the data so obtained will provide a harvest of experience which should profoundly affect all future teachings. If this is to come about, however, it will be necessary for medical officers of all grades now engaged in clinical work for the army in the field, or in the hospitals at home, to keep the records accurately and systematically. The task of making adequate notes during a busy day is often irksome, but the knowledge that good use will be made of them will be an encouragement to carry out the daily task conscientiously and thoroughly. It must be recognized, however, that the compilers of the medical history will have to overcome very formidable difficulties, and the work of organization cannot be too soon taken in hand. In the first place, it usually happens that a large number of cases are received even at the base hospitals at about the same time, and it may often be difficult for the staffs to provide such full and exact reports as are necessary for the purposes of the scientific historian. In the second place, owing to the fact that the wounded are evacuated as rapidly as possible from the field ambulances to the base hospitals in France or at home, it is impossible for the whole course of a case to be watched by the same person. It will therefore be necessary for the committee to organize special machinery to secure continuous records, and, for the encouragement of those who have to make the detached entries, to let it be widely known that such a system exists. We have no doubt that the members of the committee fully recognize the necessity of devising some co-ordinating system to secure such a continuous record, but we believe that it will be found impossible to achieve this end without the assistance of a staff specially trained for the purpose.

From the point of view of the sanitarian, the war constitutes an enormous physiological and pathological experiment—an experiment which we may hope will never again be repeated. We have millions of men, differing, within fairly wide limits, as to age and physique, and, within still wider limits, with respect to previous habits of life, exposed to diverse physical and climatological conditions. Without approaching the firing line at all, data for the study of, for instance, the physiology of metabolism and the effects of different methods of housing, clothing, and physical exercise, could be accumulated which would help to solve problems of moment and give valuable hints to the civilian expert. When we come to the firing line, similar problems suggest themselves, complicated there by factors of strain and nervous exhaustion, not to speak of such special difficulties associated with active service as the minor horrors of war, of which Dr. Shipley has been giving so interesting an account, and which in themselves afford a field for combined research work.

Again, the epidemiology of a war conducted in temperate, subtropical, and tropical climes should yield data which may put an end to controversies of long standing, and great care will have to be exercised in collecting and analysing the epidemiological data. Here the value of immunizing processes will come under consideration, and it will be important to secure accurate statistical data. Mere numbers of inoculated and uninoculated men, and their respective mortality or morbidity rates, would be inadequate for any final summing up. We shall require to know the length and conditions of exposure to possible infection and other relevant details. Such information must be obtained while the events are recent; it cannot be added later on. All students of epidemiology can point to lacunae in published reports of epidemics which might have been filled up once, but by efflux of time have become irremediable. The recorders of the epidemiological history ought in fact to err rather on the side of giving too many details, even though they may seem irrelevant at the moment, than too few; the history will not be for the general reader but for the instruction of scientific men; its aim should be to provide materials for the deduction of laws rather than to formulate the laws themselves. The committee, we suspect, will have to draw largely upon its own resources of energy and personnel even when dealing with medical aspects of the war which have a direct and immediate relation to the health and efficiency of the troops, and are therefore under the eye of the active medical staff. When it comes to consider, as we hope it will, the more remote but not less important and far-reaching causes which

make for physical efficiency, it will have to depend even more largely upon what it can directly supervise, for medical officers working at high pressure can hardly be expected to furnish physiological or anthropological data which shall be scientifically exact.

A careful study of the hygienic conditions of the new armies, the effects of transferring men from canvas to huts, the incidence of disease upon men under such different environmental conditions, are all matters which should be investigated and the facts placed on record. This part of the medical history of the war will be less dramatic than an account of the triumphs or failures of military surgery, but it will not be of less value to the student of disease. It appears to us that the committee will have to proceed somewhat on the lines of such bodies as the Royal Commission on Historical Monuments, and train a staff of subordinate investigators who will, under their supervision, compile data on a uniform system carefully thought out.

Though the work of organization will not be easy, we have confidence that the eminent men who constitute the committee will do their utmost to achieve success, and are under no illusions either as to the difficulties of their task or its supreme importance. We owe it to posterity that the efforts and sacrifices of the struggle in which we are engaged shall yield commensurate results not only in the sphere of politics but in that of scientific truth. Nothing will conduce more to the attainment of the latter object than the provision of such a work as the comm ttee has in view.

THE NURSING EMERGENCY.

THE nursing profession, like the medical, has responded splendidly to the call of the country in this war, and a very large number of nurses are working in the military hospitals in this country and abroad. There is no shortage of nurses just at present, but there will be later on, when all the new hospitals have been started and the number of beds in the Territorial hospitals doubled and more than doubled. So far the work of the civil hospitals and nursing institutions from which they have been taken has not, we believe, been seriously hindered. A great debt of gratitude is due to these institutions for the way they have met the needs of the army by releasing the nurses. The largest number of nurses employed belong to the Territorial Force Nursing Service, and are serving in the Territorial general hospitals. There are over 3,000 serving now. The majority of these were enrolled before the war commenced, and were mobilized directly war was declared. As every one knows, the Territorial general hospitals are not being used for the Territorial Army only, but have received the wounded brought home from any units of the force abroad, and will continue to be so used. This is the meaning of the great extensions now being carried out. There are twenty-three Territorial general hospitals in different centres in England, Wales, and Scotland. When mobilized at the outbreak of war each contained 520 beds; they are now being increased to 1,000, 2,000, and even up to 3,000 beds. In addition to these hospitals, there are all the auxiliary hospitals organized or in process of organization at home. The regular military hospitals, which are also being largely extended, and all the many hospitals abroad, are nursed by members of the regular army nursing service and the reserve of nurses, but 276 Territorial nurses also have been sent abroad. All these nurses are fully-trained certificated women.

The question of providing adequate nursing for the increased number of hospitals which are now being provided is a very serious one, for it will not be possible to release very many more nurses from civil institutions. It is realized on all hands that the adequate nursing of the soldiers is of paramount importance. It does not mean only the alleviation of suffering, but also the quicker return to duty of the men of the fighting force, and everything during this summer depends upon the strength of our army. This is, of course, fully recognized by nurses, and a most generous response is being made to the call for more trained nurses, but even when all have joined who can be spared there will not be a sufficient number to supply the needs of the hospitals under the original system. It has therefore been decided that probationers shall be employed. These probationers are to be specially selected members of the Voluntary Aid Detachments of the British Red Cross Society and the Order of St. John, or, in some instances, probationers who are commencing their training, or who have already had some experience in civil hospitals. They will work entirely under trained nurses, and it is anticipated that they will be of the greatest assistance in the hospitals to which wounded and sick are admitted. They will release the trained nurses from a good deal of the routine work of the wards, and it will then be possible to expand the trained personnel of these hospitals to meet the enlargements. There is at present a larger proportion of trained nurses in the military hospitals than is considered necessary in civil institutions, and even when this change has been made the proportion will still be greater, so that the high standard of nursing will continue. The members of the nursing staff are quite prepared to assist the new probationers in every way they can, so that the benefit will be mutual. It is probable that a good many of these members of the Voluntary Aid Detachments will take up regular nursing afterwards, and their training as probationers in the military hospitals will be of great service to them.

Even with the help which will be given in this way every fully trained nurse who can possibly be spared will be wanted, and no nurse should be recalled to civil duty, nor should any be prevented joining the army at this great crisis of our history. The self-denying devotion of the nurses to their country should be realized, and their posts should be kept open for all those who are working in the military hospitals. In some cases nurses of all ranks are serving at a great loss to themselves, but this they gladly suffer, knowing that they are doing a noble work and that the need for their services is very great.

THE MENTAL TREATMENT BILL.

THE motive which caused the Home Office to bring forward the Mental Treatment Bill, the full text of which will be found at p. 777, is one which ought to assure it of support. The desire is to minimize as far as may be the unhappy consequences which, without some such legislation, would follow mental disorder arising from the present war. The Memorandum prefixed to the bill shows that the Home Office has an eye to certain Scottish legislation which has worked well for many years. Provision is therein made for the detention and treatment of particular cases which appear to be of a temporary nature, without the previous certification prescribed for ordinary cases, and for years past expert opinion, official and other, has been

calling for a similar measure in England. It was only to be expected that any such proposal would meet with opposition from those who, putting out of sight the curative effects of treatment which in itself necessitates detention, habitually neglect to recognize the true inwardness of "liberty." In their eyes it is wiser to preserve the liberty of the insane than to take steps to prevent the person from becoming permanently insane. It is to be hoped that, in spite of present indications, such unreason may be overborne by a sense of justice and gratitude to those who have ungrudgingly placed themselves, body and mind, at the service of their country in its hour of need.

There is, we fear, a risk that the actual terms of the bill will be found insufficient owing to lack of precision. The Memorandum speaks of the acceptance of proper treatment by the sufferer, and this would imply some measure of voluntary choice. It speaks also of assimilation with the Scottish Act, but the latter clearly permits detention against the individual's will. In England the law (Lunacy Act, 1890, Section 315) at present provides that "every person who, except under the provisions of this Act, receives or detains a lunatic, or alleged lunatic, in an institution for lunatics, or for payment takes charge of, receives to board or lodge, or detains a lunatic or alleged lunatic in an unlicensed house, shall be guilty of a misdemeanour," etc. If the bill be passed as it stands, penalties would continue for detention. It will be impossible to attempt to read into "taking charge of" a power to detain, as might be justified by the ordinary use of the term, since the two terms are here used differentially. The same section goes on to impose similar penalties for the reception of more than one lunatic in a house, unless duly authorized elsewhere in the Act. It is obvious that this provision, unless repealed, would militate against the success of the bill. Again, though evidently the intention is to legislate for the results of the war, and the operation of the bill is to be limited to the duration of the war and six months thereafter, it could, as it stands, be applied to all cases, whether arising out of the war or not.

We wish to make it clear that these criticisms are not directed against the object of the bill; on the contrary, we should like to see it strengthened and, after suitable amendment, made permanent and general in its application. Legislation by negation is always full of risks. Lunacy law, no doubt quite rightly, is rigid, and it has been so carefully pieced together that it is practically impossible to alter it successfully without fresh direct provisions. A good deal of work has already been done on proposals for greater liberality in treating temporary insanity, but they still await enactment. The Scottish Act affords a model proved to work well, and we do not quite see why it should not be adopted as it stands instead of drafting a bill on fresh lines.

In any case we trust that the task of treating mental disorder arising out of war will be confided to experts, for problems arising in the study of these cases and their appropriate treatment can be followed up successfully only by those who have had long experience in treating insanity.

From one point of view insanity may be regarded as due to the individual's mental stability and powers of resistance to external agencies being overwhelmed by those agencies. As a very general rule the individual presents some antecedent peculiarities, whether physical or mental, which make him less able than the normal man to resist the stress when it comes. The less the inherent power of resistance to stress, the less stress will be required to cause disaster. How is it with our truly admirable combatants? Physically, they are mostly picked men, the weaker having been rigorously eliminated. Since selection their condition has been sedulously improved by hard work in the open air, by continuous occupation, and, above all, by excellent food. Even privations arising from inclement weather have helped to make them more capable of bearing stress when it comes. Mentally, we cannot but pay regard to the universal recognition by experienced authorities of their persistent cheerfulness, their heroism, their splendid *moral*. This is not the ordinary soil in which insanity grows. But we hear of the terrible stresses, of "those dreadful guns," of the long-continued trench work involving alarms and exposure, and we may wonder how many could come through without harm to either body or mind. We must at least admit that those breakdowns which do occur happen in circumstances very different from those of ordinary life. The war sufferers have the great advantage of good antecedent health to help them through their trouble, and the etiology is so clear-cut that little account need be taken of those subtle factors which so often elude search and militate, unrecognized, against recovery. These and other considerations encourage the belief that the great bulk of insanity arising out of the war will prove to be temporary and eminently susceptible of recovery; further, we may hope that, for the same reason, the probability of recurrence in the future will be much less than in ordinary insanity.

If these conclusions are sound, as we believe them to be, it results that new psychiatric conditions have arisen which require different treatment from that which is usual, and will justify any step that can be suggested in that behalf. The proposal of the Home Office is one that is absolutely justified. Above all, these unfortunates should be spared that pain and despair for the future, which must follow recognition as lunatics, with just the same environment as is accorded, say, to a fellow who has drunk himself under lunacy law. We would indeed go further, and deprecate the application of the term "insane" to them; rather should they be regarded and spoken of as mentally war wounded; they are verily instances of trauma.

THE WAR EMERGENCY.

THE War Emergency was considered at some length at the meeting of the Council of the British Medical Association on April 28th. The Council, like the Chairmen of Committees Committee, was fully convinced that the emergency was very great, and authorized the Committee to approach the Government with a view of arranging suitable terms and conditions of service which would allow of the large number of civilian medical practitioners required immediately placing their services at the disposal of the War Office. During the past week meetings have been held in several Divisions in the area of the Metropolitan Counties Branch at which medical officers from the head quarters of the London District Command attended, and also in many cases representatives of the War Emergency Committee of the Branch Council. While the importance of obtaining a supply of whole-time medical men for service with the battalions was generally recognized, it was found that the chief difficulty experienced by men under 40, otherwise willing to serve, was that no provision has been made as yet by the authorities for enabling a man who has surrendered his livelihood in order to serve his country to re-establish himself in practice. At the

meeting of the Council of the Association the opinion was expressed that the Government should itself take action to guarantee, not only proper salaries, but reasonable compensation for disturbance. A sum of £1,000 was placed at the disposal of the Chairmen of Committees Committee for the purpose of defraying any expense in connexion with steps which the Association will take to bring the matter fully to the notice of the profession and of the Government.

TYPHOID AND PARATYPHOID INOCULATION.

IN his paper containing further remarks on the mixed typhoid + paratyphoid A + paratyphoid B vaccine, Dr. Castellani again draws attention to the importance of associating the two paratyphoid strains with the typhoid vaccine. The objection usually raised against the use of such a mixed vaccine, that it will probably give a much smaller amount of immunization than a simple typhoid vaccine, has not been supported by his experiments. It certainly has to be considered whether some of the cases of so-called enteric which have occurred amongst inoculated men may not have been examples of one or other of the varieties of paratyphoid. This of course is important, because such cases are apt to throw disrepute upon the enteric inoculation as a whole. The preparation of the mixed vaccine apparently is no more difficult than that of the typhoid alone, and, according to Dr. Castellani, it gives no severer reaction than simple typhoid vaccine, and the patient is protected against the three diseases. In the BRITISH MEDICAL JOURNAL of February 27th, in an article on typhoid fever, it was pointed out that between 50 per cent. and 60 per cent. of cases eventually proved to be typhoid were due to the *B. typhosus*, while the active organism in the rest has been more commonly paratyphoid B than paratyphoid A. Not only have these cases been diagnosed clinically, but careful laboratory methods have been applied to them as well. The whole question is being very thoroughly dealt with at Wimereux now, and the authorities will no doubt read Castellani's paper with interest, and will thoroughly consider the advisability of adopting this mixed vaccine for the benefit of the troops.

A MODEST "HERBAL ESTABLISHMENT."

THE prejudice which some people appear to have in favour of drugs of a vegetable nature is freely exploited by those who call themselves herbalists. A handbill which has recently come before us shows how far some people will go in making most extravagant claims for their so-called herbal remedies. It may be remarked in passing that in the series of analyses which have appeared from time to time in these columns[1] various instances have occurred of medicines described as purely vegetable but found to contain mineral constituents. The handbill in question, which appears to have been distributed broadcast in South London, purports to come from the "South London Herbal Establishment and Botanic Stores, Wandsworth"; apparently the proprietor of this establishment, although selling herbal remedies, does not wish to be regarded as a herbalist, for it is stated in a note on the handbill, "We have only one address in or near London, and have no connexion with any herbalist, or so-called herbalist." The notice is headed "Patronised by the Nobility," and after the address it goes on "Health is offered to all. Lowry's Herbal Remedies for every Disease incident to the Human Race," which is a fairly comprehensive claim. The first article mentioned is "Lowry's Specific for Consumption, Asthma, Bronchitis, and all diseases of the Chest and Lungs. This is a very valuable discovery. Thousands have been restored to health by this remedy who have been given over to die." It will be remembered that the recommendations of the Parliamentary Committee on Patent Medicines included, among other proposals for legislation, "That the advertisement and sale (except the sale by a doctor's order) of medicines purported to cure the following diseases be prohibited: Cancer, consumption, lupus, deafness, diabetes, paralysis, fits, epilepsy, locomotor ataxy, Bright's disease, rupture (without operation or appliance)," and of the witnesses called by representatives of the manufacturers of proprietary medicines, all, or practically all, were agreed that the total prohibition of the advertising of medicines for cancer and consumption was desirable. The gem which shines brightest in the handbill is, perhaps, the claim that the proprietors of this "herbal establishment" make that they are "holders of the original recipe and only manufacturers of the historical and precious Spikenard Ointment, mentioned in St. Mark xiv, and other parts of the Scriptures. It is the only known remedy for Scrofula, Cancer, Ulcerated Wounds, Leprosy, and all Skin Diseases of long or short standing. Price 2s. 9d. per box." Various other medicines are mentioned, for which very extensive claims are made, as for example: "An infallible remedy for all diseases of the Liver and Kidneys"; "A safe and certain cure for all Female disorders"; "All who wish to be in possession of Health should consult us. We restore thousands yearly to health after all other remedies known to man have FAILED." This establishment evidently does not intend to miss any possible clients, for it is stated "Si Parla Italiano. On parle Français. Man spricht Deutsch. A Lady Herbalist can be seen by appointment if desired. Open on Sundays for the benefit of those who cannot come on other days." The restoring to health of thousands for whom all other remedies have failed apparently does not exhaust the beneficent activities of these philanthropists, for on the other side of the bill they proclaim: "Good News for all those who wish to have Beautiful Hair"; the good news is that "They should at once apply for Lowry's Natural or Pure Botanic Hair Restorer and Tonic." Altogether, about a dozen preparations are advertised on this handbill, the general tone of which seems to imply a belief that the recipients of the circular were persons endowed with a high degree of credulity.

[1] *Secret Remedies: What they Cost and What they Contain*; and *More Secret Remedies: What they Cost and What they Contain*. London: British Medical Association, 429, Strand, W.C. (Price 1s. each; postage, 3d. each.)

BLINDED SOLDIERS AND SAILORS.

ONE of the greatest hindrances to the efficient working of charitable enterprises in times of peace is the rivalry between different institutions. In time of war, when public sentiment is deeply stirred and the mass of suffering to be relieved is increased to an incalculable extent, this difficulty becomes much more acute, for in addition to established institutions new organizations spring into existence, each, according to its promoters, having special claims on public support. The motives of those responsible for this kind of work are in the highest degree creditable, but without co-ordination of effort there must necessarily be much waste of energy. As an example may be cited the overlapping of work for the relief of those who have lost their sight in the battles of the present war. Mr. C. Arthur Pearson, Chairman Blinded Soldiers' and Sailors' Care Committee, opportunely writes to call attention to the confusion caused by the issue from certain institutions for the blind of appeals for financial assistance for the benefit of blinded soldiers and sailors. He points out that these appeals have no connexion with the Blinded Soldiers' and Sailors' Hostel, St. Dunstan's, Regent's Park, N.W., organized by him and conducted with the concurrence and support of the War Office, the National Relief Fund, the Red Cross Society, the Order of St. John, and the National Institute for the Blind. The Committee of the Hostel has called in the assistance of experts in the treatment of the blind from all parts of the kingdom, and almost without exception those responsible for institutions for the blind

are working in co-operation with St. Dunstan's. According to Mr. Pearson this hostel offers advantages to the blinded soldiers and sailors which they are scarcely likely to get elsewhere; they include the provision of a seaside home at Brighton. It would certainly be a pity if the success of so excellent a work were spoiled by competition which should have no place in the field of charity.

THE GERMAN USE OF ASPHYXIATING GASES.

OUR correspondent in Northern France writes to us from Boulogne under date April 28th, stating that "a considerable number of men who are suffering from the effects of the asphyxiating gas used by the enemy in the country near Ypres have reached the Boulogne hospitals. What proportion these cases bear to the total number of men affected by the gas it is impossible to say. Some of the graver cases have remained in the clearing hospitals, others died on the battlefield itself, and it is probable that very many of the lighter cases have been sent on to more distant hospital bases. Among those that have arrived at Boulogne there have already been several deaths, and in one case I was able to observe for myself some of the physical results. Around the larynx, including the epiglottis, was a band of acute inflammation, and the trachea was intensely irritated. The kidneys were cyanotic—that is to say, they presented the deep colour seen in cases of asphyxia from any cause. The clinical features are those of acute bronchopneumonia, and in grave cases there is pulmonary oedema. The gas appears to be evolved in some special apparatus, and to be projected from a tube towards the trenches of the Allies when the wind is blowing towards these from the German. It appears in the form of a yellowish-brown smoke, which floats slowly along close to the ground, and is easily visible from a considerable distance. If it reaches any trenches when comparatively undiluted it rapidly causes choking. Otherwise the immediate phenomena are smarting of the eyes and violent coughing. The men's buttons turn green and their bayonets black. All these phenomena are compatible with a belief that the gas is chlorine, a body about two and a half times heavier than air, and dangerous to life in quite low admixtures. If so, the remedy would seem to lie in the use of respirators, formed by placing over the mouth and nose a handkerchief dipped in solution of sodium bicarbonate. The adoption of this means of protection would not seem to offer insuperable difficulties, since the gas could only be effectively used when trenches were quite close to one another, or possibly for discharging against a force attacking trenches which have not been submitted to a preliminary artillery bombardment." It was on April 22nd that a number of the French troops were overpowered and rendered incapable of defending their position, and on April 26th the War Office issued a communication stating that "It is officially reported on medical evidence that Canadian soldiers have lost their lives in the recent fighting, not from wounds, but from poisoning by gases employed by the enemy—which is a means of warfare contrary to the Hague Convention." Sir John French reported on April 23rd that the enemy had made "use of a large number of appliances for the production of asphyxiating gas. The quantity produced indicates a long and deliberate preparation for the employment of devices contrary to the terms of the Hague Convention, to which the enemy subscribed." The War Office sent over to France Dr. J. S. Haldane of Oxford, than whom there is no higher authority living on questions of this order. He reported on April 27th that with Sir Wilmot Herringham, consulting physician to the British Force, he had examined several men from Canadian battalions, who were at the No. 2 Casualty Clearing Station, Bailleul; they were struggling for breath and blue in the face. On examining the blood with the spectroscope and by other means, he ascertained that the blueness was not due to the presence of any abnormal pigment. There was nothing to account for the cyanosis and struggle for air but the one fact that they were suffering from acute bronchitis, such as is caused by inhalation of an irritant gas. In one case, in which a *post-mortem* examination was conducted, in the presence of Dr. Haldane and Sir Wilmot Herringham, by Lieutenant J. W. McNee, assistant to the Professor of Pathology in the University of Glasgow, it was shown that death was due to acute bronchitis and its secondary effects, and there was no doubt that the bronchitis and accompanying slow asphyxiation were caused by the irritant gas. On the previous day Lieutenant McNee had examined the body of a Canadian sergeant, who had died in the clearing station, and in this case very acute bronchitis and oedema of the lungs had caused death by asphyxiation. Captain Bertram, of the 8th Canadian battalion, who was in the clearing station suffering from the effects of the gas and from a wound, stated that when in a support trench about 600 yards from the German lines, he had observed first a white smoke rising from the German trenches to a height of about 3 ft., and then in front of the white smoke appeared a greenish cloud not rising to more than about 7 ft., when it had drifted along the ground to the British trenches. He made a counter attack about fifteen minutes after the gas came over, and saw twenty-four men lying dead from the effects of the gas on a small stretch of road leading from the advanced trenches to the supports. He was much affected by the gas still present, and felt as though he could not breathe. Dr. Haldane states that the symptoms and other facts so far ascertained point to the use by the Germans of chlorine or bromine for purposes of asphyxiation. Professor H. B. Baker, F.R.S., Professor of Chemistry in the Imperial College of Science and Technology, London, is making further inquiries from the chemical side. At present the evidence seems to be generally in favour of the view that the gas used was chlorine, which at ordinary temperatures and pressures has a greenish-yellow colour. In France the opinion seems to be more in favour of bromine, which in a gaseous state is still heavier, and of a yellowish-red colour. It is pointed out that Germany commands large stocks of bromine, obtained from the mother liquors of the Stassfurt potash industry. Owing to competition with bromine made from the salt works in America the price has greatly declined. At one time it was as high as M. 90 a kilogram, but was recently obtainable at about M. 1.6 a kilogram, which is approximately about 8d. a pound. Very few cases of poisoning by bromine or chlorine vapour have hitherto been recorded, and all of them have occurred accidentally in laboratories or chemical works. Dr. Haldane states that there are also facts pointing to the use in German shells of other irritant substances, though in some cases at least these agents are not of the same brutally barbarous character as the gas used in the attack on the Canadians. The effects are not those of any of the ordinary products of combustion of explosives. On this point the symptoms described left not the slightest doubt in his mind. The War Office has issued a request for respirators, to be sent in packages of not less than 100, to the Chief Ordnance Officer, Royal Army Clothing Department, Pimlico. They may be either of two patterns: (1) A facepiece (to cover mouth and nostrils) formed of an oblong pad of bleached absorbent cotton-wool about $5\frac{1}{4}$ in. by 3 in. by $\frac{3}{4}$ in., covered with three layers of bleached cotton gauze, and fitted with a band, to fit round the head and keep the pad in position, consisting of a piece of $\frac{1}{2}$ in. cotton elastic 16 in. long attached to the narrow end of the face pad so as to form a loop with the pad. (2) A piece of double stockinette, $9\frac{1}{2}$ in. long, $3\frac{1}{2}$ in. wide in the centre, gradually

diminishing in width to 2½ in. at each end, with a piece of thick plaited worsted about 5 in. long attached at each end, so as to form a loop to pass over the ear.

Medical Notes in Parliament.

The Military Medical Services.

ON April 22nd, after the first reading of some Emergency Bills and a well-deserved tribute to Sir Henry David Erskine, the retiring Serjeant-at-Arms, an interesting discussion took place on the Army Estimates. Mr. Tennant's remarks on the health of the troops and on the medical arrangements must give well-merited satisfaction, and may be quoted in full.

Health of the Troops.

He said: When you consider the kind of warfare which we have been waging, and particularly when you consider the kind of weather in which it has been waged, the health of the troops has been remarkable. All epidemic diseases, such as measles or enteric fever, have been so brought under control as to enable us to circumscribe their area, and to localize them at the earliest possible moment, whilst special illnesses to which the troops were particularly prone, such as frost-bite, have been so treated in the early stages that where actual prevention has not been effected, recovery in the shortest possible time has been general. To this, again, the Field-Marshal Commanding-in-Chief has drawn attention in his latest dispatch.

I have before now laid special emphasis upon the sanitary arrangements of the responsible officers in the Royal Army Medical Corps. Again, I would say that nothing could exceed the efficiency or the precautions they have taken, or of the corps itself—indeed, I think the absence of disease is the greatest and most eloquent tribute in their praise. To those who have knowledge of the diseases of warfare, when I mention this fact that there is not a single case at the present time of dysentery amongst our troops, it will be agreed, I think, that is one of the most significant things any one can say. It is the same with regard to the arrangements for the care of wounded, bringing them from the scene of active operations in the field to the clearing stations down to the base hospitals, and their transit in motor ambulances or hospital trains from those base hospitals to hospital ships and to this country, the arrangements for the treatment of wounds and disease both in France and at home—all these are subjects of legitimate pride and gratification. It was no uncommon feature of the battle of Neuve Chapelle that the wounded should be back at hospitals in London within twenty-four hours of their wounds having been received. I had the pleasure of seeing a lieutenant-colonel in one of the Highland regiments who was wounded at Neuve Chapelle whilst in the trenches, between the hours of 1.30 and 2 o'clock in the afternoon. He became unconscious on receipt of his wound, and he awoke to consciousness soon after 3 o'clock in comfort in a bed in the hospital 11 miles behind the firing line, with his wounds dressed. I think that is a most remarkable achievement. I mention these facts, which are well known to hon. members in all quarters of the House, because I believe them to be the broad outline of the picture as we see it to-day, and I ask hon. and right hon. gentlemen never to forget that broad outline when they are endeavouring to fit in the details of their criticisms.

Insect Pests.

Only two points remain for me to deal with. Now that the rigours of winter may give place to the intensity of summer heat we naturally are apprehensive that plagues of flies and insects may harass the troops, and we have sent out, in order to combat that evil, entomologists of world-wide reputation, who are now engaged in trying to take such precautionary and preliminary steps as are possible while these creatures are in the larval stage, to render the larvae unlikely to bring forth the insects. At home, bacteriologists have gone all over the country and have taken in hand individual cases of cerebral spinal meningitis, which is a most dangerous disease, and which might prove a scourge and ravage our ranks. I hope and believe that that difficulty has been successfully overcome.

Reporting of Casualties.

In regard to the reporting of accidents, there is always, of course, great anxiety that reports of casualties should come as quickly as possible, and in order to get that quickness and celerity mistakes have in the past been made, relatives being informed in some cases of a casualty or death, which really related to another man of the same name. That is a contingency which might well happen in a Highland regiment or in a regiment raised from a particular locality, including many men of the same name. In this war it was preferred that there should be certainty rather than celerity, and that has caused delay, particularly where the casualty list was a long one, as, unfortunately, it was at Neuve Chapelle. We regret we cannot relieve the anxiety of the relatives of our gallant soldiers as quickly as we could wish, but I have been in conference with Sir Alfred Keogh and Sir Arthur Sloggett, the head of the Casualty Department of the War Office, and I hope that the arrangements we have been able to make are such as will expedite the issue of the lists, and that they will be sent out as quickly as possible, having regard to the certainty which is so desirable. It is only due to relatives of officers of the Territorial Force to tell them that the reporting of their casualties involves one step more than is the case with officers of the Regular Army, because the notice goes from the War Office to the Record Office, which is under the Territorial Forces Association, and is reported from the Record Office, while in the case of officers of the Regular Army the notice goes direct from the War Office. In the case of non-commissioned officers and men, both in the Territorial Force and the Regular Army, the notice goes from the War Office.

Pay of Officers: Special Reserve.

Mr. Long, in criticizing the Estimates, drew special attention to certain grievances of officers in respect to the pay of those serving in rank higher than that for which they were formally gazetted, and to the pensions and allowances to dependants in case of their death. It formed a very valuable contribution to the debate, and evoked specific assurances from the Prime Minister and from the War Office on some points, and a full undertaking carefully to investigate all the cases. Where, for instance, a major had been in command of a battalion, it was undertaken that he should receive the full pay of lieutenant-colonel while so acting, and that the change should be made retrospective, and that the pension and other allowances, in case of his death, should be upon the scale of the rank in which he was serving at the time. In respect to the grievances of medical officers, Mr. Long, feeling, no doubt, the pressure of time, did not go into the question of the relative pay of Territorial and Regular R.A.M.C. officers, but raised a very important question with respect to medical officers from the Special Reserve. He said: It is the same thing with the doctors, especially those of the Special Reserve. You have got the same extraordinary anomalies there. You have got the doctors whom you have brought into the army, men without special training and men with a very short service, brought in since the war began, to whom you have given promotion. Yet you have got senior men who are in the Special Reserve, who are older and have got longer service, and who are left with the rank which they had then. These men cannot come forward with their own cases. They are not allowed by the rules and regulations of the service to write to the newspapers. Do not let the War Office think that these gentlemen have written to me. I have been for a long time made the recipient of an enormous amount of information about what are called hard cases. I can assure the War Office that I am not bringing one-tenth of them or one-twentieth of them before the Committee, and I can add almost any number extra of these hard cases. The last time we were discussing this question the right hon. gentleman asked whether I did not realize that the War Office were hard-worked. I know that they are hard-worked. I know that the pressure is enormous, but I would ask them to increase their staff. I do implore them to remove these injustices to men who are fighting abroad, who are preparing at home to take their places at the front, and to see that so far as possible each man has the rank and the pay to which he is entitled by his service, and does not have to endure the

mortification of seeing men, not for special service or distinguished service, but in the ordinary course, put over their heads, and *in some cases* actually commanding them.

The Prime Minister followed, giving the assurances already referred to.

Colonel Yate gave an interesting account of the ambulance barges now at work in the north of France and in Belgium.

Pay of Territorial Medical Officers.

Colonel Greig, to whom the profession should be grateful, specifically raised the question of the pay of Territorial and Regular medical officers. He said: To-day the Prime Minister invited for the consideration of the Government and the War Office cases of hardship in the various departments under them. There is one case which I venture to bring before the notice of the right hon. gentlemen, the Under Secretary and the Financial Secretary, and that is the case of the medical officers of the Territorial regiments. A large number of these appointments of medical officers have been filled by professional men who have given up large practices in order to fill the vacancies caused by the large expansion of that force. In many cases they are men who have sacrificed a professional career to the needs of the country. There is a considerable dearth even now of applicants for the posts, mainly, I believe, because of the inequality of treatment which they are receiving from the country as compared with their professional brethren, to whom, of course, we are very much indebted for their medical services. As between the two, however, the Territorial medical officer seems to be treated very badly. The facts are these: His period of service when he joins, for there is no limit, is as long as the authorities like to keep him. His pay is 14s. per diem, *plus* certain allowances. The highest possible amount he can get is 18s. 10d. per diem. When he starts his work he gets an outfit allowance of £30, and a camp outfit allowance of £7 10s., which every one who knows about these matters is perfectly well aware does not cover the camp outfit cost. He gets no gratuity at the end of his service. I want to compare that schedule of payments with what the officers of the Royal Army Medical Corps are getting. I do not desire for one instant to say that they ought to be paid less. In many cases, following on the experience of the Boer war, a large number of young men have gone into the force—quite rightly—and we are under great indebtedness to them for having done so. But there are many cases of pupils who have been trained by present members of the Territorial Medical Corps, and when these Territorial medical officers meet their old-time pupils in camp they find their pupils in higher ranks and receiving a very much higher rate of pay. The thing is an absurdity! The two sets of men are doing exactly the same work. Of course, the Territorial medical officers in a large number of cases have taken the Imperial Service obligation. No other distinction can be indicated between the two sets. This is what the Royal Army Medical Corps officers get. Their period of service is twelve calendar months, or until their service is no longer required, which presumably will be when the war has terminated. The pay is 24s. per diem, being a flat rate with no allowances. Travelling on duty is also paid for by the Government. This officer gets an outfit allowance of £30 at the time of his service, the same as the Territorial medical officer, but at the end of his service he gets £60. It is a matter for the consideration, perhaps, in the long run, of the Treasury, rather than the War Office, to consider whether these two sets of professional gentlemen should not be put upon the same footing, and that the scale of pay of the Territorial medical officer should be raised to that of the officers of the Royal Army Medical Corps.

Mr. Falle also referred to the question of Territorial medical officers. He said: I only propose to touch upon three matters, but they are of very great importance. The first relates to majors of the Royal Army Medical Corps (Territorials). This question was touched upon by several gentlemen, but they missed the particular point to which I wish to draw attention. If these Territorial majors are attached to any unit but the medical unit they cannot be promoted to lieutenant-colonel. When I say "cannot," I mean that it has been done, but it is very unusual. I know one who has been attached to a Territorial regiment for more than twenty years, and he has gone through all the grades and passed through all the ranks, but he is now told that he cannot be promoted above the rank of major. That does not seem to me to be fair, considering that newcomers are promptly made lieutenant-colonels and receive pay superior to the men who have been over twenty years with their regiments.

In his reply, on behalf of the War Office, Mr. Harold Baker did not make a very encouraging statement with reference to the grievances of medical officers, to which attention had been called in the debate, and it may be anticipated that more will be heard of the matter. He said: Then reference was made to the question of the hardships of doctors to the Territorial Forces. Well, they were well aware of the terms of contract into which they entered, and they have suffered no hardship, but we should all recognize the very great sacrifices—possibly greater than any other class have made—which these medical officers have made in giving up their practices and giving their services to the State. Something should be done with regard to promotions, and the question of a gratuity, such as has been offered to medical officers especially enlisted after mobilization, on the outbreak of war, is also under consideration, and I hope will shortly be decided.

Unregistered Practitioners.

Later on in the debate points were raised as to the employment of unregistered practitioners. With reference to this, Mr. Tennant, in a further reply, took a very definite and proper line. He said: Obviously it would have been wrong for us to accept such a proposal as that which was laid before us, because it would have been directly opposed to registered as against unregistered men, and it would not be a correct policy for us to have done anything which would have given colour to that suggestion. When I am asked not to accept the advice of my advisers, I really must demur to doing anything of that kind. I really must be guided by my advisers to a very large extent, but, nevertheless, I think the House will bear me out when I say that occasionally I have to exercise my own judgement and perhaps direct a different policy. On so technical a matter as the one in which the hon. member is interested, I may say at once that I do not think I can hold out very much hope that I shall be able to overrule the advice which has been tendered to me by the head of the Royal Army Medical Department.

The Medical War Emergency.

Pay and Rank of Territorial Medical Officers.

Sir Clement Kinloch-Cooke asked the Under Secretary of State for War, on April 20th, whether the recent order arranging for the promotion to captains of all lieutenants in the Royal Army Medical Corps included lieutenants, Royal Army Medical Corps, Territorial Forces; and if not, would he consider the advisability of their inclusion? Mr. Tennant said it was not intended to extend the arrangement referred to to the Territorial Force, as the circumstances were not the same. Sir C. Kinloch-Cooke asked if it were not the fact that those men had to leave their practices and were put to a great deal of expenditure, and could not the Under Secretary of State for War see his way to do something to meet the case? Mr. Tennant: Yes; but so are other medical practitioners.

Sir Francis Lowe, on April 21st, asked the Financial Secretary to the War Office whether a doctor joining the Territorial Forces, although he might be of superior rank, got a much lower rate of pay than a doctor who joined Kitchener's Army; and, if so, what was the reason for this inequality. Mr. H. Baker: It is true that certain civilian medical practitioners commissioned as temporary lieutenants, R.A.M.C., received a consolidated rate of pay slightly higher than the amount of pay and allowances received by a captain of the Regular or Territorial Force, R.A.M.C. It was sometimes necessary to give higher rates to those commissioned on emergency.

Mr. Walter Guinness asked the Under Secretary of State for War on April 22nd whether, in view of the sense of injustice caused by the increased rates of pay now given to medical men joining the Royal Army Medical Corps as lieutenants for the period of the war, all lieutenants in the Royal Army Medical Corps, Territorial Force, who were called out on mobilization and who are now serving on 10s. a day less pay than men now joining in the same rank,

may at once be promoted to the rank of captain, as has recently been done in the case of all lieutenants in the Regular Royal Army Medical Corps. Mr. Baker: The position of these officers is now under consideration. I may add that the difference in emoluments is not as suggested. Mr. Guinness: Is the right hon. gentleman aware that the medical officers of the Territorial Force made great financial sacrifices and had to leave valuable practices at a moment's notice? And is he further aware that those medical officers are much older than officers of corresponding rank in the Regular Army Medical Corps, and, naturally, cannot look forward to a sufficient length of embodied service to qualify for a retiring pension? Mr. Baker: I quite agree with the hon. gentleman that they have made great sacrifices, and, as I have informed him, the case is under consideration.

Indian Medical Service.

"Unemployed Pay."

Sir Philip Magnus, on April 22nd, asked the Under Secretary of State for India whether he was aware that a number of officers in the Indian Medical Service, now actually serving in France with the field ambulances of the Indian Expeditionary Force, were drawing unemployed pay; and whether he would take steps at an early date to discontinue the arrangement under which many officers on active service were classed as unemployed and paid at the unemployed rate. Mr. C. Roberts (Parliamentary Under Secretary) said: Unemployed pay was a somewhat misleading term. The salary of an Indian Medical Service officer holding a specific appointment was made up of grade pay and staff pay. Unemployed pay was the rate of pay allowed to a junior officer who had not yet obtained a specific appointment and is higher than the grade pay which he would otherwise receive. Under orders recently passed all Indian Medical Service officers of two years' service and a good many others would, while on active service, receive as a minimum a rate of pay somewhat in excess of unemployed pay.

Sir P. Magnus: Will the hon. gentleman inquire as to why members of the Indian Medical Service are complaining very strongly of disabilities in many directions as compared with the British medical officers at the front, and will he take some steps to remedy this grievance? Mr. C. Roberts: This is a technical matter, but I should be very glad to look into it with the help of the hon. member.

Mr. Rawlinson: As I raised the same point some months ago, may I inquire whether there will be an opportunity given to discuss this question any time during the next few weeks—it is rather pressing? Mr. C. Roberts: I will see.

Sir Philip Magnus, on April 27th, asked the Under Secretary of State for India whether he was aware that the junior officers of the Indian Medical Service are charged 1s. 9d. a day for rations, whereas no corresponding charge is made to officers of the British medical service; and whether such officers when employed during war time in India are charged only 1s. 4d. a day. Sir Philip Magnus also asked whether Indian medical officers below the rank of major, to whom during war the use of a horse is essential, are charged at the rate of £7 per annum for the hire of a horse and receive no horse allowance; and, if so, whether any steps will be taken to remedy these and other disabilities under which members of the Indian Medical Service now serving in France appear to suffer.

Mr. C. Roberts said: With the hon. member's permission I will answer his two questions together. Under a recent decision of the War Office the charges hitherto levied on officers in receipt of Indian pay for hire of horses and for rations and forage will cease to be levied during the present war in Europe, and amounts already collected will be refunded.

Early Treatment of Mental Disorder.

The following is the text of the bill introduced into the House of Commons by Mr. Cecil Harmsworth, Parliamentary Under Secretary to the Home Office, on April 20th, to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, disease, stress, exhaustion, or any other cause. The purposes of the bill are explained in the memorandum.

MEMORANDUM.

As the law now stands nursing homes cannot receive for treatment patients who are suffering from nervous breakdown affecting their mental condition (Lunacy Act, 1890, section 315 (2)). Such patients can only obtain residential treatment if they are certified insane and sent to an asylum or hospital under the Lunacy Acts. This applies even if the breakdown is of a temporary character, and almost certainly capable of being cured. As it is found that a sort of stigma attaches throughout life to a person who has once been certified as insane, there is great reluctance to have such cases certified, and the result is that persons suffering from temporary mental disorder do not receive the special treatment in a nursing home which is suitable to their condition and which is calculated to effect a speedy cure.

The object of the present bill is to secure the proper treatment of such cases by making the law less rigid than at present. It removes the necessity for formal certification in the case of persons suffering from mental breakdown of recent origin and arising from wounds, shock, etc. In this respect it assimilates the English law to the law which has been in force in Scotland for fifty years and which has worked satisfactorily [Lunacy (Scotland) Act, 1866, Section 13].

It is brought forward at the present moment in order to meet an urgent need which has arisen in the case of soldiers and sailors invalided from the front, and others whose health has broken down under the stress engendered by the war.

This bill will enable a man who in the service of his country has suffered a nervous breakdown to accept the treatment without being certified, but only for a period not exceeding six months and under conditions which will provide security against misuse.

A BILL to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, and other causes.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same as follows:

1. *Power to receive Persons suffering from Mental Disorder of Recent Origin arising from Wounds, etc.*—(1) Notwithstanding the provisions in any other Act to the contrary, a person shall not be liable to any penalty for receiving to board or lodge or for taking charge of, whether for payment or not, any person suffering from mental disorder of recent origin arising from wounds, shock, disease, stress, exhaustion, or any other cause, if and so long as he complies with the conditions imposed by regulations made under this Act.

(2) Regulations may be made in England by the Secretary of State with the concurrence of the Lord Chancellor, and in Ireland by the Lord Chancellor of Ireland, as to—

(*a*) The period, not exceeding six months, for which such a person may be so received;
(*b*) The institutions, homes or houses into which such a person may be received;
(*c*) The statements and notices to be furnished as respects a person so received;
(*d*) The treatment of persons so received and their visitation, removal to other care, and discharge.

(3) Regulations made under this Act shall be laid before each House of Parliament as soon as may be after they are made, and if an address is presented to His Majesty by either House of Parliament within the next subsequent twenty-one days on which the House has sat praying that any such regulations may be annulled, His Majesty in Council may annul the regulations, and they shall be thenceforth void, but without prejudice to anything previously done thereunder before the expiration of the said period, and the regulations made under this Act shall have effect as if enacted in this Act.

2. *Short Title, Extent, and Duration.*—(1) This Act may be cited as the Mental Treatment Act, 1915.

(2) This Act shall not extend to Scotland.

(3) This Act shall continue in force during the continuance of the present war and for a period of six months thereafter and no longer, except that, as respects persons who at the end of the said period of six months are receiving treatment under this Act, it shall continue in force so long as they continue to receive such treatment.

In consequence, however, of opposition which threatened, the bill was not proceeded with on Tuesday, the 27th, as had been intended.

Prisoners in Germany.—On Tuesday, April 27th, the time of the House was mostly occupied in a discussion on the treatment of prisoners of war, arising on a motion by Sir Frederick Banbury out of the White Paper issued by the Foreign Office. The debate was chiefly noteworthy for the melancholy but emphatic testimony of the Prime Minister, Mr. Chamberlain, and other speakers as to the cruel treatment in various ways of British prisoners of war in Germany, and the discrimination which was plainly exercised against them in this respect in comparison with their French, Belgian, and Russian fellow prisoners. It was some comfort to the medical side of the case that, at all events in many hospitals, there was evidence that the British prisoners were well treated and that no discrimination was exercised. Much satisfaction was caused by the statement of the Prime Minister that the Government was fully resolved, when the time of discussing terms of peace should arrive, that ample punishment, so far as it should be in our power to exact it, should be secured for those who had been responsible for these outrages.

Naval Medical Officers.—Mr. George Terrell asked the First Lord of the Admiralty whether medical officers who had withdrawn from the service previous to the war and had received a gratuity on the scale laid down in the regulations now had deductions made on their pay as representing interest on the amount of such gratuity; and whether, in the absence of any authority for the making of such deductions, he would give instructions that all such officers were to receive their pay in full. Dr. Macnamara said that it was a long-established rule in the navy that an officer in receipt of an annual retiring allowance should cease to draw that allowance on becoming entitled to full pay, etc., during re-employment, whether in peace or war. The same principle was applied to officers who received their retiring or withdrawing allowance in a lump sum, and an amount representing the annual value of this gratuity was accordingly abated from their active service emoluments.

Military Dentists.—Mr. Bridgeman asked if any appointments as dentists to the proposed camp at Park Hall, Oswestry, had been made, and, if so, who were appointed, and by whom. Mr. Baker replied that no appointments had been made by the War Office, but the local military authorities had full power to employ local dentists should their services be necessary.

Antityphoid Inoculation.—Mr. Tennant stated, in reply to Mr. W. Therne, that the privilege leave given to inoculated soldiers who were shortly proceeding to the front, to enable them to visit their homes, was not extended to men who declined to be inoculated, and who were consequently selected to remain in this country. The manner in which an officer or soldier should seek redress for any grievance was laid down in the Army Act, and any officer or soldier who adopted other methods was guilty of a military offence. Mr. Chancellor further asked whether inoculated men would be given this permission before they went to the front. Mr. Tennant said he thought he could give that assurance. Mr. Tennant, in reply to Mr. Yeo, said that there were no grounds for the suggestion that the death of Second Lieutenant Beate of the Connaught Rangers was due to septic poisoning caused by inoculation against typhoid. He had not been so inoculated since his arrival in the command. He was reported to have died of septicaemia due to absorption from an abscess of the heel, and he received as treatment during his illness injections of antistreptococcus serum properly given. Mr. Chancellor asked the Under Secretary of State for War whether he had any official information showing that two hundred men belonging to one cavalry regiment became seriously ill with symptoms of blood poisoning after inoculation against typhoid; if so, would he say whether two or three of them died; whether the two doctors who performed the inoculation were on inquiry found to be Austrians, tried by court-martial, and sentenced to penal servitude; and what steps had been, or would be, taken to ensure soldiers in future against the dangers of inoculation. Mr. Tennant replied that there was no official information corresponding in any way to the statements in the first three parts of the question. No one had heard of the Austrian doctors who had been sentenced to penal servitude. Every precaution was taken to protect soldiers against any risk of sepsis arising from inoculation. He asked Mr. Chancellor to furnish him with any information in his possession.

Spirit Duty (Hospitals).—Mr. Bridgeman asked the Chancellor of the Exchequer whether he had reconsidered the question of giving an exemption from spirit duty to hospitals using a large quantity of tinctures in surgical work, and if there was any reason why any such exemption could not be given to hospitals without also giving it to doctors and chemists. Mr. Lloyd George replied that he was considering the suggestion.

Ventilation of Schools.—Mr. King asked the President of the Board of Education whether he was aware that a special system of ventilation had been installed, with eminent success, in fifteen schools in Glasgow, three schools in Liverpool, six schools in St. Helens, two schools in London, and in many other places, and that the cost of this system was not now allowed to be provided for by loans sanctioned to education authorities; and whether, in view of the alleged effectiveness of this system and the satisfaction given to local authorities who had installed it, an inquiry into it would be undertaken and the results published for guidance in building. Dr. Addison said that the sanctioning of loans was not a matter for the Board of Education, and he saw no reason for making the inquiry suggested. In reply to a further question by Mr. King, Dr. Addison said that the question of ventilation had been very carefully considered, and it was found that most methods of ventilation were considered by their supporters to be the best.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE progress of this Fund continues, but the outgoings for which preparation has to be made are now considerable. The Executive Committee, which is very sensible of the great generosity shown by the subscribers, wishes to point out that the work of relief undertaken by the Fund may be of long duration.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Voeux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:

Twenty-second List.

	£	s.	d.
Association of Physicians of Great Britain and Ireland (per Dr. Hale White, Hon. Treas.)	105	0	0
Nelson, New Zealand, District Doctors, Chemists, and Dentists	49	10	0
Societies of Medicine in Italy and Medical Men (per Professor Jacobs)	56	7	3
Dr. Barrs, Leeds, collected by			
Dr T. B. Hellier ...	5	5	0
Dr. Rowden	2	2	0
Mr. Sydney Rumboll ...	3	3	0
Dr. Frank E. Easton ...	3	3	0
Dr. R. M. Courtaud ...	2	2	0
South Indian Branch, B M.A. ...	50	0	0
Bournemouth Division, B M.A. (per Dr. E. C. Bond, Hon. Sec.), (3rd donation—total, £121 2s. 6d.)—			
Dr. James Appleyard...	1	1	0
Dr. J. E. Esslemont ...	1	1	0
Dr. K. Mayo Gibbins ...	1	1	0
Dr. Mary Jeremy ...	1	1	0
Dr. W. H. L Marriner.	3	3	0
Dr. F Scorer	1	1	0
Surgeon-General W. F. Stevenson, C.B. ...	1	1	0
Dr. A. Heygate Vernon	2	2	0
Southern Branch, B.M.A. (per Dr. Jas. Green, Hon. Sec.), (5th donation — total, £56 1s. 6d.)—			
Dr. A. Thomas ...	0	10	6
Dr. Henry S. Taylor ...	1	1	0
Lieut.-Col. J. C. H. Peacocke	0	10	6
Dr. Francis E. Carey...	5	0	0
Dr. S. Gaster	2	2	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A S. Percival, Hon. Secs.) (8th donation—total, £340 10s.)—			
Dr. E. L. Prowde ...	1	1	0
Dr. James Smith ...	1	1	0
Dr. J. W. Williams ...	2	2	0
Dr J. Brydon	2	2	0
Dr. R. Chisholm ...	1	1	0
Leeds College of Pharmacy (per Mr. F. P. Sargeant)	2	2	0
Mr W. Reeson	1	1	0
Messrs. Henry Sykes and Son	2	2	0
Mr. E. Hands	0	10	6
Buckrose Pharmacists' Association (per Mr. P. Hawkins)	1	0	0
Mr. A. H. Cupit	1	1	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

EVACUATION BY WATERWAYS.

IN several previous notes reference has been made to the establishment by one of the constituent bodies of the French Red Cross Society, L'Union des Femmes de France, of a service of *ambulances flottantes* or canal barge ambulances. On one or more occasions early in the war some wounded British officers were transferred from Paris to Rouen in a privately equipped vessel of the same sort. It can now be stated that on the British side also a barge ambulance or hospital service is in being.

According to present plans, it is to consist, I understand, of four vessels, of which one recently completed a kind of trial trip, and started on its first ordinary journey last week. This had already commenced when I boarded the vessel, so that my visit was necessarily somewhat brief. Nevertheless, I had time to observe sundry points of interest. Certain general principles in converting the canal barges into temporary hospitals had to be observed by both the French and the British builders. It was necessary that the roof of the ward to be constructed must not project much above the existing freeboard, as otherwise the vessel would be unable to pass under canal bridges, and there must be no projections from the sides of the vessel lest its movement in and out of locks be obstructed. The shape of the ward or wards had to be such that they could be kept clean without difficulty, and warmed and ventilated. It was necessary also that they should provide a sufficient number of beds to justify the setting aside of a considerable personnel. At the same time space had to be found within the walls of the vessel for the staff and for the various annexes that go to make up a ward unit. Plenty of room had also to be left for keeping ordinary stores and medical requisites since the voyages undertaken might be of rather indefinite duration. Further, means of getting stretcher cases in and out of the wards without undue shaking had to be arranged.

Despite, however, the resemblance in the general arrangements, differences were observable between this vessel and those of like purpose with which I had previously made myself familiar on the French side. The woodwork presented a greater degree of finish and the general transformation seemed to have been effected on somewhat more radical lines. Probably the builder commenced his work by gutting the interior of the barge from stem to stern. All the accommodation for patients was provided in a single well-lighted ward, running fore and aft, affording space for 17 ordinary bedsteads down each side, leaving a 4 to 5 ft. gangway between their ends and plenty of room to allow of an attendant approaching a patient from either side of his bed. Small bedside lockers were in position, and the bedding and bedsteads were of the kind ordinarily used in advanced hospitals on active service. Except for the absence of sheets and the fact that the bed legs could be turned up they did not differ materially from those used in ordinary hospitals.

The forepeak was cut off by a partition with a door in the centre, and divided up into several compartments, one of which was fitted with bunks for the subordinate personnel, and another equipped as a cook-house. In the latter was a drinking-water cistern, which, for the present at any rate, it is intended to replenish each day from the field water-carts containing water sterilized chemically or otherwise by the Field Water Corps. The steerage had been similarly transformed. The extreme end of the steerage had been turned into a kind of lavatory and bedpan-cleaning room, with pipes leading out into the canal, and a pump for drawing up utensil-flushing water. A little further forward, and on each side of the alley-way, were the rooms used as sleeping quarters and surgery by the medical officer in charge, and a dispensary, which seemed well equipped with compressed and other drugs, disinfecting fluids, splints and bandages, etc.

The ingress for patients was amidships and of a more convenient kind than that in use on the corresponding French ambulance barges. A central oblong hatchway had been cut in the roof of the ward—or upper deck of the barge—and this had been fitted with a lift large enough to carry a stretcher. Its corners worked into well-greased grooves in four uprights; it was raised and lowered by hand pulleys and blocks. A trial showed that the personnel had already acquired the art of raising and lowering any person lying on it without jerking him on the short journey or bumping him at the bottom.

There was no special accommodation for the performance of operations, but since—for the present, at any rate—it is intended that the barge shall ply only between a casualty clearing station and an advanced stationary hospital, this would be superfluous. This journey is quite short; including loading and unloading, it can be completed, I understand, within a day. Later on, when the other barges are ready for use as temporary hospitals, the arrangements will perhaps include separate accommodation for operations. This, however, does not seem very likely, unless it is found to be convenient to use these vessels as a kind of special clearing station, the patients being taken straight to them by the ambulance convoys and the barge's journey prolonged so that it terminates only when the place has been reached at which the patients can be transferred direct to a general hospital or to a hospital ship. I do not know that any such plan is definitely under consideration, and in any case there would be difficulties in carrying it out. It is true that the canals within the British war zone lead to ports at which the patients could easily be transferred to hospital ships, but they communicate with no town at which there is now, or is ever likely to be, a general hospital in the sense of a place where a patient can be retained for an indefinite period. This is a consideration of some importance, since the main medical argument for the use of barges at all when other means of evacuating the wounded are available is that water carriage with its relative freedom from shaking is best suited to the needs of certain specially serious cases. The same fact would seem also to make it somewhat difficult to arrange for these barge hospitals to receive their patients straight from motor ambulance convoys, the patients removed by the latter from the field ambulances being almost inevitably of mixed type. It would, of course, be possible at times for the commanding officer of a field ambulance to keep back certain cases for direct transfer to a barge hospital if one was known to be waiting not far off, but on the whole it seems more likely that these new units will be used chiefly for evacuating to a base hospital or hospital ship certain cases for whom train transport is very undesirable, but which do not demand very early active surgical intervention; or else as casualty station overflow annexes in times of special stress.

The personnel of the vessel I visited consisted of a temporary lieutenant R.A.M.C., a non-commissioned officer qualified in dispensing and ward-master's duties, a cook, one or two general duty men, some nursing orderlies, and a couple of Royal Engineer privates specially enlisted on account of their knowledge of barge work. I understand that the other boats will be similarly staffed and that the whole service will be administered by a captain R.A.M.C. who has had experience of work on hospital ships and who will perform his duties as deputy of the officer at General Head Quarters (Lieutenant-Colonel S. L. Cummins), who as one of the staff officers of the D.M.S. (Front) regulates the movements of all ambulance trains. I should add that what has here been said about the future of this barge hospital service must not be taken as representing the views of this staff officer, for I have not at present had an opportunity of conversing with him on the subject.

Finally, it may be mentioned that in the idea of using canal barges for the purpose of evacuating the sick and wounded in war there is nothing that in itself is new. What is novel is the formation of a regular barge ambulance or hospital service and its formal adoption as a part of the general provision for evacuation purposes. Canal vessels have probably always served to some extent as refuges for the wounded whenever battles have taken place in countries intersected by canals; and they were certainly used as such in the Franco-Prussian war of 1870.

Moreover, some of the fashions in which barges, lighters, launches, and other like river craft may be adapted for the reception of the sick are considered in manuals, both old and new, in which the work of the medical officers in war

operations is discussed, and stress is laid on the value of water transport for very serious cases. Its advantage must have been relatively much greater when army medical officers had to depend largely for evacuating field ambulances on any empty supply wagons or other like vehicles available than it is now when ample arrangements exist for the rapid and comparatively smooth transport of the wounded by motor ambulance from the battlefield to the rear. Though this be the case, and even if their special value from a medical point of view may not prove to be very great, there will still be much to be said for them from the strictly military standpoint. So far as their accommodation and the length of their journeys extend, they will relieve pressure on the roads and railway lines leading to and from the battle front. To keep these as free as possible has always been the aim of military commanders, and must be a matter of special importance at the present date, when the consumption of ammunition is enormous and when the temporary obstruction of any road or railway line might spell all the difference between signal victory or comparative failure. To those who know Flanders only by inspecting it from a railway carriage window it may seem the easiest thing in the world to drive or ride in a bee line from any one point to any other; but the very reverse is the case. Flat as is the country, and free as it is for the most part from bridges, the whole land is cut up by broad, deep ditches and canals, often invisible till their brink is reached. Consequently for wheeled vehicles any real progress is only possible so long as they stick to the beaten tracks, and in some areas these are by no means numerous. Moreover, they are often very narrow and bordered by ditches or marshland, so that the breakdown of a single vehicle—ambulance car, ammunition wagon, or supply lorry—may hold up the whole traffic for a time varying with the weight of the vehicle that has to be thrown on one side.

Ambulant Soup Kitchen.

On a recent occasion I came across a kind of ambulant soup kitchen, which seemed to me a more practical arrangement than some others I have seen for providing soldiers, whether sick or well, with light refreshment when on the march or travelling by train. It consisted of a moderate sized motor chassis, fitted with a plain wooden van body suitably equipped. Inside, just behind the driving seat, was a cistern or boiler connected with a force pump and a filtering apparatus. Attached to the latter was a long wire-protected piece of tubing to enable water to be drawn into the filter from a water-cart, stream, well, or any other suitable source of water. The filtering apparatus was of the porous candle variety. The water in the cistern or boiler was heated by flat thin burners, fed, I assumed, with paraffin, which furnished a noisy, almost colourless, flame; the containers were linked up with an air pump, so that the pressure in the interior could be varied at will. Along the side were a series of racks for cups, and lower down a number of cupboards containing tinned milk, tea, coffee, cocoa, meat extracts, biscuits, and so on. The outfit, in short, contained everything necessary to enable those in charge of it to serve a large number of men rapidly with a warm beverage almost anywhere it met them on the road. Beside the chauffeur there were two attendants, both of whom wore medal ribbons, and proved on inquiry to be old British soldiers who had settled in Canada. Outside the car was an inscription indicating that the whole undertaking was of Canadian origin, but I did not make a note of the exact wording. At the time I saw this excellent travelling coffee stall it was in proximity to the Canadian casualty clearing station, and it is very likely an annex to this unit.

CASUALTIES IN THE MEDICAL SERVICES.

Army.

Killed.

Captain Maurice Burnett, R.A.M.C., was killed in action at Shaiba, near Basra, in Turkish Arabia, on April 14th, aged 26. He was the son of Surgeon-General Burnett, R.A.M.C.(retired), and was born on October 31st, 1888. He was educated at St. George's Hospital, where, after taking the M.R.C.S. and L.R.C.P.Lond. in 1911, he served as senior house-physician. He entered the R.A.M.C. as Lieutenant on January 26th, 1912, and became Captain on March 30th, 1915, when all the lieutenants of the R.A.M.C. on the active list of the regular army were promoted to Captain.

Died of Wounds.

Lieutenant Ernest Stratford, R.A.M.C., died at Bourne End on April 20th, aged 38, from septicaemia following wounds received by the bursting of a shell at Neuve Chapelle. He was educated at Marlborough, at Emmanuel and Downing Colleges, Cambridge, and at St. Thomas's and St. Mary's Hospitals. He took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1908, and afterwards acted as resident medical officer to the West End Hospital for Diseases of the Nervous System. He then settled at Wokingham, Berkshire. He had previously served in the South African war, in Bethune's Mounted Infantry, in which he attained the rank of captain, but was invalided home after the relief of Ladysmith. He took a temporary commission as lieutenant in the R.A.M.C. on September 16th, 1914, and after serving for three months as a surgeon at Netley hospital and subsequently acting as surgeon in the Indian hospital at Bournemouth, went to the front in February, attached to No. 8 British Field Ambulance in the Lahore Division of the Indian Expeditionary Force. After being wounded on March 17th he was for a short time in hospital at Dieppe, from which he was invalided home. He leaves a widow, but no children.

Wounded.

Major H. A. J. Gidney, I.M.S. (Indian Frontier).
Surgeon-Major E. G. Stocker, R.E.(T.F.), (Flanders).
Captain E. B. Allnutt, R.A.M.C. (Turkish Arabia).

NOTES.

The Mechanical Education of Crippled Soldiers. Allusion was made in the Journal recently (April 10th, p. 652) to the problem, which the war will render acute, of training partially disabled soldiers for such occupations as their remaining powers will enable them to pursue, and some particulars were given of efforts already begun in this direction in France and Austria. In this country since the South African war the Incorporated Soldiers' and Sailors' Help Society has been training and finding employment for partially disabled men, the aftermath of that campaign. The society is under the patronage of Their Majesties the King and Queen; Major-General Lord Cheylesmore is its chairman, and Major A. Tudor Craig the secretary. The society has organized a scheme to provide soldiers and sailors with the name and address of a "friend" in each parish or ward throughout the empire, to help them financially until pension formalities are complete, and to maintain convalescent homes for discharged soldiers and sailors who are disabled and necessitous. In the case of men partially disabled the society instructs them in useful trades, and employs them, when skilled, in its own workshops. This work was begun about nine years ago under considerable disadvantages through lack of capital for the purchase of machinery. In the first five years the society did not meet its expenses, but in the last four it has paid its way. Any profits which may be made in the future will be devoted to the charitable side of the work, which is of considerable dimensions, 200,000 men having been helped in ten years, and £76,800 expended in relief. The society has trained 261 disabled men in such trades as basket making, carpentering, moulding, polishing, and electric wiring, and is now devoting much attention to toy making, in which soldiers and sailors are manifesting great aptitude. The method of the society in dealing with soldiers partially disabled is to pay them 4d. an hour from the moment they come, whether possessing any training or not. They are either placed under an instructor or set to work beside a fully trained man, whichever method is best in the particular trade selected. In about eight weeks a man is able to earn a minimum of £1 a week, and usually considerably more. Men with one arm are taught painting, and other trades in which two hands are not necessary, or they are engaged in feeding wood or paper to band machinery. To the men employed under the society's direct supervision £38,687 has been paid in wages during nine years, an average of £68 to each man per annum.

The position created by the present war naturally calls

for very serious consideration if the method of employment under the society's immediate supervision is to be continued. First, it is necessary to have some idea of the dimensions of the problem. Up to about a week ago fewer than 2,500 men had been discharged from the army as medically unfit. About half of these were totally unfit for any employment; they would live on their pensions of 25s. a week and 2s. 6d. for each child. The partially disabled men numbered about 1,250, and it is hoped that, even with the great increase in the number of men in the fighting line now taking place, and allowing for the possibility of a considerable prolongation of the war, the number of the partially disabled will not even then reach unmanageable proportions. The Incorporated Soldiers' and Sailors' Help Society is making provision for a large extension of its operations; it has already workshops in London, Edinburgh, Dublin, and Brookwood (Surrey), and it hopes to open others in various provincial centres. It is proposed to install modern machinery instead of, as at present, relying entirely on hand labour. It is felt that the extension of the workshops would be a fitting memorial to Lord Roberts, who took a keen interest in the society, and to this end an appeal is being issued. Subscribers will have the satisfaction of feeling that contributions are not mere charitable doles, but money well invested, for it is calculated that every £100 subscribed enables the society to train one man, and pay him £50 for the first year and £65 a year for the rest of his life. Subscriptions may be sent to the Treasurer of the Memorial Fund (Sir Frederic Milner), addressed to 122, Brompton Road, S.W.; to H.R.H. Princess Christian, at Schomberg House, Pall Mall; or to Major-General Lord Cheylesmore, at 16, Prince's Gate, S.W.

R.A.M.C. Orderlies at the London Hospital.

At the request of the War Office the authorities of the London Hospital have recently undertaken an experiment which it is hoped will lead to a general scheme for giving non-commissioned officers and privates now being trained in the R.A.M.C. practical experience of hospital routine. The men are drafted into the hospital in small detachments, under the command of a lieutenant, and remain for about a month, sleeping on the hospital premises; they are picked men, and will afterwards be in charge of stretcher parties. The officer in charge is relieved at more frequent intervals than the men, and the successor arrives a few days before the term of the first has expired, so that continuity of method may be preserved. The men act as stretcher-bearers on the arrival of a batch of wounded; they are taught to make beds, change dressings, and to perform various offices for the wounded which are more conveniently done by men. They are taught the importance of asepsis, and shown how to sterilize instruments and clothing. Part of the day is spent in the out-patient and casualty departments and in the operating theatre. During the mornings the men are under the command of their lieutenant, but in the afternoons the sister of the ward they are in is their officer. At 6.30 a.m. every day they have a route march. For disciplinary reasons the authorities of the hospital embarked on the experiment with trepidation, but there has not been the least difficulty, and the War Office has expressed itself entirely satisfied with the results. It is hoped to man the King George Hospital, when it is opened little more than a month from now, with orderlies similarly trained, but this will only be possible if a number of hospitals will give R.A.M.C. men opportunities of gaining practical experience. In the case of the London Hospital the first officers in charge who were chosen were men who were trained there, and a similar course would be followed in the cases of other hospitals.

Serbia.

According to an Englishman now at Kragujevatz, whose letter to the Rome correspondent of the *Morning Post* appeared in that newspaper under date April 22nd, whole villages in Serbia are being wiped out by typhus; one of 2,000 inhabitants, near Skoplje, has disappeared, and 100 of the 360 Serbian doctors are dead. He heard a few days before that there were 1,000 cases in another Serbian town, and thirty deaths daily at one of the hospitals, yet one of the grave-diggers at the local cemetery told him that only sixteen to twenty are now buried daily, as compared with fifty to sixty daily in January and February.

Dr. Elsie Inglis, the inaugurator of the Scottish Women's Hospitals for Foreign Service, left London a few days ago for Kragujevatz.

According to the *Medical Record*, of the six American surgeons and twelve nurses who went in the Red Cross units to Serbia, the only one who has escaped the disease is Dr. Butler, the head of the second unit.

In the Journal of April 17th (p. 696) reference was made to a statement made by the New York correspondent of the *Daily Telegraph* that Major-General Gorgas had accepted an appointment at a salary of £10,000 a year, under the auspices of the Rockefeller Institute, to take measures for stamping out typhus fever in Serbia. In quoting this statement we suggested that it should be accepted with reserve, as we thought it likely that confusion had arisen from the fact that a sum of £10,000 had been collected to defray the expenses of the American expedition under Professor Richard P. Strong of Harvard. A statement by Mr. Jerome D. Greene, Secretary of the Rockefeller Foundation, published in our American contemporary *Science* for April 16th, warrants this caution. He says that General Gorgas has been invited by the Rockefeller Foundation to become a permanent member of its staff in the capacity of general adviser in matters relating to public sanitation and the control of epidemics. Mr. Greene proceeds:

> During the two years of the Foundation's existence the attention of the trustees has been chiefly given to problems of public health, including the control of epidemics, and the need of a competent adviser and executive in this field has been strongly felt. When in co-operation with the American Red Cross the Foundation undertook the important task of helping the Serbian Government to control the epidemic of typhus and the threatened epidemic of cholera, the trustees again naturally thought of General Gorgas as a man pre-eminently fit to be of service in this emergency, and at a meeting held in New York last week they decided to make him a definite offer. This offer is now taken under consideration, and he will doubtless communicate his decision within a few days.
>
> The Foundation's invitation contemplates his retiring from active service, as he is now entitled to at any time, but it does not contemplate his resignation from the army unless he should be assigned to duties of such a nature as to be incompatible with the regulations affecting retired officers. Such a duty would be involved in his going to Serbia at the present time, which he could do as a representative of the Rockefeller Foundation, but not as an officer on the retired list of the army. The sanitary commission of the American Red Cross has actually been sent to Serbia in charge of Dr. Richard P. Strong, of the Harvard Medical School, as director. The Rockefeller Foundation is co-operating with the American Red Cross in support of this expedition, and if General Gorgas should accept the Foundation's offer he will doubtless be largely influential in determining the nature and extent of its participation in the work.
>
> In justice to General Gorgas, it should be stated that there is no foundation whatever for the statement that he is to receive a salary of 50,000 dollars. The offer of the Rockefeller Foundation includes a moderate salary, and the assurance of the usual allowance in the event of resignation or death. If the offer proves attractive to General Gorgas, it will be because of his sympathy with the general aims of the Foundation in regard to public health, and his belief that the resources placed at his disposal will enable him to render a large service to humanity along the lines of his professional experience and ambition.'

Montenegro.

The Wounded Allies Relief Committee, Sardinia House, Kingsway, having received reports indicating that typhus and typhoid fever prevail in endemic form in Montenegro, is sending Dr. Isabel Ormiston, chief medical inspector of schools to the Government of Tasmania, to report on the form which the help the committee is prepared to send should take. Dr. Ormiston was formerly in charge of the Kursaal Hospital at Ostend, and since Christmas has worked at the Queen of the Belgians' Hospital at La Panne.

Medical Officers Wanted.

2nd South Midland Mounted Brigade Field Ambulance (T.F.).

Two officers are required to complete the establishment of the 2nd and 3rd lines of this unit. The 2nd line unit is moving into camp almost immediately, and the 3rd line will follow shortly. Applications to be made to the Commanding Officer, 2nd South Midland Mounted Brigade Field Ambulance (T.F.), Great Missenden, Bucks.

3/3rd Home Counties Field Ambulance.

There are vacancies for two or three more medical officers in this unit, which has only just been formed. The officers will thus have the opportunity of getting a full insight into their military duties during the training of the men. Applications should be addressed to Major E. L. Houchin, commanding 3/3rd H.C. Field Ambulance, 62, Claremont Road, Surbiton.

England and Wales.

THE EARLY DIAGNOSIS OF TUBERCULOSIS.

FOR some time past statements have been made reflecting rather seriously on the panel doctors as regards the treatment of cases of suspected tuberculosis in Lancashire. The criticisms were mainly to the effect, first, that the panel doctors did not diagnose the cases sufficiently early to give the best chances of successful treatment; and, secondly, that insured persons receiving domiciliary treatment for tuberculosis did not get proper attention owing to the fact that the panel doctors were not able to devote sufficient time to them. At a meeting of the Insurance Committee, Dr. Cox, the central tuberculosis officer, presented a report bearing on these points. He stated that during 1914 the number of insured persons reported as suffering from tuberculosis was 1,159, and that of these 25 per cent. were in the first stage, 27 per cent. in the intermediate stage, and 47 per cent. in the advanced stage. He suggested that there might be three reasons for the failure to get earlier diagnosis: (1) The fact that persons who themselves suspected that they were consumptive were often unwilling to report themselves to the panel doctors; (2) that the doctors had not time in some cases to make proper examinations; and (3) that the doctors had not properly understood that the free services of the tuberculosis officers were at their disposal when required as consultants.

Mr. Redman Ormerod, of Liverpool, said he had felt that a large number of insured persons were not getting the full benefit of the Insurance Act, especially as regards treatment for tuberculosis, and he was confirmed in this belief by the fact that 47 per cent. of the cases of tuberculosis were in the advanced stage of the disease and practically in a hopeless condition. He had known of cases in which the doctor had been attending for as long as twenty weeks or even nine months without reporting the cases to the tuberculosis officer. One case was only reported after being attended for nine months, and the Committee only heard of it after the patient's death. It would not be fair to say that the doctors were entirely to blame, but he was satisfied that it was not generally known that the panel doctor could have free consultations with the tuberculosis officer in suspected cases and that the county council had specially retained Professor Delépine to make sputum tests without cost to either doctor or patient.

Dr. Oldham said it would certainly be news to most of the panel doctors that free consultation could be had for suspected cases before notification. At the same time he claimed that the discovery of 25 per cent. of cases in the early stage had meant the exercise of extraordinary care on the part of the panel doctors, and he thought that the report presented by Dr. Cox showed that the doctors had not failed in their duty. It was ultimately decided to issue a short circular to every panel doctor explaining what free services were available and the steps to be taken to obtain sanatorium benefit for the insured.

Scotland.

SCHOLARSHIPS FOR EDINBURGH WOMEN MEDICAL STUDENTS.

A GOOD many years ago certain funds—the James Cropper Scholarship of £1,250 and the Waldie Griffith Scholarship of £500—were in the hands of the late Dr. Sophia Jex-Blake, for the benefit of women students of the Edinburgh School of Medicine for Women. The school came to an end, and then some years later Dr. Jex-Blake died and her executors found it necessary to divest themselves of the funds. Somewhat prolonged and difficult legal proceedings followed, but at length the Edinburgh University Court had laid before it at its meeting on April 19th schemes for the administration of the funds referred to above, as approved by the First Division of the Court of Session. The balance of the funds will be paid over to the university court. The annual income is to be used in the case of the James Cropper Fund to assist women students for one, two, or three years, as the Senate may determine, preference being given to natives of India, and in default of suitable candidates from India, to women who declare their intention to practise in India. The Waldie Griffith Fund is to be used for providing financial assistance to women studying for graduation in medicine at or graduates in medicine of the University of Edinburgh carrying on work with the object of increasing their medical knowledge at the Edinburgh Hospital and Dispensary for Women and Children, or failing that, to women students or graduates studying at any school of medicine in Edinburgh approved by the Court.

FUNERAL OF SIR THOMAS CLOUSTON.

The funeral of Sir Thomas Smith Clouston, LL.D., M.D., F.R.C.P.E., took place on April 22nd from his residence at 26, Heriot Row, to St. Cuthbert's Parish Church, and thence to the Dean Cemetery. The Royal College of Physicians was represented by Dr. Freeland Barbour, President, by Dr. J. J. Graham Brown, Vice-President, by Sir Alexander Simpson, Sir Thomas Fraser, Sir James Affleck, and others; the Royal College of Surgeons, the University, Morningside Royal Asylum, the Lunacy Commissioners, the Edinburgh Medical Missionary Society, the National Council of Public Morals, and other bodies were likewise represented. The service was conducted by the Rev. Dr. R. H. Fisher and the Rev. Norman Maclean. The pall bearers were Mr. J. Storer Clouston and Mr. T. Harold Clouston (sons), Major D. Wallace (son-in-law), Lieutenant C. W. Donald, Mr. J. H. Annandale, Dr. J. A. Trail, Dr. J. Macpherson, and Dr. T. Burn Murdoch.

RESEARCH IN ANIMAL BREEDING IN EDINBURGH.

A body called the University of Edinburgh and College of Agriculture Committee on Research in Animal Breeding has recently been formed, and is now looking out for a director of research, who will be expected to initiate and carry on experimental work on scientific lines, to advise as to work which may be suggested by the Committee, and to supervise and assist the work of others who may be carrying on similar researches. Facilities for the carrying out of experimental work will be given in the laboratories and on the farms of the University and the College. No definite scheme of research has been determined upon, it being thought desirable to appoint the director in the first place.

ASYLUM AS MILITARY HOSPITAL.

The Army Council has accepted the offer by the Edinburgh Parish Council of the Bangour Asylum as a military hospital under the same arrangements as have been made with the English Board of Control for the transfer of certain English asylums. Arrangements are being made with the General Board of Control for the immediate disposal of the patients now in the asylum, and the Edinburgh extramural students and the women students who have received clinical instruction at Bangour are now being taught at the Morningside Royal Asylum under the supervision of Dr. G. M. Robertson.

THE LATE DR. ELIZABETH ROSS.

The fund for a memorial to the late Dr. Elizabeth Ross, who died while working at the military hospital at Kragujevatz, Serbia, now amounts to £181 12s. It is proposed to devote £150 to the endowment for twelve months of two memorial beds—one in the Scottish Women's Hospital, and the other in the military hospital at Kragujevatz—and for the provision of immediate surgical and medical necessaries. The fund will be kept open until the end of April, and it is asked that subscriptions, including special subscriptions to defray the cost of a small tablet in St. Duthus Memorial Church, Tain, should be sent to Dr. E. K. Mackenzie, Mrs. Irwin Smart, or Mr. Sutherland Ross, at Tain.

Ireland.

ULSTER MEDICAL SOCIETY.

IT was decided at an early date in the session of the society by the president and council that the annual dinner should not take place. It was felt that the present was not a time for merry-making, when so many of the community were in grief and so many were deeply anxious

about near friends and relations. A number of medical men, either directly from Belfast and Ulster, or well known to the members of the society, had fallen, or were in captivity, or were home recruiting their strength, and so the custom of years, uninterruptedly observed in the lifetime of all now living, was fittingly broken. The President (Dr. J. S. Morrow), however, very kindly held a quiet and informal reception of the members on the evening of March 31st, which was largely attended; and although perhaps the customary hilarity was subdued, all appreciated very gratefully the thoughtful action of Dr. Morrow in calling the members together and giving them an opportunity of meeting each other and of hearing and relating the news from their fellows at the front and the various experiences that many had gained in their new military duties.

India.

PROPOSED POST-GRADUATE SCHOOL OF OPHTHALMOLOGY IN INDIA.

WE have received from Lieutenant-Colonel Henry Smith, V.H.S., I.M.S., civil surgeon, Amritsar, a memorandum urging that the time is opportune for the establishment of a post-graduate school of ophthalmology in India. He gives a table showing the number of cataract operations year by year in the several provinces, and the following abstract:

Provinces.	1881.	1913.
Punjab and N.W.	265	16,236
United Provinces and Oudh ...	2,640	9,905
Bengal with Calcutta	357	1,291
Madras with City	480*	1,655
Bombay with City	193†	1,586
Central	27†	922‡

* For 1882. † For 1883. ‡ For 1912.

He attributes the great increase in the number of operations in the Punjab to the superior results obtained by intracapsular extraction since he first began to advocate that operation shortly after 1898. It is, he says, now practically the operation of election in the Punjab, and is beginning to extend rapidly in other provinces. In hospitals where the operation is adopted the number of applicants for treatment rises, showing clearly the patients' opinion regarding its excellence. He attaches great importance to the technique that he has evolved—namely, "The method of completely exposing the conjunctival sac for disinfection and for exposing the field for the operation; the method and the importance of controlling the orbicularis muscle; the different methods of dealing with the different types of lens; the fact that an eye should not be subjected to meddlesome dressing any more than any other surgical wound, etc."

He claims to have been the first to show that a cataract may be extracted at any stage of its immaturity as safely as when matured, and also to have been the first to teach the mechanical side of surgery as the mechanical side of any other art is taught. He says: "The procedure I adopt in teaching is to show the pupil in a considerable number of cases the method of operation, pointing out the importance of every detail. The pupil is then set to perform the operation before me on the living subject in a large number of cases. He is instructed as he proceeds; the mistakes he is making are pointed out and the reasons given, and I come to his relief in case of difficulties. A short course of training of this kind makes a man a more efficient operator than a lifetime of lectures, or of looking at demonstrations. One advantage in this method of teaching is that it establishes the confidence of the operator in himself which no other method does, or else force him to decide that he had better confine himself to the physician's art."

Such teaching is, he says, a very strenuous work, and has had to be done single-handed in an institution grossly understaffed and financially starved in intervals between other duties. Post-graduate instruction in ophthalmology should, he urges, not be left to the meagre material of Vienna and Berlin; India should takes its position in the scientific field of ophthalmology, since it has incomparably more material than any other country in the world. He appeals for financial aid on a generous scale for the establishment of a post-graduate school of ophthalmology in India, the objects of which he defines as follows: "The study and teaching of the causes and prophylaxis of the many diseases to which the eye is incident in India; the teaching, both theoretically and practically, of the methods of treatment of diseases of the eye; the utilization of our material to such a degree that men and women from all the world will come for instruction to India."

Such a school, he says, "must be properly manned and financed. Its incumbents should not be paid on the principle that they are to eke out a meagre existence by means of private practice, competing with men who will do a cataract operation for two rupees. If it is to be a success their pay and prospects should be so ample as to attract the best men available, as the prospect of private practice for such men may safely be calculated as approaching *nil* from this time onwards. The Government is advancing rapidly as regards the improvement and development of their medical schools for undergraduates. Government is also instituting research schools and schools of tropical medicine all over India for post-graduates, but nothing has been done to promote instruction and research in post-graduate surgery."

Correspondence.

THE DOCTOR'S HOLIDAY.

SIR,—I was greatly interested in the article on p. 730, entitled "The Doctor's Holiday," giving a description of the proposed arrangements in Bury. As we have had a somewhat similar plan in this district (Sparkhill) of Birmingham for the past three years, I thought it might possibly interest your readers to know how it has worked.

The beginning was modest. Nine of us wanted a free afternoon and evening once a week. By selecting different evenings this was easily arranged. We mentioned the suggestion to our patients, and they helped most willingly, and fell into the working of it very soon.

The plan was such a success that it emboldened us to go further. Why not have our holidays on the same principle, and do away with locumtenents? We made the following arrangements:

1. Each man to have at least one month's holiday, to be taken all at one time or in parts, according to desire.
2. Not more than two men to be away at one time.
3. No remuneration. This includes midwifery.
4. A patient desiring to change from her usual doctor to the doctor called in during holiday must not be accepted by the deputy until at least twelve months have elapsed from date of first visit.
5. The arrangements to apply to illness at any time of the year and for any duration.
6. All records, including national insurance, to be carefully kept.
7. Before starting for holiday the patients on visiting list are asked to select a doctor. Each of the deputy doctors receives a small ruled book containing names of patients to be visited. In this he keeps a record of work done for the man away. On return the doctor sends round to each doctor for his book. When a patient comes to the house of the absent one he is handed a card, one of which I enclose. The patient hands this to the doctor he selects. To prevent mistakes we usually put our names or initials at the corner of our own cards.

The plan has been an unqualified success. There has not been the slightest friction, and to the best of my knowledge no doctor has lost a single patient owing to it. In the rare cases where the patient has desired to make a change we got over the difficulty in the following manner: We point out that, instead of having a locumtenent of whom they know nothing, they have a wide choice of men who live in the district, who have their reputations to keep up, and whom they at least know by report. Having these advantages, they must not abuse them, and in these circumstances it would hardly be fair to supersede their usual doctor. They always see the point, and there the matter ends. Patients, all said and done, are reasonable beings. It also soothes them to point out that they can change at

the end of twelve months—but they never do. By that time the fascination of the deputy has passed away.

Work is very pleasant here. No grabbing other men's patients. No anxiety whilst on holiday. Start when you like, come home when you like, provided, of course, you keep to the arrangements. Remember, however, that the very foundation is mutual trust and confidence. If there are any "rotters," they should be promptly put in outer darkness.

I think the Bury men are right in deciding that half midwifery fees should be retained by the deputy. This is merely my personal opinion. It is irksome for a man who avoids midwifery to be obliged to attend the confinements of a man who is enthusiastic in that way. Moreover, it is a severe test of altruism to sit up all night without remuneration with another man's confinement.

I think the Bury men are making a mistake in keeping records on cards. They are liable to be lost, and all men are not methodical. We have tried both ways, and find the books the more satisfactory.

The Bury men would do better to form, if possible, local groups, with the right to claim help from neighbouring groups. It would make the collection of books or cards much easier after a holiday, and they would pick up their work much more quickly. Besides, groups would facilitate holiday arrangements.

A fortnight's holiday is not sufficient. It should be at least a month, at one time or split up. It will be found that two men's work spread over six to eight men makes very little difference in the work of the deputies, especially during the summer.

Dr. Wishart's suggestions are quite feasible. It is simply a question of "training" the patients. He is, I think, a little before his time, but once we learn to trust one another the lot of the general practitioner should greatly improve.

I have described our arrangements as fully as I am able. If there are any points I have not made clear I shall be very happy to give any further information in my power.—I am, etc.,

Birmingham, April 26th. J. ATTRIDGE WILLIAMS, M.D.

Copy of Patient's Card.

By mutual arrangement any one of the following doctors will attend you during my absence from home (or incapacity from illness) on presenting this card to him.

Patients will greatly help the success of this plan by giving the doctor they choose the name of their usual medical attendant.

(Here follow the names.)

TEMPORARY MEDICAL OFFICERS.

SIR,—That there has been and is a considerable amount of discontent amongst the more senior members of the medical profession who have volunteered their services to their country for the period of the war is increasingly evident.

By more senior members I mean those over 32 years of age who have held resident hospital appointments in large hospitals in the past, and who, at the outbreak of war, were engaged either in special work on the junior or senior permanent visiting staff of a large hospital, or in a well established and considerable private practice—men whose professional income would average about £1,000 a year. Such men have made very considerable pecuniary sacrifices at their country's call by volunteering to serve at a salary of about £400 a year; for not only is their present income reduced, but in many cases it must take several years after the war is over before the ground lost by their temporary absence has been rewon.

Junior members of the medical profession—by which I mean fairly recently qualified men who have not yet attained either to the permanent staff of a hospital, or to a partnership in an established general practice, and whose professional income is probably under £200 per year—clearly make no pecuniary sacrifice, but on the contrary derive considerable pecuniary advantage by joining either of the services as temporary surgeon.

The junior medical volunteer, therefore, has no cause whatever for complaint, whereas the senior medical volunteer has, I think, just cause for complaint. For the senior experienced man is given neither the work nor the rank to which his age and professional experience entitle him. He enters the service on precisely the same level as the junior inexperienced man, is given the same subordinate routine work, and is of the same rank, the lowest for any medical officer in that service, and junior to the most junior permanent officer.

If, at the outbreak of war, a physician or surgeon on the staff of a large teaching hospital, and his newly-qualified clinical clerk or dresser joined the navy or army on the same day, the physician or surgeon as a temporary officer, and the clinical clerk or dresser as a permanent officer, the elder experienced man would be junior to the younger unskilled and inexperienced man, and at the same time the elder would suffer great pecuniary loss, while the younger would enjoy considerable pecuniary advantage. Such an arrangement is obviously unfair, and neither to the advantage of the country, the service, the profession, or the individual. For, in a great war, all should work for the common good, all petty jealousies should be wiped out, and every man given the position and work where his services will be of the maximum advantage.

For a medical man of unquestionable knowledge and skill in any particular branch of his profession to be used for subordinate routine work, or for work in which he is not able to use the advantage of his special experience, is obviously a waste of valuable personnel that might be employed to greater advantage. There are unfortunately many instances of this comparative waste of personnel.

Even previous war service counts for nothing, and medical men between 35 and 40 years of age who served as civil surgeons through the South African war are now asked to join the R.A.M.C. with the rank of second lieutenant, junior to men ten years or more younger than themselves, and who have had no war experience or any extensive or special experience in their profession.

A medical volunteer officer is in quite a different position to a combatant volunteer officer, as he has in most cases an equal and often greater professional experience than his brother officer who is a regular, whereas the combatant volunteer officer must necessarily have had little experience compared with the regular officer.

The medical department of both the navy and the army would have been entirely unable to cope with the situation presented by the sudden enormous increase in the personnel of the navy and army without the cordial and patriotic co-operation and assistance of the volunteer civilian doctor, who has not always been treated with the consideration that he deserves. The senior volunteer medical officer does not ask for (or wish for) more pay than he already receives, but he does demand rank a little more suitable to his age and experience, and also the opportunity of exercising any special knowledge that he may possess for the benefit of the sick or wounded.—I am, etc.,

April 27th. TEMPORARY COMMISSION.

*** We have received several other letters on this subject more or less to the same effect, but the above, we think, states all the main points of the case which our other correspondents desire to put forward.

LOCUMTENENTS' FEES.

SIR,—I think that my personal experience with regard to the provision of a war locumtenent may be of interest and point to a possible danger to others similarly placed. Before accepting a temporary commission in the R.A.M.C. I approached one of the medical agents, and through the agency I was introduced to a medical man who was prepared to take over my work. The agent took his fee, and the working of my practice assured, I accepted a temporary commission. Since then the agent has repeatedly attempted to induce my locumtenent to give up my work and accept other locum work at a higher salary, with the result that, in order to retain the services of my locumtenent, it has been necessary to raise the salary to a figure which, had it originally been asked, would have prevented me from taking a commission. The action of the agency in the matter appears to me to be extremely questionable.—I am, etc.,

April 23rd. TEMP. LIEUT., R.A.M.C.

TYPHUS FEVER.

SIR,—Dr. Hort, in his article on typhus fever, in your issue of April 17th, refers to some observations of mine published in the *Hospital* which seemed to demonstrate that the excreta of typhus patients remained highly infective after lying in the soil for several years. In view of the

importance of the subject at the present moment, perhaps I may be excused for drawing attention to a case which I quoted in my article. The reference was to an outbreak of typhus fever which occurred in an isolated district in Skye. It was investigated and reported on by the medical officer of health, the late Dr. Dewar of Portree. He traced the origin of the outbreak to a man who had been engaged in stripping the thatch from the roof of his cottage shortly before he contracted the disease. The man had lived in the house for years, but Dr. Dewar found that some time previous to his occupancy several cases of typhus fever had occurred in it. Dr. Dewar believed that he could exclude all other sources of infection, and concluded that the disturbance of the thatch had set free the infective agent. This seems to point to the virus being conveyed through channels other than the excreta. Might it not be that the bronchial secretion, often profuse, contained the infection, and that this, forcibly expelled by coughing, lodged in the exposed thatch of the low cottage roof?

In the typhus outbreak with which I had to deal, in addition to minute precautions against the *Pediculus vestimenti*, greatly in evidence, I insisted on the liberal use of the formalin spray (especially when the patient had much cough) as a possible prophylactic.

I had one undoubted ambulatory case. The patient, a woman, not only did not lie up, but spent most of her time outside her cottage door. She had all the typical symptoms except the stupor. There is certainly grave danger, at a time like this, of the disease being spread by people who do not feel ill enough to seek the hospital, and whom no one would suspect to be suffering from such a disease.—I am, etc.,

Raasay, Inverness-shire, April 19th. WM. C. BURNS.

SIR,—In Dr. Hort's interesting paper on typhus I note that he remarks: "The serum of typhus patients may give a reaction with emulsions of *B. typhosus* even in dilutions of high titre (W. J. Wilson)."

I do not know when Dr. Wilson's observations were published, but it may be of interest to Dr. Hort to know that very shortly after Widal's reaction for typhoid was published I examined the serums of a number of typhus patients at the laboratory of the late W. J. Brock, M.O.H. for the Lothians, during an epidemic in West Lothian, several giving the Widal reaction. The observations were published in the now defunct *Scottish Medical and Surgical Journal*, and at the time seemed to throw doubt on the specificity of Widal's reaction. I am glad to learn that those early observations have been confirmed by Dr. Wilson.—I am etc.,

Edinburgh, April 17th. JAMES CAMERON.

THE PHTHISICAL SOLDIER AT THE FRONT.

SIR,—As light on this subject can only come through the experience of those who are working at the cure of tuberculosis, I ask permission to publish the following data of cases:

CASE I (*Pulmonary Tuberculosis Moderately Advanced*).—Was under sanatorium treatment here in 1908; since then has been continuously occupied in active professional life. Was also in the Territorials, and since the war broke out has been in regular work as an officer in the new army. He is keeping very well.

CASE II (*Pulmonary and Glandular Tuberculosis*).—Has not been treated in a sanatorium, but has been under my occasional observation for four or five years past. During that time he has had recurrent and occasionally severe haemoptysis. He enlisted in August. Was for four months in a cavalry regiment, doing field and trench work; after this he came to see me, and was splendidly fit, had increased in weight, and said he was finding it difficult to believe that he had ever been ill. He is now lieutenant in a Highland regiment.

CASE III (*Early Pulmonary Tuberculosis*).—Was in this sanatorium October, 1913, to January, 1914. An engineer by trade, he enlisted in August, went through his artillery training at Woolwich, and is now staff sergeant in a R.F.A. corps, expecting soon to be sent to the front. His only complaint is that "he has lost his appetite and found a donkey's."

CASE IV (*Early Pulmonary Tuberculosis*).—Was in this sanatorium February to May, 1914. An old soldier, he re-entered service in August, 1914. He has written to me several times from a remount camp in France, where he is under canvas, working hard, and is in very good health.

CASE V (*Early Pulmonary Tuberculosis*).—Was in this sanatorium from July to September, 1914. In October, 1914, he enlisted in an infantry corps. He has been promoted to lance-corporal, and more recently to corporal. He is in splendid health.

These promotions *in themselves* tell of good health. Besides these cases, several others of my old patients have more recently joined the new army. They have all reported to say that their health is good. I have had no news of any breakdown.

With regard to the spread of infection, I do not think it probable that any man would be accepted for service who had a grave lesion. But is it not the case that sanatorium treatment has been instituted partly for the purpose of teaching patients (even if they have a grave lesion) to live without spreading infection?

They say that "Fac's are chiels that winna ding," and these are a few facts—enough, I think, to bid us have courage and fight on for the cure of this terrible scourge of mankind.—I am, etc.,

ISABELLA MEARS, L.R.C.P.I.

Woodburn Sanatorium, Edinburgh,
March 29th.

Medico-Legal.

DEATH FOLLOWING INJECTION OF PITUITARY GLAND EXTRACT.

AN instance of death following the injection of pituitary gland extract has been investigated by the East Sussex coroner (Dr. G. Vere Benson). The deceased was Mrs. Mary Dorothea Woodman, aged 32, the wife of Captain L. C. Woodman, of Old Manor House, Willingdon, and the inquiry was completed at Willingdon on April 20th.

Mr. H. C. Dickens (barrister), instructed by Messrs. Hempsons, represented the Medical Defence Union and watched the interests of Dr. Ambrose Emerson, the deceased's medical attendant. Dr. Tunnicliffe, who advised the treatment, and Mr. W. H. Martindale, pharmaceutical chemist of New Cavendish Street, W., who supplied the extract, were also legally represented.

The evidence given when the inquiry opened a fortnight earlier was to the effect that in March Mrs. Woodman visited Dr. Tunnicliffe, who prescribed injections of pituitary gland extract. These were given by Dr. Emerson on March 22nd, 24th, 26th, and 28th. On March 27th the deceased said she believed she had been poisoned, and she continued to make complaints to that effect up to the time of her death. Her husband wrote to the coroner demanding an inquest. Dr. Emerson said that after death he and Mr. H. D. Farnell could come to no other conclusion than that erysipelas had supervened, causing acute general symptoms of heart failure.

Dr. Walter d'Este Emery (London), at present bacteriologist to the 4th London General Hospital, stated that the septic poisoning which caused death was due directly or indirectly to living organisms in the pituitary extract. The extract was clear as a rule; if it were turbid, but had been given to him by a medical practitioner who had greater knowledge than he had, he should use it. If, however, he found it in this condition on purchasing it from a chemist, his suspicions would be aroused. Mr. Martindale's reputation was very high, and if he guaranteed a preparation as sterile, he (the witness) would be willing to accept that absolutely.

Dr. Willcox, Senior Analyst to the Home Office, expressed agreement with Dr. Emery's views. In his opinion the pituitary extract was at fault, since it was not sterile. There was no lack of care on Dr. Emerson's part. Had the extract been sterile he had no doubt that no harmful results would have occurred. Turbidity in the extract might be due to other causes than the presence of organisms. Having had considerable personal experience of this preparation, he would not have used a turbid sample without inquiry. That an accident had not happened for five years was good evidence that proper care was exercised in preparing the extract.

Mr. W. H. Martindale described the precautions taken to ensure that the extract was sterile, and mentioned that he had given up the use of antiseptics in the preparation because it was difficult to select one which would not modify so delicate a substance. He had recovered possession of all the extract made at the same time as the sample supplied to Dr. Emerson.

Dr. Emery, recalled, said he did not agree with Mr. Martindale's assumption that his methods would necessarily secure the sterility of the extract. It could be sterilized in several ways without interfering with its efficiency, and it was most dangerous, in his opinion, that the preparation should not be sterilized. In reply to Mr. Muir, who represented Mr. Martindale, the witness agreed that five years' uninterrupted success was presumptive evidence that the methods were safe.

Dr. Willcox also expressed agreement with what Dr. Emery had said, and added that if no antiseptic were used very special precautions should be taken as regards sterilization in the most minute details of the process.

The jury returned a verdict that death was caused by heart

failure due to septic poisoning. They found that the injection was properly administered by Dr. Emerson, and that death was due to misadventure. The jury added a rider that in their opinion more care should have been taken in the preparation of the extract.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association, being anxious to assist in facilitating exchanges between medical officers of the Territorial Force in accordance with the War Office letter of December 10th (BRITISH MEDICAL JOURNAL, February 27th, p. 402), is prepared to publish in the JOURNAL applications for exchange. In all cases officers desiring exchange should furnish information on the following points:

1. Rank and name .....
2. Regiment *or* medical unit .....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally .....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Present address and date .....

Captain J. M. Postlethwaite, 1st East Lancashire Field Ambulance (T.F.), at present stationed at Ras El Tin Hospital, Alexandria, wishes to make an exchange with a medical officer holding a home hospital or other appointment. He would prefer to go to the Whalley Hospital if possible.

INDIAN MEDICAL SERVICE.

AN examination for not less than ten commissions in the Indian Medical Service will be held in London on July 12th and five following days. Particulars and necessary forms of application can be obtained from the Military Secretary, India Office, London, S.W. The applications, accompanied by the required certificates, must be received by June 30th.

Universities and Colleges.

UNIVERSITY OF GLASGOW.

AT a meeting of the University Court on April 22nd the Principal announced that the women students of the Queen Margaret College had in large numbers offered themselves as volunteers to assist as probationary nurses in the Western Infirmary. Steps were being taken to organize them so that they could attend at the Infirmary partly for training and partly for service, and also attend their classes.

A resolution, moved by Sir D. C. M'Vail and seconded by the Rev. Dr. John Smith, and adopted after explanations in private session from the Principal, expressed the opinion that Parliament should empower the court—after consultation with the senatus—to modify as it might deem expedient the curriculum of study required by the ordinances for graduation in any faculty in the case of any student who served in the navy or in the army during the present war.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST EXAMINATION.—R. Austin, J. Black, A. Galustian, F. X. Hayes, D. L. Henderson, R. A. C. Pooley, S. H. Waddy, R. Wilson.

SECOND EXAMINATION.—P. G. Bainbridge, A. B. Black, D. M'K. Black, J. Calder, J. M'M. Crawford, R. P. Crawford, R. D. Howat, W. Jackson, R. J. T. Malcolm-Gaspar, J. Michaelson, P. A. O'Brien, S. Sloan.

THIRD EXAMINATION.—J. Carden, W. C. Borrie (with distinction), K. S. Bhiwandiwalla, W. Brown, J. G. Buchanan, H. Ellison, O. G. Evans, J. W. Irvine, W. P. H. Lightbody, J. Y. M'Lean, H. Morley, C. E. S. Runciman.

FINAL EXAMINATION.—F. A. V. Denning (with honours), J. Walker, G. Thomson, J. M. Smeaton, S. N. Toulmin, W. T. M. Sebeta, V. A. Goonetilleke, J. Scott, W. P. Over, T. R. Scott.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*C. D. Banes, *†B. A. Bull, *†R. Curle, *L. Lee, †J. G. Lewis, *H. Morrison, *†D. C. Ogilvie, *†R. Quesada-Jiménez, *†W. H. Rhys-Jones, *†J. A. W. Robinson, *†G. S. Stathers, *†H. E. P. Yorke.

MEDICINE.—*†B. A. Bull, *A. Butterfield, *†J. E. Cheesman, *†R. Curle, *†H. A. de Morgan, *†J. B. Fairclough, *W. Fox, *†L. A. J. Graham, *†N. Hoffmeister, *†L. Lee, †J. G. Lewis, *†D. C. Ogilvie, †J. A. W. Robinson, *†E. E. Samaraweera, *†H. E. P. Yorke.

FORENSIC MEDICINE.—G. T. Baker, A. Butterfield, L. Lee, J. Mitchell, J. E. Rusby, E. E. Samaraweera, H. E. P. Yorke.

MIDWIFERY.—A. Z. Abushady, H. Archer, J. B. Fairclough, W. Fox, J. L. Hamilton, H. L. Hughes, L. Lee, J. E. Rusby, C. P. C. Sargent, H. E. P. Yorke.

* Section I † Section II.

The diploma of the society was granted to Messrs. B. A. Bull, R. Curle, L. A. J. Graham, R. Quesada-Jiménez, J. G. Lewis, D. C. Ogilvie, W. H. Rhys-Jones, J. A. W. Robinson, and H. E. P. Yorke.

Obituary.

SURGEON-GENERAL AYLMER MARTIN CROFTS, C.I.E., I.M.S.(RET.)

SURGEON-GENERAL AYLMER MARTIN CROFTS, C.I.E., Bengal Medical Service (retired), died suddenly of heart disease in London, on March 12th. He was born on May 25th, 1854, the son of Mr. George Crofts, of Temple Hill, Blackrock, co. Cork. He was educated at Queen's College, Cork, and took the diploma of L.R.C.S.Edin. in 1876, that of L.R.C.P.Edin. in 1877. He entered the I.M.S. as surgeon on March 31st, 1877, became surgeon-major on March 31st, 1889, and surgeon-lieutenant-colonel on March 31st, 1897; he was placed on the "selected list" on April 10th, 1903, promoted to colonel on October 15th, 1908, and to surgeon-general on April 7th, 1911; he retired less than a year ago (May 25th, 1914). He was an honorary associate of the Order of St. John, holding the Knight's Cross of the Order, received the C.I.E. on May 24th, 1900, the Knight's Cross of the Order of Philip the Magnanimous (Hesse) in 1904, and was appointed Honorary Surgeon to the King on March 2nd, 1913. He was also in receipt of a good service pension during his last year of service.

His first ten years were spent in military service, when he was for several years medical officer of the 10th Bengal Lancers, Hodson's Horse. During these years he served in the second Afghan war of 1878–80, with the Kandahar and Khaibar field forces, took part in affairs with the Ghilzais at and near Jagdalak, and received the medal; in the Egyptian war of 1882, when he was present in the actions of Kassassin and Tel-el-Kebir, receiving the medal with a clasp, and the Khedive's bronze star; and in the Zhob Valley expedition of 1889, on the North-West frontier of India. In 1886 he was appointed residency surgeon of Gwalior, and tutor to the young Maharaja Scindia. In 1900-01 he served in the third China war as senior medical officer of the hospital ship *Gwalior*, which was presented to Government by the Maharaja of Gwalior, and received the medal given for that campaign.

In June, 1905, he became residency surgeon of Kotah and Ghalawar, and in October, 1905, administrative medical officer of the newly created North-West Frontier province. As surgeon-general he was principal medical officer of the Rawal Pindi division. When the Indian princes presented the hospital ship *Loyalty* to the Indian Government for service in the present war, they expressed a desire that Surgeon-General Crofts should be appointed to the medical charge, but his health would not allow him to accept the post. Many in India will regret his passing, for he was always most popular alike with his friends and equals in age, and with the juniors who served under his command.

His elder brother, James Crofts, was educated with him at Queen's College, Cork, where he took the M.D. of the Queen's University in 1874. He entered the Indian Medical Service in the same batch, on the same day, but junior to his younger brother. Like him, he served long in the Political Department, but retired as a lieutenant-colonel on July 15th, 1905, and died at Cork on May 7th, 1913.

JAMES HUXTABLE BENDLE, M.B.,

OPHTHALMIC SCHOOL OFFICER, SOMERSET.

JAMES HUXTABLE BENDLE, M.B.Lond., M.R.C.S., L.R.C.P., Ophthalmic School Officer for Somerset, died suddenly on April 13th, at his residence in Bath, at the age of 40. He had suffered from chronic bronchitis, and possibly phthisis, for some years. He had been to Hove for the Easter

holidays, and only felt slightly unwell the evening before his death, when he feared he was threatened with an attack of influenza. Early in the morning, while still in bed, he had a profuse attack of haemoptysis, which proved fatal almost immediately.

Dr. Bendle was born and educated in Devonshire, studied at St. Mary's Hospital, and in 1898 took the degree of M.B.Lond. and the diplomas of M.R.C.S. and L.R.C.P. He held the appointments of resident medical officer at York Dispensary, assistant house-surgeon and house-surgeon at the County Hospital, York. He subsequently went into general practice at Abbots Bromley, Staffs., but his health became impaired, and he gave up general practice in 1908. At the beginning of 1909 he was appointed ophthalmic school officer and assistant school medical officer to the Somerset County Education Committee, and held this until his death. He leaves a widow and two sons.

Dr. W. G. PARKER (Assistant School Medical Officer, Somerset) writes: Dr. Bendle was my colleague in the School Medical Service in Somerset for over six years. His death is a great personal loss to his colleagues, to whom he was always a true friend and loyal comrade. Perhaps one of his most outstanding characteristics was his loyalty to his friends, of whom he had many. He was a good companion, could tell a good story and tell it well, and an evening spent with him was never dull. A supremely conscientious worker, who devoted much care to detail, he was also a sound and capable practitioner with a wide knowledge which he brought to bear on his work. In his work as school oculist, each individual case received careful thought, as well as a thorough examination, and he was never satisfied with any result but the best possible. He remembered and followed up his cases for years, taking a great interest in them and keenly watching their progress. He never spared himself, and spent at his work many hours which should have been free for rest and recreation. Both as an official and as a man he set and lived up to a very high standard. His death is a great loss to the School Medical Service, and his place will be difficult to fill satisfactorily.

THE LATE SIR THOMAS CLOUSTON.—Dr. George M. Robertson, Physician - Superintendent, Royal Asylum, Morningside and Craig House, Edinburgh, writes: The death of Sir Thomas Clouston has come as a blow, for although it was known that his health had recently not been good, he continued to display till the last that energy and optimism which distinguished him all his life. The loss of one with so strong a personality will be deeply felt by his numerous friends and pupils. His death is more than a personal matter: it is a break with the past, a landmark in the history of psychiatry. Like many another, I came under his spell while attending his admirable lectures on mental disease. No man ever lectured in a more forceful and interesting way and threw himself more zealously into this work. Failure of attention on the part of a student was almost a psychical impossibility. Clouston was so richly endowed with natural gifts that he was a born teacher. He was a fluent and ready speaker and had a full command of appropriate language. He had a most excellent memory and it was richly stored with clinical facts as his experience was an exceptionally extensive one. There is no doubt he had the born clinician's insight to feel symptoms almost instinctively, and to give them their proper value. There is little difficulty in understanding, therefore, that the effect of such a teacher on students was almost "dazzling," as one writer has it. There was no class in the medical curriculum from which students carried away such vivid and permanent impressions of useful clinical facts. It seemed a natural thing to take up work in which one's interest had become so roused. I therefore found myself in course of time an assistant at Morningside, and I saw Dr. Clouston in his capacity as a psychiatrist and superintendent. He was keen and energetic in the performance of his own duties, and he expected and compelled every one else to be the same. He insisted on high ideals of medical treatment, kindliness of behaviour towards the patients, and an atmosphere of work. This did not conduce to an easy time for his medical subordinates by any means, but it was the making of them. In spite of it, probably on account of it, they all grew devoted to the work they had taken up, and when the time came ripe for promotion, no one could have worked harder for his assistants' success than he did. There was one drawback to this commanding personality. He so overshadowed his assistants that the independence of their judgement perhaps suffered. They were so loyal to him and to the institution that they felt that the last word had been said on any point of administration or treatment when the practice at Morningside had been quoted. The best monument and tribute to his memory is no doubt the work being done by his former pupils and assistants in all parts of the empire. The most striking is Craig House. It needed a strong personality to induce a board of managers to embark on a new scheme costing nearly £150,000. Clouston, however, felt that it had become necessary to provide a modern mental hospital for the richer classes which would be worthy of the metropolis of Scotland and the reputation of the great medical school there. The success of this bold and well-conceived enterprise has been phenomenal, and it stands probably unequalled for beauty of situation, amenities, and arrangements. It is, therefore, not too much to say that his death is more than a personal loss—it is a landmark in the history of psychiatry.

DR. DAVID WILSON, of Birtley, died on April 18th. For the last four months he had been disabled by heart disease. In his illness he was attended by Dr. John Johnson, of Birtley, and by his old college contemporary, Sir Thomas Oliver, with whom he always remained on the friendliest terms. By his kind and amiable disposition, Dr. Wilson succeeded early in his professional career in making for himself a large practice, first in Usworth and latterly in Birtley, where he succeeded Dr. Bain when that gentleman removed to Harrogate. By his patients he was held in high esteem. In 1908, on being appointed surgeon to the Birtley Iron Works and the Pelaw Main Collieries, he resigned a considerable part of his practice to his partner and relative, Dr. Johnson. In this position he was extremely successful in settling claims and in helping to maintain good relations between employers and employed. Dr. Wilson was also medical officer for the Third Division of the Chester-le-Street District Council. In politics a Conservative, and in religion a Churchman, he never obtruded his own views. Dr. Wilson was a keen follower of games. Few people knew better than he, or could appreciate more keenly, the caprices of a football contest. On several occasions he acted as referee in the matches of England *versus* Scotland. He filled with great acceptance a similar position in many important Association matches in the North of England. He leaves a widow, a son, and two married daughters. The large crowd of mourners and onlookers who attended the funeral at Birtley Parish Church on April 21st was an indication of the esteem in which Dr. Wilson was held. The path up to the church was doubly lined by a body of St. John Ambulance men and Girl Scouts in uniform.

DR. PANTLAND HICK, of Liverpool, died on April 17th, at the age of 33. He was educated at the University of Liverpool, where he had a distinguished career as a student, winning several scholarships. He graduated M.B., Ch.B. at Liverpool in 1904. He also took the degrees of M.B., B.S.Lond. in 1906, and that of M.D. in 1909. He was an assistant physician to the Liverpool Royal Infirmary and Subcurator of the Pathological Museum of the University of Liverpool. He was a Captain in the R.A.M.C.(T.F.) attached to the 1st Western General Hospital. He had been honorary physician and pathologist to the Stanley Hospital, and to the Liverpool Infirmary for Children. He was the author, in conjunction with Dr. Blair Bell, of a paper on the physiology of the female genital organs, which appeared in the BRITISH MEDICAL JOURNAL in 1909. Dr. Pantland Hick was a man of very amiable disposition, and a career of high promise has been cut short by his untimely death.

WE regret to announce the death, on April 22nd, of Mr. F. ADDISCOTT, F.I.A., who from February, 1893, till June 1912, was secretary of the Medical Sickness and Life Assurance Friendly Society. On retiring from the position of secretary he was appointed actuary to the society.

Medical News.

COLONEL C. H. MILBURN, M.B., has been gazetted a Deputy Lieutenant of the East Riding of Yorkshire and of the City and County of Kingston-upon-Hull.

THE King has granted Dr. George E. Morrison, political adviser to the Republic of China, permission to wear the Insignia of the First Class of the Order of the Excellent Crop conferred upon him by the President in recognition of valuable services rendered.

As already announced, the annual meeting of the British Association will be held this year at Manchester. It will begin on September 7th, under the presidency of Professor Arthur Schuster, and end on September 11th. The president of the Section of Physiology is Professor W. M. Bayliss; Professor E. A. Minchin will preside over the Section of Zoology, and Dr. C. G. Seligman over that of Anthropology.

SICK and wounded officers of the allied armies will be accorded gratuitous treatment at Aix-les-Bains, Savoie. Some of the hotels have been opened, and the syndicate of hotel proprietors announces a special tariff, varying from 5 to 10 francs a day inclusive, for convalescent officers. The train service between Paris and Aix is said to be good.

THE first clinical meeting of the newly-formed North Staffordshire Medical Society was held at the North Staffordshire Infirmary on Thursday, March 25th, when a number of cases and specimens were shown. The president of the society is Dr. John Russell, and the honorary secretaries Dr. R. H. Dickson, Nelson Place, Newcastle-under-Lyme, and Dr. E. E. Young, Stoke Road, Stoke-on-Trent.

The question of dealing with soldiers, picturesquely called *blessés de la tuberculose*, has attracted the attention of the French Government. M. Malvy, the Minister of the Interior, issued a circular on April 10th suggesting the creation in every department of one or more family or agricultural colonies for tuberculous soldiers in places especially suited by goodness of air and abundance of sunlight to the mitigation or cure of the disease. There the men would be sent while waiting for their discharge from the service or afterwards. They would be kept at the expense of the State till they no longer constituted a danger to the community.

THE report for 1913 of the Inspector concerning institutions certified or licensed under the Inebriates Acts 1879 to 1900, has been delayed on account of pressure of other work, before and after the war. Twelve inebriate reformatories have been certified under the Inebriates Act 1898. Three were established by county councils acting singly, one by a combination of county and borough councils, and nine by other persons. One reformatory (Chesterfield) was closed in September, 1913; six were still in regular work at the end of the year. The number of persons committed during the year 1913 to reformatories under the provisions of the Inebriates Act, 1898, was 310 (males 93, females 217). Of these, 21 were from assizes and sessional courts under Section I, and 289 under Section II, for the most part from petty sessional courts. Down to the end of 1913, 586 persons in all had been committed under Section I of the Act. The greatest number of offences which led to the imposition of reformatory sentences under this section was for "unlawfully neglecting children in a manner likely to cause them unnecessary suffering"; these numbered 459. The next on the list is that of stealing and receiving (47). There were 44 cases of attempted suicide. The offences that led to the committal of persons under Section II of the Act numbered 289, and of these 217 were that while being drunk these persons were guilty of disorderly behaviour; 67 were found drunk in a public place. During the fifteen years that the Act has been in force 4,004 cases have been dealt with. Two State reformatories (Aylesbury and Warwick) are used for the most part for inmates transferred from the certified inebriate reformatories on account of misconduct. During the year 19 women were received at Aylesbury, 18 on transfer from certified reformatories, and 1 direct from court on commitment; 24 women were released on expiration of sentence, and 3 were removed to lunatic asylums. Seventeen retreats were licensed under the Act at the close of 1913; one—the "Westwood Tower" Retreat, Wandsworth Common—was closed. During the year 161 persons signed the necessary application before a Justice of the Peace, and were duly admitted as patients under the Act, and 360 persons entered as "private patients" without any attestation before a Justice. There was a slight decrease in the number of "patients under the Act" as compared with 1912.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

URTICARIA.

VLADIMIROW.—A practitioner in the tropics asks for advice in the treatment of severe urticaria in a man, aged 36, otherwise strong and healthy. The diet has been regulated, and the bowels have been kept freely open; grey powder and salol have been tried as intestinal antiseptics, and calcium chloride and adrenalin have also been prescribed.

LETTERS, NOTES, ETC.

ANTISEPTICS.

CAPTAIN JOHN FURSE MCMILLAN, M.R.C.S.Eng., R.A.M.C. ret. (Sandown, Isle of Wight), writes: After the perusal of the Hunterian oration, the writer was struck with the hint conveyed by Sir W. Watson Cheyne that any suggestion, however seemingly feeble, and proceeding from howsoever a humble source, would be acceptable by those who make a speciality of determining the relative growth of streptococci on agar plates under the different conditions of varied antiseptics—such antiseptics as are used for the prevention of tetanus, gangrene, and the various degrees of suppuration. Sir James Paget and Billroth were disciples of Celsus, and their work as surgical pathologists concerning inflammation was based on his pronouncements. But Celsus, like the good Samaritan, as we have been recently reminded, was well aware of the antiseptic properties of alcohol, for he says (Bk. VII, c. iii): "As often as the ulcer may have opened up wash it. If the secretion would appear to be held back, wine mixed with water, or water in which mastich has been boiled, would be indicated." (*Lenticula*, in my text, Collins's, means lentils; but a more probable reading is *lentiscula*, meaning gum mastich, obtained on the shores of the Mediterranean, but not readily soluble in water.—Garrod). So that the Roman worked on quite antiseptic lines, for mastich is allied to the turpentines, and we are told that the whole process of sterilizing the hands before operation may be summed up by washing them in this spirit (Baird and Cathcart's *Minor Surgery*).

Corrosive sublimate would appear ill adapted to the stern realities of war, where there is little time to discuss the question of albumin.

Iodoform, had it ever any potency, would appear to have lost it, whilst the effect of the application of its substitute and successor, iodine, would appear to be of too lasting a nature to be applied to open wounds.

Carbolic acid would appear to be detrimentally absorbed into the system, whilst the mere fact of its absorption would seem to demonstrate that beyond its actual effect upon the wound itself it is neither a prophylactic nor germicide, when either present in the blood or system generally.

Tar was employed in the Peninsular and Crimean wars (Longmore, Lawson), both as a styptic and antiseptic.

As regards creosote, the writer remembers 7 cases of phagedaena of the penis in the Cambridge Hospital, Aldershot, when in order to reduce swelling before proceeding to circumcise and trim, he used creosote with every success.

It is well to realize that tar, pitch, wood resins, exudations, and oils, are all allied, whether obtained from wood or the carbonized lignum. In an autumn number of the BRITISH MEDICAL JOURNAL the sawdust of Norwegian pine was said to constitute the best agent for the prevention of the decomposition of urine; hence it was advanced as a prophylactic against the infection of wounds. But it would seem questionable whether its action would be other than local.

I would suggest that when a soldier appears at a dressing or clearing station, be the nature of the wound sufficiently grave—that is to say when there is either loss of tissue, smashing of bone, or both—wool or lint of the loosest consistence of fibre saturated with creosote should be freely applied on swabs and confined there—a more potent dressing than gum mastich.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

STERILIZATION OF WATER BY CHLORINE.

BY

CAPTAIN J. J. HARPER NELSON, M.D.,
F.R.C.S.EDIN.,
INDIAN MEDICAL SERVICE, 119TH INFANTRY.

AN article entitled "Sterilization of Infected Water in Camp and on the Line of March in India," published in the *Journal of the Royal Army Medical Corps* for October, 1913, under the names of Colonel F. H. Treherne and myself, described a method of generating chlorine, and of using it for sterilizing water. The article was not written for publication, and as some alterations were made in regard to the method of preparing the chlorine without my knowledge, and in consequence some confusion has arisen regarding the technique, it seems now advisable to publish fuller details, both with reference to the method and the results obtained by me.

EVOLUTION OF THE METHOD.

In September, 1912, Colonel F. H. Treherne, A.M.S., suggested to me, whilst I was in charge of the Brigade Laboratory, Bangalore, the advisability of carrying out some experiments to ascertain the value of chlorine as a water-purifying agent. As bleaching powder is unstable, and not easily obtained in India, he suggested the use of potassium chlorate and concentrated hydrochloric acid to produce chlorine, on the same lines as are used in the preparation of Burney Yeo's chlorine mixture.

Into a bottle capable of holding 30 oz. 14 grains of potassium chlorate were placed. One drachm of concentrated hydrochloric acid was then added and the bottle stoppered. When all the potassium chlorate had been decomposed by the acid the stopper of the bottle was removed and 20 oz. of water added by degrees, shaking between each addition to take the liberated chlorine into solution. A solution of chlorine of such a strength should have thus been obtained that 1 oz. added to 5 gallons of water gave 1 in 500,000 of free chlorine. But fallacies were soon found in this procedure. The potassium chlorate got scattered about the large bottle, and in consequence by no means all of it was decomposed by the acid; and when as much chlorine as possible had been liberated, a considerable amount of gas was lost at each unstoppering of the large bottle when adding the water to it. In consequence the actual strength of chlorine solution finally obtained must have been considerably below that calculated.

A number of experiments were carried out with chlorine prepared in this way, and though the results were uncertain they were sufficiently encouraging for continuance of the investigation.

The obvious defects of the method having impressed me, I devised other means of producing chlorine so as to get the full value of the gas from the potassium chlorate used, and I finally settled on the method described in the *Journal of the Royal Army Medical Corps* already referred to, and have had every reason to be satisfied with it.

THE APPARATUS AND METHOD OF PREPARING CHLORINE SOLUTION.

Instead of having a large bottle full of chlorine solution and adding water, I have reversed the process by having a bottle holding 20 oz. of water and adding the chlorine in the following manner:—Two bottles are required—one, A, with a capacity of 24 oz., and another, B, with a capacity of 1 oz. The large bottle has a mark on the side indicating 20 oz.; the smaller has a mark indicating 2 drachms. The stopper of A is perforated, and two pieces of glass tubing about 0.5 cm. in diameter are passed through. One passes down almost to the bottom of the large bottle A, the other just passes through the stopper. The stopper of small bottle B has one piece of tubing let through which projects inwards for ½ in. This small bottle is connected to the long tube in bottle A by rubber tubing.

A complete apparatus, of which this is the model, is being made for me. It consists of an unbreakable apparatus as described, an unbreakable bottle holding 24 oz. of concentrated hydrochloric acid, a small box holding 350 5-grain potassium chlorate tablets, measure glass, and spare parts. It weighs only 12 lb., and contains sufficient material to sterilize 9,600 gallons of water without replenishing—that is, sufficient water for a battalion 1,000 strong for nine days.

Preparation of the Chlorine Solution.

Fill the large bottle A up to the 20 oz. mark with water and insert the stopper, closing the stopcock on the short tube. Place 2 drachms of concentrated hydrochloric acid in the small bottle B, powder three 5-grain tabloids of potassium chlorate (grains 15), and add the powder to the hydrochloric acid in the small bottle. At once insert the stopper. The potassium chlorate is decomposed by the HCl and Cl_2 and ClO_2 are liberated. These gases pass along the rubber tubing, down through the long tube in bottle A, and bubbling up through the water in the large bottle, being readily soluble, go into solution. The evolution of these gases is accelerated by shaking the small bottle and warming it gently.

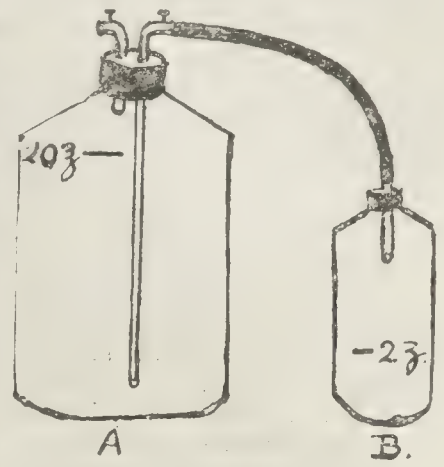


Fig. 1.

From time to time the stopcock on the short tube of bottle A is opened to lower the pressure. When the whole of the potassium chlorate in bottle B has been decomposed by the hydrochloric acid, its contents are poured into bottle A by unstoppering both bottles. This makes certain of getting all the Cl_2 and ClO_2 liberated from the original potassium chlorate. The large bottle then contains a solution of Cl_2 and ClO_2 of such a strength that 1 oz. added to 5 gallons of water gives a dilution of 1 in 440,000.

The preparation of chlorine solution as described takes only fifteen minutes.

Chemistry of Process.

The reaction I rely on requires an excess of concentrated hydrochloric acid, and is as follows:

$$4\,KClO_3 + 12\,HCl = 4\,KCl + 6\,H_2O + 9\,Cl + 3\,ClO_2.$$

ClO_2 itself is a very powerful oxidizing agent and some of it is probably acted upon by the HCl, chlorine being liberated.

In all equations such as this the resulting products are seldom truly quantitative, the products coming off in somewhat different proportions according to the conditions under which the substances react, such as concentration, excess of either, temperature, etc. But the variation cannot be great.

The atomic weight of potassium chlorate is 122.56 (K = 39.1, Cl = 35.46, and O = 16).

Therefore, taking my formula as given:

$4\,KClO_3 + 12\,HCl$ liberates $9\,Cl + 3\,ClO_2$;

or $4 \times 122.56\,(KClO_3) + 12\,HCl = 9 \times 35.46\,(Cl) + 3 \times 67.46\,(ClO_2)$; *i.e.*, 490.24 parts of $KClO_3$ yield 319.14 of $Cl + 202.38$ of ClO_2; or 490.24 parts of $KClO_3$ yield 521.52 parts of gas ($Cl_2 + ClO_2$).

Therefore 1 part of $KClO_3$ will yield $\frac{521.52}{490.24}$ parts of gas.

$= 1.06$ parts of gas.

1 grain of $KClO_3$ acted on by HCl therefore yields 1.06 grains of gas; 15 grains of $KClO_3$ will therefore yield 15.9 grains of gas.

In almost all of my experiments I have taken 15 grains of potassium chlorate *plus* 2 drachms of HCl. From the above calculations these quantities yield 15.9 grains of gas ($Cl_2 + ClO_2$), which pass into solution in 20 oz. of water in the large bottle A. As 20 oz. of water contain 8,750 grains by weight, it means that my stock solution of chlorine is 1 in 550 (8,750 ÷ 15.9). One ounce of this is added to 5 gallons of water. This equals 1 oz. to 800 oz., and as the stock solution is of a strength of 1 in 550, it follows that there is 1 of gas in 800 × 550, or 1 in 440,000 of water.

In nearly all my experiments I worked with this strength of chlorine (roughly 1 in 500,000). My reason for doing so was that I found this concentration to be efficient in destroying organisms of water-borne diseases without rendering the water unpalatable, and also because I wished to standardize the whole process, so that no matter what water was being dealt with the technique would always be the same. By having a fixed strength of chlorine and a fixed period of contact, unskilled persons

can be trained to carry out the whole process, and mistakes will not be made.

The reason potassium chlorate and hydrochloric acid have been selected as the source of chlorine is that these substances are cheap, universally obtainable and not dangerous to handle.

EXPERIMENTAL RESULTS.

In all experiments recorded in this paper the technique described above has invariably been adhered to. A strength of 1 in 440,000 of chlorine has been used, and half an hour's contact allowed before making observations on the efficacy of the method. Further, I have always worked with large bulks of water, never less than $2\frac{1}{2}$ gallons. From a practical point of view this seemed sounder than using small quantities.

My experiments fall roughly into two main groups: I, Observations on Bangalore tap water artificially contaminated with *B. typhosus*, *B. paratyphosus* A, and *B. cholerae*. II, Observations on "natural waters" such as would be used on service, that is, waters from open tanks, wells, etc.

A few isolated experiments regarding the reliability of the process in domestic water supplies, camps, and the preparation of mineral waters, are also given.

I. *Artificially Contaminated Waters.*

In all of these experiments Bangalore tap water was used. This water is of exceptionally good quality. It is pumped up from a well-protected catchment area 18 miles distant, sedimented with alum and purified by filtration through Jewell filters. It is very clear, and contains very little organic matter.

Experiment 1.

October 15th, 1912.—Five gallons of tap water were taken and contaminated by adding 10 c.cm. of 24-hours fresh broth culture of *B. typhosus*.

(*a*) A colony count on Drigalski-Conradi medium, after 48 hours' incubation, was made, and five tubes of MacConkey's bile salt lactose broth were inoculated with 10 c.cm. each of the contaminated water.

(*b*) As a control 10 oz. of the contaminated water were set aside. Half an hour later a colony count on Drigalski-Conradi, after 48 hours' incubation at 37° C. was made, and each of five tubes of MacConkey's bile salt lactose broth were inoculated with 10 c.cm. of this specimen.

(*c*) To the 5 gallons of contaminated water 1 oz. of chlorine solution was added and allowed half an hour's contact. At the end of half an hour Drigalski-Conradi was inoculated with 1 c.cm. of chlorinated water for purposes of making a colony count, and each of five tubes of MacConkey's bile salt lactose broth was inoculated with 10 c.cm. of specimen.

Result.

Sample.	Colony Count on Drigalski-Conradi after 48 hours at 37° C.	5 Tubes Bile Salt Lactose Broth after 48 hours at 37° C.
(*a*) Tap water + B. typhosus before adding chlorine	500 per c.cm.	+5
(*b*) Same, control, half-hour later	380 per c.cm.	+5
(*c*) Tap water + B. typhosus + Cl_2 (1 in 440,000)	Sterile	−5

From this experiment it is seen that a water, highly contaminated with *B. typhosus*, after half an hour's contact with chlorine in the strength recommended, is rendered free from all typhoid organisms.

Experiment 2.

October 17th, 1912.—The above experiment was repeated in every detail except that a twenty-four hours' culture of *B. paratyphosus* A was used instead of *B. typhosus*.

Result.

Sample.	Colony Count on Drigalski-Conradi after 48 hours at 37° C.	5 Tubes Bile Salt Lactose Broth after 48 hours at 37° C.
(*a*) Tap water + B. paratyphosus A before addition of chlorine	200 per c.cm.	+5
(*b*) As above half-hour later ...	240 per c.cm.	+5
(*c*) Tap water + B. paratyphosus A + Cl_2 (1 in 440,000)	Sterile	−5

This experiment shows that chlorine completely destroys the *B. paratyphosus* A in half an hour.

Experiment 3.

November 11th, 1912.—Five gallons of tap water were contaminated by adding 10 c.cm. of a twenty-four hours' growth of *B. cholerae* in peptone broth. Two pints were kept as a control. To the remainder 1 oz. of chlorine water was added and allowed half an hour's contact. At the end of this period five Durham's tubes containing peptone broth were inoculated with chlorined water, and five others with untreated water and incubated for twenty-four hours at 37° C.

Result.

Sample.	5 Durham's Tubes containing Peptone Broth.
(*a*) Five gallons tap water + B. cholerae + Cl_2 (after half an hour's contact)	−5
(*b*) Control. Tap water + B. cholerae...	+5

This shows that chlorine, in the strength recommended, completely destroys *B. cholerae* in half an hour.

These are a few examples of a large series of experiments using other organisms, such as *B. coli* of Escherich, *B. dysenteriae* (Shiga), and *B. coscoroba*. The invariable result of half an hour's contact with chlorine in the strength recommended was to render the contaminated waters absolutely safe, and in most cases sterile.

II. *Observations on "Natural Waters."*

The waters of this series of observations were collected from wells, open tanks, and streams. They were very good samples of the kind of water that would be used by troops on service, and, as a matter of fact, many of the specimens of this series were actually collected by me for examination with a view to their being used on camps and manœuvres. There is therefore great practical value to be attached to the results of these experiments, far more than to those of the artificially-contaminated waters.

Experiment 1.

December 9th, 1912.—Water from a surface tank at the twelfth milestone, Dodballapur Road. This tank is about half a mile long by a quarter of a mile broad. It is within 200 yards of a village and surrounded by cultivation. The tank is well sunned and the water fairly clear. It had been used two days previously by the 7th Queen's Own Hussars to water their horses during a night's bivouac in its vicinity.

Result of Examination.

Before Treatment with Chlorine.			After Half an Hour's Contact with Chlorine.		
Medium.	Total Colonies per c.cm. after 48 hours at 37° C.	B. coli Present in c.cm.	Medium.	Total Colonies per c.cm. after 48 hours at 37° C.	B. coli Present in c.cm.
Agar	900	1 c.cm.	Agar	*Nil*	None in 50 c.cm.

This sample of water was examined in fuller detail according to Clemesha's method to determine the varieties of organisms present and classify them according to their powers of resistance to sunlight, etc., and the following interesting results were obtained by picking off ten colonies from the agar and passing them through sugars as given below.

CLASSIFICATION OF TEN COLONIES.

Source as above.

Colony Number.	Motility.	Gram Stain.	Spores.	Gelatin Liquefaction.	Indol.	Lactose.	Saccharose.	Adonit.	Dulcit.	Inulin.	Voges-Proskauer.	Organism and Group.
1.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.
2.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.
3.	+	+	−	−	+	−	−	−	−	−	−	B. Grunthal I.
4.	−	−	−	−	+	+	+	−	−	−	−	B. coscoroba IV.
5.	+	+	−	−	+	−	−	−	−	−	−	B. Grunthal I.
6.	+	−	−	−	+	+	−	−	+	−	−	B. coli communis I.
7.	−	−	−	−	−	+	+	+	−	−	+	B. lactis aërogenes IV.
8.	+	−	−	−	+	+	−	−	+	−	−	B. coli communis I.
9.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.
10.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.

There were therefore present four organisms of Group I, the least resistant type, and therefore indicating recent contamination, and six organisms of Group IV, the most resistant type. Yet after half an hour's contact with chlorine (1 in 440,000) all, including the highly resistant Group IV, of the organisms had been destroyed—an excellent testimony to the efficiency of the method I advocate for purifying infected waters.

Experiment 2.

October 28th, 1912.—Water from a well at tenth milestone, Yelahanka Road, near Bangalore. The well is a deep one, protected all round by a wall and stone lined to level of water in it. Situated on outskirts of a village and used by the villagers as their water supply. The water is clear.

EXAMINATION BEFORE CHLORINATION.

Source as above. Collected, 28-10-12. Examined, 29-10-12. Total Colonies on Agar after 48 Hours at 37° C., 700 per c.cm. Faecal Organisms present in 5 c.cm.

Colony Number.	Motility.	Gram.	Spores.	Gelatin Liquefaction.	Indol.	Lactose.	Saccharose.	Adonit.	Dulcit.	Inulin.	Voges-Proskauer.	Organism and Group.
1.	−	+	−	−	−	+	+	+	−	−	+	B. lactis aërogenes IV.
2.	−	+	−	−	−	+	+	+	−	−	+	B. lactis aërogenes IV.
3.	+	−	−	+	−	+	+	−	−	−	−	B. cloacae IV.
4.	−	+	−	−	+	+	+	−	−	−	−	B. coscoroba IV.
5.	−	+	−	−	−	+	+	+	−	−	+	B. lactis aërogenes IV.
6.	−	+	−	−	−	+	+	+	−	−	+	B. lactis aërogenes IV.
7.	+	−	−	+	−	+	+	−	−	−	−	B. cloacae IV.
8.	+	−	−	−	+	+	−	−	+	−	−	B. coli communis I.
9.	+	−	−	+	−	+	+	−	−	−	−	B. cloacae IV.
10.	+	−	−	−	+	+	−	−	+	−	−	B. coli communis I.

Group I, two colonies; Group IV, eight colonies. A fairly good water supply of its kind, but showing recent contamination. It was treated with chlorine, and examined on the same lines after half an hour's contact, with the following result:

EXAMINATION AFTER CHLORINATION.

Source, as above. Total Colonies on Agar after 48 Hours at 37° C., 4 per c.cm. Faecal Organisms, None in 50 c.cm.

Colony Number.	Motility.	Gram.	Spores.	Gelatin Liquefaction.	Indol.	Lactose.	Saccharose.	Adonit.	Dulcit.	Inulin.	Voges-Proskauer.	Organism and Group.
1.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.
2.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.
3.	+	−	−	+	−	+	+	−	−	−	+	B. cloacae IV.
4.	−	+	−	−	−	+	+	+	−	−	+	B. lactis aërogenes IV.

This experiment again shows the value of chlorine. The colony count was reduced from 700 to 4 per c.cm. Faecal organisms present in 5 c.cm. and upwards before were not found in 50 c.cm. after chlorination.

Experiment 3.

October 14th, 1914. — Source of water, the Jewell filters, Bangalore, before filtration, but after sedimentation with alum. Two pakhals, A and B, were taken, and five gallons of this water placed in each. (A pakhal is a metal receptacle for carrying water, capable of holding six gallons, which can be loaded on a mule. Each mule carries two, one on each side. Every regiment has one pair per company for camps, etc.) Pakhal A was kept as a control. To pakhal B was added 1 ounce of chlorine water. The water in both pakhals was identical except that to B chlorine had been added.

The mule was sent for a walk at 9 a.m., immediately after adding the chlorine. At 9.30 specimens were taken from both pakhals and examined.

Result of Examination.

Specimen.	Colonies on Agar.	B. coli Present.	Comments.
(*a*) From pakhal A (control)	660 per c.cm.	Present in 10 c.cm.	Twelve colonies examined showed Group II—9, Group IV—3.
(*b*) From pakhal B. Same as (*a*) plus chlorine	2 per c.cm.	None in 50 c.cm.	Both B. cloacae. Clemesha's Group IV.

This observation I consider of great importance, as it shows that water can be dealt with efficiently whilst troops are actually on the move. In this case the colony count was reduced from 660 per c.cm. to 2 colonies per c.cm., and though faecal organisms were found in 10 c.cm. of the control (pakhal A), none were present in 50 c.cm. of the chlorinated water after half an hour's contact.

These are a few examples of a large series of experiments which were performed to test thoroughly the efficiency of the method of sterilizing water which I have described, and they show clearly how very simple and effectual it is. In no instance did I fail to get satisfactory results.

I wish now to produce negative evidence in favour of the method advocated. Major R. Hime, R.A.M.C., writes as follows:

I am sorry the chlorine method does not seem popular in your part of the country, as I am a firm believer in the method of purifying water. I used it entirely, continuously, and solely at Camp Rajankunti for three weeks at the end of November and beginning of December last. No other method was employed; in fact, no boilers were taken out, nor was firewood issued for boiling water. The method employed for making the chlorine water was that recommended by Colonel Treherne and yourself in the Corps *Journal* some months ago.

I or my assistant surgeon made a couple of Winchester quarts of chlorine water each evening, so as to have it ready for use early the following morning.

One of the sanitary orderlies was instructed as to the quantity of chlorine water to be added to the water-carts or pakhals, and he did this at the well where they were filled up before the cart started back for camp.

Only drinking water was treated, and all carts, etc., which were used for drinking water were specially marked, and whenever they came to the wells had chlorine added.

The well was a "shallow one," within about eighty yards of a native village, and surrounded by stacks of manure, etc.

The water, after treatment, by the time it had been poured into the drinking-water receptacles had practically no smell or taste. Water used for making mineral waters was treated in the same way, and though the mineral water was very largely used in camp, I never had a single complaint from either the officers' mess (fifty officers) or men.

I had five batteries in camp for rather over three weeks and during the whole of that period *I never sent one sick man to hospital*, nor did any man report sick with the ordinary bowel complaints (diarrhoea, constipation, gastritis, etc.). The only people I had to deal with were those suffering from accidents. The weather was cold, raw, and damp, and one would have expected bowel complaints, but none came. I am a firm believer in the process. Simplicity, combined with efficiency and cheapness. Make what use you like of my remarks.

Colonel D. Macewen, commanding the 2nd Queen's Own Cameron Highlanders, writes as follows:

Many thanks for your letter in connexion with chlorine. We used it from Belgaum to Poona with satisfactory results, as there were only 3 cases which one could attribute to water, namely, 1 dysentery, 1 diarrhœa, and 1 stomach-ache. We drank some pretty foul-looking water too. During medical and inter-brigade manœuvres the battalion again had it in use. There were no intestinal cases. The advantages of a sterilizer such as chlorine were most marked. . . . There is no question that the boiling of water on active service and even at manœuvres is impracticable.

There have been no complaints as to taste. I have taken the trouble to ask repeatedly. The minerals are made with chlorinated water and are in every way satisfactory.

These two testimonies regarding the ease with which the whole process can be carried out and the very satisfactory results obtained under service conditions from an experienced medical officer and observant commanding officer should be received with the greatest respect and confidence. It seems to me that little can be added to substantiate the claim that this method of purifying water by chlorine is an advance on all previous efforts in this direction, and that it is worthy of extended trial.

No claim is advanced to regard sterilization by chlorine as a new discovery. The work of Sims Woodhead has

established chlorine as pre-eminently the best chemical means of attaining this end. He has shown that as weak a solution as 1 in 7 million of chlorine will destroy the *coli* and typhoid group of organisms.

Nasmith of Toronto has also demonstrated the very powerful germicidal powers of this gas. Dr. F. Adams of the Toronto Health Department has kindly written to me regarding the use of chlorine in water purification. He states:

Here in Toronto we use a chlorine dose up to 0.3 parts per million. To get efficiency and still avoid taste we find it necessary to vary the dose according to the season, the direction of the wind, etc. A dose from 0.15 to 0.3 is, we believe, suitable for great lakes water, such as we have here in Toronto. In Ottawa we understand they find it necessary to use a dose of chlorine more than five times as great as we use in Toronto. The Ottawa water supply is from the Ottawa River, which has its origin in swampy water. Bleaching powder is commonly used as the source of chlorine in this country.

Dr. Adams kindly enclosed a pamphlet by Dr. Nasmith describing his method of preparing and using chlorine. The following facts are there recorded:

This will give 0.4 to 0.5 part of free chlorine to a million parts of water, and in ten minutes will destroy all typhoid and colon bacilli or other dysentery-producing organisms in the water. Moreover, all traces of chlorine will rapidly disappear. This method of purification has been used with Toronto Bay water inoculated with millions of bacteria. Every dangerous germ has been destroyed, and it has been found quite unnecessary to boil the water. This method has been in use for several years, and has proved of great value to those living in summer places where water supplies are apt to be impure.

I advocate the use of chlorine in a strength of, roughly, one in half a million. This is four times as strong as Nasmith, and fourteen times as strong as Sims Woodhead recommends. I also recommend thirty minutes' contact, as against ten minutes recommended by Nasmith and twenty minutes by Woodhead. I have done this because Indian waters contain often a large excess of organic matter which absorbs a good deal of free chlorine. Experiment has shown me, however, that any water that would be selected for drinking purposes can be rendered absolutely safe by 1 part in 500,000 of chlorine with thirty minutes' contact, and so, as already pointed out, in order to standardize the whole process, no alteration is made regarding these factors to obviate errors which might otherwise arise.

Chlorine used in this strength does not give the water any objectionable taste. This has been referred to in the letters of Colonel Macewen and Major Hime, and in my own regiment I have been using this method for months, and the men, though very particular about their drinking water, have not once made any complaints on this score.

Practical Application of the Method.

The method was originally devised for use on service with troops, but it has a much wider sphere of usefulness. It can be used by troops on the march, on manœuvres, etc., by troops in barracks, by smaller parties, such as men out shooting, by households where there is no filtered supply available, and so on. In fact there is no limit to its use.

When used by troops each battalion or independent unit should have *one apparatus for every 200 men*—roughly one for each double company, squadron of cavalry, or battery of artillery—with perhaps an extra outfit for head quarters.

During peace men should be trained in the method of preparing and using the chlorine, and on service trained men would thus be at once available for duties in the water section of his unit. Each water orderly would carry a complete outfit—weighing only 12 lb.—and he would then have sufficient material to give each of 200 men one gallon of drinking water a day for seven weeks without replenishing.

If the water used as the source of supply is clear, the plan adopted by Major Hime, of adding the requisite amount of chlorine at the place of filling the pakhals or water tank, is excellent. The shaking of the water in the receptacles during transit to camp ensures thorough mixing of the chlorine with the water, and also time is saved by the period of contact being partly taken up by the time of transit. In this way the water is ready for drinking in much less than thirty minutes after it reaches the receptacles in camp.

If the water is turbid, clarifying by alum is necessary This must be done in camp to allow sedimentation to take place, and then the requisite amount of chlorine is added to the water.

I have frequently examined samples of water treated in this way with most satisfactory results. The experiment already given of pakhals on a mule is one of such. Another observation of a similar nature, kindly carried out by Major W. W. Browne, R.A.M.C., is as follows:

June 30th, 1914.—Source of sample, Ahmednagar water supply. This water was very turbid, being an unfiltered supply, not even clarified with alum, distributed through pipes. It is often quite muddy. My regimental "diggies" (Willesden canvas receptacles supported by a collapsible wooden framework, and for use on manœuvres, etc., capable of holding 60 gallons each) were filled at 7 a.m. The requisite quantities of chlorine were added by a sanitary orderly, and specimens collected by him.

Report on Results.

Specimen.	Colonies on Agar per c.cm. after 48 Hours at 37° C.	Colonies on Drigalski-Conradi after 48 Hours at 37° C.
1. Tap water from "diggie" unclarified and *before* adding chlorine	Profuse growth	Profuse growth.
2. Tap water from "diggie" *after* being clarified with alum, but *before* adding chlorine	Profuse growth	Profuse growth.
3. Tap water from "diggie" *not* clarified with alum, but treated with chlorine and allowed 30 minutes' contact	Profuse growth	Sterile.
4. Tap water from "diggie" *after* clarification with alum, and then treated with chlorine and allowed 30 minutes' contact	*Sterile*	*Sterile.*

The chlorine used in these experiments was prepared the previous evening by my subassistant-surgeon, and used in the strength recommended, 1 in 440,000. From this experiment it is seen that by sedimenting and chlorinating the water complete sterilization resulted.

Domestic Supplies.

The method of purification is eminently suited for domestic water supplies where filtered water is not available. I have used it for many months in my own bungalow in Ahmednagar in the following way:

I had two tanks made of tin capable of holding five gallons each. One is placed on a shelf on the wall, and the second on a table immediately below (see diagram). Each tank has a tap 2 in. from the bottom. Both have closely fitting removable lids.

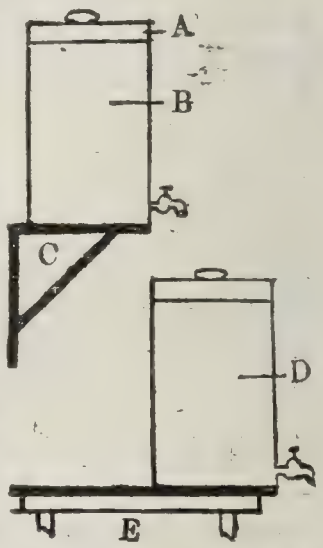


Fig. 2.—A, Lid; B, sedimentary tank; C, shelf; D, chlorinating tank; E, table.

The upper tank is filled the last thing at night and alum added as required. During the night sedimentation takes place, all the sediment falling below the level of the tap. In the morning the lid of the lower tank is taken off, and the clarified water from the upper tank is run into it. The requisite amount of chorine is then added to the lower tank, the lid replaced, and in half an hour the water is ready for use.

The water from the lower tank is beautifully clear and sparkling, and, though frequently examined, it has always been bacteriologically above reproach.

Mineral water factories can similarly be supplied with a safe water. Boiling, the almost universal practice in India, is extremely difficult to carry out on a large scale, and as it is not uncommon for factories to require 200 gallons of water daily, even though the water be boiled it is almost as difficult to cool it again rapidly enough for use. If the water is not cool the gases cannot be forced into solution in sufficient quantities, and the mineral, therefore, is very flat. By using chlorine, in place of boiling, all these difficulties are solved. In my own regimental factory the chlorine method has been in use for many months with complete success.

The following is the report of Major Browne, R.A.M.C. kindly made for me on one occasion:

MAY 8TH, 1914.

Specimen.	Colonies per c.cm. on Agar after 48 Hours at 37° C.	Colonies per c.cm. on Drigalski-Conradi after 48 Hours at 37° C.
1. Ahmednagar tap water ...	Profuse	Profuse
2. Tap water + alum + chlorine	Scanty	*Sterile*
3. Soda water made from (2) ...	Scanty	*Sterile*

This shows how reliable the method is, and it is perfectly simply carried out. In this case the whole process was left to a sepoy trained to carry it out.

Cost of Process.

To be generally used the method must not only be reliable, but also cheap. This requirement is fulfilled by my method.

To supply a battalion of 1,000 men with one gallon a head a day for a month of thirty days will require 900 (say 1,000) 5-grain tablets of potassium chlorate and 5 pounds of concentrated hydrochloric acid. The tablets can be purchased at Rs.1.8 (2s.) a 1,000 and acid at 8 annas (8d.) a pound. The total cost per month, therefore, for 1,000 men at a gallon a head is only Rs.4 (5s. 4d.).

The cost of boiling water is infinitely more. Soldiers are allowed four-fifths of a pound of wood a head a day for boiling drinking water. For 1,000 men this comes to 800 lb. (equals 10 maunds) a day, or 300 maunds a month. The cost of wood is 10 annas (10d.) a maund, so that the cost of boiling water comes to Rs.187.8 (£12 10s.) as against Rs.4 (5s. 4d.) for chlorine. Comment is unnecessary.

Conclusions.

Much more could be written regarding the process, its efficiency, and the ease with which it can be carried out. And there are many side questions I have not touched on. But I think I have produced sufficient evidence to warrant the method receiving a fair trial. And I am sanguine enough to believe that it will not be found wanting. I advance it as a substitute for boiling of water, being quicker, more easily carried out, and as reliable. The apparatus is small, and its adoption, especially for use by troops, should diminish the long-standing difficulty of getting safe water for men to drink without keeping them waiting unnecessarily long for it.

NOTE.

Since writing this article I have had the method in constant use by my own regiment on service for over four months. The waters used have been very bad in every way. Storage difficulties have been very great, yet out of a strength of 800 men and followers I have during this period only had to send eight men to hospital with intestinal complaints, only one of whom has had to be invalided to India. I have no figures regarding other regiments of our force, but understand they are not so good as mine. The method, with improvised outfits, is now being extended by use by all other units.

AMONG the French medical periodicals which have come to life again after temporary suspension mention should have been made of the *Archives des Maladies du Coeur, des Vaisseaux et du Sang*, published under the direction of Dr. H. Vaquez, *professeur agrégé* at the Paris Medical Faculty, and physician to the Saint-Antoine Hospital. This valuable journal began to appear again in January, and we regret the oversight which led to its omission from the list of resuscitated periodicals.

DR. FLAISSIÈRES, Senator for the Bouches-du-Rhône, although he is 64 years of age, is on active service with the French army as *médecin-major* of the first class. He has recently been mentioned in the Order of the day by the general commanding the 96th Division for having continued to give his professional services to the wounded in his regiment on the occasion of the bombardment of a village. Dr. Flaissières, though himself suffering from illness, superintended their transfer to the ambulance, and did not leave his station till every man had been dressed and he had made his report.

A Clinical Lecture ON BIRTH PALSY.*

BY

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BIRTH palsy or obstetrical palsy is by no means a rare condition. It has been said to occur once in every two thousand births (Frauenthal[1]), an estimate of frequency which is in all probability rather too low. It will be the fate of a goodly proportion of practitioners to encounter this condition at least once during their professional careers. From the point of view of the general practitioner birth palsy is of special importance, as in the majority of instances the parents of the child are prone to bestow undeserved blame on the doctor who conducted the labour.

For some time it has been held by most authorities that the lesion present in birth palsy is an injury to the brachial plexus in the neck; this occurs during delivery as a result of traction applied to the head with the shoulder fixed, or vice versa. The German school of orthopaedic surgeons, most notably Lange[2] and Vulpius,[3] consider that a primary shoulder-joint or bone lesion is present, paralysis being either absent or of secondary importance. This view was originally propounded by Küster in 1889, who described the condition as a rotatory displacement of the upper humeral epiphysis.

Last year Turner Thomas,[4] of Philadelphia, brought forward new evidence in favour of the shoulder-joint lesion theory.

Certain etiological factors are well established and accepted by all. In the vast majority of cases birth palsy is seen in an infant born after a prolonged and difficult labour in which there was a disproportion between the size of the child and the maternal pelvis.

Statistics available show that the injury occurs more frequently in vertex than in breech presentations, but the exact relative proportions remain to be settled in the future from a large series of cases.

There are, then, two opposing theories to explain the etiology of birth palsy:

1. Primary paralysis, due to stretching or tearing of the brachial plexus.
2. Primary joint or bone lesion, with or without secondary paralytic phenomena.

SYMPTOMS AND SIGNS.

Following a difficult labour in which instruments may or may not have been employed, it is noticed that one arm of the infant hangs limp and motionless. The position of the affected limb is characteristic, the arm hanging close by the side in full internal rotation at the shoulder, with the elbow extended, the forearm pronated, the fingers flexed, and in some cases obvious wrist-drop. For a few days the neck and shoulder may be tender, the infant resisting all efforts of examination and manipulation of the limb; usually no actual bruising or other superficial local signs of trauma are seen. If untreated, the subsequent progress of the case may be along one of three lines:

1. Rapid and complete spontaneous recovery may ensue, leaving the limb in a practically normal state.
2. There may be complete absence of recovery with persistence of a flail limb. This is a rare sequel.
3. Considerable recovery may take place, but in an incomplete manner, leaving a residual paralysis.

This latter event is the one usually seen, so that after some weeks the arm is no longer limp but is used by the child with fair power. As time goes on in all moderate and severe cases there is an evident lack of growth in the whole limb and shoulder girdle.

Invariably in this type of case with incomplete recovery,

* The substance of a post-graduate lecture delivered at the Ancoats Hospital, January 26th, 1915.

it will be found that in addition to a residual paralysis which in actual fact may be little marked, there has developed a mechanical obstacle to the full functional use of the arm. The shoulder is now fixed in the position of internal rotation: this is the result of a shortening of the subscapularis tendon and the adjacent joint capsule. Moreover there may be some flexion contraction at the elbow or pronation contracture of the forearm. As the child grows the contractures increase and the disability is still more evident. Usually in such cases there appears little wasting of the musculature. At this stage careful examination of the shoulder region may demonstrate a slight prominence of the head of the humerus below the acromion, that is to say, the humerus is no longer in concentric apposition with the glenoid and there is a commencing posterior subluxation of the joint.



Fig. 1.—Boy, aged 10. Posterior subluxation of right shoulder-joint following birth palsy. Note the prominence of the head of the humerus, the degree of internal rotation of the upper arm, and the diminished development of the whole limb.

It is of the utmost importance to examine for this latter complication in all cases of obstetrical palsy. In a young plump infant it is not easy to make out a subluxation in the early stage; in an older child the projection of the displaced head is obvious to the eye (see Fig. 1.)

The association of posterior subluxation of the shoulder-joint with obstetrical palsy was first accurately described by Whitman in 1905.[5] Fairbank[6] has recently given a very able exposition of this subject based on the experience of a unique series of cases. It is quite an established fact that subluxation is associated with the majority of cases of moderate severity which undergo almost complete recovery. In Fairbank's series of 37 cases, 28 showed a subluxation. Turner Thomas had 9 subluxations out of a total of 12 cases.

Out of 5 consecutive cases which have been under my care during the last six months, I found 4 with subluxation. The one uncomplicated case was under treatment for a short time, and then, owing to parental apathy, was kept away from hospital for three months and the splint discarded; on being examined quite recently after this period of neglect, it was quite certain that a posterior subluxation was now present—a striking illustration of the mode of development of this sequela.

The diagnostic features of a subluxation are as follows:

(*a*) The attitude of the arm. This differs from the one characteristic of the early stages of simple palsy. The arm is now abducted a little at the shoulder, the elbow flexed, the forearm pronated and lying across the abdomen—the "stomach-ache" attitude.

(*b*) The head of the humerus is prominent under the acromion, and there is a corresponding hollow in front. In a normal infant's shoulder there is a slight but distinct depression behind, just beneath the acromion; by noting the difference when the fingers are placed simultaneously below the acromion a definite bulging of the head can be appreciated in the earliest stage of subluxation. In a long-standing case the projection is evident on sight.

(*c*) There is limitation of the movements of abduction and external rotation at the shoulder-joint, both active and passive, the scapula moving with the humerus. The joint is thus fixed by periarticular contractions in a position of adduction and internal rotation.

(*d*) The *x*-ray appearances are quite typical, showing an underdeveloped humerus and scapula, a small upper humeral epiphysis with a downward displacement of the head in relation to the glenoid. In an ordinary radiogram the exact position of the head in the antero-posterior plane is not shown; stereoscopic views will demonstrate the posterior displacement.

A subluxation of the shoulder-joint may be reducible at first by simple manipulation, but the condition usually becomes fixed very rapidly. The disability resulting is considerable, and is not only manifest in the shoulder region, but is seen in the diminished utility of the hand and forearm.

PATHOLOGY.

I. *Brachial Plexus Theory.*

The conception of birth palsy as a primary lesion of the brachial plexus is one based on sound clinical, pathological, experimental, and operative evidence. It is generally held that the exact lesion is either a simple tearing of the nerve sheaths or a stretching, laceration, or complete rupture of the nerve trunks. Every degree of injury is possible, and may involve the whole plexus or be localized to one or more trunks.

The different clinical types—the Erb paralysis, the rare lower arm paralysis, or the complete plexus paralysis—are explained by the extent and localization of the injury.

The characteristic posture of the arm is indicative of a paralysis of the deltoid, spinati, biceps, brachialis anticus, supinator longus and brevis, a muscle group supplied by the fifth cervical segment or the anterior primary division of the fifth cervical nerve. Operations on the plexus have usually revealed the site of the lesion as the fifth cervical nerve or the junction of the fifth and sixth cervical nerves just proximal to the origin of the suprascapular nerve. Few cases have been examined *post mortem*, but in one described fully by Boyer[7] the actual nerve roots had been torn close to their origin from the cord, the plexus itself being uninjured.

Clarke, Taylor, and Prout,[8] in a series of experiments on the cadaver, have shown that traction on the head with a fixed shoulder, renders taut the brachial plexus cords in the neck. Increased force causes fraying or rupture of the cords, the uppermost one, the fifth cervical, being the first to give way. By further increasing the violence all grades of injury could be produced. Difficult labour obviously provides the necessary conditions for the occurrence of such an injury to the infant.

The explanation of the associated joint subluxation is quite logical. The prime factor is the early contraction of the subscapularis tendon and the adjacent joint capsule which is seen after an incomplete recovery of the paralysis. The deltoid and external rotator muscles recover late or recover imperfectly and the joint loses important support behind, thus allowing the head of the humerus to slip backwards. Fairbank believes that in addition the pectoralis major now acts on the humerus at the insertion of the subscapularis, which is a fixed point; the humerus is adducted and flexed and during this movement the head is tilted backwards. Without the contracture of the internal rotators, however, there can be no subluxation.

It is instructive to compare and contrast the upper arm type of infantile paralysis with obstetrical palsy. The characteristics of the former are extreme muscular atrophy, a flail shoulder-joint, but no fixed contracture or subluxation in the antero-posterior plane. In birth palsies there is usually little atrophy and flaccidity, but a fixed contracture and posterior subluxation of the joint are present. Brachial plexus injuries in the adult, on the other hand, generally show considerable muscle atrophy, and subluxations of the shoulder are rare.

As an uncomplicated paralytic lesion, obstetrical palsy thus presents certain unexpected features, and these have been used as evidence against the primary paralysis theory.

II. *Epiphyseal or Joint Lesion Theory.*

In a recent contribution Vulpius[3] reiterates his view that the essential lesion in birth palsy is bony. Paralysis he dismisses lightly as a secondary unimportant feature. The traction injury at birth produces a fracture or displacement of the upper epiphysis of the humerus, which is followed later by union in the dislocated position. Lange considers that the chief lesion is a laceration of the anterior part of the joint capsule, the healing of which produces a twist of the humerus at the shoulder-joint in the position of internal rotation, but with no dislocation.

Turner Thomas has enthusiastically supported the shoulder-joint theory, and has brought forward a new conception of the mode of production of the injury. Thomas believes that in all cases the joint capsule is damaged, and in addition, in the majority of instances, an actual subluxation is produced at the time of birth; this subluxation is difficult to diagnose, and therefore is invariably missed in the first few weeks. The resulting

scar tissue from the lacerated capsule involves the brachial plexus cords lying in close proximity to the shoulder-joint, causing paralytic phenomena which are usually slight and transient.

The violence producing this shoulder-joint injury is not traction during delivery, but pressure, exerted by the bony pelvic wall on the anterior aspect of the infant's shoulder whilst still *in utero*. According as to the degree of backward pressure there is either a tearing of the joint capsule or a subluxation of the joint.

In Thomas's series of 12 cases 11 showed an affection of the right side, and as the right shoulder is anterior in the majority of labours this (according to the author) explains the preponderance of right-sided cases. Furthermore, in all cases the acromion process showed the effect of the pelvic compression, the anterior part of the tip being bent downwards, thus forming an obstacle to the complete reduction of the subluxation. This acromial deformity is a new physical sign described only by Thomas.

In further support of his theory, Turner Thomas has adduced arguments against the conceptions of Whitman and Fairbank. It is said that the plexus theory does not explain the rapid recovery of the paralysis, the unsatisfactory results of electrical tests, the absence of sensory symptoms, the evidence of operative procedures in which scar tissue has been found merely *around* the nerve trunks, and the occurrence of rupture of the nerve roots at their origin from the cord, as in Boyers's case. These objections really have little weight and can be readily met. Rapid recovery is not incompatible with slight injuries localized to the nerve sheaths only, leaving scar tissue surrounding, but not invading, the intact cords. Electrical reactions are unsatisfactory in all forms of paralysis unless the electrodes are directly inserted into the affected muscles; in infants the results are specially inaccurate. Sensory symptoms could hardly be appreciated accurately in infants, and as the typical lesion is one corresponding to the distribution of the fifth cervical anterior primary division, sensory disturbances would not be appreciable. Finally, the known occurrence of rupture of the nerve roots high up does not preclude the possibility of rupture at a lower level.

The hypothesis brought forward by Thomas can be fairly criticized on several grounds. In the first place 12 cases is too small a number from which to draw dogmatic conclusions. In Fairbank's 28 cases the two arms were affected in equal numbers. To establish a relationship between the shoulder involved and its position *in utero* demands an accurate knowledge of the presentation in every case. It is true that the right shoulder lies anterior in the majority of normal fetal positions, but obstetrical palsy is almost invariably seen after an abnormal labour, in which it is more than probable that an unusual presentation was encountered.

Personally I have been unable to discover the acromial deformity on which Thomas lays so much stress in 5 cases which I examined specially for this point. There is no reason to doubt that on the affected side the acromion shares in the lack of development which is evident also in the glenoid and coracoid; this is a secondary change due to the presence of a persistent unreduced subluxation of the joint, and is manifested as a diminution in size and a change in contour of the process.

It cannot be denied that shoulder-joint subluxation dominates the clinical picture of birth palsy. Turner Thomas states that in neglected cases the unreduced dislocation explains the limitation of movement and loss of power in the limb. Fairbank, on the other hand, found that in 10 out of 28 cases there was a residual paralysis of the extensors of the wrist and fingers.

Although there is at present scanty evidence to support the theory expounded by Turner Thomas, there is a certain amount of evidence in favour of a primary epiphyseal or joint lesion in some cases of obstetrical palsy. It is probable that the combination of physical signs presented in birth palsy may be produced by a pure plexus lesion, a joint lesion, or an epiphyseal displacement. The differential diagnosis of the three conditions in a very young infant is well-nigh impossible. As the treatment is the same for all the diagnostic disability is happily not of great practical importance. Both Biesalski[9] and Rosenfeld[10] recognize two types—the primary nerve lesion and the joint lesion—but admit the difficulty of distinguishing between the two. It is a reasonable conception to hold at the present time that obstetrical palsy is in the majority of cases a primary plexus injury, but in a certain unknown proportion of cases is a shoulder-joint or epiphyseal lesion.

It is noteworthy that the theory which explains the violence as pelvic compression entirely eliminates the participation of the accoucheur, and therefore, if supported, might be of extreme medico-legal importance.

TREATMENT.

It is convenient to divide the treatment of obstetrical palsy and its associated deformities into three stages as it is usually seen by the surgeon.

I. *Simple Paralysis.*

This is the earliest stage, in the first few days or weeks after birth; the arm is limp and useless, and no contractures are present.

The arm must be fixed without delay in the position of relaxation of the paralysed muscles—that is, abducted to 90°, and rotated out fully at the shoulder, flexed to a right angle at the elbow, with the forearm fully supinated and the wrist and fingers hyperextended. Whilst a splint is being made this posture can be roughly maintained in a newborn infant by pinning the sleeve of the vest behind the neck. As a temporary measure in an older child a plaster-of-Paris shell can be used; such an apparatus is used permanently at this stage by Lange. A suitable splint can be made from block tin or aluminium, the latter being advisable except in tiny infants. The splint consists essentially of a broad body piece and a narrow arm piece suitably padded and furnished with webbing straps and buckles.

The position of relaxation must be constantly kept up night and day. In addition, daily massage and passive motions at the shoulder to prevent contracture are begun. At the first sign of recovery, exercises to train the muscles are instituted. In a young infant quite efficient exercises can be devised with the aid of toys; an enthusiastic parent or nurse can be of great value at this time. Hospital patients unfortunately rarely get these advantages. Massage, to be of any avail, must be quite superficial, and carried out with the muscles kept continuously relaxed. Deep kneading applied to a muscle which for the time being is completely cut off from its nerve cells is positively harmful, and massage of any kind practised on muscles which are allowed to be stretched is valueless. These facts are little appreciated by masseuses in general, and consequently a great deal of massage for paralysis of all kinds is both dangerous and a waste of time.

The most essential part of the treatment in the early stages is the maintenance of the arm in the splint in the correct posture.

Recovery is generally rapid in the hand and forearm, the shoulder muscles lagging behind somewhat. Until there is recovery of the power of active external rotation and abduction at the shoulder there is a danger of subluxation developing, therefore the splint must be used until such recovery is established. If, in spite of efficient treatment, there is no recovery at all after three months' time, it is usually recommended that the electrical reactions of the paralysed group be tested. The presence of the reaction of degeneration after such a period has been regarded as an indication for direct operative attack on the plexus. There are obvious technical drawbacks to the testing of electrical reactions in infants, and the mere presence of the R.D. does not indicate that a muscle is past recovery. Personally, I attach little prognostic value to the electrical reactions of paralysed muscles.

The results of operations on the plexus in infants have been uniformly poor. A mass of scar tissue is encountered surrounding the small nerve cords, which are not always easy of accurate identification.

In cases of complete rupture an exact topographical end-to-end suture is impossible, and the removal of scar tissue does not guarantee that a new scar will not follow the operative manipulations. Secondary nerve suture for incomplete anatomical nerve injuries must always be an operation of little use, and fraught with much harm whenever performed.

Nerve anastomosis in the plexus region is *a priori* likely

to be unsatisfactory. To be accurate and therefore successful, a nerve anastomosis must always be practised at the periphery, and not close to the origin of nerves from the cord; this has been fully proved by the work of Stoffel and Spitzy. Therefore in the rare cases of birth palsy which show little or no recovery after correct treatment prolonged over a sufficient period, the operative methods which are used in the residual paralysis of poliomyelitis are indicated, tendon transplantations or arthrodesis according as to the exact requirements. Recovery is the rule in birth palsy, even if it is long delayed, and therefore a patient trial must be given to splint treatment and massage, before any hasty conclusion is arrived at. It is a striking fact that flail limbs following obstetrical palsy are practically unknown in adults.

II. *Internal Rotation Deformity at the Shoulder.*

Cases neglected for several months usually present the above feature. The position of the head of the humerus should be carefully ascertained, and if no subluxation be present an anaesthetic must be given and energetic stretching of the contracted capsule carried out, especially in the direction of external rotation and abduction, the scapula being firmly fixed during these manipulations. The limb is then placed in the same position as is used in the first stage, either in a splint or better in plaster for a few weeks, and afterwards on a T splint. The usual massage, manipulations, and exercises then follow.

If the capsule cannot be stretched fully by manipulations an open operation is necessary in which the contracted parts are divided.

In children over 2 years of age with the internal rotation deformity, Lange, Vulpius, and others recommend the performance of an osteotomy of the humerus with rotation out of the lower fragment. In the first place, this is dealing with a contracture of soft parts by a bone operation; and in the second place, it is very likely that an unrecognized subluxation of the joint is present, the direct operative treatment of which gives better functional results than osteotomy of the humerus.

III. *Posterior Subluxation of the Shoulder-joint.*

One may be confronted with this sequela in an infant, an older child, or in an untreated adult. It may be possible in the early stages of subluxation to accomplish reduction without an anaesthetic, but generally the deformity is so fixed as to demand considerable force. Whitman has successfully reduced a number of such cases by manipulations under anaesthesia; in some instances to obtain full reduction repeated efforts were required. The shortening of the capsule is often so great that manual force, unless approaching a dangerous degree, is insufficient.

Fairbank has found it necessary to perform an arthrotomy to effect reduction in most of his cases, even at an early age. Over the age of two years an open operation will



Fig. 2.—Position of limb in plaster after reduction of subluxation by an open operation.

always be indicated. The joint is best approached by the anterior route and the anterior capsule with the subscapularis tendon insertion freely divided. The acromion may appear as an obstacle to reduction and require partial removal. Turner Thomas recommends its removal as a routine. After reduction and closure of the wound, a plaster-of-Paris case is applied, fixing the limb in full external rotation with the elbow well back; the original position devised by Whitman was to keep the arm adducted to the side, but the functional results are better if the typical obstetrical palsy position be employed. (Fig. 2.)



Fig. 3.—Result of open operation for reduction of subluxation. Note the range of external rotation possible, and compare with Fig. 1.

After three months' fixation, massage and movements are necessary if full mobility is to be attained. The functional result indeed depends very largely on efficient after-treatment. In a long-standing subluxation the distorted head and glenoid are factors which modify considerably the after-results of a successful reduction. In this connexion subluxation of the shoulder resembles congenital dislocation of the hip-joint.

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DECORTICATION FOR TRAUMATIC EMPYEMA WITH COMPLETE COLLAPSE OF LUNG.

BY

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IN the present war it seems that cases which survive wounds of the thorax rarely develop empyema, and traumatic empyema does not now claim the attention devoted to it by the writers on military surgery in the past. The case to be described is further noteworthy in that the empyema developed without obvious signs, the wound healing by first intention; nevertheless, in the course of three weeks from the injury the lung had become so bound down by inflammatory fibrous tissue that nothing but the modified Delorme's operation of decortication could have availed the patient.

A private, wounded on November 4th, was admitted to the 4th London General Hospital on November 27th, 1914, where I had the advantage of the assistance of Lieutenant Comyn as house-surgeon and Lieutenant Davis as anaesthetist. On admission, the man was found to be pale, weak, short of breath, and had lost flesh; the temperature was 102° F., the pulse 108, and the respirations 32. He had been wounded by shrapnel, which had penetrated the thorax under the right axilla at the level of the fourth rib. The external wound had practically healed, a fragment had lodged in the fourth rib, and another fragment in the lower part of the pleural cavity. There was a narrow zone of dullness to percussion above the level of the liver, but the impairment of resonance did not extend as high as the angle of the scapula. Except for this sign, auscultation and percussion seemed normal in character. From the dull zone Lieutenant Comyn drew off pus mixed with blood.

On November 30th (twenty-six days after the injury) I removed a portion of the eighth rib, and found the whole pleural cavity filled with a loculated mass composed of blood clot, cheesy fibrin, and purulent fluid mixed with foul gas. It was only after considerable sponging and scrubbing that the fibrinous masses could be detached and removed, but when this was completed there was no sign of any expansion of the lung, which remained in a state of complete collapse. As a result of this operation the patient's temperature fell to normal, the respirations to 26, and the pulse to about 100. Ten days later, on December 9th, as there was still no sign of any re-expansion of the lung, I enlarged the opening by removing portions of the seventh and ninth ribs, so as to be able to insert a part of the hand. The lung was absolutely bound down, being covered by a tough

fibrous membrane more than a quarter of an inch thick, so that it was quite difficult to penetrate it and commence its separation from the lung. The separation once started, however, its tough layers of newly-forming fibrous tissues were peeled off and torn away until the lung was freed. By the end of the operation the lung had so far expanded as to fill two-thirds of the cavity. A complete re-expansion of the lung followed in the subsequent days, the patient aiding in this by blowing bubbles. On February 13th, 1915 (two months after the operation), the wound had definitely healed and the patient had regained flesh and strength. When he stood upright with shoulders square there was no deformity to be seen from the front; from behind the spine was seen to be held quite straight, the only abnormality being a retracted scar below the right scapular angle. The man had already put on flesh, and was feeling well enough, after a short convalescence outside the hospital, to return to duty.

It is now recognized that the inflammatory fibrous tissue which covers the collapsed lung in empyema is formed in layers parallel to the surface of the lung from which in recent cases it is separable, so long as they are not tuberculous. Indeed the layer of this false membrane next the lung is vascular, containing newly formed blood vessels, and is loose in texture, as compared with the tougher outer layers. This inflammatory tissue forms a capsule within which the lung is confined in a state of pure atelectasis, but is capable of re-expansion when this capsule has been shelled off.

In this respect there is a marked contrast to the state of the parietal pleura in empyema. The parietal pleura is not only thickened and indurated, but the inflammatory induration is continued outwards in the subpleural connective tissue so that the parietal pleura becomes fused inseparably with the periosteum of the ribs and of the intercostal muscles. Hence in the operation of Estlander and Schede for the reduction of the cavity of an empyema the parietal pleura and intercostal tissues have to be removed with the ribs *en masse*. This operation leaves the compressed lung permanently inactive and useless, induces a deformity of the chest, and in young people a curvature of the spine supervenes with only one lung active. We are indebted for the discovery that the shelling out of the compressed lung from its inflammatory capsule is possible in recent non-tuberculous cases to Delorme, who described his operation of decortication of the lung in 1893. His method included the turning upwards of a large parietal flap so as freely to expose the capsule covering the compressed lung. This operation has been followed in a series of cases by a mortality from the operation of 15 per cent., which is much the same as the mortality after Estlander's operation. But Delorme's operation in its full extent is only needed for old-standing cases of empyema, although it has been reported that an operation combining removal of part of the chest wall with removal of the capsule compressing the lung was followed by re-expansion of the lung four years after the onset of the empyema.

For recent cases of empyema the essential thing is to sponge the cavity free from fibrin and pus, and then, by the finger, aided by sponges on holders, to seize portions of the capsule with forceps in order to free the lung. This can safely be done if the patient is given nitrous oxide gas with oxygen or air; as the lung is being freed a little ether will induce cough with which the lung will expand. The difficulty in children may be the occurrence of bronchopneumonia with the empyema. Then, after the pleural cavity has been cleared, the lung may be found free, but it cannot expand owing to consolidation. If the base of the lung is then drawn into the wound and fixed there by suture with a tube beside it leading into the cavity healing will soon occur.

In confirmation of the foregoing statements I may quote two cases of pneumococcal empyema recently in the Westminster Hospital.

A male, aged 32, was admitted with a left-sided empyema which had existed for about four months. At the first operation the pleural cavity was cleared of fibrin; a week later, the lung having shown no signs of re-expansion, it was freed from its capsule and fixed by a suture in the wound with a tube beside it. The patient was admitted on June 24th, 1914; he was shown to some American visitors on July 28th, with the lung fully expanded, and he was discharged on August 6th, soundly healed.

A female, aged 7, had right-sided bronchopneumonia and empyema of about a week's duration. After clearing out from the pleural cavity all pus and fibrin, the consolidated lung could be moved freely, showing no fibrinous covering, but it did not expand with cough. The lower lobe of the solid lung was drawn forward and fixed by suture in the wound and a tube beside it into the pleural cavity. The child was admitted on February 2nd, 1915, and was soundly healed on March 15th following.

INSECTS AND WAR:

XIV.—*THE MOSQUITO* (*Anopheles maculipennis*).

BY

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(*Continued from p. 590.*)

"Amongst aquatic larvae, the most beautiful and delicate are those of numerous species of gnat."—Goring and Pritchard's *Micrographia*, 1837.

THE LARVA.

IN the young larva of *Anopheles* the head is broader and deeper than the thorax, but in the older larvae the segments that succeed the head have at least twice its diameter. It is a characteristic of true flies, or Diptera, that the thorax should not exhibit that separation into three divisions which is so usual in the less specialized insects, such as the cockroach, and this is peculiarly true of the larva of the mosquito—at any rate, so far as its external structure goes. The abdomen of the larva consists of nine free segments; the third, fourth, fifth, sixth, and seventh of these bear palmate hairs, something like a hand with fourteen fingers spread out. These hairs adhere to the under layer of the surface film of the water, and help to maintain the animal in a horizontal position just below that film. When the larva relaxes its hold and sinks into the water, it not unfrequently carries with it air bubbles enclosed by these fourteen "fingers."

The eighth abdominal segment bears the stigmata or the openings of the respiratory apparatus, and the ninth segment has abandoned the flattened and square cross-section of its predecessors, and is cylindrical and tapering. The posterior end of the body is cut off sharply. Round the posterior opening of the alimentary canal are four white, soft papillae, which are well supplied with tracheae and are capable of contracting and expanding. Above these are four very prominent hairs, two median and two lateral, and ventrally to the ninth abdominal segment is a fan-shaped arrangement of hairs springing from two pieces of very complicated structures. These hairs seem to act to some extent as a rudder, and they probably serve as an accessory organ of locomotion. Possibly they have also a sensory or tactile function, and act, as so many posterior filaments do in insects, as antennae "from behind."

We have referred above to the respiratory openings, and, indeed, these are the key to the whole situation. Close these openings, as they can be closed by floating petrol or other oil on the surface of the water, and the trick is done. The larvae and the pupae can no further breathe, and there is no imago. In *Culex* (the gnat) these respiratory orifices are borne on a long tube directing dorsalwards—a tube which is larger and longer than a segment of the body, and whose presence gives the larva the appearance of a Y with slightly unequal limbs. These breathing-openings are of the greatest complexity, but the outstanding fact is that these stigmata pierce through the watery film and put the respiratory system of the larva into communication with the atmosphere of the whole globe. If anything frightens the larva, certain side pieces and flaps fold suddenly backwards and over the stigmata, the connexion through the surface film is broken, and the little larva, like a German submarine when it sights an English battleship, darts below, frequently carrying with it the drop of air attached to the rim of the respiratory recesses which surrounds the openings of the two stigmata.

Not unfrequently the larva ceases to lie parallel with the surface of the water, its palmate hairs are put out of action, and then its body hangs down into the water, but it still maintains its respiratory connexion with the outer air through these breathing pores. From time to time the hairs mentioned above are brushed over by the mouth-organs and cleaned of any débris.

The larvae when they leave the surface film sink by their own weight, but they not unfrequently swim actively

downwards, their swimming action being very like that of an eel. When returning to the surface they are entirely dependent upon their powers of swimming, being slightly heavier than water. When the tail reaches the surface film they are at once arrested and immediately cease their swimming movements. The larvae invariably move tail forwards, and the hairs which we have mentioned above at the posterior end of the body undoubtedly act as "buffers" or "fenders." As a rule, when they are above they are actively engaged in feeding, but at the bottom they lay inert, as if feigning to be dead. Kept in a glass beaker they are apt to lie with their respiratory apparatus attached to the concave film, which capillary attraction draws up on the surface of the glass. Their heads then point towards the surface of the beaker. If forcibly kept below, say by submerging them under a watch-glass, they are frequently enabled to breathe by attaching the openings of their respiratory apparatus to an air bubble.

The general colour of the larva is a mottled brown, darkened where the chitin is thickened. The older larvae are to some extent green, possibly due to their food; but this green colour is not by any means confined to the alimentary tract. After moulting the issuing larva is a uniform light lavender colour, which, however, very soon darkens.

A strong wind passing over a pool where *Anopheles*' eggs, larvae or pupae are floating, will gradually pile them all up on the side towards which it is blowing. The *Anopheles* larvae undoubtedly are braver than those of the *Culex*—that is to say, a disturbance which will send all *Culex* larvae to the bottom will leave the *Anopheles* larvae unmoved.

When first hatched the larvae measure somewhere about 0.07 to 0.095 mm., but when ready to pupate they have attained the length of 7 mm. The rate of development is greatly influenced by the temperature, and a few cold days will markedly retard the larval growth. In warm, sunny weather, larvae will pupate between the second and third week, but larvae taken in August (if the autumn be cold) do not attain their full growth until November. The young larvae undoubtedly die in considerable numbers, and the act of pupating is also undoubtedly attended with certain dangers. Out of 834 larvae and pupae caught in Cambridgeshire, 636 were small larvae, measuring less than 4 mm., 181 were large larvae, measuring up to 7 mm. But only 17 pupae were taken. There are other facts which show that the larvae in Nature succumb in very considerable numbers.

THE PUPA.

When the larva is about to turn into a pupa it comes to rest, and now the thoracic regions are more swollen than ever. Soon a dorsal slit appears along the larval cuticle and the pupa slowly but gradually emerges through this slit and leaves the larval chitinous cuticle behind it. On first emerging, the pupa measures about 6.5 mm., the head and thorax making up one-third of this. During the last larval stage many of the pupa organs have been re-forming and are more or less visible through the cuticle. The mouth parts and limbs of the third stage—the future imago—show no relation to those of the larva. They are there enclosed in their respective sheaths, but these are quite independent of the larval "appendages." The respiratory trumpets, which, as in the larva, pierce the surface film, are ready to act as breathing organs. Whereas the larvae breathe through two stigmata at the posterior end of the abdomen, the pupae breathe through two respiratory trumpets issuing from the anterior dorsal surface, and it is these trumpets together with certain palmate hairs which support the pupae in the right position and put the respiratory organs at this stage into communication with the outer atmosphere. During the pupa stage *Anopheles*, like the pupa of other insects, takes no food.

The pupa is something like the tadpole, with its tail flapping dorso-ventrally, and bent under its body, instead of from side to side. The whole pupa is enclosed in a thin semi-transparent membrane through which the organs of the adult can be readily seen. As it grows older its colour darkens. Until about the time when it will give rise to the fly, the pupa floats quietly at the surface, breathing through its respiratory trumpets. When disturbed it shows considerable activity, and it is by no means always easy to capture by means of a pipette. At the least sign of danger it starts below with a series of intermittent strokes and rests at the bottom of the water. Its own buoyancy brings it back to the surface, as, unlike the larva, it is lighter than water. Not only has it a certain amount of air in its trachea, but there is a reservoir of air at the posterior end of the thorax which acts as a very efficient float. When retreating below the surface the respiratory trumpets usually carry down with them two minute air bubbles. As a rule the pupa stage lasts three or four days, but much depends upon the temperature.

The sex of the pupa can be determined by the lobes at the posterior end of the tail, A and B (Fig. 1) representing the male, and C and D the corresponding parts of the

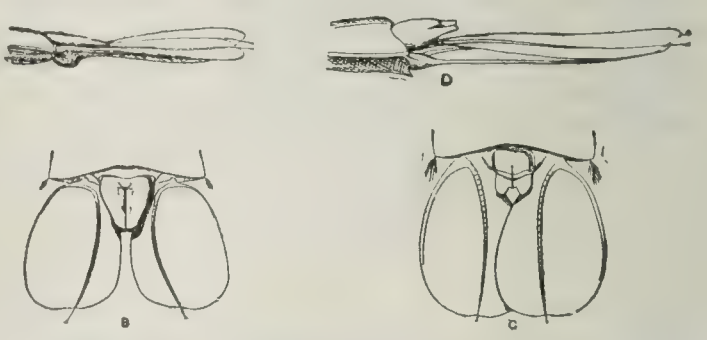


Fig. 1.—A, Side view, B, ventral view, of the pupa of a male *A. maculipennis;* C and D, the same views of the female pupa.

female. The duration of the pupa life is generally three to four days, but conditions of temperature and the state of the natural surroundings exert considerable influence upon the rate of development. Howard has pointed out that the addition of creosote or creosote-oil to the water in which the larvae are living hastens the metamorphosis into pupae, and the pupa stage is passed through in as short a time as fifteen hours instead of the normal forty-eight hours of the warm waters of the southern States in America. It has also been observed that showery weather hastens the rate of development.

When the adult mosquito is about to emerge, a certain amount of air is secreted under the chitinous casing of the pupa. Fine streaks containing air appear along the back extending between the respiratory trumpets and the base of the head. This central streak gradually passes backwards until it reaches the seventh abdominal segment, and then suddenly the pupa extends its abdomen so that it floats parallel to the surface of the water instead of being under the rest of the body. The chitinous integument now splits along the median dorsal line, through the slit thus made the surface of the thorax protrudes. By gradually pressing its abdomen against the pupa-case, the body of the perfect insect is slowly but gradually raised above the surface of the water. The head is pulled backwards and upwards, and millimetre by millimetre the mouth parts, the palps and antennae are withdrawn, and at first remain bent backwards beneath the body of the insect. Gradually the bases of the wings and the abdomen emerge, and soon the wings are freed and immediately flatten out and begin to harden. The legs and the tip of the abdomen alone now remain to be dealt with. At this stage the insect projects far beyond the anterior end of the pupa encasement, and somewhat resembles an exaggerated figurehead on a ship. The pupa-case is still filled with air, and acts as a float to support the emerging insect. At last the front legs are being freed, the second and third pair of legs soon follow, and now the insect is standing on the surface of the water raised on its tarsal joints, the tip of the abdomen being the last part to free itself from the pupa-case.

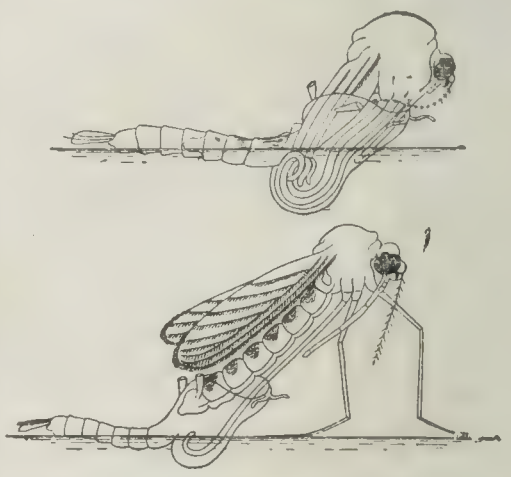


Fig. 2.—Imago extracting itself from the pupa-case, which floats on the surface of the water. Magnified. From Guiart.

The exit of the fly is naturally a very critical period in its life-history, and in many cases it is fatal. The freeing process takes between five and ten minutes. When undisturbed the emergent fly rests for a time until its wings and limbs are sufficiently hardened to enable it to fly, or at least to walk about. Sometimes the mosquito takes its first flight straight from the pupa case; at other times it rests awhile before taking to the air. The young imago is pale in colour, the thorax being brown and the abdomen transparent, with a greenish tinge. At first the abdomen is much longer than it is later, for almost immediately after the mosquito's exit from the pupa-case its abdomen begins to contract and from its hinder end four or five drops of a white, glistening, greenish fluid are exuded.

The newly-born imagos generally take to flight between five and ten minutes after they have emerged, and they at once begin to darken in colour, and in two hours assume the normal dusky colour of the adult. If anything hinders the insect from properly extending its limbs immediately on issuing from the pupa-case, the parts harden and remain distorted throughout life.

Anyone who has spent a day or two in Lille or Bruges, or other towns in Picardy and in Southern Belgium, will understand why, as my Uncle Toby has it, "Our army swore terribly in Flanders." The incessant and tireless biting of mosquitos would make any army swear, even though they were ignorant, as my Uncle Toby's army certainly was ignorant, that the gnats, as they called them, conveyed tertian and quartan ague. In Europe the trouble is a summer or early autumn trouble; but our troops are fighting in many tropical and subtropical countries, where the mosquitos—like the poor—are always with them.

That the plague can now be checked is shown by the making of the Panama Canal, and that this check is due to British science is shown by the work on the life-history of the malarial organism, first investigated by Sir Ronald Ross, and, as regard the human parasites, by certain Italian savants. It is also due to the public health services of one or two British medical officers of health in the East. *Their* methods have been applied and improved by those responsible for the channel which now separates North from South America.

We have seen that the larva and the pupa hang on to the surface film of the water by means of certain suspensory hairs, and by the openings of their breathing apparatus. Anything which prevents the breathing tubes reaching the air ensures the death of the larva and pupa, and then there is no issuing adult. Hence the use of paraffin on the pools or breeding places. It, or any other oily fluid, spreads as a thin layer over the surface of the pools and puddles, and clogs the respiratory pores, and the larvae or pupae die of suffocation.

In Ismailia the disease has been reduced to an amazing extent, and remarkable results have followed the use of these preventive measures at Port Swettenham in the Federated Malay States. Within two months of the opening of the port in 1902, 41 out of 49 of the Government quarters were infected, and 118 out of 196 Government servants were ill. Now, after filling up all pools and cleaning the jungle, no single officer has suffered from malaria since July, 1904, and the number of cases amongst the children fell from 34.8 to 0.77 per cent. The only melancholy feature about this wonderful alleviation of suffering due to the untiring efforts of the district surgeon, Dr. Malcolm Watson, is that his fees for attending malarial cases dropped to zero.

Thus, even ten years ago, a considerable degree of success had attended the efforts of the sanitary authorities, largely at the instigation of Sir Ronald Ross, all over the world, to diminish the mosquito plague. It is, of course, equally important to try and destroy the parasite in man by means of quinine. This is, however, a matter of great difficulty. In Africa and in the East nearly all native children are infected with malaria, though they suffer little, and gradually acquire a high degree of immunity. Still, they are always a source of infection; and soldiers stationed in malarious districts should always place their dwellings to the windward of the native settlements.

Knowing the cause, we can now guard against malaria; mosquito nets and wire-protected windows and doors are a sufficient check on the access of *Anopheles* to man. If the mosquito and man could only be kept permanently apart, we might hope for the disappearance of the parasite from our fauna. In relieving man from this world-wide pest, all genuine lovers of animals will rejoice that we are also relieving the far more acute sufferings of one of the most delicate and beautiful insects that we know.

It has always been a source of surprise to me that the great resources and the very evident enthusiasm of the anti-vivisecting societies have not been turned in this direction. In the malarial parasite we have a most potent vivisector of the entrails of one of the most charming and graceful of creatures, whose poetry of movement is hardly approached and never equalled by the ladies of the Russian ballet. A little help, a very little help, would free these fascinating flies from a form of trouble far worse than the human, alternative, host suffers. Yet as far as I know these societies and the societies for the prevention of cruelty to animals have declined to help in any way, and have knowingly allowed hundreds of millions of animals to perish annually by a most painful death and have never stretched out a helping hand to the fairy-like and fascinating mosquito.

ON THE CURVE OF THE EPIDEMIC.

BY

JOHN BROWNLEE, M.D., D.Sc.

IN the issue of the JOURNAL for March 27th Sir Ronald Ross published a preliminary communication on the theory of the form of epidemics and allied subjects from a very interesting point of view. My work, as he says, has developed on different lines. As in the immediate future I shall have little time to extend the investigation, I wish to state the conclusions I have come to since my last published paper.[1]

Though I have never denied that an epidemic might not end by lack of susceptible persons (the epidemic of small-pox in Boston, U.S.A., 1721, is a marked instance of this), yet I have hitherto been of the opinion that the loss of infecting power on the part of the organism is much the most potent factor in determining the end of an epidemic. This opinion has been based on three grounds: (1) The form of the curve of the epidemic; (2) the variation in infectivity of the organisms of certain diseases (of which measles and small-pox are prominent examples) between epidemic and interepidemic times—this, I think, is proved by observation; (3) the nature of space distribution of an epidemic—for example, the last great epidemic of small-pox in London in 1901, which had a well-marked centre of great prevalence, from which the amount of disease radially decreased. Sir Ronald Ross's notes demand that my arguments on the first count should be reconsidered.

I have formed a general epidemic equation by means of which any conceivable law can be reduced to an approximate mathematical formula and tested against the facts. The general equation is obtained as follows: Let there be an amount of disease y at any period of time; after a unit of time equivalent to the incubation period, let there be $y + \Delta y$: let $\frac{y + \Delta y}{y}$ be called the infectivity at t, t being counted from the commencement of the epidemic. This will be some function of the time, say $f(t)$. Then $\frac{y + \Delta y}{y} = f t$.

On the assumption that the law holds also for small fractions of this time, the equation becomes

$$1 + \frac{dy}{y} = \left(f(t)\right)^{dt}$$

or $1 + \frac{dy}{y} = 1 + \log f(t)\, dt +$ terms in higher powers of dt.

So that in the limit $\frac{1}{y}\frac{dy}{dt} = \log f(t)$.

The most easily imagined cases are as follow:

1. That the infectivity of the organism decreases in a geometrical progression—that is, let $f(t) = e^{a - bt}$, then $\frac{1}{y}\frac{dy}{dt} = a - b t$ and $y = C e^{a t - \frac{1}{2} b t^2}$, C being a constant.

This is the normal curve of error, and represents the form of the epidemic curve given by Farr in 1866, though he did not state it in an equation, but as a relationship between the successive numbers in the epidemic wave. It

is also the curve which expresses the results of certain laws of physical chemistry. It gives the form of the epidemic curve on the assumption that something present in the organism at the beginning of an epidemic decays according to the law of mono-molecular reaction. Of this there are many biological analogies.

2. That b, the constant expressing the rate of loss of infectivity, be not an absolute constant, but varies among the mass of infecting organisms according to the normal law. The coefficient of infectivity at time t will then be given by the form $e^{a - bt + ct^2}$, where c is in general small. This gives an epidemic equation

$$y = C\, e^{at - \frac{1}{2}bt^2 + \frac{1}{3}ct^3}$$

In this case the decline of the epidemic is somewhat slower than its rise.

3. That the hypothetical substances necessary for infecting disappear according to some physico-chemical reaction of higher order than the first, or of a mixed order—that is, let it be bi-molecular or some other.

The epidemic equation for this is of the form

$$y = \frac{a\, e^{mt}}{(t+p)^{n(t+p)}}$$

None of these three equations are more than rough approximations.

In a previous paper[2] I have given a method of adapting the first assumption, so as to make it fit a considerable number of epidemics, but of the ultimate worth of this method I am doubtful.

4. That we assume $\frac{1}{y}\frac{dy}{dt} = \frac{a - bt}{m - nt + lt^2}$ instead of $a - bt$, as in (1), where in the denominator the values of m, n, and l are such as to ensure that the sign is always positive. In this case Pearson's Type IV is the solution. This describes many epidemics very closely, but I can offer no *a priori* reason for its probability. The form implies that the organism loses in infecting power from the commencement of the epidemic, but that the rate of this loss is at the beginning less than it ultimately becomes.

5. That the epidemic dies out from want of susceptible persons. Here let there be N susceptible persons: let c be the number of these an infected person is likely to come into contact with at the beginning of the epidemic: let d be a figure denoting the coefficient of the power of infecting, taken constant throughout the epidemic. The number of susceptible persons at time t is obviously

$$N - \int_o^t y dt$$

and consequently the number infected at time t will be equal on the average to

$$cdy - \frac{N - \int_o^t y dt}{N}$$

The general equation thus becomes

$$\frac{1}{y}\frac{dy}{dt} = log\ \frac{cd}{N}\left(N - \int_o^t y dt\right)$$

I have not been able to integrate this in a suitable form, though Sir Ronald Ross has succeeded in integrating a similar finite difference equation. Reading his note in the JOURNAL of March 27th suggests that I may have hitherto misinterpreted this equation, and that is partly, and may be wholly, true. Maxima and minima of curves in general are given by the relation $\frac{dy}{dx} = o$.

For a maximum in this case

$$y\ log\ \frac{cd}{N}\left(N - \int_o^t y dt\right) = o$$

Thus, either $y = o$, which is clearly not a maximum, or

$$log\ \frac{cd}{N}\left(N - \int_o^t y dt\right) = o$$

that is $\frac{cd}{N}\left(N - \int_o^t y dt\right) = 1$ or $\int_o^t y dt = N - \frac{N}{cd}$

This equation seems to show that the number of cases which have occurred up to the maximum is greater or less than half the total number according as cd is greater or less than 2. But the smaller the value of cd the greater number of individuals are left uninfected (for instance, if $cd = 1.5$ and $N = 1{,}000$, about 400 persons remain uninfected), so that the decline of the curve found on this hypothesis is, even with low infectivity, more rapid than the rise. As cd increases the decline becomes more rapid. But with the value of cd approximately equal to 1.5 very nearly symmetrical curves arise. In addition, these have the relationship between the curve constants, which the epidemic requires as examined from actual statistics. If $cd = 2$, these relationships no longer hold. The exact point where the change from a probable to an improbable epidemic form takes place I have not determined. As in my previous work, such small values of cd were not contemplated; I was led to consider other hypotheses, and I still think that these must play a large, and even the most important, part.

6. Any of the hypotheses Nos. 1 to 4 may be combined with No. 5.

There is, however, another form of epidemic symmetry which possibly arises from reasons quite independent of those given above, or by Sir Ronald Ross. An example of this is the seasonal distribution of enteric fever in London, a curve of remarkable symmetry. If, as Sir Shirley Murphy considers likely, this epidemic was due to impure water, a possible solution offers itself. The seasonal distribution of temperature in London is very closely a simple sine curve, necessarily symmetrical. As most organisms grow better at higher temperature than lower, the simple rate of growth of the enteric organism in the water might quite well give rise on the average to an epidemic form of the type found, without the necessity of any other hypothesis.

Sir Ronald Ross's full paper will be awaited with much interest, whether it furnishes complete solutions or not. The whole subject is of the greatest importance and not intensely difficult, the chief factor which prevents progress being the immense amount of arithmetical work necessary to check the accuracy of any given hypothesis.

REFERENCES.

[1] International Congress of Medicine, London, 1913, Section XVIII, p. 153. [2] *Proc. Roy. Soc., Edin.*, 1910, vol. xxxi, p. 252.

FOREIGN BODY IMPACTED AT THE BIFURCATION OF THE TRACHEA EXTRACTED BY AID OF THE BRONCHOSCOPE.

BY

SEYMOUR JONES, F.R.C.S.,

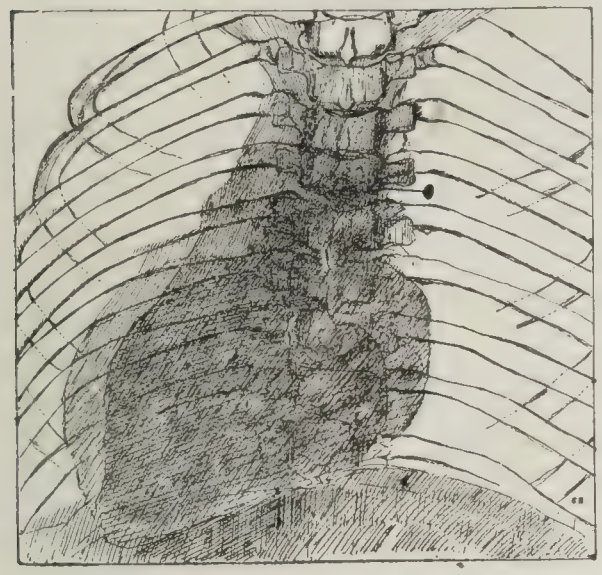
ASSISTANT SURGEON, EAR AND THROAT HOSPITAL, BIRMINGHAM.

THE following case will illustrate the value of the direct method of bronchoscopy in the removal of foreign bodies:

A girl, aged 7, staying at Droitwich with her mother, was playing outside a room in which her parent was occupied; she suddenly rushed in and exclaimed, "Oh! mummie, I have swallowed a pin." Dr. Shirley Jones, of Droitwich, was called in and promptly referred the child to Drs. Hall-Edwards and Emrys-Jones, of Birmingham for *x*-ray examination. A pin shown to Mr. Emrys-Jones, similar in all respects to that swallowed by the child, was a steel pin 1⅝ in. long, with a blue opaque glass head. The child was screened and an opaque object like the glass head of the pin was seen 1 in. to the right of the spinal column and at the level of the vertebrae. On careful scrutiny, the shaft of the pin was made out pointing to the left horizontally. The pin shadow moved up and down with respiration and was foreshortened on rotation of the body. A radiograph was taken and the blurred head of the pin accurately located, but the shaft of the pin was not visible in the print. After further screening in my presence, it was concluded that the pin, from its movement with respiration and situation so far outside the vertebral column, was impacted in the trachea or lung.

The child was sent into a nursing home to be prepared for bronchoscopy under an anaesthetic the following evening. She had no symptoms, enjoyed her breakfast, and felt no pain on swallowing or respiration. Glucose was given three times in the day. One minim of liquor atropine was injected one hour before the operation to arrest secretion. This amount was effectual for the purpose, and did not mask the pupil signs of anaesthesia by undue dilatation. The anaesthetic was administered by Dr. McCardie, anaesthetist to the General Hospital, a mixture of 2 parts of ether and 1 of chloroform being given.

The second smallest size (No. 5) of Bruning's tubes was passed to the entrance of the larynx and the glottis was swabbed over with 10 per cent. cocaine and adrenalin. After an interval the tube was reintroduced through the glottis and passed a considerable way down, when a glimpse was seen of the shaft of the pin lying across the bifurcation of the trachea—the head not being visible. Anaesthetic disturbances compelled the removal of the bronchoscope, and the question arose how to extract the impacted pin—whether to break it in two or withdraw it whole by manipulation. The problem was solved in a fortuitous manner. On quiet deep anaesthesia the tube was reintroduced. The pin, however, could not be seen, and was concealed by a collection of blood and mucus at the bifurcation of the trachea. A cotton-wool carrier was inserted down to the bifurcation to mop away the secretion, and on bringing it away I found that the blue head of the pin was visible. This had accidentally been pushed down into the right bronchus, while the point of the pin was directed upwards, but was slightly impacted in the wall of the trachea where it merged into the left bronchus. One of Bruning's long pincettes was introduced at this critical and anxious moment, the pin grasped, eased from its point of impaction, and brought out.



The next day the child was very slightly hoarse, but the following day even this symptom had disappeared, and she was as well as ever.

One or two points concerning the ease and technique of the operation I should like to emphasize.

1. The value of *x* rays, which, in the absence of any symptoms, confirmed the child's statement and located the presence of such a small object.

2. The atropine administered before the commencement of the operation was of incalculable value in minimizing the secretion.

3. The swabbing of the laryngeal orifice with cocaine facilitated the introduction of the tubes by abolishing reflex spasm and cough.

Reviewing the circumstances, I would suggest that it would be good practice in a similar case, after the impacting pin has been located, to place the child in the Trendelenburg position, and then, by careful manipulation with a long probe with cotton-wool wrapped round the end, to push one end into a bronchus to disengage it.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SHRAPNEL WOUND OF THE SPINE, WITH EXCEPTIONALLY LOW TEMPERATURE.

WITH reference to the case of shrapnel wound of the spine, with exceptionally low temperature, described in the JOURNAL of February 6th, 1915, by Lieutenants Oliver and Winfield, R.A.M.C., may I be permitted to offer a possible physiological explanation of the phenomena recorded therein?

A fall of temperature, varying from 7° to 16° C., as a result of section of the spinal cord in animals has been recorded by various observers, including Tscheschichin, Bernard, Pochoy, and Riegel. Goltz and Ewald, too, found that animals deprived of their spinal cords from the medulla down lived for a long time, but were liable, in spite of all reasonable care, to die of cold, even after the blood vessels had returned to their normal calibre.

Now, Sajous of Philadelphia holds, as a result of experiment and an exhaustive study of the literature of the subject, that one of the main functions of the adrenals is the regulation of metabolism, including oxidation, and hence the regulation of body temperature. He also asserts that this function of the adrenals is controlled by a centre in the pituitary body, and that these two bodies (pituitary and adrenal) are connected by a nervous path—the pituitaro-adrenal path—which passes from the pituitary to the tuber cinereum and the walls of the third ventricle, thence, by way of the pons and bulb, to the spinal cord. The fibres then leave the spinal cord by the upper four or five dorsal rami, and pass by the great splanchnic nerve and coeliac ganglia to the adrenals. The proofs he gives of these facts are numerous, and I need not go into them in detail here. Any one interested will find them all in his book, *The Internal Secretions and Principles of Medicine.*

How, then, can we explain the exceptionally low temperature and terminal hyperpyrexia in this case? There was evidently at first more or less complete interruption of the pituitaro-adrenal path, due presumably to haemorrhage—haemorrhage into the central canal was observed *post mortem.* The adrenals, thus deprived of the impulses from their controlling centre, would cease to secrete the normal amount of internal secretion, oxidation would be greatly diminished, and the temperature would fall. That the adrenals have an influence on the production of body heat is shown by the facts that: (1) Hypothermia is a constant and prominent symptom of Addison's disease in man and of removal of both organs in animals; (2) injections of suprarenal extract cause a rise of temperature (Oliver, Schäfer, and Reichert).

The terminal rise of temperature progressing to hyperpyrexia is explained by the softening and absorption of the blood clot relieving pressure and the irritation of uninjured fibres—or rather, the intact ends of the distal portion of the injured fibres—by the chemical substances thus produced. Thus a condition of hyperadrenia, with increase of internal secretion, and as a result increased oxidation and rise of temperature in proportion, would be brought about. In this connexion it is important to note that the wound had nearly healed, so that infection as a cause of the hyperpyrexia may be excluded.

Hypotonia of the muscles, as evidenced by the flaccidity of the leg muscles, which were not paralyzed, is a prominent symptom of adrenal deficiency.

The abnormal difference between the mouth and rectal temperatures points to dilatation of the splanchnic arterioles and consequent deprivation of a normal supply of warm blood to the peripheral parts. This would mean low blood pressure—another symptom of hypo-adrenia.

The position of the lesion is important, namely, from the fourth to the sixth cervical vertebrae—the latter marking the upper limit of the outflow from the spinal cord. Ott found animals could generate their usual heat when the section of the cord was below the fifth dorsal vertebra.

In any case, whether we accept Sajous's conception or not, it must be admitted that the lesion under discussion injured a path between some heat centre in the brain and an organ concerned in the regulation of the body temperature, and that this path leaves the spinal cord between the sixth cervical and fifth dorsal vertebrae. I have already shown that there is evidence in favour of the adrenal glands being directly concerned in the regulation of the body temperature.

J. A. SHORTEN,
Captain I.M.S., (lately) Officiating Professor of Physiology, Medical College, Calcutta.
Jullundur, Punjab, India.

CONGENITAL ABSENCE OF BOTH EYEBALLS.

I AM in attendance on a female child, M. H., aged 22 months, suffering from bronchitis. Both eyeballs are absent, and her mother and the midwife, who was present at the birth, inform me that the child was born in this condition. The eyelids on both sides are complete, and are kept constantly closed. On separating them the eye socket formed by the capsule of Tenon is seen to be complete, and there is no sign of either eyeball. There is some contraction of the eye socket and a shortening of the palpebral fissure. There is no other apparent malformation, and the child is bright mentally. She can talk to the other children and call them by their names, and can sing "Tipperary." She cannot yet walk, but this may be due as much to defective nutrition as to loss of vision. There is no history of maternal impression.

Warrington. J. S. MANSON, M.D., D.P.H.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

THE ISOLATION HOSPITAL, SOUTHAMPTON.

MENTAL DISTURBANCE FOLLOWING ASPHYXIA.

(By Oscar Holden, M.D., D.P.H., Resident Medical Officer.)

L. C., aged 8 years, was admitted on December 12th, 1914, suffering from severe laryngeal diphtheria. It was found necessary to perform tracheotomy three hours later. Temporary relief was obtained, but the tube became repeatedly blocked by very tenacious and viscid mucus. The next day a larger tube was inserted, but this in turn became plugged. On the evening of December 14th complete blockage of the trachea occurred below the tube. When I saw her respiration had ceased for over four minutes, but the pulse remained fairly strong. She was extremely cyanosed and unconscious. Artificial respiration was performed, but, owing to the obstruction, was futile. As she was rapidly dying I passed a No. 10 soft rubber catheter down the trachea for a distance of 5 in. below the wound level. Resistance was encountered about 1½ in. below the wound. Artificial inflation by mouth was carried out at the rate of eighteen times a minute. Within five minutes the colour perceptibly improved and spontaneous respirations recommenced in just under twenty-five minutes from the time inflation was begun. When once breathing became regular, the catheter was withdrawn, and adhering to it was a plug of hard mucus about the size of a hazel-nut, and so tenacious that it was with difficulty removed from the tube. An hour later the respirations were sixteen a minute.

The change in the child's mental condition was most interesting. Before her asphyxiation she was a docile, amiable, intelligent girl and gave no trouble. Immediately after spontaneous respiration recommenced, and for three days later, her temperament was the exact opposite. She was very violent, repeatedly tossing about and tearing at her wound. She became wildly excited when any one approached to attend to her, and she did not appear to comprehend her surroundings or to recognize people around her. Nourishment was refused. Motions were passed into the bed. Throughout this period the pulse remained between 80 and 90 when she was quiet, but when approached or when excited it rose to 120 to 130. Respirations remained at 24 to 28 and the temperature at normal.

She gradually regained her former amiable disposition, and within a week had to all appearances quite recovered. During the rest of her stay her mental state was perfect. No lung complications whatever resulted. She was discharged after a stay of thirty-seven days in hospital in perfect health.

Her mentality during the three days seemed one of great terror, and it appeared as if the intense carbonization of the blood had temporarily injured the more delicate controlling cells of the cortex, giving the less highly organized neurons free play.

I have to thank Dr. Lauder, M.O.H. for Southampton and Medical Superintendent of the Isolation Hospital, for permission to record this case.

The Mayor of Boston (Mass.) has recommended to the trustees of the City Hospital the allocation of a fund of £4,000 to the pathological department of the Institution for the study of scarlet fever and measles. The investigation is to be specially directed to the determination of the etiological factor and to the discovery of means of cure and immunization.

A small pamphlet of a dozen pages, containing an English-French-German *Motor Dictionary* of technical phrases used in the motor industry, has been printed by the Commercial Motor Users' Association, and would be found very useful by users of motor cars serving abroad. A good many of the terms are quite outside the knowledge even of those who have a colloquial acquaintance with French and German.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Pathology.

At a meeting on February 19th, Dr. Bronte in the chair, Dr. T. Wigham showed blood films from a case of *Trypanosomiasis gambiensis*. About November last Dr. Jellett, of Waterford, brought him a man believed to be suffering from malaria. Specimens of the blood were examined, but no malaria parasites could be found. It was found that the patient had been in Nigeria, and a further examination of the blood having been made, the trypanosome was discovered. The man had some enlargement of the glands in the posterior triangle of the neck. He had some attacks of fever, but thought he was getting better. He was, however, losing strength. This seemed typical of trypanosomiasis. Some illustrations of Miss Robinson's demonstrating the changes the *Trypanosoma gambiense* underwent in the fly were shown. Remarks were made by Drs. O'Farrell, Mettam, and Law, and Dr. Wigham replied. Professor A. E. Mettam showed several specimens: (1) *Infective sarcoma* from a fox terrier. (2) *Cystic kidney* from the same dog; the kidneys were found to be cystic. (3) The heart of a pig showing *Endocarditis*. On examination of the heart he found unexpectedly that the lesion was due to a streptococcus. (4) *Endocarditis* from an ox. (5) *Dissecting aneurysm of the pulmonary artery* from a sheep. (6) *Tuberculosis of the udder* from a cow; the animal from which it was removed gave milk recently in the city. He understood that the milk was swarming with tubercle bacilli. (7) Two specimens of *Tuberculosis of the udder* from sows. (8) *Tumour of kidney* from an ox. Dr. T. T. O'Farrell showed an unusual case of *Spindle-celled sarcoma*. The patient was a labourer, aged 54, who, after a fall on his back, passed blood mixed with the urine. He stated that he was drinking heavily at the time. Three months ago he complained of pain, which he referred to the region between the last rib and the erector spinae muscle. He also had severe attacks of pain at the right external abdominal ring, which lasted from one to two hours. After the attacks the urine was said to be red or brown. He never suffered from incontinence, but became very emaciated and weak. Albumin was never found in the urine. The abdomen was opened, and the kidney on that side was found apparently normal. The patient afterwards died. A partial *post-mortem* examination was made. The specimen consisted of liver and kidney. The other kidney was normal, as was the suprarenal. There was a tumour between the liver and kidney. The interest in the case was that the growth was perfectly outside the capsule of the kidney, and distinct from the liver and suprarenal. Some part of it was external to the peritoneum, but the large bulk of the tumour had pushed the peritoneum in front of it. He thought there could be no doubt that it originated extraperitoneally.

Section of State Medicine.

At a meeting on April 16th, Dr. T. P. C. Kirkpatrick, President, in the chair, Dr. G. E. Nesbitt gave an account of the recent outbreak of *Cerebro-spinal meningitis in Ireland*. Eighty-nine cases had been notified to the Local Government Board since January 28th last, of which 30 had occurred in the Dublin Military District, with which his remarks were chiefly concerned. The mortality-rate, so far as his figures were available, was 50 per cent. The features of the outbreak were in accordance with general experience. No source of infection could be ascertained in the majority, and no two cases occurred in the same building. He emphasized the importance of early diagnosis, if necessary by lumbar puncture, and pointed out that in Ireland in civil practice too little attention was paid to the examination of contacts. In military practice the greatest importance was attached to this matter, and careful search was made for carriers. He sketched briefly the routine method of examination and the steps employed to limit the extension of the disease. Professor E. J. McWeeney suggested that the cases of cerebro-spinal meningitis which occurred constitute only a small minority of the cases; the whole mystery of the disease would then disappear, leaving a widespread catarrhal affection all over

the country, with here and there a meningitic complication. How the diplococcus got from the pharynx into the cranial cavity had been under investigation for a long time, and light had recently been thrown on this by the discovery of the meningococcus in the blood. He recommended that in a case of suspected meningitis 10 c.cm. of blood should be removed from the arm for examination. He also impressed upon clinicians the necessity for early lumbar puncture, and said it would be found to be a matter of extreme simplicity if the proper needle was used. One of the leading features of this bacillus was its extraordinary tendency to die off; he considered that this might be due to the fulminating character of the micro-organism, and it was just possible that the fulminating cases were the ones in which difficulty was experienced in getting the organisms. The discussion was continued by Sir JOHN MOORE, Dr. WATSON, and Dr. J. MARSHALL DAY, and Dr. NESBIT replied. Sir JOHN MOORE read a paper on *The exploitation of the medical profession in respect to medical certificates*, which was published in the SUPPLEMENT of April 24th (p. 143). Dr. ROWLETTE feared that the practice of giving certificates of death free could not be reversed, but the profession should try to prevent any further impositions. This was a serious question where the profession was asked, not to protect the interests of the poor, but to protect the interest of trading bodies such as insurance societies. The Legislature had provided money to pay, and that money was being perverted from the persons who were properly able to do this work, and this was done on the plea that doctors were not honest. The arguments, he considered, should be put before the public, and it should be made quite clear that the profession were tired of this exploitation, and some steps ought to be taken to prevent its continuance. He suggested that the General Medical Council should consider whether it was within their power to look into the regulations made by the Government, and whether they interfered with the interests of the medical profession. Dr. MARSHALL DAY suggested that in teaching candidates for the profession great stress ought to be laid on the fact that the signing of certificates should be carefully done, as some of them looked upon certificates as of very little value because no fee was paid for them. Sir JOHN MOORE replied.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

AT a meeting on April 27th, Dr. A. E. GARROD, Vice-President in the chair, Dr. A. J. HALL read notes of cases: (1) One in which the blood count was that of acute leukaemia, but the absence of severe anaemia, great prostration, and haemorrhage, together with the rapid and complete recovery, which had remained uninterrupted for four years, suggested that the case belonged to the category of *Lymphocytosis associated with cervical adenitis.* (2) *Chronic myelaemia* in a man aged 34, in which treatment by *x* rays led to complete subjective recovery after two exacerbations of the disease; a third exacerbation was fatal. (3) *Chronic myelaemia* treated by *x* rays, with complete restoration to working health for about six months. (4) *Acute leukaemia* associated with very severe and persistent pains in the bones. (5) *Chronic myelaemia* in a woman, in whom the very large spleen had become completely dislocated, so as to rest on the floor of the pelvis and form a large median tumour, rising up into the abdomen and reaching above the navel. In the absence of a blood count the tumour had been diagnosed as pelvic in origin, and an exploratory laparotomy performed. Dr. F. P. WEBER read a paper on an instance of *Long quiescence of leukaemia.* The patient was a woman, aged 63. The spleen was unusually large, and anaemia was absent. It was doubtful whether the symptoms which induced the patient to seek medical advice had any relation to her leukaemia. He suggested that the absence of anaemia was an evidence that the bone marrow remained capable of exercising its erythropoietic function, despite the presence of leukaemia, and that this explained the freedom from symptoms. Dr. W. IRONSIDE BRUCE spoke of the technique of the application of *x* rays in these conditions. He used a felt filter, preferred large infrequent doses to small ones often repeated, and made a practice of keeping the white cells as nearly as possible at 40,000, since below that number they dropped rapidly. He had found no advantage from exposing the ends of the bones as well as the spleen. This treatment did not influence the ultimate prognosis, but the temporary improvement was encouraging.

SECTION OF DERMATOLOGY.

AT a meeting on April 15th, Dr. J. J. PRINGLE, President, in the chair, Dr. G. PERNET showed a *Rodent ulcer*, of three years' duration, in a man of 26, and commented on the early age at which it had commenced. The PRESIDENT, Sir MALCOLM MORRIS and Dr. J. H. SEQUEIRA referred to similar cases seen at a less advanced age. Dr. Pernet also brought forward a young man who exhibited extensive *Picric acid staining of the skin and hair*, due to his work, which was that of filling high explosive shells. Dr. S. E. DORE, Sir M. MORRIS and Dr. A. M. H. GRAY referred to the discoloration of the urine sometimes caused by the absorption of picric acid in the treatment of ringworm, burns, and other skin conditions, but which generally was unaccompanied by constitutional symptoms. Dr. H. W. BARBER recorded one case in which toxic symptoms occurred in a child. Dr. GRAHAM LITTLE exhibited an *Ulcer on the foot due to several closely-repeated x-ray applications* for a wart on the sole which had been administered by a layman. He asked for suggestions as to prognosis and treatment. A general discussion ensued as to the value of *x* rays in the treatment of warts, in which the PRESIDENT, Dr. W. K. SIBLEY, Dr. H. G. ADAMSON, Dr. DORE, Dr. PERNET, Dr. J. M. H. MACLEOD, Dr. SEQUEIRA and Dr. P. S. ABRAHAM took part. Dr. GRAHAM LITTLE also brought forward a case of *Folliculitis decalvans of the scalp* of several years' duration in a lady aged 55, who also presented the condition of keratosis follicularis of about six months' duration in the axillae, bends of the elbows, groins and back; the latter lesions simulated those of Darier's disease, but the association with lesions of the scalp had not, as far as he knew, been reported. The PRESIDENT, Sir M. MORRIS, Dr. SEQUEIRA and Dr. MACLEOD, while agreeing with the diagnosis of folliculitis decalvans, were inclined to adopt the view that the lesions on the body were probably early Darier's disease, but Dr. Adamson expressed the opinion that the lesions of the latter disease were not essentially follicular. Dr. J. H. SEQUEIRA showed a porter, aged 35, with *Gummatous syphilis and diabetes insipidus.* He referred to several similar recorded cases as supporting the view that diabetes insipidus was commonly of syphilitic origin. Mr. J. E. R. MCDONAGH pointed out that this correlation was more marked in congenital than acquired syphilis; he was inclined to attribute the condition to arterial disease. Dr. PARKES WEBER and Dr. KINNIER WILSON emphasized the relationship of diabetes insipidus to syphilis, the latter suggesting the pathogenesis of the condition was a certain degree of basal meningitis with pressure in the floor of the third ventricle in the region of the pituitary body. Dr. KINNIER WILSON and Dr. DORE exhibited a case, shown at a previous meeting, of a man who had lived in the tropics and who had various patches of *Thermo-anaesthesia* and other indications of a peripheral neuritis, as well as bullae on the feet and thickening of the skin of the hands with nail changes. In their opinion the bulk of evidence favoured the diagnosis of leprosy. Dr. PERNET accepted the suggestion of the exhibitors, but Dr. ABRAHAM and Dr. MACLEOD thought that further evidence ought to be adduced before accepting so grave a diagnosis. Dr. KNOWSLEY SIBLEY demonstrated a typical case of *Epidermolysis bullosa*, or congenital tendency to the formation of bullae from trivial injury, in a woman aged 50. He referred to an apparently identical condition developing after traumatism during adult life. Dr. HALDIN DAVIES showed a girl, aged 14, with extensive ulceration of the face and nose due to *Congenital syphilis*, and asked for opinions as to the value of salvarsan and neo salvarsan in such cases. Dr. BOLAM, Dr. MACCORMAC, Dr. GRAY, and the PRESIDENT strongly advocated the use of salvarsan when the ulceration was active, but Dr. SEQUEIRA thought the administration of mercury by inunction and potassium iodide internally would be equally efficacious. Dr. DOUGLAS HEATH presented a case of very unusual, extensive, deeply pigmented, and atrophic *Lichen planus* in a man aged 56, which was said to have developed at the age of 3 months. On the hands

the lesions were verrucose. Fresh lesions, which were constantly appearing, were characteristic lichen planus papules, but there were no lesions of the mucous membranes. The exhibitor's views were generally accepted by the PRESIDENT, Dr. DORE, Dr. ADAMSON, and Dr. MACLEOD.

SECTION OF PSYCHIATRY.

AT a clinico-anatomical meeting on April 28th, under the presidency of Dr. F. W. MOTT, Dr. ARMSTRONG JONES exhibited a number of cases of *Hypothyroidism*, a condition due to loss of function of the thyroid gland. Schiff described cases of this condition in 1859, Gull in the Sixties, Ord in 1880, and Kocher in 1883, and Sir G. Savage described it more than thirty years ago in Tuke's *Dictionary of Psychological Medicine*, and pointed out its association with mental disease. Dr. Mott made the relation of the ductless glands (thyroid, suprarenal, pituitary, ovaries, and testicles) the subject of his address last year. It was known that the condition cachexia strumipriva, allied in all respects to myxoedema, was induced in animals by removal of the thyroid gland, and that this could be prevented by transplanting the thyroid of an animal into the peritoneum. Baumann demonstrated that the nucleo-albumin of the gland contained a large percentage of iodine, and that the gland manufactured some thyro-antitoxin, and formed an internal secretion having the characteristics of an alkaloid. This substance acted as a hormone to other glands, while its absence was followed by physical and mental disturbance. Hypothyroidism caused an overgrowth of the subcutaneous tissue, the hands became unwieldy, the skin rough and harsh, and the hair disappeared or became sparse and wiry. On the mental side there were apathy, listlessness, and inactivity. Pawlow had shown how glandular secretions could be influenced by the emotions. In children, absence of the thyroid produced sporadic cretinism, and, possibly, idiocy of the Mongoloid type. In adults its absence eventuated in myxoedema. It was not by any means easy to recognize during life all cases of hypothyroidism, as some of the symptoms, such as tremor, seizures, and the mental reactions, were common to alcohol and general paralysis. Dr. M. KOJIMA stated the results of examination of the thyroid gland in 110 cases of mental disorder, with special reference to hypothyroidism. The minimum average weight of the thyroid in the non-insane was 22 to 25 grams. In the average insane person the weight was much less—namely, about 16½ grams in the male, 16.87 in the female; but there was considerable variation in the weights among the insane, especially in females. He considered that all these cases exhibited hypothyroidism. The weights of the external parathyroid in 41 cases varied from 0.01 cg. to 0.07 cg. In a third of the cases four glands were found. The weight of the pituitary body seemed to have no relation to the nutrition of the body or to the form and duration of the insanity. The adrenals of the male were heavier than those of the female, and there was no relation of their weight to that of the body. No definite conclusion could be arrived at regarding the weight of the reproductive glands in the male and female in relation to body weight or to mental disease, except that in congenital imbecility and dementia praecox the ductless glands were all below the average weight. The PRESIDENT gave a microscopical demonstration of the changes in the nervous system in hypothyroidism, and discussed the changes he had found in the nervous system in 6 cases of the condition. These chromolytic changes he first observed ten years ago, in a case of myxoedema which was under his care at Charing Cross Hospital. In the case of a woman whom Dr. Armstrong-Jones had sent for him to see there was anaemia, but the only signs of hypothyroidism present were slight dryness and harshness of skin, a malar flush, and slowness of speech. She showed marked confusion. She died shortly afterwards, and Dr. Mott examined the thyroid gland and nervous system. As similar changes seen in her had been since found also in three other asylum cases, the faults which had been described by Dr. Kojima might be regarded as established, seeing that these had now been found in six cases. The thyroid showed only a few remnants of glandular structure amid the lymphoid structure, and a large excess of fibrous tissue. The autonomic centres in the medulla were more affected than were the other cells, but all the cells of the central nervous system and spinal ganglia, especially the small viscero-vascular cells, exhibited some chromolytic change. The processes were but indstinctly seen and the nucleus was excentric. He specially wished to show the changes in the cortex so as to correlate the mental symptoms with the changes in the cortical cells; these he demonstrated by a series of slides. A section from the cardio-inhibitory centre in a typical case of myxoedema showed a peri-cellular chromatolysis in all the cells. Similar changes were seen in the glosso-pharyngeal nucleus and the psycho-motor cortex. The cortical pyramidal cells had lost their position, and instead of lying in columns with the apical processes pointed upwards they were twisted from side to side. A superficial layer of the cortex stained with victorian blue showed a network of glial cells and a superficial felting in the cortex, owing to the extreme glial proliferation. A low-power slide showed that the columns of Meynert formed by the pyramidal cells and their processes were too indistinct to be recognized, their places being partly taken by nuclei of proliferated glial cells. In these cases there had been a change which led to the disappearance of the Nissl substance, which probably occurred on account of an alteration of the osmotic conditions of the cells, allowing water to pass in and swell the cell. If, as was supposed, this basophile substance was the kinetoplasm, this change constituted a physical reason for the slowness of speech and cerebration which these cases manifested. Dr. Mott also showed slides of ganglion cells in the living stage, as viewed with the dark-ground microscope; an enormous number of highly refractile granules were seen in the cell. The little granules of fluid were enclosed by a thin membrane which stained blue, and this formed the Nissl granules when death occurred. His view was that these granules formed an enormous oxygen surface, because if they were stained blue and placed in an atmosphere of nitrogen in a warm chamber, the colour disappeared; but on letting oxygen in, the colour returned. It would be important to be able to prove that the Nissl substance was the energy substance, for in hypothyroidism there was a definite lack of that substance, and it would account for the loss of mental capacity and of alertness of response observed in these patients. Dr. LENA BEACH exhibited and demonstrated a case of *Disseminated sclerosis*. Dr. SANO reported the result of his anatomical investigations regarding speech functions in a case in which there was a *Cyst of the left hemisphere*, dating from birth or shortly afterwards. The lesion had destroyed the whole of the centrum ovale on the left side; but, notwithstanding that, the man had been able to earn his living as a clerk. The cortex remained, but practically the whole of the projection system was destroyed.

Reviews.

EVOLUTION AND HEREDITY.

THE eight chapters of which Prince KROPOTKIN'S *Mutual Aid*[1] consists first appeared in the *Nineteenth Century* during the years 1890 to 1896. And now, twelve years after the work first appeared in book form, we have before us a popular edition procurable at the modest price of 1s. The author's intention can best be conveyed in his own words. "No naturalist," he admits, "will doubt that the idea of a struggle for life carried on through organic nature is the greatest generalization of our century. Life *is* struggle; and in that struggle the fittest survive. But the answers to the questions, 'By which arms is this struggle chiefly carried on?' and 'Who are the fittest in the struggle?' will widely differ according to the importance given to the two different aspects of the struggle: the direct one for food and safety among separate individuals and the struggle which Darwin described as 'metaphorical'—the struggle, very often collective, against adverse circumstances. No one will deny that there is within each species, a certain amount of real competition for food—at least, at certain periods. But the question is whether competition is carried on to the extent admitted

[1] *Mutual Aid: A Factor of Evolution.* By P. A. Kropotkin. Popular edition. London: W. Heinemann. 1915. (Cr. 8vo, pp. 247 1s. net.)

by Darwin, or even by Wallace; and whether this competition has played in the evolution of the animal kingdom the part assigned to it." Prince Kropotkin is of opinion that the part played in evolution by what he calls with Darwin the "metaphorical" struggle—that is, the struggle of natural groups or species to resist adverse economic or climatic conditions—far surpasses that of the struggle against one another of separate members of such groups or species. Indeed, he is inclined to go much further, arguing that a careful study of Nature will show that the competition of individual members of a given species is more often hurtful than advantageous from an evolutionary point of view. "Combine—practise mutual aid!" That, he tells us, is Nature's true lesson; and the bulk of this work is composed of illustrations, many of a most striking character and not a few the result of his own observation, of the vast amount of spontaneous co-operation practised among wild animals of almost every kind as well as among savages, among barbarian races, in the cities of Europe during the Middle Ages, and in the present day among ourselves. We would call the attention of prospective readers—and every student of evolution should read this book—to the glowing account of the achievements of the mediaeval guilds, which begins on page 158. We are of opinion that the book is of great scientific value, and that the author has proved up to the hilt his contention that, as an evolutionary factor, spontaneous co-operation has by no means yet received the consideration and appreciation that are its due. What seems to be needed now is a judicial comparison of the two factors—on the one hand, conflict and discipline, on the other, free and unrestricted co-operation—with a view to the appraisement of their mutual relation and specific value.

Students of heredity should not fail to read Mr. C. L. REDFIELD'S *Dynamic Evolution*,[2] which treats on novel lines one of the most vexed problems of that branch of biology—the transmission of acquired energy of a specialized kind. By an exhaustive scrutiny of the family histories and records of fast-trotting American horses the author arrives at the conclusion that, contrary to the breeders' tradition, the parental condition in regard to speed acquired or rather developed by training, reappears in the offspring. The apparent exceptions to this law are attributed to the fact that stallions are often trained in adolescence, and that speed so developed behaves as a sexual character and has no effect upon the racing qualities of daughters or gelding sons. This fact has, he thinks, prevented the detection by trainers of the inheritance of accumulated energy, which under all other circumstances he finds to be the rule. Of the thousands of foals begotten by forty-five sires whose records he investigated, only those sons got at dates very near the time when they retired from the track reached into the highest speed class. These conclusions the author supports by facts recorded as to the breeding of prize setters and the milk-producing capacity of Holstein-Friesian cows. In the concluding chapters the investigation is extended to human heredity, and facts are adduced to show that the kind and degree of ability is directly influenced by the age of the parents. The author also contends that, while the infant mortality of the offspring of somewhat aged parents is excessive, those of them who survive to twenty-five years are both longer lived and more intelligent than the children of younger parents.

That we live again in our children and in our children's children is no new discovery, but the truth of it has come home to Dr. MOONEY with such force that he endeavours to persuade others to share the consolation he finds in it for the sacrifice of what he considers the idle dream of a supermundane survival. *How You Live Again*[3] is a brightly written little book, but its frank materialism has a somewhat belated air, the trend of thought being to-day in a contrary direction. There are those who will not agree that the continuity of the germ plasm, and the possibility that some remote descendant may resemble one so closely as to be "practically the same individual," afford any solid ground for the conviction that death is swallowed up in victory.

[2] *Dynamic Evolution: a Study of the Course of Evolution and Degeneracy.* By C. L. Redfield. New York and London: G. P. Putnam's Sons. The Knickerbocker Press. 1914. (Cr. 8vo, pp. 220. 6s. net.)

[3] *How You Live Again.* By J. Mooney, M.B. Manchester: The Pons Press. 1915. (Post 8vo, pp. 149. 5s. net.)

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

A NEW edition of Professor GLAISTER'S *Textbook of Medical Jurisprudence and Toxicology*[4] has appeared, and the fact that a textbook has reached its third edition within about seven years from its original appearance silences adverse criticism, for the fact proves popularity and adaptation to public needs; nor are we surprised at the success of Professor Glaister's book. We may, perhaps, be allowed to state a little personal experience to explain our meaning. We began looking through the pages of the work with the object of writing this review, anticipating that probably an hour might suffice for appreciating its salient features; so absorbed and fascinated did we become that several hours had passed in its perusal before we appreciated that the review was still to be written. What attracted us? Perhaps in the first place the clearness and legibility of the type, a tribute to the care and attention of the publishers, but next, and of course essentially, the charm of Professor Glaister's diction. Never was it necessary to read a sentence twice to appreciate its meaning, for the author is not only master of his subject, but master of a style of composition which made it a pleasure to read his pages. When we put the book down we felt that every part of the field of forensic medicine had received an almost complete exposition—first, the basic principles of evidence, then the collection of facts to form the evidence, and then illustrations of evidence brought into court with all its strengths and weaknesses laid bare for the reader to form his own judgement upon it.

The first subject that attracted our attention was that of finger prints as a means of identification. This is frequently thought to be an extremely difficult and deeply technical subject—a feeling we have shared—but Professor Glaister's description, coupled with the illustrations, seemed to render it as simple as possible, and made one fancy that one could proceed straightaway to the detection of a criminal by this means. Probably this impression is wrong, and the inexperienced might make a sad bungle of the matter, but for all that, the point well illustrates Professor Glaister's gift of clear exposition.

On slowly passing over the section on wounds we found the illustrative cases so appositely chosen that we had read them without appreciating the passage of time. In the same section we read of a form of wound that was certainly new to us. Professor Glaister quotes it from an Italian source apparently; we mention the outlines in the hope that they may catch the eye of some one who can tell us of the possibility of such an event. A man, aged 64, was attempting to rape a girl, and she in defence caught his penis and forcibly pulled on it. It came away in the struggle. Biondi, from whom Glaister quotes, says that experiments proved this to be possible with the organ in a state of erection.

We might write much more in illustration of the excellence and completeness of the work. All we can say in detraction is that it strikes us as too much for a student to absorb; still, it is so easy to read that perhaps a student might read it like a novel and so retain enough for his purposes on the principle of "throwing mud enough."

The medico-legal aspects of our profession are very much to the fore since legislation has been very active in measures dealing with social problems. Dr. BREND has been extremely active in his endeavours to give students and practitioners a clear idea of these same aspects, and we think that in his *Handbook of Medical Jurisprudence and Toxicology*[5] he has made a most successful effort. The diction and phraseology in which he has clothed his ideas are remarkably pleasant to read, although his publishers have compressed them into a comparatively small space. So much do we feel this that the question inevitably arises whether it is worth while to write large books on the subject. We have made

[4] *A Textbook of Medical Jurisprudence and Toxicology.* By J. Glaister, M.D., D.P.H.Camb., F.R.S.E. Third edition. Edinburgh: E. and S. Livingstone. 1915. (Demy 8vo, pp. 872; 138 figures. 15s. net.)

[5] *A Handbook of Medical Jurisprudence and Toxicology for the Use of Students and Practitioners.* By W. A. Brend, M.A.Camb., M.B., B.Sc.Lond., of the Inner Temple, Barrister-at-Law. Second edition, revised. London: C. Griffin. 1915. (Fcap. 8vo, pp. 321. 8s. 6d.)

many experimental researches into the book for certain specified points, and have always found that the information given is quite sufficient for a clear understanding of the principles of the matter, and beyond this experience is the safest guide. A typical example of what we mean is to be found on p. 175, where "Reasonable skill and care" on the part of a medical man are considered. Dr. Brend gives some excellently-chosen cases in which the verdict has been for and against the practitioner, and his remarks supply the key to the reasons for the variation in verdict. That the book has reached even a second edition proves that our opinions coincide with those of the medical profession.

DISEASES OF CHILDREN.

Practical Pediatrics,[6] by JAMES H. MCKEE, M.D., and WILLIAM H. WELLS, M.D., is published in two volumes, each of which contains over 550 pages. The text is for the most part arranged upon the same plan as a large number of other works which deal with the diseases of infancy and childhood, and it may be said to give a very satisfactory account of the teaching at present accepted upon this subject. In one respect only it differs from other books the purpose and scope of which is the same. It appears to have been the intention of the authors to give prominence in their presentation of the ailments of infancy to the preventive aspects, and to indicate, so far as possible, how a skilful control of the diet and hygiene of the young child may succeed in preventing the earliest departures from the normal in growth and development. In the preface it is stated that "the writers have endeavoured to present many salient points and fundamental principles of development which they hope will prove of service to practitioners of medicine, and also that the more comprehensible of these points shall be passed on to parents." On the whole the authors have succeeded well in their attempt to lay emphasis on this aspect of the question, and for this reason the book should have a special value for those who are giving particular attention to the routine inspection of children under school age in schools for mothers and elsewhere. The authors have, however, gone further and have associated with themselves Dr. John Madison Taylor, who contributes an appendix of some 250 pages upon anomalies of development. We confess we find the style of this writer somewhat obscure, whether he deals in generalities or describes the specific peculiarities of the child. As an example of his writing we may quote the following: "Normality of posture is essential to organic competence. Erectness is compounded of vertical and horizontal lines from which divers other lines depend. While curving lines make for grace, they tend to impair the power of support. . . . A secondary cause is loss of integrity in those agencies exercising support which is supplied by collateral and external structures." At times the author is more explicit. "Infants' cries may be divided into shouts, yells, screams, roars, whimpers, whines, wails, bawls, squeals, screeches, squeaks; cries of older children made include these and also whoops, snarls, grunts, snores, wheezes, sibilations, pipings, and likewise simulations of animal cries." After such a list, it comes as no surprise to the reader that the author should take occasion to insist that "to punish an infant or child for crying is barbarous and cruel." We are inclined to think that it would have been wiser to publish the appendix in separate form.

The *Practice of Pediatrics*,[7] by Professor C. G. KERLEY, is a textbook of diseases of children which for many reasons can be recommended to British readers. It contains a short account of the important points in the diagnosis and treatment of the ailments of infancy and childhood. The author confines himself to a description of matters as to which there is general agreement, and more than once expresses his sense of the uselessness of discussing in a general textbook speculations which lead to no definite conclusion. "Unless we possess demonstrable facts," he concludes, speaking of the intestinal disorders of infants, "in teaching, it is best not to go into vague chemical and metabolic theories which no one understands." Although the book cannot be said to throw any new light upon the subjects of which it treats, or even to present a full statement of the most recent work in pediatrics, it is yet of value because of the clearness of its practical directions. This becomes especially evident in the later part of the work, in which the author, having completed the description of the diseases of the several systems, is free to devote a few chapters to special points in which he is particularly interested. His chapters entitled "Miscellaneous Subjects," "Suggestions in Management," and "Therapeutic Measurements," are not only full and clear, but are stamped with an individuality which is a little wanting in the more stereotyped review of children's diseases which precedes them. The book is well illustrated with photographs and diagrams. Of these, however, there is no index, and this is the more unfortunate because some of them are likely to be of great utility, as, for example, the pattern for making a face mask in eczema on page 572, or the sketch of Thomas's modified straight jacket on the same page.

[6] *Practical Pediatrics: A Modern Clinical Guide in the Diseases of Infants and Children for the Family Physician.* By J. H. McKee, M.D., and W. H. Wells, M.D. With an Appendix upon Development and its Anomalies. By J. M. Taylor, A.M., M.D. Two volumes. London: H. Kimpton. 1914. (Post 4to, pp. 1205; 2 plates, 238 figures. Cloth £2 10s. net the two volumes.)

[7] *The Practice of Pediatrics.* By C. G. Kerley. Philadelphia and London: W. B. Saunders Company. 1914. (Roy. 8vo, pp. 878; 139 figs. 25s. net.)

TISSUE TRANSPARENCIES.

No doubt most of the visitors to the International Medical Congress in London in 1913 were attracted by an exhibit in the museum technique department of the Congress museum. It was described in the catalogue as "a method of rendering organs and tissues transparent, and of illustrating the vascular supply of bones," and the exhibitor was Professor Dr. WERNER SPALTEHOLZ of Leipzig. Various organs and entire rats, frogs, etc., were displayed, injected or stained and rendered transparent by means of a clearing agent. In his essay entitled *Ueber das Durchsichtigmachen von Präparaten*[8] he gives a full account of his methods and of the theoretical considerations which guided him to the excellent results to which he has attained. Dr. Spalteholz, as long ago as 1906, when engaged upon a study of the vascular system of the heart, used oil of cloves and xylol to clear comparatively large masses of tissue, availing himself, in fact, of the method ordinarily employed by histologists in the process of embedding in this country and elsewhere. The results, however, were at that date far from perfect. Objects of some size were still much too opaque to allow of the tracing of the ramification of injected vessels with any degree of certainty.

The next step in the development of the method was the use of a clearing agent of a higher refractive index than those hitherto employed. Pure benzol and carbon bisulphide were selected. They gave greater transparency, but it was found that the increase in the refractive index of these clearing agents was accompanied only up to a certain point by a corresponding increase in the transparency of the tissues. Beyond that point a further increase in the refractive index produced a diminution of transparency. The best results were obtained by the employment of a certain definite mixture of the two clearing agents, giving a refractive index as nearly as possible the same as that of the tissues to be cleared. However, the refractive index of no two tissues or parts of tissues being the same, the actual composition of the mixture had to be varied in each case, so as to give a refractive index closely agreeing with the average index of all the tissues of the specimens. The above-named clearing agents were found to have several disadvantages, and, after much experiment, Dr. Spalteholz determined that the best and most permanent results were obtained from mixtures of oil of wintergreen (*Oleum gaultheriae*), or, as an alternative, safrol, and benzylbenzoate, or, as an alternative, isosafrol. The most suitable preparations for several classes of tissues and for animals of different orders are noted in detail in the pamphlet. That for decalcified bone, for example, of which the refractive index is 1.547, is five parts by weight of oil of wintergreen to three of benzylbenzoate. A specimen successfully cleared by that method resembles a radiograph; the object, as a whole, is brilliant and displays a high degree

[8] *Ueber das Durchsichtigmachen von menschlichen und tierischen Präparaten und seine theoretische Bedingungen.* Nebst Abhang ueber Knochenfärbung. Von Dr. med. et LL.D. Werner Spalteholz, a. o. Professor an der Universität Leipzig. Zweite erweiterte Auflage. Leipzig: Hirzel. 1914.

of transparency, but, at the same time, its several parts and component tissues show up within the general mass by a suggestion of opacity in proportion as their refractive indices diverge from the index of the clearing mixture—that is, from the average index of the object as a whole.

The pamphlet closes with an extremely minute description of all the processes necessary to ensure success in the preparation of these transparent specimens, with notes upon suitable injection masses, and, in an appendix, a full description of a method of staining bone tissue, such as centres of ossification *in situ*, with alzarin.

Specimens prepared by these methods are certainly of high value in research and for museum purposes. Perhaps the most successful of those exhibited at the Congress museum were samples of fetal centres of ossification stained with alzarin, the bony labyrinth, filled with metal, in position, and various injected organs. The author has improved upon more primitive methods of rendering tissues transparent, of which one of the most useful is that used in the series prepared by Mr. R. H. Burne in the museum of the College of Surgeons demonstrating the ossification of the fetal skeleton, after a method introduced by Lionel Beale.

NOTES ON BOOKS.

A *Medical Dictionary for Nurses*[9] has been compiled by Mrs. AMY POPE to explain to nurses words and terms of special importance to them, and a table of prefixes and suffixes is appended to facilitate the understanding of words omitted because of their similarity to those included. Certain descriptions of terms like "bandage," or "permanganate," familiar to nurses, are relatively too short. Perhaps, however, the compiler did not think it necessary to dwell on matters which a nurse cannot help knowing if trained on modern principles. Several words often confused with others in more frequent use, like "morbidity," are rightly included, and "causal," easily confused with "casual," ought not to have been omitted—as it is a word not rarely met with in clinical reports and works on public health. There is a very complete list of the chemical elements, and a good table of poisons, symptoms, and antidotes. The article on the average composition of common American products is instructive. Under "common" we find clams, several flours unfamiliar in the United Kingdom, great variety in bread and biscuits, also squash, Lima beans, succotash, musk-melons, persimmon, butternuts, hickory nuts, pecans and piñon. The table gives to the Briton an idea that the Americans have the advantage over him in variety of diet. On the whole, this dictionary is above the average of its type, mainly, no doubt, because the compiler has had long experience in tuition as well as in nursing, when filling several appointments in hospitals and nurses' schools in the States.

The fact that two editions of Major BLACKHAM'S treatise on *Indian Home Nursing*[10] have been sold out within a year gives evidence of its popularity and usefulness. The work has been adopted as the official textbook of the Indian branch of St. John Ambulance Association, under the auspices of which it has been published. It has found favour beyond the limits of the association, and has been accepted by the general public as a practical and useful exposition of home nursing. The third edition presents no novel feature; its subject matter does not undergo rapid change. We notice that, in an excellent tabular representation of the salient features of communicable diseases, cerebro-spinal fever, which is at present exciting so much attention, and is not uncommon in Indian gaols, and perhaps outside of them, does not find a place. Major Blackham is entitled to warm commendation on account of the series of manuals which he has prepared on first aid, home nursing, tropical hygiene, the care of children, and military sanitation.

The Middlesex Insurance Committee has issued a very handy pocket *Diary and Year Book* for the use of the members and officials of the committee. A full list is given of the names and addresses of the members of the committee and of all subcommittees, together with the standing orders and extracts from the regulations as to Insurance Committees. The names and addresses of all the panel practitioners and chemists are also given and a brief sketch of what is meant by medical benefit, with the duties of panel practitioners and chemists, taken mainly from their agreements with the committee. The names and addresses of the Panel and Pharmaceutical Committees also are given, with a short account of the constitution of these committees. Under the head of "Sanatorium benefit" a summary is given of the agreement between the committee and the county council of Middlesex, and the hours of attendance at the various tuberculosis dispensaries. In the diary are inserted in each month the usual dates of the meetings of the committee and the subcommittees.

[9] *A Medical Dictionary for Nurses. Giving the Definition, Pronunciation, and Derivation of Terms Used in Medicine, together with Supplementary Tables of Weights, Measures, and Chemical Symbols, etc. Arranged with Special Reference to Use by Nurses.* By A. E. Pope. New York and London: G. P. Putnam's Sons. 1914. (Cr. 8vo, pp. 288; illustrated. 3s. 6d. net.)

[10] *Indian Home Nursing.* By Major R. J. Blackham, C.I.E., V.H.S., B L., R.A.M C. Third edition. Simla: St. John Ambulance Association. 1914. (4 by 5½; pp. 247; 39 figures. 1 rupee.

MEDICINAL AND DIETETIC PREPARATIONS.

Oxyntin.

IT is well known that certain forms of dyspepsia are connected with a deficiency of acid in the gastric juice, and it may be necessary to make this deficiency good by the administration of hydrochloric acid, sometimes in considerable amount. The preparation called Oxyntin, which has recently been introduced by Messrs. Fairchild Bros. and Foster, New York (London agents, Burroughs Wellcome and Co.), contains hydrochloric acid in loose combination with albumin. Our analysis of a sample recently submitted showed the presence of 5.1 per cent. by weight of real hydrogen chloride (HCl), so that it was rather more than half the strength of the dilute hydrochloric acid of the *Pharmacopoeia*. The preparation is a fine dry powder readily miscible with water and suitable for administration either in a capsule, in powder, or with water; it appears likely to prove a very useful way of administering hydrochloric acid.

Enzymol.

Another preparation made by Messrs. Fairchild Bros. and Foster, of which we have recently received a sample, is a solution of proteolytic enzyme intended for external application and put forward under the name Enzymol. Our analysis of the sample submitted showed that it contained 0.3 per cent. of real hydrogen chloride, and on evaporation it left 26.6 per cent. of residue, consisting of a mixture of nitrogenous matter and glycerin. When tested with coagulated egg-albumen it showed strong proteolytic activity. The makers suggest that this solution might be used as an application to wounds to dissolve diseased and sloughing tissue and other albuminoid matter, with a view to its being removed by irrigation; it is intended to be applied by spray, tampon, compress, etc., according to the nature of the case.

MEDICAL AND SURGICAL APPLIANCES.

A Modification of an Old Tonsillotome.

MR. CHARLES J. HEATH, F.R.C.S., late Surgeon, Throat Hospital, Golden Square, London, W., writes: For the purpose of meeting the requirements of those surgeons who, when removing the tonsil, force it through the opening in the tonsillotome by a pushing instead of a pulling action, I have modified the instrument I designed some eighteen years ago. In the old pattern the blade is above the sheath, in the modified one I have placed it below. By this arrangement practically nothing but the sheath required alteration. A discussion in the Laryngological Section of the Royal Society of Medicine showed that some of the most prominent laryngologists still regard my instrument as the best. It is the simplest, it has stood the test of time, and thousands of them are in regular use. Being essentially of similar mechanical construction, the modified instrument will doubtless prove as durable as the original. In this, as in other matters, however, fashions change, though the principles underlying sound mechanical construction do not. Messrs. Mayer and Meltzer are the makers.



On March 30th the Nebraska Legislature threw out the so-called "eugenic" marriage bill, which was drawn up on the lines of the Wisconsin law. The chief objection to the bill was that women were exempted from its provisions.

CHINA MEDICAL MISSIONARY CONFERENCE.

THE China Medical Missionary Conference held at Shanghai in February last brought together about a hundred medical men from all parts of China. Dr. Duncan Main, of Hangchow, presided. We have received a report of the proceedings from the China Medical Missionary Association, but want of space prevents our giving anything more than the briefest possible summary of a few of the communications presented.

Public Health Work in China.

Dr. Arthur Stanley, Health Officer of Shanghai, read a paper, entitled, "How to Initiate Public Health Work in Chinese Cities." The first essential, he said, was some form of authority controlling finance, staff appointments, and general policy, such as a municipal council. The second essential was a health officer, upon whom practically all organization and responsibility should devolve. The next essential was the necessary power to enforce the requirements of sanitation. Then followed the question of finance. Speaking generally, Dr. Stanley held that the annual appropriation for public health work in a Chinese city should not exceed Tls. 0.50 a head of the population, and half of this should be got from the sale of refuse, and market and other fees.

Public Health Education in China.

Dr. W. W. Peter contributed a paper on public health education in China. Legislation was necessary, but restrictions of personal liberty, in order to be enforced and of any value, must be understood and supported by the public, and the people would submit to a restriction of their personal liberty only as they were convinced that it was necessary for their own good. The medical profession could point out the way and could lead in the fight, but they could not accomplish anything permanent or satisfactory without public support.

A plea for a campaign of public health education in China was made by Dr. E. S. Tyau, who dealt with the subject under the following headings: School instruction as the leading factor; the dissemination of health principles by the churches; the influence of women in the betterment of sanitary conditions, and the influence of the press.

Dr. Wu Lien-teh discussed the awakening of the sanitary conscience of China. That a "sanitary conscience" had existed among the Chinese for a long time was proved, he said, by writings handed down from the Chou dynasty, and by the unconscious practice of hygiene in their daily lives. The first factor in the spread of public health ideas among Chinese was a realization of the superiority of modern Western over ancient Eastern medicine. Hygiene should be taught in the schools; sanitary boards and social leagues should be established, and there should be proper supervision of the work of the sanitary bodies in China by a centrally established public health institute at the capital.

Choice of Anaesthetic for Chinese.

A discussion as to the choice of an anaesthetic for Chinese was opened by Dr. J. L. Maxwell, who favoured chloroform, and Dr. Samuel Cochran, who favoured ether. Dr. Maxwell quoted figures which showed that in 70,000 administrations in different parts of the tropics, only nine deaths had occurred, a fact which proved that chloroform was practically without danger to the Chinese. The general opinion of the delegates seemed to be in favour of chloroform.

X-ray Experiences in a Mission Hospital.

Dr. A. F. Cole of Ningpo read a paper on this subject. He said that in the records of cases the class dealing with bullets and the like was prominent. The Chinese had a natural liking for sport, but their ideas on the subject were curious; they included sitting with a blunderbuss loaded with small stones, old iron, etc., until the pheasant or other bird was within a dozen yards, and thus they aimed at economy, even if only bits were left for the pot. Those who had seen their guns would understand why the custom existed in some places of requiring the gunsmith to fire the first shot by way of experiment. Dr. M. C. Poulter contributed a paper on obstetrical experiences in Futsing city, which was followed by one on "Nursing requirements in our mission hospitals" by Miss E. Hope Bell of Hankow. In discussing Dr. Poulter's paper Dr. G. Duncan Whyte congratulated her and the other lady doctors on having won the confidence of Chinese women to so large an extent. He appealed to all the lady doctors to do what they could in obtaining statistics, for until they were in possession of correct figures they could not give their students that precise instruction which they required.

Medical Education in China.

In a discussion on medical education in China Dr. Paul J. Todd of Canton said there were at least fourteen hospitals in South China which ought to be willing to promise now that in four years they would take on a certain number of interns.

Dr. E. M. Merrins of Shanghai expressed the hope that the Chinese Government would soon be in a position to assume the control of national education in all its branches, and bring the whole system into complete accord with Western standards. A difficulty that had to be encountered was the general standard of medical education. American degrees had gone down a good deal in the estimation of some because some of the colleges had a low standard. They did not want their Chinese students to be ashamed of the degrees which they obtained. They were anxious that the matriculation examinations should be as high as those suggested by the Council of the American Medical Association.

Dr. Cormack quoted figures which showed that out of 97 students who were taught in English, 44 students were paid for by friends, while out of 647 students who were taught in Chinese, 99 were paid for. The Chinese students who had been educated in English so that they could put their learning before their own people in their own language, had not yet succeeded in doing so, and this was a strong argument for giving their students a thorough education in their own language, with the addition, if they wished, that they should help things forward by learning another language. The speaker quoted instances where students educated abroad had admitted that their Chinese had become so rusty that they were unable to translate what they had learnt; there was something wrong with the system if that was the case.

Dr. Wu Lien-teh said the question was whether the Chinese could be taught medical science better in English than in Chinese. They all knew Chinese must be taught in the future, but they had to consider whether they ought not to use the intervening period in finding out a body of men who could be entrusted with the work.

Dr. Neil said they were all agreed that the teaching of English was only a temporary expedient. He hoped that the majority of schools would teach Chinese, and that the standard attained would be a high one.

Tuberculosis in China.

Dr. E. Margaret Phillips of Kaifengfu, Honan, opened a discussion on the treatment of tuberculosis in China. With the progress of missionary work, the adoption of Western civilization, trades, industries, etc., and the increase of large institutions, educational and industrial, they were confronted with the danger of the spread and increase of tuberculosis amongst the natives, unless they were on the watch for the earliest signs and the immediate treatment of the sufferer and the safeguarding of his associates. The most important factor in the treatment of tuberculosis was the mental factor. A doctor's treatment was not limited to the prescribing of drugs, and if the patient's mind was a menace, they should assist him to find something healthier and more helpful for his case. The time had come for the doctors of China to establish sanatoriums in different places, preferably in union wherever possible, or by establishing a tuberculosis section or annexe to the mission hospital, so that all tuberculous patients could be safely isolated.

Dr. Charles K. Roys of Weihsien, dealing with artificial pneumothorax in the treatment of pulmonary tuberculosis, suggested that method of treatment as a measure offering hope in some of the cases which were commonly seen in China.

The President said that a few years ago the Chinese

promised them a new tuberculosis hospital, undertaking to pay all expenses connected with it. They certainly were in need of such an institution. He urged all hospitals, where it was at all possible, to have a sanatorium also.

Beri-beri.

Dr. J. P. Maxwell contributed a paper on beri-beri in the province of Fukien. He said that in inland Fukien practically all the rice was grown, husked, and pounded locally, and no such thing as steam milling and polishing was known. But in the coast ports there was an immense amount of steam-milled and polished rice imported, and the probability was that the small epidemics in the coast ports had taken place on a diet of this rice.

Committee on Public Health.

In a report of the committee appointed to deal with public health, Dr. Houghton, the Chairman, said there were evidences from all parts of China that there was an awakening of the public conscience on the subject. The committee laid stress on the importance of the organization and unification of available forces. They recommended the Conference to appoint a permanent council to deal with the matter and to initiate new kinds of work. It was also recommended that lantern-slide exchanges should be established; that literature, approved by the Publication Committee, should be distributed; that exhibits, lectures, and demonstrations should be given, and that the co-operation of the press should be requested.

Exhibition.

In connexion with the Conference an exhibition was held for the benefit of Chinese visitors.

A RUSSIAN INDICTMENT OF GERMANY.

ON several occasions reference has been made in the BRITISH MEDICAL JOURNAL to the extraordinary manifesto to which ninety-three leaders of German thought, including several representatives of medical science, appended their names some months ago. This document was received with general disapproval by scholars and men of science throughout the civilized world. In our issue of October 31st, 1914, we gave the gist of the British reply, which was drawn up by Professor Gilbert Murray, of Oxford, and signed, among others, by Sir Clifford Allbutt, Sir Charles B. Ball, Sir Thomas Barlow, Sir William Watson Cheyne, Sir James Crichton-Browne, Sir Rickman Godlee, Dr. J. S. Haldane, Sir Wilmot Herringham, Professor J. N. Langley, Sir Donald MacAlister, Sir William Macewen, Sir Patrick Manson, Professor F. W. Mott, Sir William Osler, Sir Isambard Owen, Sir William Ramsay, Sir Ronald Ross, Professor C. S. Sherrington, Sir William Turner, and Sir Almroth Wright. In the JOURNAL of November 28th, 1914, the text of the reply of the universities of France was quoted; in the number of December 5th extracts from the replies of the Paris Académie de Médecine and the Académie des Sciences were given, and in that of March 27th, 1915, reference was made to similar protests by the Association Générale des Médecins de France, by the professors of the Universities of Roumania, by representative members of the medical profession of Brazil, and by the Lisbon Academy of Sciences. The essential passages in the protest signed by 361 leaders of Russian literature, science, and arts were quoted in the same number. We have since received through Sir Alexander Ogston, to whom the document was sent by Professor H. Turner, of the Imperial Academy of Military Medicine of Petrograd, the following further reply from the Conference of that institution. It comes rather late in the day, but it will be seen that the delay had been due to the care taken by the Academy to verify the facts on which it is founded. It is one of the most terrible indictments of German methods of waging war, and contains matter particularly relating to the treatment of the wounded and the behaviour of German doctors, which will probably be new to most of our readers:

> It is our conviction that the gigantic conflict, the horrors of which we are now living through, was long premeditated and forced upon Europe by Germany, and that it is the result of the aspiration of Germany to subject the whole world to her influence, to compel the world to obey the mandates of the German nation and hers alone. The worst crime against humanity, a crime that might have seemed impossible in the modern history of Europe, has been committed by William II and his Government, as is now proved by documentary evidence. The appeal promulgated by German men of science and representatives of art is remarkable for its ignorance of the real cause of the war, and is, in our opinion, the result of the blinding and duping of the cultured representatives of German society, above all others, by their own Emperor and Government. If now German intellectuals beginning, perhaps, to be sobered by the misdeeds committed by their fatherland, and feeling the necessity of justification, are raising their voices against the crimes laid at the door of the German people, assuring the educated world, although without any accompanying proofs, but only on their own honour, that the accusations brought from all sides, are untrue, then this perhaps is but the beginning of the sobering process; its end is still to come, when impartial history shall open their eyes once for all to all that has been done.
>
> What faith can now be placed, after all that is known and has become matter of history, in the words of men of science who deny the existence of violence, plundering, scoffing, aimless atrocities on the part of Austro-German armies, when a whole array of facts, everywhere proved, stands as evidence to the contrary; when we see soldiers and peaceful citizens brutally tortured to death, when we see prisoners pierced by bayonets because they refused to answer questions about the disposition of their forces? What faith can be put in learned men who deny facts known to us, of the shooting of the wounded, even with weapons specially devised for the purpose, and moreover, at the hands of the medical staff? Where can such faith find justification, when compatriots of these learned men, commanding Turkish camps and hordes of Kurds, ever try to raise new peoples against each other; while in all the war zones they operate on one and the same plan, pillaging on all sides, murdering peaceful inhabitants, everywhere profaning churches, destroying with bombs from Zeppelins quiet and defenceless towns and invaluable monuments of art, breaking every precept of international law, every custom of honourable warfare, and impudently invoking this same international law when it is advantageous to themselves?
>
> How can the German intellectuals be believed when German doctors, during the temporary captivity of a Russian hospital, order the captive medical staff, all but under fear of death, to leave their own and help the German wounded? How can they be believed, when the German wounded themselves complain of the cruelty of their own doctors? Finally, we will never forget that the German health resort physicians, at the beginning of the war, threw out into the streets wholly innocent Russian patients who had entrusted health to their care, not even considering with seriousness the condition of the sick, thus sometimes causing their death, thanks to the harshness of the German rabble and police.
>
> It would be vain to think that the facts already set forth are single instances, that they represent exceptions. On the contrary, everything which is known to us and to the whole world about unhappy Belgium, Serbia, France, and lastly, Poland, in regard to which we have now already critically verified and incontestable facts—all these show clearly that methods of barbarism in the conduct of the war by Austro-Germans are general in character. There are occasional exceptions, but these stand out brightly against the general dark background.
>
> No! Confidence cannot be placed in the German representatives of science and art who have signed this manifesto. Even their illustrious names cannot compel us to be silent nor to look upon what has been done as anything else than the crime of William II and his nation. The Germans have forgotten the doctrines of the humanists; they have exchanged the teachings of humanity, truth, and justice for Nietzsche's doctrines of the superman, of arrogance, cruelty, cunning, and falsehood. For a nation, blinded by the mania for greatness, and for the sake of this greatness upholding militarism even by the lips of their men of science, for such a nation the practical advantages of a general subjugation have seemed easily realizable and obtainable. But this shall not be.

An array of civilized nations rose fearlessly to the defence of the rights of humanity, the rights of individual Governments and peoples; other Governments refused to assist German pretensions. Russia, whom German scholars and representatives of art stigmatize, conducts herself with quiet contempt for their calumnies, knowing that she is in the right. Not for the first time does it fall to our great fatherland to rise in the defence of Europe and stand for the freedom of oppressed peoples. Russia once shielded Europe from the invasions of the Mongols; now, she, in alliance with her noble allies, will save Europe from German violence, and her mockery of the principles of humanity, law, truth, and justice.

Let German militarism fall decisively, during the course of decades ruining all nations and bringing its own land, Germany, to the verge of insanity! Let German espionage perish, an espionage under the guise of culture, which, like a spider's web, entangles the whole world! Let the arrogance and cruelty of the German nation destroy themselves!

The ways of culture and civilization are not those in which the German people now walk. Humanity and justice have never yet expressed themselves in slaughter, violence, and pillage, and never will so express themselves. This is another reason why there can be no faith put in the appeal of the German representatives of science and art.

Their manifesto appeared long ago, and if the conference of the Imperial Military Medical Academy has not heretofore raised its voice in protest, it is only because it has desired to wait for the accumulation of historic documentary data and irrefutable facts, clearly pointing not only to the causes of the war, but also to the inhuman and utterly barbarous conduct of the Austro-German soldiers. Now we have all these in abundance, and it only remains to the German "intellectuals," who pledged their honour, to confess their mistake in a new manifesto that they may not remain wholly lost to shame.

This reply is signed by the President of the Academy, T. Makavieeff, honorary physician to the Court of His Majesty, and Professor M. Flün, Secretary.

THE REGISTRAR-GENERAL'S ANNUAL REPORT.

THE annual report of the Registrar-General on the vital statistics of England and Wales (Cd. 7780, 5s. 4d.) has just been published. The present volume is the seventy-sixth which has been issued since civil registration was established, and deals with the statistics for the year 1913. The new features introduced into the report for 1911, which differed in important respects from all its predecessors, have been repeated in the latest issue. In view of the special circumstances the advisability of curtailing the scope of the report was considered, but it was decided that, having regard to the value of continuity in the series of annual tables, none of the principal ones could be dispensed with. Modifications of detail are, however, held to be advantageous as enabling statistical material on many subjects, which though of considerable interest cannot be regarded as of primary importance, to be dealt with in greater variety by the selection of different subjects for discussion from year to year. Thus in the present report the secondary classification of causes of death is, in accordance with the scheme initiated in 1911, carried on for cancers and other tumours. Special attention is directed to the tables showing the incidence upon single and married women of the mortality from the important forms of cancer peculiar to that sex.

Marriages.

The marriages registered during 1913 numbered 286,583, corresponding to a rate of 15.5 per 1,000 persons married in the population at all ages. This rate is equal to that for the year 1912, and to the average for the ten years 1901–10, but is 0.3 per 1,000 less than the mean rate for the whole period (1838–1913) of civil registration. Correction of the marriage-rate by allowing for the increased proportion of persons of marriageable age (taken as 15 years and upwards) shows, however, that the decline in recent years has been greater than is indicated by the less accurate method of calculation without reference to age. The mean age at marriage, which had been steadily increasing in recent years, showed a slight decline in 1913. As regards manner of solemnization there has been a continued increase in the number of purely civil marriages in register offices, which have risen from 8 per cent. to 22 per cent. of the total during the past fifty years.

Births.

The births registered in England and Wales in 1913 numbered 881,890, of which 37,909 were illegitimate. The crude birth-rate—that is, the proportion of births to the total population—was 23.9 per 1,000, or 0.1 per 1,000 more than the rate in the preceding year, but was as much as 3.3 per 1,000 below the low average rate for the ten years 1901–10, and was less than two-thirds of the maximum annual rate in this country (36.3) which was recorded in 1876; since that date the decrease in the birth-rate has continued almost uninterruptedly. The proportion of births to total population is, however, affected by (1) changes in the proportion of women of child-bearing ages, (2) changes in the proportions of single and married women at these ages, and (3) changes in the average age at marriage. Changes of the first kind would, in the absence of other disturbing factors, have led to a rise in the birth-rate since 1876, while changes of the second and, to a less degree, of the third kind have contributed to the decline. The potential effect of (1) and (2) are calculated in the report, the result showing that they would account respectively for a rise of 2.86 per 1,000 and for a fall of 1.10 per 1,000 in the rate for 1913, compared with that for the five-year period 1876–1880; the total recorded fall in the rate was 11.46 per 1,000, and the total effect of diminished fertility from all causes (including higher age at marriage) was therefore equal to a decline of 13.22 per 1,000 in the birth-rate. The rates for the main geographical divisions of the country show, as in previous years, that whatever measure of fertility is employed, Wales comes highest, and is followed in order by the North, Midlands, and South of England, London having a somewhat higher position than the remainder of the South. Illegitimate births were in the ratio of 43 to 1,000 total births, or 7.9 to 1,000 of the unmarried and widowed female population between 15 and 45.

Deaths.

The deaths of 504,975 persons (261,687 males and 243,288 females) were registered in the year under notice. These deaths were equal to an annual rate of 13.7 per 1,000, which is 0.4 per 1,000 higher than the rate in 1912 (the lowest yet recorded), but is lower than the rate in any year up to 1910. The lowest standardized death-rate of the nineteenth century (taking the population in 1901 as the standard) was 16.4 per 1,000 in the year 1894, the normal rates being much higher; thus for the five years 1861–70 it was 21.3, and for 1891–95 it was 18.5. The standardized mortality of males in 1913 was 23 per cent. greater than that of females, and shows a much larger excess now than formerly; up to 1860 the difference was only about 9 per cent., but for the last fifteen years it has averaged 20 per cent. The fall in mortality in recent years applies to all ages, though in old age it is comparatively slight; up to 35 years of age among males and 45 years among females the mortality in 1913 was, for each quinquennial or decennial period of age tabulated, only about one-half of that recorded fifty years ago. Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 108 per 1,000, and was 13 per 1,000 below the average in the preceding ten years.

Causes of Death.

The increase of mortality in 1913 over that in the previous year is accounted for by the increased number of deaths from diarrhoea and enteritis due to the warmer summer. Mortality from all the principal epidemic diseases was below the average, that from enteric fever and from whooping-cough being the lowest on record. The mortality from diphtheria and croup together was lower than in any year except 1912, and from scarlet fever was lower than in any years except 1911 and 1912. Cancer caused a higher death-rate both among males and females than in any preceding year, but the rates from phthisis and from tuberculosis as a whole were the lowest on record. The inquiries sent to medical practitioners asking for further information respecting deaths which had been

indefinitely certified were fewer than in 1911 or 1912, but more than in any previous year. The issue with each book of death-certificate forms of a list of examples of indefinite certificates, with indications of the further information desirable in each case, has facilitated inquiries respecting indefinite certifications, and has also diminished their number.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE EXECUTIVE COMMITTEE.

AT the meeting of the Executive Committee held on Thursday, April 29th, a letter was read, addressed to the Chairman, Sir Rickman Godlee, by Dr. Pechère, the President of the Aide et Protection aux Médecins et Pharmaciens Belges, conveying the warmest thanks of that body for the donation in money which had been forwarded in accordance with the decision of the committee at a previous meeting. To this letter a reply was sent by Sir Rickman Godlee stating the intention of the Fund to continue to help in this way, and asking that details of the distribution should be made known to the committee of the Fund. Sir Rickman Godlee also read a letter from Mr. Herbert Hoover, saying that for the moment it would not be possible to communicate with Belgium or to receive from Belgium the information sought.

A letter was also read from the Under Secretary of State for Foreign Affairs explaining the circumstances in which His Majesty's Government decided that they would not be able to make a monthly contribution out of public funds to the benevolent department of the American Commission for Relief in Belgium. It was decided that a copy of this letter should be sent to the chairman of one of the American Funds, having similar objects to the British Fund, as there seemed to be some risk that the position of the British Government in the matter might be misinterpreted in the United States.

Dr. Des Voeux and Dr. Squire Sprigge said that their experiences were alike at the present moment with regard to finding situations for Belgian doctors in this country. At one time there appeared to be little difficulty in finding the posts, but applicants were not coming forward. Now there seemed to be many vacant appointments, but for one reason or another the Belgian candidates were not successful in obtaining them.

The treasurer's report showed that money was coming in steadily, though many districts had not yet responded to the invitation to subscribe. Dr. Alfred Cox said that the claims of the Fund were mentioned in the annual report of the Council of the British Medical Association (SUPPLEMENT, p. 179). It was generally felt by the committee that though the outgoings at the time were not large, the call upon the resources of the Fund in the future would certainly be very heavy, and that no pains ought to be spared to augment them.

Messrs. Burch, Whitehead, and Davidsons, 29, Spring Gardens, London, S.W., have kindly consented to act as honorary solicitors to the Fund.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Voeux during the week ending Tuesday last make a total of very nearly £2,000, but this handsome sum, of course, includes a donation on account from the Scottish Committee, Belgian Doctors' and Pharmacists' Relief Fund, of £1,000. From the Liverpool Belgian Doctors' Relief Fund there was received £400, the sum being earmarked for the relief of doctors, as a separate fund has been instituted in Liverpool for pharmacists. A further welcome donation of £400 was received through the Australian Agent-General from the Australian Pharmaceutical Conference.

	£	s.	d.
Mr. F. Godlee	10	0	0
Liverpool Belgian Doctors' Relief Fund (subscribed entirely by Doctors)	400	0	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.) ...	16	0	0
Dr. G. D. H. Carpenter...	1	0	0
Dr. Barrs (Leeds), collected by—			
Dr. Hawkyard ...	3	3	0
Mr. F. H. Mayo ...	2	2	0
Furness Division, B.M.A. (per Drs. Alexander and Thompson, Hon. Secs.)—			
Dr. Cook	2	2	0
Dr. Mallagh	1	1	0
Dr. Fawcett	1	1	0
Dr. Lowther	1	0	0
Dr. Gwatkin	1	1	0
Dr. Collins	5	5	0
Dr. Harper	1	1	0
Dr. Daniel	1	1	0
Dr. Livingston ...	1	1	0
Dr. Wilson	1	1	0
Dr. Bowman	5	5	0
Dr. Brown	0	10	6
Dr. J. A. Reed ...	3	3	0
Dr. Carmichael ...	1	1	0
Dr. Ashburner ...	3	3	0
Dr. Kendal	0	10	6
Dr. Alexander ...	1	1	0
Dr. Johnston	1	1	0
Dr. Blacklee	1	1	0
Dr. Cross	1	1	0
Dr. Forster...	1	1	0
Dr Stoney	0	10	0
Dr. Ware	1	1	0
Dr. Menzies	1	1	0
Dr. Hawkesworth ...	1	1	0
Dr. Sinclair	1	1	0
Dr. Pratt	1	1	0
Dr. Sansom and Dr. Bayne	2	2	0
Dr. Magill	0	10	
Dr. Thompson ...	1	1	0
Scottish Committee Belgian Doctors' and Pharmacists' Relief Fund (per Dr. Norman Walker, Treasurer, Royal College of Physicians of Scotland)	1000	0	0
Birmingham Local Committee (per Dr. R. Saundby) (seventeenth donation, total £387 17s. 3d.)—			
Dr. and Mrs. Stonehewer (proceeds of Whist Party) ...	10	5	0
Dr. G. Lestock Thornton, recruiting fees, etc. (second donation, total £3 3s.)...	2	2	0
Bucks Division, B.M.A. (per Dr. A. E. Larking)—			
Dr. Johnstone Harris...	1	1	0
Dr. Lysander Maybury...	1	1	0
East Sussex Medico-Chirurgical Society (per Dr. F. W. S. Culhane, Honorary Treasurer) ...	30	0	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.), ninth donation, total £349 19s.)—			
Dr. T. A. B. Kane ...	3	3	0
Dr. A. Wilkinson ...	1	1	0
Dr. W. J. Baty ...	3	3	0
Dr. J. R. Burn ...	1	1	0
Dr. James McConnell...	1	1	0
Australasian Pharmaceutical Conference (per the Agent-General)—			
Victoria	300	0	0
Queensland	65	0	0
Tasmania	35	0	0
Mr. P. L. Ridge	0	5	8
Northants Pharmacists' Association (per Mr. R. H. Robinson) ...	2	2	0
Mr. T. H. Powell ...	0	5	0
Wimbledon and District Pharmacists' Association (per Mr. F. T. Bowen)	2	2	0
Mr. J. W. Venters ...	0	5	0
Mr. F. A. Williamson (proceeds from weighing machine)	0	7	3
Mr. A. Chapman ...	0	11	7
Mr. R. Fouracre ...	0	5	0
Dr. A. W. Sanders ...	1	0	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

LIVERPOOL.

At a recent meeting of the committee formed under the auspices of the Liverpool Medical Institution, it was resolved to remit £400 to the Honorary Treasurer, Dr. H. A. Des Voeux, who has acknowledged its receipt. The Liverpool Fund still remains open, and attention may be drawn here to the fact that a considerable number of the medical profession in Liverpool and district, as well as of the members of the Liverpool Medical Institution, have not yet sent in their subscriptions. These will be gratefully welcomed by the local Honorary Treasurer, Dr. T. R. Bradshaw. The following list is the third; the first and second were published in the BRITISH MEDICAL JOURNAL, January 23rd, page 176, and February 13th, page 307, respectively:

Third List of Subscriptions (May 1st, 1915.)

	£	s.	d.
T. P. Cowen, Rainhill ...	4	4	0
Charles J. Macalister ...	3	3	0
J. P. Bligh	2	2	0
W. McIntyre Brown, West Kirby	2	2	0
W. E. Livsey	2	2	0
Robert Stevenson, Bootle	2	2	0
Wallasey Medical Society, per Dr. Seymour Davies	2	2	0
Anon.	1	1	0
Percy Ashworth, Southport (2nd subscription)	1	1	0
G. T. Bogle	1	1	0
H. Haward Bywater ...	1	1	0
Mrs. H. Haward Bywater	1	1	0
A. Ross Carmichael ...	1	1	0
W. C. Costine	1	1	0
William Crooke, Liscard	1	1	0
Seymour Davies, Liscard	1	1	0
Walter Dawson... ...	1	1	0
Percy Edwards	1	1	0
R. P. Edwards, Mold ...	1	1	0
J. H. Fardon, Birkenhead	1	1	0
William Irvine	1	1	0
Henry Jones	1	1	0
Leslie Kingsford ...	1	1	0
W. McAfee, West Kirby	1	1	0
R. I. Richardson ...	1	1	0
F. W. Taylor, Blackburn	1	1	0
John Twiston Davies, Liscard	0	10	6
W. Howie	0	10	6
J. Leggate (2nd subscription)	0	10	6
F. G. McCaughey ...	0	10	6
S. Wilkinson	0	10	6

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments contributed by the following donors:

Dr. Flora Butcher, Tanakpur, U. P. India.
Dr. J. C. Eames, Stoneclough.
Drs. Hargreaves, Orbell, Whitton, Scott (per Mr. W. H. Rose, Chairman, Oamaru Hospital, New Zealand).

British Medical Journal.

SATURDAY, MAY 8TH, 1915.

THE TREATMENT OF WOUNDS INFLICTED IN WAR.

IN a recent number we dealt with the first part of Sir A. E. Wright's address so far as this related to the pathology of wound infections. Now that the publication of the entire address is completed, we propose to say a few words on its concluding and, perhaps, more controversial section.

In this, Sir Almroth Wright proceeded, in the light of the facts elicited by his experimental investigations as to the processes taking place in wounds, to consider in order the three methods of combating wound infections—namely, the use of antiseptics, treatment by physiological methods, and vaccine therapy. It will be remembered that he had already insisted that, of these three, the second was of much the greatest importance, and we imagine that most surgeons will agree with this statement, inasmuch as it underlies the whole treatment of projectile wounds by efficient drainage.

With his strictures on the use of antiseptics, however, many surgeons will join issue. We do not feel it our duty to take one side rather than the other in this matter, but we do think it right to point out that there is much to be said on both sides, and to state fairly the opposing claims.

Admitting the immense prophylactic value of antiseptics for the prevention of infection in wounds about to be inflicted, Sir Almroth has hardly a good word to say for their use in the treatment of already infected wounds. He analyses with much point and acuteness the frame of mind of those who put a blind trust in the routine treatment of such wounds with antiseptic solutions, and demonstrates beyond cavil the futility of expecting completely to disinfect projectile wounds by these means. So far we are in hearty agreement with him, but it is possible to overstate a case and to leave out of account an important consideration.

Sir Almroth himself, in discussing the stages of projectile wounds, describes the first stage as that of "imprisoned discharges" and draws a lurid picture of the anaërobic horrors going on in their depths. This is the stage before efficient surgical treatment, and therefore before physiological methods can be employed. Now any means which could check bacterial development in the depths of a wound, even if the check were only partial, would be something to the good. It is not a question of attempting to disinfect the wound. The term "antiseptic" is, or should be, used for a substance checking fermentative or putrefactive processes; it is not necessarily identical with a "disinfectant," though one substance may have either effect according to its concentration. In a measure at least it should be possible to introduce into a wound, even into its depths, some antiseptic which should control bacterial development during the interval which must elapse before physiological methods can be brought to bear.

It so happens that a group of naval surgeons, under the leadership of Sir Watson Cheyne, have been attacking this very problem since the outbreak of the war. They have attacked it by the very means which Sir A. E. Wright and his colleagues have employed—namely, by exact and well-devised laboratory experiments. They have reached certain conclusions, definite as regards the experimental work, but as yet incomplete as regards their practical application to human wounds. The essence of the results obtained was embodied by the President of the College of Surgeons in his recent Hunterian Oration, and more complete data are now published in the April number of the *Journal of the Royal Naval Medical Service* as the preliminary report of a Committee appointed by the Director-General to inquire into the best method for the early treatment of wounds sustained in action. The Committee consisted of Sir W. Watson Cheyne, Fleet Surgeon P. W. Bassett-Smith, and Mr. Arthur Edmunds. In our issue of March 6th last we gave a short account of the laboratory experiments. They indicated that a paste of lanolin with a little white wax, containing certain disinfectants in suitable amount, could inhibit bacterial growth when it acted through a sheet of agar $\frac{1}{4}$ in. in thickness, such influence being exerted within an hour or two, and remaining persistent in the case of certain substances. Phenol and cresol gave the best results, as the paste appeared to retain them and part with them slowly. Pastes containing 20 per cent. of these substances appeared to do no serious harm to living tissues, in the sense of causing any sloughs delaying subsequent healing, and in this connexion we may remind our readers of Mr. Bond's observations, also published in the JOURNAL on March 6th, in which he showed that even strong antiseptics do not materially affect the healing of aseptic wounds. The human wounds treated by the method evolved by the Naval Committee have so far been too few to allow of any final judgement as to its efficacy, but they promised well.

It appears to us that the method is deserving of trial, and is not forthwith to be dismissed by the reasoning which Sir Almroth Wright has brought forward, sound though this may be in relation to the washing out of wounds with antiseptics in their later stages. Those of our readers who will read the two sides of the question in detail will perceive how much may be said in both directions, but the issue must be left to practical experience. There can be no doubt, however, that Sir Almroth's forcible criticisms on the routine use of antiseptics are needed. They cannot but stimulate thought, and perhaps help us to reconsider our ideas.

Sir Almroth next dealt with treatment by physiological methods—that is, those with which Nature herself combats infections. He showed how surgical procedures are efficient in proportion as they bring the antibacterial agencies of the body into play, and suggested certain means by which these natural agencies can be helped, notably by lymphagogue dressings, of which he especially advocated 5 per cent. salt solution with a little sodium citrate. This portion of his address will have been read with especial interest, for it is in the highest degree thoughtful and instructive. He analyses the scientific reasons for the various operative measures, and shows their influence in regulating the flow of lymph and the emigration of leucocytes. Both these processes can largely be controlled by surgical means, and when our control is perfect he holds that the problem of treating infected wounds will have been solved.

Turning to the third method of treatment, by vaccine therapy, Sir Almroth gave a very candid review of the conditions under which this could be of

service, and from the apostle of vaccine treatment it came with peculiar force. The chief value of the method lay, he maintained, in prophylaxis; in the treatment of localized bacterial attacks upon tissues adjacent to the wound (for example, erysipelas and lymphangitis); and in the treatment of well-drained wounds. In other cases he confessed to disappointing results, and this, we imagine, has been the experience of most of those who have employed vaccines in treatment during the war. He regretted that the prophylactic use of "antisepsis vaccine," of which a large supply was available, had been undertaken to so small a degree.

In the great majority of wounds coming under observation perfect drainage is not attained because the surgeon reasonably holds his hand, as far as possible, in order not to increase the damage already inflicted. It is in the case of these imperfectly drained wounds that vaccine therapy has proved disappointing in its results. Nevertheless, even here some good may be done, and we believe that in the experience of some hospitals in this country favourable results have been obtained in not a few cases. It is clear, however, that Sir Almroth is right in assigning a secondary rôle to vaccine treatment as compared with the proper employment of physiological methods.

The conclusion of the address was devoted to a subject of such high importance that we cannot do justice to it in this article. In his epilogue Sir Almroth discussed the question of the organization and co-ordination of the treatment of the sick and wounded, and he adduced many weighty reasons for the issue of definite instructions as to the broad principles on which wounds should be treated. Such instructions would be based on the knowledge already gained during the war, and the memorandum which we printed a fortnight ago may be taken as an example of the form they might take. It is objected in some quarters that this would be to interfere with the individual liberty of the surgeon, but we think this need not be so, for such instructions should take the line of fatherly guidance rather than peremptory command; they would be of much service to surgeons who are dealing with a novel form of practice, and who have not had opportunity to become acquainted with all the lessons which the war has already taught. We believe that they would welcome any memorandum on treatment drawn up by such a committee as Sir Almroth Wright suggests, and founded on clinical experience and pathological research on the spot. It is clear, of course, that there could be no finality about the recommendations or instructions contained in such a memorandum, and this point Sir Almroth Wright himself makes when he says that the membership of the committee should be restricted to those actually at work at the seat of war, and prepared carefully to watch the working of the recommendations, and at any moment to revise them in the light of accumulating experience or further laboratory experiments.

CHOLERA AND THE DARDANELLES.

ALTHOUGH the existence of cholera among the Austrian troops was established months ago, and the number of cases reported was considerable, this disease has not so far been a serious menace to our own armies. We must, however, not lose sight of the facts that not only are we now drawing near to the season when epidemic cholera is prone to manifest itself, but that large military operations are in progress in a part of Europe peculiarly subject to the disease which only a few years ago wrought fearful havoc among the very troops to which we are now opposed. It is therefore opportune to summarize those epidemiological facts which are likely to be of importance in connexion with the Dardanelles operations.

It is unnecessary to describe the phenomena of an epidemic as observed in civil life, typified, for instance, in the explosive outbreak at Hamburg in 1892, or in the more recent epidemic of 1909 at Petrograd. Of more relevance are the outbreak among the Turkish troops during the last Balkan war and the experience of the Greek army in the subsequent conflict with Bulgaria. The former outbreak occurred among the retreating and demoralized Turkish troops subsequent to their defeat at Lule Burgas (October 30th and 31st, 1912). From the account published by Simond, Pasteur,[1] Vallery-Radot, Kiamil Bey, and Asseo, we can form a good idea of the ravages of the disease in a beaten army without an adequate sanitary administration. No prophylactic measures appear to have been adopted; to dispose of the dead was impossible, and the mortality from the disease was enormous. No trustworthy statistics are available, but that there may have been 30,000 deaths is a conjecture, not wildly improbable, of eye-witnesses. The interest of this occurrence is the demonstration it affords of what may happen when cholera does its worst in a district not remote from the actual scene of operations. Much more instructive is the history of cholera in the Greek army at the same epoch, and we shall describe it in rather more detail, following Savas's report.[2]

There were no cases of cholera in the Greek army during the conflict with Turkey, the first being recorded after the outbreak of the second Balkan war. It appears that the Bulgarian troops became infected at the Tschataldscha lines—presumably by the Turks—and thence conveyed the infection through Thrace and Eastern Macedonia, from which it was brought within the Greek lines by fugitives. The first case was recognized in the second week of May, and the exigencies of the war prevented complete inoculation of the troops at that time. On the march men drank from streams polluted with corpses of Bulgarians, and the disease was spread through Macedonia by fugitives. After the cessation of hostilities in July-August, 1913, the epidemic declined, and ceased altogether in October. The total number of cases in the whole epidemic was between 5,200 and 5,300, this number including those among the civil population. In ten army divisions, with an original strength of 114,805 officers and men, there were 2,192 cases. The fatality, reckoned on 2,503 cases in hospitals and ambulances (inclusive of some civilians), was 20.6 per cent. This rate, judging by previous experience, is low.

The circumstances preceding the outbreak were precisely those which are likely to prevail in any campaign conducted in South-Eastern Europe and Asia Minor, namely, the importation of infection ultimately perhaps from Asiatic Turkey, the heavy pollution of streams with corpses and dejecta, the occupation of villages previously held by the enemy, and the presence of a plague of flies. Savas draws attention to the last-named factor, and remarks that the cases diminished when the army had attained an altitude of 1,000 metres, where hardly any flies were seen and the pollution of the water was less.

The Greek sanitary organization appears to have been good; both military and civil cases were sent to

[1] *Bull. de la soc. de path. exot.*, vii, 1914, p. 313.
[2] *Wien. klin. Woch.*, xxvii, 1914, p. 1093.

the same special hospitals, and Savas attaches importance to a unified method of administration. A system of cholera ambulances was established, each "ambulance" being constituted out of a nucleus hospital, with accommodation for twenty-five patients and a mobile laboratory. According to Moutouses,[3] the laboratory made it possible to separate cases of cholera from others immediately behind the firing line; by the help of laboratory methods carriers could be detected and patients were not discharged until their stools were bacteriologically negative.

From the epidemiological standpoint, the probable importance of flies in this outbreak is of interest and confirms the findings of numerous workers, such as Sawtchenko, Uffelmann, Macrae, Ganon, and Passek.[4] The point is of importance since this source of danger will be less easy to deal with than the pollution of drinking water in the case of our own troops. The experience of the Greek army shows that it is imperatively necessary to staff and equip the laboratory service of the Dardanelles army as adequately as that of our main army in France and Belgium; indeed it might be argued that the importance of this service is even greater in the cholera zone than elsewhere.

We now come to the subject of protective inoculation, which is likely to be the object of the same sort of attack as antityphoid vaccination. The earlier work of Haffkine and his assistants and collaborators is well known, and the details can be conveniently read in Haffkine's recent book;[5] Nijland's experience in Java is also of importance.[6] As, however, none of these workers were in charge of troops on active service and their technique differed in certain respects from that likely to be used at present, we shall confine our attention to the Greek experience. Savas states that the source of the vaccinal matter was a vibrio isolated from the stools of a Bulgarian cholera patient; it exhibited characteristic growth forms, and was agglutinated by a serum of high titre in a dilution of 1 in 1,000, and gave a positive Pfeiffer's reaction in the same dilution. The virulence was exalted by passage, and was maintained unaltered during the preparation of the material. Cultivation in bulk on alkaline agar was carried out. The material for inoculation was suspended in 0.8 per cent. saline, so arranged that 4 mg. of bacteria were present in each cubic centimetre of emulsion. The emulsion was sterilized at 56° C., and put up with 0.5 per cent. carbolic acid in 5 to 10 c.cm. ampullae, or 20 to 100 c.cm. flasks.

Injections were made into the left arm, persons over 10 receiving half a cubic centimetre, followed eight days later by 1 c.cm. According to Moutouses, three injections were sometimes given, and he noted a few severe reactions, generally after the third inoculation, which he thought might be anaphylactic. Savas observed some instances of fulminating cholera appearing within a few hours of the first inoculation—a result pointing to the existence of a negative phase, and emphasizing the desirability of completing the immunization process before the troops are exposed to infection.

The original combatant strength was 114,805, and of these 14,613 were returned as having received one inoculation, 91,224 two, and 8,968 none; 618 cases of cholera occurred among the once vaccinated, 644 amongst the twice vaccinated, 834 amongst the unvaccinated; 96 cases were unclassified. The total morbidity per mille was 93 in the case of unvaccinated, 42 in the case of once vaccinated, and 7 in the case of twice vaccinated men. The morbidity rate on all the troops together was 19 per mille.

Since the process of inoculation was being carried out during the epidemic and was not completed until the disease itself showed signs of remission, it is not permissible to draw conclusions from these figures, because the period of exposure to risk was not the same in the different classes. Contrasted morbidity rates of inoculated and uninoculated groups ought not to be quoted unconditionally as proofs of the value of inoculation; if the inoculations are carried out during an epidemic, the inoculated group will necessarily show a lower morbidity rate than the uninoculated (unless, of course, the inoculation itself caused the disease), because those that acquire the disease early will figure in the uninoculated class, while the inoculated group will be swelled by those who passed through some of the period of exposure to risk in an uninoculated condition. If Savas had only provided these figures, we should have been unable to base any valid argument upon the experience of the Greek troops with respect to inoculation. Fortunately, he has furnished us with far less equivocal evidence.

Although the combatants were not, for the most part, inoculated at the outbreak of war, one branch of the army had been vaccinated before any exposure to disease took place; this was the sanitary corps. The members of this corps were of the same class as the combatant soldiers; with the exception of a short course of instruction from the medical officers they had no more knowledge of prophylaxis than their comrades; on the other hand, they were particularly exposed to the risk of contracting the disease, since the duty devolved on them of transporting the sick, often on their backs down mountain paths, in circumstances rendering it difficult or impossible to avoid soiling their persons with dejecta. The cholera morbidity of this corps was as follows. Of 2,897 men, 2,831 had been vaccinated twice, 62 once, and only 4 were unvaccinated; only 13 cases of cholera occurred in the whole body, 3 among once vaccinated and 10 amongst twice vaccinated men. This gives a general morbidity-rate of 4.5 per mille as contrasted with 19 in the case of the whole of the combatants—a very remarkable difference. If we confine our attention to the men twice vaccinated the rate is 3.5 per mille. If we take it that the hygienic value of the short course of instruction is at least neutralized by the special opportunities the sanitary corps had of contracting the disease, it is very difficult to find any other explanation of their marked relative immunity than the fact of previous efficient vaccination. These figures, indeed, make the practical argument in favour of anticholera inoculation as a military measure very cogent.

The inference to be drawn by the sanitary administrator from this recital of occurrences of recent date and within the very sphere of our own military operations is unmistakable.

If complete inoculation of the troops destined for the South-Eastern theatre has not yet been carried out, it should be undertaken forthwith. It is unreasonable to suppose that the difficulties of wholesale inoculation during an active campaign encountered by the Greek authorities will be absent in our own service. It is also plain from Savas's testimony that the full advantage of immunization can only be reaped if the work is done before exposure, and that in this way the risk of serious results following

[3] *Militärarzt*, Jahrg. 48, p. 66 (Supplement to No. 10 of *Wien. med. Woch.*, 1914).

[4] The earlier literature on this subject is collated in Nuttall's monograph, *On the Rôle of Insects, etc., as Carriers in the Spread of Bacterial and Parasitic Diseases of Man and Animals* (Johns Hopkins Hospital Reports, vol. viii), pp. 27–30. More recent literature is given in Sticker's *Die Cholera* (Giessen, 1912), pp. 209–11.

[5] *Protective Inoculation against Cholera*, Calcutta, 1913.

[6] *Geneeskundig Tijdschrift voor Nederlandsch-Indië*, Deel 51, afl. 4, and 53, afl. 1.

exposure in the period immediately succeeding inoculation is avoided. This policy must, of course, not exclude the adoption of the other methods of hygienic administration, but *prima facie* it certainly appears that early inoculation is the most valuable weapon in our struggle with cholera.

The Balkan experience, indeed, ought to be pondered by all. The fate of the Turks after Lule Burgas teaches us how in a few days unchecked cholera may inflict more loss on an army than months of shell fire. The Greek experience, on the other hand, shows what efficient measures may attain. We do not wish to imply that the comparative immunity of the Greeks was necessarily due entirely to their better sanitary organization, including the use of inoculation; such a conclusion would ignore the natural variations of infectivity and virulence with which epidemiologists are familiar. But we do unhesitatingly say that the result is consistent with such a nexus of causality, and that there is no particle of evidence that the measures taken by the Greek authorities were *per se* productive of any evil consequences whatever. Such being the case there can be no reasonable doubt as to the course we should follow.

THE WAR EMERGENCY.

WE have received reports of a number of meetings in various parts of the country to consider the means which can be taken to liberate as many medical men as possible for whole-time military service, and to organize part-time service for troops and for hospitals at home. We are compelled to postpone the publication of these reports this week owing to the pressure on space created by the publication of the annual report of the Council of the Association. In Aberdeen a medical bureau has been established, through which the work of medical men who have gone away on military service is organized. The directors of the Royal Infirmary have lent a suitable suite of rooms where consultations are held in the evening from 6 to 8 p.m. Two members of the profession attend during these hours, and the rota formed is sufficiently large to require the attendance of two only for two hours once a fortnight. Each evening since its commencement there has been a good attendance of patients. A staff of women clerks is employed to receive messages and to transmit them by telephone. Both private and panel patients are invited to send messages before 9 a.m., if possible, and by 10 a.m. the calls have been allotted to the various medical men who have undertaken the work of their absent colleagues. A clerk is resident in the infirmary at night. When a message requiring a visit is sent a card is made out and posted to the doctor so as to arrive the same day; the card is retained by the doctor until the end of the attendance, when it is returned to the bureau to be filed. The bureau has been fortunate in securing the goodwill and assistance of the Aberdeen Burgh Insurance Committee, and both private and panel patients have shown their willingness to adapt themselves to the altered circumstances. To defray the expenses of the bureau and to remunerate the workers it was decided, with the consent of the medical men who have left on full-time service, that 60 per cent. of both panel and private fees should be paid to the bureau, the remaining 40 per cent. going to the absentees. All private accounts are rendered by the bureau. The bureau is prepared also to undertake the practices of men who are ill, or require a holiday, and it has been suggested that a reasonable rate would be 15s. a day. The convener of the executive committee of the bureau is Dr. John Gordon, and the Secretary, Dr. F. K. Smith (7, East Craibstone Street, Aberdeen), the Secretary of the Aberdeen Division of the British Medical Association.

STERILIZATION OF WATER BY CHLORINE.

IN September last we published an article by Professor Sims Woodhead on the sterilization of water supplies by the use of chlorinated lime, and in the present issue Captain J. J. Harper Nelson, M.D., describes a method he has tested very thoroughly in India and proved satisfactory, in which chlorine is obtained by the action of hydrochloric acid or potassium chlorate. It appears to be well established that chlorine is an extremely efficient agent for the destruction of bacteria in water in the absence of undue amounts of other organic matter which might combine with it. The preliminary treatment advised by Professor Woodhead consisted of filtration of the water, while Captain Nelson clarifies waters which are not already bright by the addition of alum. In either method the water is obtained free from suspended matter and ready for the chlorine treatment. Professor Woodhead satisfied himself that if, after a short interval, sufficient chlorine remained in the water to give a blue colour with starch and iodide, the destruction of all *Bacilli coli communis* could be depended on, and he found that the water with which he experimented could be sterilized by one part of chlorine in seven million. In Captain Nelson's investigations, which were particularly directed to the treatment of rather bad waters, he used a strength of 1 in 440,000 and allowed the chlorine, etc., to act for half an hour. It may be pointed out that this strength refers to the total gases obtained from the chlorate and hydrochloric acid, consisting of a mixture of chlorine and chlorine peroxide; taking the proportions of those given in Dr. Harper's paper and calculating the total amount of chlorine only, the strength which he used is one part in 528,000, since chlorine peroxide contains about one half of its weight of chlorine. The directions given by Professor Woodhead represent a minimum of one grain of chlorine in about one and a half million; and if, on testing after fifteen minutes, free chlorine is not found, the quantity is increased up to two or four times as much, so that for a bad water these directions would involve the use of a somewhat greater strength than that employed by Captain Nelson. It does not appear probable that any particular importance attaches to the fact that the chlorine in the two cases is in a somewhat different form. On mixing chlorinated lime with water, a solution of hypochlorous acid (HClO) is obtained, and it is apparently this which acts on the bacteria; potassium chlorate and hydrochloric acid, on the other hand, give a mixture of free chlorine and chlorine peroxide (ClO_2). It will be observed that in some of Captain Nelson's experiments the whole of the bacteria were not destroyed, although their numbers were greatly reduced. The advantage of using potassium chlorate and hydrochloric acid instead of chlorinated lime lies in the fact that these two chemicals can be kept indefinitely, even in hot climates, whereas chlorinated lime deteriorates somewhat rapidly. On the evidence submitted it would appear that whichever method is used it would be safer always to test the treated water to make sure that excess of chlorine remains, as the amount of organic matter, organized or unorganized, to be destroyed varies greatly in different waters. To ensure the destruction of all the germs it is, of course, not sufficient that the proportion of chlorine added should be such as has been proved in control tests to be fatal to the organisms in question, but it is necessary that when a great part of it has been consumed by some of the organic matter, the proportion still remaining shall be such as to be fatal to the bacteria in question. Professor Woodhead considered that this would be the case if the chlorine was sufficient to liberate iodine so that the latter could be detected by means of starch; but this is an extremely delicate test for chlorine, and it appears still to be necessary to prove by direct tests that the proportion indicated in this way is sufficient to have the required bactericidal

action. It would then be quite easy to remove this excess by a suitable "antichlor," or substance which will react with free chlorine leaving only neutral substances in solution—for example, sodium thiosulphate—before the water is consumed.

ANTITYPHOID INOCULATION IN HOLLAND.

ALDERSHOFF'S report[1] on the first large series of typhoid inoculations carried out in Holland agrees with the experience obtained in other countries. He injected about 600 soldiers twice, and in many instances three times. In no case did the inoculations cause any but transitory discomfort, and the local and general reactions were as we are accustomed to see them in this country. The temperature curve rose rapidly, reaching a maximum (of 100.6° after injection of agar culture, and 102.4° with broth culture) in five to eight hours, to fall again quickly, and reached normal, sometimes after a secondary lesser rise, always in thirty-six to forty-eight hours. He prefers to inoculate on the breast at the level of the third rib. This is perhaps higher than usual, but he found that an extensive local reaction following injection above the second rib occasionally caused a discomfort on swallowing which was rather alarming to the patient. Inoculation in the abdominal wall was, in his experience, followed by a more severe and more lasting reaction than on the breast. His series included ten individuals who had suffered from enteric fever two to twenty years previously. In none of these was the pre-inoculation agglutinin titre higher than 1 in 50, and it remained unaltered by the injections in nine out of the ten, although six reacted rather more strongly than normal individuals. This immobility of the agglutination reaction in old enteric cases is an unusual experience, of which no satisfactory explanation is offered.

THE INVALID CHILDREN'S AID ASSOCIATION.

THE Invalid Children's Aid Association held its twenty-seventh annual meeting at the end of last month, and was able to report an excellent year's progress. As the chairman, Field-Marshal Lord Grenfell, pointed out, the association dealt with over 6,300 new cases in London alone last year, and gave assistance in all to more than 8,000 invalid children. The twenty London branches of the association raised and spent between £15,000 and £16,000 on these patients, the parents themselves contributing over £4,300 of this total expenditure on cases. The work of the association is not confined to London; there are nearly forty provincial branches scattered among the large towns of England and Scotland, all but three of them federated to the London Invalid Children's Aid Association. One of the most natural and laudable objects of the annual meetings of charitable societies such as this association is to gain subscribers and support. The chairman laid stress on the expansion and general scope of the association's work, and other speakers emphasized special points in its principles or methods. The Countess Ferrers spoke of the inability to secure or carry out the medical treatment required by or ordered for the sick children as one of the acutest pains of poverty, and from her own observations was able to praise the association's work most highly. Lady Jellicoe pointed to a number of the association's "cases" treated so successfully as now to be serving in His Majesty's naval or military forces. Bishop Boyd Carpenter brought eloquently before his audience the humanitarian and religious aspects of the care of crippled children. Other speakers described in detail how the association sets out to do its work, emphasizing three main aims in its *modus operandi*. The first of these—supreme in importance from the medical and surgical points of view—is the continuity in treatment at which it aims. Once taken in hand, the invalid child is followed up, supervised, and kept in touch with its medical attendant, until it is either pronounced cured or has reached the appointed age limit—14 or 15 years—in which case it is transferred for further supervision to some other charitable agency or society well able to look after it. The second of the association's aims is to ensure all possible co-operation with other charitable agencies that may be concerned, in order that the overlapping of relief that so surely leads to pauperization and the destruction of the recipients' self-respect may be avoided. To a large extent this is effected by making the association's Branch Committees representative of the chief local agencies for charity or relief—the local education and care committees, nursing associations, tuberculosis dispensaries, Poor Law guardians, the Ragged School Union, the hospitals and their almoners, and the Charity Organization Society, to mention but a few out of many. The third of the association's aims—perhaps the most important of them all—is that the parents should be induced to co-operate in every scheme undertaken for the invalid children's benefit. It is the truest charity to help people to help themselves; and while the association spares no effort in finding out the best treatment for any case and in making the arrangements necessary for obtaining such treatment, it has always made a point of asking the parents to contribute some portion of the expense involved—something less, speaking generally, than it costs the parents to keep the child at home. In practice this principle works excellently; in the labouring classes, as in others, the value attached to gratuitous treatment, costing nothing in time or money, soon sinks. To the London hospitals and to hundreds of the medical practitioners in London the Invalid Children's Aid Association renders the most valuable services, year in and year out. At the present time a certain tightness in money matters naturally makes those responsible for the association's finances a little nervous as to the future. On all sides one hears that subscriptions to charitable agencies are being cut down, yet the association's work shows a steady increase, and no diminution. The number of invalid children requiring supervision and assistance is not lessened by the war, but contrariwise; the association's business, to employ an over-rated motto, must go on as usual. The annual meeting, held this year in a large and overcrowded Mayfair ballroom, gave promise of a healthy crop of new annual subscribers. We hope that this promise may be fulfilled; the association does work of the highest value among invalid children, and wastes as little of the money entrusted to it as any charitable society with which we are acquainted.

BARGE AMBULANCES FOR THE SICK AND WOUNDED.

IN the BRITISH MEDICAL JOURNAL of May 1st (p. 779) it was stated that a service of canal barge ambulances for the transport of sick and wounded had been established in France. It was also mentioned that such floating ambulances had probably always been used for this purpose wherever waterways were available, and it was added that they were certainly used in the Franco-Prussian war in 1870. In the *Chronique Médicale* of February 15th there appeared a paper by Dr. Michel Ferron, *médecin major* of the first class, describing this method of evacuation as used in the French army between 1743 and 1832. The former year is memorable in the history of warfare, because it was then that the first agreement providing for the inviolability of hospitals and their personnel and for the neutralization of the sick and wounded was made between belligerents. This agreement was made between the British and French commanders, Lord Stair and Maurice de Noailles. After the battle of Dettingen a number of wounded were conveyed from Seligstadt to Alsace by the Main and the Rhine. In the wars of the French Republic floating ambulances were

[1] *Nederlandsch. Tijdschr. voor Geneeskunde*, March 20th, 1915, p. 886.

largely employed; their use was indeed expressly recommended by a decree dated 3 Ventôse, An ii (February 2nd, 1794). Major Ferron cites a number of instances of their employment in Germany, Switzerland, Italy, the South of France, and Egypt, where Larrey organized a regular service of hospital boats on the Nile. Floating ambulances were also used for the transport of the wounded by Percy in Germany and Poland wherever there were canals or navigable rivers. There were the inevitable difficulties with the administrative branches of the service, and Percy complains bitterly of the want of medical comforts and even of provisions. How strenuous a fight he had to wage against red-tape is told with much interesting detail in the journal which he managed to keep through all his campaigns. Luckily he could generally count on the support of Napoleon.

ANTIVACCINATION AND FACT.

ANTIVACCINISTS may well be feeling rather annoyed just now. Their money has been spent. Their officers have talked themselves hoarse. They have been successful (in the absence of small-pox) in securing that many babies shall not be vaccinated. At a critical moment, however, when a real test comes they are powerless. All is undone so far as their propaganda is concerned. The Government, who excused the babies, has not excused the men, and reliance is placed on the incontrovertible protection afforded by vaccination against small-pox. We have no official return of numbers vaccinated, but the estimate that the number of men vaccinated and revaccinated since the war began is now well into the second million will be on the safe side. Tens of thousands of "conscientious" objectors have found out for themselves the wild assertions and gross misrepresentations of the antivaccinist. The war has thus served one useful purpose in this direction. According to the antivaccinators, who talk about polluting the blood with "filth" and "poison," these recruits should have been decimated. Instead of this, the recently vaccinated men have been seen in every town and countryside improving daily in physique and condition, and great numbers have left our shores for the front magnificently "fit."

UNIFORM OF FRENCH MEDICAL OFFICERS.

THE services of the medical officers of our army during the present war have received splendid recognition, notably in Sir John French's last dispatch. This marks a great step forward from the time when soldiers, even of such distinction as the late Lord Wolseley, seemed to take a special pleasure in depreciating the army doctor. In Germany not long before the war the medical officer was, in regard to salutes and other military honours, placed on an equality with the combatant. In France it would appear that something of the old spirit of jealousy of the medical service still survives. An order was issued some time ago by the Minister for War that, on the ostensible ground of preventing confusion, medical officers should wear silver instead of the gold stripes indicative of their rank. This order, which was to have come into effect in March, naturally caused much dissatisfaction among the army doctors, and a deputation of the medical parliamentary group waited on M. Millerand and presented to him a memorandum drawn up at the suggestion of Professor Léon Labbé by a number of the medical associations of France, asking that the order should be rescinded. It was pointed out that during the war a large number of medical officers had been mentioned in the order of the day for their courage in tending the wounded under fire. It was further shown that, next to the infantry, the medical staff showed the largest list of casualties, both killed and wounded, of any branch of the service. The Minister was struck by the facts brought under his notice and promised to give the matter his most serious consideration, adding that he thought it his duty to recognize the devotion of the medical officers in the most conspicuous manner. It is practically certain that the doctors will not be deprived of their gold stripes.

AN INDISCREET COURT PHYSICIAN.

IN a short essay on the Court physicians of the Royal House of Hohenzollern Dr. Hans Krauss[1] has given an amusing account of some of these worthies, whose lot cannot always have been enviable. However gifted the Hohenzollerns may have been, tact and delicacy of feeling seem often to have been qualities denied to them. The want of these qualities must have been responsible for the following incident, in which a luckless Court physician had to suffer a penalty reminiscent of the fate of a hero of the *Arabian Nights*. This physician was Dr. Fritze, attached to the Court of the Elector John. In 1476, at the peace of Prenzlow, Duke Bogislav X of Pomerania was given the Hohenzollern Princess Margretha in marriage. But this marriage was not blessed with children, so the Elector John, scenting mischief, dispatched his physician, Dr. Fritze, to the Pomeranian Court, and entrusted him with the delicate mission of discovering the cause of the bride's lack of reproductive activity. He was instructed to examine her abdomen and to learn whether the lady's sterility was due to disease, and if so, whether the disease could be cured and the sterility terminated. The Duke was away on a hunting expedition when the Hohenzollern medical envoy arrived at the Pomeranian Court. Here he seems to have given himself airs and the Pomeranians great offence. Dr. Krauss does not tell us how far the physician carried out his master's instructions, but it appears that the Duke on his return accused the physician of having taken unpardonable liberties with the Duchess. Be this as it may, the physician had to pay the price of his indiscretion with his life, and he was condemned without a trial to death by starvation. After this harrowing incident, it is pleasing to find that other Hohenzollern Court physicians were not only saved the horrors of death by attrition, but were even paid in kind with corn and chickens, eight of which were bestowed yearly by the Elector Frederick of Brandenburg on his Court physician early in the fifteenth century. It is interesting to note that Dr. Paul Luther, a son of Martin Luther, rose to the position of physician to the Elector Joachim II of Brandenburg. This physician's services were much appreciated, and were rewarded by three golden chains, to each of which a medallion, with a portrait of the Elector, was attached.

TYPHUS IN GERMAN CONCENTRATION CAMPS.

IT would seem that typhus fever has broken out in some of the German concentration camps. It is announced that Professor George Cornel, whose name is well known in connexion with research work on tuberculosis, died recently in a Berlin hospital of typhus contracted in a concentration camp at Hamburg. He was a member of the staff of the Koch Institute for Infectious Diseases. The death of Professor Stanislaus von Prowazek, head of the Zoological Department of the Hamburg Seamen's Hospital and Institute for Tropical Diseases, which was reported in the JOURNAL of April 17th, was due to the same disease. The late Professor Löffler is also said to have died of typhus. We have received a copy of a postcard dated April 3rd, from a British prisoner at Gardelegen, a Captain in the Royal Army Medical Corps, in which it is stated that typhus of a mild type has been prevalent there. When he wrote the epidemic was diminishing, but he quotes an order to the effect that prisoners will not be allowed to write again till it has ceased.

[1] *Deut. med. Woch.*, February 11th, 1915.

ALCOHOLIC STRENGTH OF BEER AND CIDER.

IN announcing the policy the Government proposed to adopt with regard to the drink question as it has been found to affect the conduct of war, Mr. Lloyd George proposed on April 29th that there should be heavy increases in the duties on spirits, wines, and the stronger forms of beer. In regard to the latter, he said it was not proposed to make any alteration in the duties on beer up to 43 specific gravity; between 7 and 8 per cent. of proof spirit—namely, up to 48 specific gravity—it was proposed to impose a surtax of 12s. per barrel; between 49 and 53, a surtax of 24s., and afterwards, on the heavier beers, 36s. Though it seems to be generally assumed, after Mr. Lloyd George's reply to the discussion which followed the introduction of the Budget on May 4th, that the proposals as regards beer will not be persevered with, yet, as the statements with regard to the manner in which it was proposed to carry out the surtax on beer were not very clear, it may be worth while to point out that the duty on beer is not levied on the amount of alcohol it contains but on the specific gravity of the wort before fermentation, which is commonly known as the "original gravity." To arrive at the original gravity it is necessary to determine both the alcoholic strength and the gravity of the beer after removing the alcohol. The higher the gravity of the original wort the stronger in alcohol the beer can be, but it does not follow that it is necessarily of the full strength corresponding to the original gravity, as fermentation may be checked before all the sugars are used up. Beers which had the same original gravity may, therefore, vary quite considerably in the amount of alcohol they contain. The specific gravity (43), mentioned by the Chancellor of the Exchequer, of course means 1.043, which is the specific gravity before fermentation; he spoke of a specific gravity of 43 to 48 as representing 7 per cent. of proof spirit; 7 per cent. by volume of proof spirit is approximately 4.3 per cent. by volume of real alcohol, and the proposals were based on the supposition that as the original gravity is increased, the amount of alcohol in the beer will be increased, and this is, of course, generally, though not always, true. It is rather difficult to give exact figures for the strengths of the different beers sold, and it is not at all easy to judge how far the various published figures are representative of what is now consumed; so far as we can ascertain, "four-ale" or "mild ale," commonly sold at country public-houses, generally contains only a little under 7 per cent. by volume of proof spirit, and the "bitter ale," which is perhaps more commonly consumed in towns, is of very much the same strength, or perhaps just over the 7 per cent. limit. In reply to a question as to cider, Mr. Lloyd George said that he doubted whether there was much cider in this country which contained more than 7 per cent. of proof spirit; but the alcoholic strength of cider varies considerably, and for English cider it may be from 3 to 9 per cent. by volume of real alcohol, the average of many published figures being 6 per cent.; this is about 10½ per cent. by volume of proof spirit. A number of samples of bottled cider reported on in our columns some time ago[1] contained from 4.71 to 9.28 per cent. by volume of real alcohol.

[1] BRITISH MEDICAL JOURNAL, May 25th, 1907, p. 1253.

WE learn from *Science* of April 23rd that the Prussian department of education has petitioned the Legislature for a continuance of the appropriation of 25,000 marks which for the last six years has been granted for cancer research. The condition is attached that the amount would be doubled by private subscriptions. This has always been done, and the amount for 1915 is assured. The money is devoted mainly to the cancer research work carried out under the supervision of Professor Ehrlich.

Medical Notes in Parliament.

Business of the House of Commons.—On Wednesday, April 28th, the time of the House was devoted to a discussion on the Post Office's Estimates. The Postmaster-General gave some interesting figures as to the effect of the war upon the postal services in various departments. Incidentally, he informed the House that the Post Office had contributed 35,000 men to the war, and added that it still had in its employment 11,000 men of military age, of whom 6,000 were unmarried. A lively cross-examination of Dr. Macnamara on the supply of glass for optical instruments took place at the beginning of questions, and is reported on the next page. On Thursday, April 29th, the Chancellor of the Exchequer made a long and most important statement on the drink question and its relation to the supply of munitions of war. It has been fully reported in the lay press, and does not contain features of special professional interest. The whole question is one obviously in which members of the medical profession are profoundly interested, and the State will doubtless not look in vain to them for their advice and co-operation.

The Budget.

The general finance and the figures given by the Chancellor in his Budget statement have already been made well known through the lay press. From the conversation of members it is to be gathered that the proposed increased duties on beer and spirits will be very materially modified, if not dropped altogether. Possibly some graduation in the taxation of beer with regard to its strength may be retained as well as provisions allowing for the dilution of spirits. In this connexion we should not lose sight of the assurance given by the Chancellor of the Exchequer to Mr. Glyn Jones that in any proposed increased taxation of alcohol consideration was being given to the liberation from any increased duties of that used in drugs. The prospects, however, for the Government bill under which powers are taken to control the whole of the drink trade in munition areas appear to be very favourable.

A statement of the Chancellor in response to remarks by Sir Alfred Mond may possess significance in view of the close attention which the Prime Minister said the Government was giving to questions relating to the encouragement of scientific research in an answer which he made in the House before the Easter recess. Sir Alfred Mond said:

> As the war has shown, one of the things in which we are deficient in this war—and a thing which is very important—is our scientific equipment. One of the difficulties in connexion with our national dyeing scheme, which has been discussed at such length, and which everybody realizes, is the want in our great universities and teaching institutions of endowment for research. We find the same thing to some extent—if not to the same extent—if we touch on the question of high explosives and other departments of scientific research. It may seem a curious moment to make a request on the subject when we are spending hundred of millions of pounds on the war. But it is just because we are spending so much that it may be possible for the Chancellor of the Exchequer to find the relatively small amount of money that is required in order to assist our universities and technical institutions to train and educate a larger number of English chemists. It is a perfect fallacy to assume that there is anything in the German intellect which gives the German any superiority over the Englishman in the scientific field. It is perfectly untrue that the German has got any kind of monopoly of intellectual fitness in this respect.

In reply to these observations, the Chancellor said that provision had been made in this year's Estimates for the purpose of research and of increasing the steps which will enable us to deal with special manufactures on which we were dependent too much on foreign countries. This appears to mean that proposals are likely to be made to the House in connexion with this matter in the near future.

The Medical War Emergency.

Pay and Rank of Territorial Medical Officers.

Mr. Falle, on April 29th, asked whether a medical officer, however long his service, attached to a unit other than a medical unit could not attain higher rank than that of

major, while *à la suite* medical officers, who were not attached to Territorial or other units before the war, started now as lieutenant-colonels, majors, and captains, and drew the pay of those ranks; whether officers *à la suite* were for the most part able to remain in their own town and carry on their private practice without passing any examination for rank; whether all majors and captains of, say, five years' standing, attached before the war to Territorial or other units, would be granted the rank of lieutenant-colonel or major, and the pay of those ranks; and whether the disadvantages as to promotion and pay now attaching to the medical officer who had served for years before the war attached to a Territorial or other unit would be removed.

Mr. Tennant, in reply, referred to the answer returned to Mr. Walter Guinness on April 22nd, and repeated that the position of officers of the R.A.M.C. Territorial Force in regard to promotion and pay was under consideration.

Sir C. Kinloch-Cooke, on May 4th, asked whether officers of the Territorial Force were excluded from obtaining increments of pay similar to those given to officers in the regular army; that a major in the Royal Army Medical Corps (Territorial Force), although having ten years' service in the ranks, received 23s. 6d. a day, and must render three years' embodied service before being entitled to draw 26s.; and would he consider the advisability of removing what was regarded to be an injustice throughout the Territorial Force, and grant increments of pay to all ranks in respect of combined service rendered before and after embodiment. Mr. Baker: As I have already explained in answer to previous questions on this subject, service in the Territorial Force before embodiment cannot be regarded as equivalent to continuous service in the Regulars, but the position of Territorial Force Royal Army Medical Corps officers with regard to pay and promotion is now receiving consideration. Sir C. Kinloch-Cooke: Can the hon. gentleman say when we shall know the result of that consideration? Mr. Baker: Very soon, I hope.

Army Medical Reserve.

Two questions were addressed to the Under Secretary of State for War on April 27th with regard to the Special Reserve R.A.M.C. Mr. T. M. Healy asked whether, in view of the fact that lieutenants of the regular R.A.M.C. had all been promoted to captains, it was the intention of the Government to promote the lieutenants of the Special Reserve R.A.M.C. who were in the Special Reserve R.A.M.C. before the outbreak of the war, giving them the same seniority as they had at mobilization. Sir Henry Craik asked whether officers of the Special Reserve R.A.M.C. were being treated differently from the rest of that corps as regards temporary promotion, and if so, upon what grounds that difference was based. In reply to Mr. Healy, Mr. Tennant said that the lieutenants of the regular R.A.M.C. had been promoted to the rank of captain to ensure as far as possible a due proportion of that rank to the large number of temporary lieutenants now serving. The position of the Special Reserve lieutenants was different. It was not the intention to promote all of these, but it was probable that promotion of some would be made. In reply to Sir Henry Craik, Mr. Tennant said that temporary promotion was not given in the regular R.A.M.C. In the Special Reserve R.A.M.C. promotion was by time, but it was probable that some promotions otherwise than in respect of a period of service would be made. Mr. Tennant asked for notice of a supplementary question by Colonel Yate, who wished to know whether permanent promotions would be given to captains in the R.A.M.C.

Sir C. Kinloch-Cooke asked a further question on the subject on April 29th, but Mr. Tennant did not add anything to the information given above in reply to Mr. Healy.

R.A.M.C.: Service Abroad.—Mr. Robinson asked the Under Secretary of State for War whether, in view of the strain imposed upon many doctors who have been at the front for several months, he would make use of the services of first-class medical men of the Royal Army Medical Corps now in this country anxious to do duty abroad, and thus relieve for a time those doctors abroad who had been toiling incessantly for months? Mr. Tennant said the question he imagined referred to the temporary commissioned medical officers, and he could give an assurance that all those who were eligible for foreign service would take their turn at the front.

University Students and the War.—Mr. McKinnon Wood informed Mr. MacCallum Scott that he was giving consideration to a representation from the Glasgow University Court as to the position of students of Scottish universities now serving in His Majesty's forces, and with regard to whom the universities had no power to modify their curricula.

Antityphoid Inoculation.—Mr. Ronald McNeill asked the Home Secretary whether his attention had been called to the circulation by some person or persons unknown of a leaflet suggesting that a Territorial died last November at Lytham as the result of antityphoid inoculation, and that the death certificate falsely alleged a different cause of death; and whether he would take steps to prevent the dissemination of incitements to soldiers to endanger their own and their comrades' lives by refusing to undergo inoculation? The Under Secretary of State for War (Mr. Tennant) replied that reports had been received that this leaflet had been distributed both with and without the statement that the death was ascribed to a different cause on the death certificate. Such steps as were considered necessary have been taken. Mr. McNeill asked whether the matter could be dealt with under the Defence of the Realm Act. Mr. Tennant replied: I am advised that proceedings could not be taken in this case; therefore, I am afraid that the answer to the hon. member is in the negative. But if he likes to repeat the question I will give him a more definite reply. In reply to Sir Courtenay Warner, who asked a question with regard to enteric fever among soldiers of the Expeditionary Force and the comparative number of cases amongst those who had and had not been inoculated, Mr. Tennant said that the latest information with regard to the incidence of enteric fever amongst the British troops in the Expeditionary Force was as follows: Up to date 963 cases had occurred. Of these 780 had been analysed. One hundred and forty-two cases had occurred in men inoculated fully with two doses of vaccine. Among these ten deaths had occurred, giving a case mortality of 7 per cent. One hundred and fifty-seven cases had occurred in men partially protected by inoculation—that is, who had had only one dose of vaccine. Amongst these there had been ten deaths, giving a case mortality of 6.36 per cent. Four hundred and eighty-one cases had occurred in uninoculated men. Among these there had been 100 deaths, giving a case mortality of 20.79 per cent. To appreciate the full value of these figures it must be brought to notice that 90 per cent. of the troops forming the Expeditionary Force had been inoculated voluntarily. Therefore, amongst 90 per cent. of the Force—that is, inoculated men—there had been 299 cases and twenty deaths. In the other 10 per cent. (uninoculated men) there had been 481 cases and 100 deaths.

Optical Instruments (Supply of Glass).—Sir Philip Magnus asked the First Lord of the Admiralty whether the supply of optical glass for the manufacture of lenses, prisms, and other optical instruments for the use of the navy was keeping pace with the immediate requirements of the service; and what steps had been taken to increase the number of British sources from which the supply may be drawn? Dr. Macnamara said that there had been delay, but so far not of a serious character in the supply of optical instruments for naval service. The Admiralty, War Office, and Board of Trade had been in communication on this matter, and as a result of joint action a large firm of makers in this country had greatly increased their output and were still adding to their plant. Sir P. Magnus: May I point out that the right hon. gentleman's answer referred to optical instruments? My question referred to the supply of optical glass, which is essential to the manufacture of optical instruments. Dr. Macnamara: If I have misunderstood the question I will confer with the hon. gentleman. Mr. John O'Connor: Is the right hon. gentleman aware that the

Chancellor of the Exchequer has appointed a stone wall committee to prevent the granting of permission to anybody for the manufacture of this glass for optical instruments, and that there is a want of it all over the country; is he aware of the personnel of the Committee—Sir F. Banbury, Sir Thomas Whittaker, and Lord St. Aldwyn—and that they had absolutely refused all permission to establish factories in Ireland that have been——Mr. Speaker: The hon. member is putting a long series of questions, of which he should give notice. Sir Philip Magnus asked the Under Secretary of State for War whether the supply of optical glass for the manufacture of lenses, prisms and other optical instruments for the use of the army was keeping pace with the immediate requirements of the service; and what steps had been taken to increase the number of British sources from which the supply may be drawn. The Financial Secretary to the War Office (Mr. H. Baker) said that there had been some difficulty in procuring a sufficient supply of optical glass. The British supply was, however, being largely increased and was expected to prove sufficient. The matter was being carefully watched, and further measures will be taken if found necessary. Mr. J. O'Connor asked whether it was not the fact that all the talk about the capture of German trade had been reduced by the Committee to which he referred to a farce and a humbug.

Tuberculosis (Sanatorium Treatment of Soldiers).—Sir Henry Craik asked whether provision would be made systematically for the sanatorium treatment of soldiers suffering from consumption or tuberculosis caused by hardships experienced on active service or developed as the result of wounds; whether he was aware that at present such provision was casual only and in some cases entirely wanting, and that offers of accommodation in consumption hospitals had been sometimes accepted and sometimes declined by the Medical Department of the War Office upon no apparent uniformity of principle; and who was responsible for this state of matters? The Under Secretary of State for War (Mr. Tennant) said: I fully recognize the importance of this matter, to which careful attention has been given. The National Health Insurance Commissioners accept the responsibility to secure the provision of accommodation in sanatoriums of all cases of tuberculosis occurring amongst insured soldiers. Instructions to this effect and as to the procedure to be followed have recently been issued to all commands. The best method of providing sanatorium treatment for tuberculous soldiers who are not insured is not yet finally settled, but the War Office has taken up and has at its disposal beds in several sanatoriums, and full use has been made of these. Only one offer of a consumption hospital has been refused. This was because the War Office were advised that it was not suitable for military cases.

Fares of Soldiers on Sick Furlough.—In reply to Mr. Wing, Mr. Baker said that soldiers sent home on authorized sick furlough were given free railway warrants; if in any exceptional cases they had paid their own fares, a refund would be allowed on the facts being represented.

Mental Treatment Bill.—As intimated in our notes last week, the proceedings in the House on the Mental Treatment Bill, introduced by Mr. Cecil Harmsworth, were temporarily suspended owing to threatened opposition. We understand that a conference was held at the Home Office last week, and is likely to be renewed during the present week.

Pensions Available for Soldiers Mentally Incapacitated.—In reply to Mr. Rendall on May 4th Mr. Baker said the amount of pension depends on the degree of disability, and no doubt these cases will generally come into the class of the totally incapacitated. The rates of pension are shown in paragraphs 15-18 of the First Report of the Select Committee. There is power to apply the pension for the benefit of a soldier who cannot manage his own affairs.

Meat for the Navy.—Mr. William Thorne asked if purchases of frozen meat and canned meat for use in the Royal Navy were made separately or in conjunction with the War Office purchases; what quantities approximately were acquired for the use of the Navy from August 1st to December 31st, 1914; and what prices were paid by the Admiralty approximately for these two classes of goods? Dr. Macnamara replied that frozen meat for the Navy was obtained under a special arrangement made by the Board of Trade with the large importers, which provided for the joint requirements of the Army and Navy. Canned meat for the Navy was purchased separately from Army requirements. The approximate quantities bought and prices paid for meat for the Navy from August 1st to September 31st, 1914, were as follows: Frozen meat, 2,000 tons, chiefly beef; average price estimated at slightly over 6d. per pound. Canned meat, 3,150 tons; average price 8d. per pound.

University Colleges of Wales.—Mr. Robinson asked when the report of the Committee appointed by the Board of Education to report on the University Colleges of Wales and the report of the Departmental Committee appointed by the Treasury to consider the question of the Welsh School of Medical Research would be laid on the table. The Prime Minister replied that it had been thought advisable, in accordance with the usual practice, to defer publication until the Treasury was in a position to arrive at a decision as to the new grants recommended.

Standardizing Drugs.—Mr. Yeo asked the Home Secretary whether, in view of the fact that the use of animals in standardizing drugs in the Wellcome Laboratory involved unnecessary cruelty, he would consider the advisability of withdrawing the licences granted to vivisectors in that establishment. Mr. McKenna said that the work of standardizing drugs at this laboratory was of the greatest importance for the prevention and treatment of disease. It was carried on in accordance with the prescribed conditions, and was subject to the supervision of inspectors under the Cruelty to Animals Act. He was advised that no cruelty occurred in the work and that every precaution was taken to prevent cruelty.

Bovine Tuberculosis.—In reply to Sir John Spear, Sir Harry Verney said that the number of bovine animals in respect of which notices of intended slaughter under the Tuberculosis Order, 1913, were received during the year ended June 30th, 1914, was 6,651, but the actual number of animals slaughtered was probably less. Compensation was paid by the local authorities, and only in part refunded by the Board.

Compulsory Vaccination in India.—In reply to Mr. Snowden, who asked a question as to legislation in the Central Provinces for the enforcement of vaccination, Mr. C. Roberts said that compulsory vaccination was already enforceable in municipalities at the request of the municipal commissioners and cantonments in the Central Provinces under an Act of 1880. An amending bill was now proposed extending the power of enforcing compulsory vaccination to certain quasi-municipal areas. It was specified both in the Act and the amending bill that it was open to any inhabitant of the area to object to the extension, but in neither case was there a conscience clause.

Swine Fever.—In reply to Mr. John Spear, Sir Harry Verney submitted a table showing that the number of outbreaks of swine fever confirmed on inquiry had increased from 897 in 1905–6 to 4,509 in 1914–15. The compensation paid had increased from £7,306 to £76,004, and that the net cost had risen from £43,512 to £134,385. In reply to Mr. Ginnell, Sir H. Verney said that the Departmental Committee appointed in April, 1910, under the chairmanship of Captain G. L. Courthope, was still sitting, and intended shortly to consider a report by the chief veterinary officer of the Board of Agriculture as to certain outbreaks in which serum treatment is being used experimentally. A scientific committee had also been appointed at the request of the Board by the Royal Society to study the pathology of the disease, but that committee was only about to begin its investigation, and it was impossible to say when this report or that of the Departmental Committee would be received.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

ASPHYXIATING GAS.

JUST after posting my last note (BRITISH MEDICAL JOURNAL, May 1st, p. 774), I came across some cases which made the latest German breach of accepted rules of honourable warfare seem even more repulsive than before. One of the patients was a powerfully-built young Canadian; both his feet were so cold and blue as to suggest definite gangrene; his face was slightly livid, and he had been coughing up a thin, evil-smelling fluid, containing many clots of blood. Though his respiration was very hurried (about 50 to the minute), as also his pulse (130), he insisted on uttering short sentences between his gasps. From what he said, it would appear that the gas used by the Germans is capable of being carried by the wind for considerable distances without becoming materially diluted. The trenches from which the gas seemed to come were over 250 yards away, and when it began to reach them he and four companions tried to escape it by getting under cover of a hut. There he lost consciousness, and when he came to himself he found his comrades dead. This patient, a man of exceptional vitality, seems now to be getting well, but how far his feet will recover remains to be seen. The pathology of the foot condition can at present be merely a matter of surmise. It has been suggested that it is merely coincidental, and in itself due to "water-bite." This, however, seems improbable, for though it is true that the patient was not found for many hours, he states that the ground where he was fighting was so dry and sandy that it "slithered" through the fingers, and that he himself was neither standing in water nor wet. There is also the consideration that on one of the patient's arms there was a patch which suggested that deep below the surface there was a lesion closely allied to those in the feet. To the ordinary observer unacquainted with the history of the case the appearance of the latter might well suggest occlusion of one or more arteries. But there is no direct evidence of this, and I have as yet heard no thoroughly satisfying explanation either as to this particular case or as to the general action of the gas used, except in respect of its production of inflammation of the respiratory mucosa in men who do not die forthwith—that is to say, on the battlefield itself—from spasm of the glottis or continued inhalation of air practically devoid of free oxygen. As for the cases which reach the hospitals, the clinical phenomena seem to vary to some extent, as might be expected from the fact that the degree of the concentration of the gas which reaches different individuals must vary greatly. In a general way the phenomena may be said to be those of acute bronchitis, but there are two features which very materially distinguish the cases from ordinary instances of acute bronchitis. The outpouring of mucus is immediate and extreme—so extreme, that the bronchi seem full of fluid, and the patient stands in danger of being drowned in his own secretions. Should he escape this risk, the bronchial auscultatory phenomena subside with some rapidity, and the patient's colour improves; nevertheless, the respiration continues to be hurried and panting. The appearances strongly suggest a condition of acidosis. The blood of a certain number of patients who exhibit this great rapidity of respiration unaccompanied by auscultatory evidence of a degree of bronchitis sufficient in itself to account for is being investigated. In regard to the nature of the gas, the colour of the ground-skimming clouds formed by it is described sometimes as greenish-yellow, sometimes as yellowish brown, sometimes as red brown, but people often differ on colour questions, and most of the facts that are definitely known favour the assumption that the gas is chlorine rather than bromine—for example, more particularly the fact the vapour turns brass buttons green and steel bayonets and fittings black. There is also the consideration that chlorine is easy to prepare and very cheap; bromine is more costly. Both gases are heavy, and the sodium hyposulphite said to have been found in the respirators worn by the German troops who advanced behind the screen of vapour would be as effective against one gas as the other. Finally, I may perhaps state that a careful clinical study of many of these cases has been made by Sir John Rose Bradford with a view to immediate publication of the knowledge gained, and that an illustrated record of the *post-mortem* appearances in several cases is being prepared by one of the pathologists out here—Dr. Henry of Sheffield University—with a view to its inclusion in the official history of the war.

OFFICERS' WARDS.

In peace time, as also in ordinary wars, the practice in regard to the treatment of officers is to set aside for them a certain number of beds in all the military hospitals serving the area in which such officers are stationed at the moment they come upon the sick list. In the present war the same plan was adopted at the beginning, but now, though it still obtains to some extent, it has been considerably modified. The first departure from it was in October, when the British Red Cross Society obtained permission to open at Rouen a hospital solely intended for officers. The next was early in November, when, soon after the first adoption of Boulogne as a hospital base, it began to be customary to send all officers taken off the ambulance trains proceeding further south to the Allied Forces base hospital. This hospital, however, was never exclusively reserved for officers, and many were treated at two other hospitals at the same base. The Allied Forces base hospital was one of the first to be established in Boulogne, but hospitals, both military and voluntary, multiplied with rapidity in this area, and when, soon after Christmas, it became clear that there was likely to be a pause for some considerable time in the military movement those responsible for the upkeep of "the Chrystol," as the Allied Forces base hospital was sometimes called, obtained permission to husband their resources by disbanding for the time being the medical unit formed by the institution. On its closure there was a return to the normal, so far as Boulogne was concerned, until about six weeks ago, when instructions were issued that No. 7 Stationary Hospital should be reserved for officers, and the arrangement of its accommodation was modified accordingly. This hospital was presumably selected for the purpose because the building in which it is situated did not conform to many of the needs of ordinary hospital work, but presented great possibilities if utilized for a kind of nursing home. Of all these possibilities the fullest advantage has been taken by the officer appointed to effect the transformation (Lieutenant-Colonel F. Kiddle), and the place promises, when everything is complete, to be a model of an up-to-date private hospital, exhibiting throughout much thoughtfulness, but nowhere any extravagance.

The building occupied is far enough away from the landing-stage for trawlers to escape the fishy odours of the port. It was built for use as a private hotel, and its six upper floors are cut up into apartment suites of three rooms, each compartment of which has, as a rule, a sea view, and makes a very cheerful two-bed ward. Each suite has a large dressing-room and lavatory, these all having now been provided with shelving, baths, etc., so that each suite is converted into a ward unit. The corridor running behind each unit is utilized for various administrative purposes, and this, together with the use of the few back rooms that exist as ward kitchens, ward store-rooms and the like, practically turns each floor into a separate ward block. These corridors are very tastefully arranged, and, judging from this and other circumstances, I should say that there was a good deal of competition among the nurses and officers in charge of each floor as to who can best combine efficiency with brightness.

On the third floors three communicating rooms serve as an operating unit, and the surgical specialist in charge can scarcely be disposed to cavil at the character of the outfit provided for him. It includes the bronze head and chest rests, devised, I believe, by Mr. Ballance for facilitating craniotomies and laminectomies respectively. On the sixth floor is a clinical laboratory, and on the third floor a large *x*-ray department. A well-equipped *x*-ray department

is a feature of all British military hospitals in France other than casualty clearing stations, but that at No. 7 Stationary Hospital is particularly complete, since the officer in charge of it (Captain Curtis-Webbe) has brought out several appliances of his own. One of them is a special table for localization work, the devising of which he completed just after the war began. It provides mechanically against all sources of error in judging the distance from the plate to the anticathode, or that through which the bulb has been moved when throwing a second shadow on to the plate or screen; he uses it in conjunction with a graph worked out for him by a French electrical engineer at a hospital in Rouen. This eliminates all need for calculations of any kind when determining the depth from the surface of any foreign body discovered.

The ground floor of the building provides day room accommodation for any officers who may be allowed to get up—namely, a dining-room and sitting-room, the latter being provided with easy chairs and plenty of books and papers. Both rooms have widely opening windows looking seawards, and are very cheery apartments.

The kitchens are in the basement; they are not ideal, but such inconveniences as they present do not prevent the cooks turning out meals quite up to the standard of good restaurants in respect of any dishes likely to be ordered for invalids and convalescents. A great deal of attention has been paid to cookery in the Royal Army Medical Corps of late years, and those who join this section of its work are often successful competitors at the exhibitions annually organized by the National Food Reform Association. The provisions used at this and other hospitals in Boulogne all come from England with the exception of the bread and soda water. Even the fish is brought over daily, as also a large proportion of the milk. The bread comes from the bakeries set up by the Army Service Corps, which has also established an aërated water manufactory.

Of the hospital for officers at Rouen I hope to be able to give some account later.

The normal accommodation of each establishment is 150 beds, but it can be raised when required to 200.

These are the only two hospitals for officers in France which rank as independent units, but there are several others which are practically indistinguishable from them, except for the fact that nominally they are merely a section of a larger institution. Both at Etretat and Havre, for instance, the beds for officers are in villas, standing at a little distance from the general hospitals of which they form a part. In both cases, however, it should be noted that the parent hospitals themselves consist of an aggregation of buildings.

At all places where officers are received for treatment an attempt is made to secure for them a certain amount of privacy, the general principle being to treat them as far as possible in small one- or two-bed wards, but otherwise the arrangements do not differ materially from those for non-commissioned officers and men. The diets are the same, but more daintily served, and the crockery used is of finer quality. They are necessarily kept apart from the men for disciplinary purposes, and the idea would seem to be to treat them as far as possible like private individuals and submit them to an environment approaching that to which men of their class are accustomed in peace. There is, however, no difference in essentials, for the standard for the treatment of the rank and file is satisfactorily high. The object of establishing a separate hospital at Boulogne would seem to be to facilitate administration. There are numerous hospitals in that town, and instead of making arrangements at each of them for the reception of officers it is thought better to bring all officers' beds together at the institution in the same area. The proximity of Boulogne to England is probably another factor, as it permits visits by patients' friends. The reception of such visitors must add no little to the labours of the staff of No. 7 Stationary Hospital, and as all the graver cases among officers tend to be brought to this institution—since Boulogne is nearer the firing line than any other hospital base—the exercise of a great deal of sympathetic tact must be necessary on the part of its commanding officer.

THE USE OF ALCOHOL.

A decree relating to the consumption of alcoholic drinks which was signed by General Joffre some time ago came legally into force last week. It forbids the sale of spirits and of any beverage containing alcohol other than wine and beer to soldiers, and has been made applicable to the British forces as well as to those of France itself. The fact that wine and beer are not included in the edict supports what was said in one of these notes some little time ago as to the apparent views of the antialcohol party in France. It was to the effect that that party seemed to have no objection to the use of beer and wine as innocuous, and, in any case, treated raw spirits and various sophistications thereof in the form of liqueurs and "apéritifs" as the only material enemy. Most of the beer drunk in France is very light, and the same is true of the wine daily used in probably 90 per cent. of all French households. The decree of General Joffre follows soon after local edicts at various towns within the war zone, which closed to soldiers of the Allied Forces all cafés and other places where drinks can be obtained by non-residents, except for two hours at midday and two hours in the evening. Such orders can be issued on his own authority by the military governor of any garrison town in France, and he can also, I understand, limit to any extent that he pleases the hours for which cafés and restaurants shall be open to any section of the public. Such orders are necessarily obeyed, for any breach of them is easy to detect and the penalty of total closure for a certain number of days or weeks is likely to follow swiftly. The same considerations do not apply to the new order, and whether it will be thoroughly observed still remains to be seen. At present neither the coffee-house keepers nor the civil police in the large town from which I am writing seem to be officially aware of its existence.

NO. 1 GENERAL HOSPITAL OF THE FIRST CANADIAN CONTINGENT.

No. 1 GENERAL HOSPITAL sailed with the first Canadian contingent in September, 1914. On arrival in England it went with the contingent to Salisbury Plain, and almost at once began work under canvas.

Early in November Bulford Manor House was occupied, and, as the need arose, Netheravon Cavalry School and hutments, Figheldean House, several other buildings, and a large tent hospital were utilized in addition. The hospital has been at work during the whole of the winter, and has cared for a large proportion of all sick from the contingent. It has had an ambulance service that collected the sick and returned them to duty. It has a fully equipped laboratory in operation, and as a hospital unit is complete in every respect.

Altogether it has treated some 4,000 patients on Salisbury Plains, and has had as many as 1,200 patients at one time. At present its work in England is nearly done, the sick remaining being few in number.

It is understood this unit may shortly proceed abroad. Many of its medical officers have already left and are at work in various hospitals on the Continent. These will be assembled with their unit into a general hospital providing 1,040 beds.

As will be seen from its staff of officers, who are drawn from every province of the Dominion, this hospital is thoroughly representative of Canada. They are as follows:

Colonel Murray MacLaren, Commanding Officer, Surgeon to the General Public Hospital, St. John, N.B., at present President of the Canadian Medical Association.
Lieutenant-Colonel Kenneth Cameron, Lecturer on Surgery, McGill University.
Lieutenant-Colonel F. G. Finley, Professor of Medicine, McGill University.
Lieutenant-Colonel C. F. Wylde, Demonstrator in Clinical Medicine, McGill University.
Major E. A. Le Bel, Quebec.
Major C. E. Doherty, Medical Superintendent, Hospital for the Insane, British Columbia.
Major A. C. Rankin, Professor of Bacteriology, University of Alberta.
Major A. Mackenzie Forbes, Lecturer on Orthopaedic Surgery, McGill University.
Captain J. T. Hill, Saskatchewan.
Captain G. Shanks, Physician to Royal Victoria Hospital, Montreal.
Captain G. G. Corbet, Radiographer, St. John, N.B.
Captain J. G. Hunt, Laryngologist and Oculist, Fort William, Ontario.
Captain G. S. Ramsay, Quebec, P.Q.

Captain Robert Wilson, Radiographer, Western Hospital, Montreal, Quebec.
Captain C. H. Robson, New Westminster, British Columbia.
Captain T. A. Lomer, Medical Officer of Health for the City of Ottawa, Ontario.
Captain A. W. M. Ellis, of Toronto, Ontario, Research Scholar from the Rockefeller Institute, New York.
Captain A. L. Johnson, Vancouver, British Columbia.
Captain A. E. H. Bennett, Kamloops, British Columbia, Adjutant.
Captain L. W. MacNutt, Alberta.
Captain A. H. Cameron-Smith, Manitoba.
Captain G. H. Jardine, Prince Edward Island.
Captain A. Z. Lozier, New Brunswick.
Captain R. M. Luton, Nova Scotia.
Captain O. G. Hassard, Dental Surgeon, Ontario.
Captain Robert Kirkpatrick, Quartermaster, Demonstrator in Chemistry, McGill University.
Lieutenant M. S. Gooderham, Paymaster, Toronto, Ontario.

Chaplains Attached to the Hospital.

Major P. M. O'Leary, Quebec City.
Major W. H. Emsley, Pembroke, Ontario.
Captain A. D. Cornett, Quebec.

In addition to these officers, eight other medical officers are joining the unit.

MEDICAL CONSULTANTS: NAVY AND ARMY.

ROYAL NAVY.

In the House of Commons on April 27th Commander Bellairs asked the First Lord of the Admiralty whether any sums of over £3,000 a year are being paid to doctors and surgeons in civil life as retainers for their services; if so, in what cases and what amounts, and whether the arrangement was made prior to the war, and allows of private practice as well. Dr. Macnamara replied as follows: The following consultants are paid over £3,000 per annum: Cheatle, G. L., Esq., C.B., C.V.O., F.R.C.S., £5,000 per annum; Cheyne, Sir W. W., Bt., C.B., F.R.C.S., £5,000 per annum; Johnson, Raymond, Esq., M.B., F.R.C.S., £5,000 per annum; Macewen, Sir W., F.R.C.S., £5,000 per annum; Rolleston, H. D., Esq., M.D., F.R.C.P., £5,000 per annum; Turner, G. R., Esq., F.R.C.S., £5,000 per annum. The employment of eight consultants was approved previous to the outbreak of war. The whole time of these consultants is at the disposal of the Admiralty, and they are under similar regulations with regard to private practice as all other medical officers serving—namely, private practice is not forbidden, but must not in any way interfere with the performance of an officer's naval duties.

ARMY.

As the above answer in the House of Commons has been extensively reported in the press, we applied to the Medical Department of the War Office for particulars of the consulting surgeons and physicians employed with the army, and we are enabled to publish the following list of the consulting surgeons and physicians at present employed in the Army Medical Service abroad and at home, with the rates of pay:

ARMY MEDICAL SERVICE.

TEMPORARY COLONELS.

Consulting Surgeons (Abroad).

Colonel Sir G. H. Makins, K.C.B., F.R.C.S.
Colonel Sir A. A. Bowlby, Kt., C.M.G., F.R.C.S.
Colonel F. F. Burghard, M.D., F.R.C.S.
Colonel W. T. Lister, M.B., F.R.C.S.
Colonel H. M. W. Gray, M.B., F.R.C.S.

Consulting Physicians (Abroad).

Colonel Sir W. P. Herringham, Kt., M.D.
Colonel Sir A. E. Wright, Kt., M.D., F.R.C.S.I., F.R.S.
Colonel Sir J. R. Bradford, K.C.M.G., C.B., F.R.S., M.D.
Colonel Sir B. E. Dawson, K.C.V.O., M.D.

TEMPORARY LIEUTENANT-COLONELS.

Consulting Surgeons (At Home).

Lieutenant-Colonel A. E. J. Barker, F.R.C.S.
Lieutenant-Colonel Sir T. Myles, Kt., M.D., F.R.C.S.I.
Lieutenant-Colonel Sir C. B. Ball, Bt., M.D., F.R.C.S.I.
Lieutenant-Colonel Sir W. A. Lane, Bt., M.B., F.R.C.S.
Lieutenant-Colonel Sir F. S. Eve, Kt., F.R.C.S.
Lieutenant-Colonel J. Swain, M.D., F.R.C.S.

	Colonel.	Lieut.-Colonel.
	£ s. d.	£ s. d.
Pay	2 5 0	1 10 0
Servant allowance	0 1 0	0 1 0
Field allowance*...	0 7 6	0 6 0
Lodging allowance†	0 5 6	0 4 6
Fuel and light allowance†—		
Winter (Oct.-May)	0 2 1	0 1 9
Summer (June-Sept.)	0 1 0	0 0 10
Ration allowance‡	0 1 9	0 1 9

*Issuable only when under canvas or when accommodated in temporary war shelters.
†Issuable only when not provided with public quarters and fuel and light in kind or field allowance.
‡Issuable when rations are not issued in kind.
Note.—The above rates are those issued at home, but when serving in France field allowance is issued concurrently with lodging, fuel and light allowance.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Killed.

FLEET SURGEON ADRIEN ANDREW FORRESTER, R.N., of H.M.S. *Implacable*, battleship, was killed in the bombardment of the Dardanelles on April 25th. He was educated at Glasgow, where he took the degrees of M.B. and B.Ch. in 1897, entered the Navy as surgeon in November, 1898, became staff surgeon in 1906, and fleet surgeon on November 8th, 1914. He joined his ship on February 11th, 1914.

ARMY.

Wounded.

Major F. G. Proudfoot, R.A.M.C.(T.F.), Oxford Yeomanry.
Major W. M. Mackay, R.A.M.C.(T.F.), 6th Durham L.I.
Captain E. Perceval, R.A.M.C.
Captain J. L. Duval, 1st Canadian Field Ambulance.
Captain R. H. McGibbon, 1st Canadian Field Ambulance.
Captain J. M. Bowie, R.A.M.C.(T.F.), 9th Royal Scots.
Captain D. H. Weir, R.A.M.C.(T.F.), 4th Northumberland Fusiliers.
Captain C. A. Wood, I.M.S., 1/4th Gurkhas.
Lieutenant R. E. Barnsley, R.A.M.C.(T.F.), 3rd London Field Ambulance.
Lieutenant V. H. Wardle, R.A.M.C.(T.F.), 2nd Northumberland Field Ambulance.
Lieutenant H. S. de Boer, R.A.M.C. (Dardanelles).
Lieutenant (temporary) G. L. K. Findlay, R.A.M.C.
Lieutenant (temporary) J. A. MacMahon, R.A.M.C.

Missing.

Lieutenant J. A. Stenhouse, R.A.M.C.(T.F.), 8th Durham L.I.

Second Lieutenant Hugh Bertram Neely, L.D.S., of the 1st Battalion, Suffolk Regiment, was killed in action at Ypres on April 25th. He was educated at Guy's Hospital, took the L.D.S. of the Royal College of Surgeons, England, in 1912, and went into practice at Southampton. He received a commission as second lieutenant in the 3rd (Reserve) Battalion of the Suffolk Regiment on August 15th, 1914.

NOTES.

LONDON ASYLUM AS WAR HOSPITAL.

THE Asylums Committee of the London County Council has agreed that the Horton Insane Asylum, Epsom, shall be used as a war hospital. The patients, numbering nearly 2,200, have been removed to other London county asylums, and provision is being made at Horton for 2,700 beds for the wounded. The institution will be known as the County of London War Hospital, Epsom. The medical, nursing, domestic and general staff of the asylum will be employed, with additions, for the purposes of the hospital, and the medical superintendent, Dr. J. R. Lord, will be the commanding officer. The Asylums Committee states that a number of medical practitioners have already offered their services, and it is hoped that other practitioners will be willing to help.

SCOTTISH NATIONAL RED CROSS HOSPITAL.

The Scottish Branch of the British Red Cross Society has arranged to put up a military hut hospital providing

700 beds on a site in Bellahouston Public Park, granted by the Corporation of Glasgow. There are to be seven blocks, each containing two wards with fifty beds each. The erection of the hospital has been decided upon owing to the impossibility of securing permanent buildings suitable for hospital purposes in West Scotland. It is to be known as the Scottish National Red Cross Hospital.

THE BRITISH RED CROSS SOCIETY.

Red Cross Work at the Dardanelles.

Sir Frederick Treves has left London for Malta, Alexandria, and Lemnos, to ascertain what arrangements should be made by the Red Cross in connexion with the Dardanelles Expeditionary Force. Surgeon-General Sir Benjamin Franklin, K.C.I.E., will take his place at the head quarters of the British Red Cross Society in London, and will represent the Society on the business committee of the King George Hospital.

SERBIA.

The Wounded Allies Relief Committee has appointed Dr. R. Fleming Jones head of their Serbian typhus hospital at Kragujevatz. Dr. Jones has had exceptional experience in this kind of work, not only in the Spanish-American war, but also in New Guinea, where for the past three years he has been chief medical officer. The Committee's Serbian advance guard left England on April 1st, and last week an Admiralty transport conveyed a second party of nurses, who were accompanied by a motor ambulance.

It is announced that the second Serbian unit of the Scottish Women's Hospitals, which was on its way to Kragujevatz, by way of Salonika, has been stopped at Malta, the Governor having requisitioned it for immediate service to nurse British troops.

MEDICAL OFFICERS WANTED.

3/2nd East Anglian Field Ambulance R.A.M.C.(T.).

Two vacancies for medical officers in the newly formed unit are announced. Pay and allowance as in the regular army. Applicants must be prepared to undertake imperial service obligation. Applications should be addressed to Major Caie, 44, Bethel Street, Norwich.

1st London (City of London) Sanitary Company.

There are a few vacancies for medical men to take commissions in this company, the duties of which consists of organizing and supervising sanitary work at the front and at home. Candidates, who may expect to be ordered abroad at an early date, should have a knowledge of sanitation. The posts are especially suitable for men in the public health or education service who can be released for military work. Applications to the Officer Commanding, 1st London (City of London) Sanitary Company, Room B 6, Duke of York's Head Quarters, Chelsea, S.W.

2/1st North Midland Field Ambulance.

Medical officers are urgently wanted for the 2nd and 3rd line of this unit for imperial service only. Apply Lieutenant-Colonel Dawson, 2/1st North Midland Field Ambulance, Luton.

King George Hospital.

There are vacancies for a few honorary anaesthetists to help on Fridays and Saturdays. Offers of service may be addressed to Mr. Edmund Owen at 83, Pall Mall, S.W.

England and Wales.

THE CONSUMPTION PROBLEM FROM THE LAYMAN'S POINT OF VIEW.

THE formation of mixed committees for the control of dispensaries is gradually forcing the consumption question into the minds of lay authorities, who have hitherto taken only a superficial interest in the oft-repeated warnings of experts. A paper by the vice-chairman of the Lancashire County Insurance Committee[1] may be taken as evidence of this fact. In it he calls attention to a manifest defect in the working of theoretical schemes. He has found that the machinery for the notification of the incipient case has proved to be altogether inadequate, and that 50 per cent. of the cases within his own purview have advanced into the incurable stage before being notified. He suggests that free consultations might be established by local authorities to meet the difficulty, and that the great fact should be popularly recognized that the incipient case has a chance of recovery while the advanced case has none. The futility of spending money on attempts at prevention while the chief source of the spread of the disease is permitted to remain an ordinary member of the household is beginning to be realized. Reform in this direction must come through the action of laymen, pressure being brought to bear upon their representatives in Parliament. Complaints of the inadequacy of sanatorium accommodation are heard in the northern counties as elsewhere, but the need for reform of domestic hygiene in the home of the consumptive does not appear to have been sufficiently appreciated.

[1] *The National Insurance Gazette*, April 24th, 1915.

EAST LANCASHIRE BRANCH OF THE RED CROSS SOCIETY.

Some idea of the large amount of work now being done by the East Lancashire Branch of the British Red Cross Society may be formed from the fact that the branch has now no fewer than 57 auxiliary home hospitals in East Lancashire, and since the war began it has dealt with over 6,000 wounded soldiers and sailors. As early as the middle of last August offices in the Y.M.C.A. buildings, Peter Street, Manchester, were placed at the disposal of the branch, public meetings were held at various places round Manchester with the view of organizing new divisions, and working arrangements were made with the St. John Ambulance Brigade. Special attention was paid at first to the formation of classes in first aid and home nursing, and working parties were formed for providing comforts for wounded soldiers. Appeals for funds met with a generous response, and early in September the branch was able to equip with 150 beds, and undertake the maintenance of Worsley Hall, which the Earl of Ellesmere had offered to lend for use as a hospital. This was accepted by the War Office, and shortly afterwards The Woodlands, Wigan, generously offered by Lord Crawford and Balcarres, was also accepted. Numerous other offers of small hospitals or premises for such were also received, some of which have recently had to be refused. At the Worsley Hall Hospital, which is beautifully situated in an extensive park overlooking Chat Moss, about six miles from Manchester, already over 700 wounded have received treatment. The new scheme of the War Office for the employment of members of Voluntary Aid Detachments in military hospitals has been strongly supported by the branch, and under its control there are over a dozen convalescent homes in various health resorts which are available for invalid or wounded soldiers.

LONDON COUNTY COUNCIL.

Medical Treatment of School Children.

It was reported to the London County Council on May 4th that the Board of Education had decided to fix the grant in aid of the cost of the school medical service in London elementary schools for the current year at £36,149. In an accompanying letter the Board stated that it was glad on this occasion to recognize, by the payment of a grant at the maximum rate, the steps taken by the authority to remedy defects in the school medical service to which attention was drawn at the last inspection by the Board's medical officers; it was, however, to be understood that the assessment of the grant would be subject to annual revision, and that in fixing the rate in future years the Board would have regard not only to the maintenance of the present standard of efficiency, but also to the extent to which provision was made for such improvements and developments of the work as might be required in order to meet the needs of the area completely.

The Board also signified its approval of the arrangements for medical inspection and treatment of school children for the ensuing year, but with regard to the Council's experiment of employing an increased number of part-time assistant medical officers for a period of two years,[1] the Board stipulated that its general approval of the provision for medical inspection must not be regarded as endorsing a reversion to a part-time system in London. The Board would arrange for the experiment to be carefully inspected by its medical officers.

Tuberculosis Advisory Board.

The Public Health Committee reported that at the first meeting of the Honorary Advisory Board appointed under the Council's tuberculosis scheme,[2] Dr. W. Hale White was elected chairman, Dr. James Calvert vice-chairman, and

[1] BRITISH MEDICAL JOURNAL, vol. i, 1914, p. 735.
[2] BRITISH MEDICAL JOURNAL, vol. i, 1914, p. 1206.

Dr. F. J. Wethered secretary. The Board had undertaken to advise as to the desirability or otherwise of the production of artificial pneumothorax.

Ireland.

TRINITY COLLEGE AND DUN'S HOSPITAL.

SOME fifty years ago a *liceat ad examinandum* fee of £5 was imposed on candidates for each of the final examinations in medicine and surgery in the University of Dublin with the avowed object of handing the proceeds to the governors of Sir Patrick Dun's Hospital—then a purely medical hospital—for the purpose of establishing surgical beds. The main argument used to justify the course then adopted was that university students would thus be enabled to attend their whole hospital practice at Dun's and thereby save in the total hospital fees payable by them. Since then matters have changed. It is no longer compulsory for university students to attend any of their hospital curriculum at Dun's, nor can the payment of the *liceat* fees be claimed to effect a saving in total hospital fees. Indeed, these fees have meanwhile been raised at all the Dublin hospitals, Dun's included.

The majority of the university students are now distributed over the various other Dublin hospitals, and at different times in recent years the above condition of affairs has led to expressions of dissatisfaction from clinical teachers in these hospitals, while students generally and their guardians do not realize the purpose for which the *liceat* fees are charged and to which they are devoted. The matter has again come to the fore, and counsel's opinion has been taken by both sides as to the legality of the position, the claim being advanced, on behalf of Dun's Hospital, that a contract exists from which the College cannot withdraw. To the impartial onlooker it is not clear how, under present circumstances, the continuance of the charge can be justified either by the receivers of the benefaction or by the vicarious donors. It is to be hoped that an equitable solution of the difficulty will be found, and that the matter will now be put on a proper basis once for all.

Scotland.

ROYAL VICTORIA HOSPITAL, EDINBURGH.

MILITARY patients have been treated in the Royal Victoria Hospital (Consumption) since last October; but now an arrangement has been come to between the Edinburgh Town Council and the Red Cross Society whereby the latter takes over the whole hospital and all the expenses connected with it so long as its occupation is continued, and the former makes a contribution towards the maintenance of the buildings and the grounds.

EMERITUS PROFESSOR SIR ALEXANDER R. SIMPSON.

On April 30th Sir Alexander R. Simpson, Emeritus Professor of Midwifery and Gynaecology in the University of Edinburgh, completed his eightieth year. Sir Alexander, who has enjoyed very good health during the winter, was the recipient of a large number of congratulations from relatives, former assistants, old patients, and friends. He is active as ever, and is not seldom found presiding at medical, charitable, and evangelistic meetings in Edinburgh and neighbourhood.

INCORPORATED EDINBURGH DENTAL HOSPITAL AND SCHOOL.

At the annual meeting of the Edinburgh Incorporated Dental Hospital and School, presided over by Captain Guy, it was reported that the total number of operations performed during the year was 20,256, as compared with 17,420 in the previous year. The effect of the war had been very striking—from January 1st to July 31st the total number of operations performed upon soldiers and recruits had been 556, but from August 1st to December 31st the number had risen to 2,027. During the year the hospital staff had performed in all 2,583 operations for 1,036 soldiers, and had provided sixty dentures. Lieutenant-Colonel Sir Joseph Fayrer, who moved the adoption of the report, expressed his great admiration of the work done for the soldier by the dental profession, and said he hoped to live to see the day when there would be an army dental department.

Correspondence.

SEPTIC INFECTION.

Is there Immunity against a Second Invasion?

SIR,—Owing to the fact that a number of officers and men have unfortunately already been wounded on more than one occasion in the present war, and bearing in mind that nearly all wounds undergo septic infection, an opportunity will be afforded of adding to our knowledge of the protection (if any) which is afforded by recovery from one attack of septic infection against a second invasion by the same or allied pyogenic organisms. We know little as to the extent and duration of the protection which follows successful resistance to streptococcic and staphylococcic infection, and still less about acquired immunity to invasion by anaërobic organisms in the human subject.

If we are to learn more about this problem during the war, we must begin to observe and record the facts now. If the clinical and pathological findings could be recorded in the case of every soldier wounded for the second or third time, and if these findings could be compared with the bacteriological report (if available) and the clinical history (if this can be obtained) of the infective process in the previous wound, then something will be gained.

It will not be wise, for this purpose, to trust only to the analysis of such statistical data as may be available after the war, because some of the necessary facts can only be ascertained by inquiry at different hospitals now while the events are fresh in the minds of those who have charge of these patients.

The importance of the subject and the necessity for prompt action must be my excuse for venturing to draw attention to it now.—I am, etc.,

Leicester, May 4th. C. J. BOND.

THE PHYSIOLOGICAL TREATMENT OF WOUNDS.

SIR,—Lister was, I believe, the first to advocate early incision to relieve tension, and he always made a good deal of his original ideas on drainage. In fact he introduced the indiarubber tubes. The lining of an emptied abscess, the pyogenic membrane, being of the same cellular structure as normal granulation tissue, Lister regarded it as the first line of defence. Before it is formed the germs can enter the body, but after the granulation tissue matures there is no probable entry. It was his strong point that this layer of cells does not absorb, but secretes a clear lymph, which he insisted, like the granulation cells, had the power of resisting the growth of bacteria. This was a matter of daily demonstration in his wards. The most interesting of Lister's discoveries was the organization of the blood clot. He proved that the blood clot in aseptic wounds remains undecomposed till it organizes into the ordinary scar tissue. Such clot has to be protected from all irritation, of the germs, the chemical irritation of lotions, and the mechanical irritation of surgical dressings. He therefore covered the clot with oil silk and exposed it very little.

These conditions are not to be obtained, as Lister showed, except in perfect asepsis. In many cases at the front I was able to retain the unaltered blood clot for seven or eight days. But with the irritation of the gauze dressing granulations formed, which, however, hastened healing by filling up the wound.

Sir A. Wright and those who prepared the memorandum published in the issue of April 24th strongly recommend the use of 5 per cent. saline in various ways. I have seen this extensively used at the front, and consider it a failure. This is quite evident when one studies the temperature charts. With antiseptics the temperature falls in three or four days, whereas with saline the temperature is up and down for two or three weeks. The pain and suppuration,

especially with baths and continuous irrigation, is most conspicuous in contrast to the rest and healing of the antiseptic treatment. The latter, however, is often loosely carried out, and this can only end in failure. Wounds should be freely irrigated with 1 in 20 or 1 in 40 carbolic, and then dusted with salicylic acid, or, better, a mixture of that and boric acid. Salicylic is dear and practically forbidden by our Government, which requires all the carbolic going.

I was able this year at a field hospital to leave dressings on for two and three days, everything being sweet and only sero-pus on the dressing, whereas I saw in other hospitals similar cases with delayed healing dressed daily or in saline baths. Where I was, north of Arras, the wounds stank of high pheasant, and were burnt black, in all probability with phosphorus.

Antiseptics will always be "disappointing" unless the details are carefully attended to. This memorandum says that "partial sterilization" must be put up with by those who employ antiseptics on account of residual pus infecting the discharges. But this is a confusion between efficient drainage and antiseptics—two separate subjects. When drainage is good antiseptics can work perfectly—otherwise their action is hampered. But in this connexion I would refer to the researches of Watson Cheyne and Bassett-Smith[1] with pastes of varying strengths of cresol and carbolic acid—and boric *plus* salicylic acid. The special advantage of the paste is that it retains the antiseptic and gives it out slowly as it is required. I attained a similar object by dusting on salicylic acid, which I have already shown is germicidal at 0.2 per cent., while it is soluble in the serum of the wound at 0.5 per cent.[2] Any treatment of wounds at the front to be successful must accomplish four things:

1. The banishment of sepsis, as indicated by total disappearance of odour and fall in temperature.
2. Production of a discharge of serum, or lymph, or sero-pus, to be maintained as such.
3. All blood clot to remain undecomposed.
4. The minimum of dressing or disturbance, which is by no means an unimportant factor—that is, it should be possible to leave dressings on two or three days.

This is attainable with Listerism, though it may not be by antiseptics as sometimes employed. Saline, when used so freely in baths and irrigation, so injures the granulation cells that they are robbed of their phagocytic value. The physiological aim in healing cannot, therefore, be attained. Experience proves this.—I am, etc.,

London, W., April 30th. ALBERT WILSON, M.D.

TYPHUS FEVER.

SIR,—I hope Dr. James Cameron will forgive me for not having known that he was the first to establish the interesting fact that the *B. typhosus* is sometimes emulsified by the serum of typhus patients. I attempted last year to make a complete list of papers on typhus fever, which amounted in all to more than a hundred contributions. But I was not fortunate enough to come across Dr. Cameron's paper in the *Scottish Medical and Surgical Journal*, in which his results appeared, as he tells us, soon after Widal published his observations on the serum reaction in typhoid. Dr. Cameron's results in typhus appear to have been independently confirmed by Love in 1905, by Patterson in 1908, by Ker in 1909, and by W. J. Wilson in 1910. The last-named author, in his paper of 1910, mentions the work of Love, and of Patterson, and of Ker in this connexion, but evidently he, like myself, was unaware, when he wrote, of Dr. Cameron's important observations.

The same number of the BRITISH MEDICAL JOURNAL, which contains Dr. Cameron's letter, also contains a most interesting note by Dr. Wm. C. Burns. Dr. Burns was, so far as I know, the first to produce epidemiological evidence that the excreta of typhus patients may be infective. His classical observation in the island of Eriskey of a series of ten cases, which he had good reason for primarily attributing to disturbance of an abandoned midden, raises a suspicion as to the infectivity of typhus excreta which can hardly be set aside by invoking the agency of lice in the first case of the series. And, as I have recently shown, the validity of his contention is strengthened by the direct experimental evidence as to the infectivity of typhus urine which I published last year, without knowledge of the Eriskey outbreak. Dr. Burns now suggests that the infective agent of typhus may also reside in the sputum. This observation deserves special study, on account of the fact that broncho-pulmonary invasion is not uncommon in typhus fever. If typhus urine is infective, and becomes itself infected from the blood stream, as there is good evidence for believing, it is not difficult to understand that broncho-pulmonary mucosa may also become infected from the blood stream, and may impart its infection to the sputum. Moreover the albuminous content of the sputum, as we showed to be the case with the blood, and to a less degree with the cerebro spinal fluid, should ensure a better chance for survival of the causal organism of the disease than the alien environment afforded by non-albuminous synthetic media, on which as a filter-passing bacterium it does not persist. The question, therefore, of the infectivity of typhus sputum should be readily settled by the controlled injection of bonnet-monkeys with fresh specimens of sputum from acute cases, as has been done by injection of fresh typhus blood, and by injection of first cultures on blood-agar from fresh urine, from fresh cerebro-spinal fluid and from fresh blood.

In the meanwhile, in view of the urgency of the position in Serbia, Poland, and other parts, it is to be hoped that the devoted men and women who have gone, or who are going, to help the stricken of these countries will be freely supplied with facilities for the disinfection of the excreta and sputum of acute cases and of convalescents, as well as of the ambulatory cases to which Dr. Burns incidentally refers. And there is no reason why the taking of these additional precautions against the spread of the disease should in any way imperil the success of the essential warfare against lice.—I am, etc.,

London, W., May 4th. EDWARD C. HORT.

[1] *Journal of Royal Naval Medical Service*, April, 1915.
[2] BRITISH MEDICAL JOURNAL, February 20th, 1915.

GENERAL ANAESTHESIA FOR EYE OPERATIONS.

SIR,—I am much obliged to Mr. Beatson Hird for pointing out (April 17th, p. 698) a misprint in my article upon general anaesthesia in eye operations. A.C. was obviously intended for C.E., as there is no A.C. mixture in use, as far as I am aware. The statistics he gives of the deaths from general anaesthesia at the General Hospital, Birmingham, seem to show an unusually high mortality, but, in the absence of any details, it would be futile to discuss them. It would, however, be interesting to know the circumstances under which the three patients died from ether anaesthesia.—I am, etc.,

T. HARRISON BUTLER, M.D.Oxon.

Leamington Spa, April 30th.

UNSYMPATHETIC TREATMENT OF TERRITORIAL MEDICAL OFFICERS.

SIR,—In answer to Mr. Harold Baker's statement in the House on April 22nd that R.A.M.C.(T.F.) officers have suffered no hardship in regard to the terms of their service, I should like, as a civilian medical practitioner, to draw attention to facts which I think are sufficient to convince any unbiassed person that not only has a great injustice been done to a body of men who have shown pre-eminent loyalty by preparing in peace time for their duties in war, but that the continuance of the present inept system is calculated gravely to interfere with the supply of good medical officers to the Territorial Forces now and in the future.

Joining the R.A.M.C.(T.F.) in 1908, and at intervals since then and before the war, they have gone to examine recruits whenever required; they have given lectures and drills in first-aid and sanitary work; they have attended camp each year instead of going on their well-earned holidays; they have gone on frequent route marches; they have taken out courses of instruction in military law, organization and administration, map reading, sanitation, and R.A.M.C. training, previous to passing examinations in these subjects.

All these duties were performed in times of peace;

moreover, were done without even the incentive of a war scare, but to the accompaniment of the sneers of those of their medical colleagues who preferred to enjoy themselves.

Let us see how their loyalty has been rewarded.

On the outbreak of war they were immediately mobilized by telegram, were compelled to leave their practices without having time to make adequate arrangements, and with an outfit allowance of £27 10s. have been paid at the rate of 14s. and 15s. 6d. a day and allowances, averaging 4s. 9d. a day for lieutenants and captains respectively.

On the other hand, let us consider the position of those medical men who took no trouble whatever in time of peace to become efficient, but have now come forward at the eleventh hour. These have been given temporary commissions carrying an outfit allowance of £30 instead of £27 10s.; furthermore, they are to have a gratuity of £60 at the termination of their engagement, and meanwhile are enjoying a daily rate of pay of 24s.

Such are some of the disadvantages of being too loyal.

Many of these temporary commissioned officers are men who have only recently qualified in medicine, and yet are, as above stated, receiving higher pay than the trained Territorial officers to whom in many cases they have previously acted as house-surgeons, dressers, and pupils.

Another grievance is that the temporary commissioned officers are often sent straight away on active service, whilst their trained seniors are kept at home to train men and do clerical work.

If Mr. Harold Baker, instead of rising in the House to make statements provided by his subordinates, would acquaint himself with the truth by such means as condescending to receive a deputation of R.A.M.C. officers, he could easily acquire enough first-hand information rapidly to alter his opinions. I have no doubt he could be provided with many instances of operating surgeons to whom the mobilizing telegram meant the wreck of a promising consulting practice, who have never had the chance of handling a scalpel since August, but who are eating their hearts out doing clerical work and stretcher drill, whilst their recent pupils are sent to the front to enjoy unique surgical opportunities which should be theirs by right.

Moreover, are not our wounded entitled to the services of the skilled and experienced surgeon rather than of the untried?

He would also learn of cases by the score of loyal general practitioners who as Territorial officers have to provide locumtenents at £6 and £7 a week and keep their home expenses going, on their 14s. or 15s. 6d. a day, whilst their neighbours, apathetic in times of peace, are receiving 24s. a day and being sent straight to the front.

Another point in which the man in the street sees no sense is the present regulation preventing medical men of over 40 years of age from leaving these shores, whilst newly qualified and presumably less experienced men are chosen for the base hospitals in France.

It seems to me that all these regulations when summed up are, in effect, the exaltation of the less worthy at the expense of the more worthy.

I have written at this length not simply to draw attention to the wrongs done to the R.A.M.C. (T.F.), but because it is an urgent matter of national importance in that it is directly responsible for the dearth of medical officers to the Territorial Forces; and unless Mr. Harold Baker shows some desire to learn the real truth, we must wait for the slow action of facts and public opinion to force his hand.

At present no civilian medical man who wishes to serve his country, and is not a wealthy philanthropist, can afford to take a commission in the Territorials when a temporary commission in the Regulars is open to him.—I am, etc.,

FRANCIS HEATHERLEY, M.B., B.S.Lond.,
F.R.C.S.Eng.

Rock Ferry, Cheshire, May 3rd.

TEMPORARY MEDICAL OFFICERS.

SIR,—Most of us will agree with a great deal of what "Temporary Commission" writes in your issue of May 1st, but if he is correct in writing, "A medical volunteer officer is in quite a different position to a combatant volunteer officer, as he has in most cases an equal, and often greater, professional experience than his brother officer who is a regular, whereas the combatant volunteer officer must necessarily have had little experience compared with the regular officer," it seems to me the R.A.M.C. is unnecessary unless it teaches a man something the civil practitioner does not learn. If a soldier's only work were to shoot, the volunteer combatant officer might be a better shot in many cases than the regular, and a gamekeeper ought to have command immediately he joins. But if the R.A.M.C. is a necessity, what is one to think of a man having spent ten or twelve years learning his work and reaching the position of captain or major, and yet finds the most recently-qualified man joining Kitchener's Army receives 5s. a day more than he does?

Obviously in war time everything cannot be arranged to please everybody.—I am, etc.,

May 4th. G. P.

EMERGENCY BILL FOR MENTAL TREATMENT.

SIR,—Mr. Harmsworth's bill for mental treatment, presented on the plea of emergency necessitated by the war, has no application to private soldiers invalided through nerve-strain. So long as they remain in the army it is not customary to certify them, the strict military control in which they are held being sufficient detention. Its provisions do not therefore benefit them, but rather the contrary.

When discharged unrecovered, after a limited period, the soldier, on his return to civilian life, runs the risk (should this bill pass into law) of being placed in charge of lunacy authorities without formal certification or appeal to a magistrate.

The memorandum prefixed to the bill states that the law, as it now stands, prevents the residential treatment of nervous breakdown unless the patient is certified and sent to an institution under the Lunacy Acts. This, however, is not the case. There is no prohibition in English law against "uncertifiable" cases being treated in hospitals or homes so long as compulsory detention is not exercised. The Local Government Board emphasized this fact by stating on December 18th, 1914, in reply to inquiries as to facilities for early mental treatment, that "local authorities," by the Public Health Act, 1875, S. 131, have power to provide hospitals for the inhabitants of their districts. This need is very deeply felt. It might be supplied, for instance, by such an institution as the new Maudsley Hospital, if kept as a genuine hospital, and not made into an asylum.

Mr. Harmsworth's bill proposes to remove the penalty incurred by any person who (whether for payment or not) takes charge of or receives a mental patient, if and so long as he complies with the regulations framed in England by the Home Secretary and Lord Chancellor (who are the executive of the Lunacy Commission) and in Ireland by the Lord Chancellor alone. These regulations are to be substituted for any existing legal enactments *re* the point in question.

It is desirable that the promoters of the bill should say clearly whether detention is included in Section 1 or not, for the term "to take charge of" is very vague. If detention is not intended why bring in the bill at all, since the law as it stands allows of treatment in hospitals or homes, provided that the patient is not detained and is not certifiable?

Where a patient has become dangerous to himself or others it is imperative to restrict his freedom, but at the same moment judicial intervention becomes necessary in order that he may be protected from injustice. Great stress has been laid upon the "stigma" which attaches to an individual who has been certified. Some have even gone so far as to say that if there were no legal procedure there would be no "stigma." Such an assertion is based on confusion of ideas. What lies at the root of the stigma is the fact of the existence of a dangerous condition of mind necessitating detention. It is the necessity for detention that originates the stigma, not the law. The function of the law is protective, and we run into grave danger if we allow detention to be exercised while the safeguarding provisions of the law are in abeyance.

The leading article in the BRITISH MEDICAL JOURNAL of May 1st indicates a possible arrangement to the effect that a patient may "accept" the treatment. But if the patient is "uncertifiable" he can make the choice for himself, without being obliged to do so by a bill. It is a contradiction in terms to compel so-called "voluntary"

patients to accept treatment in an institution for lunatics (as in Earl Russell's bill of July 22nd, 1914). The same article suggests the simple adoption of the Scottish Lunacy Act, 1866, S. 13, by which any doctor can send any one to an asylum for six months on his own sole authority. It would be much preferable that transient cases of violent toxic insanity should be treated in special hospitals on the same lines as ordinary delirious cases are now treated, and kept altogether apart from lunacy and asylum management.

We are told that with the progress of enlightenment the question of disorder of the mind is now beginning to be regulated by scientific considerations. What we require above everything else is that all mental affections should be genuinely taken into account as a branch of medicine. It is both unnatural and unscientific to regard mental treatment as a speciality, secluded from the advantage of the light that other branches of medicine might throw upon it. The methods hitherto adopted have failed signally in checking the prevalence of insanity. That is because its beginnings have not been attended to; and the dread of detention has stood in the way of successful treatment of the early stages when the malady is most curable. The only really hopeful plan is to treat it differently.

We want places where the early cases will not be afraid to come of their own accord for treatment, to be helped out of their worries and anxieties, cheered by medical care, and encouraged by hopefulness; that so they may be prevented from ever arriving at the stage at which detention is necessary.—I am, etc.,

May 2nd. S. E. WHITE, M.B., B.Sc.Lond.

Obituary.

SIR WILLIAM GOWERS, M.D., F.R.C.P., F.R.S.,

CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, LONDON.

WE regret to have to record the death on May 4th, after a long illness, of Sir W. R. Gowers, so well known as a neurologist.

William Richard Gowers, the son of William Gowers, who married Ann Venables, was born in London on March 20th, 1845. He was educated at Christ Church College School, Oxford, and entered the medical profession through the customary portal in his time, by being apprenticed to a country surgeon at Coggeshall, Essex, in his 17th year. His medical education proper was received at University College and its hospital. He qualified in 1867 by taking the diploma of M.R.C.S., and two years later graduated M.B. in the University of London. Next year he took the M.D. with the gold medal. In his early student days he took up the study of shorthand, and used it even at the time of his preliminary examination "for all purposes for which the writing of English was needed." He made it his duty, he tells us, to perfect himself in the art, and obtained his practice for speed by aid of two Sunday sermons and a sheltered curtained pew, and by the end of his apprenticeship he acquired the art of taking down every word of the sermon whilst thinking about something else all the while—an accomplishment not possessed by all shorthand writers. The skill thus gained enabled him to do medical reporting, by which for some years he kept himself, and bridged over the interval, as he put it, between the impecunious student and the impecunious physician. The influence of his shorthand writing had another great effect on his career—namely, that of determining the fact that he became a physician in London instead of a practitioner in the country. It brought him also the post of secretary to Sir William Jenner, who referred in the preface of one of his works to the fact that his lectures on abdominal tumours were reported by "his able friend and former pupil, W. R. Gowers." After being one of Jenner's pupils he had the "culminating privilege" of acting as house-physician to him, and he continued afterwards for years in the closest relation with him as private secretary. "The daily intercourse with that intellect" was to Gowers "a privilege inestimable," and he was sure that any powers of reasoning displayed in his books, or in the method in which the subjects were discussed, was due to the influence of Jenner in a degree that no ordinary person would suspect.

In 1870 he was appointed medical registrar to the National Hospital for the Paralysed and Epileptic, Queen Square, and he held this post until he was promoted to the honorary staff as assistant physician (1873). He became full physician in 1880. In 1872 he became assistant physician to University College Hospital, and in 1883 physician. He retired from the staff in 1888, when he was appointed consulting physician. A few years after he joined the honorary staff of the hospital he became assistant teacher in clinical medicine, and held this post, and at a later date the professorship, for several years.

At the Royal College of Physicians he became a Member in 1875, and a Fellow in 1879. He read the Goulstonian lecture in 1880 on "Epilepsy and other chronic convulsive disorders," and the Bradshaw lecture in 1890 on "Subjective sensations of sound." He also acted as Censor for the years 1900, 1901, and 1902. In 1887 he was elected a Fellow of the Royal Society for his work in connexion with diseases of the nervous system.

From a very early stage of his medical career he took a special interest in diseases of the nervous system, and he was asked to edit the sections on the brain and spinal cord in the eighth edition of *Quain's Anatomy* (1876). Before this date he had written several papers on neurological subjects, some of which appeared in this JOURNAL. Thus after a paper on the state of the arteries in Bright's disease in 1876 (JOURNAL, vol. ii), he wrote in the following year on the diagnosis and treatment of auditory nerve vertigo. In 1878 (vol. i) appeared a paper on chorea. Before these papers were published he had translated into English Pagenstecher and Genth's *Atlas der pathologischen Anatomie des Augapfels* (1875). His first book (1876) was an essay of eighty-five pages reprinted from the *Medical and Chirurgical Transactions* on athetosis and post-hemiplegic disorders of movement. A striking feature of this paper are its illustrations, which were drawn by Gowers himself. They are beautifully finished drawings of the movements described, and more impressive than the outline reproductions of them used in his *Manual of Diseases of the Nervous System*.

His interest in research into the structure of the nervous system was shown by his description of the then unrecognized tract of fibres in the grey matter which he himself called the antero-lateral ascending tract, but which is also known as Gowers's tract. It was in examining the spinal cord of a case in which the lower extremity had been crushed by a fracture of the spine that he found "a symmetrical area of slight ascending degeneration in the anterior part of the lateral columns in front of the pyramidal tracts," and he thought the function of the fibres in the tract was probably the conduction of sensation. The tract is first referred to and illustrated in his book on *Diagnosis of Diseases of the Spinal Cord* (1880).

Gowers's name must be remembered in connexion with his methods of estimating the percentage of haemoglobin and the number of corpuscles in the blood which he worked out in his earlier days.

He published the details of his haemoglobinometer at a meeting of the Clinical Society of London, December 13th, 1878. This instrument had for its standard colour a tube filled with picrocarmine jelly. Although the tint of the standard was known to change on keeping, and although it was not as efficient in artificial as in daylight, it was regularly used, in England at any rate, until Haldane (1901) modified it by using as a standard tint a 1 per cent. solution of normal blood saturated with carbonic oxide. This carbonic oxide blood is permanent in tint, and can be used by artificial light. With it, of course, the blood to be tested has to be treated with carbonic oxide, or equally well, and more conveniently, by coal gas. The haemoglobinometer was described in the *Lancet* in 1877 (vol. ii, p. 797). The chief innovation was to replace the squares, which in Hayem's instrument were engraved on the eyepiece of the microscope, with similar squares in the bottom of the cell on the counting slide. The exact value of the micrometer lines on the eyepiece varied with each microscope, and their value had to be known accordingly. Gowers's modification was therefore a great improvement. This haemoglobinometer has been now almost entirely replaced by the Thoma-Zeiss instrument. The latter is simpler, with its pipettes serving the

additional function of mixers and doing away with the little mixing vessel of Hayem and Gowers, into which the blood had to be expelled from the pipette. His solution for blood corpuscle estimation is still, however, widely used.

The first important work which Gowers published was that on Medical Ophthalmology (May, 1879). Long before this work appeared, the importance of the ophthalmoscope in medicine was fully recognized, and whilst Gowers was in his medical swaddling clothes his great master and future colleague at Queen Square—Hughlings Jackson—had written a note in this JOURNAL on "The ophthalmoscope in physician's practice" (1867). In this Jackson pointed out, amongst other things, that the presence of advanced kidney disease could be predicted with confidence sometimes by an experienced ophthalmologist. Dr. Clifford Allbutt had also been working at the subject at Leeds, and had published (1871) a book of close on 400 pages on the use of the ophthalmoscope in various diseases, recording in it many original and valuable observations. But Gowers went into the subject very fully and systematically, and certainly was instrumental in bringing ophthalmoscopy more into use in general medicine. His first intention in producing this work, he tells us in the preface, was to publish a series of illustrations accompanied by an account of the cases from which they were made. He, however, thought that a systematic account of the subject would increase the utility of the illustrations and notes. The cases described were met with in the course of his medical work, and he took great care in securing the utmost possible exactness in his illustrations. Some of the plates are in colour, but more are autotype reproductions of sepia drawings, probably used for the first time in illustrating medical works. His chief object was to fix the attention on changes of form rather than alterations in colour, which, important as they are, very often mislead the inexperienced. He believed that if the illustrations were studied with the aid of the descriptions prefixed to them the absent colours of the sepia drawings would not be missed by those accustomed to the use of the ophthalmoscope. Where changes of tint are of predominant importance chromo-lithography was employed for the illustrations. The illustrations, which are a striking feature of the book, were all drawn by Gowers himself. One point on which he laid great stress was the importance of a student learning how to use the ophthalmoscope early in his practical work, so that he could begin clinical and hospital life with a degree of expertness otherwise only attained just before he left the hospital. He further recommended that the condition of the fundus should be systematically described in medical case-taking. The work certainly had a great influence in teaching the medical profession the importance—as an aid to diagnosis of many diseases—of the condition of the fundus. It met with well-deserved success, and a fourth edition, in the preparation of which he was assisted by Mr. Marcus Gunn, appeared in 1904. German and Italian editions of this work were published. In November of the same year that saw this important work (1879) he published a small book on *Pseudohypertrophic Muscular Paralysis*, which contained a lecture delivered at Queen Square with reference to the cases seen and papers published by other clinicians. In 1880 appeared *The Diagnosis of Diseases of the Spinal Cord*—an enlarged and revised version of a lecture delivered in the previous year before the Wolverhampton Medical Society. The practical advice in the diagnosis of what was then a very difficult subject which he gave in this small work (80 pages) was so much appreciated by the profession (a third edition being published in 1884), that he was asked to write a similar book on the diagnosis of diseases of the brain. This larger work contained the substance of eighteen lectures delivered at University College Hospital, and was published in 1885. A second edition was called for two years later. Both books filled an important gap in medical literature of their day, and were deservedly popular with the profession.

Epilepsy and its allied conditions was a subject which always interested Gowers very deeply, and to which he gave very close study. His book on *Epilepsy and other Chronic Convulsive Disorders, their Causes, Symptoms, and Treatment*, was published in 1881. It was founded on the experience of 1,450 cases under his care, chiefly at Queen Square, which had provided him with the substance for his Goulstonian lectures in the previous year. The book, however, contained about four times the material of the lectures as published in the journals of the day. A second edition, based on an experience of 3,000 cases of epilepsy, was published in 1901. The work was translated into French.

His *Manual of Diseases of the Nervous System* in two volumes was published in 1886. It was an attempt to give an account of diseases of the nervous system sufficiently concise to be within the compass of the time-pressed student or busy practitioner, and yet adequate in its outline of a subject which had become wide and deep beyond any other part of medicine. At the same time, he felt that success in both these aims could scarcely be more than approximate. Many of the numerous illustrations were original drawings. He purposely left out subsidiary letters in the illustrations of the lesions of the spinal cord. He considered that a knowledge of the structural topography of the cord is the first requisite in the study of its morbid anatomy, and when this knowledge is gained the figures would be understood without difficulty. In his opinion, familiarity with unlettered illustrations facilitated the comprehension of sections of the spinal cord. It may be questioned whether the plan of leaving the time-pressed student or busy practitioner to work up his anatomy of the spinal cord from other books, and to know it sufficiently thoroughly to be able to manage with the incompletely described figures, would recommend the work to its public as much as its merits deserved. Nowadays such a method would probably not be a recommendation for a student or practitioner's book, however good it might really be for them if they only knew and prepared accordingly. A second edition of Volume I appeared in 1891, and of Volume II in 1893, and a third edition of both in 1899. This work was translated into German and Italian, and also published in America. A collection of clinical lectures on diseases of the nervous system was published in 1895, and a second series, chiefly on subjective sensations of sight and sound, and a biography in 1904. Most of these lectures had previously appeared in various medical journals.

Another small work (131 pages), published in 1892, was his *Syphilis and the Nervous System*, a revised reprint of the Lettsomian lectures for 1890 delivered before the Medical Society of London. An interesting feature of the lecture was the close inquiry into the frequency of the disease and the warning that the absence of history of infection by no means precludes the presence of the disease. He related Radcliffe Crocker's inquiry, carried out at his request, into the frequency of a history of chancre in tertiary skin lesions—an inquiry that showed a negative history in 20 per cent. of cases. The difficulty in getting a history of infection in cases of presumably syphilitic nature in more general practice was also emphasized with interesting experiences of his own. He also stated his belief that, apart from embolism and injury, sudden hemiplegia coming on between 25 and 45 years of age is very seldom due to any other cause than syphilis. In 25 per cent. of such cases the hemiplegia comes on within two years, for the rest within fourteen years of infection. As to treatment, he pointed out that much depends on the nature of the pathological change which has already taken place; and that the prognosis must accordingly be decided on the history of each individual case. One of his last books was a variant on his earlier work on epilepsy and had the title, *The Borderland of Epilepsy, Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms, and their Treatment.* It was published in 1907. He had kept for many years a special list of all cases which seemed to be on the borderland of epilepsy—near it, but not of it. When these cases were collected and classified they revealed a number of unfamiliar facts and taught many lessons. The groundwork of the book originally appeared in the *Lancet* and the JOURNAL, but it was rewritten for the purpose of this book.

Gowers's great interest in shorthand in his early days has already been referred to. It had an abiding fascination and usefulness for him, and was a royal road for his house-physicians or students to his heart. If any of them in after-years could write a letter in shorthand to him they were sure of its ready reception, and a fuller reply in kind than they might have received had they adopted the usual method of correspondence of their less gifted fellows. In a previous generation, when neurology was more feared than studied in England, if a man knew this subject

well, and especially if he carried an ophthalmoscope ready for use in his pockets, he was probably an old student at Queen Square, and if, in addition, he could write shorthand, almost certainly one of Gowers's house-physicians there.

In December, 1894, Gowers founded and became the first president of the Society of Medical Phonographers. The membership at the beginning of the life of the society was 60, and this grew until, at the inaugural meeting in July, 1895, it was 175. Gowers delivered the inaugural address on "Writing and Shortwriting in Relation to Medical Work" (BRITISH MEDICAL JOURNAL, 1895, vol. ii, p. 817). The society has led an active life, publishing a journal in shorthand, with contents like an ordinary medical journal, for many years.

It will be seen that Gowers was a prolific writer in his active years. While his subjects were mostly of neurological nature, he also wrote articles on dilatation of the heart, leucocythaemia, and Hodgkin's disease for Reynolds's *System of Medicine*. In addition, he wrote the articles on medical ophthalmology, paralysis agitans, and epilepsy for Allbutt's *System of Medicine*. His skill as a draughtsman can be seen by the life-like drawings by which he illustrated his books. Etching was a favourite hobby, and he exhibited in the Royal Academy. He received the honour of knighthood in June, 1897, on the occasion of the celebration of the Diamond Jubilee of Queen Victoria. In the following November he was entertained at dinner by the Society of Medical Phonographers, who presented to him an illuminated address. Sir William Broadbent, who was in the chair, in complimenting the guest, said very truly that, besides his original contributions, he had taken up the raw material of knowledge wherever it was to be found, and had worked it up into a piece of most beautiful texture, presenting the difficult problems of nervous physiology and nervous disease in the clearest way.

With such a world-wide reputation as an investigator and writer in the science of neurology, he was naturally honoured by many of the foreign scientific and medical societies. Thus he was a Fellow of University College, London; an honorary member of the Russian Medical Society; of the American Neurological Association; of the Netherlands Psychological Society; of the Royal Society of Science of Upsala; and of the Society of Internal Medicine, Vienna. He married in 1875 Mary, daughter of Mr. Frederick Baines of Leeds. She died in 1913.

During the Seventies and early Eighties Gowers was one of the most prominent figures among the younger rising consultants in London. Reputations were then very largely made in certain of the societies—the Pathological, the Clinical, and the Medico-Chirurgical. He was a ready and forcible speaker, and never spoke unless he had something to say. He diligently made use of his great opportunities to enlarge his clinical experience; he was a competent microscopic anatomist, a bold and original thinker, and very well read in the foreign literature of his subject. He was, therefore, a formidable antagonist, and perhaps at this stage of his career was more admired than liked by his contemporaries. He was not ungenerous in the recognition of the work of others, but he was so eaten up by zeal for the advancement of neurology, and so confident in the truth of his own conclusions, based as they were on extensive observation and wide reading, that he often seemed over-dogmatic. Even in his clinical teaching of students he was so extremely dogmatic as to raise resentment in some minds. But he was a very impressive and stimulating teacher, and sent his hearers away from a clinical lecture perhaps to argue that he was wrong—he was usually right—but certainly keenly interested in the subject. At a time when neurology was beginning to emerge from a stage in which pathology was confused and diagnosis summary, Gowers insisted on tracing symptoms to their origin and an accurate regional diagnosis being made. The students gave him the nickname of "primary lesion," and respected what they did not always fully understand. But his teaching was not very well adapted to the ordinary run of young students.

He found his true place at the Hospital for Paralysed and Epileptic at Queen Square. There, with a small class of advanced students or men who had already been some years in practice and wished to improve their knowledge of nervous diseases or to become specialists, he was seen at his best. It was perhaps a consciousness of this that led him to retire at a comparatively early age from active work at University College Hospital, though a contributory cause was, no doubt, the early and remarkable success he had attained in consulting practice. Far from being spoilt by success, he was very much the better for it; without any diminution in the earnestness and confidence with which he expressed his conclusions and settled opinions, he grew more tolerant and ready to listen, and the attention with which he received a doubter's question was sometimes even embarrassing. His clinics at the Queen Square Hospital became famous: he did not proceed usually by the favourite method of his master Jenner by questioning one of the class, and leading him either to the solution or into a maze; Jenner perhaps rather preferred the latter result, for it enabled him to hark back to the point where the wrong scent had been picked up. Gowers's method was more a kind of thinking aloud. After a few questions and gaining a first rapid general impression, he would himself take a very full history, noting the facts in shorthand and as it were underlining the important points by reading out his note. Then came a very thorough examination, each sign and symptom being observed and stated aloud. The patient was then sent away, and the whole case reviewed, possibilities debated, and the diagnosis reached by the process of exclusion. Any remark from a member of the class at this stage which tended to raise a doubt as to the sufficiency of the grounds of exclusion was always well received, and often gave occasion for an interesting excursus. Finally, the discussion of prognosis was attended by a change of manner, and even of the tone of voice, very characteristic of his mental attitude. Very accurate in discovering and very confident in interpreting the facts that could be observed at that time and place, he grew very cautious when asked to foretell the future, his immense experience having taught that the power of resisting the progress of disease varies enormously, and that both in the upward and downward course Nature has many surprises with which to confound the prophet. There can be no doubt that in neuropathology Gowers was a very remarkable teacher, and that both in that capacity and as an original investigator he did very much to enlarge its bounds and to improve its practice, especially in relation to diseases of the spinal cord.

As has been said, he early attained to great success in practice, and for a good many years was one of the busiest consultants in London. Then his health began to decline; the beginning seems to have been a severe attack of sciatica, which continued to trouble him and to limit his activities for years. He never regained his old vigour, and aged prematurely in appearance. In the winter of 1912–13 both he and his wife suffered at the same time from pneumonia; she died, but he recovered. He had been living since in retirement in Ladbroke Square, W.

DAVID EDWARDS, M.R.C.S., L.R.C.P.,

MOLD.

WE regret to announce the death of Dr. David Edwards, of Mold. Dr. Edwards, who was 62 years of age, began the study of medicine as a pupil of Dr. Hughes, of Bala, and continued it at University College, London. He obtained the diplomas of L.R.C.P. and M.R.C.S. in 1875. He was born at Mold, and was a son of the Rev. Roger Edwards, a well-known Nonconformist minister and brother of the late Rev. Ellis Edwards, D.D., Principal of the Bala Theological College. After holding the appointments of obstetric assistant and physician's assistant in the children's wards at University College Hospital he returned to practise at his native place, where he spent the whole of his professional life. He was surgeon to the Mold Cottage Hospital, and a J.P. He was one of the senior members of the Denbigh and Flint Division of the British Medical Association. He was very popular as a medical practitioner in Mold and the surrounding district, and although always busy professionally, he found time to take his share in church work and in local public life. He was held in the greatest esteem by his colleagues, being a man of high ideals, in accordance with which he steadily acted. He was Vice-Chairman of the Panel Committee, by which his judgment and wise counsel were greatly valued. The funeral of Dr. Edwards, which took place on April 27th, was attended by a large gathering

of friends, including representatives of the County Council, of which he was formerly a member; of the Insurance and Panel Committees, and of the church of which he was a deacon. Dr. Edwards leaves a widow, four daughters and a son to mourn his loss.

THE LATE DR. PANTLAND HICK.—A friend writes: "Life is short, and the Art long. . . ." Men must strive to achieve, even though they live not to see the fruits of their endeavours and achievements. Thus did Hippocrates, in his wisdom, inscribe the epitaph of the many physicians, cut off in the vigour of youth, who were to follow him with devotion and faith through the long ages. Pantland Hick was one of them. He was absorbed in his work; he spared neither his energies nor his health. Indeed, he died serving his country with the same unselfishness that he lavished on his friends and patients in their hours of need. In these times memory is short and hopes are high. Men whose deaths would cause a stir in ordinary times pass almost unnoticed. But to those who knew him Hick will always be a living memory—the memory of a physician whose powers of observation and whose frank and noble disposition would have placed him among the great physicians of the country, had he been spared to accomplish in his own modest but unswerving way that to which he had set his hand.

Major ALBERT HILTON, R.A.M.C.(T.F.), died on service in Egypt on March 4th, as recorded in the casualties in the April *Army List*. He was educated at Owens College and at the Royal Infirmary, Manchester, and took the diploma of L.S.A. in 1896 and the D.P.H. of Manchester in 1912. He practised at Hurst, Ashton-under-Lyne, and was medical officer of Hurst Union district and surgeon to the Lancashire county constabulary. He had served as President of the Ashton-under-Lyne Division of the British Medical Association. He was a Fellow of the Royal Institute of Public Health, and a member of the Society of Medical Officers of Health. He entered the auxiliary forces as medical officer on August 23rd, 1899, attained the rank of major on July 12th, 1911, and was medical officer of the 9th Battalion of the Manchester Regiment.

Lieutenant-Colonel ROBERT MARK BRADFORD, R.A.M.C. (ret.), died at Bradford Peverell, Dorchester, on April 22nd, aged 68. He was the son of the late Rev. John Bradford, of Pinhoe, Exeter, and was educated at St. Bartholomew's Hospital. He took the diplomas of M.R.C.S. and the L.R.C.P.Edin. in 1868, and entered the army as assistant surgeon in the same year. He became surgeon in 1873, surgeon-major in 1880, reached the rank of lieutenant-colonel on October 1st, 1888, and retired on October 18th, 1893. He served in the second Afghan war of 1878–80, and received the medal.

Medical News.

OWING to the absence of Sir William Osler on military service, the annual oration and conversazione of the Medical Society of London, fixed for May 17th, will not take place.

A DISCUSSION on the value of mechanical filters in the purification of water will be opened by Dr. Thomas Orr, M.O.H. Shrewsbury, at a meeting of the Royal Sanitary Institute, at the Guildhall, Shrewsbury, at 7.30 p.m., on Friday, May 28th.

COLONEL FREDERICK GREENWOOD, who become M.R.C.S. in 1847 and L.S.A. in 1848, but retired from medical practice, and was in command of the Huddersfield Volunteers till 1873, died recently at the age of 88. He left £85,078.

THE next quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at the house of the Medical Society of London, Chandos Street, Cavendish Square, W., at 3 p.m., on Tuesday, May 18th, when papers will be read by Dr. P. B. Hyslop on anger, and Dr. David Orr on research.

The French Académie des Sciences, after considering a report presented in secret committee by M. Adolphe Carnot, has passed a resolution removing from its membership four of the German "intellectuals" who signed the manifesto which excited such indignation throughout the learned world. Among those so dealt with are Dr. Wilhelm Waldeyer, professor of anatomy, and Dr. Ernst Fischer, professor of chemistry, in the University of Berlin.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Radcliffe Prize, 1915.

AT the stated general meeting of the Masters and Fellows of University College holden on Saturday, March 20th, the Radcliffe Prize was awarded, upon the report of the examiners, to Martin William Flack, B.M., M.A., University College (a former Radcliffe Travelling Fellow).

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examinations indicated:

SECOND M.B. (*Part II, Pharmacology and General Pathology*).—E. V. Beale, J. J. O. Beven, H. R. Bickerton, G. E. Birkett, J. T. Bleasdell, C. N. Carter, P. D. Chapman, H. L. Cronk, H. T. Cubbon, I. de B. Daly, W. L. Dandridge, F. N. V. Dyer, H. W. Eddison, R. French, H. H. Ginsburg, E. O. Goldsmith, G. A. Goolden, E. H. V. Hensley, L. G. Higgins, J. M. Higgington, S. M. M. Jabir, B. E. Jerwood, S. H. M. Johns, J. B. S. Lewis, C. K. Mowll, F. P. Nicholas, C. L. Odam, C. J. Penny, P. R. O'R. Phillips, S. R. Prall, G. W. Pratt, M. K. Robertson, Lewis W. Shelley, H. J. R. Surrage, M. B. R. Swann, O. S. Thompson, W. G. Verniquet, H. W. C. Vines, R. S. Woods, W. G. Woolrich.

UNIVERSITY OF LONDON.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

HER MAJESTY THE QUEEN has sent £250 to the London (Royal Free Hospital) School of Medicine for Women to pay for the training and expenses of a woman medical student. The money formed part of a fund placed at the disposal of the Queen by the wives of freemasons. The council will make known shortly the conditions for the award of the Queen's gift.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

FINAL M.B. AND CH.B.—J. C. Bramwell, J. E. Brooks.

S. G. J. Dowling passed in Obstetrics and Surgery.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on April 29th, Dr. Frederick Taylor, the President, being in the chair.

Admission of Members.

The following candidates, having passed the required examination, were admitted Members of the College:

Cyril Dudley Hely Corbett, M.D.Oxon, L.R.C.P., and Joseph Strickland Goodall, M.B.Lond.

Licences Granted.

Licences to practise physic were granted to ten candidates who had passed the necessary examinations.

Election of Fellows.

The following Members were also elected Fellows of the College:

Archibald Donald, M.D.Edin. (Manchester), George Gavin Morrice, M.D.Camb. (Weymouth), Thomas Beattie, M.D.Durh. (Newcastle-on-Tyne), Noel Dean Bardswell, M.D.Edin. (Midhurst, Sussex), Frank Cecil Eve, M.D.Camb. (Hull), John Hay, M.D. Vict. (Liverpool), George William Watson, M.D.Lond. (Leeds), Reginald Charles Jewesbury, M.D.Oxf., Edwin Greaves Fearnside, M.D.Camb., Thomas Renton Elliott, M.D.Camb., John George Adami, M.D.Camb (Montreal, Canada).

Grafton Elliot Smith, M.D.Sydney, F.R.S. (Manchester), was also elected a Fellow of the College under By-law LXXI.

Election of Representative of the College.

The President was re-elected a representative of the College on the Senate of the University of London.

Reports.

Reports were received and adopted from the Committee of Management, recommending that the University of Illinois and the following Portuguese universities—namely, University of Coimbra, University of Lisbon, and University of Oporto—be added to the list of foreign universities recognized by the Examining Board in England.

The Medical Curriculum and the War Emergency.

Another report from the Committee of Management, dated April 21st, referred to a letter received from the Dean of St. Bartholomew's Hospital Medical School suggesting that during the war it might be possible to shorten the curriculum for medical students, and a letter had also been received from the Director-General of the Army Medical Service expressing the hope that the Royal Colleges would give the matter their most earnest consideration.

The Committee of Management were of opinion that it is not desirable that the two important requirements of the Regulations (1) a minimum curriculum of fifty-seven months, and (2) a minimum period of clinical study during two winter and two summer sessions after passing in anatomy and physiology, should be relaxed at the present time.

The Committee desired to point out, however, that under the Regulations of the Board they have power to grant exceptions to the Regulations, and that they have already exercised this power in cases where the two important principles above

referred to have not been involved. The Committee are prepared to antedate the commencement of the curriculum in cases where students have pursued medical or scientific study before passing the preliminary examination, or before entrance at a medical school, and they believed, from inquiries which have been made, that this procedure will enable the majority of the students referred to by the Dean in his letter to enter for the final examination three months earlier than would otherwise have been possible, and yet with a full curriculum of fifty-seven months.

The report was adopted.

After some further formal business, the President dissolved the Comitia.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual elections by the Council of the College will take place on Thursday, July 1st. There will be five vacancies occasioned by the retirement of Sir Rickman Godlee, Bt., Mr. Mansell Moullin, Mr. Charters Symonds, and Mr. Ryall, and by the death of Mr. C. B. Lockwood. Mr. Moullin and Mr. Charters Symonds have served as members since 1907, the full term of eight years. Sir Rickman Godlee, re-elected in 1905, retained his seat two years longer as President. Mr. Ryall was elected as substitute for Mr. Jonathan Hutchinson, jun., who retired a year ago, when occupying a seat as substitute for the late Mr. Bruce Clarke until 1915. We understand that Mr. Ryall is a candidate for re-election.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—H. J. Bradlaw, J. P. Cleary, B. A. Cohen, J. F. Gallagher, T. P. Harpur, J. McAleer, P. McAndrew, T. F. McCay, J. C. M. Martin, M. J. O'Riordan, L. R. Reilly.

SECOND COLLEGE.—*J. J. Brennan, J. Coman, *W. E. Cooke, *T. N. D'Arcy, J. P. Doyle, P. J. Greene, *S. J. Healey, G. A. Henderson, M. J. O'Connor, V. R. O'Connor.

THIRD COLLEGE.—D. Boland, T. Curran, B. J. Daunt, G. Dunne, J. J. Hayes, J. F. Seale, J. P. Sheridan, B. J. Steele, A. R. Soady, J. Young.

FINAL COLLEGE.—W. H. W. C. Carden, C. F. Coyne, D. B. Donohoe, W. J. Dunlop, O. Farrelly, S. E. Gordon, J. D. Hamilton, R. J. Hennessy, M. J. Loftus, J. F. Lyons, J. T. McConkey, W. G. McConnell, J. Murnane, P. J. Murphy, J. V. O'Brien, D. V. O'Connor, Mary E. R. Welply.

DIPLOMA IN PUBLIC HEALTH.—J. F. Lobo, Captain W. C. Smales, R.A.M.C.

* With honours.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association, being anxious to assist in facilitating exchanges between medical officers of the Territorial Force in accordance with the War Office letter of December 10th (BRITISH MEDICAL JOURNAL, February 27th, p. 402), is prepared to publish in the JOURNAL applications for exchange. In all cases officers desiring exchange should furnish information on the following points:

1. Rank and name .....
2. Regiment *or* medical unit .....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally .....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Present address and date .....

Captain C. H. Pentreath, R.A.M.C.(T.), attached medical officer to 2/6th (Home Service) Battalion, The Essex Regiment (T.F.), at present stationed at Stamford, Lincolnshire, wishes to make an exchange with a medical officer attached to a base hospital, or home service field ambulance stationed within twenty miles or so of Windsor or Maidenhead. The work is extremely light. The pay is 15s. 6d. a day for captain or 14s. for lieutenant *plus* 4s. 9d. a day billeting allowances. A junior medical officer (lieutenant) or elderly practitioner desiring home service only would find this a suitable appointment.

Public Health.

LUNACY FEES IN POOR LAW CASES.

J. M. T.—The fee to which our correspondent would be entitled depends on the order of the magistrate for whom the certificate was furnished. In most cases a fee of one guinea is ordered, where a lunatic is certified, except in Poor Law cases, where the smaller fee of half a guinea is perhaps not unusual.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. R. desires to hear of a home into which a woman, aged 26, suffering from neurasthenia following chronic dyspepsia, could be admitted for massage and electrical treatment; her means are limited.

INCOME TAX.

C. J. S. D. has purchased a practice, the consideration being payment to the widow of the previous proprietor of the amount of the earnings for one year. The surveyor of taxes informs him that he must pay income tax on those earnings notwithstanding the fact that they go to the widow.

*** The surveyor's contention appears to be correct. The point is that our correspondent cannot deduct as a professional expense any sum that really represents an outlay of capital on his part. The purchase of a new practice is clearly a capital and not a current expense, and "C. J. S. D.," therefore, cannot deduct the amount in determining his liability to income tax. In the hands of the widow the sum represents capital also, and tax would not be payable by her. At the end of the year the position is that our correspondent has paid tax on a certain "income"—say £1,000—and has spent that "income" on the purchase of a medical practice.

ANSWERS.

URTICARIA.

DR. LEONARD J. KIDD (London) writes: Let "Vladimirow" try calcium sulphide gr. $\frac{1}{15}$ at bedtime daily, instead of calcium chloride, regular small doses of thyroid extract, and stop adrenalin.

DR. HENRY WALDO (Bristol) writes: I suggest that ichthyol may be effective. It is usually given in capsules (5 minims three times a day). The late Professor McCall Anderson told me that he got some of his patients to take teaspoonful doses.

LETTERS, NOTES, ETC.

A CURE FOR GERMAN MEASLES.

THE following prescription, attributed to a Dr. Cannon, has, according to the *Canadian Medical Association Journal* for April, been widely recommended as a sure cure for the German measles: Mix some Woolwich powders with tincture of iron and essence of lead, and administer in pills; have ready a little British army (a little goes a long way), some Brussels sprouts, and French mustard; add a little Canadian cheese and Australian lamb, and season it with the best Indian curry. Set it on a kitchener, and keep stirring until quite hot. If this does not make the patient perspire freely, rub the best Russian bear's grease on his chest and wrap in Berlin wool. As to diet, the patient must on no account have any *peace soup* until the swelling in the head has quite disappeared.

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Remarks
ON
CASES OF NERVOUS AND MENTAL SHOCK
OBSERVED IN THE BASE HOSPITALS IN FRANCE.

BY WILLIAM ALDREN TURNER, M.D., F.R.C.P.,
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TEMPORARY LIEUTENANT-COLONEL R.A.M.C.

CASES of nervous and mental shock may be counted among the more interesting and uncommon clinical products of the present war. Cases of this character began to arrive in England shortly after the commencement of hostilities in which British troops were engaged, and have continued to be met with in our base hospitals at home with varying degrees of frequency up till the present time. It was soon recognized that one type of case was due to the explosion of big shells in the immediate vicinity of the patient, who did not himself receive any detectable physical injury or bodily wound. Intermingled with the cases of this nature, cases of a general neurasthenic character were found whose symptoms were attributable to exhaustion of the nervous system induced by physical strain, sleeplessness, and other stressful conditions associated with the campaign.

It has been my privilege to have been able to study the early symptoms of nervous and mental shock, from whatever cause, during a period of three months at the base hospitals in France. I have thought, therefore, that it would be of general interest if a short account were given of the various clinical manifestations of nervous shock, observed in patients upon admission to these hospitals, before they were transferred to the special institutions at home which have been provided for their reception and subsequent treatment.

In a general way the frequency of these "shock" cases depends upon the intensity and character of the fighting at the front. The severe fighting in Flanders and around Ypres in the latter part of October resulted in a large number of such cases being sent down to the base. The numbers of the cases subsequently diminished, and during the earlier months of this year were relatively small, with occasional accessions, the outcome of such engagements as took place on January 25th and 26th and March 10th to 12th. One of the features of the early fighting was the heavy shelling to which our troops were subjected, and which to a large extent accounted for the prevalence of nervous shock at that time. In addition to the "shock" cases, as such, other forms of functional nervous and mental disorder were observed and studied. These cases are of general interest as showing the effects of "wear and tear" upon the nervous system under the conditions of the present campaign.

If one studies the cases of nervous and mental shock, it will be seen that the symptoms are widely distributed throughout the nervous system. In the first group, there is a definite type of mental shock in which the symptoms are essentially of a psychical character. In the second group there is a spinal type characterized by a limitation of the symptoms to the extremities, and usually to the lower limbs. In a third group the symptoms are referred more particularly to the special senses. In this class the remarkable cases of blindness or amblyopia, deafness and deaf-mutism have been included. More specialized symptoms, such as stammering or hesitation of speech, local palsies and tic-like movements, have been included in a fourth group.

It should be borne in mind that whatever the special symptoms may be, the patients have been subjected in most instances to prolonged and often serious general nervous strain.

PSYCHICAL SHOCK: MENTAL STUPOR.

From time to time cases are sent down from the Casualty Clearing Stations in a state of mental stupor. Some of these cases are unaccompanied by any history or statement which would throw light upon the cause or method of onset of the symptoms. Other cases of a similar though less profound type of stupor, on recovery from the acuter phases, are able to give some account of the nature of the psychical shock through which they have passed.

The symptoms exhibited by these cases of stupor are interesting and create a clinical picture of a striking character. In the more severe class of case the patient is entirely unconscious of his surroundings. All the usual tests applied with the object of arresting attention—such as throwing a bright light on to the eyes, pinching the skin, or clapping the hands close to the ears—fail to provoke a response. The deep reflexes, however, are normal or brisk, and the plantar response is of the flexor type. The pupillary light reflex is frequently impaired or lost. Urine is passed normally; swallowing is carried out usually without difficulty.

In some cases the patient would appear to be living again through an experience of the past, probably associated with the time of onset of the symptoms. in a very striking instance the patient lay curled up under the bedclothes. From time to time he would look out, as if peering over the parapet of a trench, stare wildly around him, and then hide under the clothes. These actions were often repeated and lasted for several days with gradually diminishing frequency. In another case of a somewhat similar character the patient would suddenly start and sit up in bed and look around him, crying out, "He's gone, he's gone." It was subsequently ascertained that this patient's brother had been killed when fighting beside him in the trench. Many of these cases present a scared or startled appearance. When approached they shrink and hide under the bedclothes. Others are dull, lethargic, and apathetic, taking no interest in what is going on around them.

A closer examination reveals a marked degree of rigidity of the limbs in most of the cases. As a rule all the extremities are affected; the thighs are tightly flexed upon the abdomen and the fingers clenched in the hands. In one case there was a decided tendency to catatonic rigidity. In another case of genuine shock the rigidity had a hemiplegic distribution affecting the left arm and leg. In this case the deep reflexes upon the left side were exaggerated and the plantar response was abolished.

In the milder type of case the stupor is less profound. These patients may carry out simple actions, such as putting out the tongue when requested to do so, but in a slow, apathetic, and hesitating way. They present a dazed appearance, are readily startled when spoken to, and take little or no notice of what is going on around them. Even in the slightest cases some rigidity of the limbs may be detected, which gradually passes off as the mental condition improves.

A consideration of these cases shows that the patient is probably in a state comparable to what is observed in the "hysterical stupor" or hypnoidal state of civil practice. The evidence would seem to show that he is living through some past experience of a terrifying kind. When information has been obtained upon the possible cause or origin of the symptoms it has been found to be of a psychical character, such as seeing a friend or relative killed by his side.

On the other hand, there were cases of a severe type in which no history was obtained. It is permissible to assume that they may have resulted from shell explosion, or from repeated and continuous shelling. These symptoms are found mainly in young soldiers; in no case has the patient been over 28 years of age, the majority being about 22 or 23.

The duration of the stupor varies. In some cases the intensity of the shock has passed off before admission to the base hospital. In those admitted in stupor the symptom persisted for several days and then suddenly passed away, the patient having no recollection of what had taken place in the interval. In other cases a more gradual recovery ensued, the patient being sent home before complete recovery had taken place. The general outlook for recovery is decidedly favourable. Rest, quiet surroundings, and ample nourishment are the main points of treatment.

LOSS OF MEMORY.

Comparable in many ways to the cases of stupor just described are those cases of loss of memory, or transitory amnesia, which are admitted to the base hospitals for further observation. Prolonged fatigue and exhaustion,

coupled with continuous shelling, seem to be the primary causes of these mental breakdowns. The history furnishes evidence that the patient had been found wandering, and was unable to give a satisfactory account of his movements. On inquiry of the patient himself as to what had happened to him, one is told that he had been under heavy shelling for a time just previous to his "losing consciousness," as he says. One such patient said that in the stress of the engagement he had "lost his head" and became unconscious.

The loss of memory may extend over a period of several days. The patient has no knowledge or recollection of what has happened to him during this interval. Attempts to bring back the memory by suggesting possible events or circumstances have not met with success. In one patient, however, the memory was partly restored by a striking association. When lying in hospital, he saw a number of men being prepared for inoculation against enteric fever. This recalled to his mind that he himself had been inoculated a few days before the loss of memory came on. From this clue he was able to give some account of himself, although his memory for a period of three or four days had not returned by the time he was sent home. Attempts to recall the memory by the use of "word associations" were not tried.

In addition to the loss of memory, the patients complain of headache, and sometimes of a feeling of strangeness and discomfort in the head; the head, they say, is muddled. Sleep is disturbed at first. The reflexes are normal, although the pupillary light reflex may be impaired. Recovery takes place satisfactorily with rest in bed and ample feeding.

Deafness and Deaf-mutism.

Deafness of a transient character is not an uncommon symptom resulting from the explosion of big shells in close proximity to the patient. In addition to the deafness the effects of the explosion are a stunning or dazing of the mental faculties and sometimes temporary loss of consciousness. In other cases the patient is "blown away" or forcibly precipitated on to the ground by the violence of the explosion. On recovery from these immediate effects the patient discovers that he is deaf in either one or both ears. If all cases are eliminated in which the tympanic membrane has been ruptured, or in which signs of previous or old-standing middle-ear disease were observed, a number of cases remains in which an examination reveals a nervous type of deafness. The watch may not be heard except on contact, and Rinne's test is positive; in one-sided cases submitted to Weber's test, the tuning-fork is lateralized to the hearing ear. This form of deafness is not of long duration. It may pass away in a few hours, or at most in a few days. The general symptoms of neurasthenia may persist for a longer period.

Deaf-mutism is another effect of the explosion of big shells, and provides one of the clinical surprises of the war. In all the cases observed this cause was given by the patient in explanation of his symptoms, although in one case the patient appears to have been buried as well. As the patient is able to write an account of the incidents which led to the onset of his symptoms, the following statements are given as characteristic of all the cases. "We had been in the trenches for thirty-two hours and we were being shelled. The front of the trench was blown down in three places. One shell exploded right over my head and buried me. I do not remember anything until about a quarter of an hour later, when I found I could not speak or hear, and I was shaking all over. In about twenty-eight hours my hearing came back, but I have not been able to speak since." Another patient wrote: "I was coming out of a ditch to go to the store for ammunition when a shell burst right over my head and knocked me down. When I recovered consciousness I was lying in a reserve trench occupied by some of our men, two of whom had come along the ditch and found me lying there. One of them spoke to me, and it was then that I discovered that I could not hear or speak." The examination of the sense of hearing reveals deafness of the nervous type. The distance at which the watch can be heard is either *nil* or very greatly reduced, and the Rinne reactions are positive. Should the ears not be equally affected the tuning-fork when placed on the forehead is lateralized to the better ear. Tinnitus, giddiness, and staggering gait are not present. I have never observed nystagmus. The mutism may be complete, though in less profound cases the patient may speak in a whispered voice. Attempts at phonation may be accompanied by movements of the lips and facial muscles.

In the early stages deaf-mutism may be accompanied by general symptoms of shock, such as headache, tremors, twitching movements of the limbs, and insomnia. In the later stages it is the only symptom present, the patients being frequently bright and very sensitive of their disabilities. The deep reflexes are normal, but I have found the palatal reflex abolished and the plantar responses often difficult to elicit. The cases of deaf-mutism would appear to be more persistent than those of simple deafness. One case which was examined three weeks after the onset was still completely deaf and dumb.

Blindness and Impairment of Vision.

In comparison with the cases of deaf-mutism just described, blindness or impairment of vision following the explosion of shells is relatively infrequent. There would appear to be two types of case in which blindness is complained of in consequence of shell explosions.

In the first class quite a number of soldiers suffering from the symptoms of a general mild neurasthenia following prolonged fatigue complain of being blind. An examination of these cases shows that they are not really blind, but are suffering from photophobia and tonic spasm of the eyelids (blepharospasm). Further investigation into the origin of the symptoms reveals that at the time of the explosion sand, dust, or mud was blown into the eyes, and had given rise to conjunctivitis, hypersensitiveness to light, and spasm of the eyelids. Recovery takes place quickly under suitable local applications and rest.

In the second class the patients suffer from a temporary blindness or impairment of vision. In the cases of this character which were examined, consciousness was stated to have been abolished temporarily at the outset. In addition to the loss of vision, the eyeballs are tender to pressure in the early stages. The pupillary light reflex is normal. An ophthalmoscopic examination shows no structural change in the media, retina, or optic discs. In one case in which the blindness was unilateral, an associated partial ptosis of the upper lid on the same side was present. In another case the examination revealed a large patch of opaque nerve fibres. In a third case Colonel Lister found a slight peripheral contraction of the visual fields. Most cases show some error of refraction. Recovery is said to be complete eventually, although I have myself not been able to observe a case sufficiently long to ascertain the duration of visual impairment.

Stammering.

Hesitation of speech has been observed in several cases in consequence of shell explosions. As in the previous cases of shock, the impediment may or may not be preceded by a temporary loss of consciousness. The onset of the symptoms is favoured by previous conditions of fatigue, sleeplessness, and exposure. Most of the patients were suffering from an associated neurasthenia. The symptom itself corresponds in every way with that seen in civil life. The organs and muscles of articulation are of normal character and development, but co-ordination in their movements is defective. The outlook for recovery is good, although the symptom may persist for several weeks.

Local Palsies and Spasms.

These cases are not common, and the symptoms are confined to the eyelids. Those examined have been ptosis and spasm of the orbicularis palpebrarum. The ptosis may be unilateral or bilateral, and present all the features of a functional palsy. The spasm is associated usually with local irritation and conjunctivitis. There was one case of "blinking tic" seen in consultation with Colonel Lister. The case was not a true one of nervous shock, as the symptoms had commenced when the patient was at his work before joining the army. The onset was attributed to some chips of iron being forced into his eyes. A fall upon his forehead when on service had greatly increased the blinking.

Spinal Shock: Paraplegia.

The outstanding symptom of spinal shock is loss of power in the legs. This is brought about by shell or mine

explosion in the immediate vicinity of the patient, with or without an accompanying burial of the patient in the trench or resulting débris. It has been found also as a result of a fall, the patient being knocked over and striking his pack against the wall or parapet of the trench and injuring his back indirectly in this way.

In a characteristic case the symptoms and signs are somewhat as follows: The paralysis comes on suddenly, the onset being accompanied by a temporary stunning or dazing of the mental faculties. In other cases temporary loss of consciousness follows the shock, and on recovery from this the patient finds that he is unable to move his legs. In those cases which have been buried with or without an associated loss of consciousness, the paraplegia is discovered as soon as the patient is dug out. There may or may not be a transient retention of urine. If it is present it lasts for about twenty-four hours, and requires the use of the catheter; this retention is succeeded by a difficulty in passing urine for two or three days. An examination of the legs reveals a more or less complete motor paralysis, the muscles in some cases showing a slight degree of spasticity or hypertonus. The deep reflexes are either brisk or of normal intensity. The plantar responses are in all cases of the flexor type, although one or both may be lost or impaired if the case is seen in a very early stage. The abdominal reflexes usually are present. An examination of the sensory functions reveals a complete or partial sensory loss both to painful and tactile sensibilities of the "stocking" type. The joint sense of the feet and toes may or may not be impaired. An examination of the back fails to show outward or visible evidence of bruising or injury. Percussion of the spinal column may be accompanied by some degree of localized tenderness, and the patient experiences difficulty in turning in bed owing to the pain or discomfort which accompanies this movement. In this class of case the outlook for recovery is good; movements begin to return in the legs within a short period, and the patient is able to walk about in three or four weeks, or less.

There would appear, however, to be a graver type of paraplegia, in which the symptoms suggest an organic disturbance of the spinal cord or its nerve roots. Dr. T. R. Elliott[1] has described cases of transient paraplegia following shell explosions, especially in those who have been buried in the trench. The symptoms of this form are complete paralysis of the legs characterized by a lowering of the muscle tone or hypotonus, and a depressed state of the reflexes. There is generally a band of hyperalgesia at the upper limit of the area of numbness, and the spine is acutely tender over a localized area. The sphincters are rarely affected except in the severer forms. The plantar reflexes never show an extensor response.

Taking into consideration the fact that the cause and method of onset are similar in both types of case, the relatively slight clinical differences scarcely warrant the assumption that the first type of paraplegia is "functional" and the second organic. Moreover, it is clear that the men who have been buried under a mass of clay, or who have received a definite injury to the lower dorsal or lumbar portion of the vertebral column have been submitted to a local trauma of the back which the shell explosion cases have escaped. In the only case of Dr. Elliott's in which *post-mortem* examination was made, it was noted that the spinal cord was normal, although the muscles of the back were bruised and infiltrated with blood as far down as the sacral spines It is conceivable, therefore, that the slight difference in symptomatology may merely indicate different degrees of general and of spinal shock. The duration of the symptoms in the latter type is stated to be longer than in the former, but the outlook for recovery is good, the patient being able to walk about within a few weeks.

Although the legs bear the brunt of the shock, paralysis is not invariably confined to the lower extremities. Cases were observed in which one or both arms may be similarly affected, although to a less degree, and others have been seen in which deafness or even impairment of vision have been accompaniments of the paraplegia.

NEURASTHENIA.

The cases of neurasthenia which are met with in the base hospitals resemble in essential features those seen in civil practice. A common history, as given by the patient, is that after he has been abroad for several weeks or months he begins to sleep badly, loses appetite, and feels "run down." Often the breakdown goes no further, and a short rest relieves the symptoms, and the patient is able to return to duty. On the other hand, to these symptoms may be added feelings that he is incapable of doing his duty properly, he loses confidence in himself, and begins to worry about his health. In more severe cases the patient loses weight and complains of flatulence, constipation, and dyspeptic symptoms.

In this type of case the cause is found usually in the exacting conditions under which the patient is living. In many instances he may persevere with his work until a severe psychical shock—such as seeing one of his friends killed beside him, severe shelling, an upsetting experience, or bad news from home—unsteadies him, and precipitates a definite attack of neurasthenia, requiring rest and treatment at home. An inquiry into the history of these cases will reveal usually either a previous attack of neurasthenia or occasional sleeplessness.

On the other hand, there is observed a form of temporary "nervous breakdown" scarcely justifying the name of neurasthenia, which would seem to be characteristic of the present war. This occurs in those who have been strong and well, and is ascribed to a sudden or alarming psychical cause, such as witnessing a ghastly sight or undergoing a harassing experience. As the result of such a shock the patient becomes "nervy," unduly emotional and shaky, and most typical of all, his sleep is disturbed by bad dreams. The dreams are of experiences through which he has passed, of shells bursting, of duels between aeroplanes, or of the many harassing sights of the war in the trenches. Even the waking hours may be distressful from the acute recollection of these events revolving in his memory. Headache, slight mental depression, and fine tremor may be accompaniments of these symptoms. There is usually an entire absence of objective signs; the deep reflexes are normal, the pupils respond to light, the tongue is clean, and the pulse of normal frequency. Recovery is satisfactory, especially if the patient is sent home for a complete rest.

Various modifications of the usual type of neurasthenia, as just described, are observed. For example, there is a type characterized by *anxiety* as the main feature. This may take the form of fear or apprehension as to his ability to do his duty, or fear of being left alone, or of having made a serious mistake in his work. In one case the patient conceived the idea that he was unable to hold his rifle. Should the anxiety be concentrated upon his health the patient develops symptoms of a definitely *hypochondriacal* character.

Other cases, again, are accompanied by excessive *motor agitation*, in which tremulousness of the face, tongue, and limbs is associated with a nervous and agitated manner. Cases of generalized tremor are found also, although they are less common and more persistent than the types already described. In the cases of this sort which were examined the tremor was mainly in the head and neck, although the limbs did not entirely escape.

Passing from the comparatively simple types of neurasthenia, we meet next with those of a more aggravated kind.

Acute insomnia may be included under this heading. This symptom would seem to be more common in those whose duty confines them to an office, especially where responsibility weighs heavily upon the individual. It has been found also in consequence of prolonged strain and continuous shelling. Other forms assume a more depressed character and merge into *melancholia*. Other aggravated forms have the features of the *exhaustion psychoses*, and develop symptoms of mental confusion and maniacal excitement.

In conclusion, it may be stated that a form of neurasthenic breakdown may be found in cases admitted for medical disorders, especially of the gastro-intestinal tract, such as gastritis, enteritis, and colitis. It happens occasionally also that patients suffering from surgical wounds of the head show acute neurasthenic or psychical symptoms, which may persist after the wound has healed; these cases do not come within the scope of this paper.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, December 12th, 1914, p. 1005.

EPIDEMIC CEREBRO-SPINAL FEVER: ITS RECOGNITION AND TREATMENT.

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THE following must be read in conjunction with our previous articles, and it must be borne in mind that we still insist on the protean nature of the disease and the necessity of diagnosing it on only a few symptoms. The disease rarely presents a classical picture. Further, we would again call attention to the three stages of the disease described by us. Our later observations have led us to associate more symptoms with Stage II than we originally thought belonged to it.

STAGE I.—CATARRHAL.

In a series of 170 cases the symptom which stands out predominant in its constancy is an initial naso-pharyngitis. Every patient has admitted to suffering from this, and this condition was present not only in the series of 170 cases definitely diagnosed as cerebro-spinal meningitis, from fluid obtained by lumbar puncture, but in every definite carrier. It is of the highest importance that this throat condition should be early recognized.

On looking at the throat the uvula is generally seen to be oedematous and flabby, with the venous radicles standing out distended and tortuous. The anterior pillars of the fauces are reddened and injected, as is also the posterior part of the soft palate and the posterior pharyngeal wall. The condition differs from the throat in scarlet fever in the colour being of a deeper hue, probably due to venous stasis.

In practice attention is called to the existence of an abnormal throat condition, by the huskiness of the voice and a complaint of dry cough.

The type of catarrh generally is a dry one. Any mucus secreted is viscid and tenacious, and difficult to dislodge. The nasal secretion is sometimes tinged with blood, as are also the crusts which are often present in the nose. There is sometimes a marked stuffing of the nostrils, but it is most unusual to see a free discharge. When the catarrh is at all marked the patient suffers from a good deal of prostration, more than one is accustomed to meet with in ordinary coryza, and the patient often lies up for a day or so. In the case of those who have been carriers for even, say, two or three weeks there is no apparent interference with health, but the throats are always noted to be congested as described. There is no early fouling of the tongue such as occurs in scarlet fever, and the state of the throat ought not to be confused with the condition found in that disease, inasmuch as it never presents the same "dirty" aspect.

The pulse and temperature are not much affected, which serves to aid in eliminating the possibility of an attack of scarlet fever.

It is to be noted that in many cases the conjunctivae are also involved. There is redness and injection; an exudate may be seen and a bead of pus may collect at the inner canthus.

A swab taken from the throat of a patient in such a condition will almost invariably show the presence of a streptococcus. In our opinion, the primary invasion of the mucous membrane is by a streptococcus, which so prepares the way for the entrance of the more delicate meningococcus, and should the meningococcus settle on such a throat, the way for further advance is facilitated.

The importance of recognizing this first (catarrhal) stage of the disease in epidemic times cannot be too strongly emphasized. While the patient himself may combat the disease well, he may be a constant source of danger to his immediate contacts. He may harbour the meningococcus for some time after the acute stage has passed, and the danger of his being a source of infection still remains.

The diagnosis cannot be confirmed without a bacteriological examination, and where the facilities exist this should invariably be undertaken.

STAGE II.—SEPTICAEMIC.

There is no sharp line of demarcation between Stages I and II. While the symptoms of Stage I persist, the symptoms of toxic absorption may be superadded in varying degrees. The usual symptoms are:

1. Headache almost invariably.
2. Pains in the back and limbs.
3. Feelings of chilliness and nausea; vomiting occurs in most cases, in very rare cases it may be the only symptom for a few days.
4. Sometimes mental depression, but in some exaltation.
5. Photophobia.
6. Deep-seated pains in the orbit and pain on moving the eyeballs.
7. The temperature is usually about 100° or 102° F.
8. The pulse is moderately accelerated.
9. The general nervous system in the early stages of the disease shows marked signs of irritation as indicated by the intolerance of light and sound. The skin is markedly hyperaesthetic. The patients complain bitterly of the slightest noises in the room. The hydrocephalic cry may be noted at this stage. All the reflexes are exaggerated. Ankle clonus is frequently met with and tetanic spasms have been described on an attempt being made to elicit certain reflexes. A further occasional occurrence at this stage is acute mania.
10. Rigidity of the neck and retraction of the head frequently occur early, and when present are of the greatest importance from a diagnostic point of view.
11. The skin is usually slightly flushed, and very sensitive to touch and cold, particularly the latter.
12. The *tache cérébrale*, which we originally thought appeared later, is present.

If a lumbar puncture be done at this stage the fluid is clear, and varies in quantity: it is always sterile. The protein content of such a fluid is always found to be increased, the sugar content is as a rule reduced, and there is present a pathological substance that promptly reduces potassium permanganate, giving a yellow coloration. Normal fluid remains pink with this test. The operation of lumbar puncture at this stage often relieves the headache temporarily, and may help to arrest the disease.

STAGE III.—MENINGÉAL.

This stage is marked by the arrival of the meningococcus at its destination. Pus accumulates in the cerebro-spinal fluid, giving it varying degrees of turbidity. The general symptoms of nervous irritation give place to those of depression. Stupor tends to set in, and the patient ceases to complain of light and sounds. Headache still is frequently complained of. At this stage we have always found the pupils dilated. Strabismus, optic neuritis, and deafness may also be met with. Frequently there is incontinence of urine and faeces, but occasionally retention is met with. Priapism is often seen. The reflexes begin to disappear about this time. Kernig's and Macewen's sign can now be elicited. Head retraction is increased, and the patient may exhibit convulsive seizures. Herpes labialis is frequent, the mouth and tongue become very foul and dirty, in marked contrast with Stage I. The pulse is slow, the patient usually showing cyanosis due to respiratory failure, Cheyne-Stokes breathing being often observed. There is usually delirium, which may be either of the low muttering type or maniacal. The maniacal type is difficult to control, and not infrequently causes

death by exhaustion. The usual cause of death, however, is respiratory failure, but some cases died of coma.

In a certain number of cases, in which the natural resistance is low, the disease runs a fulminant course. The

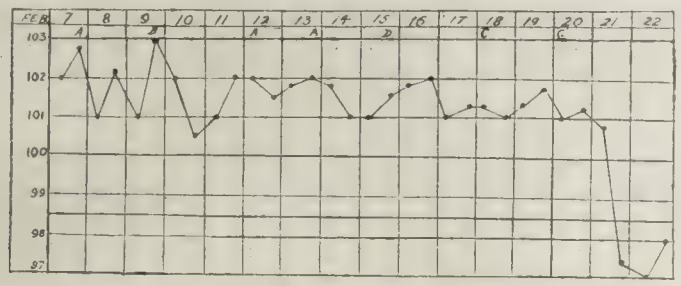


Chart I.—A, Lumbar puncture; 30 c.cm. serum injected. B, Lumbar puncture; 75 c.cm. cerebro-spinal fluid withdrawn, and 30 c.cm. serum injected. C, Lumbar puncture. D, Lumbar puncture; 60 c.cm. cerebro-spinal fluid withdrawn, and 30 c cm. serum injected. (Illustrating the effect of lumbar puncture frequently repeated.)

onset is extremely abrupt. After the first appearance of the headache death may follow in a few hours. In these cases the patient is always profoundly unconscious, and cannot be roused. There is no rigidity, no Kernig's sign, and the reflexes are absolutely lost, both deep and superficial. Even the conjunctival reflex is lost in a bad case. Instead of cyanosis and laboured breathing, there is paleness and collapse, shallow breathing, and a fast "thready" pulse of low tension. This type of case usually dies by cardiac failure. The cerebro-spinal fluid obtained in these cases is rarely turbid, but is under considerable pressure.

Rashes.

Rashes are not nearly so frequent as the popular appellation of the disease would indicate. This, of course, applies strictly to the present epidemic. About 10 per cent. of the cases have exhibited a rash, which may be erythematous, macular, morbilliform, petechial, or even purpuric. It is mostly in the severer cases and in the third stage that a rash occurs. The petechial and purpuric forms appear earlier than the macular or morbilliform. The two latter usually appear after serum treatment, about the time when a serum rash might generally be expected.

Relapses.

Early relapses may be met with in a fair percentage of cases, usually at about the end of a fortnight. The symptoms have generally been of a milder type than in the original attack, and have been characterized by a return of the headache and swinging temperature. The cerebro-spinal fluid again becomes turbid, and meningococci reappear in it.

A point of striking importance and magnitude is that a second attack of the disease may occur after apparent

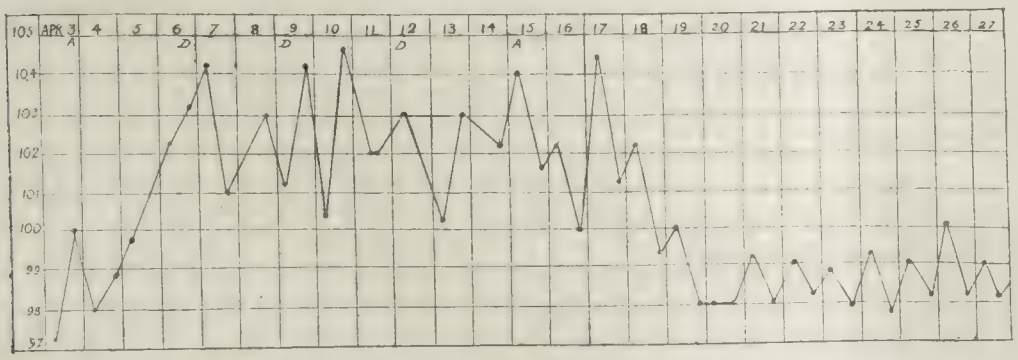


Chart II.—A. Lumbar puncture; 30 c.cm. serum injected. D, Lumbar puncture; 60 c.cm. cerebro-spinal fluid withdrawn, and 30 c.cm. serum injected. (Illustrating the effect of lumbar puncture frequently repeated.)

complete recovery. This may happen two, three, or even four months after the patient has been pronounced well and discharged. These attacks may prove fatal. This naturally raises many points for consideration.

Chronic Cases.

In a certain percentage of cases the temperature falls, headache and all distressing symptoms disappear, but gradual wasting sets in. Nevertheless, in spite of the wasting the appetite remains good, although there is frequent vomiting. The patient during this process is apparently unconcerned. These cases usually die in about three to four months.

Temperature.

In an average case of medium severity the temperature remains elevated for three to five days, with remissions of $\frac{1}{2}^\circ$ to 1° F., then falls to normal and remains so; but if lumbar puncture is not performed repeatedly during the period of elevated temperature, the fall of temperature is not maintained, and it again rises and develops a swinging character, which may persist for three or four weeks, and even then be followed by recovery, but in some cases even this treatment fails to prevent this unfavourable temperature. If lumbar puncture be performed when the temperature is swinging, the cerebro-spinal fluid is found to be under moderate pressure, but it is clear and usually sterile.

Hyperpyrexia.

Some cases die early with hyperpyrexia, the temperature rising, for example, to 103.8° F. in twelve hours from the onset, while others die with a normal or even a subnormal temperature.

Sequelae.

A notable feature of the recoveries in this epidemic is the absence of any serious sequelae. Occasionally complete deafness has occurred, and there were one or two cases in which the mental faculties were dulled.

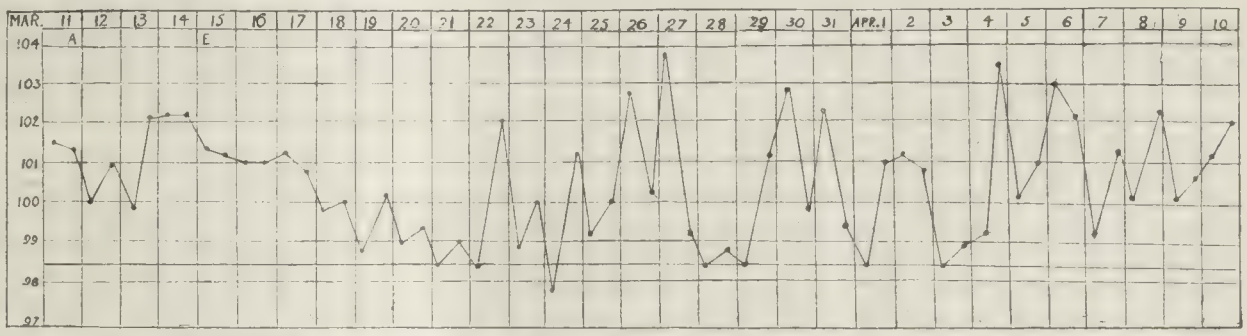


Chart III.—A, Lumbar puncture; 30 c.cm serum injected. E, Lumbar puncture; 15 c.cm. serum injected. (Illustrating the failure of two lumbar punctures.)

Prognosis.

If the disease is recognized in Stage I, and appropriate treatment carried out, recovery is invariable. It also may be reckoned upon in Stage II, but if Stage III supervenes the prognosis is much more grave, but by no means hopeless, provided suitable treatment is commenced early, and thereafter maintained as long as necessary.

Treatment.

Treatment will, of course, depend on the stage at which the disease is recognized.

Stage I.

We regard and treat these people as semi-invalids—for example, we exempt them from duty, provide them with invalid comforts, and place them under the most favourable condition for recovery. We find the most useful preparation for local treatment is a solution of potassium permanganate, 1 in 1,000, administered as a nasal and oral spray as advised by the Local Government Board. The importance of a generous diet must not be overlooked, and everything is done to allay their fears of a general infection. Light exercise, such as easy marches and light fatigues, serve to keep them sufficiently employed. They are allowed to play outdoor games. They are of course treated as infectious, and strictly segregated from the healthy community. Smoking is not encouraged, and frequent bacteriological examinations are made of their throats; it is only when two consecutive examinations have given negative results that a case is discharged.

Stages II and III.

The treatment of Stages II and III may most conveniently be considered together.

In performing the diagnostic lumbar puncture, it is well to administer a first dose of serum without waiting for the bacteriological report. Much valuable time is thus saved. It may be necessary to repeat this procedure daily or every forty-eight hours, being guided by the condition of the patient, until there is marked improvement in the condition. Under this treatment the disease is generally favourably affected. Consciousness is restored, headache is relieved or abated, and the general condition of the patient shows marked improvement. The fluid obtained by frequent lumbar puncture, followed by intrathecal injection of serum, becomes successively clearer, and, finally, it is sterile, and of normal pressure. This method of treatment should be persisted in until this end is attained. The serum almost invariably used has been that prepared by Mulford and Co., according to Flexner's directions.

We always remove as much fluid as will flow out spontaneously without suction; this may amount to 100 c.cm., and we always introduce a smaller quantity of serum than the amount of fluid removed. The usual dose is 30 c.cm.; If less fluid than 30 c.cm. has been removed, of course relatively less serum must be introduced.

The point we aim at is to make sure that the resultant will always be less than the initial pressure, and it is probable that part of the improvement is due to this point being always observed. (A curious fact is that the meningococcus grows vigorously on certain specific agglutinating serums.)

Autogenous Vaccines.

Some benefit may be obtained by this method used in conjunction with serum treatment. In chronic cases the results have not been encouraging. Further observations are in progress.

Medicinal Treatment.

Medicinal treatment can at best be only palliative. Numerous drugs have enjoyed a temporary reputation as curative agents in this disease, notably soamin and urotropin. We have tried these without observing any beneficial results, although urotropin has been pushed to the extent of producing haematuria. Soamin is particularly dangerous on account of its possibly deleterious effect on the optic nerve.

Sulphonal is very useful in the milder cases for its sedative action. In the severer cases morphine is indicated. For the slighter headaches in convalescence aspirin is very useful. We have found bromides of little use. Stimulants may be called for at any time in the disease. Brandy and digitalin can safely be used; strychnine is always contraindicated.

General Treatment.

Good nursing is absolutely essential if success is to be obtained. The toilet of the mouth and eyes is very necessary. Special attention must be paid to the prevention of bed-sores; incontinence of urine and faeces make this condition difficult to avoid. In cases of retention of urine the use of the catheter must not be neglected. Particular attention to the bowels is necessary, and calomel (gr. 3–5) is found best for preventing constipation.

The patient should be kept in an airy, quiet room, with the light subdued. Disinfection of the excreta should always be carried out.

Dietetic Treatment.

In the acute stages a milk diet only is advisable, but a noticeable feature is the ability of the patient to resume a normal diet at an early stage. Occasional vomiting or a swinging temperature does not contraindicate a generous diet, if the patient is already convalescing or progressing favourably in other respects. In the later convalescence the diet should be liberal and the patient should be kept as much as possible in the fresh air.

Lumbar Puncture.

A general anaesthetic may be necessary for excitable patients, or those showing much rigidity of the lumbar muscles. No ill effects have been noted from its use. The site of puncture is between the fourth and fifth lumbar vertebrae in the middle line. We arrive at this point by drawing a horizontal line between the highest points of the iliac crests. A 3-in. exploring needle with a stylet is employed. This is inserted a short distance centrally below this line and directed forwards and slightly upwards until the resistance of the interspinous ligament is felt. The next resistance encountered is that of the posterior common ligament; the point of the needle is then slightly withdrawn and the stylet removed, when fluid should at once appear, but if it does not come, the stylet should again be passed and the needle rotated. The usual antiseptic precautions should, of course, be observed. The serum is gently introduced by gravity through a short rubber tube from a glass funnel held about a foot above the patient. On no account must a serum syringe be used to force it in. The puncture is sealed by collodion.

The recovery-rate in the series of 170 cases is 75 per cent.

EIGHT CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS IN INFANTS.

BY HUGH T. ASHBY, B.A., M.D.CAMB., M.R.C.P.LOND.,

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THE eight cases here recorded were seen and treated within three weeks; all presented similar symptoms, and all proved fatal, notwithstanding different lines of treatment. Seven of the cases were between the age of 6 months and 1 year, while one was 2 years of age. All came from Manchester and the surrounding districts, but no connexion could be traced between any of them, and there appeared to be no relation to soldiers who had been outside the district.

In each case the onset was fairly sudden, often starting with vomiting, and all presented the same symptoms. Marked head retraction was a prominent feature in every case, and the anterior fontanelle was very tense. Drowsiness was also present, and the infants would lie in their cots taking no notice of anything except when awakened to have their feeds, which they took well. Squint and blindness were invariable, especially towards the end. The bowels acted regularly, in contrast to the constipation found in tuberculous meningitis.

The other symptoms included slight fever, irregular pulse, Kernig's sign, and increased reflexes; towards the end twitching of the limbs and convulsions were common. The lumbar fluid was examined in each case by Dr. A. H. Miller, pathologist to the hospital, who reported the presence of a meningococcus found inside the leucocytes, and giving the cultural properties of the *Diplococcus intracellularis* of Weichselbaum.

Treatment did not appear to help very much. Repeated lumbar punctures were done, even twice a day, according to the tenseness of the anterior fontanelle; the object of doing this was to draw off the infected fluid, which was under pressure, with the hope that as fresh cerebro-spinal fluid was formed the organisms would be diminished. After a few days, however, it became impossible to withdraw any cerebro-spinal fluid, which appeared to dry up, although the anterior fontanelle kept tense and bulging. It thus appeared as if there was no communication of the fluid in the skull with that in the spinal column.

The first four cases were also treated with soamin, which has proved so successful abroad in cerebro-spinal meningitis of adults. An injection of soamin, gr. iii, dissolved in sterile water, was given intramuscularly for three days; then, after an interval of two days, three more injections were given daily. As the result in these cases was not successful, the next four cases were treated with antimeningococcus serum injected into the spinal canal after the withdrawal of cerebro-spinal fluid. An injection of 10 c.cm. of serum was given daily for three days and repeated for a similar period after an interval of two days. These latter cases were as unsatisfactory as those treated with soamin. To all of them also urotropin was given by the mouth during the whole time they were under treatment.

These cases are interesting from the fact that cerebro-spinal meningitis in adults is at present more common in England than it generally is, but whether these cases in infants are infectious is doubtful. It will be best, however, in the future to treat them as possibly infectious and isolate them in a fever hospital. None of these patients had any nasal discharge, except two cases, in whom it came on just before death.

ALUMINIUM SKELETON SPLINTS IN THE TREATMENT OF COMPOUND FRACTURES.

BY

C. MAX PAGE, M.S., FR.C.S.,

CAPTAIN, R.A.M.C.(S.R.)

THE value of skeleton splints in the treatment of gunshot fractures has been recently pointed out by Mr. Robert Jones and others. Their virtue is determined by the self-contained nature of the extension which they render possible, and by the ready adaptability of the slings which hold the limb in position.

The general adoption under active service conditions of these splints is bound to be difficult, since, as usually described, they must be manufactured to measure by an instrument maker.

I have found that from the aluminium splinting contained in the regulation field fracture box substitutes for any such splint can be readily contrived. The malleability of the material renders splints made from it more adaptable to present conditions than are those of wrought iron.

I will describe two splints in detail—one, a modified Thomas's knee splint, the other an arm splint, suitable for fractures of either upper or lower arm. These two splints alone suffice for the treatment of about 80 per cent. of fractures of the extremities that are met with. For special cases similar splints can be contrived from the same material.

Modified Thomas's Knee Splint: Scope and Advantages.

This splint is most satisfactory for any fracture in the lower two-thirds of the femur, for injuries of the knee-joint, or fractures of the tibia and fibula, where extension and free access to wounds is required. The splint can be applied at a clearing station, and is adequate for the treatment of the case till union of the fragments has taken place.

The conclusions in these notes have been arrived at chiefly from the treatment of cases of fracture of the femur. As a standard of comparison I would say that I had previously treated this type of injury with various forms of long outside splint—including the adjustable type with a perineal ring—Hodgen's splint and interrupted plaster-of-Paris splinting. The points in favour of a splint of this modified Thomas's type are as follows:

1. The splint can be applied to the limb, without an anaesthetic if need be, whatever the degree and stage of swelling.

2. The slings can be arranged or the side pieces bent so that any sized wound can be easily dressed without disturbing the patient's comfort.

3. The splint maintains constant fixed extension on the fragments. Transport is thus without discomfort, and night starting-pains are abolished.

4. The patient is free to move his body in any direction. Movement of the body does not affect the injured leg. The patient can be rolled on his side and dressed by one person. The ordinary slipper bed-pan can be comfortably used. The fragments are pulled and constantly kept with their long axes in the natural line of the limb. Though there may remain some flexion of the fragments, the ultimate shortening need be very slight if the extension be kept adjusted.

In general the independence and comfort of the patient in one of these splints is remarkable, if comparison be made with his state when he is fixed to any form of long outside splint. Nursing and transport are correspondingly easy.

Preparation of the Splint.

The measurements required are (A) from the tuber ischii to the point of the heel; (B) an oblique from the tendon of the adductor longus an inch below its origin, passing behind the limb, to the upper margin of the great trochanter of the femur.

The splint is made from two U-shaped pieces of aluminium splinting as usually supplied (length 60 in.) (Fig. 1). The convexity of one U is bent to form the hip crutch, which will be of the size of measurement B. For manipulating the splinting a large screw wrench (as supplied with the ambulance carriages) will be found most useful. The other piece of splint is bent symmetrically to form a stirrup. This stirrup should be formed with a slight concavity downwards (not shown in Fig. 1), in order to keep the extension strap in place.

The crutch of the upper U is padded with tow and covered with jaconet. When the splint is wanted, the two U sections are joined together with aluminium ribbon, so as to give a length from the margin of the crutch to the stirrup of 4 in. to 6 in. more than measurement A. Slings of linen or other firm material are then attached to the inner limb of the splint at such levels as to support the leg but not to interfere with dressings. A triple fold of jaconet will be found a useful form of sling near a wound. Fixation of the slings can be effected by safety-pins.

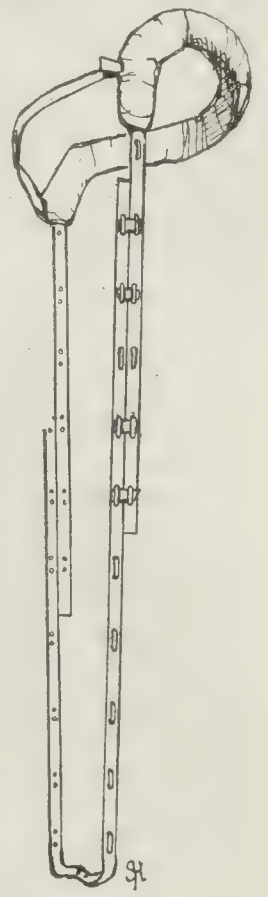


Fig. 1.—Modified Thomas's knee splint. The arches of aluminium ribbon here shown should be replaced by webbing and buckle in the case of the transverse to the crutch, and by fabric slings below.

Application of the Splint.

An ordinary extension attachment is first fixed to the leg. I have found that a four-tailed extension bound in place with two or three plaster-of-Paris bandages gives good results. The bandage is carried over the heel and instep as well as the leg; this checks the formation of any pressure sore, and as long as the plaster remains rigid prevents any give in the extension.

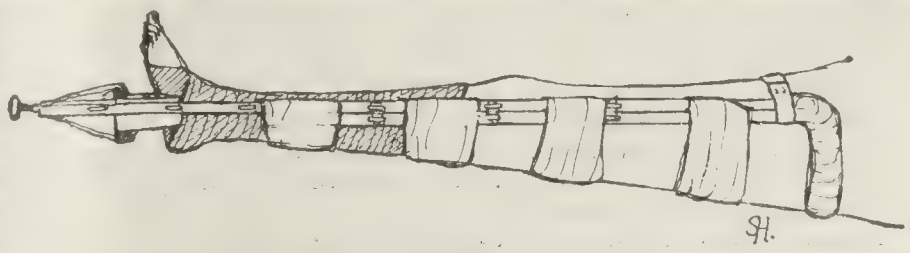


Fig. 2.—The modified knee splint applied.

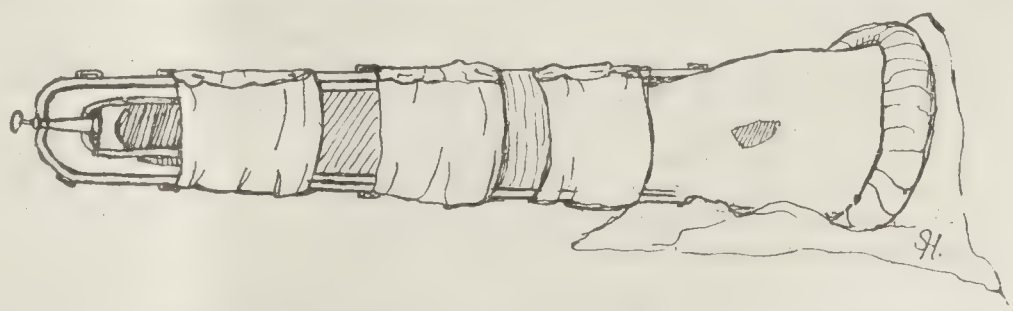


Fig. 3.—The knee splint applied. The patient has been rolled on his side to show how well the limb is supported in this position.

The splint is then slipped under the leg and the crutch pushed against the tuber ischii; the crutch is moulded to fit the thigh firmly at this level, and then fixed by buckle and webbing passing across in front of the limb. Extension is then applied by a strap passed from the loop and round the stirrup. The slings are passed under the leg and made fast to the outer limb of the splint with safety-pins, in such a way that the limb lies evenly in the middle of the splint (Fig. 2).

The extension is then tightened up and a few straps are applied over all to keep the leg firm at times when the patient may be rolled on his side (Fig. 3).

In the first weeks of the treatment of compound injuries any accessory splints will be found merely an encumbrance. When the wounds are in a satisfactory state they can be applied if the fragments do not fall into good position.

After-Treatment.

When the patient is in bed the splint can be conveniently hung from a cradle. For transport the stirrup of the splint should be raised on a small sandbag, so that the leg remains slung in the splint.

The extension must be kept taut. A regulation screw tourniquet, in place of a strap, gives a very excellent method of applying traction (Fig. 4). The crutch will probably want re-covering with jaconet every two or three weeks.

The two parts exposed to friction are the skin over the tuber ischii and (if the extension slips) the skin over the tendo Achillis. No soreness should result if the buttocks are kept clean. If plaster-of-Paris is used as recommended for attaching the extension, pressure is evenly distributed over the foot, and no sore will form.

If the position of the fragments should render some flexion at the knee and hip joints desirable, the splint can

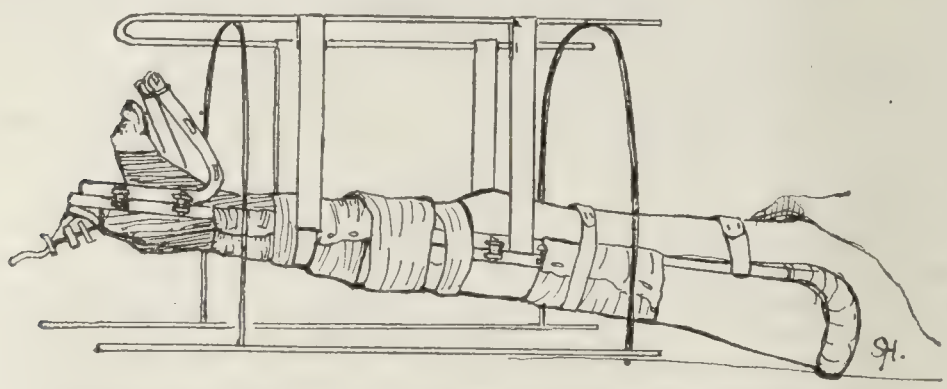


Fig. 4.—Knee splint, in use for a case of fractured tibia and fibula. The foot piece was fitted to control a tendency of the foot to rotate. Note screw tourniquet extension on stirrup.

be bent into a form like a Hodgen. The self-contained extension will still operate to a sufficient degree.

The Arm Splint.

The Thomas's knee splint may be adapted to the upper extremity, and is most useful in treating severe compound injuries of the upper extremity, but is only suitable for use when the patient is lying in bed. The arm splint I have used is bent at a right angle, and is therefore more compact and suitable for transport.

This splint is adapted for the treatment of fractures of the lower two-thirds of the humerus, injuries of the elbow, and fractures of the forearm.

It is made from one full length piece of aluminium, and is completed by a short piece. The figure sufficiently shows its form (Fig. 5). This type is suitable for either

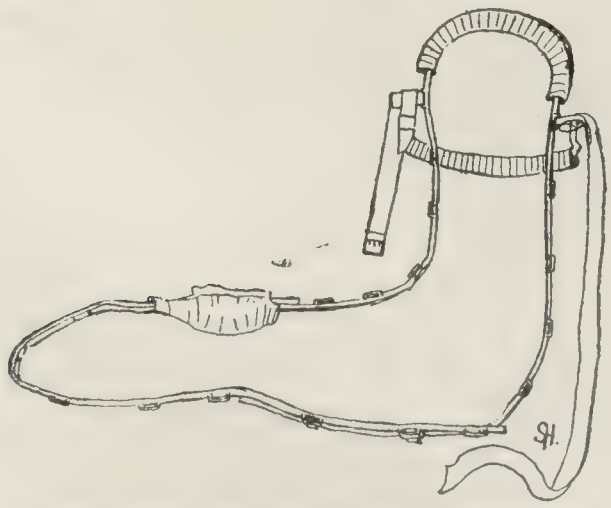


Fig. 5.—Arm splint. The axillary strap is covered by rubber tubing. The long white belt passes round under the opposite axilla. The hand padding is in position for supination of forearm.

side and for any fracture below the upper third of the humerus. The projection beyond the hand is only wanted for applying extension in forearm cases.

The shoulder arch of the splint may be padded by slipping a stout piece of rubber tubing over it. Rubber tubing covers



Fig. 6.—Arm splint applied (diagrammatically). The prolongation in front of the hand is only of use in cases of fracture of the forearm where extension is required.

in the same way the axillary strap, which is attached to two rings made of aluminium ribbon. This strap bears on the two axillary folds, and exerts no pressure on the vessels. The pad for the hand is fixed to the upper limb of the splint if it is desired to put the arm up in supination, to the lower if in the prone position.

For fractures of the humerus long axis extension is obtained as follows: After the shoulder piece has been strapped in place the hand is fixed to its pad, traction just below the elbow to the lower convexity of the splint is made by a belt of webbing or elastic; a short length of Martin's bandage is useful. In Fig. 6 extension is diagrammatically applied with a narrow band of webbing. A piece of composition splinting supplied in the field fracture box is useful if placed on the upper surface of the forearm in order to distribute the pressure.

For fractures of the forearm the humerus is fixed to the posterior limb of the splint, and extension maintained from the extremity of the splint through the plastic loop fixed to the wrist and hand.

A modification of this splint which often proves useful is the substitution of a crutch under the arm for the arch passing over the shoulder. The crutch is kept in place by two straps or bands—one passed over the shoulder, the other passed round the body and under the axilla of the opposite side.

I am indebted to my commanding officer, Major A. F. Steele, for permission to publish these notes.

THE TREATMENT OF MALIGNANT DISEASE BY X RAYS;

*ITS PRESENT LIMITATIONS, AND THE LINES UPON WHICH THEY MAY BE OVERCOME.**

BY J. A. CODD, M.D.,
WOLVERHAMPTON.

THE selective action of *x* rays and radium on cancer and sarcoma cells has been a matter of controversy. But though some extravagant claims may have been made, the fact remains that radium and *x* rays destroy malignant cells and leave healthy adult cells relatively intact. This is simply an inverse way—and perhaps an awkward way—of expressing the relative vulnerability of the cells. We administer strychnine or physostigmine, and find that these drugs in a widely different way act on the anterior cornual cells of the spinal cord, and leave the other cells of the body comparatively unaffected. We administer atropine and find it acts on the acini of the mammary and salivary glands, the centre for and the fibres of the sphincter iridis, and a few other cells, but leaves the others intact. It is not unusual to speak of these drugs as having

*Read before the Staffordshire Branch of the British Medical Association February 25th, 1915.

a selective action on these particular cells. When, therefore, the expression "selective action" is used, we are thinking rather of the different natures of the things selected than of the specific action of the selecting agency. The selection really lies in the cells themselves.

Whatever theory we may hold, the fact is incontestable that the action of *x* rays and radium upon malignant and healthy cells is profoundly different, especially in sarcoma, which in many cases will melt down before the rays, while the surrounding tissues are unaffected. The reason of this difference is that one set of cells is embryonic and the other adult. This distinction is demonstrated by the fact that the radiologist, however well he may protect himself and is immune from all other *x*-ray lesions, yet is bound to suffer from azoospermia, because the spermatozoa are embryonic cells, and are killed even by *x* rays of high penetration. In other cases—notably hard cartilaginous and fibrotic tumours—the growth is often unaffected in size or appearance, while the skin may be burnt, though it is possible that better results might have been obtained if the penetration and quantity had been greater, and the filter thicker.

There is no treatment for malignant disease (other than complete excision) that gives such good results as that by *x* rays and radium. The results are so good that one feels that if only the technique could be vastly improved the long-hoped for cure might be realized, and yet they generally fall short to such a degree as to demand progressive endeavour.

There have been alternative rises and fall in the relative estimation in the eyes of the profession and the public of *x* rays and radium. At first *x* rays had it all its own way, then soon after its isolation radium held sway. Then once again *x*-ray treatment was in favour; then, with the filtration method of Wickham and Degrais, radium bounded into favour again. But its limitations were eventually realized, and with the advent of better tubes, especially the heavy target and water-cooled tubes with tungsten targets, we got massive doses of *x* rays with greater penetration, and for accessible growths *x* rays are in greater favour than radium.

The two factors necessary for effective treatment are penetration and quantity, and if only both could be secured in abundance in one apparatus the ideal might be obtained. But radium has penetration and very little quantity, while *x* rays have comparatively little penetration and much quantity. These two factors are comparable to volts and ampères of an electric supply. To get an efficient economic electric supply we must get a product of many volts by many ampères. With the old high tension apparatus we got many volts and very few ampères. With the old batteries we got very few volts and many ampères, but with modern dynamos we get many volts multiplied by many ampères, which produces many watts.

If we could get the penetration of the gamma ray and the quantity of the first-class *x*-ray tube in one apparatus, we would then get a product equivalent to the watt of our electric supply system, and such an efficiency as we can as yet only dream of. Perhaps a kilogram of radium might do it. I believe 30 grams represents the total quantity of prepared radium now in the world. The therapeutic efficiency of radium depends not on alpha, soft or hard beta, but on the hardest gamma rays, which have a penetration very many times that of the hardest *x*-ray tubes. They penetrate the body so easily that the bones and solid organs do not stop them, and there is no shadow on the fluorescent screen, which glows almost as brightly as if the body had not been interposed. On the other hand, even when we are dealing with several thousands of pounds worth, the quantity is very minute, a minute fraction of that given out from an ordinary *x*-ray tube. So that it appears to be along the lines of improvements in *x*-ray tubes that the solution may come. We have now tubes with tungsten anodes that are capable of standing currents of 3 milliampères or more for quite long periods, and with a high penetration capable of giving a pastille dose or more through 3 mm. of aluminium. There is, however, a limitation to the practicable hardness of an ordinary tube, for when it reaches a certain hardness (about 10 Benoist), no current will flow through it but sparks pass over it, and eventually pierce the tube.

This difficulty appears to have been overcome in the case of the Coolidge tube, in which the vacuum is a thousand times more attenuated than an ordinary first-class hard tube; no current could pass through it under ordinary conditions, but the cathode consists essentially of a fine tungsten spiral wire like that of an ordinary metal filament incandescent lamp; it is connected to a battery outside the tube, so that it can be heated to any desired extent, and, when heated, throws off electrons and allows the high-tension current to flow through the tube. The more the voltage of the coil current sent through the greater will be the penetration. The more current sent into the cathode spiral from the battery the greater the quantity of rays got out of the tube, so that both penetration and quantity can be regulated to a nicety. So far the hardest rays yet produced by it fall very much short in penetration of gamma rays. Dessauer of Frankfurt-am-Main claimed that a tube he had produced actually evolves gamma rays, but we have not heard much of it since the war broke out. But, whatever future developments may show, we have theoretically in the Coolidge tube an engine of far greater power than we have had before, and it remains yet to be seen whether in practice its promise will be fulfilled.

It is not desirable to quote any large number of cases. Many of them, especially hospital cases, present a long series of absolutely hopeless lesions, huge fungating, rapidly-growing tumours, sent in the hope of making the remainder of their life more tolerable. Also, owing to the great pressure of work at the hospital produced by war conditions, I have not been able to collate the notes of the hospital cases. The reports given are almost exclusively of private cases, fairly typical of the others, except the very bad cases mentioned above.

The cases that have yielded best results have been those of rodent ulcer. I have had very many of these, and all have speedily yielded, except one in which the floor of the ulcer was formed by the cartilage of the nose. It would heal and break down readily; he came to me from York several times, but each course was far longer than usual, sometimes supplemented by CO_2 snow, but there did not appear to be any finality, and I advised him to have radium, which Dr. Rowden of Leeds applied; he has had no further trouble. But the usual course of treatment is so certain and uneventful that no description is needed.

Large superficial epitheliomata have been found very amenable. In three cases large fungating ulcers of the temple, considerably larger than a crown piece, cleared up quickly. In one case of epithelioma of the upper lip, with infected submaxillary glands, Mr. Deanesly removed the glands and I applied *x* rays to the lip, with the result that the growth sloughed away and left a harelip, but without any signs of growth; no recurrence took place.

Epithelioma of Lip.

CASE I.—T. H., aged 50, an engine attendant, sent to me by Dr. Clendinnen, presented an epithelioma of the lower lip on the left side. Mr. Deanesly thought the condition more suitable for *x* rays than operation. A few applications cleared it up. A year later it recurred on the other side, about the same size. This again cleared up, leaving a perfectly healthy scar. One month later there was a growth about the same size, one inch behind the angle of the mouth on the mucous surface of the cheek. I gave him *x* rays by cross fire, inside and outside the mouth, using in each case a silver plate on the far side from the tube, according to the Hernaman-Johnson method. There was slight improvement at first, but after twelve months' treatment of this growth it got larger and penetrated the cheek, and he grew rapidly worse.

Sarcoma of Tonsil.

CASE II.—J. B., aged 60. A case of sarcoma of the tonsil was sent to me by Dr. Ashley Smith and Dr. Bolton of Nottingham. He had had continual swelling and sloughing of the right tonsil. Surgical opinion as to the advisability of excision differed, and Dr. Bolton was against excision and proposed *x*-ray treatment. I was convinced that it was sarcoma, and snipped off a projecting piece; the report was that it was apparently inflammatory, but was not inconsistent with sarcoma. With a few applications of *x* rays with cross fire it cleared up. I then told him that in spite of the apparent cure he must have an occasional dose to prevent recurrence, but he did not return for five months, when he had a recurrence, far larger than the original growth had ever been. It freely invaded the soft palate and cheek. I again gave him *x* rays by cross fire, without, however, any hope of clearing it up. It spread steadily in spite of the rays, until he could no longer admit the funnel into his mouth. Then I abandoned the treatment but advised radium, which, however, he refused. In spite of the great increase of the growth he did not die for nearly a year.

Cases of Enchondroma.

CASE III.—Mrs. L., sent by Dr. Carter for recurrence after an operation by Mr. Cholmeley; the original growth appeared to be fibroma. There was a large projecting growth, about 3 in. long, in the parotid region, probably of lymphatic gland, firmly bound down. Under the treatment she improved in general health and the tumour became quite free from subjacent tissues, but did not perceptibly decrease in size or hardness. Later she developed lung recurrence and died.

CASE IV.—Mrs. C., sent by Dr. Galbraith, had first undergone operation five years ago; a second operation was performed two years ago. There was a hard cartilaginous growth in the neck, 2½ in. long, firmly adherent to the subjacent tissues. She was still under treatment. So far the only effect has been slight softening of the tumour, which has become free from subjacent tissues.

Breast Cases.

CASE V.—Miss B., aged 44, was the most successful case of this kind that I have had. She was sent to me by Dr. Dent in March, 1911. Nine months previously her breast was removed by Mr. Cholmeley; seven small nodules developed in and near the scar. After twenty-two weeks' treatment they all disappeared, and she went away for a month. Since then she has been in almost continual attendance, and the success of the case has been largely dependent upon her perseverance, her courage, and spirit. She has developed lesions at various places—in the fifth right costal cartilage, in the rib beneath the left breast, a gland below the middle of the right clavicle, a gland in the right axilla. Now these have all disappeared, save that on the bone and cartilage a little fullness may be detected, which, though not now malignant, may never get quite smooth again. Bone once expanded from any cause probably never gets quite its normal contour again even after the cause is completely removed. About two months ago she discovered a crop of new lesions—nodules on the right sixth and seventh ribs in the anterior axillary line, ill-defined gland below the middle of the left clavicle, and a gland in the left axilla. These lesions caused very severe lancinating pain, which kept her awake at night. They have been vigorously and assiduously treated, and now the pain has completely gone, the nodules are very much less, and the glands have disappeared. She has some irritable cough, and has a distinct shadow in the root of the right lung, doubtless some enlarged bronchial glands. These are now being treated. There was, however, no dissemination through the lungs, and the bronchial glands should be accessible to treatment, as the succeeding case shows. She has kept up her general health and weight very well.

CASE VI.—Mrs. Ll., aged 66, underwent operation for scirrhus of breast five years previously by Sir T. Chavasse. For a year she had had severe pain in the middle of the back, followed by the passage of "gall-stones," which she carefully washed out of her stools, and brought me a packet. They were scybala! With the fluorescent screen I found that there was a large growth in the root of the left lung. I gave her a dose of *x* rays three times a week and the lancinating pains cleared up entirely.

CASE VII.—Miss S., aged 45, sent by Dr. Cookson of Stafford, had undergone an operation for scirrhus of the breast in August, 1903. There was recurrence, followed by operation in August, 1910, and recurrence in July, 1911. She was sent to me in September. In the interval the growth had increased considerably. There was a fungating tumour about 1½ in. across. The pain and fetor were considerable The treatment very speedily removed the pain and fetor, only a slight discharge of healthy pus taking place, but there was no appreciable diminution of the area of the tumour, though it became flat and level with the skin, and had more the appearance of a healthy granulating sore. In April, 1913, the sore was about 3½ in. across, the lungs had become affected, she had much dyspnoea and distress, and I advised her to discontinue treatment. Dr. Cookson, however, tells me that she is still alive, but in much distress.

CASE VIII.—Miss H., sent by Dr. Blumer, underwent complete removal of breast and glands by Mrs. Scharlieb for scirrhus in 1905; eighteen months before I saw her she developed a pea-sized lump in the scar, which remained stationary up to a month before I saw her, when Dr. Blumer removed it. I treated her with *x* rays as a prophylactic for six months, and she has had no recurrence.

CASE IX. *Recurrent Scirrhus of Breast.*—Miss H., aged 57. Kocher operation by Sir Thomas Chavasse in September, 1910. Recurrence in July, 1911, a lump forming in the left axilla, which was removed by Dr. Edge. She came to me in February, 1912. There was recurrence in the scar anterior to the anterior axillary line like a pea, and another 4 cm. by 2.5 cm. further along the scar of second operation. I tried Hernaman-Johnson methods for obtaining secondary radiation, injecting on several occasions solution of strontium bromide and emulsion of precipitated metallic silver in oil beneath the growth, and applying *x* rays. There was some sterile suppuration around the collections of metallic silver, which had no definite effect upon the growth. This, however, gradually cleared up, and things looked very favourable; but she stayed away against my advice from May to September, and then again till December, and by this time there was a large patch of ulceration beneath the axilla, with the base impregnated with silver. I regarded this as a malignant ulcer. She went into an invalid home, and the ulcer healed; but later the arm began to swell, and when eventually she returned to me it was enormous; and upon my advice she consulted Mr. Deanesly, who did an operation for silk-thread drainage. It was not successful, and she refused to have the arm amputated. I have not seen her since, but have heard that she is now much in the same condition, and is able to walk about. If she had been more pertinacious, and had not allowed long intervals to pass without treatment, she might have avoided this distressing complication. In any case, her life has been very definitely prolonged, and she has been relieved for a long time from the initial pain.

CASE X.—Mrs. R., aged 68, noticed a lump in her left breast the size of a pigeon egg in December, 1913. In February, 1914, she was sent to me by Dr. Bates, both he and the patient having definitely decided against operation on the ground of her age and general frailness. There was a hard indurated patch about 4 cm. in diameter and much puckering of the skin, which was adherent to the growth. In October, 1914, the tumour had become very indefinite, fairly soft, and almost blended with breast tissue. Three small pea-like glands were felt in the axilla, which have since disappeared, and though the primary growth is still there, and still requires treatment, it appears to be well in hand, and her health and weight are well maintained.

Sarcomata.

CASE XI.—Mrs. H., aged 50, sent by Mr. Deanesly in September, 1913. A year before a small lump in the wrist was removed. A recurrence in wrist and axilla followed, which Mr. Deanesly removed. I gave her *x* rays, but on July 14th she had some recurrence in the wrist, above the area usually irradiated. This was removed by Mr. Deanesly, and she still received occasional irradiation, and now the question arises whether it would be justifiable to stop it.

CASE XII. *Sarcoma of Concha and Parotid Region.*—Mr. K., aged 19; growth removed by Mr. Deanesly and the patient sent on at once to me. I irradiated him for two months, after which he ceased coming, but I understand he is still clear.

CASE XIII. *Sarcoma of Cheek and Upper Jaw.*—Miss K., aged 30, sent to me by Dr. McAlister Brown on October 12th, 1914. A year previously had a "gumboil" on the cheek, which gradually got bigger, and then penetrated the cheek and was seen on the outside. She saw Mr. Cholmeley, who pronounced it inoperable. There was a fungating mass protruding through the left cheek, just below the zygoma; it measured 3 cm. horizontally, and the anterior portion bulged outward very prominently. There was also a large fungating mass occupying the posterior part of the fornix of the left cheek. There was intense pain and much fetid discharge. I gave heavy *x*-ray doses, at first through 1 mm. and later through 2 mm. aluminium on the outside, and also through a funnel into the mouth without filter at first and later through 1 mm. aluminium. The pain rapidly disappeared, the discharge ceased, the growth in the cheek completely disappeared, and the cheek healed, the internal growth receded until all that was left was an ulcer between the alveolar margin of the upper jaw behind the site of the last molar tooth and the adjacent surface of the cheek. All went well until December 28th, when there was some pain on swallowing, possibly due to reaction from the internal applications. In January last she developed a distressing spasm of the left external pterygoid, pushing the jaw over to the right side, and the only relief she could gain was by putting her denture in place, when the movement to some extent stopped. She found relief from chloretone. Mr. Cholmeley saw her again, but he still thought the growth inoperable, and her general condition is such as to make further treatment inadvisable.

CASE XIV. *Sarcoma of Jaw and Tongue.*—H. P., male, aged 43. Growth removed by Mr. Deanesly. Recurrence took place, and on October 14th the stump of the tongue was covered with a fetid grey slough. There were large masses of glands beneath the chin, partly breaking down. *X* rays by cross fire within and without. February 24th, submental glands completely disappeared. Triangular stump of tongue, 2.5 by 4 by 5 cm., in a fairly healthy condition.

CASE XV. *Sarcoma of Jaw.*—E. P., female, aged 49. Growth removed by Mr. Deanesly in June, 1914. Shortly after growth appeared on site of scar. On September 21st the growth was cauterized and removed down to the digastric muscle, leaving a large wound opening into the mouth. She was then referred to me for *x*-ray treatment. By January 21st the wound had healed, but a pea-sized nodule appeared beneath the angle of the jaw. On February 25th other nodules felt, and dose increased in quantity and frequency.

CASE XVI. *Epithelioma of Dorsum of Hand.*—G. W. M., aged about 55. The growth was 5 cm. across, with affected glands in supracondylar and axillary regions. I sent him to Mr. Deanesly, who removed the tumours, and the patient returned to me for the rays (July 29th, 1914). Now a small recurrence has appeared in the supracondylar scar, but he is otherwise quite clear. A similar case has also been treated from about the same time without any recurrence.

It would be very useful to have a symposium of methods for treating malignant disease at the Electro-Therapeutic Section of the Royal Society of Medicine, similar to that with regard to opaque meals, with a view of endeavouring to co-ordinate our methods and establishing a standard practice.

My present practice has been to use heavy tungsten target tubes of the well-known American patterns. Until recently I used German and London tubes of the same heavy calibre, but it is a great advantage to have a tube that is high to begin with, that requires the regulator to

be used every time, and that can be worked hard from the beginning without having to wait till the tube is seasoned before any serious work can be done. But in the future the Coolidge tube will doubtless play an important part in therapy.

The diseased area is generally placed at a distance of 15 cm. from the target, and a filter of 2 mm. aluminium used with or without an additional fabric filter, which is often the patient's clothes. The pastille is always covered with the same filter, and 1 pastille or 10 X Kienbock given. The tube is generally at 8 Benoist and worked at 2 m.a. If the area is large it is divided into two or more, each of which receives this dose. If it can be approached by cross fire this is always done, and glass funnels are used for the mouth or vagina. I use one of the standard tube boxes and holders, but instead of having a straight lever attaching the box to the arm, I use one bent at a right angle, so that the long axis of the tube instead of being vertical is horizontal, as in the vertical position the cathode stem is always coming into contact with some part of the patient's body; with the axis horizontal this is avoided. I nearly always treat the patient while sitting, and have a special chair, made like the laryngological chair with back rest, but having clamps for the back rest at each side as well as in the middle of the chair. In this way the head can be made to bend over in a restful position on to one of the lateral rests, so that the tube box can fit into the widened hollow of the neck.

I should emphasize the great value of the use of *x* rays as a prophylactic after operations for primary, and especially after recurrent, growths. In cases of recurrence, the question before the surgeon's mind should always be: Shall I hand over to the radiologist at once, or operate and then hand over? In many cases of recurrence *x* rays without operation would be better, for to disturb the lymph channels is always a dangerous proceeding except in primary operation, in which case one can get apparently quite clear of the infected area.

The ideal practice would be to radiate the open wound with a good stiff dose of rays, in which case they would get direct access to any danger cells that might lurk on or near the cut surfaces. It is a question whether it would not be well worth the extra trouble and the risk of disturbing the asepsis of the wound and of the prolongation of the anaesthetic. Better have a coccus or two in the wound than a cancer cell or two!

But in any case systematic prophylactic after-treatment would give much better results after operation, and if an operation were done for recurrence it should be done with the cautery and not the knife, and the cold cautery of diathermy seems to be the best of all. Also, if *x* rays are to be given in recurrences, they should be used at once. Delay in radiation in such cases is as dangerous as delay in operation in primary cases. Wherever there is recurrence there is much greater danger of subsequent recurrences than in the primary operation, and it appears to me to be the duty of any surgeon who has any faith in radiation to have his recurrent cases radiated at once, even if he demurs to the same treatment after primary operations.

The general position is that on the whole we have *not quite* succeeded in curing the majority of our likely cases, but, in spite of disappointments, the possibility of attainment becomes nearer, and some day, if we persevere, we may turn the corner, make some change in instrumentation or technique, and the goal may come in sight.

MALIGNANT OEDEMA.

BY

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THE following conclusions are based upon a recent series of 11 cases treated in No. 2 Canadian Stationary Hospital, Le Touquet, France. Apart from actual mechanical damage to the tissues, there is perhaps no other disease in the present war which presents such dramatic awfulness as malignant oedema (septic gangrene). Its onset is so rapid and its result so disastrous that, if the surgeon wishes to save his patient, he has no time to lose from the moment his diagnosis is, not apparent, but suspected. In other wars the mortality of malignant oedema has reached as high as 90 per cent., and yet I believe, if the treatment is instituted early enough, the mortality should be *nil*.

Symptoms.

The disease, we find, most frequently originates in a large bullet or shell wound, usually deep in the channel of exit. Its onset is insidious but rapid, and not especially painful. The wound is black, instead of red, and at first appears to be filled with decomposing blood clot, from which on, or sometimes without, pressure bubbles of gas issue. In a few hours the wound may present one of two phases—it either becomes dry and black, having an appearance of being seared with the actual cautery, or in other cases it presents a dark greyish slough not unlike diphtheritic membrane. The surrounding skin for several inches is often dark in colour, a smooth spreading pseudo-ecchymosis about the colour of iodine stain. It does not present the mottled appearance of true ecchymosis. The limits of the colour usually mark the extent of the disease. At the end of twenty-four hours the limb commences to swell, owing to gas in the tissues, and in a few hours becomes markedly oedematous. On pressure one can sometimes, but not always, elicit gas crepitus. The limb gradually becomes enormously enlarged and the skin is drawn taut, presenting a shiny appearance. There is one characteristic symptom prominent above all others, and unmistakable when once encountered: a vile pungent odour of remarkable penetrating power, capable of permeating a large hospital ward. It can only be compared to the odour of dead blood in a large cavity when scented at close range, but intensified a hundred-fold.

At the end of forty-eight hours, if the patient lives so long, the face assumes a sickly greenish pallor, and the expression becomes anxious. There is no change in the mentality. Patients remain rational to the last. The pulse presents the usual features of grave toxaemia. The temperature ranged in the cases under my observation from 100° to 105° F., and the pulse and respirations were in direct ratio to the temperature. It is quite likely the high temperature is due to complicating staphylococcic organisms, for in the most severe case of all, which, by the way, recovered, the maximum never exceeded 101° F. The pulse ranged from 104 to 128, unusually high in this series.

Treatment.

The necessity for the following treatment being carried out in detail is illustrated by the fact that we lost our first case—a skin wound only of the upper arm—because we treated it superficially. Two cases were moribund on entry, and died in a few hours. One case had a badly shattered limb, and was saved by amputation. The other seven cases recovered. It is necessary to make immediate and deep incisions down to the bone, under chloroform, by means of a 6 in. blade amputation knife. These incisions were, in the cases at Le Touquet, 4 to 6 in. in length. They were afterwards kept wide open with fenestrated rubber tubes, 1 in. in diameter, passed on transversely through the muscle to a counter incision. Not less than three, and in one case six, large openings, were made. The wounds were irrigated with solutions of hydrogen peroxide of the ordinary strength, followed by a mixture of the same solution with an equal quantity of carbolic acid 1 in 100. The wounds were also lightly packed with gauze. Dressings and irrigation were repeated every three hours. A high cradle was placed over the wounded part so as to admit plenty of air. After a few hours (as soon as checking of bleeding would permit) the gauze drainage was removed and only a thin layer of gauze left to cover the wound. It is quite possible that had these wounds been exposed for hours to direct sunlight we should have had a more rapid result.

The wounds have a great tendency to close in a few hours, and this, unless prevented by the surgeon, will bring about the anaërobic conditions we are trying to avoid. A pair of forceps and the moving about of the rubber tubes will prevent this accident. Night and day special nurses were employed, and since the adoption of this system of treatment (in the last seven cases) we have had no deaths. Recovery took five to seven days.

A CASE OF URINARY AMOEBIASIS.

BY

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URINARY amoebiasis appears to be a very rare condition; Braun[1] refers to 9 cases, and Doflein,[2] under the heading of *Entamœba urogenitalis*, gives references to 4 of the same cases as those mentioned by Braun. Baelz's case occurred in a woman in Japan; entamoebae were found both in the bladder and the vagina, and Baelz was of opinion that the parasites were introduced into the vulva with the water used for washing the parts, and that they penetrated thence into the bladder and vagina. The amoebae are said to have been very motile, with a diameter of about 50 μ. Apparently it was not stated whether they contained ingested red blood corpuscles, though the urine is described as sanguineous. Baelz's paper was published in 1883, twenty years before Schaudinn pointed out the distinctive characteristics of the pathogenic and non-pathogenic entamoebae. The author's suggestion as to the mode of infection of his patient seems very probable, if it is understood to mean that the amoebae were transferred from the intestine to the bladder and vagina by means of water used for ablution.

On May 12th, 1914, a male agriculturist, aged 18, Brahmin by caste, was admitted under my care to the King George's Hospital, Lucknow. He had been suffering from haematuria for six months, and from anasarca of the legs, penis, and scrotum for about three weeks. There was paraphimosis and a small superficial ulcer—scarcely more than an abrasion—on the glans penis near the meatus; from this ulcer there was a slight serosanguineous discharge. The sore was not indurated, and although there were numerous large spirochaetes, there were no treponemata in the discharge. The inguinal glands were not enlarged. No abnormality was found in the heart, lungs, spleen, or liver. There was no tenderness or irritability of the bladder and no fever. The appearance of the stools was healthy, and no entamoebae could be found in them; the patient stated that he had never suffered from dysentery. The urine was rather scanty and deeply blood-stained. Its reaction was acid; specific gravity, 1013; there were much albumin, numerous pus cells, red blood corpuscles, and a considerable number of hyaline and granular tube casts. The urine contained very numerous actively-motile entamoebae.

Half-grain doses of emetine hydrochloride were given hypodermically twice a day. The next day the amoebae were still numerous and very motile. In forty-eight hours, by which time the patient had received 2½ grains of emetine, the amoebae were much diminished in numbers, and decidedly more sluggish. On the following morning the urine was much clearer, and no longer tinged with blood; the reaction was now alkaline, the specific gravity 1010, there was little albumin, and a copious deposit of triple-phosphate crystals. No active entamoebae could be seen, but there were still a few non-motile rounded forms. These possessed no cyst-wall, and contained a large vesicular nucleus; they were probably dead. On May 17th no amoebae could be found in the urine, and the emetine was discontinued. The patient looked and felt much better. There was still some anasarca of the ankles and feet, and of the scrotum and penis. The urine was still alkaline, and contained only a trace of albumin.

On May 21st the swelling of the legs had quite disappeared, though that of the penis continued; the sore had healed. Within the next few days the reaction of the urine gradually became acid; a small quantity of albumin persisted, and an occasional granular or hyaline tube-cast could be found. The stools were examined microscopically almost every day; no entamoebae were found in them until June 5th, when there were a few sluggishly motile entamoebae, which seemed to be *E. tetragena*. At this time there were no amoebae in the urine, nor did any reappear during the rest of the time that the patient was under observation. The administration of emetine was resumed, and the entamoebae disappeared from the stools within two days.

The patient is still under treatment. He is evidently a case of chronic Bright's disease, and continues to pass a variable but always small quantity of albumin, and an occasional tube-cast. The urine is quite free from blood, and, although it has been examined repeatedly, no amoebae have been found in it since they disappeared on May 17th, nor have entamoebae been found again in the stools.

The entamoebae which occurred in the urine in this case were especially characterized by their active motility and by the unusual persistence of motion in one direction. As a rule, a single hyaline lobose pseudopodium was protruded in the direction in which the amoeba was travelling; as soon as the granular endoplasm had flowed into it a fresh ectoplasmic pseudopodium appeared at the same place. In this respect the entamoebae differed from the ordinary forms of *E. tetragena* and *E. coli*, which frequently produce pseudopodia simultaneously at different parts of their surface, and often alter the direction of their motion. As the result of its great motility, an amoeba soon travelled right across the field of the microscope. In addition to actively motile amoebae, spherical or oval resting forms were seen; these varied in diameter from 25 to 35 μ. The cytoplasm in both the active and resting stages was coarsely granular, with numerous vacuoles; the vacuoles ranged in size from those that were just visible to others of a diameter of about 3 μ.

Nearly all the amoebae contained red blood corpuscles (which abounded in the urine); some amoebae were literally crammed with these. Many of the red blood corpuscles appeared to have been ingested recently and preserved their normal colour; others, from which the haemoglobin had disappeared, could scarcely be distinguished from very large vacuoles in the cytoplasm. The number of ingested blood corpuscles varied, as a rule, from one to sixteen, with an average of about ten; in one actively motile amoeba I estimated that there were at least thirty. On the other hand, a few full-grown entamoebae contained no red blood corpuscles or other food particles. No included bacteria were seen in any of the amoebae, either in fresh or stained preparations, and no free bacteria could be found in the urine. The surface of the amoebae seemed to be sticky, as foreign particles were often seen adherent to the posterior end of the cell, and these were dragged about by the parasites.

No distinction could be made in active amoebae between ectoplasm and endoplasm except in the pseudopodia. In the motile forms a broad process of hyaline ectoplasm was protruded suddenly, and might attain a depth of 4 to 5 μ, and persist for several seconds before the granular endoplasm flowed into it.

A few of the amoebae that were motionless and appeared to be dead were circular in shape with one large persistent hyaline pseudopodium projecting on one side. Owing to the great activity and persistence of motion in one direction displayed by most of the entamoebae, they generally assumed a narrow elongated form, attaining a length of 50 to 60 μ, with a breadth of 10 to 20 μ. On May 15th, when the patient had received 1½ grains of emetine, there were numerous very large and very active amoebae; some of these measured as much as 100 μ by 30 μ. In most of the living active amoebae no nucleus could be made out; in a few, however, a spherical nucleus, about 4 μ in diameter, could be seen. The nucleus usually showed a peripheral aggregation of granules. The difficulty of distinguishing the nucleus in living amoebae was enhanced by the numerous included red blood corpuscles and by the numerous vacuoles, which tended to conceal it. *Intra vitam* staining with dilute methylene-blue did not help much, as the nucleus stained very faintly or not at all; by the use of this method, however, two amoebae were seen which contained two nuclei each. None of the amoebae possessed contractile vacuoles, and no encysted forms were seen at any time.

In preparations of the amoebae, fixed in Schaudinn's solution and stained by Heidenhain's iron-alum haematoxylin process, the cytoplasm is very vacuolated. The nucleus shows no definite nuclear membrane; in some cases, there is much chromatin collected round the periphery of the nucleus and connected by strands with a central mass; in other amoebae the chromatin is distributed more evenly throughout the nucleus, and is not especially collected at the periphery. In fixed specimens the entamoebae vary in size from 18 to 35 μ.

Attempts were made to infect animals with the entamoebae from this case, in order that the specific characters and life-history of the parasite might be studied more thoroughly. On May 15th about four ounces of urine, containing numerous but rather sluggish amoebae, were injected per anum as far up the colon as possible into a young kitten, and some of the urine was planted out on Musgrave and Clegg's medium. The kitten did not become infected, and no growth of amoebae occurred on the culture medium. On June 5th, when entamoebae were present in the stools, an emulsion was made and injected into a second kitten; this animal also did not become infected.

As already mentioned, encysted forms of the entamoebae were never found, either in the urine or in the stools.

It is therefore impossible to be quite sure of the species of entamoeba concerned; but, considering the morphological characters noted, there seems to be no valid reason to doubt that it was other than the commonly occurring *Entamoeba tetragena*. Certainly the motility of the amoebae found in the urine was much greater than that of any entamoebae that I have ever seen in the stools, but possibly the fluid nature of the medium may account for this.

To what extent the urinary tract was affected is also doubtful. In a case recorded by Posner,[3] that author came to the conclusion that the entamoebae spread from the bladder to the pelvis of the kidney.

The present case appears to be one of chronic tubal nephritis, and it seems to me to be more probable that the infection of the urinary tract with entamoebae merely aggravated a pre-existing condition than that it was itself the actual cause of the disease. The disappearance of the entamoebae from the urine, as the result of hypodermic injections of emetine, was immediately followed by the disappearance of blood from the urine, and a marked diminution (but not total disappearance) of anasarca, with, of course, a considerable diminution of the albumin in the urine. The tube-casts also diminished considerably in numbers. If the entamoebae were confined to the bladder, it is difficult to understand the marked amelioration of the condition of the urine as regards tube-casts, and the diminution in severity of the general symptoms. Now, however, although more than a month has elapsed since any entamoebae have been found, there is still some anasarca, and some albumin and a few tube-casts still persist in the urine. In Posner's case several relapses occurred in the course of more than a year; it will be interesting to note whether the present case also relapses.

The mode of access of the entamoebae to the urinary tract appears to be fairly obvious in this case. Although the patient states that he has never suffered from dysentery, entamoebae were found in his stools (otherwise normal) on two consecutive days, and their characters agreed with those of *Entamoeba tetragena*. It is the custom among Indians to wash the parts about the anus and perineum with water, after defaecation. It is easy to understand that entamoebae could readily be transferred by the ablution water from the neighbourhood of the anus to the orifice of the urethra, whence they could make their way to the bladder and the rest of the urinary tract. Probably an abnormal condition of the urine is necessary for the parasites to establish themselves. Chronic nephritis is a common enough disease in India, and so also is intestinal amoebiasis; hence opportunities for the infection of the urinary tract must frequently be present, and the case recorded above suggests that possibly urinary amoebiasis is a commoner condition among Indians and other Asiatic races than is generally supposed.

The rapid disappearance of the entamoebae from the urine of this case, as the result of hypodermic injections of emetine, is an interesting confirmation of the efficacy of this treatment in other forms of amoebiasis.

REFERENCES.
[1] Braun, *Animal Parasites of Man*, 1906, pp. 37-8. [2] Doflein, *Lehrbuch der Protozoen-Kunde*, 1909, pp. 505-6. [3] Braun, loc. cit.

CHRONIC INTESTINAL STASIS ASSOCIATED WITH LANE'S ILEAL KINK AND HYPOTHYROIDISM.

BY CLIFFORD MAYER, M.D., B.S.LOND., ETC.,
CHIEF MEDICAL OFFICER, BARODA.

IN face of the continued expression[1] of conflicting opinions on the real importance of peritoneal bands, whatever their mode of origin, in the production of chronic intestinal stasis, it may be of sufficient interest to place on record an instance illustrating beyond doubt the leading part that may be played by Lane's ileal band in simulating chronic appendicitis and in the causation of obstruction by kinking.

Mrs. B., European, aged 23, multipara (2), was admitted into the Countess of Dufferin Hospital, Baroda, on December 6th, 1914, for chronic intestinal stasis.

She had always been subject to constipation; for the last three years it had been getting worse, her bowels opening regularly only once every seven or eight days. She first had pain in the right iliac fossa about five and a half years ago, so much so that about three and a half years ago her appendix was removed in London by a well-known surgeon, but the attacks of pain did not disappear; if anything they had been getting worse, especially at the premenstrual time. Evidence of peristalsis in the right iliac fossa had been observed during an attack of pain by Major Mackechnie, I.M.S., under whose treatment she had been. He desired to operate on her, and for that purpose facilities were given him at the hospital.

Mrs. B. had pigmentation of the skin and presented many symptoms associated with chronic intestinal stasis, and, on careful scrutiny, also with hypothyroidism; in which order these two conditions should be correlated is a matter for speculation beyond the scope of this report.[2] It is to be noted that there was no relaxation of the abdominal walls or external evidence of enteroptosis.

I assisted Major Mackechnie at the operation, which was performed on December 7th, 1914. It had been proposed to perform an ileo-sigmoidostomy. The parts on opening the abdomen presented a disappointingly normal appearance. The caecum showed no trace of its removed appendix. There was no distension, no matting or any trace of old inflammation, no hypertrophy, no obvious sign of constriction or narrowing of lumen of any part of the gut. It was only on closer examination that Lane's ileal kink was identified. The peritoneal band was clamped, divided, and ligated, completely freeing the gut from its downward pull. The proposed ileo-sigmoidostomy was abandoned, and the rest of the operation consisted in "slinging" the retroverted uterus.

Major Mackechnie left for the front the day after the operation, and the case has remained under my observation. It is now more than three months since the operation, which yielded immediate striking results in the correction of the stasis. The latest report from the patient is that her bowels still continue to move daily, copiously, and without the help of any laxative.

It is regrettable that we had not the means of observing the behaviour of the gut under radiographic examination. I do not know, however, what more conclusive evidence than in this case can be adduced in favour of Lane's ileal kink having been the sole cause of the chronic obstruction. There was no disturbing factor otherwise to account for the stasis or to which the ultimate success of the operation might have been attributed. The fact that the appendix had been previously removed without relief does away with the suggestion of an inflamed appendix causing spasm of the ileo-caecal valve.

For those who admit only of the possibility of Lane's band playing a secondary part consequent on inflammatory thickening or contraction, or on "marked" visceral ptosis, or on defective tone of the intestinal wall, it may be said with absolute certainty that none of these conditions existed.

Rightly or wrongly, as time will show, none of the more ambitious operative measures had been undertaken such as ileo-sigmoidostomy, with or without colectomy, partial or complete, to which the success of the operation might have been attributed without in any way establishing a case for Lane's ileal kink.

Correction of the position of the uterus has no doubt helped in the disappearance of the premenstrual pelvic pain, but considering that the appendages were perfectly normal I do not know that it is possible to ascribe the pain in the right iliac fossa to a "reflex tonic spasm of the psoas muscle," though the attacks of pain were said to have been worse premenstrually. At any rate it would be too far-fetched to connect the dramatic relief of such pronounced stasis with the correction of the retroversion of an otherwise perfectly normal and movable uterus.

It may be further recorded that while the patient has been feeling ever so much better than she had ever felt before, and that her complexion soon became clear and pink, and all pelvic and right iliac pains have disappeared, yet the premenstrual headaches and neuralgias, though far less severe, still persisted, and there had been no appreciable diminution in the menstrual flow, which had always been far too abundant. The uterus is freely movable and in perfect position; the eyes, nose, and mouth, etc., have

been rigorously excluded as peccant causes of the neuralgias. From other associated symptoms of hypothyroidism I recently determined to place the patient on thyroid medication, yielding within the short period unexpectedly gratifying results.

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[1] Dr. Robert Hutchison, Alimentary Toxaemia and Intestinal Stasis, *Medical Review*, January, 1915; Mr. John Morley, Address on "Some Conditions that Simulate Chronic Appendicitis, BRITISH MEDICAL JOURNAL, 1914, vol. ii, p. 467. [2] Dr. E. Hertoghe, Thyroid Insufficiency, *Practitioner*, January, 1915.

A CASE OF LACRYMAL CONCRETIONS.

BY

G. MAXTED, M.D., F.R.C.S.,

ASSISTANT SURGEON, NORFOLK AND NORWICH EYE INFIRMARY.

C. M., female, aged 68, came to the Eye Infirmary in November, 1914, complaining of pain and discharge in the left eye.

The history was as follows: For the last three or four years she had been troubled with "watering" in the left eye, the fluid remaining quite clear until the last two or three months, when it became purulent and was associated with a good deal of pain and smarting in the corner of the eye; recently this pain had been so severe as to disturb her sleep at night.

On first seeing the patient one thought that she had a "sty" at the inner end of the lower lid, as it was much thickened and inflamed in this situation, but on looking more closely it was seen that the punctum was standing out at the summit of the inflammatory mass, as shown by a bead of pus exuding from it; the caruncle and neighbouring part of the conjunctiva were much congested, and on everting the lower lid the region of the canaliculus was seen to be greatly enlarged and swollen towards the conjunctival surface. A probe was passed through the canaliculus without the presence of any concretion being detected. The region of the upper canaliculus showed changes precisely similar to those of the lower.

The lacrymal sac itself was not dilated, and on syringing through the lower canaliculus only a small quantity of muco-purulent fluid escaped through the upper; no fluid appeared to pass down the nasal duct.

The lower canaliculus was then slit up, and at once six small faceted fawn-coloured concretions escaped; they were not very hard, and could be indented with a probe. On slitting up the upper canaliculus three somewhat larger concretions escaped, also faceted, and of the same consistency and colour as the others. The largest concretion measured 4 mm. across and the smallest 2 mm. Both canaliculi were greatly dilated, and their mucous lining was replaced by granulation tissue; nevertheless, they were still patent into the lacrymal sac, as shown by the course of the fluid on syringing. When a probe was passed into the lacrymal sac through the partially slit-up canaliculi, it was evident that they were constricted just at their entrance into the sac.

The literature on this subject shows it to be a rare condition.[1] The upper canaliculus is said rarely to be affected, although it was so in this case. Accompanying dacryocystitis is unusual, and in this patient the epiphora of several years' duration can well be explained by the obstruction in the canaliculi rather than by any nasal duct obstruction; this is borne out by the subsequent course of events, as two months after the removal of the concretions the woman had no epiphora and no accumulation of fluid in the lacrymal sac; the canaliculi had remained patent, and all thickening and congestion around them had disappeared.

Bacteriological examination of the concretions after decalcification showed them to be made up of a mass of organisms somewhat resembling colonies of actinomyces—long, thin organisms of the streptothrix class, staining very imperfectly by Gram's or methylene blue stains, and showing in places false branching.

The bacteriology of this affection is as yet rather obscure and in want of accurate classification, but most observers agree that the concretions are due to a fungus which is a form of streptothrix[2] difficult of cultivation.

In conclusion, I desire to express my indebtedness to Dr. G. P. C. Claridge for the bacteriological investigation of this case.

REFERENCES.

[1] Swanzy and Werner, *Diseases of the Eye*, tenth edition, p. 574.
[2] Pyle's *System of Ophthalmic Practice* (Pathology and Bacteriology).

EXCESSIVE REACTION FOLLOWING THE USE OF TINCTURE OF IODINE.

BY WILLIAM J. RUTHERFURD, M.D.

THE subject of severe reaction following the application of iodine as an antiseptic having been brought forward in the JOURNAL in an annotation on German war experiences,[1] it may be timely to place on record a few British observations on the same subject. I have been able to find only three such cases in my private journals in the notes of over 14,000 cases of illness, so that they are certainly not of very common occurrence; however, this excessive iodine reaction, like petrol dermatitis and other forms of *dermatitis a medicamentis*, seems greatly to depend on the personal tissue-reactions of the patient, or, in other words, on idiosyncrasy. To what extent this idiosyncrasy towards iodine may be developed or augmented by the hardships of trench warfare in the cold season it is difficult to say; but that external influences, nerve strain, and want of rest may have such a modifying influence seems probable, as they are doubtless all more or less operative in the common exudative and trophic lesions known for convenience under the collective designation of "trench frost-bite."

From such a point of view, it is not so extraordinary that Herzog should regard the indiscriminate use of the strong German tincture of iodine with grave suspicion, and record[1] that in a great number of cases the wounded were found on admission to hospital to be suffering from severe dermatitis in the neighbourhood of their wound as the result of its use, with the occurrence locally of vesicles and even of superficial gangrene. In this connexion it is perhaps worth while remarking that it was recorded during the Balkan wars of 1912–13 that there were cases where wounds had been converted into slowly-healing sores as the result of copious applications of iodine to exposed muscular tissue, which in consequence became dry, brittle, and black, as though it had been charred.

The following are brief notes of my three cases. They all occurred in summer, and each of the patients was of the male sex, although, perhaps, neither of these factors is of any importance.

CASE I.

A. E. B., aged 28, with inflammation of a small bursa situated over the left patellar ligament (not the bursa patellae). He painted the swelling with iodine five days before coming to see me, and two days after this application the leg became painlessly ecchymosed from knee to ankle, round the entire circumference of the limb. When he presented himself the ecchymosis was at the purple stage and gave the limb a very peculiar appearance, almost as though it had been steeped in some dye.

CASE II.

B. B., aged 50; chronic synovitis of the left knee. On June 25th he was instructed to paint the knee daily with the tinctura iodi mitior. On July 4th he presented himself, and it was seen that he had a desquamating iodine dermatitis about the joint, with oedema of the corresponding leg and foot. The application of the iodine was stopped, but six days later it was found that numerous large pemphigoid bullae, with clear serous contents, had developed in the leg, ankle, and foot. As in the previous case, a widespread area that had had no contact with the iodine (but which had been affected by the oedema consequent on its use) was affected.

CASE III.

J. I., aged 52, came to me with an injured hand, having received, two days before I saw him, a lacerated wound over the ulnar side of the dorsum of his left wrist. The wound had been sutured, and the wound area disinfected with iodine at the time of injury, in the casualty department of a hospital near the place where he had been at work, and the yellow staining of the skin was quite evident. In twenty-four hours he returned, an iodine dermatitis with extensive bullous formation having developed locally, three days after the iodine solution had been applied as a wound disinfectant.

The foregoing are but three instances among 14,000 patients. Against them must be balanced all the many instances, in hospital and out of it, in which no ill effects of any sort have followed the reasonable and judicious use

of iodine solutions. The conclusion is forced upon one that where there are no definite indications to the contrary (such as tender age), if the iodine be used in a way sanctioned by the dictates of common sense and experience, its recognized advantages as a primary wound antiseptic greatly outweigh any possible risk of severe reaction, such as might be caused by an idiosyncrasy non-existent in the great majority of persons. The so-called colourless tincture of iodine is of no advantage in this respect, as it contains no free iodine, and has none of the distinctive properties of that substance.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, March 6th, 1915, pp. 441–2.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL

VASO-DILATORS IN THE TREATMENT OF HYSTERICAL APHONIA.

THE cause of functional failure of the great nerve centres may be imperfect blood supply or some primary defect in nutritive activity on the part of the nerve elements themselves. If the first hypothesis be correct the existence of vaso-constrictor nerves in the cerebral vascular system must be postulated. Owing to the researches of Wiggers, whose conclusions have been corroborated by Morison and Gulland, this hypothesis has now become an established fact. Dr. Charlton Bastian, in his highly interesting and instructive monograph, *Hysterical or Functional Paralyses*, written more than twenty years ago, observed that the absolutely sudden onset and cessation of functional paralysis which are occasionally met with point very strongly to angio-neurotic spasm as the cause of the affection. This spasm need not be complete, occlusion of one-half or even one-third of the blood supply being sufficient. The cerebral vaso-constrictor filaments are not connected with the systemic vasomotor centre, though doubtless they have one of their own.

In connexion with this subject the following cases may be of interest.

CASE I.—C. S., aged 25 years, schoolmistress, had lost her voice for several days. After taking a few doses of nitroglycerine ($\frac{1}{100}$ gr. each), the aphonia completely disappeared, and did not recur.

CASE II.—A. C., aged 18 years, a domestic servant, had been aphonic for a year, during which period she had undergone much and varied treatment. Transitory benefit, lasting only a day or two at a time, resulted. On inhaling a capsule of amyl nitrite, her voice instantly returned. She has since been taking a mixture containing sodium and amyl nitrite, and during this time (a fortnight) she has constantly retained her voice.

Driffield. JOHN R. KEITH, M.D.Aberd.

CAECUM IN LEFT INGUINAL HERNIA.

IN October, 1914, I was asked to see a Malay boy, aged 3 years, at Kudat in British North Borneo. The parents alleged that for some months previously a swelling had appeared at intervals in the left side of the scrotum, but had caused no trouble until that time, when it became persistent, tense, and inflamed. It proved to be a left inguinal hernia which had become strangulated.

I operated immediately, and was surprised to find that the hernial sac contained the whole caecum, the vermiform appendix, and part of the ileum. The intestine was nowhere badly injured, so it was returned to the abdomen, and the remainder of the operation completed according to the method of Bassini.

At the time of the operation I recollected having seen several similar cases recorded which were due to the fact that the caecum possessed a long mesenteric attachment, and had become displaced from its usual position in the right iliac fossa. I think this must have been the explanation in this case, inasmuch as the liver and spleen showed no transposition on palpation and percussion.

The child made an uneventful recovery.

Singapore. JOHN F. HORNSEY, M.B., B.Ch.Oxon.

Reports of Societies.

HARVEIAN SOCIETY OF LONDON.

AT a meeting on April 22nd, after the passage of a resolution of sympathy with the widow of the late president, Dr. Edgar G. Bulleid, Dr. G. DE B. TURTLE was unanimously elected president for the remainder of the session. Dr. F. E. BATTEN opened a discussion on *Cerebro-spinal meningitis*. He said the last epidemic in this country had been in 1907–8. The disease was, however, constantly present as an endemic disease, showing a seasonal variation, the greatest number of cases occurring during the months of February, March, and April, and affecting chiefly children. Flexner had produced the disease experimentally in monkeys, and he had shown that it was possible to save monkeys so affected by intrathecal injection of an immune serum obtained from a horse. The serum treatment had greatly diminished the mortality, but as there were several strains of the meningococcus, it was important to obtain a serum which was polyvalent to as many strains as possible. In regard to the injection of serum, Sophian had insisted on the importance of controlling the removal of cerebro-spinal fluid and the injection of serum by observation of the blood pressure, and for that purpose had advocated the use of the gravitation method. The speaker considered that the syringe method was a perfectly safe and more easily regulated method than the gravitation method. He considered soamin inadvisable owing to its liability to produce optic atrophy. Dr. DAVID NABARRO described the changes in the chemistry and cytology of the cerebro-spinal fluid in meningococcal meningitis, and the alterations brought about by injections of serum. He also showed a number of lantern slides of the meningococci in the cellular deposit of the cerebro-spinal fluid and in culture. Dr. J. A. ARKWRIGHT, dealing with the epidemiology of the disease, said it had been shown by various observers that, though the carriers were usually free from the meningococci in two or three weeks, a small percentage were still carriers after two and even seven months, and Mayer had related a case probably existing two years. Carriers might develop meningitis after two or three weeks, and no doubt all cases were carriers for a longer or shorter period. Cases of meningitis must be looked upon as persons who, in the course of a pharyngeal infection, developed meningitis as a complication. Prophylaxis was then dealt with, the measures advocated being the detention and isolation of carriers early in the epidemic, whenever possible, the avoidance of overcrowding, and the breaking up of large bodies of troops into smaller units. The value of prophylactic vaccination was as yet uncertain. The variation of the number of carriers among contacts in different epidemics was alluded to. Among 300 soldiers who were contacts Dr. Arkwright and his colleagues only found four carriers. In other epidemics as many as 23 per cent. and 32 per cent. had been found by various observers. Dr. COLEBROOK, speaking of the treatment of meningococcus infections by vaccines, suggested that this should not be considered as alternative to the intrathecal injection of serum, but rather as complementary to it. By the use of serum one hoped to check the multiplication of meningococci in the cerebro-spinal fluid, and possibly to promote their destruction by phagocytosis, but it remained for the patient's own antibacterial defences to deal with the microbes which had established themselves in the meningeal and cortical tissues—the more serious factor in the infection. By the inoculation of vaccine into uninfected tissues one sought to whip up these antibacterial defences to a maximal effort. He referred briefly to his experience of about a dozen cases—some of the posterior basic, others of the epidemic type—of meningococcal meningitis in which vaccine had been used. He had several times seen the temperature come down and the patient's condition improve in a manner which strongly suggested that the inoculation of vaccine had exercised a favourable influence on the infection. But sometimes it seemed that very serious injury had been done to the central nervous system by the invasion of the cortex, blocking of foramina, etc., in the days or weeks of the disease before the commencement of vaccine treatment, and in these cases, although

the infection might be controlled, as evidenced by the temperature, the taking of food, etc., yet full recovery was very slow, or did not ultimately occur. It was therefore of great importance to use the vaccine very early in the disease, for choice on the second or third day. Probably nothing was to be hoped for in the fulminant cases, which ran their course within twenty-four hours, as the patient's response to vaccine would not be affected within a few hours at least, possibly a day or two. It might even do harm to inoculate a patient so suddenly overwhelmed with his infection. It would seem best to use an autogenous vaccine whenever possible, but during an epidemic it was certainly worth while to try the effect of a polyvalent stock vaccine. Such a vaccine had recently been prepared at St. Mary's Hospital from some fifteen strains isolated in various parts of the country. He had seen the best results with doses of 2 to 5 million cocci in young children and 7½ to 20 million in adults. Such small doses should be repeated every third or fourth day. Replying later to a question by Sir JOHN BROADBENT, Dr. COLEBROOK said he had recently used the stock vaccine above referred to for the prophylactic inoculation of persons exposed to the danger of meningococcal infection and of carriers. He had hoped that the vaccine might help to get rid of the microbe from the naso-pharynx of carriers, but this had not happened with any regularity. He had used doses up to 2,000 million subcutaneously and 300 million intravenously for these purposes. There was usually no general reaction, except after the intravenous doses. Dr. H. G. ARMSTRONG, Dr. LYON SMITH, and Sir JOHN BROADBENT also spoke.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on April 20th, Dr. MANKNELL in the chair, Dr. JASON WOOD read a paper on *Diagnosis in abdominal cases*. These cases divided themselves broadly into two groups: (*a*) Those in which the symptoms were sudden in onset; (*b*) those in which the symptoms were milder and of longer standing. In any case the chief things to decide were: (1) Was the patient's illness due to serious organic disease? (2) Was it a case in which operation was desirable or necessary, and when should operation be undertaken? He advised operation in all cases of serious abdominal injury if the pulse were good, as the probability was that some organ was ruptured. If the pulse were bad, the probabilities must be balanced and operation undertaken if possible. In civil practice all penetrating wounds should be operated on. In acute abdominal illness accurate diagnosis was well-nigh impossible. After enumerating the various conditions which might confront the surgeon when called upon to see an "acute abdomen," Dr. Wood pointed out that the first thing to decide was whether or not there was a perforation of a hollow viscus, as in these cases a few hours' delay meant death instead of recovery for the patient. He laid great stress on the fact that every case of severe abdominal pain was worthy of the closest examination from the very first. The cause of it was more likely to be serious than trivial. Until a diagnosis excluding certain things had been arrived at, purgatives, on the one hand, and morphine, on the other, should be avoided. Even though a perforation might have occurred, no signs of collapse may be present. The paper was discussed by Drs. MITCHELL, CLOW, OLIVER, and PHILLIPS. Dr. WOOD then replied. Dr. OLIVER read a paper on *Toxic amblyopia*. After mentioning the various drugs which had long been known to cause amblyopia, such as methyl and ethyl alcohol, lead, tobacco, male fern, quinine, muscarine, iodoform, ergot, and many others, he drew attention to ethyl-hydrocuprein, a new drug, which had lately made its appearance in the treatment of pneumonia. He was called in consultation early in February to see a patient who had been very ill with pneumonia in the first week of January. Five-grain doses of ethyl-hydro-cuprein were given every three hours. On the fourth day he had severe tinnitus and deafness, and the fifth day he became suddenly blind with semidilated and fixed pupils. In all he took 120 grains of the drug. He had bare perception of light, the retinal vessels were reduced to fine threads, and both discs were quite white and atrophic. Some slight improvement had taken place since. Dr. SYKES introduced a discussion on the *End-results of gastro-enterostomy*. He said that this had become one of the most successful of modern operations, but, unfortunately, there were many failures, chiefly owing to faulty selection of cases. He severely condemned the surgeon who performed the operation in the absence of any trace of ulcer, and comforted himself with the belief that it could drain the stomach and so relieve the suffering. It could not be too clearly emphasized that no good could come of it, even if there were an ulcer, if the pylorus was still patent and unobstructed. No food whatever would pass through an anastomotic opening, however large, so long as the outlet from the pylorus remained patent. Mr. PHILLIPS disagreed with Dr. Sykes's statement that no good could come from gastro-enterostomy if the pylorus was still patent, and quoted many cases where he had performed the operation with excellent results. Dr. MITCHELL said that *x* rays showed distinctly that food did pass through an anastomotic opening, even though the pylorus were patent. Drs. OLIVER, WOOD, LANKESTER, and MANKNELL also took part in the discussion, and Dr. SYKES replied.

Reviews.

THE FIRST ASYLUM FOR THE INSANE.

SPAIN has been credited with the foundation of the first asylum for the treatment of lunatics, but this honour really belongs to our own country. It is true that in the fifteenth century asylums were founded at Valencia in 1409, at Saragossa in 1425, at Seville and Valladolid in 1436, and at Toledo in 1483, and it is interesting at the present time to recall that the first of these owed its establishment to a monk named Joffre.

Bethlehem Hospital is considerably older than any of these institutions. It is the offspring of a monastery founded to give shelter and alms to poor pilgrims to the Holy Land. This establishment fell on evil days in the middle of the thirteenth century, and Pope Innocent IV, to whom an appeal was made for help, gave the brethren a circular letter, which was publicly read in churches. Among those who heard it in London was Simon FitzMary, sheriff of the City of London. So moved was he that in 1247 he gave to the Bishop of Bethlehem land in Bishopsgate for the establishment of a priory, which, though not originally intended as a hospital for the care of the sick, seems at an early date of its existence to have been used as a place of shelter for insane persons. Mr. O'DONOGHUE, who has written the history of Bethlehem Hospital,[1] says that an inventory, dated 1398, mentions "four pair of manacles, eleven chains of iron, six locks and keys, and two pairs of stocks." Some twenty-two years earlier it is recorded that certain persons who had lost their reason were by a royal order transferred from an asylum at Charing Cross to the Convent at Bishopsgate. In its early days Bethlehem seems to have been regarded by its administrators as a fine field for plunder, as a certain Prussian Field Marshal is said to have looked upon London. Scandal led to official inquiries, which revealed not only the most unscrupulous pillage of property left for charitable purposes, but neglect of the patients and imposition on their friends. Notwithstanding these abuses, the hospital did good work. Mr. O'Donoghue quotes a record from the Commonplace-book of William Gregory, dated about 1451, the year when he was Mayor of London:

> A church of Our Lady is named Bedlem. And in that place are found many men that have fallen out of their wits. Right well are they cared for in that place and some are restored to health again, but some are there for ever for they are incurable.

The author suggests that it was a visit to Bethlehem that inspired Reginald Scot to protest against the burning and drowning of witches on theological grounds. It was in his work, *The Discovery of Witchcraft*, published in 1584, that for the first time in England it was pointed out that the bewitched were suffering not from enchantment, but from a disordered brain.

In 1675 the hospital was removed from Bishopsgate to Moorfields, and in the early part of the nineteenth century it was transferred to its present site in St. George's, Southwark, on land which had been previously occupied

[1] *The Story of Bethlehem Hospital from its Foundation in 1247.* By E. G. O'Donoghue, Chaplain to the Hospital. London: T. Fisher Unwin. 1914. (Med. 8vo, pp. 447; 140 illustrations. 15s. net.)

by pleasure gardens and a spa which at one time had a considerable reputation.

Bedlam, as is well known from the eighth scene of Hogarth's Rake's Progress, was, till the middle of the eighteenth century, one of the public sights of London. In 1769 sightseers were excluded, a resident medical officer was appointed, and other reforms were instituted which made for the greater welfare of the patients. About 1780 improvements were made in the diet which banished the scurvy and dysentery that had previously raged among the inmates. But the state of things was still far from satisfactory.

In 1814 Edward Wakefield, a philanthropist, visited Bethlehem and saw one James Norris, a patient whose case is notorious in the annals of the hospital, in chains. He was so shocked by the sight that he induced some members of Parliament to see it for themselves. This, together with the interest aroused in the public mind by the insanity of George III, made the treatment of the insane the subject of attention in Parliament. Finally, in 1845, lunacy commissioners were appointed with the seventh Lord Shaftesbury, then Lord Ashley, as Chairman. In 1853 the hospital was registered by the lunacy commissioners, and since then has been under their supervision.

For a long time Bethlehem strongly resisted all outside attempts to reform it, but finally darkness fled before the light of growing knowledge, and the example of Pinel, Tuke, Conolly and others completed the work of reform. The contrast is strikingly shown in the later chapters of Mr. O'Donoghue's book. These are devoted to an account of the transformed Bethlehem as it is at the present day. He has told his story in a most interesting way, and the text is illustrated with pictures which show the growth of the hospital and give an idea of its condition at different periods. He has ransacked English literature century by century for references to everything bearing on his subject, and he gives accounts of many of the most celebrated patients who at one time or another have been confined there. With infinite labour he has gathered a mass of valuable material, and a little rearrangement and compression would make the book as perfect in literary form as it is fascinating in the quality of its matter. As it is, we warmly congratulate the author on the result of his labours. He has produced what the French call the definitive history of the great hospital which is evidently very near his heart.

VENEREAL DISEASES.

DR. C. F. MARSHALL'S treatise on syphilology and venereal disease[2] has now reached its third edition. In the preface to the present edition the author has the satisfaction of reminding himself and his readers that certain of the suggestions which he made in the first edition, published nine years ago, pointing out the importance of syphilis as an etiological factor in many morbid conditions, have now been proved by serological research. The volume forms a fairly complete summary of what is known about syphilis and gonorrhoea from every point of view, and reference to original papers is much facilitated by the useful bibliography appended to each chapter. The question of the use of salvarsan and neo-salvarsan in the treatment of syphilis is fully discussed. Dr. Marshall appears to hold a higher opinion of these drugs than he did when he published his second edition, but he still adopts a conservative attitude towards them, and regards mercury and the iodides as the sheet-anchors of anti-syphilitic treatment. He is in agreement with Mentberger in attributing at any rate a certain proportion of the deaths after salvarsan to arsenical poisoning rather than to the other causes which have been suggested, such as the liberation of endotoxins owing to the destruction of spirochaetes, and the toxicity of the distilled water employed. We feel bound to say that after reading Mentberger's essay, which is very carefully and cautiously written, we think that he is right. The weak point of Dr. Marshall's book is that he is too often content to record the cases and opinions of others, and does not draw enough upon his own experience. In consequence we miss the personal touch which is expected in a monograph, and a certain reminiscence of scissors and paste intrudes itself upon the mind of the reader. It is a pity that there are no illustrations; syphilis is a subject which above all requires illustration, and also lends itself to it.

[2] *Syphilology and Venereal Diseases.* By C. F. Marshall, M.D., M.Sc., F.R.C.S. Third edition. London: Baillière, Tindall, and Cox. 1914. (Demy 8vo, pp. 473. 10s. 6d. net.)

While rather a superabundance of books on syphilis has been published in recent years, the subject of gonorrhoea has received less attention. Yet this subject is of prime importance, both on account of the disastrous effects it produces in the individual, especially in women, and also on account of its effects on the race, since it is one of the principal causes of sterility. DR. WATSON'S book on *Gonorrhoea and Its Complications*[3] is therefore welcome, giving as it does the experience of one who has had a wide acquaintance with this disease. The bacteriology and pathology of the gonococcus and the immunity reactions caused by it are well described; the author regards both the complement-fixation test and the gonococcal cutaneous reaction as useful aids in diagnosis. But the chief value of the book lies in the chapters devoted to treatment; the author exercises a wise discrimination between methods of proved and those of doubtful value. Dr. Watson is a firm believer in the irrigation treatment, which he prefers to call lavation, and also in the urethroscope, but he regards the present position of vaccine therapy as unsatisfactory, and holds that vaccines may do more harm than good if used indiscriminately. In the treatment of gonorrhoea in women he recommends the insertion of a culture of lactic acid bacilli into the vagina and cervix. This bacillus is said to replace the bacillus of Döderlein, which is protective against vaginal infection, and which becomes destroyed by secondary organisms in the vaginal discharge. The author does not approve of curetting in gonorrhoeal endometritis, and advocates palliative treatment in salpingitis. He thinks abortive treatment worth a trial in the male, in cases seen within twenty-four hours after infection; he recommends argyrol or novargan, but rightly remarks that no application should be used which, in the event of failure, will render the subsequent urethritis more acute. He draws attention to the danger of "gonococcus carriers," in whom the gonococcus is implanted upon the urethra without causing urethritis. He is not in favour of heated sounds, medicated bougies, or Bier's treatment in acute urethritis, and thinks the last method liable to cause systemic infection. He considers that operative procedures recently advocated for epididymitis should not be lightly undertaken. The administration of atropine, recommended by Schindler, with a view to prevent epididymitis, etc., receives his support. There is one statement (on p. 349) to which we take exception—namely, that "no toxin seems to be elaborated by the gonococcus, but . . . there are certain endocellular substances (endotoxins) which, when injected into man and animals, produce toxic symptoms." This appears to be a distinction without a difference, for the production of toxin by the gonococcus is described on pages 33 and 267. We were also under the impression that De Christmas isolated a gonotoxin which produced urethritis when injected into the urethra. On page 148 the description of Luys's method would be better replaced by the method of ionization by means of a silver stylet and silver nitrate solution. Apart from such minor criticism, we regard Dr. Watson's book as perhaps the best monograph on gonorrhoea in the English language, and we confidently recommend it to all practitioners who have to deal with this disease.

MR. HAYES is of opinion that mercury is the most important factor in the cure of syphilis in any stage. Inunction is without doubt, he believes, the best method for ensuring the cure of patients without the risks of failure or of mercurial poisoning. *The Intensive Treatment of Syphilis*[4] is, therefore, a work advocating the Aachen treatment, the efficacy of which depends on perfected skill in medical and nursing attendants. All patients cannot afford to go to Aix-la-Chapelle, and many who could were deterred, even before the war, from sojourning in a place with what the

[3] *Gonorrhoea and Its Complications in the Male and Female.* By D. Watson, M.B., C.M. London: H. Kimpton. 1914. (Roy. 8vo, pp. 395; 12 plates, 72 illustrations. 15s. net.)

[4] *The Intensive Treatment of Syphilis and Locomotor Ataxia by Aachen Methods.* By R. Hayes, M.R.C.S., etc. London: Baillière, Tindall and Cox. 1914. (Cr. 8vo, pp. 68. 3s. 6d. net.)

author terms "such a very specific reputation." He maintains that the Aachen treatment can be carried out efficaciously in London, the details being understood, for there is nothing essential which is not at hand. The treatment, in his experience, is specially indicated in nerve syphilis and tabes, the latter at least being slackened or checked.

THE "ENCYCLOPAEDIA MEDICA."

THE first volume of the new edition of the *Encyclopaedia Medica*[5] extends from Abattoir to Asphyxia. We notice that a good deal of its 744 pages is taken up by definitions of technical terms, so that it partakes somewhat of the nature of a dictionary: Abasia, abulia, agoraphobia, agrypnia and some other terms might therefore have been included. Half a page is devoted to the prefix "anti"; ninety pages also have been allotted to the Basle nomenclature of anatomy as, in the opinion of the editor, a knowledge of it is essential for the mutual understanding of seniors and juniors in their anatomical descriptions.

Non omnia possumus omnes, and we therefore do not pretend to have read all the articles contained in this volume, as they range over a wide field of subjects. But, so far as we have read them, we may safely say that they give good accounts of the matters of which they treat. We may remark, however, that the writer of the article on acidosis has not mentioned that a persistence of such a state of blood for weeks, and even for months, may be compatible with perfect well-being; and that a fatal case of diabetic coma has been reported in which the urine contained neither diacetic nor beta-oxybutyric acid, of which not a trace could be detected in the liver when treated by the Magnus-Levy method.

So also the influence of alcohol on metabolism is in the corresponding article somewhat too dogmatically stated. The reference to Chittenden's experiments, according to which alcohol is said to raise the output of uric acid by 100 per cent., is misleading without the necessary qualifications; it would have been well to have mentioned that in carnivorous mammals, such as cats and dogs, uric acid is very irregularly excreted, and is often completely absent from the urine. There may have been output, but not necessarily production. Nor, we believe, has it been proved that alcoholic drinks such as generous wines, whisky, and champagne have any material influence upon the excretion of uric acid.

Again, Sir Thomas Lauder Brunton rightly insists that the treatment which is useful in the genuine angina pectoris is not effective in the pseudo-angina, and may even cause asphyxia if pushed too far; accurate diagnosis is here most necessary. We regret, however, that Sir Thomas has not helped towards the solution of that difficult problem. It is easy to appreciate the nature of the group of symptoms peculiar to angina pectoris if it occurs in a hysterical female; it is not so if it occurs in a neurasthenic male towards middle age.

Very interesting is the article by the editor on antenatal pathology and hygiene. We should not be surprised if it were to cause many readers to turn to the original work on which it is founded. We miss any reference to anxiety neurosis, but we suppose that it will be treated in a later volume under "neurosis." Let us say, in conclusion, that the work has a number of instructive illustrations in the text, and several excellent coloured plates.

CHRONICLES OF AN OLD CAMPAIGNER.

FIFTY-FOUR years have passed since the first attempts at notification of consumption were made in Manchester by Dr. ARTHUR RANSOME. Weekly returns were started of new cases of certain diseases, of which phthisis was one, occurring in certain areas. These returns were kept up for many years, and paved the way to the present system of notification.

During his long life Dr. Ransome has been a progressive student of tuberculosis, especially in relation to lung disease. With abundant clinical experience of the successes and failures of various forms of treatment, he has always been a persistent advocate of preventive, rather than of curative, measures. A selection from the numerous papers, essays, and addresses that he has published from time to time has now appeared in a single volume,[6] which will be found not only of great historical interest, but full of thoughtful suggestions, indicating lines for future research.

The introduction of national insurance, with its alluring promises of free treatment for the consumptive, has turned the current of public interest too exclusively towards the curative aspect of the subject. The needs of the individual are receiving more attention than the ultimate benefit to the community. In the first section of his book Dr. Ransome has included some recent papers dealing very fully with this question. He emphasizes his objection to State treatment, but is equally emphatic in his advocacy of public legislation to compel observance of preventive proceedings, and especially in relation to the reconstruction of crowded buildings in affected areas. The rate of decrease of mortality from consumption during the last ten years has not been steadily maintained, and the author's prophecy, uttered in 1899, that the vanishing point would be reached in thirty years, does not seem likely of fulfilment. The main channels of infection are, however, clearly recognized, the means by which they may be counteracted are well known, and it remains to acquire the necessary powers to put them in force.

In another section of the book the conditions of infection are discussed, and the resistant powers of the human organism closely examined. The direct relation between the increase in the number of blood cells and the decrease in the progress of tuberculosis has often been made manifest. Phagocytosis is undoubtedly stimulated as this increase progresses, and a constant diminution in the number and virulence of the pathogenic micro-organisms, other than the tubercle bacillus, must play no small part in the restoration of the healthy physiological processes. Dr. Ransome expresses his own belief that most of the good results which follow sanatorium treatment may be attributed to this induced polycythaemia.

In the later sections of the book will be found records of researches undertaken by the author and others, and a great deal of statistical information which should prove useful to present-day workers upon the same subject.

NOTES ON BOOKS.

THE virtues of *Allium sativum* as a remedy for scrofulous affections have been extolled at intervals for many centuries. They have of late years been brought again into notice by Dr. W. C. MINCHIN, whose small work on the subject,[7] reviewed in our columns (BRITISH MEDICAL JOURNAL, July 13th, 1912), has expanded into a second edition, in which a great deal of clinical evidence is quoted to prove that the old-fashioned dressing of minced garlic and lard has a very marked bactericidal power, and that cases of surgical tuberculosis condemned to amputation have been cured by its means without further surgical interference. Illustrations of patients "before and after" are inserted to afford photographic proof of these results. Given internally, or applied in the form of spray to the throat, preparations of garlic are stated to have worked wonders in pulmonary or laryngeal tuberculosis. The writer comments upon the strong antipathy many persons exhibit to the smell of the pungent vegetable, and finds that in such cases the remedy does no good. Other observers have noted the same.

Mr. R. R. BENNETT'S *Medical and Pharmaceutical Latin*[8] deals in a very comprehensive manner with the use of Latin in prescriptions. The first section is devoted to ordinary elementary Latin grammar, the examples of the application of the syntactical rules being drawn from phrases commonly used in prescriptions. A large number of typical prescriptions are then given, first in the usual abbreviated form and then in full Latin and English. Formulae from the old *London Pharmacopoeia* provide

[5] *Encyclopaedia Medica.* Under the general editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Vol. I: Abattoir to Asphyxia. Second edition. Edinburgh and London: W. Green and Son, Ltd. 1915. (Roy. 8vo, pp. 759; illustrated. 20s. net.)

[6] *A Campaign Against Consumption: A Collection of Papers relating to Tuberculosis.* By A. Ransome, M.D., F.R.C.P., F.R.S. Cambridge: The University Press. 1915. (Demy 8vo, pp. 271; 3 maps, 6 charts. 10s. 6d. net.)

[7] *The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Oleum allii.* By W. C. Minchin, M.D.Univ. Dublin. Second edition. London: Baillière, Tindall, and Cox. 1915. (Cr. 8vo, pp. 126; 7 plates, 1 figure. 5s. net.)

[8] *Medical and Pharmaceutical Latin, for Students of Medicine and Pharmacy.* By Reginald R. Bennett, B.Sc.Lond., F.I.C.; with an introduction by Henry G. Greenish, F.I.C., F.L.S. Second edition. London: J. and A. Churchill. 1914. (Cr. 8vo, pp. 457. 6s. 6d. net.)

further exercises in translation; a large section is given to Latin-English and English-Latin vocabularies, and a final section contains examples of Continental prescriptions. The book should be very useful to medical and pharmaceutical students.

THE LISTER INSTITUTE.

THE annual meeting of the Lister Institute was held on May 12th. The report, though it was the twenty-first, and thus marked the coming of age of the Institute, was chiefly concerned with the part the Institute has taken in the service of the country at this crisis.

Immediately after the declaration of war the governing body, at the request of the staff, placed the services of the Institute at the disposal of the Army Medical Department. In doing so it forwarded a list of volunteers, showing those available for foreign service, and offered to supply serums and vaccines at cost price. These offers were all gratefully accepted, and a large supply of vaccines and serums was at once requisitioned. The consequent severe pressure on the Elstree laboratories was cheerfully met by Dr. MacConkey and his staff, assisted by several willing volunteers from the Institute at Chelsea. In the same spirit Dr. Alan Green, in charge of the calf lymph at Elstree, placed his laboratory and stables at the disposal of the serum department, and carried on his own work in temporary premises at Bushey. Later on Dr. Zilva, who had been working as a research student under Professor Harden, of the department of bio-chemistry at the Institute, was appointed scientific assistant to Dr. MacConkey. The number of horses used in the preparation of serum was considerably increased, as many as 60 being required for the production of the tetanus antitoxin alone.

At the Institute at Chelsea the demand for antityphoid vaccine entailed much extra labour, especially on the bacteriological staff, but, working with goodwill and energy, it was not only able to satisfy the demands, but to afford assistance to the Army Medical Department in connexion with the manufacture and distribution of antityphoid vaccine at the Royal Army Medical College, Millbank. At the outbreak of war that College was deprived of a considerable part of the military staff usually engaged in this duty, while at the same time enormous demands were being made upon it in order that the Expeditionary Force might be inoculated prior to embarkation. At the request of Colonel Sir William Leishman, the Institute deputed a bacteriologist and two laboratory attendants to work at Millbank. In the eight months ending March 31st, 1915, the following deliveries, besides considerable quantities of other prophylactic preparations, were made to the army and navy medical departments:

Army.		
Tetanus antitoxin ...	...	102,340 doses.
Diphtheria antitoxin ...	...	18,500 ,,
Antityphoid vaccine ...	...	770,000 ,,
Navy.		
Tetanus antitoxin ...	...	18,300 ,,

Mr. Sydney Rowland, assistant to the director, Dr. C. J. Martin, in the department of experimental pathology, took out the first mobile field laboratory to the Expeditionary Force in October. It proved of so great advantage to the Medical Corps at the front that three other mobile laboratories were shortly called for. It will be remembered that the valuable services rendered by these laboratories in the early diagnosis of infectious disease and the detection of carriers were cordially acknowledged by Sir John French in a recent dispatch.

Another matter in which the Institute was able to give assistance to the army was in connexion with the outbreaks of cerebro-spinal meningitis. In response to a request from the medical officer in charge of the Canadian contingent, Dr. Arkwright fitted up a laboratory in connexion with No. 1 General Hospital of the first Canadian contingent at Bulford. He was shortly afterwards joined by Dr. Schütze, assistant bacteriologist to the Institute, and with the assistance of four Canadian medical officers —Major Rankin, Captain Shanks, Captain Lomer, and Captain Ellis—a bacteriological examination of the throats of over 1,400 men was undertaken, with the result that thirty carriers were discovered and isolated. Subsequently Dr. Penfold, assistant bacteriologist at the Institute, worked in conjunction with Dr. Johnstone of the Local Government Board and Dr. Fison, medical officer of health for Salisbury, in connexion with an outbreak of the disease in that city. As it was found early in the epidemic that the antimeningococcic serums available in this country were of little, if any, value, in the treatment of the cases, the Institute made special efforts to immunize horses as rapidly as possible with strains of the organism isolated from the present epidemic. Time has not yet permitted an analysis of the effects of the new serum in a sufficient number of cases, but the results of its use are regarded as promising.

Recently, Dr. Ledingham, bacteriologist in chief, with Drs. Penfold and Hartley, has been appointed to take charge of the pathological and bacteriological service of the new King George Military Hospital, Waterloo. Pathological and bacteriological laboratories have been provided at the hospital, under the direction of Dr. Ledingham. The laboratories at the Institute at Chelsea will be used as a base for the preparation of culture media and the carrying out of investigations requiring further facilities.

In response to a request from the Royal Society, Mr. Greenwood, the Institute's statistician, and Dr. Atkin, an assistant bacteriologist, have been seconded for the purpose of a scientific and experimental inquiry into swine fever—a matter of importance to the food supply of the country.

It will be seen, therefore, as the annual report points out, that the exigencies of the war have greatly depleted the staff of the Institute. Nevertheless, through the energy of the director and of his colleagues remaining at Chelsea, who have, with the same public spirit, subordinated their special investigations to the more pressing national needs, adequate arrangements have been maintained for dealing with the various requisitions of the Army Medical Department and carrying on the ordinary routine investigations of disease in connexion with civil practice, the volume of which shows no signs of diminution.

With regard to the proposal of the governing body that the Institute should amalgamate its funds, forces, and management with those of the Medical Research Committee, established in accordance with the provisions of the Insurance Act—a proposal which was rejected at a general meeting of the members on November 18th—the governing body states that in the circumstances of the war it is not deemed advisable to ask for a reconsideration of the decision, but that it is hoped that the vote last November may not be considered as barring further friendly discussion of the suggestion at some future time. The accounts and balance sheet show that the excess of income over expenditure at Elstree was less than usual; this was due partly to the higher cost of production during the second half of 1914, but principally to the action of the governing body in writing down more severely than usual the value of the stock in hand.

In concluding their report, the governing body paid the following tribute to the director and his staff: "In conclusion, the governing body wish cordially to thank the director and all grades of the staff of the Institute for the willing and energetic manner in which every one has met the altered conditions and the extra work imposed by the great emergency. They realize especially how great must have been the strain on the director to carry on the ordinary routine work of the Institute with his depleted staff, and at the same time to conduct negotiations in regard to the new activities referred to in this report. They wish to acknowledge, also, how much both the governing body and his colleagues in the laboratories owe to his wise and sympathetic advice."

THE Swarthmore lecture before the Society of Friends will be delivered by Professor Silvanus Thompson, F.R.S., at the Central Hall, Westminster, on May 18th, at 7.30 p.m., the subject being the quest for truth. Admission is free.

THE Osiris Prize Committee, which includes representatives of each of the five academies of the Institute of France, has made the following recommendations: That the prize for 1912 be not awarded as a whole, but that £2,000 should be given to Dr. Vincent in recognition of the value of his method of antityphoid vaccination, and £2,000 to Drs. Chantemesse and Vidal for their work in the same direction.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE Fund has received in the last fortnight some large additions; these, however, were not the result of recent subscriptions, but represented the paying to the treasurer of money collected over a considerable range of time by local funds.

The money in the hands of the Executive Committee is sufficient for immediate wants, as will have been gathered from the weekly reports in the medical and pharmaceutical press, but it is most important to understand that the calls upon the Fund in the future will be heavy.

Twenty-fourth List.

	£	s.	d.
Mr. J. P. Ellerington (La Pharmacie Française), (7th donation—total, £50)	5	0	0
Mr. A. W. Sanders ...	1	0	0
Southern Branch, B.M.A. (per Dr. James Green, Hon. Sec.), (6th donation—total, £61 4s. 6d.)—			
Dr. Chas. C. Jeffery ...	1	1	0
Dr. Archibald Leishman...	1	1	0
Dr. J. G. Blackman ...	1	1	0
Dr. R. A. Weston ...	1	1	0
Dr. E. F. S. Green ...	1	0	0
Canadian Committee (per Dr. J. Gibb Wishart, Hon. Treas.), (5th donation total, £1,427 3s. 11d.) ...	500	0	0
United Hospitals Club (per Dr. J. R. Bosworth, Hon. Sec.), (2nd donation—total £50) ...	25	0	0
Dr. H. Clifton Hughes ...	1	0	0
"A Friend" (per H.C.H.)	1	0	0
Shropshire and Mid-Wales Branch, B.M.A. (per Dr. A. G. Mackenzie, Hon. Sec.), (8th donation—total, £46 14s.)—			
Dr. R. A. F. Exham ...	0	10	6
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.), (10th donation—total £369 18s. 6d.)—			
Dr. Munro	1	1	0
Part proceeds of Belgian Flag Day, given by the Women Workers at Wheatley Hill (per W. W. Jones)	18	18	6
Miss J. Phillips... ...	0	5	0
Mr. H. R. Carson ...	0	5	0
Mr. R. Broadhead ...	0	10	6
Mr. F. W. Sadler ...	0	10	0
Orange Free State Pharmaceutical Society, Bloemfontein (per Mr. H. H. Greenwood, Hon. Sec.) ...	5	0	0
Australasian Pharmaceutical Conference (per the Agent-General, New South Wales)	152	0	0
Holderness and Howdenshire Pharmacists' Association (per Mr. C. Morrow)	1	0	0

SCOTLAND.

The following subscriptions, amounting to £93 2s., have been received in addition to those acknowledged in the JOURNAL of March 13th and April 10th. The grand total is now £1,113 18s., of which £1,000 has been handed over to Dr. Des Voeux, the treasurer of the general fund in London. The treasurers of the fund in Scotland are Drs. Norman Walker, Royal College of Physicians, Edinburgh; Dr. R. McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh; Dr. W. G. Dun, Royal Faculty of Physicians and Surgeons, Glasgow; and Mr. J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.

	£	s.	d.
Dr. N. Sydney-Williams, India	2	0	0
Dr. T. Burn-Murdoch, F.R.C.P.E	1	1	0
Dr. A. J. Ballantyne ...	1	1	0
Dr. Thos. McGregor ...	1	1	0
Dr. James Parker... ...	5	5	0
Dr. A. Whyte Cassie ...	1	1	0
Dr. Jas. W. Cook... ...	1	1	0
Dr. John Rowan	3	3	0
Dr. Wm. Snodgrass ...	2	2	0
Dr. L. R Gray	1	1	0
Per Dundee Branch of British Medical Association—			
Dr. Julia L. Pringle ...	5	0	0
Dr. Emily C. Thomson	5	0	0
Dr. J. H. W. Laing (2nd donation)	2	2	0
Dr. J. K. Tulloch ...	5	0	0
Dr. G. A. Rorie	2	2	0
Dr. C. Shoon	1	1	0
Dr. M. F. Anderson ...	1	1	0
Dr. C. Kerr	3	3	0
Dr. D. N. Anton ...	1	1	0
Dr. H. E. Fraser ...	1	1	0
Dr. C. S. Young... ...	1	1	0
Dr. W. C. Anderson ...	1	1	0
Dr. J. M. White ...	1	1	0
Dr. J. Crawford... ...	1	1	0
Mr. R. P. Mathers ...	3	3	0
Mr. J. Anderson ...	2	2	0
Dr. W. S. Malcolm ...	3	3	0
Dr. A. B. Dalgetty ...	0	10	6
Dr. D. Laing	1	1	0
Dr. J. A. Dewar... ...	1	1	0
Dr. J. Richardson ...	1	1	0
Dr. J. Ewan Taylor ...	1	0	0
Dr. W. E. Foggie ...	1	1	0
Dr. F. M. Milne ...	1	1	0
Dr. C. R. Marshall ...	1	1	0
Dr. S. W. Smith ...	1	1	0
Dr. R. Johnston ...	2	2	0
Dundee and East of Scotland Pharmaceutical Association (per Mr. Jas. Robertson, Dundee)	8	9	6
Anonymous	0	10	6
Dr. James Watt ...	0	10	6
Dr. John Anderson ...	1	1	0
Dr. J. Isdale Greig ...	1	1	0
Dr. John McLaren ...	1	1	0
Association of School Medical Officers of Scotland (per Dr. Hunter, Corstorphine), (2nd contribution) ...	5	5	0
West Lothian Local Medical Committee (per Dr. Hunter, Corstorphine)	3	3	0
Dr. J. J. Robertson ...	1	1	0
Dr. W. Oliphant Walker	1	1	0
Sister J. W. Watt ...	1	0	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments contributed by the following donors since the publication of the last list:

Dr. C. W. Buckley, Buxton.
Mr. A. Broomhall (per the Voluntary Aid Committee), Hull.
Miss C. W. Hyde, Southampton.
Mrs. C. J. Kayser, Fleet.

ROYAL MEDICAL BENEVOLENT FUND.

(Continued from p. 769.)

AT the last meeting of the Committee thirty-nine cases were considered, and grants voted to thirty-five of the applicants. The following is a further summary of cases relieved:

Widow, aged 45, of M.B., C.M.Edin. who practised at Ballindallock. Left totally unprovided for at husband's death in 1910. Has four children, three at school. Tries to earn a little by letting rooms, but been unsuccessful lately. Relieved four times, £40. Voted £10 in two instalments.

Widow, aged 67, of M.R.C.S.Eng. who practised at Sheffield. Has made a little by teaching German in private schools, but cannot obtain any work at present. Has an Epsom pension. Relieved fifteen times, £112. Voted £10 in two instalments.

Daughter, aged 59, of M.R.C.S.Eng. who practised at Blackheath. Has suffered since childhood with a nervous complaint, and never been able to work. Her sister helps as much as possible. Relieved ten times, £91. Voted £10 in two instalments.

Widow, aged 84, of M.R.C.S.Eng. who practised at Great Marlow. Has three daughters, two of whom, along with one son, are deaf and dumb. None are able to earn much, and all live at home. Relieved twelve times, £80. Voted £18 in twelve instalments.

Widow, aged 60, of M.R.C.S.Eng. who practised at North Shields. Has five sons, three of whom have joined the army; consequently her income is very much reduced. One son too ill to work and the other abroad unable to help. Relieved once, £5. Voted £15, and advised to apply to the National Relief Fund.

M.D. of Dublin, aged 81, single and practised in Lancashire. Old age prevents him from following out his professional work. Has an Epsom pension. Relieved once, £18. Voted £18 in twelve instalments.

M.R.C.S.Eng., aged 77, a widower who practised at Rainham. Gets a little locum work occasionally, but health and age will not allow him to do much. Relieved once, £18. Voted £18 in twelve instalments.

Widow, aged 60, of L.F.P.S.Glasg. who practised at Rothsay. Endeavours to obtain a living by letting rooms, but at present has none let. Suffers from rheumatism. Has a pension of £12. Relieved once, £12. Voted £12 in twelve instalments.

Daughter, aged 74, of M.D. who practised at Leominster. Has no income, and is an inmate of a home for incurables. Requires a little help for clothes, and a few necessary comforts. Was an annuitant of the fund until she went into the home. Relieved seventeen times. £209. Voted £6 in twelve instalments.

Widow, aged 56, of L.R.C.P.Edin. who practised at Blackburn. Earns a little by the day nursing of children; health not good. Has one daughter who is now beginning to earn a little as a shop assistant. Relieved once, £12. Voted £12 in twelve instalments.

Daughter, aged 60, of M.D.Edin. who practised at London. Suffering from varicose veins and only able to earn very little by sewing. Lives with a sister who has also been helped by the Fund. Relieved nine times, £50. Voted £12 in twelve instalments.

Widow, aged 64, of M.R.C.S.Eng. who practised at Streatham. Only income £40 per annum, and has an invalid daughter, and other children unable to help. Too old and not strong enough to work. Relieved once, £12. Voted £12 in twelve instalments.

Daughter, aged 53, of M.R.C.S.Eng. who practised at Newport, Mon. Applicant is blind, and recently has had an internal operation. Income only a few pounds a year from other charities. Relieved four times, £48. Voted £12 in twelve instalments.

Widow, aged 52, of M.B.Aberd. who practised in Warwickshire and Australia. Has been confined to her bed with severe illness for some months. Children only able to help very slightly; also obtains a little help from sister, but not sufficient to provide necessities. Relieved seven times, £73. Voted £12 in twelve instalments.

Widow, aged 75, of L.R.C.P.Edin. who practised at Birmingham. Has recently met with an accident, and has had to obtain help in the home. Has eight children, two of whom live at home, but only able to contribute 10s. each week; the other children are married, and only able to give very little. Relieved three times, £30. Voted £18 in twelve instalments.

Emergency grants amounting to £15 10s. were also given to six applicants, and their cases were deferred for future consideration.

Four vacancies of £20 each among the annuities were also filled at this meeting.

The grants made at this meeting involve the Fund in an expenditure of £365 10s., to meet which there is only an available balance of £49. The claims on the Fund arising out of the war are increasing month by month, but the resources show a decrease. Immediate support is essential unless the reserves are to be seriously depleted. Subscriptions may be sent to the Hon. Treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

British Medical Journal.

SATURDAY, MAY 15th, 1915.

THE WAR EMERGENCY.

A meeting of the Committee of Chairmen of Standing Committees of the British Medical Association, to which the action which should be taken centrally with regard to the war emergency has been referred, was held on May 7th. A number of questions were raised and discussed on many of which it was found that further information was required; arrangements were made to hold another conference with a representative of the Medical Department of the War Office on May 13th. Among the subjects raised at the meeting on May 7th was that of the promotion of medical officers who had long served in the Territorial Force, but who had been denied the recognition of their services which promotion would entail in respect both of their status in the army and the pay and allowances they received. It was thought important again to impress upon the War Office the position of majors in respect of the pay to which, under any ordinary interpretation of Article 358 of the Royal Pay Warrant, they would be entitled after three years' service as such. The Committee considered many suggestions which had been made to the effect that medical service with the army should be made compulsory, but came to the conclusion that compulsory medical service with the army could only be considered as part of a scheme of universal compulsory military service.

The circulars issued by the Local Government Board and the Board of Education to local authorities recommending that, as far as possible, medical men in the employment of local authorities in the Public Health or School Medical Service who were willing to volunteer for the army should be given leave, have been published in the Journals of April 10th (p. 648) and April 17th (p. 684), and the Committee, having reason to think that some local authorities were not showing the willingness which in the present national emergency they should display to set free the younger medical practitioners in their employment, expressed the opinion that some pressure should be brought to bear by the Government departments upon the local authorities which showed reluctance, and, if this proved ineffectual, that Parliament should intervene.

In regard generally to the means which could be taken to facilitate the younger medical practitioners engaged in general practice offering their services as whole-time officers for the army, the Committee took the view that this was a matter which could only be dealt with in its details locally through the Branches and Divisions, which have taken it up vigorously in most districts, but it reserved for further consideration the question whether it would not be proper, in view of the serious sacrifice a young medical practitioner must make in leaving a practice in which he had only recently been established, to represent to the Government the justice of offering a substantially larger gratuity at the termination of the period of service.

So far as we are aware the Insurance Commission has given no overt evidence of a desire to ease the strain which the war has placed upon the medical profession, a strain which there are very good grounds for saying is much greater than that placed upon any other profession by the war. On April 21st, by direction of the Insurance Act Committee, the Medical Secretary of the Association addressed a letter to the Insurance Joint Committee stating that it was increasingly evident that, if the demands of the War Office are to be met even approximately, some of the work which is done by medical men in ordinary times must be cut down, and pointing out that one obvious matter of the kind under the control of the Commissioners was the keeping of the record cards by panel practitioners. The Commissioners were reminded that nearly every medical practitioner is doing not only his own work but part of the work of one or more of his colleagues, and that the keeping of the records occupies in the aggregate a good deal of time which could much more usefully be devoted to other work. So far as we are aware the Commissioners have as yet made no response to this appeal.

The people of this country are accused of not taking the war seriously enough, and not realizing the calls which it makes on our resources in men, energy, and material. Germany is determined, ruthless, and unscrupulous in her methods, and still confident of success. The events of the last few weeks have done much to bring this home to the country at large, and to increase the determination to follow the example of Germany at any rate in one respect, and to subordinate all other considerations to the successful prosecution of the war. We are not alone in thinking that a better example might be set by Government departments and public authorities concerned with internal administration. We shall not go into the general question, which may be held to involve political considerations, but we cannot refrain from saying that the time has come, and is indeed long past, when the Joint Committee of Insurance Commissioners should seriously concert measures to relieve, as far as they can, any removable sources of increased strain which the rigid application of regulations framed for peace is producing in this time of war. So far the only evidence that the Insurance Commissioners have given that they are aware that the nation is engaged in a life and death struggle is to direct Insurance Committees to make ample deductions in respect of the payment for medical benefit to cover any possible deficiency arising out of the enlistment of the immense number of men who have joined the forces. We invite the attention of Mr. Montagu, the new Chairman of the Joint Insurance Committee, to the whole situation. The problems involved are of national importance, and call for the exercise of the high qualities of statesmanship which he is known to possess.

THE TREATMENT OF GUNSHOT WOUNDS OF THE NERVES.

Inspector-General E. Delorme recently[1] described to the French Académie de Médecine a new system of surgical intervention in the treatment of shell or bullet wounds of the nerves, which gave rise to a prolonged and interesting but inconclusive discussion of the whole matter. Based, he led his audience to understand, on ninety operations, his system depends on four main principles. First, the dense mass of fibrous cicatricial tissue round the injured nerve must be removed, and replaced by a more permeable linear

[1] *Bull. de l'Acad. de Méd.*, Paris, 1915, 3 s., lxxiii, 68, 132, 160, 173, 186, 251.

cicatrix. Secondly, the injured segment of the nerve must be resected until its cross section presents a normal appearance and is free from strands of fibrous tissue. Thirdly, this resection must be extensive enough to expose healthy surfaces at the cut ends of the nerve; it may be necessary to sacrifice as much as six centimetres of the nerve to gain this object. Fourthly, the nerve trunks must be dissected up as far as is necessary to enable the operator to sew their cut ends together in close apposition, the limb being meanwhile put up and splinted in such a position as to relax any tension on the sutured nerve.

In describing the details of his various operations, Delorme noted that neuromas are ordinarily found both above and below the injured part of the nerve. He advised that these neuromas should be resected at right angles to the length of the nerve, piece by piece, until the normal structure of the trunk was exposed. This was recognized by its vascularity (slight haemorrhage), the regular arrangement of its nerve bundles, and the absence of strands of inflammatory fibrous tissue. The sutures employed were of fine catgut, silk, or flax. Extensive liberation of the nerve—the sciatic, for example—from the tissues in which it lay might be necessary; a wound in the upper third of the thigh might require liberation of the nerve upwards as far as the sciatic notch and downwards for 10 or 15 cm. below the injured spot. The sutured nerve was buried beneath a deep and a superficial muscular bed, using catgut sutures. The limb was flexed so as to relax all tension on the nerve, put up in plaster, and kept there for at least three weeks.

Delorme believes that the utility and originality of his method of treatment consist in his bold resection of all the injured or unhealthy (neuromatous) parts of the nerve trunk with which he is dealing, whether the injury affects the outside, the whole, or the central portions of the trunk. He advised that nerves injured by involvement in callus after fractures of bones, or by compression in masses of cicatricial tissue, should be treated by free dissection and excision on precisely similar lines. While end-to-end suture of the cut ends of the nerve after resection was the best method of joining them, where this was impossible other methods well known to surgeons might be employed. All the patients treated by Delorme were serious cases, with marked paralysis and atrophy, and surgical interference was a last resort. As a result of his operations there had been a partial return of sensation in some instances, but no return of movement, for the reason, he believed, that sufficient time had not yet elapsed. His paper was illustrated with numerous sketches showing the appearances of the injured nerves in some of his cases, and the particular methods of operation he was led to employ.

In the prolonged discussion that followed the reading of this paper a considerable amount of opposition was offered to Delorme's views. Babinski agreed that resection of the injured part of a nerve was the proper treatment if the injury amounted to complete destruction of the nerve fibres, but not otherwise. He held it impossible to determine by the naked-eye inspection of the cross section of a neuroma or an injured nerve whether the destruction was complete or no; many neuromas, and many shrunken nerve trunks compressed by cicatricial tissue, were, he said, found on experiment to contain nerve fibres capable of conducting nervous impulses, and to sacrifice these by resection was a mistake. Pozzi criticized the paper very freely, remarking that it was based on theory alone, and unsupported by any clinical observations to prove its value. Surgical experience showed that the fibrous tissue between the ends of a cut nerve often served as a satisfactory channel to direct the outgrowth of nerve fibrils destined to re-establish the continuity of the nerve; to remove such a cicatrix he regarded as unjustifiable, particularly in recent cases such as those dealt with by Delorme. Professor Dejerine described the variable histological structure of the traumatic neuroma, composed of varying proportions of fibrous tissue and nerve fibres mixed together. He suggested that the surgeon should in all cases expose and inspect the injured portions of nerve trunks and liberate them from adhesions, but should limit his resection to the "exuberant parts of the nervous cicatrix," while respecting the continuity of the nerve itself. P. Marie emphasized the importance of applying the clinical test of electric stimulation to injured nerve trunks after they had been exposed by the surgeon, before interfering with them directly; the results of such stimulation might indicate, for example, the advisability of longitudinal rather than transverse incision of a neuroma. Reynier argued that the earlier surgical interference was made in cases of injury to nerves the better the results were, and he recommended resection of the injured parts and end-to-end suture of the cut extremities. Schwartz pointed out that the naked eye was incapable of determining whether a traumatic neuroma or injured nerve trunk was composed of pure fibrous tissue, which it might be advisable to excise, or of fibrous tissue mixed with nerve fibres that should be treated on conservative lines. In no case would he feel inclined to resect several centimetres of a nerve, suture its cut ends, and put up the affected limb in plaster in such a position as to secure relaxation of the sutured nerve; the dangers of secondary traction on the nerve or contracture of the limb would be too great.

Marie also described the simple sterilizable electrodes, designed by Meige, wherewith the surgeon could apply electric stimulation to any part of an exposed nerve or neuroma; he gave an account of the method of using them and the deductions to be drawn from the results. Nerve trunks, he pointed out, contained nerve bundles supplying different groups of muscles; when a divided nerve trunk had to be sutured end to end, the employment of electric stimulation enabled the surgeon to know which of the nerve bundles should be sutured to which. Babinski noted that even nerve fibres that gave no response to this direct electric stimulation were not necessarily incapable of recovering their functions, given plenty of time in which to do it.

A rapid method of determining whether a traumatic neuroma consists of scar tissue, and should therefore be excised, or of scar tissue with living nerve fibres, and should therefore be conserved, was described in a paper by Sicard, Imbert, Jourdan, and Gastaud. It is quite simple, and consists in the injection of 1 or 2 c.cm. of a 1 per cent. solution of pure methylene-blue in normal saline into the nerve trunk just above (or below) the neuroma after it has been exposed by operation. If the swelling is traversed by nerve fibres they rapidly convey the methylene-blue through it, and can be recognized, after a few minutes, by a minute longitudinal incision into the neuroma; if it is composed of nothing but fibrous tissue the neuroma remains uncoloured, and should be excised.

A further destructive criticism of Delorme's position was launched by Pozzi, who could see no good reason for abandoning the older methods of surgical intervention or clinical management in cases of nerve

injuries in favour of Delorme's novel methods. The question could only be settled, as he very fairly pointed out, by a comparison of the clinical results of the two methods, and Delorme had no results to bring forward as yet, nor had he given any statistical figures relating to his operations. Pozzi brought forward figures from the literature of the subject showing that the older and more conservative surgical methods might give excellent results in these cases, and mentioned several weak points in Delorme's surgical technique. Quénu emphasized the fact that complete recovery without any resection is quite possible, even when the injured nerve has been reduced to an unrecognizable fibrous strand bedded in a fibrous mass; he advised that resection should not be practised unless the injured nerve trunk had completely lost its electric excitability. In the majority of cases it was enough if the nerve was liberated from its fibrous adhesions to neighbouring structures.

Delorme, who had made a lengthy reply to some of his critics earlier in the discussion, explained that he had not actually employed his new method of more or less extensive resection in all his 90 cases, but only in those in which it seemed advisable. Thereupon the discussion was concluded by Pozzi, who reiterated his demand for statistics and percentages to illustrate the employment and results of Delorme's new method, satirically complimenting him upon his apparent execution of a strategical retreat. And there the matter rests for the present.

MARGARINE.

It is, no doubt, natural that a substance which is known to be a manufactured product, coloured and flavoured to resemble a natural article of diet, should be regarded with some suspicion and generally supposed to be at best an inferior substance. In many cases, no doubt, such products fully merit the opinions commonly entertained as to their inferiority to natural materials, as, for example, is the case with the so-called artificial wines. It is not, however, necessarily true that a manufactured product is inferior to a natural one, and in view of the enormous quantities of margarine which are now used regularly, it is worth while considering whether there is any justification for regarding it as a substance inferior to butter. The very comprehensive nature of the name presents a certain difficulty to begin with; butter is butter, the fat of cow's milk collected by churning, but margarine is, by Act of Parliament, "all substances, whether compounds or otherwise, prepared in imitation of butter, and whether mixed with butter or not." It is inevitable, therefore, that products of varying degrees of merit should be found under the one name; and it is no matter for surprise if any bad character which may have been earned by some varieties of margarine should have affected to some degree the general opinion in regard to all margarine.

The date of the Margarine Act is 1887, and the entire history of the product does not cover much more than about thirty years. The amount consumed has greatly increased during this time, and especially since cocoanut oil has been the chief constituent; this has only been the case in quite recent years. According to a recent publication, one London factory turns out each week 550 tons of margarine, made from cocoanut oil and milk; and it is stated in an article in *Nature* of April 8th that in 1913 some 347,000 tons of hard fat, of which 204,000 tons were vegetable, were used in the production of margarine. At the time of the passing of the Margarine Act there was no such substance on the market as the "nut butter" now produced in such large quantity. It is felt in many quarters to be unfair and undesirable to require this to be described by the name "margarine," which referred primarily to quite a different product, and a bill has been introduced into Parliament for exempting "nut butter" from inclusion under "margarine."

It is not only in the quantity produced that recent years have shown development; there has been a steady improvement in the character of the article, and it is probably quite safe to say that most of the margarine produced to-day is of excellent quality and a valuable article of food. It is interesting to notice that certain trade customs are to be found in connexion with margarine which are not adopted in the case of butter; we allude particularly to the practice, which seems to be a general one, of selling "double-weight margarine," or "overweight margarine," by which for every one pound ordered by the purchaser a larger quantity—in the former case two pounds—is supplied. Of course, the price charged for the substance is fixed so that the sale of this extra quantity yields a profit, and the purchaser receives exactly what he pays for and no more, but from the regularity with which "double-weight margarine" is advertised, it appears that the majority of purchasers find it more satisfactory to buy margarine at the nominal price of 1s. a pound and receive two pounds when they ask for one than to pay 6d. a pound for it, ostensibly as well as actually; perhaps there is something in the position of margarine as a substitute, "just as good but cheaper," which makes this kind of specious recommendation acceptable.

The principal change in the character of margarine which has taken place in recent years is due largely to the increasing use of vegetable fats with a corresponding diminution in the proportion of animal fat entering into it. The materials used in different places include beef fat, lard, cotton-seed oil, cotton-seed stearin, arachis oil, olive oil, cocoa-nut oil, palm-kernel oil, maize oil, and sunflower oil. The vegetable fats chiefly used in this country are cocoa-nut oil and palm-kernel oil, which have strong similarities in their properties while differing considerably from the majority of other vegetable fats; both these fats although quite firm solids have a low melting point, about 25° C. in both cases; average samples of butter fat melt at about 31° C. A distinguishing feature of the composition of cocoa-nut oil and palm-kernel oil is that they contain a higher proportion than most vegetable fats of the esters of fatty acids of low molecular weight; in this respect also they show some approach, though not a very near one, to butter fat. In distinguishing butter fat analytically from any of the fats which might be used in substitution or adulteration of it, the analyst relies very largely on the determination of the relative proportion of the lower members of the series of fatty acids, which are easily separated from the higher members by the fact that the lower are soluble in water. The process by which the determination is made is empirical, and the figure obtained is known as the Reichert-Meissl number, or the Reichert-Wollny number. It is not necessary here to specify the details of the process; it is enough to say that the number is an indication of the proportion of water-soluble acids obtained when the butter fat is saponified. The Reichert-Meissl number of butter fat is usually from 25 to 30, and any butter giving a figure below 24 is regarded with suspicion as probably adulterated. The Reichert-Meissl values of most natural fats lie in the neighbourhood of 1, but

cocoa-nut oil gives figures of 7 to 8, and palm-kernel oil from 5 to 7; the addition to butter of a moderate proportion of either of these materials may not bring the Reichert-Meissl number below 24, consequently the adulteration is far more difficult to determine with certainty than when other fats are used. It is probable that the assimilability of a fat when taken as food depends to a considerable extent, if it is a solid, on its having a melting point substantially lower than that of the body, so that it is presented to the fat splitting enzymes of the alimentary canal in a liquid form, and it appears not unlikely that the presence in the fat of a comparatively high proportion of the lower fatty acids is also an advantage from this point of view, although, so far as we are aware, this has not been directly proved to be the case.

The manufacture of margarine is very simple in principle although in practice no doubt there are many trade secrets. The materials to be used, which are usually taken in such proportions that the final product shall have practically the same melting point as butter, are mixed and churned and pulverized by special machines together with milk—usually separated milk—and then worked in kneading machines until the whole is thoroughly homogeneous; salt and colouring matter are added at this stage, and the manipulation is so adjusted that the product contains approximately the same proportion of fat as butter, namely, about 85 per cent. The purifying processes to which the materials are first subjected remove practically all the taste they may have naturally possessed; the working into the mixture of a proportion of milk then gives a flavour very similar to that of butter, and the churning treatment delivers the fat in a physical condition much resembling that of butter fat. As to most real butter which comes on the market some proportion of colouring matter has been added, there is no reason for objecting to margarine on the ground of the colour being artificial any more than to coloured butter, provided only harmless colours are used; a certain depth of yellow colour makes the material more pleasing to the eye and more in conformity with the general notion of what butter should be like, and such considerations are not entirely without importance in assisting the assimilation of any food product.

The fats which are used in the production of margarine are necessarily devoid, owing to their previous treatment, of the vitamines which, no doubt, are contained in genuine butter, and as the milk which is used in making margarine is usually previously pasteurized, it is doubtful whether any appreciable amount of vitamines from this source would be found in the product. To this extent, therefore, margarine is, no doubt, inferior to butter, but as only one item in a diet comprising many other items which can furnish vitamines, this difference is probably not important. Otherwise the chemical composition of most margarines is very closely analogous to that of butter. In the large factories where the best kind is produced, scrupulous cleanliness is the rule and adequate measures are adopted for turning out an uncontaminated article of standard quality. It can hardly be doubted that most of the margarine sold, and particularly that which is entitled to the description, "nut butter," is for all practical purposes as valuable an article of diet as genuine butter.

THE late Sir George Turner, formerly medical officer of health for Cape Colony, who contracted leprosy in the course of his investigations of the disease, and who died on March 12th, aged 79, left unsettled property of the gross value of £2,283, of which the net personalty has been sworn at £1,637.

RESPIRATORS FOR THE TROOPS.

FROM the various descriptions which have been given of the poisonous gas used recently by the Germans for asphyxiating the troops opposed to them, it appears almost certain that the substance used is chlorine, or at least consists principally of chlorine. If generated on the spot, a mixture of chlorine and chlorine peroxide would perhaps be quite as likely, as this mixture is evolved when hydrochloric acid acts on a chlorate; but from the way in which large volumes of the gas appear to be suddenly liberated, it is almost certain that whatever their composition, they are brought to the spot in a compressed or liquefied form and there liberated. This is quite practicable with chlorine, which is liquid at ordinary temperatures under a pressure of only six atmospheres, but would scarcely be practicable for chlorine peroxide, which forms a highly explosive liquid when condensed. Germany has for many years been a large producer of liquid chlorine, which is used in great quantities in the preparation of artificial indigo. Chlorine when compressed to a point short of liquefaction has an orange-yellow colour, and it is darker when heated; this will, perhaps, account for the statements that have been made that the gas appears reddish when first liberated, but becomes green or greenish-yellow as it spreads. In regard to the best method of protecting our troops against the gas, it was stated by Mr. Tennant, in reply to a question on May 6th, that the respirators now used by the troops contained cotton waste "saturated with a solution of carbonate of soda and hyposulphate of soda"; this quotation is from Hansard, and hyposulphate is, of course, an error for hyposulphite, more correctly known as sodium thiosulphate, while carbonate of soda is a common synonym for sodium bicarbonate. The action of chlorine on sodium thiosulphate is somewhat complex, the products being sodium sulphate, sodium chloride, sodium tetrathionate, free sulphur, and free sulphuric and hydrochloric acids. The two latter compounds would, of course, be neutralized by sodium bicarbonate with liberation of an insignificant quantity of carbon dioxide; it would, therefore, be possible to breathe quite safely through a respirator containing these chemicals in solution in water as long as any remained unacted on, but for the protection of the eyes, which are also very susceptible to attack by chlorine, some form of mask or helmet would be necessary, and Mr. Tennant said that the question had arisen whether it would not be preferable to have a helmet such as is used by fishermen; this is made of woollen material, with talc spaces for the eyes, the cotton waste inside being saturated with the same solution. Dr. Haldane has again gone to the front to conduct experiments with these various materials and methods, and the result of his experiments may be awaited with full confidence that no practicable means of dealing with this barbarous method of warfare will escape him.

ANTITYPHOID VACCINATION WITH BESREDKA'S LIVING SENSITIZED VIRUS.

IN the early part of 1913 three officers[1] of the Roumanian Army Medical Corps had the opportunity to experiment with Besredka's living sensitized typhoid virus in two small epidemics of typhoid fever. One epidemic, occurring in January, affected 80 in a regiment of 1,300 men, with 4 deaths, and 11 typhoid carriers were found; this outbreak was due to the cleaning out of the latrines, the contents of which were put into the undrained yard of the barracks. At the end of February a second epidemic occurred in another regiment; 61 cases were seen in less than twenty-five days, 5 patients died. Here the source of infection was the well supplying the drinking water. Examination of the stools of all the men in this regiment failed to detect any typhoid carriers. During April half

[1] M. Ciuca, D. Combiescu, J. Balleanu, *Ann. de l'Inst. Pasteur*. Paris, 1915, xxix, 105,

the men in each regiment were vaccinated with Besredka's virus, the other half serving as controls. Each of the 1,276 persons vaccinated received a first injection of one-tenth of a cubic centimetre of the virus; 888 of them received a second injection eight days later, the dose being doubled. In three-quarters of the cases the temperature did not rise above 99.5° F. after the first injection; it is noted that 4 tuberculous soldiers who were injected did not show any abnormal reaction, nor did 10 others with mumps. The authors observe that the second epidemic was cut short by these vaccinations. The two regiments were next sent on an expedition into Bulgaria for five months, whence they returned to live among a civil population infected with typhoid fever, and most of the 1,300 unvaccinated controls were now inoculated with an anti-typhoid vaccine heated to 60° C. Eight months later a further investigation of the men composing the two regiments showed that no case of typhoid fever had occurred among those vaccinated with Besredka's sensitized virus; 2 cases were found among those who had been inoculated with the heated virus; and 8 cases had occurred between May and October among the uninoculated men, with 1 death. The authors add that no case of hypersensitiveness to the vaccine was met with, even though the vaccination took place during the course of an epidemic of typhoid fever, and that the typhoid carriers inoculated displayed no special symptoms.

MENINGOCOCCAL ARTHRITIS.

Now that so much attention is being given by medical practitioners and the public to the occurrence of meningococcal cerebro-spinal meningitis as it occurs in this country, it would be of interest to know whether many of the cases are complicated by a meningococcal arthritis. In France, it appears, such a complication is far from infrequent at the present time,[1] and it is the more important because the onset of the arthritis may precede that of the meningitic signs or symptoms. Sainton and Maille have met with the arthritis in 3 out of 17 cases of cerebro-spinal meningitis, and note that it occurred in 7 out of 45 cases treated in the naval hospital at Cherbourg between 1905 and 1914. Their experience shows that the knee is the joint affected, usually on the fourth, fifth, or sixth day of the disease. The inflamed joint swells extensively and rapidly, but does not redden, although erythematous patches occasionally appear. It contains a thick fluid that is definitely purulent from the outset, and has a characteristic greenish look; meningococci can be seen in microscopic smears, and can be grown on media containing egg. The arthritis tends to clear up in a few days, leaving the joint none the worse. In one case the effusion returned several times after removal by puncture; the joint was opened, and healed up rapidly. Other joints may be infected as well, such as the shoulder, elbow, and wrist, while keratitis, conjunctivitis, and inflammation of the testis and epididymis have been observed in these patients. In two instances lumbar puncture was performed after a meningococcal arthritis had been treated, and the cerebro-spinal fluid was found on examination to be purulent, containing polymorphonuclear cells and meningococci; it is not stated what meningitic symptoms these patients presented. The authors think that very possibly the arthritis in these instances may exert a prophylactic or immunizing action, so that the subsequent meningitis may be mild and abortive in type. They suggest treatment by the injection of from 5 to 10 c.cm. of Dopter's anti-meningococcal serum into the joint, although they note that spontaneous cure is the rule if no such local treatment is given. Netter and Durand,[2] in commenting on the above paper, said that they had treated 200 cases of cerebro-spinal meningitis with intrathecal injections of antiserum in the seven years since 1908, and observed arthritis as a complication in 11 of these. They did not find the knee-joint constantly affected, even when several joints were involved. They are strongly of the opinion that the arthritis should be treated by the injection of antimeningococcal serum into the joint; spontaneous recovery is possible, but far less probable than the certain recovery that follows these injections. In five instances the pus withdrawn from the joints gave no growths on bacterial cultivation, and showed no meningococci under the microscope; this is particularly likely to be the case when the arthritis occurs late in the course of the meningitis. In their experience the arthritis was not confined to the larger joints; many of the smaller joints, like those of the hands and feet, were attacked simultaneously. This the authors have seen in four infants with cerebro-spinal meningitis; in one thirteen joints were involved. Three out of these four infants died. The authors compare the meningococcal to pneumococcal arthritis.

[1] P. Sainton and J. Maille, *Bull. de l'Acad. de Méd.*, Paris, 1915, 3 s., lxiii, 427.
[2] Ibid., p. 441.

ST. BARTHOLOMEW'S IN PEACE AND WAR.

THE Rede lecture, founded by Sir Robert Rede, Chief Justice of the Common Pleas in the reign of Henry VIII, was delivered in the Senate House at Cambridge on May 6th by Dr. Norman Moore, who took as his subject St. Bartholomew's Hospital in Peace and War. The first warriors known to have come into any relation with the hospital were the witnesses of a charter of Henry I, who afterwards took part in the wars of Stephen's reign. The next contest in which some of the actors came into the affairs of the hospital was that which ended in the grant of Magna Charta. The war between France and England at the end of the reign of John and the beginning of that of Henry III was connected with the subsequent tumults in London, which ended in the execution by Hubert de Burgh of Constantine FitzAlulf. Constantine himself, as he spent his last night in the Tower in August, 1222, apprehensive of danger but not knowing he was to die next day, most likely drew up the charter of benefaction to St. Bartholomew's, of which a copy had been preserved. In the following century the staff of St. Bartholomew's saw Wat Tyler's mob in Smithfield. Wat himself was pulled through the hospital gate as he was dying. The first hospital steward after the Restoration had fought in the defence of Basing House, and some wounded sailors of the second Dutch war were taken into the wards. Since that time the hospital had had little to do with war till the last nine months. It now found beds for 200 wounded, while its school had provided over 1,000 men who held commissions in the combatant or medical services.

MADAME DEPAGE.

To many members of the medical profession in this country the destruction of the *Lusitania* has brought a poignant feeling of personal sorrow because among the passengers who lost their lives was Madame Depage, the wife of Professor Depage of Brussels. He founded the International Surgical Society, which held its first three meetings, in 1905, 1908, and 1911, in Brussels. Professor Kocher of Berne was president of the first, Professor Czerny of the second, and the late M. Lucas-Championnière of Paris of the third. Professor Depage was secretary of these three congresses, and in their organization he had the able assistance of his accomplished wife. She was a good linguist, and had in particular done us the honour to learn to speak and write the English language fluently and well. During several visits to this country, among others to the Annual Meeting of the British Medical Association at Sheffield in 1908, and the International Medical Congress in London in 1913, Professor and Madame Depage added to the many British friends they had made when acting as hosts at Brussels. It is not necessary to speak of the hospitality there shown; it was not only its lavishness

but its cordiality and spontaneity which appealed to the British members of the International Surgical Society, who will never forget her graciousness as a hostess, her wonderful power of organization, her gaiety, her great linguistic powers, and the tact which enabled her to harmonize the clashing interests of a polyglot assembly. Last year (April, 1914), when the society visited the United States, Professor Depage was chosen its president, and Madame Depage accompanied him; this year she returned as a suppliant for funds for the Belgian Red Cross Society, in the organization of which she had taken a most active part from the beginning of the war. She started from Liverpool only a couple of months ago with undiminished enthusiasm, giving up, as it has proved, her husband, her children, and her home in the cause of her stricken country. To her three sons, who are all serving, and to her husband, the sympathy of all in this country who knew her will go out. We have already received intimations which show a desire that a permanent memorial should be set up to her, and we shall probably shortly be able to announce that steps have been taken by British surgeons to this end. We cannot speak for other countries, but it will be surprising if the loss of such a woman—a loss to science and the cause of international amenity—does not appeal to surgeons in America and France.

GOVERNMENT ASSISTANCE FOR SCIENTIFIC RESEARCH.

A DEPUTATION from the Royal Society and the Chemical Society was received by the Presidents of the Boards of Trade and Education on May 6th. The deputation was introduced by Sir William Crookes, president of the Royal Society, and Professors W. H. Perkins, Sir William Tilden, Professor P. Frankland, Professor W. J. Pope, and Dr. M. O. Forster spoke in support of memorials from the two societies, indicating the steps which might be taken to improve the status and efficiency of the chemical industries and those engaging in them in the United Kingdom. The speakers said that the comparatively backward state of certain industries in this country was due to a failure to realize that modern industry must be based on scientific research, to the lack of association between modern manufacturers and science, to want of scientific knowledge and appreciation of the importance of scientific work among the public generally, and to the lack of organization among the various chemical and allied industries. The memorials submitted by the deputation urged that the Government should give more assistance to scientific research for industrial purposes, should encourage closer relations between the manufacturers and science workers, and should establish a National Chemical Advisory Committee for these purposes. Mr. Runciman, replying for the Board of Trade, said that he agreed with the views expressed as to the need for closer co-operation between manufacturers and scientific workers and teachers. The war had shown the weakness of the British position in certain important respects, and the proposals made should receive careful and sympathetic consideration. Mr. Pease, President of the Board of Education, who was accompanied by Dr. Addison, M.P., said that the problem had been under the consideration of the Board of Education for some time, and that a scheme had been approved in principle by which substantial additional assistance would be given by the Government to scientific education and industrial research. Though the funds immediately available might not be large, they would be sufficient to enable an organization to be brought into being at an early date, and it would be capable of expansion. Mr. Pease expressed his appreciation of the offer of assistance and advice made by the two societies. As was stated in our notes in Parliament last week, the Chancellor of the Exchequer has intimated that the estimates for this year contain provision for the encouragement of research, and for increasing the means of rendering it possible to deal with certain special manufactures in respect of which we have hitherto been too much dependent on foreign countries.

CONFERENCE OF LOCAL MEDICAL AND PANEL COMMITTEES.

THE conference of representatives of Local Medical and Panel Committees referred to in paragraph 121 of the Annual Report of the Council of the British Medical Association (SUPPLEMENT, May 8th) will be held in London on June 16th, and will be adjourned, if necessary, to the following day. Full particulars will be circulated shortly to Local Medical and Panel Committees.

PRACTICAL ASPECTS OF VISIBILITY.

THERE are some subjects upon which it is hardly possible to formulate general conclusions of a practical nature. Visibility is one of them; its consideration opens the gates of at least three distinct departments of science. The visibility of an object depends upon the nature of the object itself, and of its background and of the light which falls upon it, and even when these factors have been adjusted a new set of far more elusive factors has to be taken into account—namely, the behaviour of the eye and the physical and psychical state of the observer. Some aspects of this subject formed the theme of a discussion at a recent meeting of the Illuminating Engineering Society. Mr. Clifford C. Paterson and Mr. B. P. Dudding, who opened it, brought forward a number of practical points, chiefly such as interest the lighting engineer. Strange tricks are played upon the eye by faint sources of illumination. Is it generally known that a green light will appear some five times brighter when viewed obliquely than when viewed directly, while a red light acts in exactly the opposite way? If a very faint point source of green light be placed in a dark room, the observer will "pick up" this light while he is looking in another direction, and, although unable to distinguish its colour, he will remain quite conscious of its presence, but the moment he looks at it directly it seems to disappear. A faint red light, on the other hand, when finally discovered by direct vision, appears to be very visible indeed, but is lost to the observer when he glances to one side of it. During the discussion Dr. Edridge-Green said that under certain conditions point sources of red light are visible over great distances; there is even a story of an American engine-driver who stopped his train for some hours until Mars got off the track. But when it is remembered that the lives of hundreds may depend upon the ability of one man to "pick up" small sources of light which, especially at sea, are of very low visibility, the importance of the subject needs no emphasis. Another phase of the question is the visibility of illuminated objects at night. A speaker who had been making inquiries among the police stated that, as might have been expected, the acuity of vision of ordinary persons at night has been greatly increased during recent months. Some interesting experiments upon motor-car headlights have been carried out in the same connexion, but we must content ourselves by expressing the result with geometrical brevity; the useful range of a motor-car headlight is proportional to the cube root of the intensity of its beam. Yet another phase of the subject has a domestic interest and relates to that indirect lighting which has grown so popular of late for interiors. Advantageous if not ideal for almost all purposes, this illumination with its soft shadows is in one particular strikingly inefficient. It is of no use for needlework, at least for that kind of needlework in which the fabrics are all of one colour and have no natural contrasts. The discrimination of the detailed strands of the fabric depends on the small shadows cast by one strand on to the next, and on the

varying brightness of each individual strand. The fact that the light upon this material should be unidirectional and give harsh shadows is one to be remembered in days which are seeing a revival of the cult of the needle.

Medical Notes in Parliament.

Proceedings of the House.—On Wednesday, May 5th, the vote of the Board of Agriculture occupied the time of the House, except that on the motion for the adjournment a further discussion took place on the German treatment of British prisoners of war. On Thursday, the 6th, the Defence of the Realm (Amendment No. 3) Bill, relating to the control of the consumption of drink in munition areas, was brought up, but its discussion has not been concluded. The Immature Spirits (Restriction) Bill, introduced by the Attorney-General on May 11th, was read a second time on May 12th. Several minor bills passed their remaining stages and others were read a second time.

Medical Consultants.

Royal Navy.

Commander Bellairs, on May 5th, asked whether the Board of Admiralty had made an arrangement during peace time with eight members of the Royal College of Surgeons under which these gentlemen are each drawing £5,000 per annum, as well as a number of others, though the circumstances of the war have not up to now interfered with their private practice; and whether this total expenditure of £40,000 per annum was reviewed by the Treasury before it was sanctioned?—Mr. Acland: I understand that these appointments were made in the first instance under a general authority given by the Treasury in 1908 for the appointment in the event of the outbreak of war of consulting surgeons for hospital ships at a remuneration not then specified. On August 14th the Treasury were informed of the appointments and also that for administrative reasons five distinguished surgeons and one physician (with remuneration at the rate of £5,000 a year each) were being employed at the royal naval hospitals instead of being sent out on hospital ships. Upon representations from the Admiralty that it was essential that the services of these specialists should be available at the respective hospitals for the performance of operations at a moment's notice, the Treasury sanctioned the arrangements which had been made. The total number of appointments at £5,000 a year is six, not eight as stated in the question. As regards the conditions of employment, I am informed by the Admiralty that five of the six reside at and are performing daily duties in the naval hospitals at Haslar, Plymouth, and Chatham, and the sixth has to visit and perform surgical work in all the naval and auxiliary hospitals in Scotland. In addition, the five who are resident at the English hospitals visit for consulting purposes other hospitals in which naval sick and wounded are being treated. It is only in any casual spare time that private practice can be followed.

Commander Bellairs: Did the amounts of £5,000 a year ever come before the Treasury before the war broke out, the arrangement having been sanctioned in 1908? Mr. Acland: No, sir; the salary was not submitted to the Treasury until the appointments were made. The Treasury gave general approval for the engagement of distinguished surgeons to look after sailors and other naval ratings who might be in need of their help; and the scheme for doing this was proposed to the Treasury and sanctioned in principle in 1908, but the amounts intended to be paid were not at that time fixed.

Commander Bellairs: In view of the fact that no similar arrangement was made by the War Office, and the fact that the navy has not one-hundredth part of the casualties or the problems arising from casualties which the army has, will the Treasury take that fact into consideration and terminate this arrangement? Mr. Acland: No, sir; the Treasury will not terminate the arrangement. It is surely of the utmost importance that our wounded men should have at their disposal the services of these extremely distinguished persons, and I cannot see my way to terminate this arrangement.

Commander Bellairs: Will the hon. member take into consideration the fact that very distinguished surgeons and medical men are now serving in the army upon the pay of an ordinary colonel, and does he not see how undesirable it is that these comparisons should be drawn? Mr. Deputy Speaker: That is a matter for debate.

Commander Bellairs asked the date of the arrangement by which eight consultants belonging to the Royal College of Surgeons are paid £5,000 a year in addition to the earnings of their private practices. Dr. Macnamara: I think the hon. gentleman will see that this question has been replied to in the answer to another question on the Paper.

Commander Bellairs: I should like to ask the right hon. gentleman whether, in view of the fact we have so few casualties in the navy that have not been dealt with by the regular surgeons of the navy, he will consent to transfer the services of these gentlemen to the War Office? Dr. Macnamara: That is covered by the answer I have referred to.

Commander Bellairs: Is the right hon. gentleman aware that there are two gentlemen at the Admiralty—Fellows of the Royal College of Surgeons—who are doing nothing but clerical work? Will he consent to give a return of the number of operations performed by these gentlemen and of the number performed by surgeons at the regular hospitals? Mr. Deputy Speaker: That is rather a subject for debate.

Commander Bellairs: I will put the question down.

On May 6th Mr. Joynson-Hicks asked what were the duties of the eminent doctors to whom the Admiralty paid £5,000 a year; whether they demanded, or were offered such fees, and how many other civilian doctors were employed at rates higher than the pay of naval doctors? Dr. Macnamara said the duties of the five consultants at a salary of £5,000 were to perform daily surgical, medical, or research work at the naval hospitals to which they were appointed and where they resided, and to visit for operative or consultative work any of the naval hospitals or civil hospitals taking naval patients in any part of England. The sixth consultant performed similar duties for the whole of Scotland. They were offered the fees paid and did not demand them. Other civilian doctors employed on special terms, and not at naval rates were, one junior consulting surgeon at £1,500 per annum, who was acting as operating surgeon in the hospital ship at the Dardanelles, and consulting surgeon for all ships and naval hospitals in the Mediterranean, and two anaesthetists at £1,000 per annum, one doing daily duty at Haslar and one at Chatham hospitals. Both of these gentlemen were also sent anywhere in England or Scotland where their services might be required.

Mr. Joynson-Hicks: Is not this an entirely new departure for the Admiralty? Dr. Macnamara: It was arranged in 1908 that in the event of this country being engaged in war the scheme and appointment of consultants on these lines should be undertaken. The salaries were fixed afterwards.

Commander Bellairs on May 11th asked the First Lord of the Admiralty whether, in addition to the six consultant physicians and surgeons who were employed at £5,000 each per annum, Sir Alfred Fripp, K.C.V.O., M.B., F.R.C.S., Dr. Douglas Shields, M.D., Mr. Arthur Edmunds, M.B., F.R.C.S., Mr. Claude Morris, and Mr. Cecil Hughes were also employed; if so, what pay and emoluments; and whether the same rule applied allowing of private practice in spare time? Dr. Macnamara, in a written answer, stated that Sir Alfred Fripp and Dr. Shields were, for the first few months of the war, employed at a salary of £5,000 a year between them for consultant duties with the hospital ships, but as it was found by experience that their services could not be utilized to the full they were released from their duties on January 24th, 1915, and had since not been employed nor paid by the Admiralty. The duties and remuneration of Mr. Edmunds, Mr. Morris, and Mr. Cecil Hughes had been already stated in the answer to Mr. Joynson-Hicks (printed above). These gentlemen come under the regulations that applied to all naval medical officers as regards private practice—that is, this was not forbidden, but, as a matter of fact could, as a rule, rarely be exercised by reason of their daily naval work.

In reply to a further question by Commander Bellairs on May 11th, Dr. Macnamara said that a surgeon-general

of the navy, when employed at any naval hospital, drew a salary of £1,300 and charge pay at the rate of £182 10s. per annum. He was also in the occupation of a house valued at £70 per annum. All the facts bearing on the question were taken into consideration when deciding the remuneration to be paid to the consultants.

In reply to Mr. James Hope, Dr. Macnamara said that the number of civilian doctors now in the service of the navy was not in excess of the needs of that service, and said that in these circumstances it would not be possible to transfer any of them to the service of the army. As regards the special consultants to whom reference had been made in an earlier question, if a specific request were made for the help of one of them for any particular operation or for any special consultation, it would certainly be acceded to if it were possible; but the daily duty that had to be performed by these gentlemen in naval hospitals would not allow of the utilization of their services by the army to a greater extent than this.

Army.

On May 6th Mr. Joynson-Hicks asked if any civilian doctors were employed by the army at salaries of upwards of £3,000 per annum, and how many civilian doctors were receiving rates of pay higher than doctors of corresponding rank in the Royal Army Medical Corps? Mr. Tennant said that there were no civilian doctors receiving higher rates of pay than officers of corresponding rank in the Royal Army Medical Corps and Army Medical Service. Commander Bellairs asked whether inconvenience would not arise from the fact that the Admiralty were paying four times as much as the army, but the Deputy Speaker said that that was a matter for argument, for which question time was not appropriate.

Asphyxiating Gases: Respirators and Helmets — Colonel White asked whether protective helmets or masks against asphyxiating gas had actually been issued to the troops at the front? Mr. Tennant replied that originally, when the Germans first introduced gas as a weapon of warfare, 1 million respirators supplied originally from the Admiralty were sent out. These respirators were not found to be quite so efficacious as was desired, and they were supplemented by another form of respirator—cotton waste, which was saturated with a solution of sodium carbonate and sodium hyposulphate, being held in place by a veil. That is now being used by the troops. The question had arisen whether it would not be preferable to have a helmet such as was used by fishermen; it was made of woollen material, with talc spaces for the eyes, the cotton waste inside being saturated with the same solution. Dr. Haldane had again gone to the front to conduct experiments with these various materials and methods.

Medical Prisoners of War.—Lord Robert Cecil asked the Secretary of State for Foreign Affairs if he could state what progress had been made for the release of medical personnel detained in the various belligerent countries? Sir E. Grey said that as would be seen from White Paper, No. 8 (Miscellaneous), His Majesty's Government accepted in its main outline the interpretation placed by the German Government on the provisions of the Geneva Convention dealing with the release of medical personnel, with the reservation that such personnel should not be detained in connexion with new work. The German Government pointed out that there were certain epidemics amongst the prisoners in German detention camps which required expert assistance. This referred principally to typhus, which had broken out amongst Russian prisoners and in which disease Russian doctors were more expert than German doctors. On further consideration, His Majesty's Government decided that circumstances, such as the outbreak of obscure epidemics among prisoners, might arise in which the captors might be justified by humane considerations in retaining medical personnel who were thoroughly competent to deal with the disease for a period longer than that which was ordinarily permissible. A note to this effect was addressed to the United States Ambassador on April 30th; an answer had not yet been received.

Incapacitated Soldiers.—Mr. Butcher asked the Financial Secretary to the War Office whether he will state the amount of the allowance made to soldiers who are wholly incapacitated by wounds or otherwise in the course of the war; whether his attention has been called to the fact that such allowance is inadequate for reasonable subsistence; and whether the Government will, at the earliest date, take steps to remedy this state of things? Mr. Baker: The amounts hitherto authorized are those shown in the Royal Warrant for Pay. New rates in accordance with the recommendations of the Select Committee will be published and applied at a very early date.

Tuberculous Soldiers.—Mr. Tennant informed Sir Henry Craik that the arrangements made by the War Office for tuberculous soldiers applied to soldiers suffering from tuberculosis discharged from military hospitals or convalescent homes to make room for the wounded or for other reasons.

Inoculation.—Mr. Chancellor asked the Under Secretary for War for how long 90 per cent. of the Expeditionary Force have been voluntarily inoculated; whether a general order for inoculation of our soldiers in France was in force or had been issued at any time since August; what proportion of those originally sent to France had been inoculated; and whether hereafter information asked for material to a full knowledge of this subject would be given? Mr. Tennant said he was not aware that inoculation in France was otherwise than a purely voluntary measure. The percentage of inoculated men in France was about 60 per cent. in October last. No statistics of the percentage in successive months are available, but he was glad to say that it was gradually rising, as the men become enlightened as to the value of inoculation, and it was hoped that the percentage, which was now 90, would soon be 100. He was not aware that any information had been withheld from the House on this or any other subject. On the contrary, he had always supplied the fullest information consistent with the interest of the army in the field. In reply to further questions by Mr. Chancellor, Mr. Tennant said that no general order for compulsory inoculation had been issued in France. He was unable to express any definite opinion as to why the death-rate among typhoid patients who had received two doses of vaccine was higher than among those who had received only one. He was unable to assert that all cases not reported as fatal at the time the last return was rendered had recovered beyond the possibility of relapse. He was advised that the prognosis in enteric fever was uncertain, and, in view of this, any statement that could be made as to how many cases were still possible fatalities would hardly provide a sound basis on which to base any reliable conclusions.

Trade in Morphine.—Mr. Theodore Taylor asked the President of the Board of Trade to state the total amounts and values of morphine manufactured in the United Kingdom in the years 1910–14, the amounts and values exported to China, Japan, and Hong Kong, and whether any provisions were in operation to secure the limitation of its use to medical or other legitimate purposes. In reply, Mr. Runciman issued the following statement, showing the quantity and value of morphine and morphine salts exported and re-exported from the United Kingdom to the countries specified in each of the undermentioned years:

		Quantity.	Value.
		Ozs.	£
To China	1911	15	9
	1912	—	—
	1913	2,270	1,080
	1914	2,329	900
To Japan	1911	58,352	24,071
	1912	125,907*	68,650*
	1913	252,110	118,791
	1914	352,130	143,975
To Hong Kong	1911	17,200	6,347
	1912	—	—
	1913	640	320
	1914	—	—

* Includes 1,600 ozs., valued at £800, of morphine, etc., of foreign or Colonial origin.

NOTE.—The exports and re-exports of morphine and morphine salts were not separately recorded in the trade records of the United Kingdom prior to January 1st, 1911.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[From a Special Correspondent in Northern France.]

GAS POISONING.

TEN days ago one hoped that the gas poisoning was merely a passing incident—that either the Germans would not again find themselves in a position to use this method of attack or that some means of neutralizing its effect would be found. These expectations have hardly been justified, for men who have been "gassed," as the soldiers call it, have been arriving from the front with considerable regularity. It is true that there have been among them a larger proportion than at first of lighter cases, but there have also been those in which evidence of previous asphyxia has been well marked, and not a few in which the patient has been wounded as well as poisoned. There have also, I understand, been further cases in which threatened gangrene of the extremities has been a phenomenon, but I have not seen them.

There would appear now to be clear evidence that in many cases the gas used has a definitely poisonous as well as asphyxiating effect; also, but not so surely, that in some cases the primary asphyxiating effect may be very slightly marked, the patient being embarrassed by the gas but not rendered immediately incapable of fighting, and only becoming so when the secondary results have begun to develop.

It would seem, too, that the general effect of being "gassed" may be written down as being divided up into several distinct stages: one of primary asphyxia due to the irrespirable nature of the gas, or to its capacity for producing spasm of the glottis; one of secondary and slowly-increasing asphyxia, owing to the rapid output of thin excretion by the bronchial mucosa; one in which the patient is apparently recovering rapidly; and, finally, one in which he once more becomes gravely ill, the temperature being raised and physical examination evidencing a condition of capillary bronchitis or patchy pneumonia.

This has been the history of the patient of whose primary condition I gave some account last week. At the time I sent off my note he seemed very decidedly better, but he soon became very ill again, and it is only now, after a lapse of five or six days, that he seems to be turning the corner. I doubt, however, if he would have survived had he not been imbued with exceptional vitality and a splendid fighter against illness. His temperature, never very high, is now subnormal; the respiratory rhythm ranges between 30 and 40; expectoration of muco-purulent secretion is free; the condition of the visible mucosa suggests a considerable degree of red blood cell destruction. It now looks as though the feet would recover without more than loss of superficial tissue.

I understand that the general history of this case has been that of many others, while some who have made a very bad start have recovered completely and rapidly at the third stage. It is also worth noting, perhaps, that, apart from breathlessness, one of the chief complaints made by the lighter cases is that all food they try to take is nauseous to them; it tastes so much of gas.

The panting respiration which was stated last week to have been generally observed and to have suggested an abnormal reaction of the blood in the acid direction is clearly one of the characteristic results of "gassing"; whether it is actually due to acidosis has not yet been determined. The point is now being investigated by Mr. Barcroft of Cambridge, who has come over specially for the purpose. The problem presented is as interesting as it is difficult, for the laboured respiration outlasts the cyanotic condition which the patients usually present when they enter the hospital. An analogy is suggested, therefore, with the cases of dyspnoea, probably of renal origin, which have already been investigated by Mr. Barcroft in collaboration with Dr. Lewis and others. Yet even these renal cases may have had as their remote cause some degree of asphyxiation of the kidney itself. The problem, therefore, with which Mr. Barcroft is faced is the extent to which the increased acid in the blood, if present, is the result merely of the asphyxial condition, or whether there is further evidence of a specific renal irritation.

As for the nature of the gas, there would now seem reason to suppose it is not in all instances the same, and that in some, if not all, the gas is a mechanical mixture. It still seems to be believed that the greater part of its volume is chlorine, but that it sometimes contains bromine and sometimes anhydrous sulphur oxides. Another suggestion that I have heard put forward with some show of reason is that the most important factor is a compound gas consisting of impure nitrogen oxides, especially the tetroxide. It is said that some time ago, during the course of ordinary trade processes, the Germans discovered that this gas, while not being so irritating as to incapacitate a man forthwith, acts after a short time as a rapid and definite poison.

PREPARATIONS.

In view of certain rumours as to a breakdown in the German medical arrangements on the right of their line—that is, opposite and north of Ypres, it is particularly satisfactory to be able to report that the British arrangements for the collection and evacuation of the wounded during the recent prolonged fight worked smoothly. The usual "emergency teams" of surgeons were sent up to assist in the work of the casualty clearing stations nearest the scene of action as soon as it became clear that the fighting was likely to be severe, and the motor ambulance convoys were likewise reinforced by the dispatch of some additional ambulances from Boulogne. As mentioned in a previous note, the "teams" each consist of five surgeons, a convenient number of passengers for a fast travelling motor car.

For several days the work was exceedingly heavy; for instance, at No. 13 General Hospital three operation tables were in almost continuous use. This hospital, it is true, is about the largest in Boulogne, and owing to its situation and the character of its building it receives a larger proportion of cases demanding immediate operative interference than most others; but the pressure was felt by medical units in France whatever their situation, including for the moment in this term the motor convoys, the ambulance trains, and the embarkation staffs. Furthermore, matters were to some extent complicated at the real front by the casualty clearing station nearest the scene of action having to be evacuated owing to the Germans shelling with their long range guns the village in which it was situated.

The outstanding feature of the casualties during the second battle of Ypres was, of course, the inclusion among them for the first time of cases of gas poisoning. There were also a good many wounds by hand grenade, which have been fairly common. These seem to present no special characteristics—they are just contused, jagged wounds, such as might be caused by fragments of low velocity shell casing, or by bits of stone thrown up by a "Jack Johnson." They are, however, usually multiple, and though their intrinsic importance varies more, perhaps, than that of other wounds with their exact situation, they seem, even when quite superficial, to be invariably infected. Infection, indeed, by gas gangrene and other allied organisms has seemingly been more common during the last few weeks than previously, but to what extent the severity of the wounds as a whole has varied it is difficult to say. Eventually, no doubt, precise information will be available, but meantime an estimate can only be based on opinions expressed by the workers at various hospitals. The general impression conveyed is that the number of very serious wounds that came under notice as the result of the Ypres battle was quite as large as in connexion with any previous fighting in the nature of a definite battle, but throws no light upon the question whether their ratio to slight cases was greater or less.

On three occasions now since the beginning of this year the medical arrangements have been severely tested and they have sustained the strain in such fashion as to leave no room for any doubt as to their being found adequate when the fighting is not only heavy, but continuous. Even as long ago as last Christmas the medical units looked quite ready for everything then immediately in view, and in the intervening months a great deal of further preparatory work has been steadily in progress. The arrangements of institutions which had

then already been at work for some months have been further elaborated; those which were then comparatively new have been completed and their machinery tuned up, and a number of new units have been started. This may possibly seem rather a vague statement, but it is not a matter in which it is easy to be very precise. The units are numerous, and when visiting them it is the patients rather than their surroundings that one often has chiefly in mind. Furthermore, and though one may be conscious of differences, one does not always stop to consider exactly what are the changes that have taken place since one's last visit, or the most recent occasion that one came across the same unit, whatever the general character of this may be.

As I write, however, one or two elaborations that apply to all the older hospital units come to mind. The nursing staffs are now homogeneous in respect of status and appearance, the Red Cross nurse having either gone home or joined the ranks of one of the definite services which now do all the nursing work of the hospitals, other than that allotted to nursing orderlies. Fire squads have been chosen and trained, electric lighting has everywhere been introduced, operating and *x*-ray rooms improved, lavatory and bathroom accommodation has been increased, and woodwork painted or repainted. Similarly, the number of completely equipped motor ambulance convoys has been increased and the bodies of many of the vehicles have been rebuilt in the light of recent experiences. More ambulance trains have been brought out from England or composed locally, and arrangements for passing them quickly up and down the lines improved; while squads of "Permanent B" men (that is, men fit for base duty but not fitted to withstand the stress of life at the real front) have been trained in the art of unloading trains. More cot accommodation has been supplied on hospital ships—that is, the hospital ships as a whole are able to transport rapidly to a British port a larger number of stretcher cases than they could four months ago. A number of small administrative changes have been made calculated to speed up the process of dealing effectively with very large convoys of wounded, to secure the well-being and relative comfort of patients during transfer, to ensure that they shall be properly clothed when being moved on or when discharged, and that information as to any operative interference that has been undertaken shall duly reach the surgeons next in charge of them. A good deal of knowledge has also been acquired and disseminated as to the handling of certain classes of cases, whether they are to remain under treatment or to be transferred.

Other advances could be mentioned, but the foregoing indicate sufficiently the points covered by the general statement in question. The net result is that after visiting within the last few weeks every British military hospital base in France, if not every single hospital, I am able to say that, bearing in mind the different classes of work done at each of them, I have seen not a single institution from which we could wish to remove a sick or wounded friend or relative on account of faulty equipment or functional inefficiency.

Zymotic Disease.

A visit to Wimereux last week showed that the accommodation at the isolation hospital—No. 14 Stationary Hospital—had been practically doubled since last I was there some six weeks previously. The increase had been effected partly by adding several large huts to the bathing box section of this hospital, partly by creating a completely new section. The bathing box section, as described in the previous note, is established on the beach alongside the main building.

The new section is about a quarter of a mile away on some pasture land with a sandy subsoil. This is a tented section, and except for the fact that it is under the same administration as the main building and bathing box section, might be regarded as an independent unit or isolation camp. It covers a good deal of ground, since the camp as a whole is divided up by barbed wire-fenced alley ways—some 12 ft. wide—into five distinct compounds. One of these is an administrative division, including a disinfecting station and a hut in which each patient receives a final bath before donning his new kit and leaving the camp; a sisters' quarters compound; a compound for contacts of all kinds; one for cases of cerebro-spinal meningitis whether convalescent or otherwise; and one for the various classes of common zymotic disorder other than typhoid fever. This latter compound is subdivided on the same principle as the camp itself into five sections, each equipped with six British army pattern hospital marquees with the addition of a bell tent for the reception of any case in which the diagnosis may be deemed dubious. Each main compound has its own cook-house and lavatory accommodation, the latrine part of the latter being so arranged that the buckets can be removed without entering the compound concerned. None of the additional accommodation at No. 14 Stationary Hospital is yet fully ready for use according to the views of its commanding officer (Lieutenant-Colonel C. E. Evans). So meantime No. 14 General Hospital, which is not far off, has for the nonce added isolation work to its ordinary duties. The cases received are mumps and measles, and by utilizing certain annexes to his main buildings the commanding officer (Lieutenant-Colonel Norrington) has been able to extemporize comfortable accommodation both for officers and men.

The total accommodation now in view for cases of zymotic disorder—apart from contacts—would seem to be about 1,000 beds, of which half will be exclusively reserved for cases belonging to the typhoid group. Present indications do not favour a belief that they are ever likely all to be utilized, but the authorities consider it well to be prepared for all possibilities in this direction. The other 500 beds may well be all required at some time or other.

The need for the provision of any considerable amount of accommodation for the isolation of cases of the less important zymotic diseases might seem to be lessened by the fact that the population concerned is one composed exclusively of adults, but this war has strikingly demonstrated how large a proportion of children must now reach adult life in countries where modern sanitation is observed without acquiring immunity against diseases such as measles, German measles, mumps, and scarlatina. All these diseases have occurred with frequency ever since the beginning of the war, and the first three have prevailed epidemically during the first four months or so. These epidemics have not, it is true, been of such a character as to prove embarrassing from a military point of view, but they have added not a little to the numerous calls upon the energies and resources of the medical department of the army.

Finally, in regard to isolation work, it may be added that I found the staff of No. 14 Stationary less than ever disposed to form any conclusions as to the therapeutic value of typhoid vaccine or its apparent effect on the course of individual cases, and rather dubious as to whether the remarkably complete records of typhoid work which in a previous note have been mentioned as being kept at this hospital would justify a belief that the best method of preparing a typhoid vaccine had yet been discovered. I also found that it was a not uncommon experience for the cases admitted with the diagnosis of measles and German measles to include instances of a disease really bearing a resemblance to them but due to another cause. This apparently is a particular tinned ration—a kind of Irish stew—which is greatly in favour with the troops, but occasionally causes a well-defined disorder which must be written down as in all probability a form of food poisoning. As a rule, this merely amounts to a passing attack of urticaria, which yields readily to a saline purge, but occasionally the phenomena bear a distinct resemblance to those of measles, except that the eruption is much more marked on the body than on the face, and that Koplik's spots are not seen in the mouth, and that if the whole body be examined, urticarial wheals and subepidermal haemorrhages are usually to be found.

Precautions against Typhus Fever.

Owing to the reception of a report to the effect that a certain amount of typhus fever was occurring in some of the German reinforcement camps, the British authorities about three weeks ago began to take special precautions against outbreaks of the disease through the medium of German prisoners, whether wounded or unwounded. Much the same lines have been followed in both cases. Having

in view the possibility of the germ concerned being lice-borne, the prisoners' clothing has been stoved as promptly as possible and the men themselves given baths. They have also been treated on isolation principles for fourteen days after their capture, and during this time each man has been examined daily by a medical officer with a view to the discovery of any suspicious condition. To facilitate the practice of these precautions in the case of wounded men, these are no longer sent to any hospital where there may happen to be vacant beds, but to a special hospital at every base where ambulance trains unload, chosen on account of its being so constructed as to make the isolation easy.

ANTISEPTIC PASTES.

During the past week or two there has been a distinct increase in the number of severely septic wounds reaching the Boulogne base, and in some at least of them there has been direct evidence that they have been treated at the front by an antiseptic paste, which is, I understand, that suggested and recommended by Sir W. Watson Cheyne. There appears to be a grave disaccord between the clinical results obtained from the use of the paste and those laboratory results on which the advocacy of its use is based. In regard to wound treatment as a whole, there would seem to be a growing feeling that unless free and early drainage is an intrinsic and essential part of any treatment advocated, that treatment ought to be condemned; and, on the other hand, that if thoroughly effective drainage is secured, the precise character of any drug introduced into the wound is a matter of relative indifference, provided always that it be not of such a character as to lower the vitality of the tissues or otherwise interfere with their capacity for self-protection. With regard to the use of pastes, however, I am told by surgeons dealing with cases at the base hospitals that they consider them dangerous owing to their tendency to block the drainage.

MEDICAL ARRANGEMENTS FOR THE BRITISH FORCES.

AT the annual meeting of the Hospital Saturday Fund on April 21st, held in the Mansion House, Dr. JAMES GALLOWAY, Major R.A.M.C.(T.), 4th London Territorial General Hospital, and senior physician to Charing Cross Hospital, gave the following address:

I have acceded to the request of your secretary to address the annual meeting of the Metropolitan Hospital Saturday Fund with pleasure. If it had ever been in doubt, the evidence of the past few months has made it clear that all the institutions dealing with the care of the sick and wounded in this country form really part of one system. The more clearly this is realized the better for the efficient and smooth interworking of our organization for medical assistance.

It appears to me, therefore, that when you asked me, as a Member of the Council and Senior Physician to Charing Cross Hospital, to address you, you were simply inviting one of your own executive officers to give some account of the work which we are all actively engaged in supporting.

Sometimes those of us who are in the midst of hospital administration in London have been inclined to become depressed on account of the apparent lethargy and want of interest of the public in institutions absolutely essential to their welfare. But it has always given us courage when we appreciated from time to time that we were being whole-heartedly backed up by such a body as the Metropolitan Hospital Saturday Fund.

In the remarks I am about to make reference will be made almost entirely to the army. Our naval forces up to the present are so self-contained and well organized that comparatively little voluntary or civil assistance has been found necessary, but much that I have to say as to the training and the reasons for the existence of the medical services of the army can be said equally truly of the medical services of the navy, and it will be well understood that the medical arrangements to which I refer include the services rendered by the devoted band of women working as nurses in the army.

The first statement to be made, clearly and emphatically, is that the medical services of our army exist to do their share in preparing a perfectly effective fighting force, and one of the chief requirements is to provide the general in command with the largest number of efficient fighting men at the point of impact on the battlefield. This principle must be constantly borne in mind as being fundamental in all medical work done for a military force. It is well enough recognized in the army, but is apt to be forgotten by the general public.

The medical services provided for the army may be divided into two classes. First, the services required to care for the health of the troops during time of peace, and during the time of their training, and to keep the army in the best possible state of health during war in order to maintain its fighting efficiency. Second, the services required for our soldiers when they are no longer efficient as fighting men, when they are sick, and when they have been wounded. The first of these duties devolves almost entirely on the Army Medical Service, and especially on the officers and men of the Royal Army Medical Corps. The second of these duties devolves not only upon the Army Medical Service in all its branches, but also to a large extent on voluntary aid. This aid is afforded by two great organizations, namely, the British Red Cross Society and the Order of St. John of Jerusalem in England, but in the case of a great war such as the present, voluntary aid is being rendered by our civilian hospitals, and there is room for everyone who is willing and fitted to assist in the work, either by his personal labour or by financial assistance.

From the point of view of the army, the first of these services may seem to be the essential and most important one. The officer commanding the fighting force is supremely anxious to have as efficient and as numerous a body of men as possible to carry out his plans. His main object is to fight and win.

The second group of services—namely, those concerned with the wounded and sick—may be considered in some respects a secondary matter. Apparently, the immediate care of the wounded cannot help to win the battle. It may be considered in some respects to retard victory, as it utilizes the energy of some who may be able to fight. It was for this reason that in barbarian warfare, and even during campaigns amongst more civilized armies in days gone by, the condition of the sick and wounded was not a matter which received great attention. They were left to die in their misery as part of the sacrifice of war. Two factors, however, worked together to bring into prominence the services dealing with the sick and wounded. First, the increased value set upon life and the feeling of sympathy for suffering which gradually develops as a community becomes more civilized. Indeed, it could never have been absent, and the records of even the most savage warfare show examples of care afforded to sick and wounded soldiers, even by individuals of the nation with whom they are at war.

The second factor, however, though of later development, was more important in promoting the efficiency of the medical services. Commanders of fighting forces soon observed that their armies were impeded by the collection of sick and wounded in gradually increasing numbers during a campaign, and that these broken fragments of an army were an easy prey to numerous infectious and preventable diseases. There are many instances on record where armies well equipped and once efficient have remained in their lines unable to win victories, easily within their grasp, because they were burdened with wounded and sick, and disease was constantly threatening the efficient residue of the fighting force. It is true that the aim of the commander in this situation must be to get rid of the sick and wounded so that the efficient army may go on, even though deficient in numbers. But if the commander is convinced that by proper medical service and care he can go forward with strong units well up to their fighting strength instead of with a depleted army, he will do everything in his power to increase the effectiveness of his medical service.

It is this fact which is really at the foundation of the remarkable increase of efficiency of our Army Medical Services, and the medical profession has not been backward in aiding the chief desire of our commanders—namely, to have a thoroughly good army.

In carrying out the first group of duties the whole work of the Army Medical Service in all its branches is concentrated. The Royal Army Medical Corps itself is in constant

training; its officers are constantly at work acquiring the medical knowledge necessary for the treatment of disease in armies; they are constantly studying and practising various methods necessary to increase the mobility of the hospital service and devising the most efficient equipment for this purpose; and the non-commissioned officers and men of the Royal Army Medical Corps are selected and trained in peace for their duties in war. One of their functions—by no means the least important—is their own education as a professional branch of the army to become capable of advising, and giving reasons for their opinions, to all other branches of the service in matters involving medical and sanitary knowledge. Most of this work is done in times of peace, and the nation at large knows little or nothing about the service being constantly rendered by the officers and men of the Royal Army Medical Corps.

The second part of the medical service of the army is concerned with the care of the soldier when he is no longer an efficient fighting man. It is this part of the army medical duty of which the public has heard most, and it is in some of its activities that voluntary associations may take part. Of these organizations, the British Red Cross and the Order of St. John exist for the purpose during times of peace, and are engaged in perfecting their organization and training their personnel for the duties to be required of them in war time.

In the little wars to which we have been accustomed little more is necessary in the way of assistance to the Army Medical Service than can easily be given by these two great bodies, but in such a great war as that now being waged every form of good voluntary assistance is necessary. It is only to be expected that all the assistance offered is not efficient, and some efforts will break down on trial, but it is only by trying and by a process of elimination that the efficient forms of voluntary aid can be ascertained and put to good use. The arrangements in our own army for dealing with the sick and wounded are very efficient and smooth in their working. They have been tried over and over again in our small wars, and have been improved until the present high standard has been obtained. They have, during the present great war, however, shown that they have another good quality, namely, that they are elastic, capable of rapid modification, of being added on to existing lines, or in some cases of being transformed almost out of recognition, and nevertheless retaining a high degree of efficient service.

Medical assistance is afforded, differing somewhat in its nature, in three zones—the collecting zone, the evacuating zone, and the distributing zone.

In the collecting zone medical assistance is afforded to troops at the front actually in the fighting line and during action. It is afforded, in the first instance, by the regimental medical establishment under the immediate control of the regimental medical officers. Every soldier takes with him into action what is known as a "First Field Dressing," and a small supply of antiseptic in the right hand pocket of his coat; it must be there, to be found easily in case of need. The regimental medical officer has not only to look after his battalion as his special charge during its time of training, but has to render it every assistance possible in action. He is provided with equipment, has attached to him trained orderlies of the Royal Army Medical Corps, and can obtain a certain number of stretcher bearers and other assistance from his unit. One of his duties in action is to arrange for the formation of the "regimental aid posts."

The next great organization—one of the most important of the whole series—is a mobile hospital, known as the "Field Ambulance." It differs more than any other of the military hospital establishments from the generally accepted idea of a "hospital" in peace time. The field ambulance is not a regimental establishment, but is a part of the divisional troops, three field ambulances to each division. It is really a mobile hospital specially developed so as to afford first aid assistance in the most efficient manner, to collect the sick and wounded on the field of battle, and to pass them back to the next hospital establishment in the rear.

The field ambulance has by practice become an extremely flexible and mobile unit. It consists of what is known as a "bearer division" and "tent division." The bearer division has the responsibility of collecting the wounded as quickly as possible on the field, by day if possible, if not by night, from the trenches and from the open field. The tent division establishes itself either under canvas or in some sheltered spot, or in some building which may offer some degree of protection, and proceeds to fulfil its purpose to give surgical assistance, to relieve suffering, and especially to clear the lines of the injured. The field ambulance has a certain establishment of officers, non-commissioned officers, and men, and is under the command of an active officer of experience and some seniority. It may be divided when necessary into three sections, each with bearer subdivision and tent subdivision. A similar unit is attached to mounted troops—the cavalry field ambulance.

The next important medical unit is the Clearing Hospital. This establishment should be at a safe distance from the front—at railhead or some convenient place on the established lines of communication. In the present war these hospitals utilize as a rule such buildings as may be conveniently arranged for their purpose. The equipment is on a higher scale than for the tent division of the field ambulance. It should receive the whole of the sick and wounded from the front in its area, render additional medical aid, and commence to classify and sort out the different types of cases. Its main function is, while rendering medical assistance, to arrange for the passing back of the injured along the line of communication in the most efficient manner possible. But the clearing hospital is a comparatively new establishment, and is still in process of development. Recent reports make it clear that a large amount of urgent and highly necessary treatment must take place at the clearing hospital. Surgical operations of urgency, necessarily of the most difficult and serious character, are undertaken at this point. On account of the nature of the work done in this unit it is becoming better known as the "Casualty Clearing Station."

In the present war the transport of soldiers from the field ambulance and clearing hospitals has been enormously facilitated by the use of mechanical transport. The horse-wagon ambulance is being used only in the extreme front, across fields, and where there are no roads; but it is being found that the motor ambulance can go to almost any place where the wagon ambulance can be drawn. The Stationary Hospital, the next stage on the regular lines of communication, may be considered to be the first great station in the evacuating zone, and is greatly concerned with "transport." At this point the ambulance trains, which have formed so important a feature in the present campaign, are met with, and carry the wounded towards the base with a degree of comfort and safety which could not have been imagined in the recent past; but owing to the fact that we are fortunate in having short lines of communication, it is possible to pass injured men to the rear along the lines of communication for a long way by motor transport alone, thus avoiding the transhipment of the wounded and facilitating enormously their treatment and recovery.

Along the lines of communication are to be found the various "rest stations," where injured are changed from one form of transport to another, or where they have to stop for other reasons. Additional medical assistance is given when necessary at such places, and the comfort, cleanliness and feeding of the sick is cared for.

Behind the zone of clearing and stationary hospitals is the next great hospital establishment, the General Hospital, normally equipped with 520 beds. These hospitals are established at the various bases, and in the present war are to be found in largest numbers at the main base—that is, in the British Islands, for our own country is the medical base in this war. The short sea voyage, which apparently interrupts our line of communication at the present time, has not been found to be a very serious obstacle, and it has promoted much ingenuity in fitting out and arranging the hospital ships, which form so important a link in the chain of transportation.

On arriving at the general hospitals we have come to the third zone, namely, that of distribution. The sick and wounded are now to be properly cared for and treated with the best possible skill and equipment. A large proportion are restored to health and in turn are distributed to the convalescent institutions, it may be to their own homes, or to the various military units to which they belong. Those restored to health are gradually collected at the

various dépôts, and in due course returned to the active army as reinforcing drafts to the various units. General Hospitals overseas have attached to them special convalescent dépôts, to which are transferred patients requiring a few days' care only, and whence the soldiers are returned immediately to their units.

A noteworthy result of this system of hospital organization, involving the rapid transference of patients from one medical officer to another, is that methods of treatment tend to become standardized in military practice to a much greater extent than in civil work. Up to a certain point this is beneficial, for it is obviously an advantage for the doctor to know the treatment previously used in cases transferred to his care at short notice from other hospital units. The obvious danger of loss of personal responsibility and initiative on the part of the medical officers must be avoided.

Attention must next be directed to the organization of the Territorial army. When the great and very opportune reorganization of our volunteer forces as a Territorial army was undertaken under Lord Haldane's administration at the War Office the formation of the Territorial Army Medical Service was happily undertaken by the present Director-General at the War Office, Sir Alfred Keogh, and his colleagues. The medical profession, as was to be expected, gladly lent themselves to the scheme mapped out, and for the last eight or ten years the Territorial Army Medical Service has existed in its main features, and has gradually become consolidated and well established. On the outbreak of this war the Territorial regimental service, the field ambulances, the clearing hospitals and general hospitals were in existence, their work arranged and planned out. The day of the outbreak of war the whole of the Territorial Medical Service was mobilized, just as in the case of the regular army, and every one and everything fell into place in a manner which astonished even those concerned. The Territorial field ambulances, already partially trained, promptly underwent training for active service. Some are now with the troops abroad, the remainder at home. The clearings hospitals exist, and the general hospitals, as we have all seen, almost suddenly took concrete form all over the country. They were ready to do their work as soon as the sick and wounded began to arrive from the front. The Territorial Medical Service in this way gave a very large and immediate reinforcement to the medical services, and proved capable of great increase on the lines arranged. Time was thus afforded for bringing up to the necessities of the occasion the already established organization and work of the British Red Cross and the St. John Ambulance.

The enormous assistance which is being rendered by these two voluntary organizations is thankfully recognized by the military authorities. Their work is continually enlarging.

In the last area of the zone of distribution are to be found the convalescent homes. Offers of convalescent accommodation have been made to the hospitals and military department in the most lavish way by generous persons all over the empire; and these offers coming at the time they did proved to be invaluable. The amount of good and unremunerated service thus rendered has been very great. It is well known, however, to every one associated with hospital administration that the management of convalescent homes is never easy, and is sometimes very difficult. Even in the convalescent home soldiers must still be within the zone of distribution, to be returned to the various units of the army to take their place with the effective fighting force in accordance with the principle underlying the whole of the administration of the army medical services. The career of a soldier who has recovered his health or been healed of his wounds does not terminate in the convalescent home. The completion of the medical organization to secure the final distribution of soldiers back to the army is of the utmost importance, it has to be done now on a scale never previously attempted, but it is certain that it will be done thoroughly and well.

There remains to be mentioned the very important share of medical service discharged by civilian hospitals. When war broke out it was very evident that a large and, indeed, unknown amount of hospital accommodation would be necessary. The urgency of the situation and the desire of every one to help to their utmost led the boards of management of civilian hospitals all over the country to consider what should be done to help. In a very large number of cases the councils of the various hospitals, found it possible by setting apart a certain proportion of their beds, by opening unused wards, or by actually extending the accommodation of their hospitals to prepare for the admission of the sick and wounded soldiers and sailors. In London most of the general hospitals and many of the smaller hospitals offered part of their in-patient accommodation to the military authorities, who accepted these offers promptly and thankfully. The circumstances under which the war is being waged has brought it about that nearly the whole of the civilian accommodation so offered has been utilized by the army. This rapid enlargement of the resources of the Army Medical Service, in the form of well equipped hospital accommodation all over the country, proved to be invaluable. Much of it was ready as soon as the sick and wounded began to arrive in this country. It had the double effect of affording the best care and attention to the sick and wounded, and of permitting the Army Medical Service to clear their general hospitals at the various bases, so facilitating the work along the lines of communication.

The financial responsibility and the administrative work necessary to allow of the civil hospitals accomplishing this task were very onerous, but the hospital councils willingly undertook the duties suddenly devolving upon them, depending upon all the friends of voluntary hospitals, and not least upon the army of subscribers to the great hospital funds.

I feel sure the subscribers to the Hospital Saturday Fund will not be disappointed to know that the institutions they have steadily and generously supported for so many years have undertaken this absolutely necessary and patriotic duty at this time of national strain.

HINTS ON ANTITYPHOID INOCULATION OF TROOPS.

WE have received from Lieutenant C. Jerome Mercier, R.A.M.C., the following hints, which he believes will prove of use to medical officers attached to battalions.

The Roll of Inoculated.—The following are the official instructions regarding the method of recording inoculations:

Method of Recording Inoculations.

A nominal roll of all men inoculated will be kept in the following form:

Corps	Reg'tl. No.	Rank and Name.	$\frac{T. V.}{2}$		$\frac{T. V.}{1}$
			Date of 1st inoc.	Date of 2nd inoc.	Date.

Station.....

Date.....

.....Signature of M.O.

When A.B. 64 (Soldiers' Pay Book) is issued to the man before proceeding overseas, a note will be made by the M.O. in the Soldiers' Pay Book on the top of inside right-hand cover. $\frac{T. V.}{2}$ with M.O.'s initials, will be entered to indicate that man has received "two-dose" system; $\frac{T. V.}{1}$ with M.O.'s initials to indicate that man has received only one dose of 1 c.cm.

In the event of a man being transferred from one unit to another, information regarding his inoculation will be forwarded to the O.C. the unit to which he is transferred, unless the man has previously been issued with his Pay Book, and the fact noted on it.

When a unit leaves for overseas the nominal rolls will be forwarded to the W.O.

(Memorandum issued by W.O. Letter 24/Genl. No. 2984 *d.* 6 8/14, as amended by W.O. letters, same No. *d.* 25 8/14 and 25 9/14 respectively.)

This nominal roll, in duplicate, in alphabetical order, platoon by platoon, giving the regimental number of each man, should include the names of officers and non-commissioned officers, and should be supplied to the medical officer after application through the adjutant. The platoon rolls should be prepared by the quarter-

master-sergeant of each company; the request passing from the adjutant (who supplies the roll of officers) through the officer commanding the company. One roll might be entered in a notebook, such as Army Book 136, and the duplicate may be entered on foolscap sheets.

While inoculation is in progress, after giving out the army order about staying indoors and abstaining from alcohol, the inoculations done should be recorded as noted above. This record is best made by the platoon officer if available, and should be controlled by another—a non-commissioned officer—sitting in view of the inoculations. The room should be so arranged that each man after inoculation has to walk past the recording officers.

If this arrangement is adhered to the medical officer will avoid falsification of his records due to:

(i) Carelessness of non-commissioned officers or deliberate attempts to assist evasion.
(ii) Omitted inoculations due to incomplete rolls.
(iii) Uncertainty about residue of non-inoculated:
  (*a*) Absent on special duty.
  (*b*) Absent on account of sickness.
  (*c*) Objectors.

The keeping of the roll by responsible officers and non-commissioned officers is very important; a check by an extra scrutineer who knows the men, and sits where he can see the operation performed, is absolutely necessary to a medical officer who is doing the work.

Needles.—Beyond the correct keeping of the roll the other matters will be familiar to most medical men. They will find that the needles are best sterilized by boiling, and not by passing through a flame. Ordinary small hypodermic plug-on needles give less pain than the large anti-toxin needles supplied. The latter may be used for drawing off the vaccine from the bottles.

Reaction.—After the experience of over 1,000 first and second doses I can say that the cases of troublesome reaction are very few, and that in these the trouble is generally only local, and recovered from by extension of "No Duty" for an extra twenty-four hours. Men over 40 suffer more than the younger men.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Prisoner.

Surgeon Probationer W. W. K. Brown, R.N.V.R., H.M.S. *Maori*.

ARMY.

Killed.

Captain Howard Tomlin Hunter was killed at Ypres on April 26th. He was the second son of Edmund Hunter, of Wentworth, Gosforth, Northumberland, and was born on October 1st, 1888. He was educated at Aysgarth School, at Charterhouse, and at Durham University, where he took the degrees of M.B. and B.S. in 1911; he studied also at St. Bartholomew's Hospital and at Vienna. He took a commission in the sixth (Territorial) battalion of the Northumberland Fusiliers in 1906, and became captain on January 26th, 1912. His elder brother, Captain G. E. Hunter, was in the same regiment, a few places his senior, and was killed on the same day at the same place.

Wounded.

Lieutenant R. C. Neil, R.A.M.C.(T.F.).
Lieutenant (temporary) P. Cagney, R.A.M.C.

Acting Sister Phillis Pearse, of Queen Alexander's Imperial Military Nursing Service, died at Havre on April 29th, on her way home from Rouen, aged 28. She was the younger daughter of L. F. Pearse, Esq., of 8, Eldon Park, South Norwood.

THE LUSITANIA.

The great Cunard liner, *Lusitania*, which was torpedoed by a German submarine, off Kinsale, on May 7th, and sank in a few minutes, appears to have had 1,906 persons on board—passengers 1,255, crew 651; of these 764 were saved and 1,142 lost. She carried two medical officers, Drs. J. F. McDermott, surgeon, and J. Garry, assistant surgeon, both of whom were lost. The names of five doctors appear in the passenger list, but only one, Dr. Owen Kenan, was lost.

Dr. James Farrell McDermott was educated at Queen's College, Cork, and took the M.B., B.Ch., and B.A.O. of the Royal University of Ireland in 1906.

Dr. Joseph Garry took the M.B. and B.Ch. of the National University, Ireland, in 1914.

NOTES.

RESPIRATOR MASKS.

THE Under Secretary of State for War stated in the House of Commons on May 6th that it might be found desirable to replace the respirators supplied by the Admiralty to the army as a protection to soldiers exposed to the poisonous gases used as a weapon of warfare by the Germans by a fisherman's helmet made of woollen material, with talc spaces for the eyes, and a pad of cotton waste for the mouth and nose which could be saturated with a solution of sodium bicarbonate and sodium hyposulphite. We learn that some time ago Dr. James Cantlie designed a facepiece which is made for sale by Messrs. Allen and Hanburys (2s. 6d.). There is a window for the eyes made of an uninflammable cellulose material; the position of the pad for the nose and mouth,



which is stitched on inside, is shown. The mask is made of cotton material of khaki or drab colour, and an elastic band run through the lower edge makes it fit snugly under the chin, while a similar band at the top is fixed on above the brim of the cap by buttonholes, which fasten on to the buttons of the cap strap. When not in use the facepiece is folded up, inside out, above the peak. Tapes are also provided so that the mask can be tied on to a Highlander's bonnet. The whole of the fabric, we are informed, is treated with solution of sodium hyposulphite and bicarbonate, and the pad is filled with the same salts in powder. We are told that if water is not at the moment available, the breath will fairly quickly moisten the pad. Experiment with chlorine and bromine gases in a closed room proved, we are told, that the appliance was effective as a protection. The general idea seems to be good, but the details might be improved. Mr. Tennant spoke of a pad of cotton waste, but in the specimen of his face mask sent to us by Dr. Cantlie the pad consists of a double thickness of coarse cotton material stitched on. It would probably be better that this pad, which is thin, should be replaced by a pocket with the opening upwards into which the cotton waste could be introduced after moistening. A good point about the mask is that it protects the eyes.

THE KING GEORGE HOSPITAL.

The Surgeon-Commandant of the King George Hospital has asked that the work of preparation may be hurried on to the utmost, and, certain labour disputes having been adjusted, it is expected that the workmen will be out on May 26th. The top floor is already being arranged for occupation by a staff consisting of orderlies from the Association of St. John of Jerusalem. Mr. Isidore Salmon, L.C.C., has rendered invaluable aid in connexion with the equipment of the extensive kitchens. The list of twenty-five resident medical officers is complete, but there are still a few vacancies for honorary anaesthetists for Friday and Saturday mornings. For these positions application should be made to Mr. Edmund Owen at the offices of the British Red Cross Society, 83, Pall Mall, S.W. All the dental work will be carried on in the mornings, and in the afternoons the same rooms will be occupied by the honorary laryngologists and aurists. The staff of dentists has, we understand, been completed, and attendance will be given each weekday by a dental surgeon and at least one assistant.

MILITARY HONOUR.

The Military Cross has been conferred upon Lieutenant A. C. Hincks, 26th Field Ambulance, Royal Army Medical Corps, Territorial Force (2nd Wessex), for conspicuous

gallantry and devotion to duty at Neuve Chapelle from March 11th to 14th, 1915, in collecting the wounded whilst under heavy fire. On the night of March 13th–14th, whilst he was attending on a wounded man, a shell struck the ambulance wagon, killing the man and rendering Lieutenant Hincks unconscious. On recovering he at once proceeded to collect the wounded under fire, and continued doing so throughout the night.

MEDICAL OFFICERS WANTED.

2/1st Royal East Kent Mounted Rifles.

A medical officer is required for the 2/1st Royal East Kent Mounted Rifles. Applications should be made to the O.C. 2/1st Royal East Kent Mounted Rifles, Maresfield Park, near Uckfield, Sussex. It may be added that the Brigade Field Ambulance is itself in want of four more medical officers. Applications for the latter appointments should be made to the S.M.O., 2/1st South-Eastern Mounted Brigade, Mansfield Park, near Uckfield, Sussex.

2/1st Highland Mounted Brigade Field Ambulance.

Three medical officers are urgently required to complete the establishment of the 2/1st Highland Mounted Brigade Field Ambulance. Particulars regarding duty, pay, etc., can be obtained on application to the Officer Commanding, 2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C., Houghton Hill House, Houghton, Huntingdon.

Scotland.

GALEN AND HENRI BERGSON.

ON May 6th a lecture was given by Dr. Arthur J. Brock to the Scottish Natural History Society, entitled "Galen of Pergamos and Henri Bergson." Dr. Brock said that Galen in the second century A.D. crystallized all the work that had been done in medicine from the time of Hippocrates to his own day—that was to say, during a period of some 500 years. Thereafter, during the speculative torpor of the Middle Ages the Galenic system was largely kept alive by the Mohammedans, who, after adding to it, and still further systematizing it, handed it back to the Western world at the dawn of the Renascence on the capture of Constantinople by the Turks in 1453. A great many medical MSS. which had been preserved in the archives of the stagnant Eastern Empire were now set free and found their way into Europe; the highly elaborated versions of Galen, which had been introduced by the Arabians, were thus confronted with their Greek originals, and the free spirit of Hellenism began once more to leaven men's minds. Thus a "Greek" party arose in medicine, in opposition to the more conservative "Arabists." But the Renascence brought in a more extreme party still, to whom all tradition was abhorrent; the iconoclast *par excellence* was Paracelsus, who, at his first public lecture at Bâle University, symbolically burned the books of Galen, together with those of his chief Arabian exponent, Avicenna. Paracelsus led men back beyond the Nature-loving Greeks to Nature herself. Since his time a vast amount of original material—clinical, anatomical, and physiological—had been accumulated. Analysis had proceeded to extraordinary lengths, with the result that the clamant need was now, once again, for synthesis—for some organization of this enormous mass of material. Herein lay Galen's chief claim to modern notice; he had already, seventeen centuries ago, to a large extent solved the modern problem. He was acquainted with the various specialist points of view of his own day, and at the same time pre-eminently capable of co-ordinating them. To Galen disease was, first and foremost, a disturbance of specifically biological processes, and the view of Asclepiades and others that these processes might be adequately stated in purely physical terms (as by the Epicurean atoms, the *horror vacui*, or the like) received at the hands of Galen a crushing confutation, which would be still largely valid as against the mechanistic physiological theories of our own day. The separation of the physical from the vital, emphasized with such vigour by the great physician of Pergamos, was again at the present day the main contribution to biology of the neo-vitalist school, among whose chief philosophical representatives was Professor Henri Bergson. To both Galen and Bergson, change was the principle which distinguished the animate from the inanimate, and this was why, in regard to living things, the purely intellectual or objective approach invariably broke down in practice. It "doesn't work." Might it not, in fact, be said that, at least in this sphere, contrary to what "scientific" dogma had always insisted, "the laws of Nature were subject to change"—namely, were subjected to, or subordinated to, the principle of change?

MEDICAL DISPENSARIES IN EDINBURGH.

As is well known, several dispensaries care for the sick poor of Edinburgh and serve at the same time as centres for the teaching of practical medicine among the students. Recently the Public Health Committee of the Town Council has been investigating the spheres of operation of these various institutions with a view to discovering whether there existed any necessity for providing medical advice to those unable to pay in districts beyond the areas of operation of the dispensaries. No recommendation has yet been made by the committee, but various facts have been ascertained. The Royal Public Dispensary (founded in 1776), for instance, is not restricted in the area of its operations, but almost all the patients are resident in the densely populated district of which the Pleasance is the centre and in which West Richmond Street (where the dispensary has its quarters) is situated. The Edinburgh Provident Dispensary, also, has no particular or fixed limits, but ministers mostly to patients in the Marshall Street district. The New Town Dispensary, too, has patients coming to it from all parts, but there are limits for the visiting done from it by members of the medical staff. The description of the sphere of its activities printed in the list of local charities of the Charity Organization Society is that it supplies gratuitously to the sick and suffering poor of the New Town of Edinburgh the best medical and surgical aid not only at the dispensary but by visitation of the poor at their own homes. The Western Dispensary is understood to limit its operations to the western part of the city, and its printed statement says that it exists for the purpose of rendering medical, surgical, and obstetrical aid to the poor in the Fountainbridge district, which, it must be noted, is only a part of the western district. The Livingstone Dispensary of the Edinburgh Medical Missionary Society in the Cowgate, lying as it does surrounded by the others, has limited its sphere by St. Mary Street on the east, by King's Stables Road on the west, and by Chambers Street on the south. It was possible, however, to put one's finger on certain streets which seemed to be in territory belonging to no dispensary, and on others which might be claimed by two or more. It was also conceivable that individual cases of emergency might suffer from lying in debatable territory. Two conclusions seem to follow—one was, that the institutions should more clearly understand their topographical limits and work more thoroughly in association; and the other was that the general public should be widely informed of the areas under the different dispensaries, so that individual cases might know to which to have recourse in need. The large Tynecastle and Gorgie districts, lying to the extreme west, might, it has been suggested, offer scope for the town council's attention.

EDINBURGH ROYAL INFIRMARY NURSES ON WAR SERVICE.

At the meeting of the managers of the Edinburgh Royal Infirmary, held on May 3rd, it was reported that 180 fully trained infirmary nurses were on war service. Of these fifty-seven were serving abroad in France and Malta, three were on a hospital ship, and 120 were in this country, Craigleith Hospital being largely staffed by them. It was thought that the list was a creditable one.

THE SCOTTISH WOMEN'S HOSPITAL, SERBIA.

Miss Madge Neill Fraser, who went out with the Scottish Women's Hospital as a nurse, dresser, and chauffeur to Serbia and died of typhus at Kragujevatz, was captain of the Scottish international golf team. In memory of her some well known golfers, among them Miss Cecil Leitch, J. H. Taylor, Harry Vardon, J. Braid, H. Hilton, and John Ball, have issued an appeal for the Scottish Women's Hospital, which is not short of volunteers for nursing service but is in pressing want of the money which will

enable their services to be used. Subscriptions should be sent to the hon. treasurer, Mrs. E. N. Marshall, Queen Mary's School, Walsall. Cheques should be made payable to the "Madge Neill Fraser Memorial," and crossed Lloyds Bank.

England and Wales.

ANNUAL REPORT OF THE CORONER OF THE CITY OF LONDON.

WE have received from Dr. F. J. Waldo, Coroner for the City of London and borough of Southwark, his report for the year 1914. The number of inquests into the cause of death were for the City of London 175 deaths (131 males and 44 females), and for the borough of Southwark 237 deaths (151 male and 86 females). The coroner dwells on a case of a man who was shot by a revolver by a lunatic discharged on probation from an asylum. The Pistols Act appears to be very defective. The traffic fatalities due to the darkened streets was, as might be expected, high. The number of deaths during October, November, and December, 1914, was 236, and exceeded by 78 the number for the corresponding months of 1913, and also exceeded the total deaths in any of the three monthly periods during the years 1913–14. The biggest total next to that for October to December is that for July to September, which numbered 179. This high figure may, in Dr. Waldo's opinion, be accounted for largely by the increased consumption of intoxicating liquors indulged in at the commencement of the war, prior to the "dark" period. Two inquests were held upon old women who died in filth and neglect. In the first instance the jury expressed their opinion that the Cleansing of Persons Act, 1897, which gives powers to local authorities to provide apparatus for cleansing a person and clothing of those infested with vermin, should be made compulsory.

FOOD POISONING AT BRADFORD.

The circumstances attending the death of Private Forman, Army Service Corps, who had been billeted in Bradford two weeks, have been investigated at an inquest held by the city coroner. It appeared that Forman had eaten some tinned salmon. There was reason to suppose that his death was due to food poisoning from this source, as three out of four other men who partook of it suffered from headache and pains in the stomach, and one of them was ill enough to be given sick leave. The city analyst reported that he had examined certain tins of salmon obtained from the barracks without obtaining any evidence of putrefaction, but a food inspector stated that he had found twenty-eight tins of salmon which were not in good condition, and had reported the matter to the medical officer of health but not to the coroner. The coroner's jury censured the Health Committee, and the medical officer of health undertook that further inquiry should be made into the matter.

THE INSURANCE ACT IN MANCHESTER.

At a meeting of the Ancoats Brotherhood, Manchester, on Sunday week, an address was given by Mr. J. E. Lilley, Clerk to the Manchester Insurance Committee, in which some interesting statistics were brought forward as to the extent of the medical work under the Insurance Act in Manchester. There were, he said, about 302,000 insured persons in Manchester, of whom 187,000 were men and 115,000 women; 93 per cent. were members of approved societies. The panel practitioners numbered about 300 and the panel chemists about 170. In each of the two years 1913 and 1914 about 200,000 persons had actually received medical attendance, and something like a million and a quarter prescriptions had been given by the panel doctors. Approximately the amount of money available for medical benefit was £114,000, of which £36,000 was paid by the insured, £27,000 by employers, and £51,000 by the Government, the figures thus showing that insured persons received over 300 per cent. of the money which they had been compelled to invest. About 2,500 cases of tuberculosis had received treatment, and at the present time there were 230 in residential institutions, 140 were attending at the tuberculosis dispensaries, and 700 were receiving domiciliary treatment. The Insurance Act had brought to light an amazing amount of sickness hitherto unsuspected, especially among women workers, and had enabled thousands of them, who had been unable to pay for a doctor, to obtain proper medical attention. He was glad to say that there had been a marked change in the attitude of the medical profession towards the Insurance Act, as the fierce opposition of two years ago had to a large extent given way to cordial co-operation.

India.

CIVIL ASSISTANT SURGEONS IN THE PUNJAB.

AT a meeting of the Punjab Legislative Council at Lahore, on March 13th, Sir Michael O'Dwyer, Lieutenant-Governor, presiding, it was explained that in 1898 there were three grades of assistant surgeon on Rs.100, Rs.150, and Rs.200 respectively. But those who on first joining could not be provided with an appointment were given what was called "unemployed pay" at the rate of Rs.50. In 1898 unemployed pay was abolished and a senior grade on Rs.300 was added. The prospects of promotion to the rank of civil surgeon had steadily improved. In 1884 two civil surgeoncies were reserved for civil assistant surgeons. In 1898 a third was added, and in 1909 the number was raised to six. It was now seven. In 1914 the initial pay of these appointments when held by civil assistant surgeons was raised from Rs.350 to Rs.400. The Government was not prepared to remove the restrictions on private practice, as they had been opposed to the public interest. In reply to a question about the Arms Act, the criterion adopted by Government in deciding questions of exemption from certain provisions of that Act in the case of its officers was mainly the necessity for possessing arms for the purpose of protection and self-defence, and to a secondary extent the status of the officers concerned. The avocation of an assistant surgeon did not involve the risks run by some of the other officials in other departments of lower status. The case of civil surgeons stationed in places where there was any special risk was specially considered on its merits.

Correspondence.

EMERGENCY BILL FOR MENTAL TREATMENT.

SIR,—I write to correct an error in Dr. White's letter referring to the powers of doctors under the Scottish Lunacy Acts. She states that under the provisions of Section 13 of the 1866 Act "*any doctor can send anyone to an asylum for six months on his own sole responsibility.*" There is no such authority granted in this section or in any other portion of the Scottish Lunacy Acts, and doctors in Scotland have no greater powers for committing patients to asylums than their brethren have in England.

Doctors in Scotland have, however, the power, which their brethren in England do not yet possess, of treating insane persons under compulsion, who might be certified and sent to asylums, out of asylums without certifying them to be insane and without registering them as lunatics, provided that the malady they suffer from is not confirmed. This practice has existed for more than half a century, and, as you say in your excellent leader (May 1st, p. 771), from the experience gained of its value, it is approved of by expert opinion, "official and other." Judicial intervention, contrary to Dr. White's opinion, has not been found necessary to protect these patients from injustice during this prolonged medical experiment. We believe, strange as it may seem, they have been spared what almost amounts to an injustice.

Dr. White also points out that the stigma attaching to certification is the result of a confusion of ideas. It may be so. If, however, a person be certified insane and be registered as a lunatic, a definite unarguable fact regarding him is recorded for ever. It may be compared to a brand. If a person be treated in a nursing home in Scotland for some vague illness, without certification or registration, no authoritative or official proof of insanity exists. If the two

illnesses be identical, the stigma attaching to both patients ought to be the same, but human nature being what it is, under the circumstances it is not. The patient who was certified carries a burden for the rest of his life which the other escapes. The fact of formal certification also carries with it certain legal disqualifications.

It is to be hoped that without any further delay England may now receive the same advantages as Scotland has enjoyed for half a century. That they are urgently called for admits of no doubt, in proof of which I advance two concrete examples. I am at present treating in a private house a patient who was brought to Scotland solely to obtain the privileges of Section 13. The family lawyer informed me it was a case of "Certification or Scotland," and the family without hesitation chose the latter alternative, desperate as it may appear. The lawyer heartily concurred in this decision, and I should not like to tell him when I next see him that he laboured under a confusion of ideas. I have also just treated another patient in a nursing home for her second attack, without certification. Her first attack was treated in London twenty years ago, and her bitterest memory is that she was then certified. Had she then lived in Scotland she would have been spared this life-long regret.—I am, etc.,

The Royal Edinburgh Asylum, Morningside, May 10th. GEORGE M. ROBERTSON.

P.S.—Since writing the above letter I have seen another patient in consultation, who was brought to Scotland to avoid certification. The new Act cannot come too soon.

SANITATION IN INDIA.

SIR,—In your issue of March 6th a joint letter from Professor Hewlett, Colonel King, and Dr. Simpson was published under the heading "Sanitation in India." The responsible positions that these three gentlemen occupy in educational sanitary circles in London secure every consideration for contributions from their pen, and I am authorized to say that the Government of India are in entire agreement with the views set forth in the joint letter in question as regards the value of British diplomas in public health. Indeed, in the resolution to which the writers refer it is clearly laid down that a British diploma in public health is a *sine qua non* for appointment either as a Deputy Sanitary Commissioner or, for the present at least, as a first class health officer. The Government of India, too, fully concur in the view that it is distinctly desirable that Indian candidates for important sanitary appointments should regard training in Great Britain as the foundation of their careers. In this connexion I may state that since 1912 twenty-seven Indians holding British diplomas in public health have been appointed to the Sanitary Department—eleven as Deputy Sanitary Commissioners and sixteen as first class health officers.

In these circumstances it is scarcely fair to hold the Government of India responsible for the private opinions of a provincial Sanitary Commissioner, especially when it is borne in mind that the only evidence as to the existence of such opinions is that furnished by the unsupported statements of a disappointed candidate.—I am, etc.,

C. P. LUKIS, M.D., F.R.C.S.,
Surgeon-General; Director-General, Indian Medical Service.

Simla, April 15th.

THE DOCTOR'S HOLIDAY.

SIR,—I have had so much correspondence in connexion with my letter you entitled "The Doctor's Holiday," that I find it somewhat difficult to reply promptly. I therefore thought it would save time all round if I answered in a letter to you the various points raised.

A common question is: How do we manage when men are in partnership? This point does not arise with us, as we are all independent practitioners. I do not, however, see why it should cause any difficulty. Suppose, at the worst, men in partnership were hostile to the scheme, and refused to have anything to do with it, I maintain that the compensations for any patients that may be grabbed by these men are such that the risk may be taken. I refer to absence of anxiety, "mobility" in arranging holidays, etc., to say nothing about the saving of locumtenents' fees. Besides, the loss of patients would cut both ways, for it does not invariably follow that a man's patients would be satisfied with his partner as a medical attendant. Suppose, on the other hand, that the partners were friendly to the scheme, but did not desire to join in. In that case it ought to be easy to arrange a mutual plan of a definite proportion of fees.

Provided groups of ten to twelve doctors were formed, I would suggest a plan we find very useful and also very pleasant. Once a month all the year round we meet at each other's houses in rotation. The meetings are quite informal. We chat, play billiards or cards, discuss cases, etc. We have one strict rule, which must be adhered to. The "solid" refreshments are limited to sandwiches and cakes. This prevents any competition in catering, and, more important still, gives the minimum of trouble to the hostesses. At these meetings we adjust any small differences which may arise, and the men are kept in touch with each other. We also hear of patients who have left us, and possibly why. We take these troubles very philosophically, knowing that our turn to receive will come all in good time. Another obvious advantage of these meetings is that the undesirables can be given the cold shoulder. I need not labour this point.

Another question is, What arrangements are made about medicines? These are supplied without remuneration, or, if the doctor on holiday leaves his dispenser in charge, prescriptions are given to the patient to take to the doctor's house. We do not give copies of the prescriptions we have given when returning the record books, but should any patient take a fancy to any medicine we willingly give the patient's own doctor a copy.

Without exception, every letter I have received contains a request for a copy of a record book. Any I had are now all over England. They are ordinary penny pass-books. We rule as many columns as days we expect to be away. On the cover we paste a blank label and write on it "Dr. X." for "Dr. Y." We have a space as in an ordinary visiting list for names. We enter here the names of patients to be visited. In the one book we enter consultations, insurance patients, confinements, etc. On return from holiday we send round to each deputy doctor for record book, and from it enter items in our own books. To do the thing luxuriously, I would suggest getting Ferris's (Bristol) Visiting List—Monthly Ruling. Each book would last years. Cost, about 6d.

I have a good supply of patients' cards, a copy of which I can send on request.—I am, etc.,

Birmingham, May 10th. J. ATTRIDGE WILLIAMS, M.D.

WASTE AND OVER-EATING.

SIR,—The discussion on your comprehensive leading article of January 30th on the above subject appears to have narrowed down in these columns into the one question of margarine *versus* butter, or, rather, nut fat *versus* milk fat. Seeing that a good brand of margarine can be bought at 6d. a pound, as compared with 1s. 4d. or 1s. 6d. for fresh butter, and that the problem chiefly concerns persons with normal digestions and not the unfortunate minority of dyspeptics, I should be quite satisfied if margarine could be proved to be not quite as good but practically or almost as good and wholesome and digestible and nourishing as butter.

At a recent conference at the Institute of Hygiene Dr. Robert Hutchison is reported to have said "margarine was an excellent food, as nutritious as butter; the prejudice against it was unfounded. He would rather have a good brand of margarine than a bad quality of butter." The last statement, it must be confessed, is not entirely an unqualified one, but I presume the question of *flavour* was in the speaker's mind. Dr. Oliver, however, in your issue of April 17th, asserted that "the vegetable fats are less easy of digestion than milk fat," etc. On the other hand, I have Dr. Robert Hutchison's word that margarine has been proved by careful tests to be practically as well absorbed as butter, and that its fuel value is the same. Dr. Hutchison further says that the calcium soap idea is of no account, there being always an excess of calcium in the diet. He adds that the only possible objection to margarine is the speculative one that vegetable oils may not play quite the same part in metabolism as animal fats, but that the *onus probandi* of this is on the opponents of margarine. Dr. Oliver, in your issue of April 17th, seeks to justify his attack on your article by declaring the importance of guarding against a too artificial mode of

living. You had already warned us against encouraging or depending on canned, bleached, and faked foods. Dr. Oliver, however, appears to have been unfortunate when he took the use of margarine as an example of a too artificial mode of living. The fact that margarine is a "recent" food product does not make it artificial. The fats entering into it are not artificially produced (they are not synthetic products), but are merely products already existing in nature extracted and made more easily available for dietetic purposes. But, apart from this, would Dr. Oliver encourage us to go "back to nature" to the extent of abolishing the processes of boiling, baking, roasting, and other adjuncts of the art of cookery?

Does the fact that only vegetable fats in margarine have been criticized in your columns justify one in concluding that animal fats other than milk fat frequently present in margarine are not considered inferior to milk fat?

With respect to Dr. Cameron's assertion, in your issue of April 17th, that butter does not contain phosphorized fats, and is therefore unsuitable for rickety children, and presumably all children, I have Dr. Hutchison's further opinion that the amount of phosphorus in the ash of butter is extremely small and not worth talking about, and can all be accounted for by the casein which is always present in traces in butter.—I am, etc.,

Criccieth, May 1st. E. LLOYD OWEN, M.D., D.P.H.

THE SCIENTIFIC TREATMENT OF METABOLIC DISORDERS.

SIR,—In the JOURNAL of April 24th, p. 728, attention is called to the importance of the study of metabolism. It is now many years since, at an annual general meeting of the Association, I called attention to our ignorance as to metabolism, and suggested that our research scholars should direct their attention to the subject; so that I am pleased to learn that Scotland is taking to its study, even though it be among the sick. It was when I began to study the effect of foods in my own case that I felt my ignorance as to metabolism; but, the more I thought of it, the more difficult the subject seemed, and I fear that it is one of those dreams, like the relation of mind to matter, which will never be understood. In *A Doctor's Discovery*, published in 1911, I say:

> There has been much said and written lately as to reforming the medical curriculum and making it more practical, but until dietetics is added to the curriculum, and as much study given to food as has in the past been given to drugs, the aim of the profession will not be *to find out a diet suitable for the sick*, which is what Hippocrates said it should be, or, what would be better still, *to find out a diet that will prevent all disease*.

With a knowledge of the physiological action of our various foods dietetics might become scientific, which it is far from being at present; and the physiological action of food is a much easier and practically a more useful study than metabolism, theoretically interesting as the latter is. I have "proved" the action of foods as Hahnemann "proved" his drugs, and, with the little knowledge I have gained, my power over disease, without the help of any drug, either in large or small doses, has been enormously increased. It is, indeed, simply miraculous, and the results I have obtained convince me that it is to the nervous system we must direct our attention, as the *fons et origo* of all the ills to which flesh is heir.

An asylum superintendent confessed that little could be done in neurasthenia, whereas, as I have already pointed out, I could cure such cases in three days, but the last case which I had the opportunity of observing was only two days under my care, and he went home a new man. I never saw any one whose nervous system was so shattered. He had been an invalid for four years, he had a bad heart and had been warned against any exertion, his bowels never acted naturally, he could not sleep, and was afraid to go out alone. His seemed a proper case for Weir Mitchell treatment, but he was neither isolated nor overfed, and is once more at work, though his life had been despaired of. If such a result can be obtained, although perfectly ignorant of the metabolic process, it might be well for Duff House to begin by first studying the physiological action of different foods and leave metabolism to be studied, not in patients, but in those whose nervous systems are still fairly good.—I am, etc.,

Denholm, Hawick, April 28th. JOHN HADDON, M.D.

YELLOW FEVER.

SIR,—I have just been sent Dr. G. C. Low's reply to my letter published in your issue of December 19th, 1914, and with your permission I will make a few brief comments. Being now attached to troops operating within the Cameroon border, Dr. Low will realize that I am necessarily cut off from most medical literature, have had no opportunity of reading his and Dr. Wenyon's paper that he refers to, and am at an obvious disadvantage in conducting a correspondence.

Dr. Low is unjustified in the use of such expressions as "so-called yellow fever parasite," "supposititious parasite," and others. These matters are still *sub judice*, and it is unfortunate that Dr. Low should consider that the verdict has already been given.

But in the meantime I would like to comment on Dr. Low's assertion that he has found "identical" bodies in normal guinea-pigs in England. He should, of course, have said "apparently identical." I also have frequently found apparently identical bodies in normal guinea-pigs in Nigeria, and I might here inform Dr. Low that Dr. Macfie and I spent considerable time and care in examining all our guinea-pigs before using them experimentally.

I recently took blood films from 150 reputedly healthy cattle in Northern Nigeria, from various herds scattered over a large area. Of these, 39, or 26 per cent., showed infection with babesiae. These babesiae were of different types, but very many were absolutely indistinguishable in stained films from *B. bigemina*, *B. bovis*, or *T. parva*, but I do not on that account proclaim that the parasites described as causative of Texas fever, red-water, or East Coast fever in cattle are "supposititious."

Surely our knowledge of piroplasmata is as yet rather rudimentary. We know far more of the morphological characteristics of bacteria, but we do not assert that two cultures, say of intestinal bacilli, are "identical" merely by their appearance in stained films.—I am, etc.,

J. E. L. JOHNSTON,
Northern Nigeria, Feb. 20th. West African Medical Staff.

PERSISTENCE OF SILK AND LINEN SUTURES.

SIR,—In your very valuable Epitome of Current Medical Literature (135, May 8th, page 38) you give a summary of Soresi's article in the *Annals of Surgery*, in which he proves experimentally that a silk or linen suture persists indefinitely if employed for uniting the mucosa in gastro-intestinal or intestinal anastomosis, and he regards it as a likely cause of peptic ulcer.

It is interesting to note that I have met with and recorded an exactly similar condition in man (*Annals of Surgery*, 1911, ii, 806):

> One point, however, has recently been forcibly impressed upon me. I operated on a man in 1909 for pyloric carcinoma. Both layers of suture were done with linen thread, as is the usual practice. He made a good recovery, and resumed his work as a car driver. One year later he was readmitted to hospital with general peritonitis, due to perforation of the large intestine by a malignant ulcer. At the autopsy we found the gastro-jejunostomy opening in perfect working order. The inner or through-and-through suture still persisted and was hanging into the opening very much like the handle of a bucket. This is, as far as I am aware, the longest authenticated duration of such a suture. Such persistence is clearly undesirable, and though the absence of free HCl in the malignant stomach may possibly account for it, I have since then used *fine chromicized or formalin iodine catgut* for this purpose, and found it quite satisfactory.

Further on in the same paper it is pointed out that the use of the inner suture of catgut, combined with posterior no-loop operation, is likely to get rid of that troublesome complication of gastro-jejunostomy, peptic ulcer of jejunum, a point now emphasized by Soresi four years later, as result of independent experiment.—I am, etc.,

Belfast, May 10th. A. B. MITCHELL, M.B., F.R.C.S.I.

TREATMENT OF PNEUMONIA BY IODIDE AND CREOSOTE.

SIR,—Dr. Wynn's opinion of the vaccine treatment of pneumonia—that it seems to give more definite results than any other—is a mistake.

I have treated 77 cases of pneumonia by the iodide and creosote combination, and not one death has occurred, with the exception of an old lady to whom I was called late in the progress of the disease. Eliminating all cases

in which the treatment slightly deviated from the now established prescription, there are still 66 cases left.

Does the elaborate vaccine treatment show anything so definite?

My testimony is strongly supported from different quarters of the world; and yet this wonderful word "vaccine" still hypnotizes part of the profession.

Do we really realize what is at stake? If we saw a man drowning we should hasten to do all in our power to save the man, but here are thousands every year—many of them previously healthy—perishing rapidly from pneumonia in these islands alone, and here is a specific without further search. I solemnly ask you, Sir, as an influential member of the profession, what you are going to do?—and through you I ask your subscribers the same question.—I am, etc.,

Hornsey, N., April 5th. ARTHUR J. MATHISON.

VENTRIFIXATION OF THE UTERUS: IS IT JUSTIFIABLE?

SIR,—To sling up the uterus in a pathological state, in a pathological manner, and in a pathological position, is neither scientific nor justifiable.

Not uncommonly I am consulted by women who have been subjected to ventrifixation of the uterus, and not infrequently I find that the uterus either is so markedly and extensively incorporated with the abdominal wall that it is practically a portion of the latter, or has dropped back again into the retroverted position. In many cases of ventrifixation, therefore, it is impossible to persuade oneself that the last state of the woman is otherwise than worse than the first. The equity of this conclusion was more than usually impressed upon me to-day, when I was consulted by a lady who a short time ago had the uterus stitched up to the anterior abdominal wall by an obstetric surgeon. I found the uterus as markedly retroverted as it possibly could have been when the operation to rectify this displacement was performed. In cases of this kind the small band of adhesion which is likely to remain stretching between the uterus and the anterior abdominal wall cannot be looked upon as otherwise than a possible source of danger to the woman at any time. On the other hand, in those cases in which the uterus forms a component of the anterior abdominal wall the discomfort subsequent to, is often greater than that experienced at any time prior to, the operation.—I am, etc.,

London, May 1st. JAMES OLIVER, M.D., F.R.S.Edin.

SIR WILLIAM GOWERS ON THE NATURE OF TABES.

SIR,—With reference to your obituary article on the late Sir William Gowers, may I be allowed to quote a passage from a paper of his on "The Nature of Tabes" in the BRITISH MEDICAL JOURNAL for 1905 (vol. ii, p. 59)? In connexion with some facts I collected for Sir William Gowers at his request, he said:

Putting aside all cases in which the record is imperfect, Dr. Pernet's notes include 58 cases of undoubted late syphilitic skin diseases, and of these 13 denied all knowledge of any primary sore; there was a history of it in 45, or 77.5 per cent.; of 66 cases of early specific skin eruptions, a sore was denied in 11; it could be ascertained in 55, or 83 per cent. Taking the two classes together (124 cases), the primary disease was known in only 100, or 80 per cent., exactly the proportion that I have found in tabes. Since all Dr. Pernet's cases were *males* they are accurately comparable, and it is noteworthy that in the cases of late eruptions, the time of which renders them most analogous, the percentage of early history was actually less than in tabes.

An interesting point is that I did not work out the percentages. This was done by Sir William Gowers himself from the figures and details I supplied.—I am, etc.,

London, W., May 8th. GEORGE PERNET, M.D.

THE New York Assembly has thrown out, by 79 votes to 46, a bill exempting Christian Science healers from the operation of the Act requiring the examination and licensing of medical practitioners.

DR. ARTHUR WIGELSWORTH ORWIN, consulting physician to the Central London Throat, Nose, and Ear Hospital, who died on February 20th last, left estate of the gross value of £93,512, of which the net personalty has been sworn at £91,227.

Medico-Legal.

STEVENS v. THE BRITISH MEDICAL ASSOCIATION.

APPLICATION FOR NEW TRIAL REFUSED.

ON May 5th, 6th, and 7th the Court of Appeal (Lords Justices Swinfen Eady, Phillimore, and Bankes) heard an appeal by the plaintiff in this case. The plaintiff, Mr. Charles Stevens, of Worple Road, Wimbledon, had brought an action for a libel alleged to have been published by the British Medical Association in *Secret Remedies* in the year 1909.

The defence was that the observations were fair comment on a matter of public interest. At the first hearing of the case (in October, 1912), before Mr. Justice Pickford, the jury failed to agree. At the second hearing, before Mr. Justice Shearman, in July, 1914, the jury returned a verdict for the defendants, and judgement was entered accordingly. (A full report of the proceedings was published in the BRITISH MEDICAL JOURNAL, July 25th, 1914, at p. 211.) The plaintiff now applied for a new trial.

The jury had found that the words complained of were not libellous, and that they were fair comments upon matters of public interest.

The grounds of appeal were (*inter alia*) that the verdict was against the weight of evidence; that the defence was really justification and not fair comment; that (alternatively) the learned judge was wrong in not determining whether the alleged comment amounting to a personal attack upon the plaintiff could be reasonably inferred from the truly stated facts in the libel. The plaintiff said he would rely particularly upon the admitted facts that there was no krameria or kino in his medicine, and that the plants he used were, in fact, African, in support of this contention. The judge was also wrong in not leaving the question whether the facts had been truly stated or not to the jury. The plaintiff also relied upon alleged misdirection; upon the rejection (by the learned judge) of certain testimonials given by doctors as evidence; upon the rejection of other evidence. He also said he complained of the finding of the jury that the words were not libellous.

Mr. Tindal Atkinson, K.C., and Mr. Rowsell (instructed by Messrs. Barton and Pearman) appeared for the appellant; Mr. Colam, K.C., and Mr. Dickins (instructed by Messrs. Hempsons) for the defendants.

In opening the appeal, Mr. Tindal Atkinson referred to the terms of the alleged libel. He said that they were to be found in a publication called *Secret Remedies*, a volume published by the defendants. The plaintiff had complained of the publication of the following passages about him:

"But with other proprietary medicines it is quite clear that the makers cannot in the slightest degree believe in the claims they make; the 'remedy' in these cases is some substance or mixture devoid of medicinal activity, or possessing some slight therapeutic property having no relation to the disease for which the nostrum is put forward as a cure. It is often, indeed, for inert preparations that the most extravagant and emphatic claims are made; the makers, and the advertisement-writers whom they employ, are untrammelled by any necessity of squaring their statements with the real properties of the thing to be recommended, and having set out consciously and deliberately to deceive, they are able to give their whole attention to telling the most effective stories in the most plausible manner, and reaping the maximum of payment for the minimum of expenditure. . . . It is the victim's money that is wanted; therefore let the price be fixed high, and the advertisements be written up to it. . . .

"The sale of another preparation advertised as a cure for consumption—Stevens's Consumption Cure—is conducted in a very similar way, but this time the herbs are said to be African, and the odd names they bear certainly have a Kaffir flavour. . . . Although Stevens is so engagingly candid about his rivals, he follows the plan of sending one letter after another to any sufferer whose name he may have obtained—a system which seems to have been invented in America; it is certainly cheaper than bold advertisement in newspapers, and is apparently found even more satisfactory, as it enables the vendor to give individual attention to the depth of his correspondent's pocket, if not to the severity of his disease. . . .

"The farce of revealing a formula by the employment of such fancy names as these is one of the oldest dodges of the quack medicine man, and no such names as 'umckaloabo' and 'chijitse' appear in any available work of reference on pharmacy. . . ."

He also complained of the description and analysis of the medicine which appeared on p. 32. It was there stated that "No alkaloid was present, and no other active substance could be detected. The solid substance agrees in all respects with the solids of decoction of krameria or a mixture of this decoction with a little tincture of kino. The formula thus appears to be approximately: Rectified spirit of wine 23.7 parts by measure, glycerine 1.8 parts, decoction of krameria (1 in 3) to 100 parts by measure, or it may be made with tincture of krameria.

Counsel said that his chief complaint against the summing up was that the judge had not distinguished between justification and fair comment. The jury had never been asked whether this substance was or was not of a therapeutic value.

Lord Justice Swinfen Eady: You say in effect it is not fair comment, but misstatements of fact. You had better indicate in the course of your argument what you say is misstatement.

Continuing, Mr. Atkinson referred to the statement on page 20 "that the makers did not believe in the efficacy of the remedy." Again, it was said "that the makers are untrammelled by the necessity to square their statements," etc. That was as much as to say they were liars. The statement that "it is the victim's money that is wanted" was also a statement of fact.

Lord Justice Swinfen Eady: Was this a known remedy in South Africa? Did it appear in any pharmacopoeia?—Mr. Atkinson: No; but that is immaterial. Many medicines were originally empirical remedies, but have now been adopted.

Lord Justice Swinfen Eady: Has it been approved by the medical profession?—Mr. Atkinson: No; but the plaintiff sought to prove that it had been approved by many medical men, but the evidence was held inadmissible.

Lord Justice Swinfen Eady: Is it disclosed what part of South Africa the root came from?—Mr. Atkinson: The port where it was shipped was mentioned, but naturally a man who has discovered a valuable cure for consumption would not disclose the place.

Continuing, counsel said that the statement (on p. 32) that "The solid substance agreed in all respects with the solids of decoction of krameria" was a statement of fact which the defendants should have been called upon to justify. All the other facts should have been similarly dealt with.

Lord Justice Bankes: If the defendants prove that the decoction contains nothing of any value, does not that justify almost any comment?—Mr. Atkinson: The question should have been left to the jury, and the evidence on one side or the other should have been laid before the jury. It was admitted that this was an excellent cough mixture.

Commenting on the evidence called, counsel said that the writer of the article had been called. He was a man who had no medical skill. In his evidence he said the mixture had no alkaloid in it, and it is common ground that there is not. But it contained some active principle. In his evidence he said he found no *evidence* of any active substance, but he went on to say that did not prove there was no active substance. Yet upon that was founded the charge that it contains no medicinal qualities.

Lord Justice Phillimore: He said enough to put your client to the proof that there was an active substance present.

Continuing, counsel said the defendants wrote in their analysis, "No alkaloid was present and no other active substance could be detected." That was not a justification of their saying that the medicine was useless.

Lord Justice Bankes: They make a general statement in one part of the book, and qualify it with reference to this particular remedy.

Mr. Atkinson: It is not a question of a bona fide opinion; it was a definite statement that it was krameria.

Lord Justice Swinfen Eady: No; he does not say that it was krameria.

Counsel then proceeded to read a number of extracts from Mr. Harrison's evidence. Commenting on the evidence, counsel complained that the learned judge in the court below had ruled out a question addressed by the plaintiff to the writer of the book, asking him whether he charged him with fraud. In his (counsel's) view that was a perfectly proper question, whereas the judge had ruled that it was for the jury. Mr. Atkinson also referred to the evidence of a number of other witnesses, including Dr. Bulloch. As to the evidence of the medical witnesses who were called on the part of the defendants, for example, Dr. Dyke Acland, Sir Douglas Powell, their evidence merely amounted to this: "There is no drug which is known to me that will cure tuberculosis." On the contrary a number of analytical chemists were called who said they could find no krameria

Lord Justice Swinfen Eady: Did they isolate any active principle?—Mr. Atkinson: No; and that is my point. It was something new and unknown.

Lord Justice Phillimore: Did the plaintiff say what it was?—Mr. Atkinson: Yes, he said it was a decoction of a root found in Africa. Continuing, counsel said his case was that the medical men called for the plaintiff could not identify anything.

Lord Justice Bankes: Has the plaintiff ever made an extract from it?—Mr. Atkinson: Oh, yes; he makes a decoction. Continuing, Mr. Atkinson said that it was wrong for the judge to have said, either in the course of or at the end of the case, that this was not justification. Had the jury found, as against the plaintiff, that the justification was proved, then there would be no more to say. Counsel further said that the plaintiff was entitled to adduce any evidence as to the effect of the drug.

Lord Justice Swinfen Eady: Have you any evidence of its therapeutic effect?—Mr. Atkinson: No; because it is a new drug.

Lord Justice Phillimore: The *rationale* of the operation of this substance has never been proved.

Mr. Rowsell, following on the same side, read a passage from the preface to *Secret Remedies* (p. vi), wherein it was stated: "Of the accuracy of the analytical data published there can be no question; the investigation has been carried out with great care by a skilled analytical chemist." He read the evidence of Mr. Parry, B.Sc., who had said that the extract which he obtained from the medicine agreed with the extract from umckaloabo and chijitse. The fact that no active principle was found did not prove there was none there.

Lord Justice Swinfen Eady: Is there any drug in the *Pharmacopoeia* which contains an active principle of which the constitution is unknown?—Counsel then read the evidence of Mr. C. E. Cassal, Public Analyst for the City of Westminster.

Lord Justice Phillimore: Do any of the four doctors called by you purport to give any *rationale* why the medicine was efficacious?—Mr. Atkinson: No; none of them purport to explain why. Mr. Stevens's case is that it is a mystery. Continuing, counsel said that the plaintiff was very much in the position of a prisoner charged with fraud, and therefore the facts upon which the charge was founded should be proved.

The evidence in chief of the plaintiff as noted by the learned judge was then read by Lord Justice Bankes. It did not appear from this evidence that the plaintiff had ever seen the plant growing, although he had seen the plant.

Lord Justice Swinfen Eady: It is evident that a large amount of the root would be necessary, for on p. 22 of *Secret Remedies* its formula (according to the plaintiff) is 80 grains of umckaloabo root and 13⅓ grains of chijitse to every ounce prepared according to *British Pharmacopoeia* methods.—Mr. Atkinson: The chijitse was afterwards added as a styptic.

Lord Justice Swinfen Eady: That was not used when he was making £1,000 a month at Capetown.

Counsel then proceeded to read the summing up, prefacing it with the remark that the learned judge had not taken care to draw a sufficient distinction between comment and fact. In the course of it he referred to the fact that certain doctors had been asked to attend on the part of the plaintiff, who refused to come because they did not want to appear against their own Association. Counsel complained that the learned judge had referred to the circulars published by the plaintiff.

Lord Justice Swinfen Eady: A man who makes statements like those in the circulars must not be too particular.

Continuing, counsel said that the judge was wrong in saying they were not trying any question as to the efficacy of Stevens's medicine. (He also referred to the BRITISH MEDICAL JOURNAL, November 12th, 1910, p. 1544.)

Continuing, counsel submitted that so long as the plaintiff honestly believed that his cure was efficacious that was enough. He said that evidence ought not to have been rejected which showed what the plaintiff knew, and that doctors' certificates ought not to have been excluded. He also objected to the disallowance by the court of a number of questions.

At the conclusion of the argument of counsel for the appellant, the Court intimated that they did not desire to hear the other side.

Lord Justice Swinfen Eady, in the course of his judgement, pointed out that the plaintiff had appealed on the grounds (*inter alia*) that the verdict was against the weight of evidence; that the learned judge had been wrong in law in holding that the defence was fair comment and not justification; that he was wrong in not deciding which points were comment and which were fact. The plaintiff also complained of certain misdirections. What, then, were the facts? The plaintiff had put on the market a cure for consumption—advertising it, on some occasions, as an absolute cure. The defendants had published a book named *Secret Remedies*, which was a reproduction in substance of articles in the BRITISH MEDICAL JOURNAL. The plaintiff complained of certain passages in this book, alleging that they were libellous, and the defendants pleaded that what they wrote was nothing more than fair comment on a matter of public interest. It was most important to remember that a comment may be fair although it contains a personal attack. In Hunt *v. Star* Newspaper Co. (1908), 2 K.B., 309, it had been clearly indicated that comment may convey imputations of an evil sort if the facts truly stated warrant the imputation.

Having regard to that statement of the law, the appellant's first contention could not be supported. Here was a case in which the plaintiff publicly advertised a cure for consumption, therefore the matter was clearly one of public interest upon which comment was legitimate. The learned judge, as it seemed to him, had put the matter fairly to the jury when he said: "The question for the jury is whether the comment, in their opinion, is beyond that which a fair man, however extreme might be his views in the matter, might make honestly and without malice, and which was not without foundation. Gentlemen, to put it in a shorter sentence, it means this: You first have to decide when you look at these words what imputation is made. It is for you, and not for me, to decide what is the exact imputation. Then you have to decide how much the defendants have proved, and, bearing in mind what they prove, do you think, on the facts which you believe to be proved, that the defendants have done anything more than fairly comment upon a matter of public interest? You will say if you think they have done more and gone out of their way to make an attack which was not justified by the facts. You may find it is not fair comment on the facts proved before you, and which have been proved in the course of the case—not merely the facts which were before the man who wrote the article, but upon all the facts which have been proved before you by the witnesses while you have been sitting in the jury box; if you come to the conclusion that certain facts are proved which would warrant the imputation made in that article, then you can find for the defendants. It is for you to say Aye or No; looking at the facts, do you think this is fair comment, realizing that comment cannot be fair if the imputation or comments rest upon untrue facts? But if they rest upon true facts and they do not go beyond fair comment you can find for the defendants. I think that will explain to you what the law is upon the matter."

That in his (the learned Lord Justice's) opinion was a proper direction; and it seemed to him that no objection in law could be taken to the summing up. The jury, in arriving at their decision, were entitled to have regard to all the evidence in the case, including the circulars and advertisements which the

plaintiff had put before the public. He claimed to have discovered a positive cure for consumption. Sometimes he guaranteed a cure, and in various forms, both in letters and elsewhere, there were statements to the same effect. His lordship then read the words said to be libellous, and pointed out, with reference to the analysis, that it in fact contained no specific allegation that the substance was krameria. Viewing the summing up as a whole, he found that there was no misdirection. It had been complained that the learned judge had improperly rejected evidence on behalf of the plaintiff, but, so far as he could judge, no evidence properly tendered had been excluded. At any rate, even if there had been misdirection or improper exclusion of evidence, they had to remember the rule which provided that a new trial shall not be granted on the ground of misdirection, or of the improper admission or rejection of evidence, or because the verdict of the jury was not taken upon a question which the judge at the trial was not asked to leave to them unless in the opinion of the Court of Appeal some substantial wrong or miscarriage has been thereby occasioned. Here there had been no miscarriage of justice, and the appeal must be dismissed.

Lord Justice Phillimore, in the course of his judgement, pointed out that the rule as to fair comment had been clearly stated by Lord Atkinson in Dakhyl *v.* Labouchere, 1908, 2 K.B., 329, where he said: "A personal attack may form part of a fair comment upon given facts truly stated if it be warranted by those facts—in other words, in my view, if it be a reasonable inference from those facts." It was, no doubt, often difficult to say where fact ends and comment begins. In the present case the onus of proof was on the defendants, and they had discharged it. It was possible that some of the defendants' charges may appear to have been difficult to justify, but the judgement in Dakhyl *v.* Labouchere (*supra*) made it plain that the defendant may go very far in imputing motives. The nature of the libel was to be gathered from the title of the defendants' book, *Secret Remedies: What They Cost and What They Contain.* In substance, they say of the plaintiff, "You are carrying on business according to the usual methods of the quack." No doubt the plaintiff had scored a point about the analysis. The substance did not contain krameria, but it was for the jury to say whether it did or not. Moreover, whatever the constituent bodies of the plaintiff's medicine, it was a question whether the accuracy of the analysis was relevant if the ingredients, whatever they were, were really otiose. There was evidence for the jury to consider, to the effect that no one could discover any active principle. Although he considered that Mr. Rowsell, in going carefully and properly through the summing up, had discovered certain points in which it might be said to have been defective, yet he (the learned Lord Justice) did not think there should be a new trial.

Lord Justice Bankes agreed. He said that whatever the medicine contained, there was evidence proper for the consideration of the jury to the effect it was to all intents and purpose valueless. In conclusion, he said that it was most important that the law of libel should be administered as stated in Hunt's case (*supra*). It was essential that the right to comment should be freely exercised in cases such as this, where large sums were made out of proprietary medicines.

Public Health AND POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL OFFICERS' ASSOCIATION.

AT a council meeting, held at 34, Copthall Avenue, E.C., April 27th, Surgeon-General Evatt, President, in the chair, the action taken in the case of the attempt of the Paddington Guardians to appoint a district medical officer, residing in his district, subject to a three months' notice, was duly reported. A letter was addressed in November, 1914, to the Local Government Board noting that the Paddington Guardians were contemplating an infringement of the Medical Appointments Order, and urging the Board to refuse consent unless a proper scheme were set before them. The Board had finally given consent to the appointment of a district medical officer for a "limited period," so that if at the end of the time the guardians were not ready with a scheme, they would be required to appoint an officer in accordance with the terms of the Medical Appointments Order, as in a previous case. The honorary secretary was directed to watch carefully any further developments in the Paddington union. A letter was read from Dr. Fothergill concerning the federation of medical societies with the British Medical Association. The council unanimously agreed that some kind of federation was desirable, but any concrete scheme would require deep consideration, and the financial bearing presented great difficulties. Dr. Drury's letters (Halifax) were then considered. He dealt with certain questions: as to the right of a lady visitor to order the attendance of a medical officer, as to whether a medical officer was expected to diagnose refraction and prescribe spectacles, as to whether a lady visitor could demand a report on a case from the medical officer, and as to whether the clerk could require of a medical officer a report about the sanitary condition of a house. All these questions were answered by the council in the negative. A report on the general sanitary state of a house in the officer's district should come from the medical officer of health of the borough.

The council unanimously confirmed the appointment of Dr. Major Greenwood to act as a delegate to represent the association on the Council for District Nursing. The report of the association on the Poor Law Institutions Order, 1913, had been considered by the Public Health Committee of the British Medical Association, and, on their recommendation, had been endorsed by the Central Council. A letter from Dr. Agnew was read concerning the resolution passed at a meeting of the Burnley Division of the British Medical Association on April 9th that no member accept a post as district medical officer under the guardians in the existing conditions. The profession, Dr. Agnew states, refused to consider any settlement till the late public vaccinators were reinstated, and the other difficulty seemed insuperable, as the profession at Burnley would not allow the guardians to retain the services of the three men who were acting, but the guardians were acting independently. The honorary secretary was directed by the council to ask Dr. Agnew to furnish any instance of neglect or deficient attendance on Poor Law patients, as, under the present circumstances, the sick poor of Burnley could hardly be well attended to. The matter demanded a Local Government Board inquiry. The honorary secretary and Dr. Withers Green had been present at the further conference of representatives of Poor Law sectional associations at Norfolk House, and they announced that a committee had been chosen to put forward a definite scheme. In conclusion, the following resolutions were unanimously carried after consideration of complaints with regard to the treatment of Poor Law medical officers: (1) That in all cases where military duties are discharged by Poor Law medical officers, the salaries paid to whole-time officers should be on a scale not less than those paid by the War Office to members of the R.A.M.C. discharging similar duties. (2) That where the duties are part-time only, an addition should be made to the medical officer's salary in proportion to the extra labour involved. The council then considered the arrangements for the annual meeting for 1915.

Universities and Colleges.

UNIVERSITY OF SHEFFIELD.

DR. J. SHOLTO C. DOUGLAS (at present Lecturer on Pathology in the University of Manchester, has been appointed to the Joseph Hunter Chair of Pathology in succession to Professor Dean.

UNIVERSITY OF EDINBURGH.

THE statutory half-yearly meeting of the General Council of the University of Edinburgh was held on May 5th in the examination hall of the Old Buildings. In the absence of Sir William Turner, Lord Dundas presided over rather a small attendance. After the minutes of the half-yearly meeting of October 30th had been approved, Mr. J. B. Clark submitted the report of the Business Committee. In doing so he commented on the absence of contentious matter from the report; this was due, however, not to the non-existence of such matter, but to the inadvisability of bringing up at this time subjects requiring deliberation and consideration. The report contained five obituary notices, including two of distinguished medical men—Sir Henry Littlejohn and Sir Thomas Clouston; that of the latter had been written by Dr. G. M. Robertson. Since the publication at the end of December of a roll of honour containing 1,679 names of students, graduates, and members of the staff engaged in various branches of war service several hundred additional names had been received, so that the roll now numbered considerably over 2,000. Up to the present date there had been recorded the names of 28 members of the University, chiefly graduates, who had laid down their lives for their country. The Senatus had also given every consideration and encouragement to students who desired to serve their country, and a number of "Privileges" had been announced in the medical as in the other Faculties. Two new appointments in the medical part of the University staff were recorded—Dr. Lovell Gulland's election to the Chair of Medicine, rendered vacant by Professor Wyllie's resignation, and that of Dr. W. W. Taylor (one of the lecturers in chemistry) to be Lecturer in Chemical Physiology.

Mr. T. J. Millar, Convener of the Finance Committee, submitted his report, which stated that the total number of matriculated students for 1913–14 was 3,283, as against 3,352 in the previous academic year; there were 1,304 medical students as against 1,319 in 1912–13. One Professor (the Moncrieff Arnott Professor of Clinical Medicine) had been added to the teaching staff during the year. Mr. Millar stated that the figures in the report might possibly give rise to the misconception that the university was well off, and had large funds and a large surplus, but he pointed out that that the increase in revenue over expenditure was simply due to increased bursary funds, which must be added to capital. The free income was less than was necessary to meet the expenditure.

The increase of £20,536 in the total funds of the university was mainly due to the grant accumulated by the Carnegie Trust during the last quinquennium for the purpose of founding lectureships in (1) Economic History, £4,500; (2) Forest Botany, £3,439; (3) Mercantile Law, £3,000; (4) Tropical Diseases, £7,000; (5) Technical Mathematics, £3,500. £15,000 had been transferred from "Funds Unappropriated" to "Funds Appropriated

to Particular Purposes," being part of Moncrieff Arnott bequest for the foundation of a Chair in Clinical Medicine. The increased revenue was chiefly due to the Robert Irvine Fund for Chair of Bacteriology, and to the Moncrieff Arnott Fund for Chair of Clinical Medicine. With regard to expenditure, lecturers' salaries had increased on account of the clinical medicine and surgery departments, and the increase of the laboratory expenditure was mainly due to the clinical medicine, pathology, and botany departments. The income from Treasury grant was increased by amounts reserved from grants of previous years—for clinical teaching, £2,000; department of botany, £1,000; natural philosophy, £595; department of materia medica, £83, set apart in a separate account last year and now brought into the Treasury Grant Account.

The members of the Finance and Business Committees were re-elected, and, on the motion of Baillie Buchan, Dr. J. W. Ballantyne was added to the latter.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE COUNCIL.

THE following table shows the composition of the Council as it stands till July 1st.

President.—Sir W. Watson Cheyne, Bt., C.B., F.R.S., C. (1) 1897 (substitute), (2) 1901, (3) 1909.

Vice-Presidents.—Sir F. S. Eve, C. (1) 1904 (substitute), (2) 1907 (substitute), (3) 1912; Sir Anthony Bowlby, K.C.M.G., C. (1) 1904, (2) 1912.

Other Members of Council.—Sir Rickman J. Godlee, Bt., K.C.V.O., C. (1) 1897, (2) 1905; Sir Alfred Pearce Gould, K.C.V.O., (1) 1900, (2) 1908; Mr. Charles W. Mansell Moullin, C. (1) 1902 (substitute), (2) 1907; Sir George H. Makins, K.C.M.G., C. (1), 1903, (2) 1911; Mr. William Harrison Cripps, C. (1) 1905 (substitute till 1908), (2) 1909; Mr. Charters J. Symonds, C. 1907; Mr. William F. Haslam, C., 1908; Mr. C. B. Lockwood (deceased), C. (1) 1908 (substitute), (2) 1910; Sir W. Arbuthnot Lane, Bt., C. 1908; Mr. Bilton Pollard, C. 1910; Mr. C. A. Ballance, M.V.O., C. (1) 1910 (substitute), (2) 1914; Sir John Bland-Sutton, C. 1910; Mr. D'Arcy Power, C. 1912; Sir Berkeley G. A. Moynihan, C. 1912 (substitute for the late Sir Henry Butlin till 1919); Mr. J. Ernest Lane, C. 1913; Mr. L. A. Dunn, C. 1913; Mr. H. J. Waring, C. 1913; Mr. J. Stanley N. Boyd, C. 1914; Mr. W. Thorburn, C. 1914; Mr. W. M'Adam Eccles, C. 1914; Mr. Charles Ryall, C. 1914 (substitute for Mr. Jonathan Hutchinson, jun., till 1915).

The medical schools are represented as follows:

London:	
St. Bartholomew's	6*
Charing Cross	1
Guy's	3
King's College	1
London	2
Middlesex	2
St. Mary's	1
St. Thomas's	2
University College	2
Special	1
Total London	21
Provincial:	
Birmingham	1
Leeds	1
Manchester	1
Total provincial	3
Total Council	24

* 1, Mr. Lockwood, deceased.

Nominations for the election next July must be received at the office of the College between May 25th and June 5th. As we have explained, there will be five vacancies in July.

Obituary.

WILLIAM BELL, M.R.C.S., L.S.A., J.P.,

NEW BRIGHTON, CHESHIRE.

MR. WILLIAM BELL, of New Brighton, who died recently, at the age of 76, was a man of strong personality, held in high esteem for his professional skill, and for the ungrudging service which he gave for the benefit of the people among whom he lived for more than half a century. He was a son of John Bell, M.D., formerly of Uppingham, and a grandson of James Bell, who graduated at Edinburgh about 1777 and settled in Uppingham in 1780 after a voyage to the Polar regions as surgeon on board a whaler. Mr. William Bell received his general education at Uppingham School and his professional training at King's College Hospital. There he had among his teachers Partridge, John Wood, and William Ferguson. He became M.R.C.S. and L.S.A. in 1865, and for some time assisted Sir William Ferguson in his private practice. Afterwards he spent a year touring all the countries of Europe. On his return he was appointed surgeon to the prison at Chatham, and while there he met the daughter of the late General Butcher, whom he married in 1868 after establishing himself in practice—in partnership with Dr. Parr, who died shortly afterwards—at New Brighton. His practice grew with the growth of the district, and for a period of years he attended nearly every family living there. His success did not induce any disposition to neglect the claims of the less fortunate members of the community; his professional skill was always at the disposal of the sick poor.

In conjunction with Mr. Crewe Chambers he founded the Wallasey Cottage Hospital in 1866. That institution had at first accommodation for only two or three patients, but in course of time it attracted a large amount of support from the charitable public. Mr. Bell was honorary consulting surgeon to the hospital and chairman of the Committee of Management from its foundation. Some years ago it was his annual custom to hold a rose fête in the grounds of his residence on its behalf; they became very popular, and brought in considerable sums of money. Mr. Bell was also for many years honorary consulting physician to the New Brighton Convalescent Home for Women and Children, and had been a member of the Committee of Management. He took an active interest in all the local medical charities. He also took a leading part in the general improvement of the district. As president of the New Brighton Improvement Association Mr. Bell headed a strong agitation which resulted in the abolition of the "Ham and Egg Parade," which had long made the Merseyside resort a byword. Its place was taken by the Marine Promenade, with its pleasant Marine Park and Victoria Gardens. When the foundation-stone of the new Promenade was laid on June 22nd, 1907, by Sir (then Mr.) W. H. Lever, who at the time represented Wirrall in the House of Commons, the public services rendered by Mr. Bell were referred to with enthusiastic appreciation; the New Brighton Improvement Association presented him with a handsome rose bowl. In 1892 he was made a justice of the peace for the Wirrall Division. He did much to advance the cause of education in Wallasey, being at different times a member of the Education Subcommittee, a governor of the Wallasey Grammar School and chairman of the Wallasey High School for Girls, of which he was one of the founders. In his younger days he was an ardent supporter of the Volunteer movement and was Surgeon-Major of the 1st Cheshire Volunteer Artillery. His services earned for him the distinction of V.D.

A keen lover of nature, Mr. Bell particularly interested himself in horticulture, rose-growing being one of his chief delights. For many years one of the National Rose Societies' shows was held in his grounds. He was an enthusiastic student of animal life, and his knowledge of birds was especially wide. He had made a very fine collection of British birds' eggs, moths, and butterflies; to these collections he devoted his attention when, five years ago, failing health caused him to retire from practice. In earlier years he had been greatly interested in breeding poultry, and at one time won prizes all over the country with his Dorkings.

Mr. Bell, who was a member of the British Medical Association, leaves a widow, three daughters (two of whom are married), and four sons, two of whom—Dr. W. Blair Bell, of Liverpool, the well-known gynaecologist, and Dr. E. Augustine Bell, who succeeded his father in his practice at New Brighton—are members of the medical profession. His eldest son, J. Hubert Bell, is serving his country with the East Surrey Regiment.

The funeral took place on May 2nd at Wallasey Parish Church. A detachment of the crew of the New Brighton lifeboat, in which Mr. Bell took a great interest, carried the coffin. The church was crowded, and large numbers of patients and friends who could not find room in the church, waited in the churchyard to pay their last tribute of respect. All the flags in the borough were flown at half-mast.

DR. J. B. CUNNINGHAM died on April 4th at his home at Ruyton-of-the-Eleven Towns, Shrewsbury, after a very brief illness. His death was due to septicaemia following a cut in his finger about ten days previously. He was a

man of uniformly robust health, and his death came as a shock to his friends and relatives. Dr. Cunningham, who was 62 years of age, graduated M.B., C.M.Edin. in 1878, and was at first in practice at Prestonpans (East Lothians). He then went for a short time to Canada, and on his return practised at Tongue (Sutherlandshire). Finally he settled at Ruyton, where he spent the last twenty-three years of his life. His tastes were rather for outdoor pursuits, such as gardening, than for medicine, but he was ever conscientious in the discharge of his medical duties. He was very popular among the working classes, with whom he had a happy manner, sometimes brusque and marked by plain speaking if occasion arose, but he possessed a natural kindliness and sincerity which found him many friends wherever he went. He suffered latterly a good deal from the effects of rural depopulation, his practice having fallen off greatly. He leaves a widow and ten children, most of whom are grown up. The funeral was largely attended, and many expressions of sorrow and respect were received by his family.

DR. NATHAN HANNAH, medical officer of health for Ashton-in-Makerfield, who died recently in his 64th year, was born at Blackburn. When quite a child his parents removed to Wigan. He received his medical education at Anderson's College, Glasgow. In 1873 he took the diplomas of L.F.P.S.G. and L.R.C.P.Edin. He was a Fellow of the Society of Medical Officers of Health. Soon after qualifying Dr. Hannah commenced practice at Ashton-in-Makerfield, and was made medical officer of that township in the days of the old Local Board. He was also medical officer for the township of Abram for many years. He was the oldest official of the Ashton Council, and had completed his fortieth annual report. He was the medical superintendent of the township's hospital for infectious diseases, public vaccinator and medical officer for the district under the Wigan Union, and certifying factory surgeon for the locality. For many years Dr. Hannah was surgeon to the Lancashire and Cheshire Miners' Permanent Relief Society, and to the South Lancashire Coalowners' Association. He was also surgeon to many collieries in the district. Dr. Hannah was the joint author of a *Report on the Effect of Roburite on the Health of Workmen in Coal Mines*, published in 1889. He leaves a widow and five daughters, three of whom are married. At a special meeting of the Ashton Urban District Council Mr. William Clark, the chairman, said Dr. Hannah's monthly and annual reports were models. He moved a resolution of regret for his death; a copy was ordered to be forwarded to the relatives.

DR. ARTHUR CAJETAN BACA, who died not long ago at Vevey, in Switzerland, at the age of 46, was a native of Gibraltar. He received his professional education at the Universities of Edinburgh and Glasgow, and at St. Bartholomew's Hospital, London. He obtained the diplomas of L.R.C.P. and L.R.C.S.Edin., and L.F.P.S.Glasg. in 1894. He settled in practice at Gibraltar, where he held the appointment of district medical officer, and was also medical referee for various insurance societies. He acted on several occasions as assistant surgeon in the Colonial Hospital. He had a large private practice, and his skill and kindness endeared him to patients of all classes. He took a keen interest in sports, and was a steward of the local race club. Dr. Baca was a member of the British Medical Association, and a Fellow of the Royal Society of Medicine.

IT is announced that Dr. GUSTAF HEINRICIUS, Professor of Medicine in the University of Helsingfors, recently died at the age of 62.

DR. THOINOT, member of the Académie de Medecine, professor of forensic medicine in the University of Paris, and inspector-general of the public health services of the Paris prefecture of police, died recently. Professor Thoinot took his doctor's degree in 1886.

MR. CHARLES HARPER, for many years medical officer to Bath Rural District Council, and who, as a naval surgeon, served during the Crimean war and the Baltic campaign, left estate valued at £7,762.

Medical News.

GIFTS amounting to over £14,500, to be applied to the purposes of cancer research at the Harvard Medical School, were announced on April 14th.

THE London County Council has decided to commemorate the residence in London of Lord Lister by placing a memorial tablet on the house, No. 12, Park Crescent, Marylebone Road, W.

A COMMITTEE has been formed with a view to collecting subscriptions for the erection of a marble tablet in the Hoddesdon parish church to the memory of the late Sir George Turner, who while residing in Hoddesdon was medical officer for a large and important district, and endeared himself to all classes of people. The treasurer for the fund is Mr. E. W. Lock, 33, Hertford Road, Hoddesdon.

FOUR lectures on the progress of public health in Egypt will be given by the Gresham Professor of Physic, Dr. F. M. Sandwith, during the course of next week. The first lecture, on Tuesday, will deal with cholera epidemics; the second, on Wednesday, with the reformation of Egyptian hospitals and asylums; and the third, on Thursday, with the awakening of the Egyptians to hygienic reform. The lectures will be given at Gresham College, Basinghall Street, E.C., at 6 p.m. on each day. On Friday, at the same hour, lantern slides relating to the subjects of the lectures will be shown.

AT an examination for sanitary inspectors under the provisions of the Public Health (London) Act, 1891, concluded on May 10th, of the candidates 70 per cent. passed. The examination included the inspection of artisans' dwellings and report thereon by the candidates, and the examination of specimens of meat and other foods provided by the Corporation of London from the city markets, and specimens of fish provided by the Fishmongers' Company.

AN interesting exhibition, Women and their Work, organized by the *Daily Express*, under the patronage of Queen Alexandra, was held at the Royal Horticultural Hall, Vincent Square, from May 1st to May 7th. It was opened by Princess Arthur of Connaught, and was intended not only to give an epitome of every phase of women's work, but also to provide the woman worker with ideas for new means of earning a livelihood. The different stalls afforded a most varied and comprehensive view of the numerous ways in which the taste and talents of women may be utilized to the advantage of their possessor and the benefit of others. The exhibits, moreover, were not solely such as have hitherto been regarded as being peculiarly the province of women. The stalls laden with every kind of fine needlework, lace making, embroideries and tapestries, were supplemented by others displaying specimens of jewellery and enamels, hand weaving, sculpture and alabaster work, whilst from others, again, it was possible to gather what women have already done in agriculture, horticulture, and photography. There was an exhibit showing one of the wards of the Middlesex Hospital, and another of invalid kitchens presided over by Lady Muriel Paget, and a series of lectures and demonstrations was given each day.

THE spring meeting of the south-eastern division of the Medico-Psychological Association was held at Newlands House, Tooting Bec Common, on April 29th, when Dr. J. Noel Sergeant read an interesting paper on certain effects of the war on the patients admitted to the institution since the beginning of last August. A question of considerable importance from a medico-legal point of view arose in connexion with one of the cases, namely, whether a certified patient under "care and control" ought to be given up to the police authorities while suffering from insanity for which he was under medical treatment at the time. Should the Board of Control allow the chances of recovery of such a case to be lessened by his being transferred from a hospital to a prison, to be there examined by the surgeon of the gaol as to his capacity to plead? Sir George Savage, Dr. George E. Miles (Royal Hospital, Netley), Dr. Dyer (medical officer, Brixton Prison), and the chairman (Dr. David Bowers) took part in the discussion which followed. Another interesting point was brought out in the paper, namely, the calmative effect of female nurses on excited male patients. Very divergent opinions were expressed on this point by several members present, including Drs. F. H. Edwards, A. C. Dave, and J. Stewart. A vote of thanks to Dr. Sergeant for his hospitality and his interesting paper brought the proceedings to a close.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DUKET HALL would like to know the most suitable place in the United Kingdom for permanent residence for a patient with slight chronic rheumatism.

INCOME TAX.

J. W. B. has in the past made no deduction from his gross receipts for motor tax, servants, and other expenses in preparing his return for assessment. Some time ago he was requested to supply the surveyor of taxes with fuller details of his income, but was unable to do so. He has now received notice of further assessments, and the surveyor declines to reduce the new charges without "accounts of professional receipts and expenses" for years going back to 1908.

*** The Income Tax Commissioners have a large discretion as to the nature of the evidence they may require as a condition of granting an appeal, and in this matter the surveyor is presumably acting on some knowledge of what the Commissioners would be likely to require from our correspondent. At the same time "J. W. B." is entitled to give notice—within proper time—against the assessments in question, and having done so has a right to attend the appeal meeting of the Commissioners and place before them any evidence he may be able to adduce as to his income tax liability for the years in question. In the circumstances of the case the Commissioners would be entitled to make any reduction in the assessments that might seem to them just and reasonable, and, we apprehend, would be not unlikely to do so.

G. F. R. has been refused a deduction for the cost of travelling from his residence to the hospital at which he was engaged.

*** Our correspondent does not say whether the assessment in question is under Schedule E or Schedule D; if the rules of the former schedule govern the case, the contention of the surveyor appears to be correct in law. If, however, our correspondent is in general practice and includes these fees with his other receipts in his return for assessment under Schedule D, it is understood that the Board of Inland Revenue are prepared to waive any technical objection there may be to deducting the cost of travelling from the place of residence to the premises where the duties of the office are performed. The notes to which "G. F. R." referred in his correspondence with the surveyor are based on the assumption that all fees from appointments are included in the general return—*vide* note under the heading of "Receipts."

PETROL DUTY.

H. D. L. has been asked by the local Excise officer to state separately the amount of petrol consumed for his motor car and his motor cycle. He is unable to do so with exactness.

*** The Excise officer apparently contemplates the possibility of the rebate being refused in so far as the claim refers to spirit used in the motor cycle, the Finance (1909-10) Act, 1910, referring to motor cars only. We recommend "H. D. L." to answer the officer's inquiries to the best of his ability, estimating the figures where necessary, and explain that the exact quantities cannot be stated, and to await events. If the rebate should, in fact, be restricted to the petrol used for his car only, perhaps he will communicate with us again.

ANSWERS.

S. H.—The experiment of fracturing (without open wound) the bones of dogs and feeding the animals subsequently with large quantities of putrid material was carried out by Kocher, and is referred to by Senn in his *Principles of Surgery*, 1890, p. 232; in some cases suppuration took place at the seat of injury. This experiment was of so crude a kind that it is not referred to in works of bacteriology, and Kocher himself does not appear to have attached any great importance to it, as he does not seem to have cited it in his later works.

The best accounts of surgical pyogenic infections of bone are those given in Kocher and Tavel's *Infectionskrankheiten* 1895. This work deals fully with staphylococcus infections by intravenous injections and suppuration of bone after contusion, etc., experimentally produced; at p. 167 experiments by Ullmann with several kinds of micro-organisms upon animals after fracturing bones are cited. Many clinical cases are reported in which osteomyelitis is traced to different sites of infection—for example, the tonsil. Infection from the intestine does not seem so easy to prove in the case of pyogenic cocci—that is, without the production of local lesions in the gut or vermiform appendix.

The cases of meat poisoning by Gaertner's bacillus show that the blood may be infected by the intestinal route though an enteritis here results. The same authors in 1909, under the same title, have published a full account of infections (surgical) due to streptococci, and give clinical cases of osteomyelitis following trauma, in which the site of infection is mentioned (p. 196).

As to the gut as an entrance site, the reports of the Royal Commission on Tuberculosis fully deal with the tubercle bacillus. It may occur without local ulceration, the disease showing itself in infection of the mesenteric glands, and thence more distant parts. Such questions are dealt with in any of the standing works on bacteriology. The following further references may be of use: *American Journal of Orthopaedic Surgery*, October, 1914, No. 2, 245; *Medical Record*, New York, 1905, lxvii, 813, 816; *Journal of the American Medical Association*, 1909, liii, 1184, 1186; *New York Medical Journal*, 1912, xcv, 365, 372; see also Surgeon-General's Catalogue, U.S. Army, vol. xviii, 396.

LETTERS, NOTES, ETC.

HYDROGEN PEROXIDE AS A WATER PURIFIER.

DR. J. C. MCWALTER (Dublin) writes: Chlorinated lime seems a very admirable water purifier, but its odour and associations excite hostility. I have experimented a little with hydrogen peroxide, and it seems to be better in many respects. Mixed in the strength of one part per 1,000 it imparts a delightful aëration to the water, with a trace of a pleasantly acidulous taste. The longer the water is exposed to the air, the more efficiently does the peroxide purify it. The question of portability is, of course, against it, but now hydrogen peroxide is constantly carried with the army stores.

CHLOROFORM AND ASPHYXIATING GASES.

DR. D. OWEN WILLIAMS (Glandovey) writes: I was interested to find that in the treatment recommended by the eminent consultants who are investigating the use of asphyxiating gases by the Germans at the seat of war in Belgium and France, besides respirators and handkerchiefs dipped in a solution of sodium bicarbonate, the use of smelling salts and the inhalation of chloroform are suggested. Some years ago when suffering from an ordinary "cold," with nasal catarrh and a slight bronchial catarrh, out of curiosity I tried chloroform, and I found it efficacious, and I have always used it since personally. I put a couple of drachms in an ounce medicine bottle and sniffed it now and again like smelling salts, keeping a cork in the bottle when not using it. I carried it in my waistcoat pocket and sniffed it at random when going about my work. It acted well and I used nothing else for the purpose. I had a mild attack of influenza this last damp winter, with nasal catarrh and slight bronchial catarrh, and I only used chloroform, going out in all kinds of weather, and I can testify to its usefulness. I have never tried it on any one else.

THE TREATMENT OF ITCH.

H. L. D. writes: The patient clothed, and with his other clothing in his lap, sits on a chair in the open air, facing the wind; a mackintosh cloak is put over all, and fastened round his neck. Sulphur is burned under the chair. The process takes about half an hour, and is repeated as desired. The mackintosh cloak is on charge in most military hospitals. This process is applicable to many parasitic cases, and disinfects the clothing and patient and saves admissions to hospital.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE TREATMENT OF THE TOXAEMIA OF LATER PREGNANCY.*

BY

SIR JOHN BYERS, M.A., M.D., M.A.O.,

PROFESSOR OF MIDWIFERY AND OF DISEASES OF WOMEN AND CHILDREN IN THE QUEEN'S UNIVERSITY OF BELFAST.

THE following cases illustrate the toxaemia of the later periods of pregnancy—that is, after the sixth month:

CASE I. (Reported by Dr. W. R. E. Wilson, House-Surgeon, Maternity Hospital, Belfast.)

Mrs. B., aged 32, admitted to the Maternity Hospital on November 25th, 1914, in the seventh month of her first pregnancy, during which she had been very constipated, having to take three cascara pills every night. For three or four months (before admission) she could not sleep well, and was very restless, and during the last two months she noticed her face, legs, and feet swollen, so that her boots did not fit her. She had also had severe headaches for a month or six weeks, floating spots before her eyes, failing sight, and a bad taste in the mouth. On November 24th the headache became very severe, and was accompanied with constant vomiting. She sent then, for the first time, for a medical man, who examined her urine and, recognizing her serious condition, advised complete rest in bed. That night she became worse, and her doctor, finding her semi-comatose, sent her into hospital, her husband stating that just before the doctor saw her she was "working" with her hands and foaming at the mouth. On admission to the Maternity Hospital on November 25th, 1914, where Sir John Byers saw her almost immediately, she was in a stupid, dazed condition, but could answer questions and was able to swallow fairly well. No fits had occurred since her admission. Her face—especially the parts about the eyelids—was swollen. Temperature normal, pulse 80. A catheter sample of urine had a dark fawn colour, was acid, 1032 in specific gravity, and, when tested, was almost solid with albumin. No signs of onset of labour. The pregnant uterus was felt well above the umbilicus, the fetal parts could be made out, and the fetal heart was heard.

Treatment.—Morphine ¼ grain and atropine $\frac{1}{150}$ grain were injected hypodermically, and, after waiting a quarter of an hour, the stomach was thoroughly washed out with saline—(sod. bicarb., ʒj. ad Oj.). This brought away a quantity of brownish material. Castor oil, 1 oz., with a minim of croton oil, was left in the stomach. An enema of soap and water, a second with the addition of ½ oz. of turpentine, and a third with 2 oz. of olive oil, produced no effect. A soft rubber tube was then passed up the bowel for twelve inches, and warm saline (sod. bicarb. in water) run in, but it was not until fourteen large wash-out saline enemas were given in this way, with doses of compound powder of jalap and compound senna mixture, and 4 minims of croton oil left in the stomach after lavage, that the bowels began to move.

November 27th. On this day the urine was sent to Dr. John M. Gibson, Demonstrator of Physiology at Queen's University, Belfast, who reported as follows on its composition: Specific gravity, 1030. Reaction, very acid. The average acidity is about 30. The acidity of this specimen is 120. Deposits, very large in amount, composed chiefly of amorphous urates; also transitional epithelial cells and a few granular casts. Albumin, present in large amount: 1.5 grams per 100 c.cm. Urea estimate, 1.1 grams per 100 c.cm. The normal is about twice this amount. Ammonia estimate, 0.1479 gram per 100 c.cm. The normal is about half this amount, and often very much less.

From this date, November 27th, following the action of the bowels, the patient steadily improved—the urine increased in amount, the albumin diminished, the swelling in the limbs and eyelids gradually disappeared, and her bowels acted regularly without medicine. She left the Maternity Hospital on December 18th, being advised to take a light milk and farinaceous diet, to see that the bowels acted daily, and to come back to hospital when signs of labour set in; but parturition took place so quickly during the first week of January, 1915, that she was unable to do so, and she has since continued in good health. The child was born dead.

CASE II. (Reported by Mr. R. L. Rea, Maternity Hospital.)

Mrs. G., admitted to the Maternity Hospital on March 3rd, 1915, towards the end of her first pregnancy.

The patient was admitted on the morning of March 3rd, suffering from eclamptic fits. The attacks apparently began at 4 a.m. that day, and before she came to hospital she had three fits. On admission to hospital she got ol. ricin. ʒij and ol. croton. ɱij by mouth; the bowel was washed out with sod. bicarb. solution and injection of morphine gr. ¼ given. The patient was found to be pregnant almost nine months, and expected to be confined in a fortnight's time.

She was suffering from severe constipation, the enema tube going in for only four inches, and after repeated washings the tube could be passed fifteen inches. A quarter of a pint of sod. bicarb. solution was transfused under each breast.

Two hours after admission the stomach was washed out with bicarb. solution, and ol. ric. ʒij and ol. croton. ɱij with some warm sod. bicarb. were left in the stomach. The patient was kept quiet, and every two hours morphine gr. ¼ was given hypodermically. During the remainder of the day she had six fits, each fit leaving her very weak.

The patient came into labour naturally at 6 p.m. the same day, and when the os was fully dilated she was delivered by forceps at 1.30 a.m. on March 4th. The perineum was ruptured, and immediately after birth she had another fit, making ten in all.

The perineum was sutured, and during the suturing the patient was kept under the influence of chloroform, the fit taking place when the chloroform was removed.

During all this time the patient passed by catheter only about 4 oz. of urine, and the bowels moved once. The child was pallid and did not attempt to breathe, but artificial respiration brought it round.

March 6th. Both mother and child doing well. No more fits. Bowels and kidneys are acting freely, but the patient's mind is not clear yet.

March 11th. The patient developed maniacal symptoms. Sleep was poor, but she took nourishment. Paraldehyde up to ʒij had been given, and bromides 25 grains, with little result. The patient getting worse mentally was then removed to an asylum, where she has done well, and the child is still living.

March 23rd. Urine brown; specific gravity 1010; very acid, and contains much albumin and acetone.

CASE III. (Reported by Mr. R. L. Rea, Maternity Hospital.)

Admitted to the Maternity Hospital, Belfast, on March 20th, 1915, in the last month of her first pregnancy. The patient, who was a primipara, and expecting her confinement about the end of March, was admitted on March 20th with the history of having had seven fits on the same morning before coming in.

At 8 a.m. she had morphine gr. ½ injected. When admitted, at 1.30 p.m., she was having eclamptic fits frequently, so that morphine gr. ¼ was given about every two hours until one and a half grains had been given before 9.30 p.m. the same day.

On admission the bowels were washed out with sod. bicarb. solution as high as possible. The stomach also was washed out with the same solution, and half a pint was left in the stomach with ol. ric. ʒij and ol. croton. ɱij. This, however, was all vomited within half an hour, and not until after the child was born and the patient had another fit and was in a comatose state, was the stomach tube introduced again and the same doses left in the stomach. These were retained. On attempting to do intravenous injection with sod. bicarb. solution, very little fluid could be got in as the patient was so full-blooded. However, a few ounces of strong sod. bicarb. were put into the right arm. Labour having set in, the membranes were artificially ruptured by Sir John Byers at 4.20 p.m., and labour was terminated by forceps at 8.15 p.m., with slight laceration of the perineum; 1 c.cm. pituitrin extract was injected subcutaneously to contract the uterus.

Altogether the patient had seventeen fits, fourteen before birth of child and three after.

March 21st. The bowels and kidneys acted well during this day, but the patient had scarcely any sleep.

March 22nd. At night sod. brom. gr. xxx were given and some sleep obtained. She showed symptoms of slight mental disturbance.

March 23rd. Paraldehyde (ʒ iij) was given, after sulphonal (gr. xx), administered twelve hours previously, had failed to act. She fell asleep almost instantaneously, and continued in that condition the night through.

March 24th. Cerebral symptoms gone, and the patient takes her food well (milk diet).

March 25th. The patient sleeps naturally and takes her food well.

The infant gradually became cyanosed and swollen all over, and died on the second day, in spite of warm bath treatment and injections of strychnine and digitalin, with signs of bronchopneumonia.

On March 20th the patient's urine was tested and was found to be small in amount, to contain much albumin, to be very acid, and to contain acetone.

Later (March 25th, 1915) the albumin was almost *nil*.

Note.—The patient was quite well on the day before admission to hospital, but her urine had not been tested by any one.

The above cases are examples of what is now called "the toxaemia of later pregnancy," occurring from the sixth month onwards. This toxaemia may be due to the increased metabolism which takes place in a pregnant woman, but unfortunately, despite the great scientific advances in modern medicine, we cannot tell what the toxin is, or where it is formed, and why it occurs so frequently in women pregnant for the first time, or why it is met with in only about 1 in 500 pregnant women. We cannot show the toxin in a test tube, but, in the meantime, we accept, as the best working hypothesis, the theory that there is a toxin, and we hope and wait for more scientific light on what is the most vexed question in obstetric medicine.

[2838]

* Paper read in part at a meeting of the Ulster Medical Society, January 21st, 1915.

TYPES OF TOXAEMIA OF LATER PREGNANCY.

From a clinical point of view there are three well-defined types of toxaemia met with in the last three months of pregnancy.

1. There is what is termed the pre-eclamptic toxaemia, which includes a large number of cases—from those which are mildest, right up to those which are most severe, but which just stop short of coma and convulsions—the characteristic signs of eclampsia. In these pre-eclamptic cases the symptoms vary, but there are usually those which indicate disturbance of the nervous system (headache, lassitude, irritability, dizziness, somnolence); alterations of vision; swellings seen in various parts of the body (face, limbs, vulva); now and again epigastric pain, but always—in the mildest as well as in the most severe—an examination of the urine will clear up the diagnosis. In cases of this type—in which the symptoms are mild, with, say, a little occasional headache, some slight oedema of the limbs, and a trace of albumin—the term "kidney of pregnancy" was formerly given by German writers.

2. *Nephritic Toxaemia.*—This group includes all cases of toxaemia in which the patients have pre-existing kidney disease before they become pregnant. Among them we meet with many of the same symptoms which are observed in the case of the first group, but, in addition, actual organic changes may be observed on ophthalmoscopic examination of the retina; and, when present, such signs are of bad omen. A careful analysis of the urine shows a marked difference between these two groups of cases. In the pre-eclamptic toxaemia the total amount of the urine is diminished, and the output of nitrogen, as well as of urea, is lessened, while in the nephritic toxaemia one often finds all these increased. In the pre-eclamptic cases the albumin is para-globulin; in the nephritic toxaemia it is serum albumin.

3. In the third type of toxaemia, occurring after the sixth month of pregnancy, we place the true cases of eclampsia, where we have the additional symptoms—convulsions and coma.

Some writers describe a fourth group, which they designate as cases of "eclampsism without fits," but they are really only extreme examples of pre-eclamptic toxaemia.

Case I, from the time I saw her first, might, by some observers, be placed in this group, but there was a history that she had "worked" (that is, suffered from a convulsion) before she came to hospital. From the period she entered the hospital, though drowsy, she had no convulsions, nor did she pass into coma. Her urine, however, was of the characteristic type met with in eclampsia.

THE TREATMENT OF THE TOXAEMIA OF LATER PREGNANCY.

It is, however, satisfactory to note that the treatment of the toxaemia of later pregnancy is much in advance of our knowledge as to the exact pathological cause of this condition. Of the first two groups—the pre-eclamptic and the nephritic toxaemia—the treatment runs largely on similar lines, and like many other obstetric complications it consists mainly in preventive measures. Every effort should be made to relieve the kidneys by getting the skin and bowels to act, and by the administration of a simple non-nitrogenous diet. If there be headache or oedema the patient, in addition, should be kept in bed, and should have hot baths, free purgation, and a milk diet; and if the state of affairs becomes more severe, warm saline lavage of the stomach and intestines is useful. In the nephritic cases, if in spite of this method of management they get worse, labour should be induced. One of the most important points to be emphasized is that a pregnant woman's urine must be analysed once a month during the first six months of gestation, and at least once a fortnight after that period. Since adopting this routine method I have not had in private practice during the past fifteen years a single case of eclampsia, as prompt measures taken, when an examination of the urine showed any considerable amount of albumin (and under these circumstances a catheter specimen should always be obtained), and with it any diminution in urea and nitrogen output, warded off all risk of convulsions and coma. At the Maternity Hospital, Belfast, almost every month I am on duty cases of eclampsia are sent in, and invariably the history given is that no doctor had ever been asked to see these patients until their condition—from the presence of convulsions or coma—had become extremely grave. One of the great blots in the Insurance Act is that a woman can get maternity benefit without being obliged to see any doctor during her pregnancy. Had it been made compulsory that, in order to render themselves eligible for maternity benefit, women must report themselves regularly during pregnancy to a doctor whom they had selected to attend them at their confinement, not only would most cases of eclampsia be prevented, but it would also be recognized at a sufficiently early time that certain of these patients had contracted pelves, and arrangements could be made beforehand to adopt the special operative measures necessary to secure for them and their children a safe delivery. As matters stand at present among the working classes, the medical attendant is too often called for the first time only when, in the case of pregnancy, the patient is in convulsions or coma, or he is summoned to find at the time of confinement a condition needing some special form of operative delivery if mother and child are to live.

THE TREATMENT OF ECLAMPSIA.

At the present time two most contradictory views are held by experienced obstetricians as to the proper treatment of eclampsia. According to one school the best results will be obtained if delivery be effected as soon after a patient has had her first convulsion as is consistent with her safety. Such a line of action naturally appeals to those who believe that the toxin originates within the pregnant uterus, and that, therefore, the sooner that organ is emptied the better it will be for the patient, and the most advanced advocates of this method recommend some form of Caesarean section—abdominal or vaginal. The other line of opinion is that better results are obtained by treating the toxaemic condition, and not by inducing labour, either by the very dangerous accouchement forcé, or by any form of Caesarean section. The supporters of this course of management believe, however, that when labour comes on naturally it may be expedited when the os is fully dilated, but they teach that the duty of the obstetrician is to treat the patient specially from the toxaemic, and not from the obstetric, point of view.

I. ECLAMPSIA TREATED BY IMMEDIATE DELIVERY.

It may be objected to the immediate emptying of the uterus in eclampsia (1) that such a plan does not cure all cases; (2) that patients with convulsions and coma have been treated so that they have recovered completely, and have given birth at a later period to living healthy children, all signs of a previously existing toxaemia having disappeared—I have personally had several such cases; (3) that some of the worst and most fatal cases of eclampsia have been those in which the first fit occurred after delivery. I used to think, under such circumstances, the prognosis was good; in later years, however, I am much more anxious about cases in whom the first fit occurs *post partum*. Further, if Caesarean section is to be done in the case of every woman with eclampsia, surely among them there will be a number who would have recovered with less radical measures of treatment. It must be conceded, in fairness to those who recommend immediate emptying of the uterus on the onset of convulsions and coma (or either), that any operative measures to do this should not be postponed until other lines of treatment have been tried and have failed, and then employed only as a last remedy; and, further, that the operative method best suited for use at an early stage—Caesarean section—is done on a patient who is already in a serious condition from a poison circulating in her system. Such a plan cannot be supposed to give anything like the good results it does in the case of a healthy, unexamined woman, in whom Caesarean section is the method of delivery chosen beforehand owing to a contracted pelvis.

RESULTS OF CAESAREAN SECTION FOR ECLAMPSIA.

In Routh's paper "On Caesarean Section in the United Kingdom," being a report read at the Vme Congrès International d'Obstétrique et de Gynécologie, at St. Petersburg, in September, 1910,[1] he writes: "In 1897 Kettlitz collected 28 cases (in eclampsia gravidarum) with 14 deaths; in 1899 Hillman collected 40 cases with 21 deaths, and Streickeisen, in 1903, added 26 cases with 8 deaths.

In the list of cases collected for the purpose of this paper there have been 10 cases with 6 deaths. Olshausen reports 3 Caesarean sections in 250 cases of eclampsia with 1 death. Thus, in 105 cases treated by abdominal Caesarean section, the deaths were 50, a mortality of 47.6 per cent."

The most recent statistics dealing very fully with Caesarean section done for eclampsia appear in volume 39 (for 1914) of the *Transactions* of The American Gynaecological Society, and were brought before the annual meeting of that body, held in Boston in May, 1914, by Dr. R. Peterson, in a very able paper, "A Critical Review of Five Hundred Published and Unpublished Cases of Abdominal Cesarean Section for Eclampsia." These 500 cases represented the work of 259 operators in fifteen countries of the world. Among them there were 174 deaths, or a total mortality of 34.8 per cent., but if they are divided into two classes—(1) those done up to 1908, and (2) those done between 1908 and 1913, the results are markedly different. During the first period—that is, up to 1908—there were 198 cases with 95 deaths, or a mortality of 47.97 per cent. During the second period—that is, between 1908 and 1913—there were 283 cases with 73 deaths, or a maternal mortality of 25.79 per cent., this improvement being due to greater asepsis and to better technique. In making up these figures, 29 out of the 500 cases were omitted because the year of the operation was not given. This was done simply to be accurate. Dr. Peterson believes the mortality percentage of 25.79 can be considerably lowered by care in technique and by not making use of the suprapubic route when there is great probability that the woman has been infected from below.

Excluding premature children and counting all children as living who survived one hour after delivery, there were 9 deaths in the series from 1903 to 1913, where 248 children were delivered by abdominal Caesarean section, or a fetal mortality of 3.62 per cent. Under the same conditions the fetal mortality was 10.69 per cent., if children dying the first three days after delivery be counted among the deaths. As Peterson concludes: "Even estimating the fetal mortality by this method, it is much better than by any other method of treating eclampsia."

Professor Bumm's statistics for the years 1904–9 at the Charité Hospital, Berlin, are as follows: 17.7 per cent. mortality in 330 cases; when, however, the uterus was emptied within six hours of the occurrence of the first convulsion the mortality was 8.8 per cent. The fetal mortality was 21.7 per cent.[2] I cannot get any of his later statistics.

II. The alternative method of management of eclampsia aims specially at the treatment of the toxaemic condition; no forced delivery is done, but when labour sets in, it is helped. One plan is that employed by Zweifel and Lichenstein, and it consists in bleeding, followed by intravenous salt solution, which is said to give a mortality of less than 7 per cent., while another method,

THE ELIMINATIVE TREATMENT OF ECLAMPSIA,

aims—

First, at the prevention of the formation of any more toxins;
Secondly, at the elimination of the toxins which are already circulating in the system;
Thirdly, at the facilitating of labour at the proper time, if it should come on naturally, no induction of labour being allowed; and
Fourthly, at the careful treatment of special conditions, such as heart failure, obstruction of the larynx, etc.

This plan of treatment has been called "the Rotunda" method, because it was begun, slowly evolved—step by step—and brought to its present state in that institution, just in the same careful way as the treatment of accidental haemorrhage has been worked out. The plan of campaign for the treatment of eclampsia was started during the mastership of Sir William Smyly; and at the International Congress of Gynaecology and Obstetrics, Geneva, in 1896, when I was asked to open—from the English point of view—the discussion on The Treatment of Eclampsia, in the absence of Sir William Smyly, who was then Master of the Rotunda Hospital, I was able to give his results, which showed a marked improvement on previous methods. His plan was the avoidance of induction of labour, as well as the use of chloroform (except for operative interference), pilocarpine, and chloral. He reintroduced the use of morphine ($\frac{1}{2}$ grain at first hypodermically, followed by $\frac{1}{4}$ grain, as often as is found necessary to control the fits, the idea being simply to keep the convulsions in check; as much as $2\frac{1}{2}$ grains being allowed in the twenty-four hours), and he recommended the placing of the patient on her side (not on her back) with her head low. Here are Sir William Smyly's statistics which he gave me at that time: "There were 30 cases of eclampsia (at the Rotunda), of which 4 occurred before labour, 22 during, and 4 after delivery. The first seventeen were treated with chloroform; of these six mothers and eleven children were lost. Since 1893 we have abandoned chloroform, except during instrumental delivery, and have had thirteen cases with two maternal and eight fetal deaths; one went out undelivered." It should be stated that it was G. Veit who originally suggested and used the morphine treatment. Before Sir William Smyly reintroduced the morphine treatment the death-rate in the Rotunda Hospital was 35.3 per cent.; it fell to 20 per cent. during his mastership and that of his successor, Dr. Purefoy, in those cases treated in the way I have described. The next chief of the Rotunda Hospital, after Dr. Purefoy—Dr. Tweedy—specially elaborated and developed the management of eclampsia, and his very full method of treatment has been, with certain modifications, continued during the mastership of his successor, Dr. H. Jellett. This plan depends for its success on the thorough and careful carrying out of a series of clearly defined details:

1. To avoid any further formation of toxins, the patient is starved, the stomach and bowels are carefully washed out with warm saline (half to one drachm of sodium bicarbonate to the pint), but in order not to embarrass the heart or breathing no fluid—after the washing out—is left in the stomach. This gastric and intestinal lavage is employed with the object of removing any toxins, as well as any articles of food taken recently, because Dr. Tweedy teaches very strongly that indigestible food is a most important exciting cause of eclampsia.

2. To eliminate the toxins, the washing out of the stomach and thorough and frequent intestinal lavage are employed, and care is taken that no medicines of any kind are placed in the mouth of an unconscious patient, but they (two ounces of castor oil, with three drops of croton oil, or some other aperient) are poured into the stomach just before the tube for lavage is withdrawn. Of course, if the patient can swallow, compound powder of jalap, croton oil, compound senna mixture, or calomel may be given in the ordinary way. To my mind, no part of the treatment is more important than the thorough emptying of the bowel, and it often requires an amazing amount of purgatives and frequent intestinal lavage, the rubber tube being passed twelve to fourteen inches until this is accomplished. For the same reason—to get rid of the toxins, to supply fluid to the system, and to act as a diuretic—mammary or venous saline infusion is to be used (especially if after washing out the bowel the urine remains scanty and high-coloured), and warm poultices to the loin are employed for the purpose of increasing renal activity, and with the idea of eliminating the poison.

3. Treatment of special conditions. The patient should be always kept on her side (either will do) to prevent mucus and saliva entering the larynx and so adding to the risk of oedema of the lungs. Suppose mucus to collect in the throat and signs of laryngeal obstruction to arise, the patient's head and shoulders should be drawn over the side of the bed, her face turned down towards the floor, so as to let any blood or mucus mechanically flow out. Oxygen and artificial respiration are important aids in re-establishing breathing. During a fit, a gag or handle of a spoon (covered with a piece of linen) should be introduced between the teeth to prevent the patient injuring herself. A cork should never be used, as it is apt to be broken up into small pieces which, if they get into the larynx, may tend to choke the patient. For any signs of heart failure 10 to 20 minims of brandy or whisky may be injected, as well as $\frac{1}{100}$ grain of digitalin. No warm baths, or any form of diaphoresis, are recommended. If labour sets in, as soon as the os is fully dilated artificial delivery is to be employed. But the three great points to attend to are (1) to prevent the formation of any more toxin, (2) to get rid of any already circulating in the

system, and (3) to treat special complications as they may arise. Dr. Tweedy has kindly given me his latest results as follows: He has had 78 cases of eclampsia treated in the way I have described, with 6 deaths—that is, a maternal mortality of 7.7 per cent.

Stroganoff's method—which differs from that of Zweifel and Lichenstein in that no free bleeding is used—is based largely on the same lines as that employed at the Rotunda clinic, with the following additions and alterations:

1. He tries to avoid all external irritation; hence, the patient is kept in a quiet darkened room; no one is admitted except the doctor and the nurse; everything is done silently, and without fuss or noise.

2. If any examination has to be made—external or internal (only if necessary)—if the catheter has to be used, or a hypodermic of morphine has to be given, the patient is allowed to inhale twenty to thirty drops of chloroform.

3. The fits are controlled by a combination of morphine and chloral (giving the latter by the mouth or by the rectum).

4. Labour is assisted, but not forced.

5. The vital processes are to be watched carefully, and to be stimulated, when necessary.

6. For the respiration, pure warm air is to be used, with oxygen after the fits; and the patient is to be kept on her side, and careful cleansing of the throat and nose is to be done.

7. For the heart, digitalis and stimulants are to be employed, if it gets weakened, and milk and saline infusion may be given by the mouth or rectum.

8. For the kidney and skin, the best remedies, he thinks, are warmth and saline infusion.

The last statistics I can procure show 900 cases reported by Stroganoff, with a 7 per cent. mortality.

When I contrast the clear and precise methods of treatment of eclampsia recommended and employed now, with the uncertain plans which were taught and carried out in a doubtful and hesitating way when I began practice, the change is indeed remarkable. Formerly, in our efforts to combat such a serious complication, we had little system or guidance; now we have clear, definite rules to follow; and—what is indeed remarkable—this complete alteration from uncertainty to self-reliance has been gradually brought about, although we still know so little—at least with anything like scientific accuracy—of the real cause of eclampsia. When the obstetrician is faced with a case of eclampsia, occurring after the sixth month of pregnancy, in whom there are no signs of the onset of labour, he may decide to follow one of two methods: (1) To deliver as soon as possible, or (2) to use every effort to eliminate the supposed toxin and to prevent the continuance of its formation, at the same time treating any complication as it arises, but avoiding all attempts at forcible delivery, and only interfering obstetrically when, in the course of labour—which has naturally arisen—the indications are clear for successfully helping the birth of the child.

Medical practitioners must, after a careful consideration of all the circumstances and statistics, such as I have given, make up their own minds which plan they will carry out. For myself, I have no hesitation in saying I prefer the second, or what we may call the eliminating method of treatment, which I have carefully followed out, with some modifications, at the Maternity Hospital, Belfast, during the past eight years, and where, of late, my results are about the same—from the point of view of mortality—as those of Tweedy and Stroganoff; and where also they have steadily improved *pari passu* with the thorough and careful attention to all the details I have enumerated. To call this method of treatment the morphine plan is to show a very superficial knowledge of what it is—it is really a combination of a series of details, every one of which is the result of close observation, thoughtful care, sound experience, and improved scientific technique. What above all else should be attended to is, I believe, starvation and the washing out of the stomach and the thorough lavage of the intestines, until they are both fully cleared out, as well as the prevention of laryngeal obstruction and oedema of the lungs, and the control of the fits by morphine. Wherever the poison is elaborated, I think it is got rid of much more thoroughly and permanently by clearing out the stomach and intestines than by emptying the uterus.

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A DRESSING STATION IN FRANCE.

BY

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THE following notes refer to a dressing station occupied for about three weeks last September by the bearer section of a field ambulance. During most of the time the assistance of a single tent subsection was also available. There were at first three medical officers, later five, and then four for the remainder of the time. The assistance of the regimental medical officers attached to whatever brigade happened to be in the trenches above was of great value in times of stress. The number of wounded and sick dealt with varied a great deal—from 20 to 300 a day.

It will be convenient first to notice the position of the station with regard to other places where medical aid was obtainable. Fig. 1 shows at T. the position of the station on the side of a hill. It dealt with all the wounded from the trenches between A' and A''. This line is about a mile long, and nearly all the cases had to be brought across country, although a proportion came along the track running eastwards from T., a few slightly wounded cases wandered down the valley to V., where another ambulance had a dressing station. Here also were collected the cases from along the line A–A'. For a few days there was a tent division at M.—virtually a clearing hospital—this being only about two miles away, but for most of the period the wounded were cleared in wagons to V. E. P.—a distance of five miles. As this was at night the journey was apt to be a chilly one, but the roads were good except for shell holes. The whole district is of course well within the range of enemy shell fire, and the long hill north of M. was in particular an object of annoyance to the enemy.

Fig. 2 shows the position as it would appear to an observer in the valley, except for the deficient draughtsmanship of the writer. We will start from the road junction marked (1) on both figures. Proceeding along the upper road we go gradually uphill. The comparatively gentle slope of the hill on our left is a disadvantage, as it, after a time, rendered the farmhouse (8) untenable for medical purposes, and, later still, for any purpose whatever. Keeping on, we come to "dug-outs" (5) on the right of the road. These, indeed, covered the hillside and seemed to increase in number daily. Further on there is a bank on the left of the road, and this also is full of dug-outs. Then the road proper turns to the left and towards the lines of the enemy. Our advanced trenches were this side of the horizon on the road. The road is continued as a broad track—the remains of fields of beet, etc. The bank continues for a while, but towards (4) falls away so that the road becomes somewhat exposed for transport of the wounded. Our trenches are in view on the left of the road along the line A'–A''.

Coming back to the road junction (1), we now take the lower road. On the left is a haystack (6), and there is another further on on the right. These, with the contents of one or two lofts, were the source of all the straw used in the caves (15) in which the wounded lay, and the supply was not as liberal as one could have wished.

At (7) we come to a track crossing the road, and it was at this point that the wagons were usually loaded. The track to the right was of no importance; that to the left was our main road, and will be dealt with presently. Beyond (7) are farmhouses on the left, and other houses (not represented in the figure) on the right. Further is a clearing (10) with a large tree, and it was here that wagons were parked when necessary. It was also the only spot at which a wagon could turn round. Behind it is a pathway to the church, which stood on higher ground surrounded by its burying ground. This was used for burials as long as possible. Then there is a fence on the left with an opening for the track which ran down the

hill (11). This track was too steep for the transport of wounded. At (12) a small stream ran down the hill into the village street, which here widened considerably. Further on the street ended suddenly in a small track which led up over the opposite hill.

We return now to point (7), and take the track leading up the hill. Just round the corner is the entrance to a large farmyard on the right and a roofless square of brickwork (13) on the left. What the purpose of the latter may have been I cannot say: it was used as a latrine by the troops. Further on the left is a barn built against the limestone of the hill, which is roughly squared to serve as the back wall. However, the roof and most of the other walls are missing. There was an incinerator here for some time. We follow up the path (down which a small stream is running) between steep banks, that on the right being perpendicular and that on the left a bush-covered slope. At (15) we come to the entrances, three in number, of No. 1 cave. These entrances are some 7 ft. up a steep bank. On the right a small track slopes up the bank and then down a little to the latrines (16) on the hillside. Higher still on the track are more caves; the entrance to one of these is closed by a room built on. Above this the track is flanked on the left by a platform on to which the cave entrances open. A little higher up a nook on the left served for stabling for five or six horses belonging to officers of regiments above. Then the track, still rising, broadens out, and on the left is a spring, the water supply for the district round being piped as far as the village V., then this track joins the main track leading eastwards.

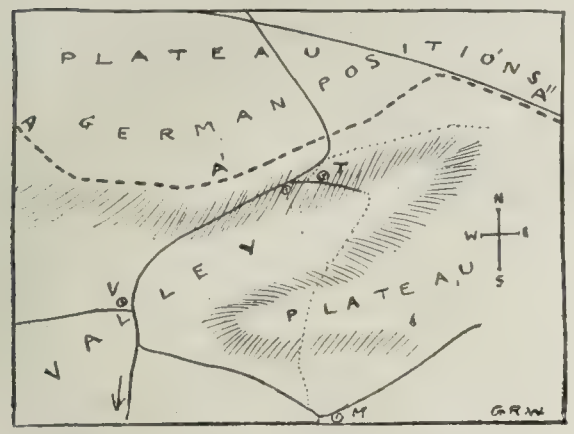


Fig. 1.—⊙ Churches. —— (Continuous lines), Good roads. - - - - - (Dotted lines), Tracks or unmade roads. A, A'' Line of allies' trenches; German trenches north of same, at places less than 100 yards. Dressing station just north of church in T. village took wounded from A'—A''. At V. was another dressing station. Rarely wounded from A'' wandered down valley to V. At M. temporary clearing hospital for a few days. Four miles south of V., in direction of arrow, was permanent clearing hospital at V. E. P. The latter was some miles from railhead.

When this station was first taken over by the ambulance it was serving as a medical aid post for the regimental medical officers of the regiments in occupation of the trenches above, and there were over 200 wounded already collected. Lack of straw and the number of wounded increasing had made it necessary to occupy the farm below (8), and this merits further description, as it was more or less in constant occupation either for the wounded or as billets for the men (about 100) attached to the ambulance.

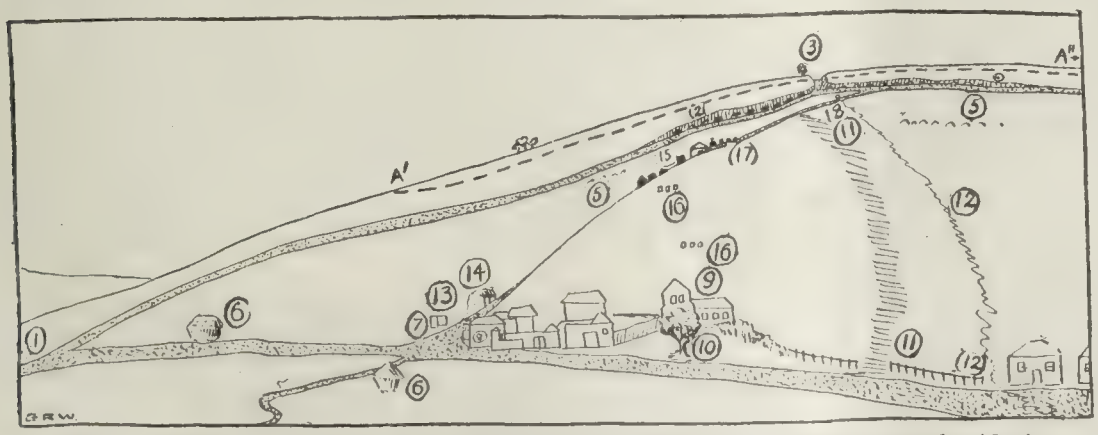


Fig. 2.—Village T., north of its main street. Houses are omitted on south side in foreground. Above caves and line of trenches.

Fig. 3 is a plan of the farm as far as memory serves. Let us enter the farmyard at A. Turning at once to the left—after patting the unfortunate dog tied up at the gate—we find a building, B. This had apparently been used as a stable for cattle, but was very low and dark. Some wounded had to be placed here on straw for a short time. They were Germans, and seemed well pleased with their quarters, as compared with the trenches from which they had come. Next is C, a tank into which water flowed continuously from a pipe which emerged from the wall

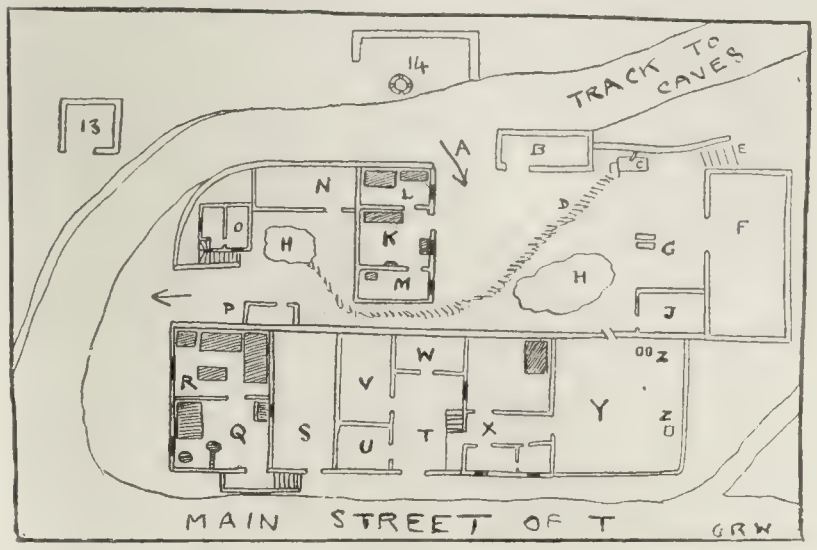


Fig. 3.—Plan of farmhouse and adjacent buildings.

behind it. The ground behind was at the level of the top of the wall, and all efforts to trace the source of the water were unavailing; probably it was piped from the spring at the top of the hill by a branch from the long pipe which led to the village of V. Then we come to some rough steps which lead to the hillside, and a small garden with beehives above the wall behind C. Continuing round to the right, we come on a large barn (F). This was empty, except for agricultural implements, and served for the accommodation of the sick—as distinct from the wounded—and at one time for German wounded when these were rather plentiful. Outside the entrance to this barn, at G, the cooks had a field kitchen. Next to the barn, at J, was a small outhouse, and this was used as a mortuary. The irregular mass marked H is a heap of manure. Past one side of this flowed the overflow from the tank C, being considerably contaminated on the way. The stream continued, always downhill, to another heap in the lower farmyard, and here terminated in a filthy pool from which it flowed away—apparently underground—there was no obvious outlet. Passing along the course of this stream, a procedure requiring care and delicacy, we come to a small building, P, which was in fact a pigsty. Beyond P there is an exit. This had folding doors, and was covered by a substantial roof. At about the situation of the letter P there was usually a heap of equipment taken from the wounded—material which we found it hard to get rid of. Coming in again at this same entrance we find on our left a flight of steps leading up to a small two-roomed cottage, O. Here some of the men were billeted. Then, skirting the second manure heap H, we come to an opening to the barn, N. This had two stories, and was almost full of straw and hay. There was room for one or two wounded, and this extremely insanitary position had at one time to be used and was even the site of an operation for sepsis. The only remaining building on this side of the farm is the house L K M. This was the private residence of the farmer, but at the time of our occupation he resided in a cellar in the village, only emerging to feed his ferrets, which lived in the room M. The rest of this room was occupied by various débris, leaving a small space in which we kept some of our stores. The whole of this building was quite dry, even in wet weather—a welcome feature. The central room, K, had a fireplace and a large bed, and a good cupboard with shelves. This was the orderly room, and was also used for the accommodation of wounded officers. Here also medical and other stores were kept to some extent. There was not room for more than five officers lying down, and even then the fact that they had

to lie on straw in close vicinity to an open grate was a source of worry. However, it was better than the caves. The room L was almost entirely occupied by a massive bed and a large wardrobe. It was possible to put three wounded here, but the small entrance made it very inconvenient. It should be noted that the upper story of the building over F and J made a billet for the men.

Leaving now by the main entrance A we turn to the left, past the exit P, round to the left again and so up the steps leading up to the house Q R. This consisted of two rooms, both largely occupied by furniture. In R three medical officers slept and in Q their servants. Here also was kept a miscellaneous amount of stores—rum, and medical comforts which might have been a temptation to the dishonest or thirsty if kept in the farmhouse L K M. The owners of Q R lived in a cellar in the village, but came every day to see that we were not destroying their furniture and to beg a little bully beef. We had to remove the shelves of a wardrobe in R to barricade the window against stray fragments of shell, but otherwise the owner had nothing to complain of; S is a small yard which we never entered. Passing to the next opening on the left, we walk into the yard T. In front and on the left open the stables and small rooms U, V and W. These were given over to the A.S.C. personnel and the officers' riding horses. There was an excellent non-commissioned officer in charge, and—except that it is doubtful whether they played cards entirely for love—this was a very satisfactory little grouping. Passing up steps we come to X, a house of one fair-sized and two small rooms. Here two medical officers and the chaplain slept, the smaller rooms being occupied by their servants and for cooking. Passing through X we come into a vegetable garden Y, surrounded by a wall, and on a higher level than the street outside. At Z Z were latrines for officers and men.

Towards the end of our stay the enemy procured the exact range of this corner and seem to have suspected that it needed keeping on the *qui vive*. Consequently we were exposed to a peculiarly offensive form of common shell, which pierced even the roofs and ceilings of our dwellings. The corner of the lane, outside the barricaded window, was especially exposed—a glance at Fig. 2 will show that this was due to the falling away of the hill slope on this side. Consequently a way was made by one of the officers over the garden wall (in Y), which is shown as an interruption in that structure. This gave direct access to the main farmyard by the mortuary and dung heap and allowed more shelter. Unfortunately, the farmer did not approve of it and was moved to stop it up with a large stone. He was remonstrated with, but to no effect. But, while placing a yet bigger stone in position, he was severely wounded by shell fragments, and was under treatment until we left. We also had some men hit in the loft over J, and fragments strewed the path outside the A entrance. The whole of the farm was therefore evacuated, and we were henceforth lodged in the caves.

At its fullest the farm and adjoining houses lodged about eighty—effective or wounded—and was far more comfortable than the caves, although far from ideal, especially in regard to sanitary conditions and the presence of biting insects.

Before turning to the measures adopted to make the position habitable, some detailed mention must be made of the caves. These were situated towards the top of the track behind the farm, and were seven in number. An eighth, not shown in diagram, was occupied by refugees from a neighbouring village.

The caves were hollowed in soft limestone, partly by Nature—entirely in the case of No. 1—and partly by man. No. 1 differed in several particulars from the others. It was very large, and could accommodate 150 wounded lying on straw. The floor was almost level, and composed of soft rubble which seemed to have fallen from the roof. At F a pit had been recently dug, and this showed, at a depth of about a foot, a black band running round its whole circumference. In this band were very small pieces of charcoal, so that one may assume that the cave was in use before the superimposed foot of rubble had fallen from the roof. There were no signs of more recent human occupation. No signs of stalagmite or stalactite formation were obvious, and water action must have been very slight in recent epochs. Nevertheless, the presence of a spring further up the hill, and the resemblance to other limestone caves in Derbyshire, etc., affords strong presumption that at first the cave was mostly due to water

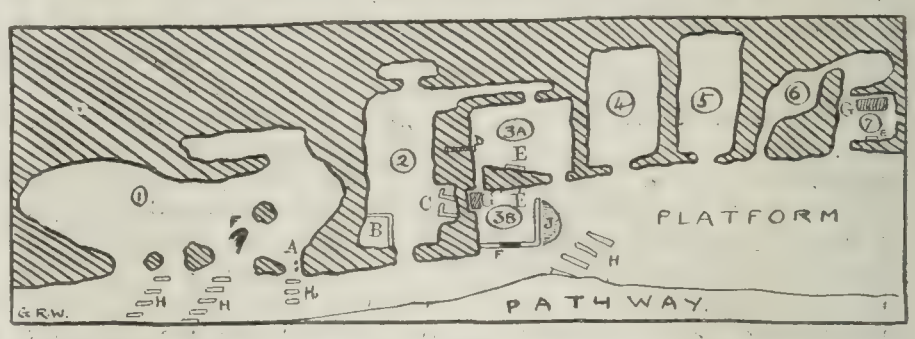


Fig. 4.—Plan of the caves at level of the cave floors. A, Cooks' fires; H, steps; J, bank of soil with tree.

action. The entrances were lofty and three in number. Four large pillars supported the roof. No. 2 cave was certainly in part shaped by man, but the floor was irregular, the entrance steep, and light very feeble. It would hold fifty men in considerable discomfort. At B was a brick enclosure in which were rabbits, and at C two other brickwork structures of unknown use. No. 3 cave was extended by a roofed room built on to the front. This contained a good window, a bed, and a stove. The latter was removed and the open fireplace behind it used instead. In the back part was also a fireplace (E), and at D an oven for bread baking hollowed out in the limestone. Over 3A, which had a good floor and substantial roof, was a loft of small dimensions. Nos. 4 and 5 were similar caves, each holding about twenty as a maximum. No. 4 had a small window, but No. 5 was rather dark. No. 6 was difficult to manœuvre in, and No. 7, although containing a bed and fireplace, was infested with all manner of unpleasant insects.

The foregoing affords some idea of the situation taken over by the ambulance bearer section. It may be noted that the latter consists of 108 stretcher-bearers with eighteen stretchers, a variable number of wagons, usually three, with four stretchers in each, and the requisite personnel for attention to horses, etc., say ten men, including grooms for officers' horses, three officers, and four non-commissioned officers. Finally, there is a supply vehicle which fetches rations—in this case a buggy acquired during previous operations—and a Scots cart containing medical stores. The equipment of the latter varied, but never was in excess of requirements in any single respect.

It should also be noted that the stretcher-bearers are not in any sense trained men or possessed of medical knowledge comparable with that of a nursing orderly of the R.A.M.C. On mobilization the ranks of the stretcher-bearers exist as a skeleton only, and were in this case filled up by ex-infantry and ex-artillery men in the proportion of one of the former to six or seven of the latter. Of the four non-commissioned officers not one had any R.A.M.C. training before the outbreak of war. Difficulties with supply of materials and untrained personnel were largely compensated when a tent section was sent up; this contained a R.A.M.C. trained sergeant and efficient nursing orderlies.

Steps taken to Improve the Position.

The caves were as far as possible lined with a sufficiency of straw, and this was obtained from the two stacks [Fig. 2 (6)], or what was left of them, for the troops above had also used this supply. It was necessary to clear the larger pieces of rubble from the floors of some of the caves before the straw was laid down. One cave was fitted with mattresses found in a house (Fig. 3, X) in the village from which it was supposed that the inhabitants had fled. Subsequently the owner emerged from a cellar in the village with a requisition order which he wanted signed, and this was the first intimation of his existence. Medical equipment was carried up to 3B, the stove there removed, and a fire lighted so that hot lotion might be at hand. Fires were also lighted in a recess outside No. 2 (unfortunately omitted from Fig. 4) and in the opening (Fig. 4, A) to No. 1. These were for the preparation of hot food for the 200 odd wounded already collected. Food was with

difficulty obtained from the very slender stock in reserve in the wagons, and from the rations of the few men who had brought theirs on them when coming in wounded. These were all measures of absolute urgency, and only later was it possible to give more detailed attention to sanitation, etc.

The sanitation of the place was appalling; the whole hillside was one vast latrine, and every fresh change of troops in the trenches above meant more difficulty, as they were seldom at first cognizant of the situation of the latrines dug by each regiment for itself. In addition, horses were stabled above cave 7, and from about the same situation a small stream ran down the path to the caves. It was first necessary to divert this stream, and this was done by earthworks at the top of the path [Fig. 2 (18)]. These were insufficient, owing to the occasional passage of pack-horses up the path. Eventually a heavy paving stone was carried up from the farm by six men and placed across the top of the path. Above this a shallow trench was made, which directed the stream [Fig. 2 (12)] down the hillside into the village, whence it escaped into the valley. Even then a constant watch had to be kept for fresh outbreaks around the paving stone. Then a ditch was scooped out at the side of the path to take off rain water and the drainage from the adjacent banks. This was not very successful, owing to the rocky and irregular nature of the path and the absence of proper tools. Entrenching tools were employed, but the flesh was not as willing as we may trust the spirit of the workers was.

Then some effort had to be made to make the path a possible passage for wounded men. Logs and stones were laid down and a few large flat stones were obtained, but the result again never left anything but a profoundly unsatisfactory path. Whenever it rained all the binding was washed out and the work had to be done again. When it did not rain some idiot was sure to bring a horse up the path. The actual approach to the caves was up a steep bank from the path, and steps had to be cut in this (Fig. 4 H). In the soft soil outside No. 1 these were not very satisfactory, but the steps to the platform outside the upper caves were cut in the limestone and endured.

Latrines were built, as shown at (16) in Fig. 2, but it was necessary to surmount a bank before these were gained. Nevertheless, no other place was available, as the sides of the lane were too steep. An incinerator was built at (14) in Fig. 3, and at (17) in Fig. 2. There was also one on the platform outside the caves for use when it was dangerous to surmount the opposite bank or appear on the hillside.

The improvement of the condition of the hillside was more difficult. It was covered with excrement anywhere within fifty yards of the caves. A little—a very little—lime was available, but no other disinfectant. This was employed on the banks near the cave entrances. In other parts the soil was laboriously dug over with entrenching tools, and in places it was possible to do something by burning the grass and small bushes. The task of clearing the hillside above and below the caves of undergrowth was too big to be attempted with the implements available, but would have been the only ideal measure. The undergrowth around the caves and on part of the hillside was very thick, although this is not represented in the figures.

It was not possible to change the straw in the caves, and only No. 3 had a washable floor. The débris from the incinerators and other waste material, for example, bully beef tins—the only available form of urinal—was buried on the hillside. The farm was a problem in itself, and all attempts to remove the manure heaps were unavailing—there was no means of doing it. No concerted effort was ever made to exterminate bugs, which were plentiful, but fortunately pediculi were practically absent. This is a short summary of the sanitary measures.

Cooking was done in the entrances to the caves and in the farmyard. For the officers cooking was done in their own houses, including in one case potatoes, local produce, fried in colza oil by an inexperienced cook, and actually eaten by two officers with no ill results!

The men were billeted in the farm and later in No. 2 cave; the officers at the same time moved to the back of No. 3 cave. This was also used by some of the regimental officers.

There was little sickness among the men, although at one time there was a mild epidemic of diarrhoea—of short duration in each case. Exercise was rendered impossible by the danger of straying beyond the main road of the village.

The only amusement was watching aeroplanes and the shells bursting over the opposite hill—sometimes also on our side and even on the platform. Musical honours were rendered by our own shells whistling (they don't really whistle) over our heads. It may be noted that the passage and explosion of a shell somewhat resemble the normal heart sounds enormously magnified—at least so our D.A.D.M.S. suggested with some force.

In conclusion, the normal routine with regard to the wounded may be outlined. Suppose there were about 100 during the day—probably in the form of a rush towards nightfall. Only one good light was available, and this was placed in No. 3, which served as a reception room and operation theatre. Wounded were placed on stretchers outside on the platform as they came in. Then one at a time they were admitted to No. 3, where wounds were dressed, fractured hips splinted, very rarely amputations undertaken, and then only as a matter of absolute necessity. Here two medical officers worked. In caves 4 and 5, with no table or vessels to hold lotion and with very imperfect light, other officers attended to the lesser wounds.

It was above all necessary to get the wounded away to the caves as soon as possible, both to be out of reach of possible shell fire and to get hot drinks, which they badly needed, as many had probably been hit many hours earlier in the day, but unable to leave the trenches. Thus the actual medical work was of necessity as hurried as possible. Wounds with a good field dressing on were not touched. If clothes were blood- or dirt-stained, they had nevertheless to be worn, for no other covering was available, and straw does not do much to keep out the cold. As there was no outlet for the smoke, fires could not be made in the caves. Hence heat had to be applied from within.

Slightly wounded cases were sent to No. 1 and also to No. 2, but the latter had a proportion of more serious cases. Very seriously wounded (unlikely to recover) were sent to No. 4, and Germans and usually head injuries to No. 5. Some of the head injuries were accompanied with signs of cerebral irritation, and—almost in the dark—it was very difficult to control them. Sick men were sent to the farm and also wounded officers. If seriously wounded, officers were kept in No. 3.

Perhaps at the same time wagons would come up to take wounded to the next station; this was always after dark. Then 100 or more cases had to be carried or helped down a very difficult path in the dark and loaded into the wagons. First, their names had to be taken and recorded, and as those who were not chosen to go were for ever trying to get included, it was necessary to take these names after they were in the wagons. Some improvement was effected by putting all the lightly wounded in the church in sufficient number to just fill the wagons, then stopping any more coming from the caves and taking names in the church. But always there was a lack of lights. Slightly wounded travel twelve in a wagon; any one who has seen the ordinary wagon can realize what this means in overcrowding and discomfort on a five-mile journey.

If the incoming wounded arrived so that one could give a quarter of an hour to each—and an anaesthetic—it might be possible to adopt some of the first-aid measures for the disinfection of wounds advocated by critics in London. As facts exist the maximum is effected if the wounded can be got away quickly and fairly comfortably.

The above is a true account of a dressing station which must be called a particularly favourable one in every way. Most are far less convenient and, of course, very much smaller.

It should be borne in mind in reading it that there was insufficient skilled labour (nursing orderlies, sanitary men, etc.), insufficient light, medical stores and comforts, and finally that the track was a very difficult one to travel after dark carrying a stretcher and that the entrances to the caves were up a steep bank. The sanitary problem was almost insuperable. Yet this was an exceptionally favoured station.

SOME INFECTIONS OF THE TONSILS.

ABSTRACT OF THE HUNTERIAN LECTURE DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND ON FEBRUARY 19TH, 1915.

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Anatomy and Physiology.

THE faucial tonsil, which lies between the pillars of the fauces, is the most complex part of the lymphoid tissue at the entrance of the alimentary canal. Lymphatic vessels pass from the tonsil to a gland in the deep cervical chains. Although afferent lymphatics have not been demonstrated, pigment injected into the nasal mucous membrane has been found after a short interval in the substance of the tonsil. Certain authorities ascribe some particular internal secretion to the tonsil, but on evidence by no means conclusive. The tonsils may serve as lymphatic glands for certain regions of the nasal cavities. They act also as a protection against the constant presence of organisms in this part of the pharynx—either in the mouth, lacunae, or tonsil substance—should they reach it through some breach in the surface. It is also probable that in the exercise of this phagocytosis they confer some immunity against the organisms inhabiting this region.

Bacteriology.

Both the surface and the lacunae of the tonsils are subject to organisms throughout life. No active invasion is apparent under normal conditions, but infection with very varied effects takes place under the influence of local injury or lowered resistance. Dwyer, in the examination of perfectly healthy subjects, found the pneumococcus, staphylococcus, *Micrococcus catarrhalis*, the diphtheria bacillus, the influenza bacillus, the spirillum, and other pathogenic forms on cultural examination of the contents of the lacunae, while the streptococcus seemed almost constant. In pathological conditions the balance is more or less upset, and additional organisms such as *Bacillus tuberculosis*, the *B. coli*, and actinomycosis, are present. The lecturer explained at length the different ways by which the organisms reached the tonsil so as to set up infective changes. *Actinomycosis* has certainly in some cases been conveyed in grain, but recent investigations have shown that the organism responsible for the disease occurs in milk, and it has been demonstrated that some cows considered clinically to be suffering from tuberculous udders were found on more careful examination to be affected with actinomycosis. As for *Syphilis*, it has been estimated that 10 per cent. of primary extragenital sores make their appearance on the tonsil. *Tuberculosis* in relation to the tonsil is most important. Unfiltered air, and dust which carries the tubercle bacillus, and infected food, especially milk, passes by the tonsils. These organs may become tuberculous, but it is almost impossible to distinguish a tuberculous tonsil clinically, excepting by its effect—namely, infection of the cervical lymphatic glands. In 70 per cent. of children with this condition the tonsillar gland is either alone involved or is the most enlarged, yet the tonsil rarely in such cases causes symptoms apart from glandular infection; a natural cure is the rule, but the infection may remain latent till middle life, till a tuberculous abscess appears in the region of the tonsillar gland. Mitchell, investigating 72 cases of tuberculous glands from children in Edinburgh, found that the bacillus was of the bovine type in 90 per cent., and of the human variety in only 10 per cent. The importance of a pure milk supply is thus manifest. When tuberculous infection is suspected, the tonsils should be removed entire in their capsule, the usual indication being tuberculosis of the tonsillar cervical glands. The tonsil, as the focus, should be taken away as early as possible, except where softening or abscess formation of the glands indicates that they should be dealt with first.

Streptococcus Infection: Rheumatism, Chorea, etc.

A constant inhabitant of the mouth, fauces, and tonsils, the streptococcus may live in apparent harmony with its host all through his or her life, yet it is probably the most important pathogenic organism in the tonsil. Its varieties are among the commonest sources of acute inflammation and of well-known complications, not only cervical bubo, but also endocarditis and septicaemia. The inflammation of the tonsil may subside, often recurring, and apparent pure hypertrophy in children is probably due in part to the presence of these organisms. The lecturer dwelt especially on that form of streptococcic infection which is associated with the production of rheumatism. The investigations of Poynton and Paine on the organism they consider the cause of rheumatism, and the later and additional work of Beattie, Dixon, Walker, and others, has shown that the organism found in acute rheumatism, although appearing in the lesion as a diplococcus, on cultural examination grows in chains, and belongs to the streptococcus group. The evidence that this organism is the chief causative agent in the production of acute rheumatism is accumulating, and its acceptance amongst the profession is increasing. Rheumatic fever and recurrence of rheumatic attacks are often preceded by an attack of tonsillitis. The presence of the streptococcus of the rheumatic type in the tonsil has been experimentally proved. The tonsil is affected in most cases of rheumatism, and lesions are detected there in persons dying of endocarditis, acute or chronic. The original case of Poynton and Paine was that of a patient with chronic endocarditis following an attack of tonsillitis. Characteristic organisms were isolated from the tonsil, and they produced endocarditis when inoculated into a rabbit. Repeated experiments by Poynton and Paine, and a later series of researches conducted by Beattie and Yates, support the evidence of the relation of the organism to rheumatism.

Material from various lesions in the joints, throat, and blood were examined in 192 cases, rheumatic and otherwise, for streptococci. The organism was obtained in 48. Seven of these cases presented a definite disease, and have no relation to the present question. Of the remaining 41 cases there was a rheumatic history in 31. The organism from these in 19 cases, or 61 per cent., on inoculation, produced typical lesions in rabbits, these lesions being characterized by acute non-suppurative synovitis. Of the 11 negative results in rheumatic cases 8 were from the tonsils. In each of these cases a single colony was subcultured, and there being many varieties of streptococcus present in the tonsil it may be presumed that a non-virulent form was obtained. If 2 additional cases, presumably rheumatic, are included, the positive results reach 70 per cent. in these cases, while in the non-rheumatic, typical arthritis was not produced in a single instance. In the experiments with organisms obtained from the tonsils of those with a rheumatic history—15 in number—a positive joint result was obtained in 7, or 47 per cent. Of inoculation from the tonsils where no history of rheumatism was obtained—5 in number—septicaemia was produced in 4 animals and arthritis in 1, the latter being possibly of the rheumatic type. A positive result was also obtained from the organism found in the cerebro-spinal fluid in a case of chorea. It has been shown that the organism from the tonsils of rheumatic patients is capable of reproducing in animals acute synovitis and endocarditis. The same organism has been found in other lesions of rheumatism, especially chorea. The *Diplococcus rheumaticus* has been isolated from 3 fatal cases of the condition by Poynton and Gordon Holmes, where it was found in the pia mater and endocardium. The histological characters of the brain lesion in these cases, together with the cultural findings, support the title given by these authors to this condition—namely, cerebral rheumatism. Chorea of pregnancy is, in the majority of cases, probably identical with that of children, as demonstrated by the experiments of French and Hicks, and of Wall and Andrews. In a patient under the lecturer's care an attack of chorea during pregnancy followed an attack of tonsillitis, and the tonsils and tonsillar glands were enlarged. The relation of hypertrophied tonsils to Sydenham's chorea has been investigated clinically by Branson, who found that of a series of 75 children 21 per cent. had been operated on for enlarged tonsils and glands.

Naso-pharyngeal lesions were present in 88 per cent. of these children with chorea, and 62 per cent. had enlarged tonsils, with enlargement of the corresponding lymphatic glands, or had undergone tonsillotomy. In 1910 the lecturer advocated the removal of tonsils for chorea where infection was considered to be occurring from them. This measure has been attended with considerable success, and has shown that the tonsil is one of the chief sources of infection, but that others exist in the naso-pharyngeal region, one case being unaffected by the operation until a chronic suppurating ear was cured. The removal of the tonsil cannot be relied on with certainty to cure the condition at once, but presumably cuts off further infection, for as in other rheumatic lesions, particularly endocarditis, the organism may remain latent in the affected tissues for varying periods.

There is also accumulating evidence that certain forms of chronic arthritis are related to infection from the upper part of the alimentary canal, in which the tonsil takes a share, as it is so much associated with oral sepsis. The lecturer added that the organism causing appendicitis, and in some cases actually coinciding with an attack of tonsillitis, may be derived from the tonsil, and he stated that he had observed acute neuritis following tonsillar inflammation. The nerve involved was not always the same; in his cases it was either the nerve of Bell, the anterior tibial, the descending branches of the third and fourth cervicals, or the musculo-cutaneous nerve of the arm. In one instance the attack occurred after incomplete removal of the tonsils, but since their septic stumps were removed, three years ago, there have been no further attacks.

Pneumococcus Infection.

The lecturer described the case of a child under his observation suffering from a large abscess in the region of the tonsillar gland. A pure culture of the pneumococcus was obtained from the pus, and also from the corresponding tonsil, which was removed at a later date; a small abscess containing the pneumococcus was found in its substance. The lecturer noted that several other pyogenic organisms have been observed to enter the system through the tonsils.

Specific Fevers.

The true or pseudo-diphtheritic bacillus may be a harmless inhabitant of the tonsil, or it may set up the characteristic lesion, yet remain limited to the tonsil. Once lodged in the lacunae, it is difficult to expel, and may cause repeated recurrences. The lecturer found this germ deep in the lacunae of a pair of tonsils removed after a third attack, and no recurrences followed the operation. Such a case imperils other persons besides the patient until it is cured. It has been shown that the infection of poliomyelitis may enter the system through the tonsils. The bacillus of influenza has been detected in the tonsils both of healthy persons and of patients subject to that disease, and tonsillitis may be associated with other specific fevers such as measles and German measles. Its relation to scarlet fever is so evident that some causal lesion between the two must be considered as established.

Hypertrophy of the Tonsil.

The Chief Medical Officer of the Board of Education states that of the six million children attending the Government schools 6 to 8 per cent. suffer from this condition to such a degree as to necessitate surgical treatment. The tonsil naturally enlarges after the age of 2 years, declining gradually in size after puberty. The hypertrophy usually corresponds with the period of decay of the milk teeth, and the year or so after the development of the permanent teeth. The main factor in causing hypertrophy is infection, due to the presence of the organism in the mouth and throat. The enlargement of the pharyngeal tonsil, with the consequent establishment of mouth-breathing, is a factor in the production of tonsillar hypertrophy. Mouth-breathing transfers to the mouth and throat the duty of filtering the inspired air, and, as the lecturer demonstrated, it produces dental caries. On the other hand, the reports of the Chief Medical Officer of the Board of Education demonstrated the beneficial effects of rendering the mouth clean. Hypertrophy often follows an attack of scarlet fever, diphtheria, or measles.

The enlarged tonsil varies greatly in size and shape; the pair often meet in the middle line, yet in some instances a tonsil may reach an extreme grade of enlargement without projecting beyond the anterior pillar of the fauces. Lymphoid tissue accumulates and germs infect the obstructed lacunae. When the infection subsides the tonsil tends to become fibrous and diminishes in size, but it remains septic and may continue to manifest its condition accordingly. Yet complete subsidence of the hypertrophied tonsil has been frequently detected on careful examination of long series of school children three months after previous inspection for enlargement of their tonsils.

In order to determine the condition of the tonsil as far as possible, in addition to mere inspection of the throat, the patient should be made to retch, when the tonsils are forced forwards and towards the middle line and stand out prominently. Under these conditions their exact size and shape can be determined. In order to judge of their septicity, if this is not manifest on simple inspection, the tonsillar fossa or lacunae should be explored with a bent probe. In all cases the tonsillar glands should be examined by palpation, while standing behind the patient, and in a large percentage will be found to be enlarged. Dr. Priestley, in his report (1910), showed the relation of enlarged tonsils to enlargement of the cervical glands. Amongst the commonest symptoms, repeated sore throats, tonsillitis, peritonsillar suppuration and enlargement of the tonsillar glands are the most important. Evidence of more general infection may be manifest, such as anaemia or endocarditis. In some of these cases the process was from the first insidious, with no history of acute tonsillitis.

The lecturer dwelt on 100 cases on which he had operated himself; 70 per cent. of the patients had suffered from attacks of tonsillitis or sore throat. The tonsils were considerably enlarged in 34 per cent. of the cases, moderately enlarged in 42. The remainder were judged to be of normal size or atrophic. In 96 per cent. the tonsillar lymphatic glands were enlarged—being definitely palpable in 82 per cent. In 14 per cent. the glands were sufficiently large to demand surgical treatment, and in 11 per cent. cases were considered tuberculous. In the remaining 20 per cent. the glands were moderately enlarged, being easily palpable, and in most cases visible.

Gross infection—shown by the presence of débris, pus, or foreign bodies—was found in 60 per cent. of the tonsils removed. Four cases had previously been operated on, and needed a second operation for tonsillitis or enlarged glands. For the removal of the 193 tonsils the guillotine was used in every instance; 95 per cent. of these tonsils were completely removed in their capsule, in one piece in the majority of cases; occasionally, however, owing to the size or shape of the tonsil, it was necessary to remove it in two or more pieces. The tonsils were definitely pedunculated in only 3 per cent. of the cases, the embedded type was present in 36 per cent., while the common variety, that with the projecting and almost solid lower pole, with the upper part hidden between the pillars and forming a cavity surrounded by folds of lymphoid tissue, was present in the remaining 61 per cent.

Treatment.

Where the symptoms are mainly or entirely mechanical and fail to subside in three months after removal of any source of infection, partial removal may suffice, but the basal portion of the tonsil may enlarge and again cause symptoms. Many hypertrophied tonsils, so far as can be ascertained on inspection, do not appear to be grossly infected, but in tonsils thus deeply infected the basal portion, often the most diseased, is left behind, and may commence to give trouble, especially if some of the lacunae become partially or entirely sealed up in the process of healing.

When infective symptoms predominate in the tonsil itself, such as acute tonsillitis, or chronic lacunar infection, or when the tonsils are in addition enlarged, any source of infection must be removed, especially carious teeth. Nasal breathing must be re-established, and the case watched to see the effect of the treatment. Where the tonsil is too severely affected to be capable of recovery, as judged by the recurrence of symptoms and the failure of the above measures, then total removal is indicated. Enucleation of the tonsil must necessarily prevent tonsillitis, and while it does not entirely prevent pharyngitis,

such attacks are, as a rule, materially lessened in frequency. When repeated quinsies have occurred, further attacks may be prevented by removing the source of the infection—namely, the tonsil. For lymphatic gland infections, where tuberculosis is suspected, tonsillectomy is indicated, and the course of the glandular enlargement determines whether more extended operative measures may be needed. In pyogenic infections of the glands the tonsil must be dealt with when the acute lymphadenitis has subsided or been operated on, if suppuration has supervened. Chronic glandular enlargement, of the mild or moderate degree, is so frequently met with in hypertrophied tonsils, that when the tonsil recovers its normal character the glands subside also. No tonsil should be removed when acutely inflamed. For more distant infections, when the tonsil is suspected of being the focus, removal is indicated when the general condition is satisfactory.

In all these cases total removal is the operation of choice; it presents no greater danger than incomplete removal, and can be readily accomplished by the guillotine alone, by a method first described by Mr. Whillis and myself in January, 1910. While these methods directed to the individual are of great importance, there is no doubt that prevention of tonsil infection should be our chief aim. This is to be obtained by the advances of hygiene—personal, in the home, and in the school. The maintenance of nasal respiration, the prevention of dental caries, and the proper supply of food, in sufficient quality and quantity, will greatly diminish the prevalence of this condition. The provision of a cleaner air supply and the prevention of infection by milk are measures needing attention. When that delicate balance between health and infection is upset, and the tonsil, a useful organ, becomes diseased and incapable of recovery, a timely removal of this focus may present more grave illness and disability. The question of infection of the tonsil and from the tonsil is not to be summed up in some form of operative procedure, but by attention to the numerous measures that have been indicated.

THE STERILIZATION OF THE SKIN WITH TINCTURE OF IODINE.

By J. LIONEL STRETTON,

SENIOR SURGEON, KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.

THE method of sterilizing the skin with tincture of iodine which was originated by me, and which was first described in the BRITISH MEDICAL JOURNAL, August 14th, 1909, was received, as I expected, with a considerable amount of scepticism. In spite of this, it has rapidly gained favour and is now very widely adopted. The remarks which I read from time to time in the press make it evident that some of those who use it are not thorough in their methods; some adopt alterations and some deny that the method is efficacious. At such a juncture it may be well for me to state my further experience, to amplify my description, to emphasize the importance of some of its details, and to reply to some of the criticisms.

I have now used the method in upwards of 3,000 cases. It is unnecessary to publish a detailed list of these. It includes most of the operations a surgeon is called upon to perform. Among these cases I have never seen a stitch abscess, and I feel confident that the skin was in all cases sterile. Of course, I only refer to cases in which an aseptic result can be expected. You can hardly blame your skin if you find a *Bacillus coli* infection after the removal of a quiescent appendix! Even in cases which are septic previous to operation the skin incisions heal more surely and more rapidly. My extended experience has increased my confidence to such an extent that I never have any anxiety of skin infection. Of course I do not claim that it will secure asepsis in all cases. There are many other channels of infection besides the skin, some of which we may never be able to control. The one which always appears to me the most difficult is infection from within. Take, for instance, traumatic effusions of blood which have no direct communication with the atmosphere. How often they become infected! Or injuries into a joint without any breach of surface where infection supervenes. If by any chance a surgeon had aspirated such a joint before it became infected, few would believe that the germs entered by any other channel than the wound which he inflicted.

The solution I originally used was the tincture of iodine (*B.P.*). It is prepared by dissolving 2½ per cent. of iodine and 2½ per cent. of potassium iodide in rectified spirit. In an endeavour to save the funds of the hospital I tried a solution of the same strength in methylated spirit, but I soon found that it produced so much irritation and lacrymation that I was obliged to resume the original compound. I now use the tincture in the theatre and a similar solution made with methylated spirit in the wards. It was probably my effort to save the hospital funds which caused another surgeon to imagine that he had discovered the rectified spirit solution. He evidently did not read my paper carefully, or he would have learnt that my original work was done with tincture of iodine (*B.P.*), which is made with rectified spirit.

The method of application is similar to that which I originally described. A wide area of skin is painted half an hour before the patient is brought into the theatre. It is allowed to dry, and is then covered with a sterile towel. When the anaesthetic has been administered another painting is performed. It would be more correct to describe it as a rubbing, for I now use a small swab held in a pair of forceps, with which I rub the solution over the surface, taking special care over the hairy regions. If there is any occasion to increase my incision or to make a new one beyond the limits of the application, a further rubbing is easily performed. The little swab is dipped into the wide-mouthed bottle in which the tincture of iodine is stored, and if a further application is necessary a fresh swab is used. This is preferable to using a brush which is constantly dipped into the bottle. It has the further advantage that the stopper can be immediately put into the bottle, and so prevent evaporation or contamination. If a brush is left standing in the bottle this is impossible.

When the operation is completed the line of incision and about an inch margin is freely swabbed with the tincture. A sterile gauze dressing is usually applied, but in some cases, especially after hernia operations in children, no dressing is used. In septic cases I have packed in gauze soaked with the tincture. In all after dressings a free application is made. As a rule, the wounds are not uncovered for a week, but occasionally more frequent inspection is desirable or dressings are not applied. In such cases I swab with the tincture every day and have never seen any ill effect.

All the casualty wounds at our hospital are treated with it. Immediately they are seen a free application is made. After the necessary exploring, trimming, and stitching is complete a second application is made before the sterile dressing is applied. The improvement in results in these cases is most remarkable.

My patients are now admitted to the hospital the day previous to the operation. This saves them from the harass and distress of waiting and from the former elaborate and alarming preparations. The house-surgeons and the nurses are saved an enormous amount of work, and the hospital is saved the large expenditure which was formerly necessary for preliminary preparations. In twelve months this would amount to a very considerable sum.

Various modifications have been practised. Some have adopted a 2 per cent. solution, some an acetone mixture, and some a colourless solution, while others either wash the skin beforehand or paint on various solutions. I fail to see any justification for these alterations. If tincture of iodine is efficient, why alter it?

It was suggested that it was necessary to insist on a fresh solution for fear of decomposition, and then it was discovered that the formation of hydriodic acid which occurs if a solution of iodine in spirit is kept for any length of time could be prevented by the addition of 2½ per cent. of potassium iodide. These observers either failed to read my original paper, which states tinct. iodi *B.P.*, or they forgot that the *B.P.* tincture contains 2½ per cent. of potassium iodide. If it is kept in a properly stoppered bottle, it will remain good for an indefinite time. If there is any evaporation, it becomes stronger and too irritant. Messrs. Oppenheimer have put it up in small

wide-mouthed stoppered bottles properly sealed, which forms an ideal method of using it.

It is inaccurate to speak of the sterilization of the skin with tincture of iodine as the Continental method or to describe Grossich's solution as tincture of iodine, because his is a 10 per cent. solution of iodine in rectified spirit. It is almost identical in strength with our liquor iodi fort., which was formerly known as liniment of iodine. There is a very wide difference between that and the tincture. I would not use such a solution myself, and I do not believe any British surgeon would. I do not know if the skins of our countrymen are more tender than those of Continental inhabitants, but I am aware that a single painting with a strong solution (liq. iodi fort.) will produce acute dermatitis in many people. This is a condition no one would welcome in the region of a surgical wound, and for this reason, I expect, the method was not adopted in this country. It was not until after I had made my experiments with tincture of iodine and published my results that the method was adopted.

One surgeon wrote to me advocating a colourless solution because "it isn't so dirty." Surely stains are not dirty. As a matter of fact, I regard this staining as one of the important advantages of my method, because it defines the exact area of skin which has been sterilized. Previously we were at the mercy of a third person, and even if the duty was thoroughly performed—which I feel sure was mostly the case—we were unable to be certain where the boundaries were situated. If the surgeon's fingers become stained, the stain can easily be removed by washing them in a 3 per cent. solution of carbolic acid, or a ½ per cent. solution of cyllin.

I have never seen any dermatitis result from the use of tincture of iodine. There is sometimes a limited amount of desquamation. My experience is in entire disagreement with an observer who states that it is unsafe to use it in young children. I have many times applied it to babies, some only a day old, and I have never seen any irritation from it.

A question has been raised as to the pain caused by its application. Applied to the unbroken skin there is no pain at all, but when it is painted on a cut surface it produces a smarting or burning sensation, which rapidly passes away. It is so slight that some young children submit to it without complaint. I have made very careful observations on this point, and I have also tried the effects upon myself.

It has been suggested that it is dangerous to use it over the abdomen for fear of damaging the viscera if they escape and come in contact with it. I have no such fear; indeed, it is my custom to allow coils of intestine, etc., to rest on the skin which has been sterilized with tincture of iodine, and I have never seen any ill effect. I regard it as superior to sterile towels or gauze, because there is always a possibility that the process of their preparation may not have been perfect.

I understand that some surgeons still insist upon a preliminary scrubbing and washing. This is not only unnecessary but positively harmful, and the same applies to a wet compress applied before the operation. They both cause swelling of the epithelial cells and prevent the tincture of iodine penetrating to the deeper layers of the skin. It causes the germs to be shut up in snug little nests, and as the skin dries they are able to infect the wound. It does not signify how dirty people's skins appear. They come in from the works begrimed with dirt, sometimes positively black, but surely we need not fear a little carbon. Skins which look clean may be far more dangerous from a surgical point of view. If a bath is desired it should be given twenty-four hours before the operation. It is not necessary, and in some instances it is a source of additional discomfort and anxiety.

Some think this method of sterilizing the skin is of little use, and it is true that, so far, there is little bacteriological proof to support it; but the clinical evidence is so overwhelming that it cannot be ignored.

Carbolic acid may be stronger, but it would hardly do to paint it on the skin; to use it in the wounds must cause a considerable amount of destruction and sloughing. I do not think many men would care to use pure carbolic acid on an ordinary lacerated wound of the forearm and 1 in 20 carbolic outside. It would be difficult to prevent the acid getting on to the skin and burning it, and although 1 to 50 carbolic may be as strong as tincture of iodine, it lacks the penetrating virtue of the iodine, while it possesses the disadvantage of swelling the epithelial cells and shutting in the germs.

Most surgeons continue to shave their patients; this, too, is quite unnecessary. If it is done it should be done dry, or the swelling of the epithelial cells already referred to will be produced. In head cases there is so much hair, and it so hampers procedure, that it is best to dry-shave it; but in other situations it is quite sufficient to clip the hair away with scissors along the line of proposed incision. This is done when the patient is under the anaesthetic. The preparation as a whole is repulsive, especially to women, and shaving the privates is more objected to than all the rest put together. In addition to this, when the hair is growing again it causes irritation which is at times intense. To avoid shaving is another great advantage of my method—perhaps far more important than some surgeons realize.

I am pleased to see that the method is being used to a large extent on the battlefields, and I feel confident that it will be of great value. In emergencies of all kinds it is most useful. There is no looking up of basins or bowls which may or may not be septic, no crying out for sterile water which, if procurable, may contain germs, no mixing of carbolic acid, no nailbrush, no scrubbing. The simple application of tincture of iodine gives far more security. The surgeon's hands can be sterilized in the same way. I do not advocate it as a routine because the skin might not stand an unlimited use of it, but when it is necessary to use the hands so soon that there is not time to prepare them properly, it can be adopted with confidence.

That tincture of iodine is an efficient application for sterilizing the skin I am confident, and I wish that those who use it would adopt the measures I have indicated. This would add to the efficiency of their technique and save their patients a considerable amount of discomfort.

TYPHUS FEVER IN PALESTINE, 1913–14.

BY

C. H. CORBETT, M.B., CH.B.EDIN.

OWING to the havoc now wrought by typhus fever in Serbia it cannot fail to be of interest to report the salient points of an epidemic of this disease in Palestine, 1913–14.

Typhus is a rare affection in Palestine, and occurs in smaller or larger epidemics in certain localities about every ten years, and many physicians in the European or American hospitals in Palestine and Syria have never seen the disease. It is, indeed, highly probable that the epidemic of 1913–14 was the most widespread that has occurred in recent years.

In the spring of 1913, at the English Mission Hospital, Jerusalem, we were astonished at the virulence of the affection which was revealed to us by an infected family admitted to our wards.

This group of patients demonstrated the comparative mildness of the disease in childhood and early youth, whilst the severer type was witnessed in the mother. From these cases a nurse and a middle-aged ward woman became infected; the former recovered after a veritable fight for life, while the latter died—our only death in a series of not fewer than 20 cases.

Subsequently children and adults, individuals from various large families in congested and uncongested districts, received treatment; in all cases of adult infection a critical and anxious period was passed.

After we had attended to about 15 cases there was a lull in the storm, till Hebron was swept with the disease, and the exodus from Abraham's city reminded one of Lot's flight from Sodom.

Again there was a decrease in the number of cases while the coast towns received their spell of the pest, till, in the spring of 1914, I saw a Nubian boy in his house suffering from a continuous fever which I could only then diagnose as typhoid (his skin was too black to see a rash). He was admitted to our hospital on the ninth day of the illness, and was put on sodium sulpho-carbolates, grs. xx, every four hours. On the twelfth or thirteenth day he had the crisis, and I fondly imagined that a typhoid fever had been aborted. A few days later, however, his nurse

was suddenly taken ill (the abrupt onset is a fact of great importance in the diagnosis of typhus fever). Her blood was negative on examination for malaria, and the profuse rash confirmed the diagnosis of typhus. As a test case, sodium sulpho-carbolates were given, and a most remarkably gradual lysis occurred, and, taking into account the nurse's age, the disease ran a comparatively mild course; the rash was fainter (another important matter in prognosis), the deafness was less, the typhus state was diminished, and the cardiac condition gave not the slightest anxiety. The patient was also given quinine, as an American observer had suggested.

The next two cases were equally instructive. Both had an accompanying bronchitis; both were over 40, one being about 65, and, remembering these conditions, we imagined that in all probability we would be unable to save these patients. Here, however, with quinine and sulpho-carbolates and, of course, other general and symptomatic treatment, we met with much less difficulty than the nature of the epidemic had suggested. In both cases the rash was non-haemorrhagic (in severer cases this was the rule), the temperature was lowered, and, particularly in the older patient, there was a lysis, the typhus state was not so severe as usual, and, in fact, in spite of severe bronchitis in the elder patient and an added pleurisy in the younger, both recovered; this was due to, in my opinion, the specific as well as the general treatment they had received. Of the last two cases one developed a lung abscess, which I operated upon with resultant cure, while the other contracted chronic bronchiectasis, which I was still treating when recalled from Turkey in September last.

From this epidemic the following are my conclusions:

1. The severity of the disease depends upon the age of the patient. Over 20 years of age the affection is much more severe, and is particularly dangerous over 30 or 35.

2. The severity of the disease depends also upon the hygienic surroundings of the patient. When the criminals in the Jerusalem prison took the disease the symptoms were especially pronounced. This was partially explained by the age of the men, but the feeding and nursing of such patients left everything to be desired, there being a lack of adequate air space (an exceedingly noteworthy aid to recovery), of stimulants, proper feeding, and a sufficient nursing staff. In America, on the other hand, the mild type of the disease seen is, according to American authors, largely to be attributed to hygienic surroundings.

3. The usual mortality of typhus has been variously estimated, in hospital cases at 20 per cent., other cases being more mild, at a considerably lower figure. In America the mortality is reported as even less than 1 per cent. (I quote from memory). On the other hand, in the Jerusalem prison, in about 180 patients there was a 50 per cent. death-rate. In Hebron the mortality was also high. Dr. Paterson of that city treated a number of cases of a prolonged type of the affection lasting several weeks. Our percentage at the Jerusalem Hospital was 5; this was of patients of all ages and both sexes, and could, I believe, have been reduced had we had our present knowledge of the disease.

4. Infection is supposed to be carried by the *Pediculus corporis*, and for that reason in my later cases I had the floors kept wet with carbolic lotion; nurses are by reason of their skirts more liable to attract the louse than doctors Dr. Ussher of Van, it is reported, infected a young probationer, who nobly volunteered for the test, by means of a louse which had bitten a typhus patient. An extraordinary detail in the epidemic was the infection of single individuals of families which inhabited one room. This was by no means infrequent. Another incident was that of a man and wife. The former was living in Hebron, the latter in Jerusalem, twenty miles away. They had not seen each other for several weeks (though messengers and letters had passed from one to the other) when the wife was admitted to our hospital with typhus fever; when she was recovering, the husband was brought in from Hebron, having already been ill several days with the same affection, he being one of the first cases from that city. There had possibly been some means of infection from the wife; had a messenger carried the carrier about his person? In another instance the infection was from a mattress which had been disinfected and exposed for some days to the brilliant sunshine of Palestine. This mattress was then unpicked to be remade. The man engaged on this work was attacked by the disease; he was treated in his own home by a Turkish doctor, without suitable nursing, and died.

5. With regard to treatment, good nursing is essential. A liberal supply of air space, fresh air, and, if possible, sunlight, are almost equally needed. Continuous sleeplessness must be combated with discretion and yet determination. Stimulants in the way of brandy and strychnine were used liberally during the days preceding the crisis, but digitalis is a drug to be avoided on account of the resultant contraction of the arterioles supplying the degenerated muscle fibres of the ventricles (Whitla). Where pulmonary affections existed, injections of camphor were of great value. Finally, quinine and sodium sulpho-carbolate are bactericides. The action of the latter drug in the blood stream seems to be unknown; undoubtedly, this combination modified the severity of the attack.

I cannot conclude this section upon treatment without reference to the Health Bureau established under the patronage of the German Government in 1912, primarily for the purpose of investigating the two most important scourges of the country (namely, malaria and tuberculosis) under Professors Mühlens and Much. To this effort was given the full moral support of the Turkish Government, with the result that this bureau of health was invited to investigate and treat the outbreak of typhus in the Government gaol at Jerusalem. This group of workers, however, could not isolate the micro-organism causing the disease. Neo-salvarsan was extensively tried, but without effect. The mortality among the criminals was, as previously stated, 50 per cent. This prison outbreak also entailed the death of a devoted French Sister of Mercy, who heroically sacrificed her life nursing murderers, cut-throats, robbers, and other villains, under circumstances more disadvantageous, more disgusting, more unsatisfactory than civilization can imagine.

6. Complications. These are generally known; I merely note those I saw—cardiac degeneration, bronchitis, and pleurisy.

7. Sequelae: Osteomalacia, lung abscess, bronchiectasis.

8. The disease spread into Asia Minor in 1914, and has evidently now crossed the Bosphorus and reached Serbia and Austria.

9. The rash is reported not to extend on to the neck; it occasionally does so, though diffusely.

10. Rubber gloves should be worn by nurses when attending to patients, and should be pulled over the sleeves of the nursing gown worn.

THE ADMISSION OF MEN WITH GLASSES INTO THE ARMY.

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THE advisability or otherwise of permitting soldiers to wear glasses is at present engaging the attention of those with whom recruiting lies. It is a complex problem on which much can be said both for and against. It is, moreover, one which is dependent upon two main factors—namely, the supply of normally sighted men and the exigencies of active service, which interfere so greatly with the employment of glasses and their replacement when broken.

Although writing from the civilian aspect, I am not totally ignorant of the service aspect of the question, as, during the late Boer war, I acted as civil surgeon in charge of the ophthalmic work in North Camp, Aldershot, for over two years. The experience there gained has led me to the opinion that the provision of glasses would in many cases certainly outweigh the drawbacks, and that the military objection is commonly closely akin to the same spirit which permeated the civilians only a few years ago, and which even nowadays occasionally crops up.

In considering this question it is necessary to bear in mind that what the military require is a man absolutely sound in every respect, not only, be it remembered, to save trouble and expense when he goes sick, but to prevent him possessing any loophole whereby he can shirk his duties. For instance, many would-be recruits who present them-

selves with varicose veins, or flat-feet, or hammer-toes, are rejected for military service, despite the fact that in civil life these things never caused them any disability. Yet such individuals, if desirous of shirking a long route march, have only to report sick and say their legs or feet ache, and no medical man can definitely deny the truth of their assertions. It is obvious, then, that a would-be shirker would only need to lose or break his glasses to obtain his desires. As, however, men wearing dentures are now admitted to the army, the objections made on this point are certainly weakened, for in the case of the soldier with glasses, other work could always be found for him, which is more than can be said for the man without his teeth.

A great, and at present the chief, objection to the proposal which the authorities maintain is the replacement of glasses on active service. This difficulty could be overcome by the establishment at the base of an optician, and very little could be urged against such a plan when one recollects the hosts of repair shops, mechanics, etc, in the rear of an army to keep in order such things as motors, aeroplanes, machine guns, etc. Then, again, the soldiers employed in such situations, to say nothing of men employed in clerical and medical departments, could surely be recruited from men who wear glasses. This sorting of men could scarcely form a rational objection, in that the entrance into various military departments is limited in so many cases to picked men. If only picked men can be taken in certain regiments, surely there can be no objection to taking men with slight visual defects into certain picked departments.

It is on this basis that the entrance of spectacled soldiers could be carried out. It is a common experience when acting as recruiting officer to meet with a would-be recruit anxious to enter the Life Guards or one of the cavalry regiments, and to find that his requirements in height and measurements debar him. Similarly it seems but logical to expect to meet men whose visual abilities only permit their entrance into certain branches of the service.

If some such procedure were adopted it would free a goodly number of men for service nearer the actual line of operations, and the nearer the base the others were employed the easier would be the replacement of broken glasses.

The question, then, of the admission of recruits with an optical visual error would be dependent upon two factors only: (1) The nature of the defect, (2) the type of recruit.

1. The nature of the defect would need consideration under the following heads:

(*a*) *The defect is of such a nature that without glasses the recruit is practically helpless.* Under this heading the great majority would be considered as unfit for military service, although some exception might be made in case of men recruited for home service entirely, where their training in civil life would warrant their employment as clerks in central head offices. The enlistment of such men could be made the subject of a special report and examination.

(*b*) *When the same condition exists, but affects one eye only, the other possessing fairly good uncorrected vision.* The chief point to consider in such cases would be the error in the better eye, and as the man would necessarily be almost entirely dependent on it, the error should, to admit him, be but a slight one.

(*c*) *When the defect is such that the glasses make fairly good sight in both eyes into absolutely normal vision with one or both.* Here the loss or breakage would form only a slight hindrance to his employment in any branch of the service behind the advanced lines, and might with the glasses enable him to use a rifle with deadly effect. If, moreover, he conforms to the requirements under the heading "Type of Recruit," there seems little objection to his employment, bar the question of replacement in case of breakage.

2. Under the heading "Type of Recruit" comes consideration of:

(*a*) *Previous experience in the use of glasses.* This factor necessarily must have a great influence in deciding the suitability or otherwise of a recruit. A man who has been accustomed from his youth up to wear glasses has not only obtained better visual acuity than one who takes to them later in life, but has learnt to treasure and take proper care of them, and is therefore less likely to break or lose them.

(*b*) *The particular branch of the service in which the recruit wishes to serve.* It is obviously useless to enlist a man with no knowledge of clerkship in the pay departments, or a "faint heart" into the Army Medical Corps, yet if of engineering taste a place might be found for him in base workshops or even in the Army Service Corps.

(*c*) *The general physique and intelligence of the recruit.* This factor would frequently turn the scale in his favour or otherwise. For example, a recruit, well educated and physically sound, but with a slight visual defect, if he had a good past employment record, would be an asset to the service far more than a large number of men with good eyesight as their chief recommendation.

The question is one which finally rests with the military authorities to settle definitely, but from the cursory outline given it is seen a great deal can be said as to the wisdom of giving the matter a practical trial.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANGIO-NEUROTIC OEDEMA.

I HAVE read with much interest Dr. Davis's account of a case of angio-neurotic oedema, in your issue of April 3rd, p. 594. I sent to the *Lancet*, on June 2nd, 1906, a description of a case occurring in my own practice, and in many respects our cases, as regards sequence of events, coincide closely. In one or more instances, however, our experiences appear to differ. I will refer briefly to his summary of the special features:

1. Rapid onset and subsidence. Experiences coincide.

2. Period of onset. Experiences coincide, probably due, as Dr. Hare points out, to the failure of the "decarbonizing functions."

3. Orderly progress of swellings. Our experiences again coincide.

4. The muscular weakness referred to was absent in my case.

5. My experience was that parts once attacked were by no means immune from future attack—quite the reverse. The eyelids were especially marked down for repeated attack, and, writing nine years since my letter in 1906, I may mention that the case referred to has repeatedly suffered from recurrences during this period, the recurrences affecting the right lower lid in over 90 per cent. of the visitations. My treatment was by strychnine and guaiacol; the latter drug was given upon the assumption that a gouty tendency existed. At any rate, this treatment appeared to suit the case. I am inclined to class this disease among the paroxysmal neuroses.

Combe Martin. CLAUDE A. P. TRUMAN.

I READ with considerable interest the contribution on two cases of angio-neurotic oedema by Dr. F. L. Davis, in the BRITISH MEDICAL JOURNAL of April 3rd, because the subject is very scurvily treated in textbooks, and even now it is not easy to formulate a description which would justify our regarding the affection as a morbid entity. On the whole it would seem to be merely a localized form of urticaria, varying greatly in severity and distribution as well as in respect of the concomitant constitutional manifestations. The following case belongs, I suppose, to this category, though I was long in doubt as to how to classify it.

A. G., aged 54, a robust, fairly temperate man, had been subject to attacks of urticaria for many years, contact with cold air or cold water sufficing to determine an outbreak forthwith. Ten or twelve years ago he had several attacks of rapid, extreme swelling of the external genitals, the scrotum attaining the size of "a small captive balloon," with no other symptom than a feeling of extreme tension, and subsiding in two or three hours. A trip into Germany four years ago and the consumption of no inconsiderable quantity of delicious German beer was followed by distressing itching of both feet and the toes, especially over the dorsum, which was much swollen, hot, and red. The swelling extended half-way up the legs, and the itching was at times intolerable. It was temporarily relieved by immersion in hot water, but did not finally subside until after several days' treatment with acetyl-salicylic acid

and an alkaline mixture containing gentian and cascara. The swelling was so marked that he was unable to put on his boots. There was also some impairment of sensation, for he felt as if walking on wadding. Since that time any dietetic indiscretion is apt to be followed by itchiness, redness, and heat of the feet, but as he has learned to be careful the matter does not go any further. He tells me that on one occasion, after a fish meal (fresh cod), his face suddenly swelled all over, almost occluding the orbits, this condition lasting for a day or two. These symptoms are not accompanied by any notable rise of temperature or indications of gastric disturbance, though their dependence on digestive aberrations seems to be unquestionable.

Only a month or two since I was asked to see a stout man, aged 50, a free liver, whose face was uniformly swollen so that he could hardly "see out of his eyes." There was no local pain beyond the sensation of tension, and he had no rise of temperature. The attack had come on suddenly, after drinking some new still fermenting cider. The swelling continued on and off for a week, and then disappeared. This patient had never suffered from urticaria, but he has a dilated stomach. Possibly this too is a case of Quincke's disease, but it seems to me very doubtful whether we are dealing with a "disease." I should be inclined to regard the swelling, etc., as manifestations of what the French call "herpetism."

Aix-les-Bains, Savoie. ALFRED S. GUBB, M.D.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ASSAM BRANCH.

AT the annual meeting on January 10th, Dr. MCCOMBIE, President, who was in the chair, read notes on *Anthrax*. The paper dealt with two outbreaks, one of which occurred in 1901, the other in 1914, both on the same garden, and both associated with anthrax epidemics among the cattle. In 1901 the epidemic began in June and lasted till the end of August. In 1914 the epidemic lasted from September to December. The mortality in 1901 was 14.2 per cent., but in 1914 it was only 7.1 per cent. The fact was established that in most cases the causation was due either to cutting up or to eating cattle dead of the disease, the former giving rise to malignant pustule and the latter to internal anthrax, while some patients suffered from both. All the cases except one occurred in meat-eating castes. The only exception was the hospital cook, who had a malignant pustule, and who might have been accidentally infected from cases in the hospital. Only one female was affected; in her case the disease was internal. The explanation given is that the men do the cutting of the raw flesh, while the small boys help to carry home the spoils and the men likewise eat the lion's share of the meat. Malignant pustule formed 82 per cent. of the cases, intestinal forms, in some of which there was malignant pustule as well, making up the balance. The situation of the pustule was as follows: Out of 42 cases 21, or 50 per cent., were in the upper extremity (mostly on the forearm), of which 3, or 14 per cent., died; 9 on the lower limbs with no deaths; 6 on the head, neck, and face, with 1 death, or 16 per cent.; 5 on the body, with no deaths; 1 had two pustules on the buttock and arm. Of these 42 cases and 4 deaths, two died without treatment, giving 40 cases of malignant pustule under treatment, with 2 deaths. In internal cases recoveries had been reported with Sclavo's anti-anthrax serum. The author had tried carbolic acid internally in large doses with big doses of strychnine, but there was no visible effect. In cases of malignant pustule his practice was as follows: In mild cases without fever, or cases seen after the fever had subsided and obviously clearing up, almost any treatment suffices, touching with pure carbolic and antiseptic compresses, or a crucial incision, with the application of pure carbolic in the moderately severe cases. In bad cases with high fever and much inflammatory oedema the following method gave him excellent results, and no time should be lost in carrying it out. All around and underneath the pustule 50 per cent. carbolic acid was injected with a hypodermic needle at close intervals, the idea of the treatment being that the pustule was shut off from the circulation by a zone of carbolized slough, which seemed to prevent the infection becoming generalized. It was not very painful, and was available in any hospital, but it had the disadvantage of forming a big slough, which had to be separated off. This process took about a week or ten days, and the sore took about three weeks to heal. The author had not lost a case in which this had been done properly. In the management of an outbreak the cattle epidemic must be vigorously dealt with, inoculation being the chief measure. The bodies of animals which died of the disease should be burned in quicklime at least 6 ft. deep. All deaths among cattle should be reported at once, and steps should immediately be taken to prevent coolies getting the meat for consumption. In the discussion several members said they had seen cases with a double pustule. Major LEVENTON said that in his experience sloughing would occur with carbolic 1 in 20. No member had found the bacillus in the general circulation in cases of malignant pustule. Dr. WINCHESTER mentioned an outbreak in which 30 people had partaken of anthrax-infected meat and 15 only of these were infected. Dr. RUSSELL read a paper on the value of *Soya bean as an article of diet for coolies*.

STAFFORDSHIRE BRANCH.

AT a meeting on April 29th, Mr. W. F. CHOLMELEY, Vice-President, in the chair, Mr. DEANESLY exhibited the following cases, radiographs, and specimens: (1) *Fracture of neck of femur in a young man.* Seven weeks after a pit accident the patient was admitted with a malunited fracture accompanied by flexion and inversion of hip and three inches of shortening. The hip-joint was exposed by Murphy's oval flap, with section of the great trochanter and the fractured neck redivided with the chisel and then pinned in good position by a long knitting-needle driven through the centre of neck and head at the normal angle. Ten weeks after the operation the man walked with a very slight limp due to about three-quarters of an inch of shortening, and the movements of the hip-joint were perfect. (2) *Fracture of anatomical neck of humerus* in a boy, treated by permanent nailing after dividing the origin of the deltoid muscle, and turning it downwards. After completing the operation the muscle was sutured by catgut sutures passing through drill holes in the acromion. Radiographs showed perfect position, with the nail in place, and the functional result was perfect. (3) *Ununited fracture of tibia* treated by a 3-inch spindle-shaped intramedullary peg taken from the crest of the same tibia below the fracture. In the radiograph taken one month after the operation the peg was only just discernible, and the surrounding callus was already ossified. In two months union was complete. (4) *Ossifying sarcoma of tibia treated by resection and bone grafting.* The patient was a woman of 28, and enlargement of the upper part of the right tibia had been noticed six years, but lately it had grown rapidly. About 4½ in. of the whole shaft, including the upper extremity, up to the level of the tibio-fibular joint, was removed with the tumour, which was of peripheral origin and nearly 3 in. in its greatest diameter. It was apparently ossified everywhere, except on its growing surface, but through an accident was not preserved for microscopic examination. Four weeks later a piece of bone, 6 in. long, ½ in. wide, and ¼ in. thick, was taken from the crest of the remaining lower half of the tibia, and including a strip of periosteum. One end was driven firmly into the medullary cavity, the other placed in a chiselled socket in the centre of the remainder of the upper extremity of the tibia, and fixed firmly by a knitting-needle, transfixing the graft and the head of the fibula. Five months after the first operation the outlines of the tibia and of the graft are still quite sharp, and the surrounding callus is only faintly ossified, but consolidation is proceeding satisfactorily. Since the first operation the woman has been delivered of a healthy child. (5) *Excision of spleen for splenic anaemia* in a boy aged 4 years. Five months after the operation he had a bright rosy colour, and was in good health except that the belly was still somewhat enlarged. Before the operation the spleen came below the navel and the liver was also enlarged. The Wassermann reaction was negative, and arsenic

and salvarsan were tried without effect. The spleen was shown. (6) *Lacerated wound of the axilla (man)*, in which, four months ago, the axillary artery and vein were completely severed just below the circumflex branch of the artery, the acromion fractured, the head of the humerus dislocated into the wound, and the brachial plexus violently stretched but not ruptured. The vessels were ligatured, dislocation reduced, pectoral muscles sutured, and the wound cleaned. It healed without suppuration, and some power was beginning to return in certain muscles, the whole limb having at first been completely flaccid and paralysed. (7) *Caecum with extensive epitheliomatous ulcer* posteriorly, not involving the ileo-caecal valve, removed from a man of 40. The operation was completed by anastomosing the ileum to the transverse colon, the right half of which was removed with the caecum. Eight weeks after the operation the patient looked well, had regained his weight, and was working as a navvy. (8) *Six inches of descending colon with typical epitheliomatous stricture.* Microscopically the growth was colloid in structure. The patient, a lad of 19, was opened for complete obstruction of many days' duration, and after resection the end of the transverse colon was brought out for drainage. Later on an anastomosis will be performed. (9) *Two parallel and closely united segments of intestine* 6 inches long removed from a patient with a prolonged history of vomiting, eventually becoming faecal. One segment consisted of the transverse colon, with a constricting epitheliomatous ulcer, the other of the first part of the jejunum, with which there was a large fistulous communication. (10) *Kidney and ureter showing calculous pyelitis, with stone in ureter*, removed entire. Dr. CODD read a paper on *The interpretation of opaque meal shadows in diseases of the stomach.* He said that increasing experience and improved technique were bringing the *x*-ray diagnosis of stomach diseases into the front rank of clinical methods. He read notes of some cases recently investigated, in all of which the diagnosis made with *x* rays was followed up by operative investigation. A series of tracings were shown on the sheet by means of a ballopticon. In all cases where the shadow was seen to be in active movement the successive phases of the movement were marked with different coloured pencils, so as to give almost a kinematographic appearance. The principal points he brought out were that, if the stomach were violently contracting in four hours and were empty in eight hours, this suggested ulcer. If it were violently contracting at eight hours or twenty-four hours, this suggested pyloric stenosis. If it showed Barclay's sign—rapid, visible emptying of chunks of food into the duodenum—this meant duodenal irritation, probably ulcer. Mr. CHOLMELEY showed *A jagged piece of steel which had pierced the femoral artery, causing a large traumatic aneurysm.* The wounded artery was also shown.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

AT a meeting on May 14th, Mr. CHARTERS J. SYMONDS, President, being in the chair, Mr. T. H. KELLOCK showed a case of *Double osteotomy of the tibiae* ten years after operation. The patient at the time of the operation was a boy aged 3. His tibiae were badly deformed and were much bowed outwards and forwards; there was a separation of the internal condyles of the femora, when the malleoli were touching, of 3 in. Open osteotomy of the tibiae was performed, the fibulae fractured, and the legs put up in "plaster-of-Paris splints." At the meeting the legs were seen to be quite straight, and the skiagrams gave practically no indication of the sites of the osteotomies, the line of the bone being normal. Mr. T. H. Kellock also read a note on a form of *Self-mutilation of the penis* in young boys. After referring to the case of a boy of 8 from whom he had removed a metal ring which surrounded the glans and had ulcerated through the floor of the urethra, and to another in which cotton had been twisted round the base of the glans, he said that during the last few years he had met with three other somewhat similar cases. In each of these hair had been twisted round the penis just behind the glans. The last was typical of all three. It was that of a boy aged 5. He had been circumcised at the age of 3, after which ulceration had occurred behind the glans. Eighteen months before he came under Mr. Kellock's observation the mother had found a piece of hair hanging round the penis. For a few weeks the urine had been passed through an opening under that organ. The glans was almost completely separated and the urethra was quite divided. The glans was attached by an isthmus only one-eighth of an inch in diameter, and was much discoloured. Immediately behind the corona was a circular sulcus completely covered by epithelium. Under an anaesthetic, by using a crochet needle, a hair was found twisted three times round the narrow isthmus. The history and condition of the other two cases were practically the same. The treatment by plastic operation after removal of the hair was one of no little difficulty. In two he had been able to reconstruct the urethra; in the third, operation had been followed by sloughing off of the glans.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

AT a meeting on May 6th, Dr. W. S. A. GRIFFITH in the chair, after an exhibition of specimens by Dr. BRIGHT BANISTER, Mr. T. G. STEVENS, Mr. W. GILLIATT, and Dr. C. E. PURSLOW, Dr. BLAIR BELL read a communication on *Infundibulin in primary uterine inertia and in the induction of labour.* Infundibulin, introduced by the author in 1909, had established its place in obstetrics owing to its power of promoting and augmenting rhythmical contractions during and after parturition. He now pointed out that, although the induction of labour could rarely be effected by administration of infundibulin alone, yet this extract had the power of sensitizing the uterus before labour; consequently the administration of infundibulin in conjunction with other mechanical measures, such as the insertion of a pack or of bougies, led to certain and rapid induction of labour. In this connexion a case of placenta praevia, in which serious bleeding occurred in the eighth month, was mentioned. The cervix was packed with gauze, and infundibulin was injected, with an excellent result. The great value of infundibulin in primary uterine inertia also was emphasized. This was as noticeable when the inertia was diagnosed before labour commenced as during labour. In the former circumstances the uterus could be sensitized and its tone improved during the last two weeks of gestation, and an interesting case was quoted by way of illustration. Remarks were made by the PRESIDENT, Dr. MAXWELL, Dr. HEDLEY, Dr. ROBERTS, Dr. DRUMMOND ROBINSON and Dr. PURSLOW, and Dr. BLAIR BELL replied. Mr. DOUGLAS DREW read a communication on *Complete inversion of the vagina after hysterectomy associated with vesical calculus.* A patient, aged 53, had undergone a total hysterectomy for fibroids twelve years previously. Within a year of the operation the vagina became completely inverted. The condition had not been treated for the past ten years. A large calculus was removed by suprapubic cystotomy, and the prolapse was treated by Le Fort's operation and colpoperineorrhaphy. Remarks were made by the PRESIDENT. Dr. DRUMMOND MAXWELL read a short communication on *Diphtheritic stenosis of the vagina*, which was discussed by the PRESIDENT and Dr. HERBERT SPENCER. Dr. BLAIR BELL read a paper on *So-called true hermaphroditism.* A complete classification of hermaphroditism in all its varieties was given to illustrate the biological importance of the condition. It was pointed out that the so-called "true hermaphroditism" in man should be termed "glandular partial hermaphroditism." All the really authentic cases (probably four in number, apart from the author's case) had had ovo-testes. Many of the recorded cases of "true hermaphroditism" had been disproved, and this specially applied to those cases in which a separate ovary and testis had been recorded. Further, all the cases with ovo-testes had shown predominating feminine characteristics. The author's case was that of a patient who had presented all the characteristics of femininity, with regular menstruation, until eighteen months after puberty, when menstruation ceased and masculine characteristics developed; these included a bass voice and an excessive growth of hair on the body with masculine

distribution. At first a diagnosis of suprarenal hyperplasia was made, and the patient was treated with ovarian and thyroid extracts. Later laparotomy was performed, and sections were removed from both gonades. The left had the macroscopic appearance of a testis. The pathologist, however, reported that the left gonad was the seat of columnar carcinoma. Consequently the abdomen was reopened and the gonades, tubes, and fundus uteri were removed. On examining the sections, the author came to the conclusion that the left gonad was an ovo-testis and not the seat of a malignant growth. The patient was therefore a glandular partial hermaphrodite. The histological appearances were fully discussed, and the relation of ovo-testes to the normal development of the gonades was considered. Finally, criteria determining glandular partial hermaphroditism were suggested. Remarks were made by the PRESIDENT.

MEDICAL SOCIETY OF LONDON.

AT the annual general meeting, held on May 10th, Sir J. BLAND-SUTTON, the President, in the chair, Mr. D'ARCY POWER gave a short demonstration, illustrated by the epidiascope, on *Early Books on Naval and Military Surgery*, from the society's library. He exhibited a *Silver penny struck by Thomas of Wesceham* at London, in the reign of Henry III. He was the first serjeant-surgeon of whom anything was known, and was granted a die to mint with by the king. He also showed a portrait of *John Arderne*, who was possibly at the battle of Crecy; an autograph of *William Clowes*, who served in Flanders with the Earl of Leicester in 1583, and in the fleet against the Armada in 1588; and portraits of *John Woodall* (1569–1643), author of *The Surgeon's Mate*, the text-book of naval surgery of the period; *Richard Wiseman*, who was attached to Charles I in the civil war; *John Ranby*, who accompanied George II at the battle of Dettingen and foreshadowed the formation of the R.A.M.C.; and *George James Guthrie*, the great surgeon of the Peninsular War in its later phases. The following officers were elected for the ensuing session: *President*, William Pasteur, M.D.; *Vice-Presidents*, David Lloyd Roberts, M.D., Sir StClair Thomson, M.D., Guthrie Neville Calcy, M.D., Walter H. H. Jessop; *Treasurer*, J. Mitchell Bruce, M.D.; *Librarian*, Arthur Francis Voelcker, M.D.; *Honorary Secretaries*, Sir John Broadbent, Bt., M.D., Hugh Lett; *Honorary Secretary for Foreign Correspondence*, Edmund Owen, LL.D.; *Council*, Donald Armour, Francis F. H. Bateman, M.D., Sir J. Bland-Sutton, M.D., W. Ironside Bruce, M.D., Edmund Cautley, M.D., Edred M. Corner, M.C., Sir David Ferrier, F.R.S., M.D., H. Morley Fletcher, M.D., Herbert French, M.D., George E. Gask, John Gay, M.D., Bruce E. Goff, M.B., John D. Malcolm, Herbert Pendlebury, Guthrie Rankin, M.D., James H. Stowers, M.D., Thomson Walker, H. D. Waugh, M.D., W. H. Willcox, M.D., Robert A. Young, M.D.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on May 7th, Dr. CLIPPINGDALE in the chair, Dr. H. J. F. SIMSON read a paper on some *New developments in the management of labour*. He began by pointing out how often it happened among married women of every class that when they came to consult their medical attendant they dated the beginning of their ailment from the last confinement. This went to prove that the methods generally practised left some room for improvement. With regard to the question of a painless labour, about which so much had been said lately in the lay as well as the professional papers, the use of morphine and scopolamine to produce the so-called "twilight sleep" were not so free from objection as many wished the profession and the public to believe. It was not free from risk either to the mother or the child. There was little doubt that the use of chloroform increased the risk of *post-partum* haemorrhage, and the after-effects were often so unpleasant that multiparae frequently preferred to do without the anaesthetic in their later confinements. However desirable it was to make labour painless, the fact remained that it was not yet possible to do this in all cases without risk. The greatest source of danger from external help lay in the possibility of puerperal infection. It was true that the absolutely sure way of preventing avoidable infection was to depend on abdominal palpation for diagnosing the position of the fetus, and if one waited until there was pressure on the pelvic floor before giving chloroform one could be more or less certain that the os was fully dilated. Before this stage of labour was reached, however, the patient often suffered a lot of pain; for instance, a slightly oedematous anterior lip coming down in front of the head often prolonged the last part of the first stage by half an hour or more, besides causing much pain. How much better it was to push the anterior lip up between the pains; this would, of course, entail passing the finger into the vagina. If one used trustworthy precautions it did not matter, within reason, how often one examined within the last half-hour. With regard to the risk from *post-partum* haemorrhage where means were taken to ensure painless delivery, either with chloroform or in the incomplete anaesthesia from scopolamine and morphine, the application of forceps at the end of half an hour's administration of chloroform got over the difficulty if the chloroform were combined with the early administration of scopolamine and morphine and a hypodermic injection of pituitrin shortly before the forceps was used. Dr. LEONARD DOBSON said he had given up the use of rubber gloves as he found it practically impossible to keep them sterile during the progress of the confinement. He now relied on thorough washing and sterilizing as for an operation, and the use of a bowl of antiseptic solution into which the hands were frequently dipped. His experience of morphine and scopolamine had not been satisfactory, and he had given up using it, especially on account of the effects on the child. He quite agreed as to the value of pituitrin given in the way Dr. Simson mentioned; the only drawback he had noticed was that occasionally the placenta was retained owing to the uterus contracting upon it instead of expelling it. With regard to chloroform, he made it a rule never to give it unless the os were fully dilated and one could reasonably anticipate the birth of the head in about half an hour. Dr. GEORGE CRICHTON said that his experience taught him that the application of the forceps should not be too long delayed—whether the prolongation were due to fatigue or to a slightly contracted pelvis. As to antiseptic methods, great care and thought were needed in even ordinary simple cases; in the matter of cleanliness nothing was to be taken for granted. Dr. CLIPPINGDALE gave some interesting details of historic confinements among certain royal personages. Drs. VERNON MONCKTON, SCHOFIELD, TURNBULL, and MALLAM also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting on April 9th, Dr. H. STOKES in the chair, Mr. W. I. DE C. WHEELER exhibited a case of *Ankylosis of elbow treated by capsulotomy*. There had been limited extension of the elbow-joint, the result of a fracture of the lower end of the humerus, caused by a bullet wound. The capsule was divided (capsulotomy) with a tenotome, introduced above the humeral condyles. When this simple procedure was carried out the arm "fell" into the straight position, and the patient now had unlimited flexion and extension. Mr. Wheeler thought that capsulotomy for impeded extension of the elbow-joint was the operation of choice in the majority of cases. Mr. Wheeler also showed a case of *Claw-foot treated by subcutaneous tenotomy*. All the flexor and extensor tendons of the toes, except that of the great toe, were divided. The tendon of the extensor longus hallucis was transplanted into the head of the metatarsal bone. Thomas's wrench, after the division of the tendons and plantar fascia, completely corrected the deformity. A point of interest was that the patient suffered from thyroid insufficiency, and an ununited fracture of the tibia and fibula united rapidly after the administration of thyroid extract. Mr. WALTER C. STEVENSON showed *Cases treated by radium emanation needles*. (1) A woman who had suffered from lupus for twenty-four years. She underwent *x*-ray treatment five years ago, and about eighteen months ago a scab developed and an ulcer formed, which went on increasing. In November, 1914, six needles were

inserted underneath the base of the ulcer for twenty-four hours, followed by two radiations in different positions. In about a month afterwards she was again radiated. In a few days she was able to work, and the ulcer was now completely healed. (2) A man from whose nose a piece of growth had been removed which proved to be a very malignant form of cancer. In the first instance, six needles were inserted above the orbital bone at 11 p.m., and at 7 a.m. they were pulled out about one-quarter of an inch, so as to radiate a greater area of the growth. At about 11 a.m. they were removed and reinserted in intermediate positions. About 1,251 millicurie hours of radiation were given in all. Since the radium emanation was inserted into the nose all obstruction had disappeared. In this case the haemostatic action of radium emanation was demonstrated by the fact that the nose could be cleared out after radiation without any bleeding, whereas before radiation bleeding was profuse. Mr. W. S. HAUGHTON gave an account of the different *Methods of localization of modern projectiles.* He then described the surgical procedures he advocated in the removal of foreign bodies and described fully a case he had recently under his care of a bullet lodged deep in the spinal muscles of the neck. Mr. M. R. J. HAYES agreed with Mr. Haughton that the most accurate method of localization was the Mackenzie Davidson method. In looking for fairly large foreign bodies, if one could get within 2 or 3 mm. there would be no difficulty in finding them. There were many foreign bodies which would be better left alone, and he had seen cases in which attempts at removal had done far greater damage than would have arisen had they not been interfered with. Referring to the interpretation of radiograms, he agreed with Mr. Haughton that no one was in as good a position to know the exact site in the limb of a foreign body as the radiographer. A point which should not be lost sight of in attempting to find a foreign body was the position which the limb was in at the time of localization, and it should also be remembered that the approximation of depth was always open to error, as the substance being dealt with was subject to alteration by gravity and pressure. Mr. W. I. DE C. WHEELER, Dr. HAYDEN, and Mr. BENSON also spoke, and Mr. HAUGHTON replied.

SECTION OF PATHOLOGY.

AT a meeting on March 19th, Mr. J. B. COLEMAN, President, in the chair, Dr. W. G. HARVEY read a note on the *Effect of radium on living tissues.* Mr. MAUNSELL brought forward a few specimens taken from cases of three different kinds, illustrating the effects of radium treatment. (1) An open ulcerating epithelioma in the mouth. Within forty-eight hours of the application of the needles the whole growth seemed to have softened. The next change noted was that the floor of the ulcer began to clear up and take on the appearance of more healthy granulation tissue; finally, the floor of the cancerous ulcer began to get covered over with epithelium. At no time was there any sloughing apparent. As far as could be seen the patient was still well. Microscopical sections made from the tumour prior to treatment were shown. It appeared to be a very actively growing cancer with a large number of mitoses. A second section was brought forward which was taken after treatment, which exhibited much lateral atrophy with practically a complete removal of the cancer. (2) A primary epithelioma springing from the branchial cleft. This was proved to be an active epithelioma. The place from which the specimen shown had been removed subsequently became patent, and after the application of radium the cancer sloughed out. The growth was now quite small, and he hoped that in a few weeks it would clear up altogether. (3) An active growing round-celled sarcoma in Scarpa's triangle in an old man. From the attachment of the growth operative removal was considered inadvisable, and the patient was therefore treated with radium. Three different applications were given, and in a few days the tumour diminished about one-third in size. The remaining part was afterwards cut down upon and shelled out. Mr. Maunsell mentioned that one pathological aspect of these cases was that if the needles were left in longer than twenty-four hours the skin presented the appearance of having been burned. This did not take place if the needles were left in for a less time than twenty-four hours. The only case that showed any reaction was that of cancer in the neck. With regard to the risk of thrombosis, the cancer of the neck was somewhat curious, as most of the needles must have nearly pierced the jugular vein, yet no harm resulted. The smallest dose given in these cases was 12 millicuries. After some remarks by Dr. WIGHAM, Dr. WALTER SMITH said that when *x* rays were first discovered they got their name because they were an unknown quantity; but an extremely important generalization had been made of late—namely, that *x* rays, gamma rays, ordinary spectral rays of sunlight, and the more recent Finsen light were all the same, and only differed in their wave length. The fundamental points for guidance were: (1) The identity of light with *x* rays; (2) the fact that these rays emitted electrons; (3) the application of these electrons was the determining factor in the effect of the rays. Dr. W. C. STEVENSON suggested that radium caused a good deal of fibrous tissue formation which might make removal of a growth very difficult. If a large amount of radium was applied one should be careful about operating on account of the liability of the patient to suffer from shock. He thought that thrombosis was very likely to occur when a large amount of radium was used, but he did not consider that there was much risk when small quantities were used. Drs. O'KELLY, M. J. R. HAYES, and BRONTE, and Professor METTAM also took part in the discussion, and Dr. W. G. HARVEY replied. Dr. W. G. HARVEY, in the absence of Dr. H. T. BEWLEY, showed a specimen of *Echinococcus cyst*, which turned up unexpectedly in a patient on whom an exploratory laparotomy was done for ptosis of the organs. The liver was pressed down very much. Dr. W. G. Harvey also showed a specimen of *Compensatory hypertrophy of the kidney*, taken from a man suffering from chronic interstitial nephritis. There was a history of a stroke, although there was no paralysis or any alteration in the knee-jerks. The patient was always somewhat of unsound mind. Remarks were made by Dr. O'FARRELL and Mr. MAUNSELL, and Dr. HARVEY replied.

SECTION OF ANATOMY AND PHYSIOLOGY.

AT a meeting on March 26th, Professor THOMPSON in the chair, Dr. W. G. SMITH demonstrated some *Tests for the detection of nitrites in organic mixtures.* Dr. O'CONNOR reported on experiments on the *Influence of temperature on the secretion of sweat*, which showed that active sweating appeared in the anaesthetized cat when the body temperature reached about normal, or the subcutaneous temperature of a portion of the body rose to about 43° C. Professor A. FRANCIS DIXON exhibited a *Proposed reconstruction of the lower jaw of the Piltdown man.* He believed that it was not necessary to assume a complete absence of the mental eminence, or an enormous development of the incisor teeth. Further, he did not think that the fragment indicated that the molar-premolar series of teeth was more nearly parallel to the mesial plane than is often the case in recent specimens. He had obtained the mandible believed to belong to a native of one of the Melanesian Islands, which exhibited many resemblances to the fragment discovered at Piltdown. From this specimen a portion corresponding to the Piltdown fragment was carefully cut away, and a cast of the Piltdown fragment was fitted to the remaining part. The manner in which the cast and actual bone so united formed a nearly symmetrical mandible was very striking. The alveolar part with the sockets for the teeth formed a symmetrical curve, and there was space enough for the recently discovered canine tooth should it prove to belong to the Piltdown skull. As the fragment of the mandible was the only part of the Piltdown skull which exhibited very striking peculiarities when the specimen was compared with the skulls of existing peoples, and as upon it alone the facial part of the Piltdown skull could be reconstructed, it became of supreme importance not to exaggerate its anthropoid characters. The reconstruction exhibited by Professor Dixon showed that these characters were not necessarily so marked as had been supposed. In reply to Professor THOMPSON, Professor DIXON said that the suggested reconstruction did not fit in with either Dr. Keith's or Dr. Smith-Woodward's. Professor BARCROFT read a communication on the *After-effects of the activity of organs.* He confined his remarks to the subject of skeletal muscle, stimulated so as to produce short tetani, and showed that the blood flow was increased for

some hours after the exercise, and that the amount of oxygen consumed by the muscle also increased, but this increase did not last so long as the vascular change, though the maximum of each occurred at the same time. Professor COLLINGWOOD read a paper on a *Method of determining the content of replaceable hydrogen ions in the urine and the bearing of this content on metabolism.* In reply to questions, he said the amount of CO_2 in the urine was negligible. He used phenolphthalein as an indicator.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Eye Injuries in Warfare.

AT the society's annual congress, held at the Royal Society of Medicine on April 22nd and two following days, under the presidency of Mr. F. RICHARDSON CROSS of Bristol, a discussion was held on eye injuries in warfare.

Mr. WALTER H. H. JESSOP, in introducing the subject, spoke mainly of the cases he had seen at St. Bartholomew's and No. 1 Base Hospitals. The steel or cupronickel mantle of the bullet was often chipped and a fragment might perforate the cornea or become embedded in it. The bullet's initial high velocity might be modified by ricochetting from a stone, and he had found that wounds so produced were more serious than direct ones. There had been a few instances of "spent" bullets entering the orbit and remaining there without bursting the eyeball; they were probably ricochet. The most distressing form of ocular injury, usually caused by enfilading fire, was that in which the missile traversed both orbits transversely. Already there had probably been about fifty such cases. If the wound was in the orbital roof, brain substance filled it up; and as sepsis could not be prevented, it was better to leave well alone. When the orbit and eyeball were much damaged it was better to foment the wound and keep it as clean as possible with sodium chloride solution, delaying removal of the eyeball until there was less inflammation, always bearing in mind the risk of sympathetic ophthalmitis if the fellow eye were sound. If both eyes were destroyed it was better to wait until the danger of sepsis was over, or at all events much reduced, before removing the destroyed eyeballs, owing to the risk of meningitis. He described an operation devised by Mr. W. T. Lister to obviate the need for opening the nerve sheath. Eyelid injuries he had found to be very common in this war, almost always accompanied by injuries of the eyeball. Usually the lids became very oedematous, so that the insertion of sutures into them was contraindicated. Conjunctivitis did not seem to have been prevalent in this war. In the Franco-German war 55 per cent. of cases of eyeball injury developed sympathetic ophthalmitis; in the American Civil War the percentage was 16.14. That he had not yet seen a case of the kind in this war he attributed to the great care exercised in diagnosis and treatment, and especially to early enucleation of a ruptured globe. The bullet and shrapnel wounds of the skull vault were generally depressed. Papilloedema was very frequent in such cases; the appearances were those associated with pressure. Papilloedema was probably present in all cases of vault injury in which the intracranial pressure was increased. Fractures of the skull near the occipital lobes were often accompanied by hemianopsia. There had been many cases of complete blindness following severe explosions, but sight returned at varying periods up to a week. They were all bilateral cases. Some of these patients were deaf, a smaller number were dumb. Three had extreme blepharospasm lasting days.

Colonel W. T. LISTER, whose contribution was submitted by Mr. JESSOP, grouped ophthalmic cases from the war as follows: Contusions, wounds, cases with foreign body in the eye, functional cases, head injuries. In concussion cases, if the bullet did not pass through the orbit, the fundus showed no concussion changes. Ruptures of the choroid were fairly common, and might be star-like, or arranged in definite groups. Other parts of the retina showed some pallor, due to *commotio retinae.* Penetration of the eye by small foreign bodies was a very unsatisfactory injury to deal with. Many such particles did not give an appreciable *x*-ray shadow; moreover, some fragments were non-magnetic. Two factors made the poor outlook in operation worse: (1) The presence, often, of more foreign bodies than had been diagnosed; (2) the friability of foreign bodies, resulting in their being broken when seized by the forceps. Even when an eye contained a foreign body, if there were no prolapse or entanglement of the uvea or lens capsule, he regarded the risk of sympathetic ophthalmitis as *nil.* Though the eye would probably degenerate, useful vision might persist for a considerable time. But if irritative signs did not abate he would remove the eye. Some striking instances of functional cases were cited. Of the cases of head injury, 50 per cent. were found to have papilloedema, though two-thirds of them had nothing beyond blurring or slight swelling. The greatest degree of swelling was found in association with cerebellar abscess. He did not attach much importance to haemorrhages or exudations, and papilloedema did not point to the need for immediate operation; the significant factor was increasing swelling. Cases of occipital injury were of very great interest, as a study of them might cast important light on the cortical representation of the fundus. The conclusions arrived at by Dr. Gordon Holmes and himself, based on the examination of a number of cases, were: (1) When the lesion was over the occipital cortex of only one side, the result was either hemianopsia, or homonymous quadrantic defect on the opposite side; (2) when the projectile passed through both occipital lobes, complete blindness occurred first, but in several cases this cleared centripetally after an interval varying from hours to days, leaving a central scotoma.

Captain A. W. ORMOND'S paper on the same subject related three cases of traumatic amblyopia following the explosion of shells. The first was of a soldier who was wounded in the retreat from Mons. He recovered entirely after complete rest and "feeding up." A second case was associated with an error of refraction which had led to the idea that recovery had not taken place; while the third patient had not yet regained his former sight, though wounded more than three months ago. It was important in these cases to take the psychology of the men into consideration. He described the frequency of "explosion injuries" peculiar to the war, the result of hand-grenades, shrapnel, or high velocity shells. Numerous cases had occurred in which, as the result of a general explosion, small fragments of metal or dirt had been forced through the tunics of the eye; these had sometimes been overlooked, and later, the man having complained of pain and inflammation, iritis had been correctly diagnosed, but the possibility of a foreign body being in the eye had not previously been realized, so that sympathetic trouble might have occurred. He related two cases in which the speedy removal of the eye prevented sympathetic trouble supervening. In regard to the vexed question of removing an eye containing a foreign body, he deprecated a dogmatic attitude, as each case must be separately considered. He discouraged relying solely on the results of *x*-ray examination, because in several cases the foreign body was not discovered until a second or third radiogram had been taken; sometimes not even then. The history, the nature of the inflammation (if any), and the amount of vision should be taken into account in arriving at a decision. Short notes were given of 28 blinded soldiers, most of whom were now at St. Dunstan's, Regent's Park; 13 of them had been left with no perception of light at all; and the sight of those with vision ranged from mere perception of light to ability to count fingers in one part of their field; 18 were the victims of bullet wounds, which, for the most part, traversed the front part of the head from side to side; 4 were wounded by shrapnel, 1 by a hand grenade, and the others by some explosion, the exact nature of which the men did not know; one, however, was due to a bullet hitting the magazine of the man's own rifle, which exploded in his face. The author remarked on the extraordinary malignancy of these bullet wounds, several of the men when looked at appearing absolutely fit, often with both eyes intact, the scars of entrance and exit wounds being almost impossible to locate. Captain Ormond also gave an account of a serious corneal ulceration due to the gonococcus, caused probably by infection from a towel which had been in general requisition. Partial recovery ensued.

Reviews.

PROBLEMS OF EPIDEMIOLOGY.

THE question is often raised, but not often perhaps conclusively answered, whether the diseases from which men suffered in earlier centuries were in all respects the same as those supposed to correspond with them now. This problem, among others, is dealt with in Dr. NASH'S *Evolution and Disease*,[1] and, upon the whole, answered in the negative. The author is a bacteriologist with experience of preventive medicine, and therefore writes from a practical as well as theoretical standpoint. It would, we think, be an exaggeration to assert that he has proved his hypothesis, but he certainly adduces many reasons, both from his own observations and reflections and from those of other workers in the field of epidemiology, for doubting the current assumption that morbific organisms invariably breed true and produce identical symptoms, without much, if any, modification by their common soil and environment. It is, of course, generally admitted that in degree of virulence bacteria do vary according to the favourable or unfavourable conditions they encounter in the host, but Dr. Nash believes that the hard and fast lines drawn between certain specific diseases—for example, diphtheria and scarlet fever—are of questionable ultimate validity, and that many supposedly distinct clinical entities have a common origin, proximate or remote. He believes, that is to say, that the variability of bacteria is, in respect of the symptom-complexes they produce, qualitative as well as quantitative, and in both ways highly sensitive to environmental determinants of every kind.

The early chapters of the book contain some interesting particulars in regard to the epidemics of the Middle Ages. The Black Death, or plague, in both the bubonic and the pneumonic varieties, first appeared in England in 1348, and, spreading rapidly, was noted in Ireland in the following year. From the year of this great outbreak it was endemic here for three centuries, with occasional recrudescences of a semi-epidemic nature. The author lays little stress on the alleged Eastern origin of the disease, and agrees with Creighton that "the hypothesis of one single source of the plague, in an unbroken series of cases *ab avo*, *ab ovo*, is the merest verbalism, dictated by the curious illusion that a species of disease, because it reproduces itself after its kind, must resemble in other respects a species of living things." He thinks that under the stimulus of the insanitary conditions produced by life in monasteries and walled cities, the soil having become choked with the waste matter of generations, the causal organisms may have evolved from some pre-existent stock, such as the colon bacillus.

Late in the fifteenth century was first recorded in England the outbreak of a disease which Dr. Nash regards as a connecting link between mediaeval and modern epidemics. This was "the sweating sickness," the described symptoms and even the nicknames of which, such as "Stoupe knave and know thy master," "stop-gallant," etc., are strikingly suggestive of the influenza of to-day. A century later there was a pan-European epidemic of influenza which was thought to be the "English sweat" come back. Space forbids reference to many other topics dealt with in this very interesting and suggestive book. We hope that in a future edition it will be printed in larger and clearer type.

SCHOOL HYGIENE.

FEW medical men in ordinary practice fully realize, perhaps, the scope and interest of the work that falls to the lot of their brethren in the school medical services. Perusal of such works as the annual reports of the medical officer of the Board of Education or of the school medical officer of the London County Council Education Committee would give a fair idea of the variety of current duties and inquiries undertaken by the school doctors, but for the complete survey of the whole field the inquirer must study a work such as the big volume edited by Professor HUGO SELTER of Bonn.[2] It deals with German school hygiene, but the problems of the school and of the scholars are much the same the whole world over, and the difficulties that arise in regard to the health of the teachers from the nature of their work are the same; such variations as must be allowed for in the application of generally recognized principles are less marked between the practice of different countries than between their application to the town on the one hand and the village on the other, whether in this country or in any other land.

The school doctor must have some knowledge of architecture, of the principles of good ventilation, of lighting (natural and artificial), of books, their print and paper, and even their binding; of writing, drawing, and handicraft, and the influences these severally exert on the habits and attitudes of the children; of teachers, their training, their work, and the strain of the work on their general health, and in particular on their voice and temper; of the children under their care, their hours of work, their clothes, their food, their general ailments, their cleansing, and in particular the disturbances that may arise from defective eyes, teeth, ears, and limbs; of hours of work and play, of the effects of fatigue on the healthy and enfeebled, of the effects of epidemic fevers upon school attendance, and of the effective modes of checking their ravages. Last, but not least, he must have a knowledge of children who are mentally defective, and the mode of dealing with what intelligence they may have to the best advantage. His knowledge of this wide range of work must be no mere surface smattering, but a real working knowledge—one on which active measures may be taken; and above all he must so hold it as to be able at any time to give a reason for the hope that is within him to all and sundry of the inquiring laymen who temporarily lord it on his Education Committee.

This wide range of work has come to him because in a great measure the efforts and researches of his professional forbears have made the science of school hygiene what it is, and that achievement is no mean credit to the medical profession. The capacity for detail and for broad organization that this work entails is a flat contradiction to the oft repeated assertion that the medical man is no business man. Maybe he is too often careless of his own private interests, but the interest of his work is his real business, and consumes his energies.

The volume issued under the aegis of Professor Selter is the product of the pens of no less than eight authors. It is, perhaps, not to be wondered at that there should be inequality in the way the subjects are dealt with. There is sometimes a lack of agreement that might with advantage have had the modifying attention of the editor. Some authors spin their phrases into interminable length and complexity, whilst others attempt to cover too wide a field, so that they fail to give a sufficiently good summary of their subject. For example, Professor von Drigalski attempts to deal with all the diseases of school children, special and general, in no more than 127 pages. But perhaps it is a good sign that in a handbook of school hygiene mere medicine should have scant space.

There is no book of this size and scope published in the English language. There are some small and good manuals, the work of single authors, but nothing that can give any adequate idea of the work of British school medical services. Yet an immense amount of excellent original work has been done, and is being done, in our islands, which is well worth collecting into a representative textbook. Is it too much to hope that some one of the several city companies which annually set aside a portion of their resources for the work of scientific research should look on such a proposition as this with a favourable eye? A British book of school hygiene would be an inestimable boon to the coming generation, but it is a work that cannot be run as a commercial speculation.

A GREAT EXPLORER.

WHEN the news of the heroic death of Captain Scott and his companions first reached England, there were many people who, whilst yielding to none in admiration of their courage, yet deplored what seemed to them a useless waste of life, and wondered what good end it could serve. In the history

[1] *Evolution and Disease.* By J. T. C. Nash, Captain R.A.M.C.(T.F.), S.S., D P.H.Camb., M D.Edin., etc. Bristol: John Wright and Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. Toronto: The Macmillan Company of Canada. Ltd 1915. (Demy 8vo, pp. 81. 3s. 6d. net.)

[2] *Handbuch der deutschen Schulhygiene.* Herausgegeben von Professor Dr. med. Hugo Selter. Dresden und Leipzig: T. Steinkopff. 1914. (Sup. roy. 8vo, pp. 767; 149 figures. M. 28, geh.; M. 30, Leinen geld; M. 32, ½ Leder.)

of every human endeavour there have always been, and probably always will be, a small number of short-sighted critics who hold all effort to be wasted that is not crowned with success, and to whom "the higher glory of unshaken defeat" means nothing but failure. Yet even to them the story told by Mr. CHARLES TURLEY in his *Voyages of Captain Scott*[3] can hardly fail to be a source of pride and inspiration. This simple record of unwavering courage and self-sacrifice is remarkable even in days when the heroic virtues seem the natural attributes of mankind; and the little group of explorers—"this band of brothers"—who accompanied Scott to the desolate regions round the South Pole and calmly and even gaily faced death by his side, will live for ever in the memory of their countrymen as examples of the heights to which human nature may rise and the magnificent response it is capable of making to the call of duty.

Mr. Turley recounts in detail the story of the two expeditions which have made Scott's name a household word in his native land. Up to the time when Sir Clements Markham put him in command of the *Discovery* Scott was unknown to the general public, though all who came in personal contact with him seem to have been aware that he was something more than a young naval officer of unusual promise and ability. Sir Clements Markham, in particular, who had known him as a midshipman, had been greatly impressed by his abilities, and Scott's offer in June, 1899, to lead the proposed expedition to the Antarctic, was fully in accordance with his own desires. Sir Clements's choice was vindicated by the successful issue of the expedition. After long delays the *Discovery* left England on July 31st, 1901, and on January 3rd of the following year crossed the Antarctic circle. Nearly three years were to elapse before her return to home waters; and during that time Scott had successfully taken the survey and soundings along the Barrier cliffs, examined the Barrier surface, and discovered Ross Island and other volcanic isles, King Edward Land, the Victoria Mountains, and the great ice cap on which the South Pole is situated, truly "one of the most remarkable Polar journeys on record." The finding of new territory, however, was not the only nor the most important result of the expedition. Nothing was known of Antarctic travelling at that time, and the men of the *Discovery* had to find out by bitter personal experience how to live and travel in this unknown land. "Scott," says Sir Clements Markham, in his preface to the second part of the book, "was the initiator and founder of Antarctic sledge-travelling," and there is little doubt that the mistakes of the first expedition, costly and unpleasant as they were, made an enormous difference to the comfort and usefulness of the second.

The object of the second expedition, apart from the actual finding of the South Pole, were mainly scientific. Scott had with him on that occasion a fuller complement of geologists, biologists, physicists, and surveyors than had ever before accompanied any Polar expedition; and though they were forestalled in actually reaching the Pole by Amundsen, science has gained enormously from the meteorological, magnetic, and tidal observations taken during their residence in the Antarctic. The details of the last expedition are too well known to need repetition here. It is enough to say that it has found a worthy historian in Mr. Turley, who tells the story of the ill-fated and gallant race with the Norwegian party in a very simple and dignified manner, with copious extracts from the diaries and letters of the chief actors in it. Some of the letters found on Scott's dead body are included, and from them the reader gains a clearer knowledge of his character. In nothing, perhaps, is the full beauty of a singularly sweet and noble nature revealed as in these quiet farewells to all the writer held dear upon earth, written when the hand of death was already heavy upon him, and poignant in their simplicity and unconscious pathos. One to whom the dying man's thoughts turned with affection at the last has raised for an instant the veil that hid Scott from the outer world, and given us a glimpse of the man himself as apart from the famous explorer. Sir James Barrie's preface is a fine memorial to a very brave and chivalrous gentleman, and a fitting tribute to the close and intimate friendship which united the two men.

[3] *The Voyages of Captain Scott.* Retold from *The Voyage of the Discovery* and *Scott's Last Expedition.* By C. Turley. With an Introduction by Sir J. M. Barrie, Bt. London: Smith, Elder and Co. 1914. (Post 8vo, pp. 440. Illustrated. 6s. net.)

NOTES ON BOOKS.

The Fifth Edition of the Pharmaceutical Pocket Book,[4] published by the Pharmaceutical Press, contains a large amount of matter of use to pharmacists and dispensers; much of it is the same that has appeared in previous editions, such as a treatise on the science and art of dispensing, materia medica and dose tables, synonyms, Latin abbreviations, weights and measures, etc., and short, useful chapters on the analysis of water, milk, and urine. The new section of the book deals with alterations in the *British Pharmacopoeia*, which are summarized in a series of short notes, and are accompanied by a set of equivalents in which the galenical formulae of the Pharmacopoeia are given in imperial weights and measures as well as the metric quantities used in the official book. The whole makes an excellent and convenient handbook of small size.

We have received copies of the second edition of *Botany*, Part I, and *Medicine*, Part II, and the first edition of *Operative Surgery*, Part II,[5] publications forming part of Livingstone's "Catechism Series." The third includes amputations, operative treatment of fractures, and operations on the head and neck—namely, exposure of the facial and other nerves, trephining, removal of cerebral and cerebellar tumours, curetting, etc., and growths in the pituitary body, cheiloplasty and staphylorrhaphy, amputation of the tongue, pharyngotomy, tracheotomy, thyrotomy, laryngectomy, oesophagotomy, and extirpation of thyroid growths. When we compare this catechism of operative surgery with similar manuals and "aids" published thirty years ago, we cannot fail to be struck by the progress which surgery has made, and the great amount of extra knowledge which the student is expected to acquire. Even in the once popular treatises, such as Erichsen's and Bryant's, where surgery was taught more fully than in a "catechism," we did not find details of the steps of complete laryngectomy, exposure of the hypophysis cerebri, which involves preliminary tracheotomy and plugging of the pharynx, or exploration of the cerebellum to locate and remove a tumour.

Dr. HENRY EDWARD JONES of Govan, Glasgow, gives his readers in *Our City Slums*[6] some highly graphic descriptions of the grim holes and corners of great cities into which the disinherited and the improvident gravitate. Dr. Jones is careful to confine himself to his subject, without dwelling on quarters of a town where there may be much destitution yet none of the repulsive attributes of a slum. "All the poor are not in slums, yet all in slums are miserably poor." The stories of the five visits which form the main part of his pamphlet are addressed respectively to lords and ladies, to "generous factors, who forget to ask the rent," to directors of charitable institutions, to ministers of religion, and to organizers of benevolent institutions. The author admits that it is useless to remedy the evils which he describes by simply pulling down the slum buildings. As to the residue of persons hopeless for reform, he expresses the opinion that inhabitants of "rowdy" areas not amenable to treatment should be placed, as incurable, under the observation of the law.

[4] *The Pharmaceutical Pocket Book for Practitioners and Students.* Edited by John Humphrey, Ph.C., F.J.I. Fifth edition. London: The Pharmaceutical Press. 1915. (16mo, pp. 360. Price 1s. 6d. net.)

[5] *Botany*, Part I, *Medicine*, Part II, second editions; *Operative Surgery*, Part I, first edition. Catechism Series. Edinburgh: E. and S. Livingstone. 1914. (Cr. 8vo, illustrated. 1s. net each.)

[6] *Our City Slums; The Experiences of a Medical Practitioner.* By H. E. Jones, M.B., C.M.Glasg. Glasgow: J. Cossar. 1914. (4 in. × 5½ in. pp. 97. 6d. net.)

WAR WORK OF THE MEDICAL RESEARCH COMMITTEE.

ON May 11th Sir Henry Craik asked a question in the House of Commons as to the nature and amount of assistance rendered by the Medical Research Committee. The answer has promptly been given by the Secretary of the Committee, Dr. W. M. Fletcher, whose report has been issued as a White Paper. The work of the Committee is summarized under various headings.

Mount Vernon Hospital.

The Mount Vernon Hospital building at Hampstead was placed at the disposal of the War Office on the outbreak of

war, and for some months has been in use as a military hospital.

Statistics.

The Statistical Department of the Committee, under the direction of Dr. John Brownlee, is now, on behalf of the Army Council, compiling the statistics of the sick and wounded from the military forces. These statistics, which will later be analysed by the department, will, it is believed, have a value beyond their immediate military purpose in providing information as to the health and stamina of the male population of these islands. The services of Dr. Brownlee and his assistants have also been lent for a statistical investigation of the male population of the German Empire and its present distribution.

Pathological and Bacteriological Research.

The Committee has assisted the War Office in supplying pathologists and bacteriologists for work at military hospitals in this country. Grants have been made for special apparatus, for part-time work by pathologists, and in certain cases for the equipment of laboratories in military hospitals for routine work or special research or both. The whole services of the Committee's Bacteriological Department under Sir Almroth Wright have been applied to purposes of military importance. During the first month of the war very large quantities of antityphoid vaccine and antisepsis vaccine were prepared, and have continued since to be supplied by the Inoculation Department of St. Mary's Hospital, to the Admiralty, the War Office, and the French and Belgian armies. In September Sir A. Wright was appointed Consulting Physician to H.M. Forces Overseas, and with Captain Douglas and Lieutenant Parry Morgan made researches bearing on the treatment of wounds, the preliminary results of which have been published. A memorandum as to the application of these results in practice has been circulated to all medical officers with the forces at home and abroad. Besides maintaining three members of Sir A. Wright's staff in work under his direction at the Inoculation Department of St. Mary's Hospital, the Committee proposes shortly to add to his staff at Boulogne two senior bacteriologists to follow special lines of research in connexion with his work.

Cholera.

Dr. John Freeman was sent by the Committee last autumn to Galicia to investigate the various strains of cholera infection, endemic or epidemic, and to bring back to this country cultures of the chief strains which might be available for the preparation of vaccines in view of the possibility that infection might be conveyed to the Allied Forces in the Western theatre of the war. The results were placed at the disposal of the St. Mary's Inoculation Department, which has already supplied large quantities of anticholera vaccines to the Serbian Government and to the British forces in the Mediterranean area.

Bilharzia.

The committee is also supporting by grant from the Medical Research Fund the expenses of inquiries near Cairo by Colonel Leiper and two assistants, on the application and results of recent discoveries regarding the life-history of the species of bilharzia which is endemic in the Nile delta. These inquiries have special reference to the prophylactic measures to be taken for the protection of the forces.

Typhoid and Paratyphoid Infections.

Grants have been made for work at Oxford under the direction of Professor Dreyer for the development and application of methods of getting accurate measurement of the agglutination reaction in typhoid and paratyphoid infections and for the study of the action of light rays of particular wave lengths used for the separation of *Bacillus typhosus* or *paratyphosus* in mixtures of these with other organisms. In view of the results of this work the Committee is supporting the simultaneous study of the same methods at Boulogne, London, Leicester, and Netley. Investigations of similar problems connected with these infections are being supported at Manchester under the direction of Professor Delépine. The Committee is establishing at Oxford, under the direction of Professor Dreyer, a department for the regular standardization of emulsions and serums for agglutination tests. The standard emulsions and serums will be supplied to military hospitals for the convenience of bacteriologists and for the better co-ordination of results obtained by different observers.

Antiseptics.

At Leeds the Committee is supplying assistance to Professor Cohen for the preparation of new chemical substances of antiseptic value. Professor Cohen is working in conjunction with Dr. Carrel and Dr. Dakin, who are making clinical observations in France. At the London Hospital Medical College the Committee is supporting the joint investigation by Dr. Fildes and Dr. Rajchmann, with Mr. Cheatle, at Haslar, into certain compounds of antiseptic value. At Edinburgh special inquiries into antiseptics and into the infections of wounds, under the direction of Professor Lorrain Smith and Professor Ritchie, are in progress.

Epidemic Cerebro-spinal Meningitis.

The Committee is supplying the War Office with the services of Dr. M. H. Gordon, temporary Major, who is directing the whole of the routine bacteriological work undertaken in this country in connexion with the study and control of this disease among the military forces. The Committee has made grants to provide two assistants for Major Gordon at the central laboratory for cerebro spinal meningitis established at the Royal Army Medical College, Millbank, and has further supplied assistance at Woolwich, Brighton, Exeter, Newcastle-on-Tyne, Cambridge, Manchester, Cardiff, Bristol, and Devonport, for the completion of the whole scheme of distribution of workers organized by the War Office. The Committee has initiated special research work by Dr. Colebrook and Dr. Tanner into the methods of sterilizing positive "contacts"; this is being carried out in the research wards supported by the Committee in connexion with the Inoculation Department at St. Mary's Hospital. Another investigation into certain questions of the mode of infection and of spread of the disease is also in progress at the Millbank laboratory.

Neurological Cases at Military Hospitals.

The Committee has endeavoured to arrange for the better co-ordination of the study and description by trained observers of neurological cases at military hospitals. In conjunction with workers abroad, neurologists in London and at several provincial centres are now working upon a common plan, the Committee providing certain printed forms, diagrams and apparatus. A card index is being compiled for reference to the full clinical records in individual hands. Grants are being made for part-time work by five or six uncommissioned physicians for assistance in the study of these cases.

Wassermann Tests.

Arrangements have been made for Wassermann tests to be made at a central laboratory for cases in certain military hospitals where the necessary facilities are lacking.

Testing of Salvarsan Preparations.

The direction of the biological testing of salvarsan preparations manufactured in England and France and sold in this country under licence of the Board of Trade has been undertaken by the Committee at the request of the Board.

Miscellaneous Questions.

Upon request from Colonel Sir William Leishman in his capacity of Adviser in Pathology to the Expeditionary Force, reports have been obtained from expert sources upon particular questions, or special inquiries instituted, and the results have been, or will be, transmitted to him for use. Among the subjects already dealt with have been "trench rheumatism," prophylaxis for dysentery, and the prevention of fly-borne diseases. The Committee has made arrangements to assist medical officers working overseas in following the after-history of certain groups of cases after arrival in this country.

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CHOLERA AND THE DARDANELLES.

IN our issue of May 8th (p. 813) the importance of realizing the dangers to which our troops in Turkey may be exposed from cholera was pointed out. It will be of some interest to our readers to consider the epidemiological facts which point to the existence of special risks in the south-eastern theatre of war.

The Ottoman Empire is liable to be invaded by cholera from two directions: from the southern governments of Russia, and through Syria. Whether we may regard any part of the Russian Empire as an endemic focus of cholera in the strict sense of the word is rather an academic point; but at least it is certain that few years pass without serious outbreaks. The sites of election are the shore of the Caspian Sea and the course of the Volga; from this region the disease may or may not spread widely through the empire. It is likely that the endemic foci, if such there be, are reinforced at frequent intervals from India overland through Persia. We may note that in the eighty-one years from 1831–1912 Petrograd suffered from severe epidemics in 1831, 1848, 1853, 1866, 1871, 1892, 1894, 1906, and 1910, while in only forty-six of the years was the capital free from cholera (Sticker). In 1904 there was much cholera in the southern governments and, after the usual winter pause, some recrudescence in the spring of 1905, but the wet summer of that year was apparently unfavourable to the spread of the disease. In 1906, again, we have evidence of outbreaks synchronizing with an alleged heavy incidence in Persia.

In the year 1907 there is some reason to suppose that the important epidemic in the Hedjaz, which began in December and, between January and March, 1908, caused upwards of 25,000 deaths at Mecca and Medina, was due to infection from Russia; it appears at least to be established that before the outbreak cholera was found at Sinope among pilgrims in transit from Odessa. In the years 1908–9 cholera was epidemic in Russia, while in the summer of 1910 the southern governments were heavily infected; thus in Ekaterinoslav the cases were close on 19,000, the returns for the whole empire amounting to about 230,332 cases with 109,560 deaths. It is thought that the outbreaks in Italy of that and the following year may have been due to the arrival of Russian gipsies at Brindisi, and there is reason to suppose that Turkey was infected from Russia.[1] It will be seen that there is abundant material for infection from this side. No doubt the cessation of commercial intercourse between Russia and Turkey will reduce the opportunities of infection, while the practically uniform military failures of the Turks in their campaign on the Russian frontier do not suggest that they are likely to run risks owing to the capture of large numbers of prisoners. On the other hand, the history of cholera as an epidemic disease does not entitle us to put much faith in limitation by quarantine or frontier closing methods.

[1] In 1910, 4,630 cases, with 3,059 deaths, were officially recorded in Turkey.

Turning to the other route, by way of Syria, we must examine the line of transit. As is well known, the sacred cities of Mecca and Medina attract large numbers of pilgrims. Those from the north land at Yambo on the Arabian coast and visit Medina first. Those from the south arrive at Jeddah, proceed thence to Mecca, travel northwards to Medina (a twelve days' journey), retracing their steps after a short stay in order to be present in Mecca during the festival of Kurban Bairam with which the Haj terminates. Of the two recent epidemics respecting which we have particulars, that of 1902 was the less severe in its local effects, but the graver in consequence of its extension to Egypt, while the outbreak of 1907–8 caused more deaths locally. Another distinction is that in 1902 infection probably arrived from the south, while in 1907–8 it may have come in from the north. In the former period the number of deaths recorded at Mecca between February 20th and March 8th was 1,389, 348 were reported in Medina, and 243 at Yambo.[2] A curious point is that most of the earlier caravans did not suffer until a village about half-way between the holy cities was reached, although eventually the whole route was infected. From the Hedjaz the disease spread northwards into Syria, southwards into Assyr and Yemen, westwards into Egypt. Cases were found in Mousha, a little to the south of Assiout, in July, and by the end of the year some 40,000 cases with 34,000 deaths were recorded. In Syria there were at least 4,700 deaths, the majority in the Mutessarifate of Jerusalem. In the winter the Syrian epidemic came to an end, but reappeared in March, 1903, at Damascus, spreading widely through the vilayet of Syria proper; 7,823 cases with 5,483 deaths were officially reported, but these are almost certainly underestimates. In January, 1904, cholera was at Bagdad, and in March at Bassora, but we cannot regard these outbreaks as direct survivals of the 1902 introduction, but rather as extensions from Persia, which may have been previously infected from Syria.

With regard to the 1907–8 outbreak in the Hedjaz, we have fewer particulars.[3] It appears that the epidemic began on December 13th, four weeks before a great festival; that during the feast 4,739 pilgrims died, and that the total mortality of 25,000 was mainly contributed to by the inhabitants of Mecca and Medina. We are not acquainted with any work describing the subsequent geographical extensions of the epidemic. This description will suffice to show the possibility of infection from the south, and it is to be observed that, so far as we are aware, the usual pilgrimages to the Hedjaz will be made, while it is even possible that preoccupation with other matters may render effective supervision more difficult than ever. Naturally, in view of the war, what modicum of sanitary supervision may have been exercised by the Ottoman Government over their Asiatic provinces in normal times is likely to be reduced to vanishing point. On the whole we should surmise that the southern danger is the greater under existing circumstances.

In our previous article we noted the facts respecting the outbreak of cholera during the Balkan war. To the particulars there recited we may add that, in the opinion of some, the epidemic among the Bulgarian troops before the Chataldja lines, which cost them between 16,000 and 30,000 men, saved

[2] See Clemow, *Trans. Epidem. Soc.*, 1903-4, xxiii, p. 223.

[3] Sticker, *Die Cholera*, Giessen, 1912, p. 126. This author cites Izzedine as his authority for the facts of the Mecca outbreak, but the appended bibliography does not contain a reference. The English Consul at Jeddah estimated the deaths at 21,000 (see report of Medical Officer of Health of Local Government Board for 1908-9, Appendix A No. 2, p. 53).

Constantinople from capture.[4] We may probably assume that the disease was communicated to the Bulgarians from the Turks, and the former seem to have adopted no sanitary precautions worth mentioning. There was extensive faecal contamination, and few, if any, of the troops washed themselves.

It may almost be said that the very military situation which we all hope will arise is precisely that likely to afford cholera an opportunity—namely, the rapid pursuit of a beaten and demoralized foe. This is what led up to the Bulgarian outbreak and to that in the Greek army, and the possibility should be steadily borne in mind during the coming summer. Another point to be noticed is that measures directed to the detection and destruction of the cholera vibrio do not exhaust the possibilities of action.

Hardly any one in this country endorses the extreme views of Sticker, who is an ardent advocate of Emmerich's nitrite hypothesis, and never loses an opportunity of disparaging the bacteriological view of epidemic cholera. But at the same time no thoughtful student of epidemiology can doubt that the formula of the disease is not summed up in the presence or absence of the vibrio. Without the vibrio we shall certainly have no outbreak, but the mere presence of the organism is not sufficient to generate the disease in epidemic form. There has unquestionably been some apparent correlation between the nature of the soil and the prevalence of the disease—a fact upon which stress was put by Pettenkofer and, of course, Emmerich and Sticker. The fact is susceptible of a variety of interpretations, but it must be borne in mind by those responsible for the movement of troops.

The danger of flies, to which we alluded in our previous article, is one which is not likely to be neglected. Again, the existence of healthy "carriers" is beyond doubt. The length of time during which the vibrio can be recovered from the stools of convalescents is variable. V. Stühlern (1909) gave ninety days, Jakowleff fifty-seven days, Bürgers sixty-nine days. Montefusco (1910) obtained positive results in 46 per cent. from ten to fifteen days, in 21 per cent. from fifteen to twenty, in 10 per cent. from twenty to twenty-five, in 10 per cent. from one to ten days, while the remainder fell between thirty-five and seventy-eight days. The percentages of healthy contacts excreting vibrios vary. Taking the case of arrivals from districts not known to be infected, of 5,200 healthy persons examined in Prussia on the Russian frontier in 1910, 3 were "carriers"; in Holland during the same year, of 7,338 arrivals from suspected Baltic ports 7 were "carriers." In Naples, of 2,000 intending emigrants 12 were "carriers." The proportions are much higher in epidemic times, so many as 6 per cent. being found at Petrograd during the epidemic of 1910, while much higher percentages have been recorded in Austria and Roumania but based upon small absolute numbers. The duration of the healthy "carrier" condition does not usually exceed three weeks; thus of 577 "carriers" at Petrograd, only 24 still persisted after three weeks, but rare instances are known of more than six months' duration (Gaffky, Janssen, Sparmberg).

The epidemiological importance of "carriers" is at present indeterminate, and, as we have remarked, the presence of the micro-organism is only one, although an essential, factor of the disease. But since we have good grounds for supposing that the other factors may be present within the field of operations, it is desirable to know the present distribution of cholera within the Turkish empire. So far as we are aware, the necessary data are unattainable, but we can form some notion of the distribution of cholera before the war. The following statistics are taken from the bulletin of the Office International d'Hygiène Publique (January, 1915), but it is to be remembered that Turkish statistics are seriously defective, and the figures are consequently minimum values. In the district of Constantinople 221 cases, with 99 deaths, were returned between August, 1913, and July 25th, 1914; 196 other cases were reported from the rest of the empire—110 of these among the troops at Adrianople between February 28th and May 19th. That this is an understatement is shown by the fact that 94 were fatal—an improbably high case mortality. It may be added that from September to December, 1914, there were 3,633 cases in Austria and 3,600 in Hungary. From December 27th, 1914, to March 6th, 1915, Austria had 244 cases. The figures for Hungary from January 11th to February 7th were 183. No recent figures for European Turkey are available, but there were 50 cases, with 15 deaths, at Bagdad in the month of January last.

A plan of campaign against cholera should, we think, include the organization of an intelligence department charged with the collection of particulars respecting the previous history of those districts likely to be occupied by the troops, since this is a matter of considerable importance; and, of course, careful inquiry in the case of sick or wounded prisoners is essential.

While it is impossible to assess the probability of an outbreak occurring, the paralysing effect of such a calamity upon military operations makes it imperative to neglect no possible precautions.

[4] Eckert, *Berl. klin. Woch.*, 1913. 1, p. 2326.

SELF-MUTILATION BY SOLDIERS.

A PRIVATE in the 4th Royal Dragoons has just been tried by a district court-martial at Devizes for chopping off his thumb with the object of avoiding military service, and found guilty. Readers of Zola's *La Terre* will doubtless remember the action of the lad who, having drawn a "bad number" in the conscription list, deliberately cuts off the trigger finger with his pocket knife with the same purpose. Self-mutilation by soldiers, especially conscripts, who wish to escape the hardships and dangers of war is a possibility that has always to be borne in mind by medical officers. But great care should be exercised in distinguishing such deliberate mutilation from wounds which are the casualties of battle or the result of accident. A soldier may hurt himself or a comrade through clumsiness in handling his weapons or in the excitement of fighting.

A classical instance of this kind of problem occurred in Napoleon's German campaign of 1813. The proportion of wounded among the French soldiers after the battles of Lutzen and Bautzen struck the Emperor as being out of proportion to the number of troops engaged. It was suggested to him that many who were injured on the fingers and hands had probably mutilated themselved in order to be sent back to France. Napoleon was very indignant and resolved to make an example of the alleged culprits. He ordered that 3,000 young soldiers, all wounded in the hand, should be confined in an entrenched camp near Dresden and tried; if found guilty, it was decided that a certain number should be shot. Desgenettes and other members of the medical staff declared that the wounds were self-inflicted, but Larrey, who had himself examined and dressed them and had seen similar cases in Spain and in the first Polish campaign, protested that they were caused by

inexperience. Napoleon was angry at being contradicted, but he could not refuse the inquiry demanded by Larrey. A surgical jury was empanelled to examine the question. Larrey, who was president of the jury, insisted that the wounded, numbering 2,632, should be examined one by one. He studied the character and the origin of each wound, putting the soldier in the position in which he had been at the time he was hurt. He also took evidence not only from the wounded men themselves but from old non-commissioned officers whose experience could be trusted. By this means he was able to show that the conscripts, owing to their want of practice in the handling of weapons, wounded themselves. Most of the accused had other wounds in different parts of the body, and their uniforms, torn by bullets, proved that they had fought with determination. Among them, too, were veteran soldiers of proved valour. These facts were embodied in a report the conclusions of which were entirely favourable to the accused. Napoleon, after a careful study of the evidence, was completely convinced, and in recognition of the service that Larrey had rendered by saving him from committing an act of injustice, gave him his portrait set in diamonds, 6,000 francs in gold, and a pension of 3,000 francs, all exclusive of any other reward that might be due to him on account of his rank and length of service. Larrey sent a circular to the principal surgeons of the army pointing out that however suspicious appearances might be in certain cases, the surgeon could not decide the question, as there was no positive sign that could enable one to distinguish a wound inflicted by the man himself and one received in the ordinary way.

In *Paris Médical* of March 13th the question is dealt with very fully from a medico-legal point of view by Professor P. Chavigny, of the Val-de-Grâce. He states that there have been some undoubted cases of self-mutilation in the present war, and that several soldiers of the French army have been shot for this military crime. He hints, however, that in some cases the evidence has been insufficient to justify the penalty. The diagnosis is sometimes very difficult, and the trench fighting which has been going on has, owing to the nearness of the combatants to each other, created new conditions which make the problem more complex. The examination should, if possible, be made at once before the application of any dressing. Care should be taken to discover whether the wounded man is left-handed or not, for while a right-handed man will wound himself on the left, a left-handed man will wound himself on the right, side. Usually self-inflicted wounds are on the fingers, sometimes on the palm of the left hand, but if the man is left-handed the wounds are generally on the right limb. Occasionally the foot is shot through. If the finger has been applied directly to the muzzle, the first and perhaps the second phalanx are completely blown away. The shreds of tissue left hanging about the aperture of entrance show a deep narrow border of blackening. According to Professor Chavigny, while in voluntary mutilation this tattooing is seen only on the injured finger, in an accidental wound there may be blackening of other parts of the hand at a corresponding level. He thinks this makes it possible to determine with fair certainty the position of the hand when the shot was fired. The laceration is caused by the expansion of gases at the muzzle and not by the projectile, while the black border is the effect of the explosion of the powder. In such a case there are grains of the powder in the epidermic layers, which can be scraped away. A point-blank gunshot through the palm of the hand causes a very large laceration chiefly at the aperture of entry. The shreds of skin are often rolled from within outwards, folded on their base or rolled upon themselves. The central wound is in the form of a crater with loss of substance. Some part of the metacarpal framework is nearly always shattered. On the dorsal aspect the laceration is star-shaped, and there is generally a narrow border of tattooing. If the shot has been fired through a muscular portion of a limb or through the soft parts of the trunk, there is seen about the aperture of entry a circular loss of substance from 10 to 12 mm. in diameter. Round the orifice of entry is found the usual blackening. The aperture of exit, if the limb is thick, shows only the mark of the passage of the bullet itself, the effect of the gaseous expansion having exhausted itself in the muscles of the anterior aspect, which are reduced to pulp. If the bullet has caused a comminuted fracture of the bone, the aperture of exit may be increased in dimensions.

These descriptions are applicable to wounds caused by point-blank shot which have traversed the limb in the direction of its greatest diameter perpendicularly to the axis. But in the case of other wounds only one of the sides may be hurt. A gunshot fired point-blank through cloth causes a very large tear. When the wound is in the foot and the shot has been fired through leather there is at the aperture of entry a large stellate laceration, while at the point of exit on the opposite side or through the sole there is only a small orifice with slightly everted edges. In wounds caused by shots through covered parts there is no tattooing. The author points out that the wounded man may believe that he has been hurt by an enemy's bullet, whilst the cause of his injury has been the ricochetting of a fragment of shrapnel or of stone. The tattooing caused by these wounds must not be confused with dirt or with the trace of manipulation of coal or other staining substances. Other things to be taken into account are the stains caused by certain antiseptics, such as tincture of iodine, by tobacco, or even by a layer of coagulated blood. As the diameter of the German rifle is the same as that of the French, it might be expected that the wound caused would have the same characters. There is, however, this difference, that the tattooing caused by combustion of the powder of the German cartridge is less intense and less widespread, while, on the other hand, the combustion of the German powder being absolutely complete, the shreds are not seen as in the case of wounds caused by a French weapon. The possibility of the man being weak-minded or suffering from the mania of persecution, general paralysis, or other mental condition diminishing his responsibility, should always be borne in mind. In the examination of men charged with self-mutilation, the medical officer should never forget that he is acting as an expert witness, not as an advocate. The decision must be left in the hands of the court.

IMMATURE SPIRITS (RESTRICTION) BILL AS AFFECTING DOCTORS AND PHARMACISTS.

THE proposals of the Government as to restrictions on the sale of spirits have been watched in the interests of pharmacists by the British Pharmaceutical Society, who warned the British Medical Association that the proposals in their original form were likely seriously to affect both pharmacists and doctors, particularly the former; but they expressed the hope that the representations they were making would be sufficient to induce the Government

to make the changes necessary to protect the interests of the two professions. It was arranged that the Association should at once be informed if and when it was felt that joint representations were necessary. As is well known, the very extensive proposals of the Government gradually narrowed themselves down to taking power to restrict the sale of intoxicants in specified areas and the supply and sale of immature spirits. The bill providing for this latter restriction was discussed in the House of Commons on Monday last, and in spite of the earnest appeal of Mr. Glyn-Jones, M.P., was left in such a state that while rectified spirits could be delivered to a manufacturing chemist, they would not have been available for practising pharmacists or for doctors—that is to say, neither could have bought rectified spirits. The representatives of the Pharmaceutical Society approached the Association with a view to joint and immediate action being taken on the report stage, which was reached on Tuesday. Accordingly, on Tuesday morning a letter was sent on behalf of the Association to the Chancellor of the Exchequer, pointing out that the bill apparently assumed that if manufacturing chemists had access to rectified spirits the requirements of doctors and pharmacists would be met. The letter went on to say that this was not the case, because while manufacturing chemists could provide, as they do now, the great bulk of the tinctures and other spirituous preparations required by doctors and chemists, there were many occasions when rectified spirits were necessary for the purpose of extemporaneous prescriptions; and if the only way in which those prescriptions could be made up entailed the sending of an order to a manufacturing chemist the position would be an impossible one. The letter ended by asking the Government to accept the amendment which was to be moved by Mr. Glyn-Jones. A similar letter was sent by the Pharmaceutical Society, and other steps were taken to bring the matter to the notice of prominent members of Parliament on both sides of the House, the result being that during the debate Mr. Glyn-Jones, after pointing out the difficulties which the bill as it then stood would cause, was informed by the Chancellor that his amendment would be accepted. The amendment provides that nothing in the bill shall interfere with the supply of rectified spirits of wine, for the purpose of making medicines, to registered medical practitioners, hospitals, and persons and firms entitled to carry on the business of chemist and druggist. This very satisfactory result was entirely due to the co-operation between the Association and the Pharmaceutical Society, and to the prompt steps which were taken to render that co-operation effective, and Mr. Glyn-Jones is to be congratulated on the way in which he handled the question.

ANTITYPHOID INOCULATION IN THE GERMAN ARMY.

SPEAKING at a meeting of the Strassburg Society of Military Surgeons,[1] Dr. Tabora reviewed his experiences based on 170 cases of typhoid fever, and 400 inoculations with Höchst's vaccine. He had no fault to find with the inoculation, except the very damning one that it did not confer reliable immunity. In his experience the reaction to the inoculation was seldom severe, and he observed a rise of temperature only in two cases. He insisted on the need for clinical diagnosis at an early date, as bacteriological methods were often not available in the field. The agglutination test was, he said, not always reliable, whereas the demonstration of leucopenia was exceedingly instructive. The diazo-reaction with potassium permanganate was a valuable sign, particularly when associated with the characteristic bright red colour of the tongue and with enlargement of the spleen, which was observed in 70 per cent. of all his cases; a roseola was often absent. There appears to be in Germany no uniform method of preparing and administering the vaccine, and at least three different preparations are mentioned. This, perhaps, may partly account for the conflicting opinions on the reactions to the vaccine and on its efficiency. Dr. E. Levy has shown himself an ardent advocate of the extensive adoption of inoculation. The quality of the vaccine available for the German army had, he said, lately been much improved, and he suggested that the dangers of a negative phase had been much exaggerated. Dr. Wolf-Eisner, although he recognized that the immunity conferred was only relative, was also in favour of inoculation. His experience of two epidemics during the war had convinced him that the thermometer was of the greatest importance in the diagnosis of the disease at the front, and that great difficulty was often experienced in distinguishing typhoid fever from sepsis. He found enlargement of the spleen a useful sign, whereas roseola was often absent. Dr. E. Meyer described the energetic measures taken by the military and civil authorities in Strassburg on mobilization. "Carriers" were interned in hospital, and it was to this measure that Dr. Meyer ascribed the subsequent relative immunity from typhoid fever observed in this district. He also warmly recommended inoculation; he had never known a negative phase or any permanent injury follow. Dr. Hiltman stated that the vaccine of the Hygienic Institute in Jena, which had produced nearly a million doses of 1 c.cm. each, caused a more or less severe reaction, particularly in persons debilitated by wounds, confinement to bed, or previous illnesses. In many cases of disease of the lungs and pleurae, of post-traumatic neuralgia, and other maladies, the inoculation provoked a relapse of the old complaint. On this account he was opposed to indiscriminate inoculation. Professor Grober, of Jena, expressed a very guarded opinion, but admitted that there was no ground for abandoning typhoid inoculation. It appears from these and various other utterances that typhoid inoculation was not practised in the first six months of the war with any thoroughness in the German army. When epidemics have occurred all the doctors, nurses, and orderlies engaged have been inoculated; otherwise systematic inoculation seems not to have been general.

[1] *Deut. med. Woch.*, January 1st.

TROPICAL DISEASES RESEARCH FUND.

THE report of the Advisory Committee for the Tropical Diseases Research Fund for the year 1914 was presented to both Houses of Parliament by the command of His Majesty in April, 1915. There is a report by the committee chiefly dealing with the distribution of the fund, and then a series of appendices giving reports on (1) Anti-malarial measures in the Crown Colonies and Protectorates, (2) Reports by the Professor of Protozoology at the University of London, (3) Report for 1914 on the work of the Quick Laboratory at Cambridge, (4) Reports from the London School of Tropical Medicine, (5) Reports from the Liverpool School of Tropical Medicine, (6) Report from the Wellcome Research Laboratories at Khartoum, (7) Observations on the life-history of *Dermatobia hominis*, and (8) Reports on work carried out in colonial laboratories. As regards scientific papers, many of these have already been published in various medical journals. Some of these are of considerable interest, particularly the work of Leiper and Atkinson on the *Schistosoma japonicum*. They believe that the development of that parasite takes place in a mollusc, the miracidia penetrating the tissues and developing into cercariae directly without the intervention of rediae. Such cercariae were removed from the livers of infected molluscs and were then placed in water and allowed to become free-swimming. Young mice, bred in the laboratory and reared upon dry rice and water, were then partly immersed, no fluid being allowed to reach the mouth. A dissection of these animals at a later date showed adult parasites in their mesenteric

vessels. These experiments, carried out with the greatest precautions to avoid fallacy, have convinced Leiper that Looss's hypothesis of the miracidia penetrating directly into the skin is erroneous. The life-cycle of the *Schistosoma japonicum* thus conforms in essential respects with that of other trematodes, and such being the case there is no doubt that the *Schistosoma haematobium* will follow a similar course. Dr. Leiper, Dr. Cockin, and Dr. J. G. Thomson are now investigating this subject in Egypt. The importance of the subject is very great, and once the proper life-cycle is worked out definite prophylactic steps may be adopted. The paper on the life-history of *Dermatobia hominis* is by Dr. Sambon, and it relates the very interesting fact of the eggs of this fly being attached to the abdominal segments of the mosquito (*Janthinosoma lutzi*). Those interested in the subject should consult this paper, as the literature is also thoroughly dealt with. On science, as well as on other branches of work, the war has had its effect; many of the workers mentioned in the report are now serving with the army in various capacities.

THE READING MANIA.

"READING," says Bacon, "maketh a full man"; but, as is the case in every form of human activity, there is a right and a wrong kind of reading. Over-reading, like over-eating, produces an unwholesome fullness, which makes learning, as Falstaff says, "a mere hoard of gold kept by a devil," which may be taken as a figurative description of a state of mental indigestion which renders it useless. On the other hand there is a reading which makes an empty man, for it leaves on his mind a confused mass of blurred impressions, sometimes a mere blank. At present most of us read too many newspapers; one finds in them the same things over and over again, repeated, it may be, at considerable intervals, till all sense of historical development is lost, and we tell each other as news events already old, or rumours which might have been thought to be dead and buried months ago. This is a consequence of the abnormal conditions in which we are now living. But apart from the war there has grown up in modern life a passion for indiscriminate reading, which acts on the mind in a manner which may be compared to the effects of the drug habit on the nervous system. As M. Ossip-Lourié points out in the *Revue Philosophique* for March, with the multiplication of books serious reading has diminished; there is a large class of persons who read not for the sake of information to be got from books or of new ideas to be found there, but as a mechanical exercise. They read everything that comes in their way, literary or scientific, without remembering, sometimes without understanding, anything. M. Ossip-Lourié cites the case of a man whom he found in the Bibliothèque Nationale with a Russian review before him. Curiosity prompted him to ask whether the reader knew Russian; to use Mr. Asquith's familiar formula, the reply was in the negative, and the explanation given was that all the other reviews were in hand! The reading mania is a form of pathological laziness. Reading to be profitable should be critical; the reader should seek to find some stimulus to thought in his book, and should, so to speak, mentally wrestle with the writer. One need not conscientiously read every line. Dr. Johnson never read a book through, and yet he could, in his own words, tear the heart out of an author by a rapid glance through his pages. On the other hand, sufferers from the reading mania surrender such intelligence as they possess into the hands of a writer and repeat the statements and arguments of their newspaper like parrots. M. Ossip-Lourié insists that this kind of reading has an injurious effect on the nerve centres, impairs the memory, and disorders the process of thought. It certainly causes a loss of power to see things, in Matthew Arnold's phrase, as they really are; it makes a man blind to the most ordinary phenomena of life, and even dulls his consciousness of his own acts. He becomes, in a word, the slave of other people's ideas and incapable of thinking for himself. He lives in a world of dreams and illusions, and this state may reach such a degree that he forgets his duties to his family and to society. If the reading mania is long continued, it is, according to M. Ossip-Lourié, apt to cause a kind of cerebral exhaustion, among the symptoms of which is temporary verbal blindness (alexia). Another effect may be graphomania, which often finds vent in constant letter writing. An illustration of this is seen in the apparently irresistible tendency which drives many persons, especially during times of public excitement like the present, to discharge floods of secondhand platitudes in the newspapers. Although mental specialists pay little or no attention to the evil effects of the literary dram drinking which he describes, the number of cases of mental aberration produced by unwholesome reading is, according to him, immense. Somewhat to our surprise, he makes no reference to cheap education as a principal factor in the diffusion of this most pernicious form of mental dissipation. Good as the work of the elementary school has been on the whole, it has the serious disadvantage of being superficial and incomplete. The records of the public libraries bear witness to the unsatisfactory class of literature that finds favour with many of their frequenters. Even among persons of higher education the old maxim in regard to reading, *Non multa, sed multum*, has, to a large extent, fallen into contempt. The result is seen in the superficiality, and what Swift called "index learning," which are so common. This is worse than ignorance, because it gives a man a false sense of knowing what he does not know.

DR. W. F. DEARDEN.

AN announcement of the death of Mark Twain once appeared in the newspapers when he was in vigorous health. He telegraphed that the report was "greatly exaggerated." We have much pleasure in stating that the same thing may be said of a similar announcement which appeared in the SUPPLEMENT of May 8th, p. 167. In a list of members of the Association who have died since the last Report of Council, the name of Dr. W. F. Dearden was unfortunately included. We have that gentleman's authority for stating that he is "in the best of health," and hopes to continue for a long time yet some useful work for a particular branch of the profession. We much regret the error, and apologize to Dr. Dearden for any annoyance it may have caused him.

THE WAR EMERGENCY.

THE Committee of Chairmen of Committees of the British Medical Association held a meeting on May 13th, at which a representative of the War Office was present. The Committee met again on May 19th, and decided to make certain representations to the War Office as regards causes operating to discourage the recruiting of medical men.

THE next session of the General Medical Council will begin on Tuesday, June 1st, when the President, Sir Donald MacAlister, K.C.B., M.D., will take the chair at 2 p.m.

A RECENT dispatch from the United States Ambassador at Berlin states that typhus is present in the following German camps, where there are British prisoners of war: Zossen, Altdamm, Schneidemuhl, Gardelegen, Wittenberg, Zerbst, Sagan, Cassel, Langensalza, Chemnitz. At Zossen cases are confined to the Russian prisoners and a few of the Indian troops. Letters are not allowed to be sent from the above camps for fear of transmitting the disease.

Medical Notes in Parliament.

Proceedings of the House.

On Wednesday, May 12th, the Immature Spirits (Restriction) Bill was read a second time. The object of the bill is clearly indicated in the words of the operative clause that "No British or foreign spirits shall be delivered for home consumption unless they have been warehoused for at least a period of three years." The purpose of the bill, as explained by the Attorney-General, was to restrict the use of raw and immature spirits. The assumption underlying the bill has not, however, gone without question. Mr. R. McNeill, for instance, fountling his contentions upon the findings of the Whisky Commission, said that it is not proven that fresh spirits were more deleterious in their effect than older spirits, but he expressed himself in favour of anything that would diminish the consumption of spirits, and said that he was glad enough that a large quantity should be kept in store for a longer period. The modified Budget resolutions impose an additional 1s. 6d. a proof gallon on this immature spirit. Mr. Glyn-Jones stated that the operation of the new tax on tincture medicines would mean that there would be an increased cost to the consumer of 4½d. or 5d. per lb.

The Attorney-General, however, explained that the provisions of the bill would enable them to exempt tincture medicines from the scope of its operations. He said it was no part of their intention by increasing the tax to increase the price of medicines made out of spirits. What was necessary was this: There must be, for some purposes at any rate, equalizing duties of 1s. 6d. or 1s., according as the spirit was new or was one year old. Otherwise a spirit which had to be warehoused for three years was treated unfairly, and these taxes had been provided as countervailing to the expenses of keeping and warehousing. That did not apply in the least to spirits used for medicine purposes. There was no advantage in making medicines out of mature spirits. Medicines ought to be made out of fresh ingredients, and he imagined it was just as important to use fresh ingredients if the ingredient were spirits as if it were any other drug or poison. The suggestion made that it might be desirable to have some form of licence or authority or certificate which should be given to persons who really were manufacturing chemists was a very practical suggestion, and he would be very glad to confer with his hon. friend as to how his suggestion might be carried out.

On Wednesday, the 12th, the Defence of the Realm Act (Amendment No. 3) Bill was read a third time and passed. This bill gives the Government control over the whole liquor traffic in munition areas, and sets up a judicial committee to determine the conditions and amount of compensation.

During the first three days of last week's sittings of the House a considerable number of other minor emergency measures were passed through various stages.

Science and Industry: Government Scheme.

Interesting announcements were made by Mr. Pease in introducing the Education Estimates on May 13th. Before dealing with the Government's proposals, he mentioned that at the present time something like 70,000 children were receiving school meals, but that after the outbreak of the war 200,000 children had been fed. With respect to the medical services of the Board and the new grants for crèches for young children, he said that since he last spoke on these estimates the Local Government Board had been enabled to help forward this work by grants for maternity and child welfare. The Board of Education had been helping something like 151 schools for mothers. There was obviously some danger of these two departments overlapping in their work. The President of the Local Government Board and he had therefore decided that all matters connected with institutions provided by a sanitary authority, and matters connected with voluntary infant consultations, should be supported out of grants by the Local Government Board, and that all matters connected with schools, as defined in the regulations, subject to collective instruction being given in classes for mothers and infantile consultations in connexion with the women who were attending the schools of that character, should be in the province of the Board of Education. In that way they believed a satisfactory working arrangement would be arrived at which would secure not only a proper bringing up of the children, but due attention to health. Their great object was to get children to the schools in a healthy condition. If they got them thus and maintained them in a healthy condition they would learn a great deal more, and there would be much less waste of public money than there had been in the past. They had now seventy-seven institutions in the country. During the past year they had contributed something like £5,000 in grants in helping to look after these tiny tots while their mothers were at work.

The War and Grants to Universities.

In connexion with the additional grant which was proposed to relieve the finances of universities and university colleges, Mr. Pease said that in the universities (other than Oxford and Cambridge, in which the percentage was somewhat higher) more than 50 per cent. of the students who naturally would be at the universities had joined the colours; 1,300 students from the London University institutions had received commissions.

With respect to the grant itself, he said the Chancellor of the Exchequer was proposing by an emergency grant to help the universities in their hour of need. The loss of fees from a large proportion of their students had placed them in a very difficult position, and consideration was being given by a departmental committee which would report to the Treasury, so as to enable the provincial universities to tide over the financial position into which the war had thrown them. In reply to Sir Philip Magnus, who asked if that included London University, Mr. Pease said it included all provincial universities "other than Oxford and Cambridge."

Government Grants to Secondary Schools.

He referred to the present position of the scheme for the provision of a national medical school at Cardiff and to the additional assistance which was being given to secondary schools. Incidentally he mentioned the fact that 35 per cent. of the students in the secondary schools which received Government grants were receiving free education. He also said that it was very desirable that they should facilitate as far as possible the earlier entry of children into secondary schools, and try to secure that only those should be expected to go who might reasonably be considered as likely to benefit from the prolonged schooling. Additional scholarship assistance was necessary to enable suitable students to proceed to universities for full-time courses of training.

The Use of Schools as Hospitals.

With respect to the use of schools as hospitals, Mr. Pease said they had been looking ahead, and Dr. Addison had been recently round the country with a committee, aided by War Office and Local Government Board representatives, with a view of seeing what places were most suited for the purpose of hospitals and of making provisional arrangements for suitable centres. In the event of more places being required, provision could be made in advance for the children dispossessed of their schools.

Council on Industrial Research.

The remarks of the President in this connexion evidently foreshadow a considerable programme which has already been decided upon by the Government. He said the war had brought home to them that they had been far too dependent for very many processes and many materials upon the foreigner, and they had realized that it was essential, if they were going to maintain their position in the world, to make better use of their scientifically trained workers. They must increase the number of those workers, and they must endeavour to secure that industry was closely associated with the scientific workers, and promote a proper system of encouragement of research workers, especially in the universities. The fault in the past, no doubt, had been partly due to the remissness on the part of the Government in failing to create careers for scientific men. It had also been due partly to the universities, which had not realized how important it was that pure science ought to be utilized with applied science and brought into close contact with manufacturing interests.

He thought it was also partly due to the fact that the manufacturers themselves undervalued the importance of science in connexion with their particular industries. It was partly due, too, to the fact that the ratepayers had been too niggardly in making provision in connexion with their technical institutions and colleges. He had himself been associated with the production of a large number of by-products from coal, and it was even necessary to go to Germany for the bricks and plant in order to erect a certain oven in this country. He satisfied himself that it was possible that these materials could be produced, and ought to be produced, at home, if only they had a sufficient number of research workers and trained men of science turning to practical value their scientific training. He might go on and give case after case where, by research and a little expenditure on the scientific training of able men, they would be able as a country to succeed just in the same way as the Germans had succeeded in recent years. Steps must be taken at once. Adequate supplies required prolonged endeavour. The task immediately before them might be advanced at once by the appointment of an Advisory Council on Industrial Research. He wanted a committee of experts who would themselves be able to consult other expert committees working in different directions. They, in turn, must be associated with leaders of industry. They would want advisers representing various industries in the country who not only possessed certain knowledge in connexion with pure science, but would be able to turn to the best account the knowledge they had acquired in the application of that knowledge to industry. They would work in close co-operation with the Board of Trade, who were seconding the efforts of his old Board. Such a body as an Advisory Council of very distinguished men upon whom they should rely for advice would, he hoped, be at work within the next few weeks. He was now considering the names. The solution of several problems would be placed before them in connexion with the glass industry, the making of hard porcelain, technical optics; and it would be one of their duties to secure selected workers who had passed through graduated courses suitable for doing research work in laboratories in the solution of a certain number of definite problems. They would advise him as to how money should be immediately spent, and how it should be subsequently spent when they were able to obtain rather larger grants from the Treasury than they would have at their disposal during the current year. They would have to advise as to the way money should be spent in training and research work generally, and how money should be spent and distributed amongst specialized departments, such as the Imperial College of Science at South Kensington. He hoped to place on the Estimates for the current year a sum between £25,000 and £30,000, but the demand for money for this work would enormously increase as time went on, and if the scheme were to succeed he believed it must depend upon State help in the years to come, and State help must steadily progress. Two things were essential in the interests of this country if they were to succeed in the future and remain in the proud position, industrially and commercially, in which they were now situated. First, that after the war, and even during the war, an effort should be made to retain longer at school those who were able to benefit by further education. Too many now left school at the ages of 12, 13, and 14, and there was an enormous wastage of ability in the country owing to the non-education of the children after that age. Secondly, the nation should create careers for men in the scientific world capable of advancing the solution of that problem. Therefore he appealed to all those men throughout the country who were devoting their lives to the cause of education to do what they could to encourage, not only the longer education of abler children in the secondary schools, but also to make the scheme which he had outlined a success in connexion with training scientific workers who would be a real advantage to the industries of this country in years to come.

The proposals of the President with reference to scientific research and kindred matters were cordially welcomed by Sir Philip Magnus, Sir James Yoxall, Sir Henry Hibbert, and other speakers. Sir Henry Hibbert pleaded eloquently for a longer stay of children at secondary schools, and bore most emphatic testimony to the value of the medical and physical work on school children, an extension of which the Board had made great efforts to secure during recent years.

Mr. Anderson and Mr. Lynch cordially welcomed the Government's proposals with respect to science and industry, which were also heartily supported by Mr. Goldstone, Mr. Bridgeman, and Mr. Rawlinson.

Dr. Addison, in reply, dealt with various points of detailed criticism that had been raised in the debate, and incidentally mentioned that 55,000 older children were attending classes on gardening and such-like outdoor practical subjects. He announced that the condition of grants for technical institutions were being revised so as to enable the Board to contribute to the whole expenditure of the authority on the institution rather than assess the grant on the number of hours attended by individual students. He answered various criticisms with respect to the use of schools as hospitals, and gave an account of the work of the Committee, of which he was chairman, which had been engaged on this subject. In connexion with the scheme for assisting industrial reseach, he said there were many things they must attend to without any delay, and it was for this reason that the Committee for Research would be set up quite soon. A great deal had been done by private effort in respect of research, and notwithstanding all that Mr. Lynch had pointed out, quite properly, in this connexion, they thought the research which had been associated with British scientists had often been the most original of any in the whole world. They had not organized and developed it as they ought, but the British researcher was often freer in his outlook and greater in his conception than almost any other. At all events he certainly stood far above the average German researcher, who tended more to apply ideas suggested by others; but they had got to recognize that they could not afford nowadays to leave all this to private effort. A great deal could be done by careful organization, and by seeing that the men turned out from universities and technological institutions were equipped with that training which would make them acceptable in industry, and make them more likely to find a good market and a good career for themselves. Going around the institutions one found certain departments where the professors would say that they could not supply the men quickly enough to the manufacturers, while in other departments it was quite the reverse. The Royal Society had lately, very patriotically, been assisting chemical research in respect of drugs. He thought his right hon. friend might be satisfied with the full assent of the House in all quarters in getting ahead with this great scheme, which, while they heard so much of the mobilization of industries with respect to the production of munitions of war, would, for the first time in this country, show that they were going, to some extent at all events, to create a machine which would enable them to mobilize brains and science in the service of industry and national progress.

Medical Research Committee.—Sir Henry Craik asked the Chancellor of the Duchy of Lancaster (as representing the Insurance Commissioners), on May 11th, whether the Medical Research Committee had rendered any assistance in connexion with the war; and, if so, what had been the nature and amount of such assistance. Mr. Montagu said that a full report of the work of the Medical Research Committee since its inception (including its recent work in connexion with the war) was already being compiled by the Committee, and would be laid upon the table in due course. In the meantime a White Paper was being prepared, and would be presented in a few days, summarizing the work specially referred to in the question. [An abstract of this document will be found at p. 896.]

Medical Officers of Health serving with the Forces.—Mr. Herbert Samuel stated, on May 18th, in reply to Mr. Ginnell, that the number of medical officers of health serving with the naval and military forces so far as the Local Government Board knew was 171, and the number of tuberculosis and assistant tuberculosis officers so serving was 52. He had no information as to the number of officers who had volunteered, but were not serving. A large number of assistant medical officers of health, superintendents of isolation hospitals, Poor Law medical officers, and school medical officers were also serving, but

he had not the precise figures as to those classes of officers. In the Local Government Board's memorandum of August 21st, 1914, it was intimated to local authorities that they might properly grant leave of absence to officers in their employ who were already in His Majesty's forces, or who joined them with their permission, and might properly make such allowances in respect of salary as they thought reasonable in the particular circumstances. Generally speaking, local authorities pay such officers during their absence the difference between their civil pay and their navy or army pay, keep their positions vacant for them, and appoint temporary substitutes where necessary. Mr. Birrell also informed Mr. Ginnell that in Ireland about twenty-six or twenty-seven Poor Law medical officers had been granted leave of absence to join the Army Medical Service. Their positions would be kept open for them. In some cases the guardians were paying the medical officer his salary and also paying the substitutes; in others the salary was paid to the temporary substitute only.

With reference to Scotland, Mr. McKinnon Wood said he had no information as to the total number of medical officers of local authorities who had volunteered for service. There were, so far as he was aware, seventeen public health medical officers, thirty-two Poor Law medical officers, and twenty-six school medical officers, of whom some might also be health officers, who were or had been serving. He was informed that their posts were, as a rule, kept open for them. Health officers either received full pay and nominated their own substitutes, or, if the local authority made arrangements for carrying on their work, received full pay less military pay, or a part thereof. In the case of school medical officers the authorities had made arrangements to secure them against any financial loss. He had no information as to the financial arrangements in the case of Poor Law medical officers.

Medical Officers of Royal Navy.—Commander Bellairs asked the First Lord of the Admiralty on May 11th how many medical officers of the regular branch of the Royal Navy were serving at the Admiralty for administrative and clerical duties previous to May 7th. Dr. Macnamara said that seven medical officers on the Active List and three retired officers were serving at the Admiralty previous to May 7th.

Army Civil Surgeons.—Commander Bellairs, on May 12th, asked the Financial Secretary to the War Office, in view of the fact that the Admiralty were paying six consultant physicians and surgeons serving on shore in Great Britain at a rate equal to 3.9 times the pay of the highest-salaried surgeon-generals of the navy, in addition to the earnings of a certain amount of private practice, whether any difficulties had thereby resulted in regard to the distinguished civil surgeons who so patriotically went to France at the ordinary rates of army pay. Mr. Baker said that there had been no difficulties with regard to the pay and status of the consulting surgeons and physicians working with the army in France.

Inoculation.—Mr. Rendall, on May 12th, asked if Sergeant Arthur Harris, late of the 4th Gloucestershire Regiment, had recently been discharged from the army; if, in October last, following inoculation, he became very ill, with the further result that his mind became seriously affected and he was first placed in the Severalls Asylum, Colchester, and was now in the Gloucester Asylum; whether the allowance to his wife and four children ceased to be paid on March 29th, and his family were now in receipt of no income whatever; whether the War Office affirmed or denied that his illness had or might have resulted from the shock to the system caused by inoculation; and what assistance it proposed to give to the family of this soldier, who served through the South African war and who afterwards, up to the time of the present war, acted as a postman and was always in good health? Mr. Tennant said that a report had been called for, but had not yet been received. Mr. Chancellor also asked the Under Secretary of State for War on May 12th (1) whether he would state the name, date of enlistment, date of inoculation against typhoid, and date and place of death of a soldier in the 20th battalion, Northumberland Fusiliers (Tyneside Scottish), who was certified by a civil medical practitioner to have died from typhoid inoculation and pneumonia and heart failure; whether the entry in the register of deaths gave the cause as above; and, if not, would he explain why such an entry was not made; and (2) whether he was aware of a report by Sir Thomas Oliver, M.D., honorary colonel, 20th battalion, Northumberland Fusiliers (Tyneside Scottish), that at one stage of the proceedings as regards inoculation for typhoid fever it was thought the preventive measure ran the risk of receiving a check, as one of the men died shortly after the inoculation, but fortunately, although the civil medical practitioner who had attended the patient gave a certificate that death was due to typhoid inoculation and pneumonia and heart failure, the necropsy revealed heart disease of long standing, chronic pleurisy, and an alcoholic liver; whether he had reason to suppose that many men whose bodily condition was alleged to have been so bad as in the case of this soldier were being passed into the army by the medical examiners; whether the man was in a fit state of health for the typhoid inoculation to be performed upon him, and, if not, why was it carried out; and what action, if any, it was proposed to take against the civil medical practitioner if he gave an erroneous death certificate? Mr. Tennant replied that inquiry was being made.

Artificial Appliances for Wounded Officers.—In answer to a question by Colonel Yate, on May 12th, Mr. Tennant stated that Article 647 of the Pay Warrant which had been in force for many years provided that an officer who had been wounded in action, and who thereby lost an eye, a limb, or a tooth, or sustained any other injury necessitating the use of an artificial appliance, might be granted such sum as the Army Council considered sufficient to defray the necessary expense of providing the artificial appliance.

Nerve Strain and Mental Disturbance (Hospital Treatment).—Mr. Rendall asked the Under Secretary of State for War, on May 13th, if he would state what arrangements had been made by the War Office to provide hospital treatment on purely medical lines for cases of nerve strain among the rank and file where each case might be sifted and diagnosed on arrival in England before being placed in charge of medical officers (Royal Army Medical Corps) who had been taken over from the asylum service. Mr. Tennant said that at large hospital centres in France specialists in nervous diseases, not alienists, saw all cases of nerve strain and determined to which clearing hospital the cases should be sent on arrival in England. At these hospitals the cases were carefully gone into, and those which were suitable were transferred to certain special hospitals, which were quite distinct from the asylum service. In reply to a further question by Mr. Rendall, Mr. Cecil Harmsworth, replying for the Under Secretary of State, said the object of the bill was to secure suitable treatment of cases of nerve strain without compulsory detention. He hoped that arrangements for this purpose might now be made without legislation, and that it would not be necessary to proceed with the bill.

Vaccination for Meningitis.—Mr. Herbert Samuel, on May 12th, informed Mr. Sutton that he was aware that the medical officer for Salisbury had issued a notice to householders advising vaccination against cerebro-spinal meningitis. The vaccine used contained dead meningococci, and was prepared and standardized by the Lister Institute. Approximately 2,600 of the inhabitants had been inoculated at the public expense.

Cardiff Mental Hospital.—Mr. Tennant stated on May 13th, in reply to Mr. Tyson Wilson, that the Cardiff Mental Hospital was being taken over by the War Office. The patients had been moved, under arrangements initiated by the Board of Control with the approval of the Home Secretary, to the following seven asylums: Gloucester, Hereford, Monmouth, Newport, Glamorgan, Carmarthen, Brecon and Radnor. The relatives would, of course, have facilities for visiting.

Ardee Medical Officers.—Mr. Patrick White asked the Chief Secretary for Ireland on May 12th whether, having regard to the prolonged controversy which had existed between the elected representatives of the people of the Ardee Union and the Local Government Board regarding the appointment of local doctors and the area of their duties, and to the fact that numerous complaints had been made that the arrangements made by the Local Government Board had worked injuriously to the sick poor, he would appoint a small Committee to inquire into the matter and report on it. Mr. Birrell said that the present medical relief arrangements in the Ardee Union had been in operation for the past ten years and were satisfactory as regards the provision made for the medical care and treatment of the sick poor. Ardee Union was more favourably circumstanced as regards the number of dispensary doctors employed than most unions in Ireland, and there was no necessity whatever for reopening this question. At the present time, when it was difficult to obtain medical officers for existing dispensaries, the creation of a new office was highly undesirable.

Disease Transmission by Flies.—On May 13th, in reply to Mr. Boland, Mr. Herbert Samuel said the Local Government Board had issued seven reports on "Flies as Carriers of Infection," and they had during the last few years warned local authorities by circular, at the beginning of the summer, of the dangers of allowing accumulations of refuse, which might form breeding grounds for flies, to remain in the neighbourhood of dwellings. They had for some time past been urging individual local authorities who were not dealing satisfactorily with the refuse of their districts to improve their methods. In a circular letter, which was about to be issued, attention would again be drawn to the matter. The War Office and the Board were co-operating in this, as in other matters affecting the health of the troops and of the civil population. A number of local authorities had issued posters and leaflets on this subject. He was considering the preparation and issue by the Local Government Board of a series of model leaflets on this and other health subjects, which local authorities could use if they so desired. He did not think it necessary to appoint a committee. In reply to Lord Robert Cecil, Mr. Samuel said that, as far as he was aware, no communication had taken place between the English and French authorities on this point.

Death-rate in Ireland.—Mr. Birrell stated, on May 17th, in reply to Mr. Rowlands, that the death-rate in Ireland in 1911 would have been approximately 13.86 per 1.000 if the conditions of the population as regards sex and age had been the same as that in England and Wales in 1911.

Vaccination in Ireland.—Mr. Birrell stated, in reply to Mr. Patrick White, on May 13th, that facilities did not exist in Ireland enabling conscientious objectors to have their children exempted from vaccination. He was not aware of any general demand for a change in the existing law as regards Ireland, and he did not consider the present a suitable opportunity for legislation on the subject.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

CENTRAL BRITISH COMMITTEE.

A MEETING of the Central Committee was held on Thursday, May 13th, when Sir Rickman Godlee, the chairman, announced that he had received from Dr. Péchère, President of the Aide et Assistance aux Médecins et Pharmaciens Sinistrés, a formal receipt for the money sent by the Fund to Belgium for distribution, and it was agreed to forward the same amount on future occasions, and at intervals, as soon as particulars of distribution had been ascertained.

The treasurer, Dr. Des Voeux, reported that he had placed further sums of money on deposit, and noted that the subscription lists had now begun to get smaller. It was the feeling of the Committee that this might be due to the fact that much of the money collected had not yet been spent, but it was hoped that the urgent need of the cause would not be lost sight of. At the rate of expenditure sanctioned by the Committee, the Fund, at its present figure, will not last very long, and it is particularly desirable that when hostilities cease there should be some money in hand to form a nucleus for an international scheme for reinstating the professions of medicine and pharmacy in Belgium after the war.

Twenty-fifth List.

	£	s.	d.
Tower Hamlets Division B.M.A. (per Dr. W. H. F. Oxley, Hon. Sec.)—			
Dr. H. Hamilton Mack	0	10	6
Dumfries and Galloway Division B.M.A. (per Dr. J. Dewar Robson, Hon. Sec.)—			
Dr. Scott	0	10	6
Dr. Bryson	0	10	6
Dr. Chalmers... ...	1	1	0
Dr. Dunlop	1	1	0
Dr. McKie	0	10	6
Dr. Shaw	1	1	0
Dr. J. Dewar Robson...	2	2	0
Dr. Brown	1	1	0
Bucks Division B.M.A. (per Dr. A. E. Larking)—			
Dr. W. H. Square ...	1	1	0
Stewartry of Kirkcudbright Secondary Education Committee (per Dr. D. J. Gair Johnston, School Medical Officer)	1	1	0
Nottingham and Notts Pharmaceutical Association (per Mr. H. P. Middleton)	5	5	0
Hants County Pharmaceutical Association (per Mr. S. G. Bartlett)	0	10	6

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

BIRMINGHAM.

The Birmingham committee of medical practitioners and pharmacists held its final meeting on May 11th, with Professor Barling in the chair, in order to receive reports from Dr. Saundby and Mr. F. Smith on the work which had been accomplished. The accounts and vouchers had been submitted to Sir Thomas Barclay, who had kindly consented to audit them, and had given certificates of their accuracy. The total amount collected was £526 5s. 3d., which had been remitted to Dr. Des Voeux, the honorary treasurer of the fund in London. All expenses had been defrayed locally, and had not led to any deduction from the amounts subscribed. The fund is much indebted to the kindness of certain medical practitioners, who with their wives had organized whist or bridge drives, and concerts from which no less than the sum of £93 13s. 6d. was received. Should any further subscriptions reach either of the honorary secretaries they will be forwarded to Dr. Des Voeux, and acknowledged as usual by publication of the names of the donors in the medical journals.

CLOTHES REQUIRED.

Gifts of clothes would be welcomed by the Committee. The supply is running short, and assistance in this direction is often very valuable to and highly appreciated by our Belgian colleagues and their families. All parcels of clothes should be addressed to Mrs. Colebrooke, Wesleyan Training College, Horseferry Road, London, S.W.

MADAME DEPAGE.

It is felt that although this is no time for making appeals for memorials the tragic death of Madame Depage, to which reference was made in our columns last week, is an exception. She had many friends who were deeply attached to her both here and in the United States, and it is thought that they might like to give expression to their feelings by subscribing to some small bronze memorial, which might be placed after the war in Dr. Depage's Hospital in Brussels. The memorial might be executed by some of the distressed Belgian art metal workers who are now in exile. Subscriptions for this purpose will be gladly received by Mr. Robert Jones, 11, Nelson Street, Liverpool; Mr. D'Arcy Power, 10A, Chandos Street, Cavendish Square, London, or Professor Sinclair White, Ranmoor, Sheffield.

THE General Council of the Department of the Loiret has voted the sum of £400 as a subvention to the school for the training in suitable trades of soldiers who have lost a limb as the result of a wound received in battle, which the city of Orleans is about to establish. The Council has further asked the prefect to study the question of the installation in some building belonging to the department of a sanatorium for tuberculous soldiers.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

THE PRINCIPLES OF WOUND TREATMENT.

SOME three weeks ago there was circulated among the medical units in France, though not, I believe, officially, a memorandum relating to the treatment of wounds such as those seen in this war, or, in other words, of gravely septic wounds or lesions. It was signed by Sir Almroth Wright and several other consultants who are or have been at work in France, and is obviously founded in the main on data derived from the bacteriological studies in which the former has been engaged during the past six months in his laboratory in the Casino Hospital, Boulogne. It is especially worth while to draw attention to it at the present moment because it brings out the essential importance of free and early drainage, besides explaining indirectly why pastes such as those mentioned last week fail to produce the benefit expected of them.

The memorandum covers a wide field of thought, but its main lessons can be formulated as follows:

1. The best and sole indubitably omnivalent bactericide and antiseptic is that manufactured by Nature herself—namely, lymph—meaning by that term exuded blood plasma, and accompanying leucocytes. *Ergo*, encourage a continuous flow of lymph into the wound.

2. The extent of the resistance of bacteria to the action of lymph may possibly vary with their species, and in any case there is a limit to the number of micro-organisms that any given quantity of lymph is able to destroy. Once this point has been reached the lymph may itself become a culture medium. *Ergo*, aim at the rapid removal of all exhausted lymph by providing the wound with very free drainage and sedulously maintaining the activity of the latter.

3. A free and constant flow of lymph into a wound may be secured in various ways, but the most physiologically perfect is chemically-produced osmosis. *Ergo :* Secure this by keeping the internal surface of the wound bathed in a hypertonic solution of common salt; for such solution, besides being easy to apply, lessens neither the vitality of the tissues nor the bactericidal power of the outpoured lymph.

4. Whatever may be its capacity *in vitro*, physiological considerations suggest, and both clinical experience and bacteriological investigation prove, that no chemical bactericide can be trusted to free a wound from living organisms when the interior of that wound is highly irregular, or when the organisms have been driven into its superficial tissues by mechanical force. Nevertheless, chemical bactericides are not without their value; for instance, they may sometimes be useful as a means of reducing the amount of work to be done by the natural bactericide, lymph, and of preventing the access to the wound of species of organisms not already present therein. *Ergo :* Wash out the wounds with an antiseptic before applying the lymphagogue solution, and in the early stages of the case repeat the process when the dressings are renewed. Also apply an antiseptic to the skin around the wound, and sterilize any instruments or materials brought into contact with its interior, including the lymphagogue employed.

5. Further studies may show that some chemical bactericides are preferable to others when certain infections are in question, but at present the choice is a matter of indifference, provided always that it is certain that the one selected will not check the output of lymph, nor interfere with its action on micro-organisms, nor impede drainage.

Apart from the high practical value of this memorandum, and the influence that it is likely to exert in encouraging the use of ample drainage and stemming blind reliance on "antiseptics," its appearance and the data on which it is based are of much interest to all students of what may be called the historical side of scientific work.

During the past thirty years short-lived new theories have emerged from the laboratories in such profusion that most men of long experience have learnt to stand on their guard when pressed to accept new lamps for old. To some it may seem that in the present instance an invitation of this kind is being offered them, but this is not really the case. The survivors of a generation of medical men earlier than that represented by the majority of those now at work in France will not fail to remember that in the days of their surgical youth they were taught to endeavour to get thin, sanious, flocculent, green, or evil-smelling discharge replaced by creamy "laudable" pus by applying warm moisture to the affected part, and to secure the rapid exit of that pus by providing the wound with free drainage. In other words, they were taught to continue a practice which had been esteemed by many generations and as to the utility of which no one had any doubt in the days when laboratories had yet to open their doors and clinical experience counted for everything. We now know why this practice obtained so much favour. It was a lymphagogue treatment and brought about lymph lavage. Likewise, we know precisely why lymph lavage is likely to be useful; also a cleanlier and more direct method of bringing it about than by warm moist applications; and how it may be usefully combined with ordinary antiseptic practices.

Obviously, therefore, what is pressed upon our acceptance by this memorandum and by the closely related address to the Royal Society of Medicine is no new lamp, but a refurbished old lamp with its light capacity raised from two to ten candle power. Sir Almroth Wright, in short, has in effect, if not by intention, utilized the resources of the laboratory to prove to the hilt the essential wisdom underlying a belief which appealed, and still appeals, to the instincts of unlearned men, and which was upheld by the clinical experience of many generations of practitioners who, in the modern sense of that term, were in no wise scientific. Never more than in such circumstances have the teachings of the laboratory a sound claim to prompt acceptance, and never more than in this particular instance are they likely to receive it. Ten years ago or so, when Sir Almroth Wright first suggested the use of hypertonic salt solutions, there seemed no particular reason for disturbing the existing relations between wound surgery and direct or chemical bactericides. But the position is now different. All surgeons—at all events, those in France—now recognize that just when the use of chemical bactericides seems most emphatically indicated, they most signally fail to justify themselves, and that if there is any kind of bactericide at all which is capable of dealing with sepsis, such as is seen in the wounds in this war, it is certainly none of those which hitherto have been intentionally used by most workers.

HYPERTONIC TREATMENT.

Several generations of medical students have been familiar with the facts underlying the efficacy of lymph in dealing with sepsis—namely, the phagocytic ability of lymphocytes and the opsonic power of the lymph itself. Equally common property are the facts which explain the lymphagogue effect of salt solution when applied to the interior of a wound. On the other hand, proof of the superior bactericidal efficacy of lymph has only recently been acquired, and equally new to most workers will seem the suggestion that lymph lavage should be made to play a definite and leading rôle in the scientific surgery of open wounds. In fact, so far as written documents are concerned, both may almost be regarded as having been set forth formally for the first time in the memorandum mentioned in a previous note. Neither, however, is entirely novel so far as medical men in France are concerned, if these be regarded as a whole. As long ago as last November, on the verbal suggestion of Sir Almroth Wright, the treatment of septic wounds by salt solution was tried by one or two surgeons. I rather gather that the results were not considered to be especially impressive, but I also gathered that these early trials were somewhat sketchy and not prolonged. More recently the treatment has been tried in several hospitals, but as far as I know it is mainly in the Rouen area that hypertonic treatment has so far been tried both on a large scale and in really systematic fashion.

To that area I happened to be paying a visit just about the time the memorandum appeared, and I then found that the principles inculcated had already been applied in practice in all the hospitals in Rouen, and that a complete technique for the treatment had been developed during the two months or more that it had been employed. Moreover, I gathered that Mr. Gray, who is the consultant for the area, and all the surgical specialists associated with him were profoundly impressed with the superiority of "hypertonic" to "antiseptic" treatment, and that their method of using it was much as follows: The parts surrounding the wound are first treated on ordinary principles—that is to say, they are carefully cleansed, and also shaved if necessary, the process being repeated each time the wound is formally re-dressed. The wound itself having been explored, any foreign bodies found are removed, and such incisions made as may be necessary to ensure free drainage. The cavity is then thoroughly washed out with hypertonic saline solution, containing 5 per cent. sodium chloride and ½ per cent. sodium citrate, the latter being added as suggested by Sir Almroth Wright to prevent coagulation of the exuded lymph. The wound having been thoroughly cleansed, continued bathing of its wall surface with hypertonic solution is secured by means of tablets consisting of sodium chloride grains 16, sodium citrate grains 3. One such tablet is inserted into each drainage tube used, the place of its insertion being chosen according to what situation it is considered will favour the salts acting on the whole surface of the wound as little by little they are dissolved by the exuded lymph. Before inserting the tablet into the tube it is dipped into tincture of iodine. If the lumen of the tube used is much larger than the tablet the latter is kept in place while it is being dissolved by slightly constricting the tube just below it by means of a catgut ligature. Finally a number of openings are cut in the tube to allow the dissolved salts to escape into the wound. The drainage aperture should always be considerably larger than the tube, and the space around the latter should be lightly packed with gauze wrung out either in hot hypertonic saline solution or dipped in pure glycerine containing the same percentage of salts. When the wound is not only very septic but also very large, it is sometimes preferable to pack it lightly with solution-soaked gauze between the layers of which a certain number of salt tablets have been placed, or to combine such packing with drainage tubes. The final dressing in either case is one of plain gauze and wool, kept in place by a many-tailed bandage, or a series of knotted bandages. Tight bandaging is carefully avoided, as it interferes with drainage. It is found that tablets placed in drainage tubes dissolve, as a rule, in about four hours, and a nurse can usually introduce a fresh tablet into the tube without removing the latter.

FURTHER EXTENSION OF THE SECOND EASTERN GENERAL HOSPITAL, BRIGHTON.

A FURTHER extension of this Territorial Hospital has been made, a seventh block having been opened at Portland Road Council Schools, lent by the Hove Borough Education Authority. The number of beds in the block is 220, making a total of 1,080 in the whole hospital. Portland Road School is situated well out of the crowded part of the town, about a mile from Hove Station on the London, Brighton, and South Coast Railway, and the same distance from Portslade Station on the same line. The school is quite modern, the most recently built one in Hove, and is admirably suited for the purpose of a hospital. The classrooms, which are of a good size, and well lighted and ventilated, have been converted into wards, each holding about ten or twelve beds. There is an excellent operating theatre, with sterilizing and anaesthetizing rooms adjoining. The sanitary and bathing arrangements are quite modern, and the block compares favourably with the other six divisions of the hospital.

The branch is staffed by a major in command, with captains to assist him, together with a resident medical officer. It is intended to use the block for surgical cases only. The nursing staff is accommodated in houses about half a mile away. All the arrangements are eminently satisfactory, and the block makes a most excellent and complete surgical hospital.

The following are notes of some cases recently treated at the hospital:

Kick from a Horse on the Head followed by Cerebral Symptoms: Trephining.—In this case a man received a kick from a horse on the skull just above and behind the ear seven weeks previous to admission. He had several fits, but none since his admission to the hospital, and their exact nature is not known. He suffered from severe and persistent headache. It was thought that the inner table might have been fractured and that some spicules of bone were causing cerebral irritation, or that there might be a blood clot under the seat of injury; he was therefore trephined, but no injury to the inner table was found and no blood clot. The bone was not replaced, but the opening in the dura mater, from which a little fluid under pressure had escaped, was left partly open, as it was thought possible there was a certain amount of increased intracranial pressure.

Shrapnel Wound of the Eyeball.—A piece of shrapnel pierced the upper eyelid, cut through the sclerotic, and remained embedded in the eyeball at the junction of the ciliary body and the iris, the latter being torn away from its marginal attachment; the piece of metal was exposed in the opening thus left. As there was a foreign body in the eye, and as this body had traversed the dangerous area, it was resolved to excise the eye, in order to obviate the risk of sympathetic ophthalmia in the other eye. The muscles were caught up with catgut before they were cut and tied together, and the conjunctiva sutured over them, so that the artificial eye to be worn later might have a more movable stump.

Malingering.—A man complained of very severe and persistent backache, for which repeated examination failed to disclose any cause. It was strongly suspected that he was a malingerer, and he was sent back to duty. A comrade then informed the ward sister that the diagnosis was correct, for the patient had told him he was determined to get his discharge by some means or other. There have been, to the credit of the patients, very few cases of malingering treated in the hospital, most of the men being of a very excellent type, not at all anxious to shirk their responsibilities. One man who was supposed to be a malingerer complained of persistent pain in the leg, and his medical officer had failed to detect any cause for this after repeated careful examination. Ordinary methods of examination failed to reveal any lesion, but an *x* ray photograph showed a long vertical fracture without any break in the continuity of the bone extending almost from ankle to knee—a condition which it is almost impossible to detect without the aid of radiography.

Ulcerative Colitis: Appendicostomy.—A man who had been in India twenty-one years, but who had never had dysentery, six weeks before admission had had discharge of mucus and blood from the bowel, with tenesmus. On admission he was obviously very ill, and rapidly got worse. He had pyrexia up to 102°, a rapid feeble pulse, general debility, with bloody motions and discharge of mucus, and sloughs. The mucous membrane could be seen to be ulcerated, and from the sloughs a pure culture of *Bacillus pyocyaneus* was obtained. As the patient was going downhill quickly, it was decided to perform appendicostomy to enable the bowel to be well and thoroughly irrigated through the opening. Unfortunately the patient died soon after the performance of the operation.

Supposed Foot and Mouth Disease.—A patient was admitted with the history that three weeks earlier he had been in charge of horses on a deserted farm, on which there were no other animals, in a town in North France. He was taken ill with symptoms of a bad cold and ulcerated mouth and blisters on hands and feet. On admission he felt quite well; the temperature was normal, the mouth was quite healed, but the palms of the hands and the soles of the feet were covered with vesicles of a yellow colour, hundreds in number, varying in size from a pin's head to a threepenny bit. A bacteriological examination of the fluid from one of them revealed no organisms of any kind on the films. The diagnosis rested between foot and mouth disease and cheiropompholyx. The former was the diagnosis made in France, but here, where he was examined by many medical men, the latter was considered the most likely diagnosis. He made an uneventful recovery without any special treatment.

Secondary Haemorrhage from the Posterior Tibial Artery.—A man was shot through the calf by a shrapnel bullet, which passed right through the leg. On admission there was a septic wound of the lower part of the leg, from which a fairly profuse haemorrhage occurred on the seventeenth day after he had received his injury. Eleven days later he was discovered by a nurse to be again bleeding very severely. She at once applied a tourniquet and informed the medical officer, who explored the wound and found that a large part of the wall of the posterior tibial artery was cut away, though there was no solution of the continuity of the vessel. The artery was ligatured above and below the affected part, and the man is now doing well.

This case illustrates several points. First, the usual causation of secondary haemorrhage, sepsis; secondly, the date, seventeen days after the receipt of the injury, the most common time being in the third week; thirdly, the importance of seeing that the nurse in charge of cases of this nature knows how to render first aid on the occurrence of bleeding; and, fourthly, the seriousness of neglecting the first warning of secondary haemorrhage.

This man had a bad attack of bleeding, which stopped spontaneously, the vessel being temporarily blocked by blood clot. But experience makes it practically certain that haemorrhage will recur in such cases. Therefore, the correct procedure is to ligature the vessel after the first haemorrhage, and not to wait for further attacks. In this case the man's life was nearly lost through neglect of this classical treatment.

Traumatic Aneurysm of the Femoral Artery in Hunter's Canal.—In this case the bullet passed right through the thigh. The wound healed, and about one month later he complained of a pulsating swelling above the knee. This was found to be a traumatic aneurysm of the femoral artery in Hunter's canal. It was cut down upon and the sac opened; a perforation was found in the arterial wall, through which blood poured until the artery above was compressed. The vessel above and below the wound was ligatured, and divided.

Persistent Sinus due to a Hidden Drainage Tube.—A man was admitted with a large sinus of the arm due to a bullet wound. It showed no tendency to heal, and an *x*-ray plate revealed a large drainage tube, about 5 in. long, which had slipped right into the wound. Its presence had not previously been suspected.

Gunshot Wound of the Lower End of the Humerus.—In this patient a bullet had struck the man's elbow and passed right through it. A radiograph showed a hole through the lower end of the humerus, but no actual division of the bone. The bullet had broken itself into a number of small pieces which lay scattered in the wound. It is remarkable that the usual procedure should be reversed, the bone smashing the bullet instead of the bullet smashing the bone.

Rifle Bullet traversing both Legs: Septic Infection: Suppurative Arthritis: Amputation.—In this case a rifle bullet passed through the right thigh, then through the left thigh, leaving two entry and two exit wounds. Those in the right thigh caused no trouble and soon healed, but those in the left were infected. On admission some four weeks later the wounds in the right leg were healed. In the left leg were many and very free incisions which had been made in a hospital in France. The man was not in a good condition and there was considerable pyrexia. He went downhill. The knee-joint became septic, the temperature went up to 105° F., his general condition was bad, and it was decided to amputate the leg. This was carried out through the middle of the thigh, the incisions for the flaps having to be made through some of the septic wounds in the leg. He improved rapidly, the temperature dropped to normal, and he was soon free from pain, slept well, and rapidly became convalescent.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

H.M.S. Goliath.

H.M.S. *Goliath*, battleship, Captain T. L. Shelford, was torpedoed in the Dardanelles, on the evening of May 12th, with the loss of over 500 lives. She carried three medical officers, according to the last *Navy List* available—that of January: Fleet Surgeon G. A. Waters, Surgeon C. Holtom, and temporary Surgeon C. H. B. Avarne. Of these, only the name of Fleet Surgeon Waters appears in the list of missing.

Fleet Surgeon George Alexander Waters, R.N., was educated at Queen's College, Galway, and took the M.D. and M.Ch. of the Royal University of Ireland in 1884. Entering the navy soon after, he attained the rank of Fleet Surgeon on August 17th, 1903, and was posted to the *Goliath* on August 1st, 1914.

Wounded.

Surgeon C. F. A. Hereford, R.N.V.R. (Dardanelles).

ARMY.

Killed.

Lieutenant Henry Wyndham Goodden, R.A.M.C., was killed in action near Ypres on May 9th. He was born in 1883, the eldest son of Wyndham C. Goodden, of London. He was educated at Clifton College and at the Bristol Medical School, where he took the M.B. and Ch.B. in 1912, also getting the M.R.C.S. and L.R.C.P.Lond. in the same year. He afterwards studied at Paris and Vienna. After qualifying he served as house-surgeon and senior resident medical officer at the Bristol Royal Infirmary. On August 20th, 1914, he accepted a temporary commission as lieutenant in the R.A.M.C., and at the time of his death he was attached to the 2nd Battalion of the Royal Irish Regiment. He had previously been wounded in the battle of the Aisne.

Lieutenant Montague Pern, R.A.M.C., was killed on May 9th at Ypres, aged 26. He was the second son of the late Alfred Pern, F.R.C.S., and of Mrs. Pern, of Botley, Hants, and was educated at Guy's, taking the M.R.C.S. and L.R.C.P.Lond. in 1912. He was serving as assistant medical officer of the workhouse infirmary, Portsmouth, till he took a temporary commission as lieutenant in the R.A.M.C. on August 16th, 1914.

Lieutenant George Harold Lunan, R.A.M.C., was killed near Ypres on May 13th. He was 23 years of age, and the elder son of Mr. George Lunan, pharmaceutical chemist, of Edinburgh. He received his education at Daniel Stewart's College and Edinburgh University, where he graduated M.B., Ch.B. in 1913. He was attached to the 9th Lancers as medical officer since the middle of October. On May 10th a bullet passed through his cap and bruised his head, but he continued on duty, and was killed three days later.

Second Lieutenant Roy Fazan, of the 5th (Cinque Ports) Battalion of the Royal Sussex Regiment, was killed in action on May 9th, aged 23. He was the youngest son of Dr. C. H. Fazan, of Wadhurst, Sussex, and was educated at Epsom College, where he was a member of the Officers' Training Corps; he took a commission in his battalion, which was a Territorial one, on May 14th, 1914, three months before the beginning of the war, and left with it for the front in February. He was a medical student at Middlesex Hospital.

Died of Wounds.

Lieutenant John Aquila McMahon, R.A.M.C., died in London on May 12th, aged 25, of wounds received a few days before near Ypres. He was the only son of the late Aquila McMahon, of Hilltop House, Howth, Ireland. He took the M.B. and B.Ch. at Trinity College, Dublin, in 1913. His name appeared as wounded in the casualty list published on May 5th. At the time he was attached to the 1st Battalion of the Somerset Light Infantry. He received a temporary commission as Lieutenant on September 26th, 1914.

Wounded.

Captain E. A. Sutton, R.A.M.C.
Lieutenant (temporary) H. P. M. White, R.A.M.C.
Lieutenant (temporary) E. F. Edmunds, R.A.M.C.
Lieutenant (Special Reserve) E. C. Linton, R.A.M.C.
Captain L. W. Jeffries, Australian Field Ambulance.
Captain J. W. B. Bean, Australian Forces.
Major J. S. Y. Rogers, R.A.M.C.(T.F.).
Captain W. D. Rogers, R.A.M.C.(T.F.).

Died as Prisoner in Germany.

Captain S. Field, R.A.M.C., April 10th, Wittenberg, Saxony.

NOTES.

BRITISH RED CROSS SOCIETY.

AT a meeting of the Council of the British Red Cross Society at St. James's Palace on May 12th, the Marquess of Lansdowne was elected chairman in succession to the late Lord Rothschild.

THE KING GEORGE HOSPITAL.

An urgent request for accommodation for the sick and wounded having been received by the Commandant, the King George Hospital will be partially opened on Monday, May 24th, and the top floor will be occupied by patients. The third floor is nearly ready, and will be opened shortly afterwards. It is hoped that the remaining floors will be available in quick succession. The work that the St. John and Red Cross orderlies are doing in the preparation of the wards for occupation has called forth the highest praise. The whole of the hospital would have been ready weeks ago but for the workmen's strikes which have occurred. Dr. T. Grainger Stewart, physician to the National Hospital, Queen Square, has undertaken charge of the electrotherapeutic and massage department of the hospital.

ABERDEEN UNIVERSITY.

At a meeting of Aberdeen University Court on May 11th it was intimated that the number of graduates, alumni, and students of Aberdeen University in service in the navy and the army was nearly 1,200.

SERBIA.

Dr. Lauwen has reported to the Wounded Allies Relief Committee from Kragujevatz that the typhus epidemic in Serbia is declining, a total of 20,000 cases in March having

dropped in April to 12,000. There is urgent need of all surgical instruments, dressing materials, and bandages, disinfectants, and iodine. Gifts in kind will be welcomed if addressed to the Committee at Sardinia House, Kingsway, while money should be sent to the Honorary Treasurer, Mr. T. O. Roberts, London County and Westminster Bank, W.C.

Sir Thomas Lipton's yacht *Erin* left Marseilles some days ago with a Red Cross party of doctors, nurses, and orderlies on board for Serbia. The expedition is taking out a full cargo of medical stores to the British Red Cross unit at Vrnjacka Banga.

Mr. John D. Rockefeller has sent £1,400,000 to Prince Alexis of Serbia, President of the Serbian Red Cross Society. This is a graceful act of gratitude. Prince Alexis married last year an American lady—Mrs. Hugo Pratt—whose father years ago lent £2,000 to Mr. Rockefeller when the "Oil King" started in business.

Oxygen Injections in Tetanus.

Some important investigations upon the treatment of tetanus by means of subcutaneous injections of oxygen, in view of the prevalence of this complication among the wounded, have recently been carried out at the Ontario Agricultural College at Guelph, by Dr. H. O. Howitt and Professor D. H. Jones, professor of bacteriology. An account of these investigations will be found in the April number of the *Canadian Practitioner and Review*, pp. 165 to 168. Dr. Howitt recently addressed a letter explaining his researches to the War Office, and has received due acknowledgement.

Casualties in the German Medical Profession.

In the *Deutsche medizinische Wochenschrift* for February 11th it is stated that the recent losses among the medical men attached to the army have been very heavy. According to the official lists, no fewer than 56 had been killed, 5 had met with accidental deaths (*verunglückt*), and 216 had been wounded between the outbreak of the war and January 15th. In the war of 1870 4,062 medical men were attached to the active forces, and only 9 were killed and 69 wounded. In the present war about 12,000 medical men had been called up, and it was thus clear that the proportion of casualties among medical men was already much higher in the present war. The chief cause of this high mortality among army surgeons was said to be the great range and destructive power of modern projectiles, and the deadliness of aircraft missiles. It was suggested that in the future the Germans should copy the restrictions which the British authorities had laid on the work of medical men in the trenches. The comparison which the *Deutsche medizinische Wochenschrift* draws between the casualties of 1870 and 1914 shows that the medical profession lost only 2 per cent. in 1870, and about 4 per cent. in 1914, but the difference cannot be altogether explained by the increased destructive power of modern weapons. It should be borne in mind that the war of 1870 lasted only six or seven weeks as far as the big battles were concerned. During the rest of the war the German army was principally engaged in the siege of Paris, at which the German medical men suffered very few casualties.

Medical Officers Wanted.

2/3rd West Riding Field Ambulance.

Four medical officers are required to complete the establishment of this unit. Applications should be made to the Officer Commanding, Major C. G. Murray, R.A.M.C.(T.), 2, Gell Street, Sheffield.

3/1st Home Counties Field Ambulance, R.A.M.C.(T.).

Three medical officers are required for the 3/1st Home Counties Field Ambulance, R.A.M.C.(T.), Foreign Service Unit. Applications to be made to the Commanding Officer, The Old Palace, Maidstone.

1st London (City of London) Sanitary Company, R.A.M.C.(T.).

There are still a few vacancies for medical men wishing to take commissions in the 1st London (City of London) Sanitary Company. It is desirable that those applying for commissions should have a knowledge of sanitation, as the duties of the company consist in organizing and supervising the sanitary work of the army at the front and at home. The posts are especially suitable for men in the public health and education service who can be released for military work. Those joining at once may expect to be ordered abroad at an early date. Applications should be made to the Officer Commanding at Room B6, Duke of York's Head Quarters, Chelsea, S.W.

Scotland.

The Edinburgh War Hospital.

As was announced in the JOURNAL of May 1st (p. 782), Bangour Asylum, or, as it may quite properly be termed, Bangour village, is in process of conversion into a military hospital. For three weeks the somewhat difficult operation of transferring the patients to other places has been in progress, and, whilst some 500 inmates are still in residence, and another week will yet be required before the change is completed, still it must be matter for congratulation that so much has been accomplished. Some of the patients have been sent to the Morningside Royal Asylum at Edinburgh, some to the West of Scotland asylums, and others will be sent to asylums in the North of Scotland. The transportation was carried out in the case of those going to Morningside by Red Cross wagons, and in the other instances hospital trains have been or will be employed, these trains making a round of all the institutions involved and being switched from one railway system to another. The motor bus also has been utilized for patients going to Rosslynlee. The opinion has been hazarded that, far from harming the patients, the change of air and scene may act beneficially upon them. Thus a hospital capable of receiving a maximum number of 1,350 wounded men will be made available, and we understand that, in view of the assistance which the Edinburgh Medical School has rendered and will continue to render, the institution for the time being will be called the Edinburgh War Hospital; it is obvious also that a change of name is desirable in the interests of the wounded soldiers who will be spending weeks or months there. We understand further that whilst the War Office has not yet announced the names of the medical staff, there will be an additional resident staff of thirteen surgeons and physicians along with six visiting surgeons and six visiting physicians. There are also 90 trained nurses at present available, and to these 50 others will be added; 45 of the Bangour male attendants are serving with the colours, but 35 remain, and their number will be increased as circumstances indicate. It may be added that Dr. Keay, the Superintendent of Bangour, and his assistants have been assiduous in lessening to the full extent of their powers any inconvenience or discomfort which might be felt by the patients or their friends, and have endeavoured in every instance to keep the former inmates as near Edinburgh as was possible.

Women's Ministry and Expectant Motherhood.

On Wednesday, May 12th, Dr. J. W. Ballantyne of Edinburgh gave an address on women's ministry and expectant motherhood in the George A. Clark Town Hall, Paisley. Provost Robertson presided. The address was followed by a conference of the Soldiers' and Sailors' Families and the Infant Health Visitors' Associations, which had been arranged by Baillie Pogson, who was the Convener of the Public Health Committee of Paisley, and by Dr. G. Clark Trotter, the Public Health Officer; for it had been felt, as Baillie Pogson expressed it, that in order further to reduce the infantile mortality in Paisley it was necessary to reach the infants before their birth, and that could be done only by influencing the mothers. Dr. Ballantyne compared the thousands of babies being born to battalions of soldiers going to the front for a campaign which might last seventy years for the babies and seventy weeks for the soldiers. If in the first week at the front each battalion of soldiers lost one hundred men killed and two hundred more were wounded, it would be regarded as a very serious disaster, and would undoubtedly excite criticism; but if it transpired further that each battalion had lost a hundred men by death in barracks the week before the detachment sailed for the seat of war, and if it came to light that a good many more lives had been lost in crossing, the demand for a searching inquiry would be irresistible. What had been stated as an extreme and very improbable disaster in war was nevertheless the average occurrence for all the thousands of babies being born in the British Isles. Out of each thousand who came alive into the world, at least one hundred perished in the first year, in the first of the seventy periods of which

human life might consist; and not a few were so damaged by diseases then suffered from that they were long in completely recovering, if, indeed, they ever quite got well. But more, each battalion of babies, like the imagined detachment of soldiers, lost at least one hundred of its numbers before birth, partly as dead- or still-births, but mostly as miscarriages; and yet again some others died during birth. So that instead of a possible eleven hundred babies which ought to arrive in life, only a thousand came, and of these a hundred perished in the first year of life, leaving only nine hundred available, and many of these disabled. And there were to be no drafts of recruits to fill up blanks. Dr. Ballantyne proceeded to mention various facts which went to show that care of the mother before the birth of her children was capable not only of preventing many of the antenatal deaths, but also of diminishing those occurring after birth, and especially in the first month of post-natal existence. He described the work of the Prenatal Nurses of the Women's Municipal League of Boston and of the Prematernity Nurses in connexion with the Edinburgh Royal Maternity Hospital, and analysed the infantile birth-rate for Edinburgh in order to show how large a percentage of the deaths in the first month were due to conditions, such as prematureness of birth, which were prenatal in origin and could be to some extent prevented. He specially emphasized the preventability of miscarriages, which, of course, were all to be reckoned as deaths in the family, although not followed by funerals and unmarked by little tombstones. He then sketched the ways in which women, health visitors, and others, might aid expectant mothers in the interest of their own health and that of their expected infants, and he made some suggestions as to the procedure to be adopted in visiting expectant mothers and in removing the reserves of reticence and shyness which so often interfered with the success of such interviews. Finally, he said a few words about each of the rules he had laid down in a pamphlet he had written, which had been published by the Women's Co-operative Guild in London, entitled *Hints to the Expectant Mother on her Health*, and he laid special stress upon such statements and rules as "pregnancy is not a nine months' disease, but it is a period of stress, the woman's marathon race, during which small errors may have grave consequences"; "pregnancy is a time for taking thought of health or for having a health stock-taking"; "the value of proper food in pregnancy"; "let the expectant mother beware of constipation, let her live healthily, avoiding strains, taking care of the state of her teeth, etc.; let her engage doctor and nurse or certified midwife early, let a medical examination be welcomed, let danger signals be watched for, let the baby be prepared for in time, let the proper date of confinement be calculated, let the dangers of miscarriages be fully realized, and let the risks of taking alcohol or drugs for the relief of tired feelings or dullness of spirits be recognized." At the close of the conference, in which Mr. Clark Millar spoke, advocating open windows, the Health Committee presented copies of the pamphlet referred to to the women who had attended.

Ireland.

Abuses of the Medical Charities Act.

Dr. J. B. Kenny, J.P., medical officer of the Killeshandra Dispensary District, wrote to the Cavan Board of Guardians calling their attention to the abuse, under the Medical Charities Act, of visiting tickets, which are issued for free treatment to well-to-do patients in his district. Dr. Kenny mentioned in particular the case of a patient for whom he received a ticket ordering free medical treatment and medicine, and who had, he stated, a sum of £250 held in trust for him. Dr. Kenny also pointed out to the Board of Guardians that, while he was called upon to afford this patient free medical treatment under the Medical Charities Act, two other doctors, one of whom is a prominent Dublin surgeon, were paid for attending him in consultation with Dr. Kenny. The experience of Dr. Kenny is fairly common with Poor Law medical officers throughout Ireland. It frequently happens that patients, who are not poor persons within the meaning of the Medical Charities Acts, receive tickets from a guardian or warden ordering free attendance and at a subsequent stage of their illness, without necessity and without the request of the Poor Law medical attendant, summon extra medical aid, for which they are able to pay large fees, notwithstanding that they got the services of the dispensary doctor on the ground that they were poor persons. The law, however, provides a remedy, though somewhat expensive and roundabout, for such abuses. In the first instance it is open to the Poor Law doctor to request the guardian or warden who has issued the ticket to reconsider the case, and as a result it is open to him, if he think fit, to withdraw the ticket and allow the patient to receive his treatment as a private patient. If a guardian or warden refuse to withdraw the ticket the dispensary doctor may appeal to the board of guardians, and on his showing that the patient was not a poor person within the meaning of the Medical Charities Acts, the board has power to cancel the ticket. In the event of the board refusing to cancel the ticket the medical officer may take his case before the county court judge. If the judge, after investigation, finds that it is a case in which a ticket should not be issued, he will grant a decree to the doctor for his fees and costs against the patient, or, in the case of the patient's death, his heirs, or if the judge should, in the circumstances, think it desirable, against the guardian or board of guardians who refused to cancel the ticket.

Substitutes for Absent Poor Law Medical Officers.

Before a dispensary or workhouse doctor leaves his district for his annual holidays he must make arrangements with his board of guardians for a substitute to discharge his duties during his absence. The board of guardians may insist that he should name his substitute, though it frequently happens that they do not appoint the nominee of the doctor going on leave. The Local Government Board, though it strongly recommends boards of guardians to accept the nominee of the Poor Law doctor going on leave when the arrangements are made with due regard to the convenience and interests of the sick poor, yet it has no power to compel the guardians to appoint the medical substitute nominated by the doctor. The result is that boards of guardians frequently appoint doctors other than those named by the Poor Law medical officers going on leave; but if the guardians' arrangements are not sufficiently convenient, or as convenient for the sick poor as those proposed by the doctor going on leave, it becomes the duty of the Local Government Board to refuse its approval. Throughout Ireland it is considered a breach of medical ethics for a doctor to accept temporary duty unless on the invitation or with the approval of the doctor absent on leave.

Coroners and Medical Witnesses.

Complaints are occasionally made in Ireland, as elsewhere, that certain coroners when summoning medical witnesses show a preference for their medical friends, and in this way, when holding inquests, pass over the local or family doctor. While it is true that a coroner can summon any doctor he desires, it is clear that, apart from cases in which expert evidence is required, the family doctor is in a position to give the best medical evidence, inasmuch as he was possibly the medical attendant on the subject of the inquest in preceding illnesses, and thus he is in a position to give the coroner and the jury the medical history and its bearing, if any, as to the cause of death.

England and Wales.

Lancashire Midwives Act Committee.

From the report of the Midwives Act Committee of the Lancashire County Council for the quarter ending March 31st, it appears that there were 930 midwives on the roll, of whom 522 are there in virtue of having been in bona fide practice in the year 1901, and 179 have temporarily ceased to practise, but may recommence at any time. During the quarter there were 650 records of sending for the aid of medical practitioners under the rules of the Central Midwives Board, 131 cases of stillbirths were

attended, and there were 14 deaths of mothers or infants before the attendance of a medical man. Of the 650 cases where medical aid was summoned, 18 were for abortions or miscarriages, 58 for unusual presentations, 40 for retained or adherent placenta, 189 for obstructed labour or cases requiring instrumental assistance, 19 for rise of temperature above 100.4° F. during lying-in, and 143 for affections of the newly-born children, of which 54 were cases of inflammation about the eyes. During the quarter 25 cases of puerperal fever were reported altogether, of which 10 died. This high mortality of 40 per cent. is slightly less than in the previous quarter, when out of 33 cases the mortality was 44 per cent. The reported cases of ophthalmia neonatorum numbered 92, not all of these being midwives' cases, but the medical officer of health feels it necessary to state that, notwithstanding the instructions given by the inspectors, midwives continue to delay advising medical help until serious symptoms are manifest.

Correspondence.

THE RECOMMENDATIONS OF THE NAVAL MEDICAL COMMITTEE ON THE TREATMENT OF WOUNDS IN WAR.

SIR,—Judging from a report by your correspondent in France in the last number of the JOURNAL to which my attention has been drawn *re* the recommendations of the Naval Medical Committee, there seems to be some misunderstanding as to the nature of that report, probably because it has only been published in the *Journal of the Naval Medical Service* and is not accessible to the men at the front, and therefore they are only speaking from hearsay.

Our report (it is not fair to my coadjutors to give me the whole credit of it) discusses the action of a number of antiseptics on pathogenic bacteria in blood clot, agar, wounds in animals, and, to a slight extent, wounds in man. The question of the exact method of dealing with wounds in man was left for further study, and our recommendations were merely tentative and open to alteration as experience indicated.

I have not had the opportunity of getting to the front although I am most anxious to do so, and have been living in hope that various hints which I have given would lead the army medical authorities to ask me to go out for a few weeks to study the matter. Mr. Arthur Edmunds, a member of our committee, has, however, now arrived at the Dardanelles, and will have every opportunity of working out the clinical side of the matter. I hope, therefore, that the profession will keep an open mind till he is able to report what the limits and possibilities of our suggestions are. This cannot be decided by a casual statement without any details of the methods employed, the time of employment, the nature of the cases, or the thoroughness with which the treatment was carried out.

My object in writing this letter is, however, to point out what our recommendations actually are. The whole original aim of our research was simply to find a means of *delaying* the growth of bacteria in wounds in the interval between the infliction of the wound and the arrival of the patient at the dressing station or the field hospital. We then assumed that the wound would be opened up, the pastes which had been introduced removed, and the wound thoroughly disinfected, drainage provided, antiseptic dressings applied, and the further treatment carried out as in civilian cases. We did not at all anticipate that the original application would *disinfect* the wound. On experimenting on animals with pastes of cresol, carbolic acid, and allied substances, we found that they were unable to prevent the development of tetanus and gangrene, but that they prevented the occurrence of suppuration and delayed the growth of the tetanus and gangrene bacilli. Hence they seemed to meet our requirements by prolonging the period of time in which disinfection of the wound was still possible, but they did not render such disinfection unnecessary, except perhaps in a few cases where the wounds were not soiled with earth.

On carrying the investigation further, however, we found that in salicylic acid, especially when combined with equal parts of boric acid (this combination we have termed "borsal" for the sake of shortness), we had a most important agent. Not only did borsal prevent entirely the decomposition of blood clot, but when introduced into wounds which had been infected with earth containing large quantities of tetanus bacilli and those of gangrene, it prevented the development of these organisms and the occurrence of the associated diseases in the great majority of cases, and in all when it was combined with antitetanic serum or with a 20 per cent. cresol paste or with both. In preventing these diseases, it naturally followed that it would prevent the ordinary septic infections. This remarkable fact altered our views as to the range of action of these substances, and opened up the possibility that disinfection might be attained by these means alone without the necessity for further disinfection. *But it is on borsal that we rely*, and not on the cresol paste; the latter is merely an adjuvant. The difficulty as regards borsal is that it acts best as a powder, and unless a wound can be opened up it is not possible to introduce a powder into all the recesses. (A powder of salicylic acid and borax was used by the Japanese to dust the wounds in the Russo-Japanese war but failed, no doubt because it did not get into the interior; also the combination with borax is not nearly so efficient as that with boric acid.) Where, however, the wound can be opened up and completely and plentifully treated with borsal in every part, I have no doubt that it will remain aseptic without the use of any cresol paste; but I would always combine it with a dose of antitetanic serum. We tried various pastes of salicylic acid, but they do not act so well as the powder; hence the reason why we suggested the addition of the cresol paste for the deeper parts of the wound. Lister's salicylic cream (salicylic acid mixed with 1 in 10 carbolic acid and glycerine so as to form a thick cream) seems, however, to act very well, and it may turn out that it is better to use a preparation of this kind in preference to the cresol paste.

In the meantime I hope that our suggestions will be studied very carefully before any decision is come to.—I am, etc.,

W. WATSON CHEYNE.

Royal Naval Hospital, Chatham, May 17th.

MEDICAL PRACTITIONERS AND SERVICE WITH THE ARMY.

SIR,—War is notoriously full of surprises. One of them is that while the part-time services of an elderly consultant are considered to be worth £100 a week to the country, the whole-time services of a practitioner aged, say, 41, and with perhaps twenty years' experience, are sufficiently requited at £1 per day. This is not very encouraging to the "family doctor" anxious to do his share. Many doctors are needed with the troops. Somewhere I have seen the figure 2,000 mentioned. It is clear that any considerable further supply will only be attained by taking men round about 40. At that age the bulk of us are established in private practice. Now to most of us our practice represents our capital, and to take a commission means just throwing that capital away. A year or more's absence would mean that—in large towns, at all events—there would be nothing left to come back to. All schemes for safeguarding the absentee's interests are chimerical; the public will please themselves what doctor they go to, and rightly. It is impertinence to attempt to dictate to them and would be justly resented. If we go we lose our capital, and unless we have private means when the war is over we should be left stranded and helpless, since a certain amount of capital is as necessary to a general practitioner as his diplomas.

Of course, I am not forgetting the £60 gratuity. About the most expensive gratuity on record that would be to most of us! If the Government wants the doctors, it can have them I do not doubt; all that is needed is reasonable compensation for the unavoidable loss sustained. That would vary in different cases; some practices containing appointments would suffer less than others consisting of purely private work. Let a man offer his services subject to compensation in return. There should be no great difficulty in arriving at a figure in any given case. Any experienced medical agent is constantly solving kindred problems. A man makes his offer to serve stating what compensation he requires. The figure would doubtless vary inversely as his patriotism. But patriotism has its limits. Many men are ready to face serious losses and

great risks, but not certain ruin—always excepting the £60! Multiply the £60 by 10 and that would about represent the average compensation the established practitioner could accept, and that would probably mean a loss of half his capital, plus all the anxiety as to how he is to get into the saddle again. In view of the enormous sums being spent, an extra million is not of vital importance, and it is of vital importance to get the army well cared for medically.

Of course I am speaking of compensation for the holders of established practices only. The holders of appointments—for example, Poor Law, Assistant M.O.H., etc.—gain rather than lose by taking up a commission at the present terms, and there is no difficulty about reinstatement on their return. By all means let the Government tap all other sources first, but when private practitioners are called on, as they must be, the authorities must be ready with something that we can listen to. The present state of affairs is, that a private practitioner, unless he wants to see himself in the gutter when the war is over, must nip his patriotic feelings in the bud. The shorter time we are away the less we should lose. Thus compensation for absence up to one year might be, say, 50 per cent. of the gross receipts of the previous year; if away over a year, it would not be worth while coming back, and the compensation would have to be higher. The present pay and £60 gratuity is not so bad for a youngster, and, in any case, he has to go or lose caste. But it is quite another story with older men. How can men with family duties, with various financial engagements, such as life insurance, mortgage charges on professional houses, and so on, throw up the lot for £60? It is not what we want to do, but what it is possible for us to do.

Naturally, it would entail a certain amount of trouble, and the substitution of elastic for red tape, and if the men can be got without it so much the better. If not, the sooner the question of reasonable compensation is tackled the sooner will the men in general practice—the bulk of the profession—get their chance of helping.—I am, etc.,

Finchley, May 17th. VINCENT MOXEY.

THE SUPPLY OF MEDICAL MEN.

SIR,—The solution of the problem of a sufficient supply of medical men at the present time for civil and military purposes is extremely simple, provided the principles of compulsion and compensation are made use of.

Compulsion is necessary in order to obtain an even distribution of medical men. The present method of obtaining medical men is unfair to the profession and not satisfactory to either civil or military patients.

All medical men should at once be compelled to notify themselves, their age, exact occupation, and income, as proved either by their books or by income tax returns. Those physically sound under the age of 50 should be compelled, as wanted, to give their services whenever, wherever, and in whatsoever capacity the military and naval authorities require. Those over 50 should, as wanted, be compelled to take the places of those called up for actual war service.

The under-50 men should be compensated by guaranteeing their earned incomes while away on duty, based on the average earned income of the three preceding years; they would then serve without pay other than their keep.

The over-50 men chosen to do the work of their younger *confrères* would be kept by the particular doctor whose work they were doing, but would be paid by public funds (*a*) if they were men in retirement, by a fee not exceeding 4 guineas a week; (*b*) if they were men partly in retirement, but who were earning a little (and there are numbers of such in our seaside resorts, as Bournemouth), their practice bringing in the small earned income, could be arranged to be worked locally on easy terms by brother practitioners, and compensation paid for any loss of earned income, then any further payment would be unnecessary.

Lastly, in the event of death, or disablement such as to prevent the carrying on after the war of the medical man's work, compensation should be paid at approximately one and a half year's purchase on the gross income of the practice, that is, the value of the practice in ordinary times.

Such a scheme as this would be less expensive than the present methods, and could easily be worked with a minimum of dislocation through the agency of the British Medical Association. Though every one must notify, as little redistribution would be carried out as would be required to obtain the necessary results—that is, the number of medical men required to be called up from time to time as the military exigencies require. By these means the medical profession would gain nothing extra; services would gladly be given without any other inducement than that by so doing these men were serving their country, while those at home saw to it that, as in other employments, their places were being "kept open," and their families provided for just as if they were still at home at work.—I am, etc.,

May 16th. M.D.

*** The Special Committee of Chairmen of Committees considered this letter at its meeting on May 19th, when it decided to adhere to the opinion expressed by it on May 7th—that compulsory medical service for the army could only be considered as part and parcel of universal compulsory service.

THE SURCHARGING OF PANEL PRACTITIONERS.

SIR,—In order to test the validity and legality of the regulations of the National Insurance Commissioners in the matter of surcharging panel practitioners for alleged extravagance, etc., in prescribing for insured persons, the Medical Defence Union has, on behalf of two of its members concerned, caused to be issued writs in the High Court. I need hardly point out to your readers in general and to those on the panel in particular, the importance of these actions, which I trust will be before H.M. Judges within a comparatively short time. The Medical Defence Union has already been successful in every action or appeal brought in respect of legal questions under the Act, and is engaged daily in working, *inter alia*, for the protection of those who have joined the panel willingly, or unwillingly.

Those who have not joined the Medical Defence Union should do so without delay, as this year will be critical in the history of panel practitioners, and they cannot afford to be without its protection.—I am, etc.,

A. G. BATEMAN,
General Secretary.

Medical Defence Union,
4, Trafalgar Square, W.C., May 15th.

Universities and Colleges.

UNIVERSITY OF BRISTOL.

Temporary Residential College.

THE University of Bristol, like most of the modern universities, has been anxiously concerned since its foundation with the question of residential accommodation for its students. Early in its history it received an important benefaction for the accommodation of women students in the shape of Clifton Hill House, to which the adjoining Callander House has since been added. During the last twelve months the Imperial Hotel and a large property on Richmond Hill, Clifton, have been purchased for conversion into halls of residence for men and women training students. The possibility of founding also a residential college near the university for men students generally has engaged the attention of an influential committee, and some progress has been made.

The university has taken two houses, Nos. 18 and 20, Belgrave Road, next to St. Mary's Church, Tyndall's Park, for the purpose of a temporary college. These houses are being renovated and decorated, and will be opened in good time for next term. When the arrangements are complete the temporary college will start with accommodation for 29 students—5 in single study bedrooms and 24 in double study bedrooms. It will include also a refectory, a common room, quarters for a warden, and housekeeper's and servants' rooms, as well as bath-rooms, offices, etc. There are good sized gardens at the back of the two houses, which may be converted into tennis courts. The new temporary college is situated in a good residential part of the city; it stands high, and is within a few minutes of the university buildings. It is expected that the alterations will be completed in a few weeks' time, when the building will be open for inspection by present and intending students and their parents.

The terms for board and residence have not yet been determined, but they will be similar to those charged in the residential colleges of other provincial universities.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Thursday, May 13th, Dr. Frederick Taylor, the President, being in the chair.

Admission of Fellows.

The new Fellows, whose names were published in the JOURNAL on May 8th, p. 831, were duly admitted.

There being no further business, the President dissolved the Comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting was held on May 13th.

Issue of Diplomas.

Diplomas of Membership were granted to 103 candidates found qualified at the recent examinations.

The Question of Reducing the Five-Year Period Required for the Conjoint Examinations.

The Council adopted the following resolution:

That it is not desirable that the two important requirements of the regulations—(1) a minimum curriculum of fifty-seven months and (2) a minimum period of clinical study during two winter and two summer sessions after-passing in Anatomy and Physiology—should be relaxed at the present time.

They desire to point out, however, that under the regulations of the Board they have power to grant exceptions to the regulations, and that they have already exercised this power in cases where the two important principles above referred to have not been involved. They are prepared to antedate the commencement of the curriculum in cases where students have pursued medical or scientific study before passing the Preliminary Examination, or before entrance at a medical school, and they believe, from inquiries which have been made, that this procedure will enable certain students to enter for the Final Examination three months earlier than would otherwise have been possible, and yet with a full curriculum of fifty-seven months.

CONJOINT BOARD IN ENGLAND.

AT a meeting of the Comitia of the Royal College of Physicians on April 29th and of the Council of the Royal College of Surgeons on May 13th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred on the following 103 candidates:

A. C. Ainsley, W. G E. Allen, D. W. J. Andrews, F. L. Apperly, J. H. Bayley, W. K. Bigger, Cyril Mary Brophy, J. K. J. Chambry, F. B. Chavasse, P Cheal, Ying-Jue Cieh, E. C. Cline, H. M. Collins, W. L. Cox, R. Curle, E. S. Cuthbert, E. I. Davies, J. K. Davies, W. A. Easton, C. H. Edwards, M Fahmy, N. Fahmy, I. Feldman, jun., I. Feldman, sen., F. J. Folinsbee, Annie M. C. Forster,* H. Gardiner-Hill, G. C. Gell, C. C. G. Gibson, B. H. Greensill, J. R. Griffith, H. S. Groves, W. T. Gwynne-Jones, G. Habgood, S. A. Hall, R. Hargreaves, C. E. Harrison, H. S. Heusman, R. C. Hewitt, W Hillbrook, R. A. Holmes, R. B. John, D. R. Jones, N. E. Kendall, J. S. Kennedy, H. J. McCurrich, A. J. V. McDonnell, A. McInnis, S. Mallinick, G. Mallya, A. H. Manfield, C. J. Marshall, R. P. S. Mason, B. Mitra, C. G. T. Mosse, N. F. Norman, D. C. Ogilvie, T. Owen, C. F. O Panditheséкere, O. Parry-Jones, E. C. Peers, W. S. J. Peiris, L. D. Phillips, H. D. Pickles, S. V P. Pill, R. F Pinson, G. W. Pool, C. L. G. Powell, J. W. Rammell, D. O. Richards, A. E. Richmond, A. I. Rihan, G. W. R Rudkin, B. Sampson, S. K Sanyal, C. H. Savory, E. H. S. Scarr, J. G. B. Smith, J. A. B. Snell, T. H. Somervell, H. G. Sparrow, G. S. Stathers, R. G. Sterling, D. P. Thomas, D. C. Thomas, R. C. Thomas, H. Q. F. Thompson, R. R. Thompson, J. R. Tibbles, E J. Tyrrell, J. E. A. Underwood, S. K. Vaidya, W. E. Wade, P. Wallice, K. J. F. Westman, E. S. White, Eva M. White,* H. A. B. Whitelocke, J. D. Wilkinson, C. M. Williams, G. R. C. Wilson, W. B. Wilson, G. W. Woodhouse,

* Under the Medical Act, 1876.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association, being anxious to assist in facilitating exchanges between medical officers of the Territorial Force in accordance with the War Office letter of December 10th (BRITISH MEDICAL JOURNAL, February 27th, p. 402), is prepared to publish in the JOURNAL applications for exchange. In all cases officers desiring exchange should furnish information on the following points:

1. Rank and name .....
2. Regiment *or* medical unit .....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally .....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Present address and date .....

Captain A. T. Griffiths, R.A.M.C.(T.), Medical Officer in charge of the 1/4 Battalion West Riding Regiment, British Expeditionary Force, France, is desirous of effecting an exchange to a clearing or base hospital.

MR. ABRAHAM LEACH, M.R.C.S., L.S.A., district medical officer to the Oldham Union and honorary consulting surgeon to the Oldham Infirmary, who died on December 12th, aged 75, left estate valued at £153,277 gross.

Obituary.

BERTRAM HERBERT LYNE STIVENS,

M.R.C.S.ENG. (1882), M.D.BRUX. (1884).

DR. BERTRAM HERBERT LYNE STIVENS passed away at his residence in Park Street, Grosvenor Square, London, on Sunday afternoon, May 9th, 1915. He was in his usual health up to Friday, April 30th, when a feverish attack, with sore throat, supervened. On May 3rd, feeling somewhat better, he came up from his country house—Garlogs, Hampshire—and attended to his professional duties on that and the following day. On Tuesday evening, May 4th, the throat inflammation recurred and became rapidly worse, and on the following Sunday Dr. Stivens died, a victim to that form of streptococcal pharyngitis, with oedematous laryngitis and pyaemic infection, which is always rapid and often fatal, particularly in a constitution such as his, which was not strong. In spite of his manly figure and fine presence Dr. Stivens had visibly failed since the death of his beloved little daughter two years ago.

Dr. Stivens was born at Birkdale in 1855. He spent his early life in Cheshire, and was educated at Bunbury Grammar School. Later, he studied abroad at Stuttgart and Heidelberg University. He then decided upon a medical career. Those who remember King's College Hospital in the early eighties, when the operating theatre used to be crowded with visitors from foreign countries, who came to see Lister at work, will hear with regret of the death of this well-known West End practitioner.

Dr. Stivens entered King's as a medical student in 1877, being some four or five years older than most of the men of his year, and this, in association with a confidence-inspiring manner, earned for him the affectionate name of "Pa Stiggins." He had a very successful career as a student, and crowned it by winning two of the much coveted residential posts. He first secured that of house accoucheur under the late Dr. W. S. Playfair, and followed this by being house-surgeon to Lister. These two posts, under such masters, were sufficient to lay the foundation of a talent for accurate and conscientious observation to which he owed his success in practice.

Although Dr. Stivens might well have aspired to consulting work, the opportunity of joining an old-established practice in the West End decided him to go direct from the wards to family practice in Kensington Gardens Square. Here his success, at a comparatively early age, was both rapid and easy. It was easy because to his knowledge and skill he was able to add the manner which is so large a factor of success in private practice. His manner was not a pose, but was the expression of a frank, sympathetic, genial, and hearty nature which took the deepest and most sincere interest in his patients and his friends. He later moved from Kensington Gardens Square to Park Street, Grosvenor Square, where his practice still further rapidly increased, and he had the honour of attending members of the Royal Family, whose confidence and esteem he very greatly treasured.

Dr. Stivens was an accomplished linguist, and his studies abroad stood him in good stead in medical practice. He included amongst his friends many of the most distinguished Continental physicians, and he often visited their clinics.

He was one of the first to introduce and practise in this country new methods of investigation and treatment which were being developed on the Continent.

Thus he appreciated the importance of the analytical investigations with regard to gastro-intestinal diseases, which were being introduced in France and Germany, and he was, perhaps, the first to carry out in this country these methods of investigation and to utilize them in guidance for appropriate medical treatment. He was familiar with the operation for removal of enlarged tonsils and adenoids in suitable cases long before it was generally practised in this country, and he was one of the first to introduce and perform this useful operation here in suitable cases. If he had aspired to it he might certainly have risen to more scientific eminence in his profession, since he had great gifts and especial knowledge and experience. He was content, however, with a less public and perhaps more satisfactory career, for it may be truly said of him that he loved to go about doing good. His friend and patient, Sir Rider Haggard, suggests for his epitaph the words "Our

beloved physician," and this expresses the regard which all his patients, without exception, felt towards him.

Circumstances made him early in life independent of his profession, but his love for the practice of his art induced him to continue it long after other men would have given it up, and even after he was attacked by his fatal illness.

He was a keen sportsman and fond of country life, and he was happy in his country home when the exigencies of his busy life permitted him to stay there.

Dr. Stivens married Belita Drabble, the daughter of the late Mr. George Drabble of Pembridge Square, W. He was a devoted husband and father, a most loyal and hospitable friend, and was simply beloved by his patients.

The sympathy of the medical profession and of a large circle of friends will go out to his widow and two daughters in their bereavement.

THE death of Professor THOINOT was announced in the JOURNAL of May 15th. We are now in a position to give some particulars of his professional career. Léon Thoinot, who took his doctor's degree at the Paris Faculty of Medicine in 1886, became physician to the hospitals in 1894 and *professeur agrégé* in the following year. He afterwards became full professor, succeeding Brouardel in the chair of legal medicine ten years ago. Professor Thoinot was not merely a medical jurist, but also a clinician and a hygienist of recognized authority. He was the author of numerous contributions to the treatises on medicine, known respectively by the names *Charcot-Bouchard-Brissaud* and *Gilbert-Thoinot*, and to the manual of Debove and Achard. He wrote on many subjects, notably on typhoid and typhus fever; a paper by him on the latter disease appeared in *Paris Médical* of April 17th of this year. He was also the author of a *Traité de Microbie*, and he was the editor of the *Annales d'Hygiène*. As a member of the Superior Council of Hygiene, inspector-general of the public health services of the Préfecture of Police, and a member of the Paris Council of Hygiene, he took a part in dealing with all questions of epidemiology and sanitation. He was a member of the Paris Academy of Medicine and an officer of the Legion of Honour.

THE death of Dr. I. W. POWELL, M.D., C.M.McGill Univ., of Victoria, British Columbia, occurred on February 25th. He was born in Simcoe, Ontario, in 1837. His ancestors emigrated from Wales to New York in 1640, and his grandfather was one of the devoted band of United Empire Loyalists who preferred to sacrifice material advantages rather than live under another flag. Dr. Powell went to Victoria and entered into practice after taking his degree in 1862, retiring in 1905. In 1865 he became a member of the Legislative Assembly, succeeded in establishing primary schools in the province, and was made the first president of the Board of Education. A strong advocate for confederation, he and another legislator, Mr. Amor de Cosmos, who supported him, were rewarded in 1871 by the news not only of confederation but of the building of a Canadian railway which connected the Atlantic with the Pacific. In 1872 Dr. Powell refused a senatorship which was offered to him, but became the first Indian Commissioner.

Medico-Legal.

A PANEL DOCTOR'S DRUGS.

AT the Bow County Court, on May 12th, before his Honour Judge Smyly, K.C., Messrs. C. J. Hewlett and Son, Charlotte Street, E.C., wholesale druggists, sought to garnishee a sum of money due from the West Ham Insurance Committee to Dr. Jamieson, West Ham, they having obtained judgement against the doctor for £8 8s. 9d. for drugs supplied. Mr. A. A. Robinson, appearing for Messrs. Hewlett, said the committee had informed him that the medical fees due to doctors on the panel had not been ascertained yet, but plaintiffs claimed the right to garnishee the amount. Dr. Jamieson said he was a ruined man if the order was made, as he depended on the money to pay his current expenses. His was a poor district, in which he was attending the poor for nothing. His panel patients numbered 374 only. He would agree to pay the amount by 5s. a month. Mr. Robinson submitted that the doctor's kind-heartedness had nothing to do with them. They were entitled to payment, and panel doctors had been earning large sums of money. The doctor said it was not realized that their profession was hit harder than any other owing to the war. Judge Smyly made the order asked for.

Medical News.

THE library and offices of the Royal Society of Medicine will be closed for the Whitsuntide holidays from Saturday, May 22nd, to Tuesday, May 25th, both days inclusive.

LIEUTENANT-COLONEL HUGH JONES ROBERTS, M.D., F.R.C.S.E., T.D., of Penygroes, Carnarvonshire, has been appointed Deputy Lieutenant for the county of Carnarvon.

THE *Annales de Gynécologie*, after a temporary suspension due to the war, has now come to life again. We welcome the reappearance of this valuable periodical, which is published by G. Steinheil, 2, rue Casimir-Delavigne (6e).

THE anniversary of the birthday of Florence Nightingale was commemorated in London on May 12th. A number of beautiful wreaths, mostly sent by nurses and women's suffrage and other societies, were placed at the foot of the statue erected in memory of her not long ago in Waterloo Place, and every officer who passed saluted.

SOME weeks ago Sir Lomer Gouin, the Premier of Quebec, received a letter from the Serbian Royal Legation in London, stating the great need for physicians in Serbia and asking for names of Canadian doctors who would be prepared to serve in the hospitals of that country, and over thirty doctors have offered their services.

DR. J. JOHNSTON ABRAHAM, author of *The Surgeon's Log*, has written an account of his experiences entitled, *With the Red Cross in Serbia*, which will be published by Messrs. Chapman and Hall. Dr. Abraham went out in charge of one of the Red Cross units. At the end of his six months' service he returned to England to join the R.A.M.C.

DR. AND MRS. A. C. JORDAN will give a concert on Royal Oak Day, Saturday, May 29th, at 4.30 p.m., at 13, Upper Wimpole Street, in aid of the "Music in War Time" Fund. Tea at 4 p.m. Tickets 5s. each, including tea. Payments received in excess of the price of tickets will go to sufferers from the loss of the *Lusitania*. The artists include Madame Amina Goodwin, Miss Cecilia Gates, Miss Adelina Leon, and Mr. Edward Halland.

THE Argentine colony resident in Paris has decided to present to the French army medical service a fleet of automobile ambulances. Each unit will be composed of three large motor vans fitted up with surgical instruments, and apparatus for radiography and for the washing and sterilization of dressings. The sides of the vans are so arranged that they can be used to form the roof of an operating theatre. Each unit will be accompanied by several motor cars for the transport of wounded.

A NEW edition of the University College, London, *Pro Patria* is in course of preparation and will be issued shortly. Past and present students, or their relatives and friends on their behalf, are invited to send full particulars of the capacity in which they are serving the country at the present time. In the case of the army, rank and regiment should be given; in the case of the navy, rank and ship. These particulars should be addressed to the Publications Secretary, University College, London (Gower Street, W.C.).

A SCHEME has been arranged at Levenshulme, near Manchester, for carrying on by mutual assistance and co-operation medical work during the holidays. It includes four weeks' holiday, together or at intervals, and provides choice of doctor to patients, and the medical practitioners agree to pay each other 50 per cent. of their ordinary charges for insurance work at the rate of 7½d. a visit and 6d. a consultation, and £1 1s. net for each confinement attended. The practitioners pledge themselves not to attend another doctor's patients for twelve months subsequently. The dates and length of holidays will be a matter for arrangement between the medical men concerned. Each practitioner before going on holiday will refer his patients to the medical men who are agreeable to take up his work, and will advise his colleagues of the dates of leaving and returning. Before leaving he will provide a list of those to be visited, with any necessary information, and on his return he will receive a list of the patients requiring to be visited. A separate account will be kept of work done, visits and attendance, both private and insurance, and supplied to the practitioner on his return home. Every man on his return from holiday will price the details of the list of work done on his behalf by each colleague, and send a yearly statement at the end of September of the value of the work done by each of his colleagues and the cross-accounts settled. All matters of doubt or difficulty will be referred to the president and secretary, or any two members of the Levenshulme Medical Society.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate. Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

I. H. asks whether cyanide of mercury and zinc made into a paste with 1 in 20 carbolic acid would be dangerous from absorption if applied as a first dressing for wounds in war.

W. B. writes: Can any member advise as to the prevention of attacks of phlebitis? I have under my care a retired butcher, aged 50, who has had three attacks of phlebitis during the past ten weeks in the post-tibial vein of either leg. Is there any treatment that could be adopted to prevent further recurrence?

RECURRENT VESICULAR RASH.

DR. R. C. MACDONALD (Falls of Foyers) writes: A patient under my care—a perfectly healthy woman aged 35—is subject to an eruption of blisters of about the size of a sixpence, surrounded by a red areola, disappearing in about a week, leaving a perfectly healthy skin. The eruption appears at intervals of from seven to twelve weeks, and is associated with slight fever and malaise which confines the patient to her bed. There is slight anaemia. The case has been diagnosed as psoriasis by a specialist. I prescribed thyroid gr. v every night and tab. ferri t.d.s. The interval between the attacks was prolonged at first to five months; now, after twelve months, it has gradually become reduced to about seven weeks. I would be glad of opinions as to diagnosis and treatment.

INCOME TAX.

J. V. asks whether certain expenses can be deducted by him in computing the income derived from a new practice.

* The expenses indicated by "J. V." can be deducted to the extent to which they are incurred in carrying on the practice. For instance, the whole of the cost of maintaining his stock of drugs and instruments would be deductible and a reasonable proportion of servants' wages and rent—the latter not to exceed two-thirds of the full amount. It must, however, be borne in mind that the cost of the original equipment of the practice represents an outlay of capital rather than an expense of maintenance, and therefore the cost of our correspondent's original instruments or motor car cannot be deducted, though the cost of renewing those or any other portions of the equipment of the practice would be a revenue and not a capital expense, and would accordingly be clearly allowable for income tax purposes. This distinction does not seem to be affected by the mode of payment, and although the purchase of furniture on a hire purchase system does involve "annual payments," we apprehend that such payments would be deductible or not according as the furniture so purchased was obtained to replace other furniture or was part of the original equipment installed by our correspondent.

ANSWERS.

PLASTER.—We cannot find that any work is published which deals exclusively with the subject of making plaster casts and moulds, but a chapter, giving a full account of the various methods and processes employed in these casts, is contained in the excellent book entitled *Modelling and Sculpture*, by Albert Toft (London: Seeley and Co. 1911. Price 6s.).

UMBILICAL CORD ROUND THE NECK.

DR. W. H. NELSON (Greenbushes, West Australia) writes: I noted Dr. Reginald Cock's inquiry in the JOURNAL of February 27th, about a baby born with the cord four times around its neck. He might be interested to hear of a case of mine last month, in which the baby had the cord five times around its neck, and the part of it nearest the placenta was loosely wound once around the body as well. The mother was a five-para, and labour came on rapidly and without any difficulty, the baby being passed out without a halt. Notwithstanding the coils around its neck, it yelled lustily while I hastily removed them. To my astonishment, on measuring the length of the cord, I found it was just over 5 ft., which is the maximum mentioned in Jellett's *Midwifery*.

LETTERS, NOTES, ETC.

SWEATING THE ANAESTHETIST.

DR. REGINALD POLLARD, who has received a request from the Royal Dental Hospital, London, to give anaesthetics on a morning or two a week, there being a large number of soldiers attending in urgent need of treatment, complains that the honorarium offered of 10s. for each morning's work, or 10s. for each twenty-five cases, not necessarily at one attendance, is an example of sweating the anaesthetist. He compares the fee offered by the hospital with the War Office offer of 2s. 6d. a case for administering an anaesthetic, usually N_2O, in extractions.

VACCINE TREATMENT.

DR. G. WESTBY (Liverpool) writes: I would like to draw the attention of your readers—especially general practitioners—to the paper of Dr. Cecil of New York in the *Archives of Internal Medicine* of January 15th last. I have been using autogenous vaccines in a few cases for the last three or four years in cases of chronic tendency to colds, in one case of hay fever, and in a case of acute bronchial catarrh. A reliable authority has informed me that he has had two cases of bronchial asthma considerably benefited by this treatment.

One often hesitates in suggesting this treatment owing to the expense to the patient, but I have not found any difficulty in this respect. A good opportunity of testing this treatment would be under the Government Insurance; it also would probably reduce the drug bill of which complaints have been so frequent.

POISONING BY MENTHOL-EUCALYPTUS SNUFF.

DR. AUBREY A. O'CONNOR (London, E.) writes: A young girl some time ago accidentally sniffed up some "menthol and eucalyptus snuff." I found her unconscious, but very wild, talking to herself, and throwing her limbs about. Her face was slightly flushed, the conjunctivae insensitive, and the pupils contracted. The pulse was very fast but of fairly good volume. I tried to rouse her, but her delirium appeared to get worse, until finally restraint had to be employed. I swabbed out her nose so as to remove any remaining snuff, and she was put to bed. After a period of half an hour she became much quieter, but still kept mumbling about pain in her head. Finally she drifted in a sort of sleep. I found her on the next day quite well, except for an intense headache, which lasted for two days, and she is now quite right again. Thus a small quantity of menthol rapidly produced violent symptoms.

ACUTE APPENDICULAR OBSTRUCTION.

APPENDIX writes: The JOURNAL of April 3rd contains a communication from Mr. S. T. Irwin, in which the view is advocated that two distinct conditions are included under the head "Appendicitis." It does not seem creditable to surgery that this hypothesis, enunciated four years ago by Mr. R. Campbell, should not have been either frankly accepted or else definitely disproved. Until this fog is cleared away and a definite decision arrived at, the usual textbook descriptions will be read with distrust, discussions on the respective provinces of medicine and surgery in appendicitis will be meaningless, and the ordinary comparisons of statistics futile. The matter is not a difficult one. In connexion with the approaching revision of the *Nomenclature of Diseases*, let the Royal College of Physicians ask for a definition of acute appendicitis from the staff of each of our large hospitals.

A DENTAL SURGEON'S OFFER.

DR. R. J. ERSKINE YOUNG (Liverpool, W.) writes: It is my desire to give up my usual August holiday this year, in order that I may go to France or Belgium and relieve some of the dental surgeons at present looking after the teeth of the sick and wounded in the base hospitals in those countries. By giving up my own holiday I might be able to give a man a holiday who needs it more than I do. I should be glad to get into touch with such a man through the medium of your columns.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address

ON

THE CARE OF THE HEALTH OF MARRIED WOMEN MISSIONARIES.*

BY

MRS. MARY SCHARLIEB, M.D., M.S.LOND.,

CONSULTING PHYSICIAN FOR DISEASES OF WOMEN, ROYAL FREE HOSPITAL, LONDON.

A RESOLUTION has recently been discussed by the association to the effect that women missionaries shall not marry until they have been in their proposed field of service for at least a year. The proposed rule appears likely to be of real value. It is quite impossible for anyone to know how far the climate is likely to prove suitable, and should it prove that the worker is unable to maintain her health in the climate in which her future husband has to work, it is evident that much annoyance, disappointment, and even wreckage of health and happiness will ensue.

Undoubtedly the rule can be followed in the case of women who have gone out, unmarried and unbetrothed, to work as missionaries. If such a lady meets her destined husband in the field there is relatively little hardship, and there is much wisdom in asking them both to wait until the woman has had time to find out how far she is able to adapt herself to the climate. On the other hand, difficulty appears likely to arise when the couple meet at home, the woman never having been in the field. They may become engaged and wish to go out as bride and bridegroom, or the man may go to his mission station, or return to it, expecting his *fiancée* to follow him. In the two latter cases the woman arrives on the mission field as a bride, without any experience of the climate. How is she in this case to obey the rule of waiting the prescribed year? There may be no other European woman in the station, or at any rate there may be no suitable home in which she can live during the probationary period.

It would be interesting to know exactly what arrangement is proposed to meet this difficulty.

Before a woman who is intending to go to the mission field as a bride is accepted a full and careful examination ought to be made of her health. Great attention should be paid to family history and to personal history. It too often happens that the examinee looks on the examination as a lawful contest of wits, and not only puts the best interpretation that she can on her personal and family history, but also suppresses any information that she thinks might have an adverse effect on the doctor's verdict.

The detailed examination of the examinee's present state should include all the ordinary points, such as relation of height to weight, condition of skin, muscles, skeleton, eyes, ears, nose, throat, teeth, organs of circulation, respiration, and digestion, and, in addition, there should be a very careful examination of the bony pelvis and its contained organs. The external measurements should be carefully ascertained by means of callipers, and the internal organs should be investigated, usually through the rectum. Attention should also be paid to the hymenal orifice, as much trouble is experienced in cases of dyspareunia. This detailed and careful examination is necessary, because it not infrequently happens that young married women are called upon to live and work in up-country stations far away from all skilled medical assistance. Should there be any condition likely to lead to difficulty in labour—for example, pelvic deformity, even of comparatively mild degree—its existence should be made known to the intending husband and wife, as well as to the society's medical examiner. It would probably be useful to have the report of the medical examiner made out in triplicate, one copy to be handed to the missionary, the others to be retained by the society and the society's medical adviser.

It would appear that a part of the doctor's duty is to give advice, to explain to the *fiancée* any facts connected with her health which call for special attention, and more particularly to insist that, in all cases in which it is possible, the first confinement shall take place in a town where competent medical assistance is procurable. At the same time useful advice may be given as to the necessary outfit of clothes, which should include a thin, fine woollen or silk garment, to be worn next the skin, and reaching from the neck to the knees. Suitable protection against mosquitos and other insect pests should be indicated, also protection for the head by a pith or cork hat with a suitable puggaree, and protection for the eyes by dark blue or neutral tinted glasses with lateral flanges. The medical adviser should further insist on all dental repairs that may be desirable, and also on the necessity for adequate protection against small-pox by vaccination and against typhoid by inoculation.

The society's medical adviser must explain to the prospective bride something of the enormous changes that marriage makes in a woman's physical position and general outlook on life. The unmarried woman is an individual responsible for maintaining her individual organism in health and efficiency; the married woman is responsible for something more than this. Upon her health and fitness depend in a large measure not only her husband's happiness, but his health and power for work. In addition to these responsibilities, the bride must be helped to realize that she is a potential mother, and that on her organic integrity and functional efficiency will depend the health and well-being of her offspring.

It might be thought that this little homily should be delivered by someone else, but in all probability the society's physician is the person best fitted for this duty, and it is absolutely necessary that someone should point out to the young woman the changes that are likely to occur in her health. He should point out to her that marriage usually causes a considerable diversion of nervous energy into new channels, and for a time digestion and the functions of the bowels are liable to be sluggish. The more thoughtful and the more conscientious the young woman, the more is she likely to be somewhat overwhelmed by the prospect of her new duties and new responsibilities and the more does she stand in need of kindly and sympathetic advice.

All young married women need this kind of help, and perhaps particularly with regard to the special duties of the married state. Some sort of a physiological standard should be suggested so that the husband and wife should live together in comfort and in harmony, not defrauding each other nor shirking the responsibilities and the difficulties of the married state. It is only too common at the present day to find young couples, and even good and well meaning young couples, who have no adequate knowledge of the objects of marriage, or of the duties entailed thereby. In some cases they even consider it praiseworthy that they should for a time refuse to accept the natural consequence of matrimony. They allege devotion to work, narrowness of means, and a scrupulous regard for the future good education of their children as reasons why they should have none for a few years. This mistaken action on their part frequently leads to artificial restrictions and anticonceptive measures. Of the immorality of these proceedings there can be no doubt, and curiously enough, even where no mechanical or chemical damage is caused to the organs and tissues, some nervous injury ensues, and when the husband and wife wish to become parents their desire is too frequently disappointed. Nor does the evil end here, for thwarted and disappointed function appears to react injuriously, and is probably one of the causes why many childless wives become neurasthenic and melancholy in middle life.

Another point in the care of the health of married women missionaries is to be found in the modifications of menstruation which are apt to occur. Not infrequently the sudden change of climate and method of life results in more or less long-continued amenorrhoea. A young American missionary had no period for fourteen months after arrival in Madras; she was not ill, nor was she anaemic, but her periods were absent and her general health somewhat below par. She had felt the parting from home very much, and it was not until after careful treatment with electricity that her ovaries resumed their usual functions. On the other hand, not infrequently the relaxing effect of a hot climate causes a greater frequency or a greater abundance of the menstrual flow. In most

* Read before the Association of Medical Officers of Missionary Societies, February, 1915.

instances, both of the *minus* and of the *plus* condition of the function, the normal will be reattained after a few months, and drastic treatment is not indicated; attention to rest, to diet, and regulation of the functions of stomach and bowels usually suffice.

PREGNANCY.

The young married woman should be taught how to recognise the early signs and symptoms of pregnancy, partly in order that she should take reasonable care of her own health and that of her unborn child, and also in order that she should early seek medical advice. The health sheet, which every missionary should have, finds one of its most useful functions when the examinee becomes pregnant. Should she be up-country, a considerable distance from any experienced doctor, she can send a letter describing the signs and symptoms that make her think herself pregnant, and enclose the health sheet, so that the doctor she wishes to consult is able to judge what arrangements it will be wise to make for the woman's delivery. He will be guided by the recorded measurements of the pelvis, and will be able to ascertain at what time he ought to see his patient in order to judge of the relative size of the child and the pelvis. If the woman is so fortunate as to live in the same town or within easy reach of her doctor, a careful examination will be made and the growth of the child will be watched during the last two months of pregnancy, so that there may be no danger of a 10-lb. baby having to pass through a pelvis that is only adequate for the transmission of one weighing 6 or 7 lb.

The patient should send her urine for examination regularly once a month, so that the doctor may know whether it remains normal, what are the proportions of urea to water, what is the absolute quantity of urea excreted. He will also be able to detect the presence of abnormal constituents, such as albumin, sugar, and acetone. The presence of albumin does not necessarily indicate disease. It may be due to a vaginal discharge. Sugar is usually lactose, and is associated with incipient lactation, not with any of the causes of diabetes.

The pregnant woman must be advised as to the adjustment of diet to her condition, and probably, as a general rule, it will be found that English women have a tendency to eat too much meat, and to indulge too freely in strong soups and meat extracts. These articles of diet put more strain on the organs of excretion than they can well stand during pregnancy, and their evil effect is aggravated by a hot climate. It would therefore be better for pregnant women to eat liberally of bread-and-butter, milk, vegetables, and fruit, and to take but sparingly of meat.

Another important item in the advice that we ought to give to women missionaries during pregnancy concerns exercise. In trying climates, and more especially where extra exhaustion is caused by press of work and the care of little children, there is too little energy available for outdoor exercise. Luckily in most tropical climates life is lived almost entirely in the open air, a condition of things which goes far to compensate for disinclination to exercise and the exhausting effects of heat. It is, however, to be remembered that the tonic and stimulating effects of outdoor exercise are not entirely due either to the goodness of the air or to the muscular exertion, but largely to the psychical effects of change of scene and interest. It is therefore very important that some change of employment, and if possible of scene, shall be enjoyed daily.

Sleep and rest are matters of the greatest importance, and the daily siesta, copied from the custom of natives, is in no way a pandering to sloth and idleness. In all tropical and subtropical countries daily life and work begin even before the rising of the sun, and thus a day of sixteen or seventeen hours is the rule. The European woman who is bearing the double burden of pregnancy and ordinary work absolutely requires a couple of hours' rest in the hottest part of the day. Her conscience should permit her to sleep if she should be so disposed, but if not sleepy the hours of retirement are specially valuable for the refreshment of the mind and spirit. We are all too easily tempted to forget spiritual necessities and to underrate the responsibility which we have for providing for the nourishment, refreshment, and development of that part of us which is destined to live eternally.

In all cases of pregnancy the expectant mother should be informed as to the manner in which she is to provide for the welfare of her unborn child. Pre-natal influences determine very largely the welfare or misery of the individual, and the expectant mother should be helped to realize that on her well-being, on the nutrition of her body, and on the calm and cheerfulness of her spirit, depends in a large measure the welfare of her child.

The medical adviser of the pregnant woman must always remember the possible influence of the three great racial poisons, and should be watchful in protecting his patient and her child from their ravages. Missionaries and their wives might well be indignant that the doctor should think it necessary to protect them and their offspring from the evil influences of alcohol and of syphilis; tuberculosis they might admit is an unsought and an unmerited evil, but with regard to the other two, instructed and enlightened conscience would lead them to consider the barest suspicion of their existence as a disgrace. It must, however, be remembered that the treasure of divine grace is contained in earthen vessels, and that in some instances it is possible that the sins and follies of youth, long ago repented of and forgiven, may be latent through long years, and then awaken into new life and cause disaster. The wise physician will therefore make careful inquiry into the history of each case, both in the family and personal aspect. He will if necessary have the blood tested, especially in cases where there have been repeated apparently causeless abortions or premature births. The doctor who is tactful and discreet as well as competent will be able to do this without compromising anyone's good name, and will be prepared to administer the suitable remedy should any virus be present.

LACTATION.

Even in a tropical climate the rule should be for the mother to nurse her child. Lactation must be carefully watched, and it must be modified or interrupted should the mother's health make it desirable; but as a rule it is sufficiently well borne, and the advantage to the child is so great that it should be the rule and not the exception. The mother gains also by suckling her child, not only in the physiological involution of the uterus, in the checking of a tendency to too early repeated pregnancy, but also in the greater security of the child's health and consequent absence of anxiety that she enjoys.

LEAVE, HOLIDAYS, AND FURLOUGH.

In all missionary societies it is the rule that missionaries shall have a month or six weeks' holiday in the country every year, and that one year in six shall be spent on furlough.

A missionary who has just returned from Corea has given it as his experience that, unless the circumstances are very unusual, no term of service should exceed five years. He would divide missionaries into classes with reference to furlough—some who apparently require no furlough; some who are absolutely exhausted and played out at the end of five years; and an intermediate class who are indeed needing their holiday, but who can work to the end of their term of service and start for their holiday able to enjoy it. He was, however, of opinion that, even in the case of those who believed that they could work on and whose health showed no obvious deterioration, the power of work was really lessened, that their work suffered more or less markedly if the holiday were delayed, and that, therefore, permission to work an extra year should rarely be given. If these considerations are just for missionaries in general, they are even more cogent in the case of married women missionaries. They have probably been bearing a threefold burden—climate, work, and family; it would be poor economy indeed, both for the society and the individual, if these ladies were not sent home without hesitation at the end of each term of service.

ARRIVAL AT HOME.

It is very desirable that the married woman missionary should see the medical officer of the society on her arrival. He would read her health sheet, talk to her, examine her, and advise her. In this interview it is extremely desirable that the doctor should remind the missionary that the object of furlough is the maintenance of health and regaining of energy that will fit her for a further term of service. The dedication of the life to the special service of God in the mission field is usually intended to be the dedication

of the whole life and not merely of some portion of it; anything, therefore, which tends to unfit the missionary for service is a real, although an unintentional, disloyalty, and the acceptance by missionaries on furlough of any work or responsibility that interferes with their recuperation is to be deprecated. In this connexion it is necessary for the society also to exercise a wise care and discretion. In the eagerness of desire to kindle enthusiasm and to diffuse a knowledge of mission work, the organizing secretary is sometimes too anxious to get as much deputation and meeting work as possible out of the returned missionary. Individuals vary greatly in their capacity for this work, and while to one it is a pleasure and inspiration, to another it is a great ordeal and one that seriously interferes with health. As a general rule it may be taken that no returned missionary should be asked to take deputation work of any kind for the first three months after arrival; more especially is this necessary in the case of the wife and mother. It is difficult to realize the amount of wear and tear that a good housewife and mother has to undergo; the daily vigilance over family and household; the frequently recurring anxieties inseparable from family life in the tropics; and in some instances the annoyances inherent in the management of native servants and others, conspire to wear her out and to break down her nervous system. Such a woman requires all the available time of her furlough to build up her health and recover her strength so that she may be fit to return with her husband to the field. These, then, are the reasons why the medical adviser should carefully inquire into home circumstances, and as to how the wearied missionary proposes to spend her holiday. He should tactfully and sympathetically indicate that the object of her furlough is not that she should relieve some other over-burdened member of her family, nor that she should constitute herself sick nurse and guardian, but that she should in the first instance do her duty to her society, her husband, and herself.

Not infrequently the medical adviser will find that his patient is a worn and delicate woman with five or six little children, and that, thankful as she is to have the prospect of a better climate, she is somewhat nervous and doubtful of her power to cope with the active healthy little ones without the help of the servants to whom she has naturally been accustomed in the tropics. Native ayahs and bearers need a great deal of supervision, but they are, at any rate, hands and feet, and they are very generally kind and devoted to their little charges, but the English home of the returned missionary is frequently all too small, and the service leaves much to be desired; consequently, the children are much with their parents, and the tired mother spends a great part of her much-needed holiday in washing and dressing the children, in sewing for them, and even in wheeling the perambulator for one or two, while others hang on to her skirt. It would really appear as though some guild or association should be formed to afford help under such conditions. The parents would not like to part with their little ones, but it might perhaps be possible for young ladies gifted with missionary zeal to form themselves into a guild of help, the members of which would be available to live with each missionary family and assist in the care of the children. An alternate scheme might be the collection of a special fund for increasing the missionaries' incomes during furlough, so as to enable them to make their own arrangements for such assistance as they found necessary.

Before the return to the field the married woman missionary should be seen by the society's medical adviser, who should be satisfied as to her fitness for return, and enter on the health sheet any observations that may be necessary.

THE Henry Saxon Snell Prize will be awarded this year by the council of the Royal Sanitary Institute for an essay on "Suggestions for Improvements in the Sanitary Arrangements and Appliances suitable on Board Ship for (*a*) Passengers and Crew, (*b*) Cattle and other Live Stock." It consists of 50 guineas and the silver medal of the institute. The essay, which must not exceed 5,000 words in length, is to be typewritten on foolscap, one side only, and to be illustrated by drawings or sketches. Essays must be delivered on or before November 1st, 1915, addressed to the Secretary of the Royal Sanitary Institute, 90, Buckingham Palace Road, London, S.W.

TRAUMATISM AND TUBERCULOSIS.

BY

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IT is now several years since my attention was first directed to the relation of injury of the chest wall to pulmonary tuberculosis.

A healthy girl, aged 17, while crossing a street in Newcastle, had been knocked down by a cab. Her chest was injured, but no ribs were broken. An hour or so after the accident she had haemoptysis. When I examined her, three months after the accident, there were signs of advancing pulmonary phthisis; cavitation was limited to the right apex, the side of the chest which had been injured. She gradually but quickly emaciated, cough became more frequent, accompanied by muco-purulent expectoration, and haemoptysis kept recurring from time to time. Death came within two months of my first seeing her.

On the occasion of her first visit I was struck by the fact that a girl, said to have been quite healthy until the day of the accident, should show so shortly after the injury signs of pronounced phthisis. Since then several similar cases have come under my observation, and are not without interest from the point of view of the liability of employers for accidents under the Workmen's Compensation Act. The subject of traumatism and tuberculosis is, therefore, one upon which it is well for all of us to have a definite opinion.

Eighteen months ago a mason's labourer, who had never lost time through illness, fell from a scaffolding a distance of 6 ft., injuring his right hip and chest against a brick wall. Little was thought of the injury at the time. The man at the close of the day's work walked a short distance to a railway station and travelled by train home. Nine days after the injury he had haemoptysis. From this he recovered and returned to work. Six weeks after the accident he complained of pain in the right chest. On examination, a doctor found evidence of pleurisy with effusion. Despite treatment, the patient gradually got worse. He emaciated rapidly. Within a few months he lost 4 st. in weight, cough became more frequent, and expectoration more abundant, while in the sputum myriads of tubercle bacilli were found. When I first saw him there was considerable dullness over the base of the right lung, but on an exploratory puncture being made no fluid was found. There were signs of rapidly advancing disease in the apex of the right lung. As the workman claimed damages from his employer, the case was heard in the county court. The patient, who was awarded full compensation on the ground that the pulmonary disease was the consequence of the accident, lived only a month or two after receiving the verdict in his favour.

While penning these notes I had under my care in the Royal Victoria Infirmary a miner who, when emptying a railway wagon, fell over the side of the wagon, bruising his right chest against the grease-box. Within two hours after the accident he had haemoptysis, but notwithstanding this he continued at work a few hours longer. That evening he did not sleep well; he was restless. Next morning the bleeding returned and continued for four days. Cough subsequently developed, with signs of pulmonary disease, accompanied by the presence of tubercle bacilli in the sputum. Cavitation of the apex of the right lung occurred, and while at the time these notes were written the patient was progressing satisfactorily under the open-air treatment on the balcony of the Infirmary, he died a few months afterwards from advanced pulmonary tuberculosis.

How are we to connect the fact of injury to the chest wall of a previously healthy person with subsequent tuberculosis? The lung disease so clearly and definitely follows the injury that there must be some connexion between the two. It is not only in affections of the lungs that the sequence of tuberculosis to injury is observed; it is seen also in affections of the joints and bones, the interesting fact being that frequently the accident is said to have been of such a slight nature as not to have attracted the attention of the patient or his friends at the time. In nearly all the instances of pulmonary tuberculosis following injury which have come under my care the injury has been of a serious nature. A sign that the lungs had suffered was haemoptysis occurring an hour or two after the accident. In some patients the bleeding did not show itself until two or three days after the accident; in the case of the mason's labourer reported, bleeding did not take place until the ninth day, but whether haemoptysis occurred early or late the after-events were the same in all, namely, pulmonary tuberculosis running rapidly to a fatal termination.

MM. Georges Brouardel and Leon Giroux[1] state that Jeannel found 5.5 per cent. of the cases of tuberculosis

under his care post-traumatic; Wilner 6 to 7; Pietrzikowski 8; Hahn found that 13 per cent. of his cases of tuberculous disease of the ankle were post-traumatic; König 20 per cent. of diseased knee-joints, while Horzetsky obtained a traumatic history in 44 per cent. of diseased spines. Brouardel and Giroux state that of 30 cases of injury to the chest they had examined which became tuberculous, in only 2, that is, 6.6 per cent., did they admit the possibility of such a causal relationship. In Germany Demme found in 159 patients suffering from wounds of the lungs caused by bullets that 17 subsequently developed tuberculosis.

Bleeding from the lung occurring shortly after injury to the chest wall and followed by pulmonary tuberculosis raises the question, Is there such a malady as *phthisis ab haemoptoe?* Experiments have been made by opening the trachea of animals and injecting healthy blood into the bronchial tubes. If the animals were subsequently kept in a warm atmosphere they recovered without any bad effects, the blood was absorbed and no lesion was found in the lungs; but if, after the operation, the animals were allowed to run about in the open air exposed to cold and wet, an alveolar catarrh developed, and the lungs became the seat of a low form of inflammation. The presence of free blood in the pulmonary alveoli and in the small bronchi thus became the starting-point of pulmonary disease. By the presence of blood in the lungs local resistance becomes reduced and the organs a possible prey to all kinds of micro-organisms, including the tubercle bacillus.

When haemorrhage occurs after injury to the chest wall, what is the cause of the bleeding? If blood was spat up immediately, it might probably be attributed to almost direct injury to the pulmonary blood vessels, but usually haemoptysis does not occur until one, two, or several hours, or even a few days after the accident. The delay in its appearance and the manner in which it recurs suggest that there probably had been some pre-existing disease—some latent focus in the lung—and that, as a result of the contusion, pulmonary tissue which had undergone structural change had become more friable, and was therefore easily torn.

Before attempting to reply to the further question whether there is a true traumatic pulmonary tuberculosis, let us see what experiment can tell us. In 1878 Max Schüller injected human tuberculous expectoration into the lungs of dogs and rabbits, and he then caused to be sprained or otherwise injured the knee-joints of these animals, with the result that in nearly all of them there developed a granular inflammation of the joints with structural changes in the cartilage and underlying bone, while in control healthy animals the same injuries provoked no lesion at all. To the injured joints, therefore, of infected animals tubercle bacilli and other micro-organisms found their way; in other words, while simple injury *per se* did little or no harm to a joint, it was quite otherwise if there were present at the same time infective micro-organisms within the body, for these became attracted to the injured part. Lannelongue and Achard placed tuberculous material under the skin of 20 guinea-pigs, and, after giving sufficient time for infection to have occurred, some of the joints of the animals were subjected to injury. All the animals died from tuberculosis, but not in one of them did the joints which had been injured show signs of tubercle. According to Lannelongue and Achard, it is not easy to induce a tuberculous process at the seat of injury. In this field of inquiry Petrow also carried out a series of experiments. He first injured the joints and thereafter injected into them tuberculous material. The experiment was repeated upon uninjured healthy joints. In those animals whose joints had not been injured the lesions were limited to the ligaments and capsule, but in those whose joints were injured previously to the injection of tuberculous material, the continuity of the cartilages was destroyed, while here and there a few small tuberculous nodules could be seen. Petrow took other 18 rabbits, injected into their veins human tuberculous material, and afterwards caused in those 18 animals 18 intra-articular fractures, 18 sprains, and 18 slight contusions. At the end of 3½ months the animals were dead. They all showed signs of tuberculosis. Of the 18 joints which had been injured 11 were tuberculous; of those which had been slightly contused 2 were tuberculous, while of those which had not been injured 2 were tuberculous. Reviewing Petrow's experiments, it may be said that injury seemed to have had some influence in determining tubercle bacilli to a joint when the disease was already present in the body.

The answer to the question whether there is or is not such a condition as traumatic tuberculosis is not to be obtained from experiment alone, but from experiment and clinical experience. All of us know that many patients who are the subjects of tuberculosis are receiving from time to time minor injuries to their joints and bones, and that those injuries heal quite well. If in these patients, just as in the animals experimented upon by Lannelongue, it is difficult for an injury to create a tuberculous joint, how much more difficult must it be for an injury to set up a local tuberculosis when people are healthy.

When localized tuberculosis shows itself after an injury inquiry ought to be directed to the previous health of the patient, always bearing in mind that in upwards of 70 per cent. of the *post-mortem* examinations made in infirmaries upon the bodies of persons who have died, not from tuberculosis, but from other causes, there are evidences in the lungs of healed or latent tuberculosis, so that should any of these people have received an injury to the chest wall it is possible that at the site of the pulmonary lesion the surrounding lung tissue might have become lacerated, a haemorrhage might have occurred, and tubercle bacilli, becoming liberated, might have found in their new surroundings fresh pabulum for growth and reproduction. When the chest wall has been injured, the *point d'appui* is constituted by the column of air retained in the lung through closure of the glottis and not by the blood circulating in the lung. Any diseased condition which interferes with the elasticity of the lung would be more likely to be followed by tearing of blood vessels than would be the case in a healthy lung. Sourdille reports the case of a man who died eight days after having received a kick on the left chest from a horse. No bones were broken. At the autopsy a considerable quantity of sero-sanguinolent fluid was found in the left pleural cavity, false membrane was present on both the visceral and parietal layers of the pleura; atelectasis of the lower lobe of the left lung, with congestion of the upper lobe, were notable features, while at the level of the injury there was a pouch the size of a duck's egg which contained black clotted blood. This pocket in the lung tissue lay underneath the pleura, its walls were irregular, and one bronchus had been torn right across. Had this man survived the injury, there can hardly be any doubt that the lacerated lung would have formed an attractive area for all kinds of micro-organisms, including tubercle bacilli.

It is interesting to remember that where death has followed injury to the chest wall the lung opposite to the side injured has sometimes shown more serious lesions than the lung on the side which had been contused.

Another condition for which medical men are consulted will be best understood if I give an illustration from my own experience:

> A working man, previously believed to have been healthy, strained himself when lifting a heavy iron plate. Severe pain at once struck him in the back; he was obliged to sit down partly through pain and partly through a sense of faintness. The following day he brought up a small quantity of blood. The haemoptysis recurred during the next four days. An incomplete recovery took place. The man returned to his work and followed his employment for some months. When I examined him six months afterwards the lungs were found to be the seat of rapidly advancing phthisis.

Supposing this man's lungs were healthy before the severe muscular strain, was the haemoptysis simply the result of effort, and was the haemoptysis the cause of the pulmonary tuberculosis which followed? In traumatic pulmonary disease three events follow in due succession —namely, injury to the chest wall or a severe strain, haemoptysis, phthisis. At first sight it would seem as if injury started the morbid process, as if it had been the first link in the chain of morbid events, but can we be quite sure that there was no abnormal condition of the lung anteriorly to the injury? If previous disease can be affirmed, or if it can even be said to have been strongly suspected, is it not the more important circumstance since but for it traumatism could hardly have played the part it did in ultimately giving rise to morbid conditions which led to death? It is hardly conceivable that injury can

create a condition of lung so distinctly microbic as that observed in tuberculosis. Where pleurisy has followed injury and become tuberculous, it is just possible the following has taken place: Knowing the high percentage of pleurisies which are tuberculous from the first or become so, it would appear as if a limited patch of tubercle situated under the visceral layer of the pleura had, as a result of injury to the chest wall, become activated, and the germs from their proximity had infected the pleura, or, as a result of shock to the system by the injury, the resistance of the body generally and of the lung locally had become reduced, the entrance of the tubercle bacillus into the body favoured, and the way made easier for the development and multiplication of the microbe, whose presence therein would therefore be not a direct sequence of the injury, but simply incidental to it.

Tubercle bacilli have been found in the blood of persons who have suffered or who have died from tuberculosis. It is thus we seek to explain the disseminated miliary lesions in acute tuberculosis. The presence of tubercle bacilli in the blood has been shown experimentally and the blood of affected persons when injected into guinea-pigs has induced in them tuberculosis. Kurashige, a Japanese, found tubercle bacilli not only in tuberculous patients, but taking thirty-four apparently healthy persons he found the micro-organism present in twenty. Within eight months afterwards three of these developed tuberculosis. If we admit that tubercle bacillaemia is a more frequent condition than is generally supposed the consequence of injury to the chest wall can be readily imagined.

On this point, however, we must not be carried away too much by microscopical findings, for acid-fast resisting bacilli, closely resembling the specific micro-organisms in question, may be found in other conditions than tubercle. They are occasionally found, for example, in distilled water. To remove doubt Dr. Slade, bacteriologist to the Royal Victoria Infirmary, Newcastle, and myself carried out a series of experiments. We took blood from several patients in all stages of pulmonary consumption, whose expectoration contained tubercle bacilli in large numbers; and after following out rigidly the technique recommended, in none of the films did we detect well-formed tubercle bacilli. Now and again we found what might have been bacillary débris. Nor was the injection of the blood of affected patients followed by tuberculosis in the guinea-pigs who received the blood. These circumstances indicated to us that if tubercle bacilli are present in the blood they are extremely few and therefore difficult to find; in a word, tubercle bacillaemia is not of frequent occurrence.

The relationship of traumatism and tuberculosis may be expressed thus: Tuberculosis develops in a person who, until the accident, was believed to be quite healthy; a latent tuberculosis is roused into activity by the accident; a tuberculous lesion becomes localized at the site of injury, the micro-organisms having been carried thither from a focus elsewhere in the body, or injury has simply aggravated a localized lesion which was previously present. Although there is no tuberculosis without the tubercle bacillus, the part played by the condition of the body, as exemplified in general and local resistance, cannot be ignored, and it is here that injury, by reducing resistance, comes in as a possible factor in the development of the disease.

REFERENCE.

[1] *La Tuberculose pleuro-pulmonaire traumatique*, p. 8. Paris: J. B. Baillière et fils. 1915.

ACCORDING to the *Journal of the American Medical Association*, in the new building of the Berlin Medical Society and the German Surgical Society (Virchow-Langenbeck House) which was opened on April 1st, there was already installed the library of the Berlin Medical Society. It consists, according to the latest information, of not less than 113,163 numbers, which are distributed in the following groups: 12,958 volumes of journals, 5,958 books, 6,682 dissertations and 3,226 reprints. In addition to this, there is the legacy of the Virchow library with 12,689 and the Lassar library with 1,793 volumes, and 149 bound maps with 5,000 volumes—altogether 48,501 pieces. Further, with the society are associated the libraries of some of the medical societies of Berlin with 20,757 volumes, and the library of the German Surgical Society with 44,105 volumes.

THE CARRIER OF YELLOW FEVER

(*STEGOMYIA CALOPUS*).

BY

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. . . . *et nova febrium*
Terris incubuit cohors.—HORACE.

LIKE other branches of human activity disease has its romantic and its unromantic side. Nobody can regard mumps or measles as romantic. On the other hand, yellow fever calls up all the romance of slave-trading, pirates and the Spanish Main, buccaneers, marooonings and other grisly horrors, whose sole redeeming feature was a touch of romance. Lovers of pirate stories—and who are not?—will always remember the graphic description of Yellow Jack in the West Indies.

We have probably always had disease with us since the creation of the world, that act of "*impardonnable imprudence*," as Anatole France calls it, but the first description of yellow fever only dates back to 1647, when an outbreak occurred in the Barbados. Then, as now, it devastated the shipping of the port, and was soon introduced by ships into St. Christopher and later into Guadeloupe. The following year it was in Cuba and in 1655 in Jamaica, and it gradually spread throughout the whole of the West Indies until a century or more later it reached St. Thomas.

One of the peculiarities of the disease is that it frequently disappears from a given locality for long periods of time. For instance, it was absent in the Barbados after the first outbreak until 1690, and when it recurred it was at first not recognized as being the same disease which devastated the islands forty-three years before. In the eighteenth century there was another break of fifty-four years, and similar breaks can be recorded in most of the West Indian islands.

Besides the West Indies, it is at present endemic in Brazil and on the West Coast of Africa, and is common in Mexico. Whether the disease arose primarily in Africa and is part of the toll the American continent has had to pay for the slave trade, or whether it was brought to the West Coast of Africa from the other side of the Atlantic, is not certain. It apparently appeared as a regular disease in Brazil in the year 1849, and from that time onwards, with the exception of one year, has been a permanent trouble at Rio. From time to time the disease has been carried to neighbouring parts of America, especially to the Gulf, Central America, and the northern coast of South America. It has been introduced more than once into Monte Video and Buenos Aires, and has even penetrated up the La Plata as far as Asuncion. Every few years it extends into the Southern States, and has even reached Philadelphia and Boston. With the exception of an outbreak in Leghorn in 1804, European epidemics have been confined to Portugal, Spain, and the Balearic Islands.

It will have been noticed that most of these outbreaks occur on the coast and then pass up the rivers. It is thus most probable that the disease is one which is brought mainly by ships. It is also obviously a disease which must be guarded against by our troops fighting near the coast in West Africa, as well as such troops as are left in the West Indies. But, above all, it must be guarded against in relation to our shipping fleet and our navy, whose chief naval engagements have hitherto been off the South American coasts.

Yellow fever is a disease which requires a winter temperature of at least 68° F., for it is a mosquito-borne disease, and the mosquito flourishes best at about this temperature. It can be introduced into a new locality by the arrival of an infected mosquito, or by the arrival of an infected human being. In the former case the disease breaks out within a few days; in the latter at least ten or twelve days elapse before new cases arise, for, as we shall see later, the organism, whatever it is, that causes the fever is not capable of passing from the mosquito until it has been in its body for ten or twelve days.

Thirty-six years ago Finlay of Havana suggested that the virus of yellow fever was inoculated by mosquitos; but it was not until the publication of the discoveries by Sir Ronald Ross and others that malaria is is transferred by *Anopheles* that a thorough investigation

was made in yellow fever. In the last year of last century an American Commission, consisting of Drs. Walter Reed, Carroll, Agramonte and Lazear, investigated the whole subject, and taking extraordinary risks were able to prove that the infection was not conveyed by contact or through the air, or from bedding or clothes soiled by the dejecta of yellow fever patients, but by a mosquito of the genus *Stegomyia*. Whatever the virus is, it is invisible even under the highest powers of the microscope. It can be filtered through a Berkefeld filter. It is destroyed by

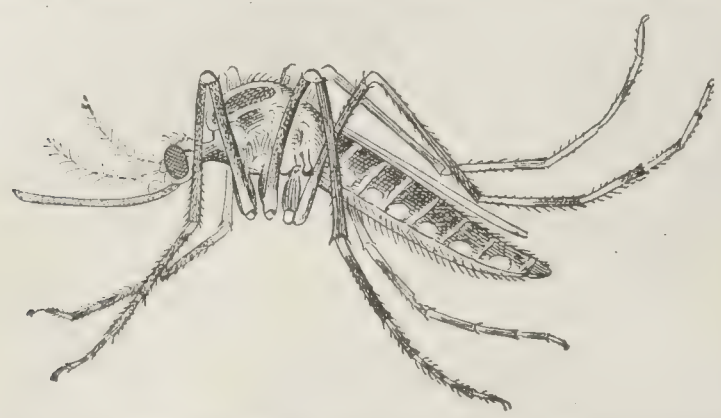


Fig. 1.—*Stegomyia fasciata*. Fly, lateral view, magnified. Note humpbacked outline, and also the position of the posterior pair of legs.

heating to 55° C. If the blood of a yellow fever patient during the first three days be inoculated into a healthy man he gets yellow fever, and it is only during the first three days that the blood is infective. On the other hand, the mosquito is incapable of transferring the disease until the unknown organism has been in its own body for at least ten or twelve days.

The mosquito in question belongs to the species *Stegomyia calopus* (Blanchard), or, as it is more often called in English textbooks, *Stegomyia fasciata* (Fabricius). The genus *Stegomyia* differs from other *Culicidae* in having a dark grey or black colour, whilst the *Culicidae* are as a rule browner. They also have silver-white spots and silver glistening scales, especially on the back of the legs and the abdomen. The grown-up mosquito is comparatively small, and very elegant. Its length is some 3 to 4 mm., but if the mouth parts be added is some 6 to 6½ mm. long. As is usual, the male is smaller and feebler than the female. When settled, as, for instance, whilst sucking the blood of its host, it rests upon its first four legs only, the two hindmost being stretched out abaft like pennants waving in the air, but in general it has the humpbacked appearance of the *Culex* and not the straight outline of *Anopheles*. The colour is greyish-black modified by numerous white spots and rings. There is a white rim round the eyes, and a very characteristic lyre-like pattern on the dorsal surface of the thorax. The structure of the mouth parts is much the same as that of any other



Fig 2.—*Stegomyia fasciata*: above, the larvae; below, the eggs. Both natural size.

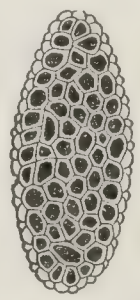


Fig. 3.—Egg of *Stegomyia fasciata*, highly magnified. Notice the air "cells."

Culicidae. The antennae have fourteen joints, the last two of which in the male are longer than the others. As is again usual, the antennae of the male have long brush-like hairs, organs by means of which they scent the female. The legs are banded alternately white and black rings. It is this character, indeed, which has given the mosquito the name of the "tiger-gnat." The rings are very iridescent.

The pupa of *Stegomyia* is darker and blacker than that of *Culex*, and seen from the side the head and the thorax are somewhat more triangular than the same parts in *Culex*. As the pupa grows older it grows darker. The length of the larva is 4 to 6 mm., somewhat larger than that of the gnat. But like that it has a respiratory tube stretching out from the last segment of the abdomen, almost at right angles to the rest of the body. This respiratory tube is much shorter than that of the *Culex*, but is long enough to enable the larva to hang obliquely down into the water. The eggs are very big. They are covered by a mass of small "cells" containing air, and they never tend to form a conglomerate like those of *Culex*, but are laid singly and remain isolated until the larvae hatch. After floating a certain time they usually sink to the bottom of the water. Their length may be about a millimetre and their colour is almost black. When the egg hatches the anterior third of the shell splits off and the larva at once emerges.

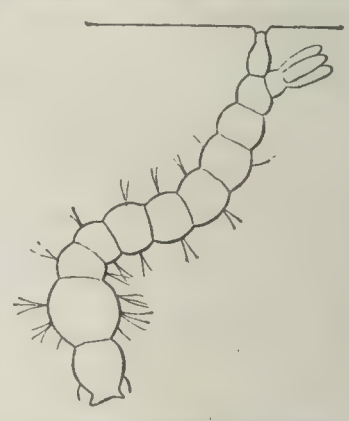


Fig 4.—Larva of *Stegomyia fasciata* breathing on the surface of the water. Highly magnified.

As is so often the case with mosquitos, it is the female alone which bites. The larva nourishes itself on plant juices, saps, and so on, especially they like sugary secretions, and in the absence of blood the female is reduced to a similar diet. Hence the *Stegomyia* is comparatively common in dwellings where sweetstuffs are—bakeries, sugar refineries, and so on. These mosquitos are, like the cockroach, the fly, and the bed-bug, inhabitants of human dwellings. They are indeed domesticated, and are always to be found in the neighbourhood of human houses or buildings or ships, and are very rarely indeed found far away from the sphere of man's activities.

They are very apt to bite one in the neck, creeping along the darker parts of the clothing until an unprotected region of the body is reached. Unless one has very thick socks they frequently bite the ankle, and they are as tireless in their pesterings as ever Mrs. Pardiggle was—no sooner are they driven away than they return to the attack. The bite is painful, and in many people raises a considerable swelling.

The *Stegomyia* bite not only during the night but also during the day. According to R. O. and O. Neumann, in Brazil, at any rate, they are capable of biting not only during the twilight, but at any time. The bite lasts twenty to thirty seconds, after which the mosquito rests a bit, waving its third pair of legs in the sun. After a considerable rest she flies away to some sheltered spot, and whilst blood is being digested the mosquito takes nothing but water—a very proper dietetic measure. After three or four days the female is ready for another meal.

In the absence of man these mosquitos will suck blood from other animals, and in confinement they are generally fed on rats or canaries, and they will even suck up a drop of blood presented on a piece of cotton-wool.

If the female mosquito has been fertilized before the sucking of blood she will commence egg laying two or three days later, and two or three days later again the larva will emerge. The larval stage lasts from nine to twelve days, and the pupa stage three to four, so that the whole metamorphosis takes from twenty to twenty-four days. Hence during warm weather many generations succeed each other, but one must have a temperature of at least 20° to 27° C. Below that temperature the processes tend to slow down, and under a temperature near freezing point the regular development is definitely interrupted. But the interruption is only a suspense, and living activities are resumed should the temperature rise again.

It is a disputed point whether mosquitos must have a meal of blood before they can lay eggs, and on this point the evidence is not yet sufficient to make a dogmatic statement. Most mosquitos are very indifferent where their eggs are laid. The smallest collection of water in an empty sardine-tin, a broken tumbler, a puddle in the street, a gutter pipe, is good enough for *Steyomyia calopus*. She will even lay her eggs on moist cotton-wool.

Although *Stegomyia* bites freely during the day-time, it as a rule avoids the light and seeks some dark shelter. Contrary to the habits of *Anopheles*, it prefers a light ground to rest upon, and exposed to light in a dark vessel it will seek the light furthest from it. The larvae live on algae or vegetable matter, or plant detritus, or in

captivity on white bread or Indian corn. They can remain for a considerable time without food, and this without materially diminishing the rate of their development. *Stegomyia* breed well in ships, and are occasionally found in one part only of the ship, such as the engine-room or cook's galley, where the conditions seem to be most favourable to their development. Thus it comes about that at times certain quarters of a ship provide the greatest percentage of yellow fever cases.

A CASE OF BANTI'S DISEASE WITH ENLARGED HAEMOLYMPH GLANDS.

BY

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CONSIDERING the paucity of the literature on haemolymph glands we have thought it worth while to record the clinical and pathological details of the case here described.

S. C., aged 57, had felt fit and able to perform his ordinary work as an agricultural labourer up to November 6th, 1914. On the following day he was attacked for the first time with aching and swelling of the feet and legs. The swelling extended above the knees, and he had to keep in bed on account of the aching, which he described as fearful. He was very positive as to the abrupt commencement of his illness. His sister stated, however, that he had been getting thinner during the past year, and that twelve months previously he had fallen off a ladder on to his stomach. On account of this he was a fortnight in bed, but did not see a doctor. He was a habitual beer drinker, taking at times up to ten pints in the day. The only previous illness he could remember was an attack of influenza in 1884.

Condition on Admission.

The patient is a small man of spare build and, from the looseness of his skin, has evidently lost flesh recently. His present weight is 8 st. 10 lb. His normal weight, according to himself, was 10 st. The skin of the face is slightly bronzed, there is a well marked malar flush, and the venules of the face are dilated. There is no general pigmentation of the skin, but the forearms and the inner sides of the legs below the knees show some brownish discoloration. There is no conjunctival icterus and the skin is not jaundiced. There is slight oedema of both legs. The muscles of the limbs and trunk are wasted to such a degree that it is surprising how he could have so recently been able to perform hard physical work. The appetite is very poor, the tongue is furred, and the bowels are constipated. The teeth are few in number and are free from pyorrhoea. There has been no vomiting. The abdomen is tense, but moves well with respiration. The left side bulges forward. The veins on both sides of the abdomen and thorax are distended, and the skin of the abdomen has a stretched appearance.

A large mass can be felt occupying nearly the whole of the left side of the abdomen. It extends from the left costal margin downwards, forwards and to the right. Just to the left of the umbilicus it makes an angle forwards, reaching to a point 1 in. to the right of the middle line and then passes down to Poupart's ligament. The tumour feels smooth and hard, it moves well with respiration, and is quite dull on percussion. No friction rub is audible over it. There is no tenderness of the abdomen except at the notch felt in the region of the umbilicus. This point is acutely tender. Ascites is indicated by the presence in the right flank of dullness, which shifts with change of position. The liver dullness extends from the third rib to 1 in. below the costal margin.

No irregularities can be felt on the surface of the liver. The heart appears normal and the lungs yield the ordinary signs of emphysema. There is nothing else to note in the thorax. The condition of the blood on November 20th was: Red blood corpuscles 2,740,000, haemoglobin 60 per cent., leucocytes 6,000. There was some poikilocytosis, but no nucleated red corpuscles nor marrow cells were found. Differential leucocyte count showed a slight relative lymphocytosis.

The Wassermann reaction was negative, and there was no reaction to von Pirquet's skin test for tuberculosis.

After-History.

The patient steadily lost weight and became weaker. He was always very cheery, and his only complaint was of a constant thirst. On December 7th, when he got up to be weighed, he knocked the back of his wrist lightly against a button; but the injury was so trivial that he did not allude to it at the time. On the 9th there was a tender red swelling over the right wrist, oozing pus. Cellulitis spread up the arm; the patient rapidly sank, became comatose, and died on December 12th. The condition of his blood the day before his death was: Red blood corpuscles 2,368,000, haemoglobin 55 per cent., leucocytes 4,400. It is of interest that the leucopenia increased in spite of the acute infection of the arm. No bile appeared in the urine at any time.

Necropsy.

A *post-mortem* examination was made twenty-two hours after death. The body was wasted. There was very little subcutaneous fat present, and the muscles were very small. The right arm was swollen from the distal ends of the metacarpals to half-way up the upper arm. The back of the arm was purple and had blebs on it. The legs below the knees were oedematous. The abdomen was not distended. The peritoneal cavity contained 33 oz. of blood-stained fluid. The transverse mesocolon was stained a purple red from extravasated blood. The spleen was seen occupying the left half of the abdomen. There were only some slight adhesions between it and the left abdominal wall. Its lower pole extended below the anterior superior spine of the ilium. The great omentum was very thin, containing very little fat, and was wrapped round the anterior surface of the spleen enveloping and adherent to its lower pole, forming a very definite hammock of support to the huge viscus. The spleen weighed 4 lb. 14½ oz. It measured 15 in. from pole to pole, 5 in. broad and 14½ in. in circumference at the notch. One vein on the posterior surface of the spleen was thrombosed. The capsule of the spleen was ⅛ in. in thickness and in places almost as hard as cartilage. When cut the spleen pulp was quite firm and did not squeeze out on pressure. It was the usual deep red colour and the Malpighian corpuscles did not stand out clearly. The liver was smooth and weighed 4 lb. 12½ oz. On its anterior surface there was a slightly depressed purple colour patch which proved later on microscopical examination to be an angioma.

The gall bladder was filled with yellow bile and showed no sign of disease. There was no sign of thrombosis in the portal vein nor in its tributaries, with the exception of the one vein on the dorsum of the spleen already mentioned. Macroscopically the portal vein and its tributaries appeared quite healthy. The right kidney weighed 4½ oz.; its capsule was thin and stripped easily. The left kidney weighed 3½ oz. Its cortex was atrophied, and the capsule was also thin and stripped easily. The two suprarenals appeared normal. The stomach and intestines exhibited no abnormality. The pancreas appeared healthy. There was a chain of enlarged lymphatic glands running in front of the lumbar vertebrae on either side of the vena cava. These glands varied in size up to 1¼ in. in length and ½ in. across; they had the shape and appearance of lymphatic glands, but for the most part resembled the spleen in colour and firmness when cut across. Some of the glands were a deeper red than others; a few, including one of the largest, were a cream colour; and some showed, when cut across, deep red streaks and mottling on a cream ground. Haemolymph glands were also present along the greater curvature of the stomach and near the hilum of the spleen. The pleural cavity was free from adhesions. The lungs were emphysematous, but otherwise showed no disease, and there was no evidence of old or recent tubercle. The left lung weighed 17 oz., the right 20 oz. The pericardial sac contained 1½ oz. of straw-coloured fluid. The heart weighed 8 oz., and was flabby and thin-walled. All the cardiac valves were normal. The aorta had small patches of atheroma above the aortic valve and in the descending aorta.

Microscopic Examination.

The capsule of the spleen is very thick and dense. Large bands of fibrous tissue pass from the capsule into the substance of the spleen, and there is also a great deal of intercellular fibrous tissue. This fibrosis is more advanced in the pulp than in the Malpighian bodies, and involves the periphery of the latter more than the centre. The large bands of fibrous tissue have the appearance of normal organized fibrous tissue and stain red with v. Gieson's stain, but a large part of the intercellular tissue has a peculiar homogeneous glassy appearance, and stains yellow with v. Gieson, suggesting the possibility of effete erythrocytes being contributory to its origin. The endothelial cells and splenic cells are increased in number, and the lymphoid tissue relatively diminished, but the fibrosis is the chief feature of the splenic tissue. There is no excess of eosinophiles, and only a few cells show phagocytosis of red corpuscles.

Haemolymph Glands.

The capsule is composed of the usual fibro-muscular tissue present in normal lymph glands with septa of the same material passing into the substance of the gland. The differentiation between lymph channels and lymph nodes is not distinct, as in normal lymph glands, and what corresponds to the lymph paths are filled with blood corpuscles. There is a great hyperplasia of the endothelial cells, and there is present in small numbers a large cell with a very large single nucleus, almost filling the cell, probably a myelocyte. Numerous cells show phagocytosis of erythrocytes, contrasting in this respect with what obtains in the spleen. There is no excess of eosinophiles. The fibrous tissue is increased, but not to such a degree as in the spleen; there is also hyperplasia of the lymphoid tissue.

It has already been noted that nearly all these enlarged glands, when cut across, were red in colour, like the spleen; a few, including the largest, were a dirty cream colour, and some, on cross section, showed a whitish-cream ground, with red streaks and mottling. Microscopically, the difference between these types lay in the number of red corpuscles present in the lymph paths. This is a very important point. In all there was hyperplasia of the endothelial cells, lymphoid, and fibrous tissues.

Sections of the spleen and lymphatic glands were

searched for tubercle bacilli, but none were found, and the histology did not suggest tuberculous disease. Many investigators have attempted without success to find a bacterial origin for this disease, but Dr. A. G. Gibson[1] of Oxford has described and figured a streptothrix found by him in different cases of splenomegaly, including cases of Banti's disease. We have examined numerous sections of the spleen and haemolymph glands, employing the Wheal[2] and Chown method of staining, as recommended by Dr. Gibson, for the identification of the organism, but have not met with a streptothrix in any of the tissues examined. We have had more recently the opportunity of examining another spleen successfully removed from a case of Banti's disease by Mr. Howell at the Cheltenham Hospital. Portions of this spleen were placed in culture media immediately after excision, but all the cultures remained sterile. Sections of the spleen were searched for a streptothrix, with negative results.

Considerable controversy has taken place as to whether haemolymph glands are actually separate and distinct organs *sui generis*, or whether they are to be regarded as lymphatic glands into the lymph paths of which blood has come by haemorrhage, diapedesis, or through the convection of extravasated blood from other areas by the lymph channels.

Professor Warthin of Michigan has made a special study of the subject for a considerable number of years and has contributed largely to its literature. He is firmly convinced that the haemolymph node is an organ *sui generis*, and expresses the following opinions:[3] "I believe that these minute haemal organs possess distinct functions, and that specific as well as general pathological changes occur in them." "It would therefore appear that the destructive influences of chronic intoxications and infections, as well as altered conditions of the blood, affect the spleen and bone marrow earlier and to a greater degree than they do the haemolymph nodes. The latter may be interpreted consequently as reserve haemal organs. In conclusion, hyperplasia is the most common specific pathological change in the haemolymph nodes, and this hyperplasia may be of four types—lymphoid, endothelial, myeloid, or fibroid, or a combination of these." Saltykow champions the opposite opinion and considers that the presence of the red blood corpuscles stimulates the endotholial cells of the lymphatic glands to intense phagocytic activity. The opposing views are clearly stated by Dr. Dayton[4] of New York. From the study of enlarged haemolymph glands occurring in a case of exophthalmic goitre, Professor Lorrain Smith[5] summed up as follows: "The general conclusion to which the study of this case leads us is that the haemolymph gland is in one form at least nothing else than an ordinary lymph gland into the sinuses of which blood has found its way. How far this conclusion is valid for other cases it is at present impossible to say."

In the case here recorded we may say:

1. The lymphatic glands in the abdomen have undergone a hyperplasia of their histological elements similar to what has occurred in the spleen.

2. Blood is present in the lymph sinuses of these lymphatic glands to a variable extent, and the amount of blood present bears no relation to the hypertrophy of the endothelial cells or fibrous tissue of the gland.

3. The haemorrhage into the mesentery and the blood in the ascitic fluid suggest that the blood corpuscles in the sinuses of the lymph glands have been transferred from thence via the ordinary lymph paths. It seems, however, more probable to us that these haemolymph glands represent blood organs *sui generis* in which the same pathological changes have occurred as in the other blood organ, the spleen, than that the great hyperplasia of the endothelial cells and fibrous tissue is simply the result of the presence of red corpuscles in the lymph paths of normal lymphatic glands.

A small angioma was present on the anterior surface of the liver. Areas of fibrosis and collections of small round cells were present about the portal systems, and to a less extent in the intercellular tissue. A certain amount of fatty infiltration was present, more marked near the angioma. The capillaries were distended with blood. The pancreas appeared perfectly normal.

The sections of the lungs showed the presence of emphysema.

A section was made through the origin of the portal vein, at the junction of the mesenteric and splenic veins, as the site most likely to be diseased. The walls of the vein were quite healthy. A portion of the splenic artery exhibited early atheroma.

Sections of the suprarenal glands exhibited no abnormality.

The kidneys exhibited the histological changes of chronic interstitial nephritis, the left kidney being considerably more fibrosed than the right.

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EXOPHTHALMIC GOITRE.

AN ABSTRACT OF THE RESULTS OBTAINED FROM THE INVESTIGATION OF 93 CASES.

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THE 93 cases of exophthalmic goitre investigated were all in-patients of the Royal Victoria Infirmary between 1903 and 1914. They were examined with especial reference to the etiology and prognosis, and the following conclusions were arrived at:

A.—ETIOLOGY.

1. *Heredity.*—In 10.7 per cent. of these patients near relatives had suffered from simple goitre; in 3 per cent. from exophthalmic goitre. In one case a mother and six daughters all had simple goitres, which in two daughters appeared accompanied by exophthalmos.

2. *Sex.*—92.5 per cent. were females.

3. *Age at Onset.*—This varied from early childhood to 50 years.

In 4	patients	it appeared	before	10 years	of age.	
In 28	,,	,,	between	10 and 20	years	of age.
In 35	,,	,,	,,	20 and 30	,,	,,
In 14	,,	,,	,,	30 and 40	,,	,,
In 13	,,	,,	,,	40 and 50	,,	,,

4. *Duration of Illness.*—This included all periods from a few weeks to twenty years.

5. *History.*—(*a*) Antecedents: 39 per cent. gave histories indicating some preceding throat trouble and suggesting the possibility of infection through the tonsils.

(*b*) Exciting cause: Emotional in 20 per cent.; disturbance of generative organs in 9 per cent.; other illnesses in 8 per cent.; operation in 3 per cent.

B.—DEVELOPMENT OF SYMPTOMS AND SIGNS.

(*a*) *Primary.*—Goitre appeared first in 62 per cent., exophthalmos in 21 per cent. In those cases which followed emotional disturbance exophthalmos was the first symptom in 80 per cent. It should be noted that in almost every case there was a vague history of nervousness, as shown by palpitation and various subjective phenomena, before any local signs appeared.

(*b*) *Secondary.*—In addition to the cardinal signs of exophthalmic goitre, various secondary points were investigated.

Contrary to expectation, the prognosis was not markedly influenced by the presence of hallucinations (7 cases), organic or functional disturbances of the cardio-vascular system (in 43 per cent.), severe diarrhoea (which occurred in 36 per cent., of which number 20 per cent. died), or considerable disturbance of the integumentary system.

Bronchitis and other diseases of the respiratory system were found in 11 per cent., and of this number 80 per cent. died.

Amenorrhoea occurred in 15 per cent. In some cases it appeared before the disease and improved when the goitre developed. In 6 cases miscarriages preceded the disease. The effect of menstruation on exophthalmic goitre is not constant; sometimes the goitre diminishes in size, and sometimes it is increased during the period.

C.—PROGNOSIS.

The prognosis is markedly influenced by:

1. *The Age of the Patient at the Onset.*—The death-rate is 25 per cent. in cases beginning between 10 and 15 years

of age, and increases gradually to 44.5 per cent. in cases beginning after 45.

2. *The Duration of the Illness before Treatment.*—In cases coming into hospital who have been ill under one year the death-rate was 35 per cent.; between one and two years, 75 per cent. The rate falls after the fourth year, as after that length of time the disease may be regarded as chronic and symptoms are always less acute.

In addition to these points, early development of very acute symptoms, such as diarrhoea and tachycardia, adds to the gravity of the prognosis.

D.—COURSE.

Treatment consisted in rest in bed in all cases. Various drugs were used according to the most prominent symptoms in each case.

Up to 1908 most patients were treated by the electric battery, and more recently by *x* rays. There was considerable temporary improvement, but possibly no more than by other means. It is too early to speak of the permanency of the improvement under *x* rays.

Rodagen, thyroidectin, antithyroid serum, and antithyroidin have all been used, and while each has been successful in some cases, none has had a generally good enough result to encourage its universal use.

Of 93 cases 64 have been traced at periods varying from six months up to ten years since leaving the infirmary.

18.75 per cent. declare themselves quite well and able to work.
20.3 per cent. are definitely improved.
20.3 per cent. are much the same.
4.75 per cent. have developed myxoedema.
6.25 per cent. were transferred to surgical wards.
29.7 per cent. are dead (6.25 per cent. while under treatment in the infirmary).

Many patients who are entirely cured of all disturbing symptoms and who are otherwise absolutely well, retain some permanent enlargement of the thyroid.

I am indebted to the past and present honorary physicians of the Royal Victoria Infirmary for permission to make use of their cases and notes, and especially to Professor Murray, of Manchester (late of Newcastle), who has allowed me to use many particulars of cases treated by him.

THE CAUSE OF APPENDICITIS.

BY

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THE question as to what brings about the pathological conditions in an appendix which give rise to appendicitis has been widely discussed from several standpoints.

I venture to suggest a theory, which I think is new, as in the literature I can find no allusion to it.

All cases of appendicitis are in the first place due to a mechanical cause, and this consists in a rotation of the organ about its meso-appendix.

I consider the acute inflammatory process, whether it go on to abscess formation or not, to be purely secondary to this rotation.

This is assumed for the following reasons:

(*a*) The valve of Gerlach is by no means a reliable valve.

(*b*) In almost all quiescent appendices, which have never given rise to any symptoms and which have been removed during pelvic operations, I have always been able to culture intestinal organisms from their cavities—that is, the normal contents of the appendix are not sterile.

What Happens when the Appendix Rotates?

Anatomically the appendix is quite free to rotate on its mesentery, and as to what actually takes place will depend upon the degree of rotation.

If the rotation be complete, then the condition is similar to that of an ovarian cyst completely twisted about its pedicle. The venous return is stopped, but the arterial supply is not wholly cut off. We therefore get initially a state of acute congestion. Infection supervenes on this damaged organ, and gangrene with abscess are the usual termination.

This type of case is familiar in that its onset is sudden, the pain is acute, the patient vomits, which vomiting I take to be purely reflex; in fact, the initial symptoms are similar to those of a twisted ovarian cyst in the female.

In less acute cases the rotation is not complete, and the venous return is not wholly cut off. These patients, if put to bed and kept quiet, invariably get over their first attack.

The symptoms at the onset are not so acute; there may be vomiting, certainly some pain, there is tenderness over McBurney's point, but all this usually subsides.

These patients, if operated upon in the acute stage, have always in my experience shown some degree of rotation of the appendix. The organ is stiff and congested, and there are subserous haemorrhages.

Similar cases operated upon in the quiescent periods have shown the familiar kink in the organ, and if this be carefully examined it will be found to be produced by a partial rotation of the organ about its mesentery.

The third type of case is that where there is a long meso-appendix and the organ from mechanical conditions I shall mention directly is rotating on its mesentery and recovering itself.

This type of appendix has, in my experience, invariably been the one that has given rise to gastric symptoms, which Sir Berkeley Moynihan has called "appendix dyspepsia." My experience in this type of appendix is interesting, and I hope others will have noticed this. In four cases I performed a laparotomy with the purpose of performing gastro-enterostomy. In all four cases the stomach was dilated, but no ulcer or disease was to be found, though the symptoms were those of gastric ulcer. In these cases a very movable caecum was present with a long appendix suspended by a long meso-appendix; there had been marked constipation in all four cases. I did nothing further than remove the appendix, and the result in all four cases was highly satisfactory, as all the gastric symptoms disappeared and the bowels moved regularly.

It is well known that abdominal operations in which any extensive handling of the mesentery is necessitated give rise in the patient sometimes to acute dilatation of the stomach. If, then, there is anything present which is constantly tugging on the mesentery over any length of time, it is quite reasonable to suppose that the stomach will react in the same way, but in a more chronic fashion. The process, it is fairly agreed, is reflex, and I think, seeing that these cases were cured, we have in this the explanation of the so-called "appendix dyspepsia."

Surgeons will, I think, recognize how difficult it often is to trace an appendix and its whereabouts when it has gone on to a condition of abscess formation, and those who do not believe in amputation of the appendix at these times, but who are content to find the abscess and drain it, will not have, perhaps, the opportunity of bearing me out; but they will surely find, if they go further with the operation of removing it, that the difficulty lies in the fact that the appendix has completely rotated on its own mesentery, and has become bound down, and there often appears to be no meso-appendix.

This, however, is a fallacy, the meso-appendix being shortened by the twist.

What, then, causes this Rotation?

The chief factors which bring this rotation about are:

(*a*) A movable loaded caecum.
(*b*) Loss of tone in the abdominal muscles.

The most important is the second of these two factors, for on it in some measure depends the first.

A loaded movable caecum is free to move in three ways:

1. It can descend.
2. It can move laterally.
3. It can expand forwards.

These three conditions are just those required for a rotation of the appendix on its meso-appendix, and the only condition that can bring these about is constipation.

Loss of tone in the abdominal muscles is one of the commonest causes of constipation and later of some amount of enteroptosis

I do not think I am far wrong in saying that if people took regular exercise and kept their abdominal muscles in good trim, if people in sedentary occupations would resort to physical exercises designed to keep up the tone of their abdominal muscles, and if there were less conveniences for those who can walk, there would be less appendicitis

The interesting question arises as to whether a "strain" can cause an attack of appendicitis. I think it can. I have had a few cases where the condition has followed a sudden strain. If suddenly the abdominal muscles contract, especially on a loaded caecum, it is quite easy to see how this could bring about a sudden rotation of the appendix on its meso-appendix.

What I have said in this paper had struck me before the beginning of the present war, but from statistics I have observed since mobilization in August I am still further convinced.

I had a number of cases of acute appendicitis I operated upon early after mobilization, but out of two brigades there has not been an acute case for nearly three months. I think this speaks for itself.

TWO CASES OF DIAPHRAGMATIC STAB WOUND.

WITH OBSERVATIONS ON THE PRODUCTION OF DIAPHRAGMATIC HERNIA AND OPERATIVE TECHNIQUE.

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Case I.

A Chinese rickshaw puller, aged 30, was brought to the General Hospital, Seremban, by the police on April 7th 1912, with a stab wound of the right chest.

History obtained from the Police.—At 6.30 a.m., while purchasing a ticket at the railway station, his companion when standing behind him thrust a small hunting-knife with a 4-in. blade into the right side of his chest.

State on Admission.—He was admitted at 9.30 a.m., three hours after receiving the wound. His clothes, consisting of a cotton jacket and pants, were saturated with blood. He was exsanguine, very restless, and unable to answer any questions owing to his fainting and collapsed condition. Respiration was shallow and frequent (54 per minute), with grunting expiration. The pulse could not be counted at the wrist. There was a stab wound in the fourth intercostal space in the anterior axillary line, from which blood trickled in a constant stream and was being churned into a bloody froth by the air exchange through a patent thoracic fistula. The abdomen was tender over the right side, most definitely in the iliac region and loin.

Operation.

A vertical elliptical incision round the stab wound was made from the third to the seventh rib and the outlined ellipse of skin excised. The fifth and sixth ribs were resected for 4½ in. The periosteal beds were each incised in the whole length thus exposed. Two Kocher clips were passed from these wounds to include the tissues of the fifth space. The structures were divided between the clips, and the flaps thus produced were folded outwards. When the blood and clot filling the chest were turned out, blood was seen to be entering the pleural cavity through a wound in the muscular portion of the diaphragm about 3 in. long, with a direction, from within, outwards and forwards. Respiration was very embarrassed, but at once improved when the lung was gripped in a clamp and part of the lower lobe held outside of the wound, thus fixing the mediastinal structures, as pointed out by Kelly. A finger, in the diaphragmatic incision, discovered a wound of the subjacent upper surface of the liver, just in front of the coronary ligament. A gauze plug, introduced through the diaphragmatic rent, failed to control the haemorrhage. The diaphragmatic wound was extended a little in both directions, and pressure by an assistant on the abdomen helped to fix the liver. A wound, about 1½ in. deep and some 2½ in. in length, bleeding freely, was well exposed. This was closed by one long mattress suture of catgut passed deep to the wound from right to left and back from left to right, tied parallel to the wound. A sharp-pointed, fully-curved needle, being all that was to hand, was used, and this produced no fresh bleeding from its tracks when the stitch was tied. Four interrupted sutures through the capsule with fine catgut got tidy approximation of the previously everted lips. The incision in the diaphragm, now some 4½ in. in length, was closed by a continuous blanket stitch of catgut extending a little beyond each end of the incision. A small incision of the margin of the lower lobe of the lung was sequestrated by a catgut ligature. The chest flaps were united, and the skin closed without drainage. He had received saline (normal), 2 pints, into a vein of the left arm during the above manipulations, and the anaesthetic used was ether two parts, chloroform one part, on a mask.

The pulse when he left the table was 144, soft, and with a collapsing vessel. Six hours later the pulse was 128. He then had a deposition taken by a magistrate, involving half an hour's oral examination and the identification of his assailant. Continuous proctoclysis during the next twelve hours sustained an almost constant pulse-rate. He rapidly developed bronchitic sounds over the left lung, and breath sounds were never present on the right side. He died in respiratory distress thirty-two hours after the accident.

Necropsy.—Right lung collapsed; no haemorrhage in chest. Liver wound dry; some soiling of the right abdomen with tarry blood; about 2 oz. of blood in pelvis. Left lung, marked capillary bronchitis.

Case II.

A Chinese coolie, aged 31, working on the Labu F.M.S. Rubber Estate, was sent to the Seremban General Hospital by the manager of the estate at 2 p.m. on October 23rd, 1912.

History obtained on Admission.—During a quarrel on the previous evening he was struck over the left chest with a sharp-pointed, triangular file. He had suffered considerable pain in the chest and abdomen during the night. This had been relieved by opium, administered to him by his friends. As he was worse in the morning, and had vomited several times, the manager was informed. With the case he sent a note informing me that "the man was vomiting, and wanted to pass water constantly."

State on Admission.—Eighteen hours after the injury he was drowsy from opium, with contracted pupils, but still complained of some general abdominal pain. He was a little cyanosed, and had frequent shallow respirations of 30, and a full, strong pulse of 60 per minute. There was a triangular-shaped wound on the left chest over the eighth interspace in the mid-axillary line. This small wound had been plugged with gauze, and the surrounding skin was blistered by some strong antiseptic dressing. The left chest was hyper-resonant, and breath sounds were absent. The abdomen was full, with all the muscles rigidly on guard, in spite of the liberal opiate. Tenderness was general, and was best demonstrated when steady pressure was suddenly relaxed. There was some bulging and tenderness of the pelvic pouch on rectal examination, and the pelvic peritoneum was tender. When the small gauze plug was removed from the wound there was no bleeding, and air could not be detected as entering the chest cavity. A director was passed into the wound in a forward and inward direction, with a downward inclination. This oblique penetration of the chest wall produced in the dorsal position complete closure of the thoracic fistula. When the valve was momentarily obliterated by the director, air was aspirated through the wound, and blood trickled out.

Operation.

As everything was ready in the theatre for another laparotomy, the operation was started within half an hour of his admission. Under chloroform, a 3 in. median subumbilical incision was made, and about half a pint of blood was evacuated. Distended small intestine crowded into the incision, but was not allowed to herniate. A tube was passed into the pelvic pouch, and the lips of the peritoneum temporarily closed by "Kocher" forceps applied above and below it. A penetrating wound of the diaphragm was diagnosed, and a wound of the liver or spleen suspected. An oblique subcostal incision, falling 2 in. below the left costal edge, extending from within an inch of the mid line to below the tip of the eleventh rib, was made. The anterior sheath of rectus was dissected up and down from the muscle, and, at its outer edge, the anterior portion of the internal oblique aponeurosis was divided at its line of fusion with the external oblique aponeurosis. The rectus was raised from the posterior sheath and retracted inwards. The internal oblique was split, and the abdomen opened through the transversalis and peritoneum for the whole length of the wound. Pads, below and to the right, controlled the distended gut. The spleen was delivered, but was found unwounded; it was remarkably "unpathological" for a resident in this country. The diaphragm could be well inspected through this

incision, and some blood was observed to be coming from above the left edge of the liver. The liver was folded on its under surface at one part of its left margin, involving the liver for about 1½ in. from the thin, tongue-like left edge. The liver was next displaced from the diaphragm, when a wedge of liver was observed to escape from the lips of a wound in the diaphragm, and a small wound of the liver was seen on the surface at the apex of this wedge. A finger passed into the diaphragmatic wound allowed air to enter the chest, and a few ounces of blood escaped into the abdomen. The diaphragmatic wound had fallen on the region where the muscle fibres blend with the central tendon just outside the cardiac area. The wound was about 2 in. long and extended, from within, in an outward and forward direction, into the muscle fibres. The pulse at this stage was causing the anaesthetist considerable anxiety owing to the constantly increasing pneumothorax from air being aspirated through the now unguarded diaphragmatic wound. With a hand below the diaphragm, the heart could be detected to contract feebly and irregularly. With a few manipulations of stroking compression good regular contraction was rapidly re-established. During these manipulations and the subsequent readjustment of the pads, a button of anterior wall of stomach had passed into the wound in the diaphragm and required some little traction to disengage it, as the herniated button was distended with gas. The diaphragmatic splitting had increased for about 1 in., so that the wound was now some 3 in. in length. A continuous buttonhole suture of catgut was introduced extending beyond either end of the diaphragmatic wound, passed through the whole thickness of the diaphragm and including half an inch of tissue on each side of the wound. This controlled some haemorrhage which had been going on from vessels in the edge of the diaphragmatic wound, very satisfactorily. The small wound of the liver was not bleeding and required no treatment. The abdominal incisions were then closed without drainage. The small stab wound in the thorax was excised by an elliptical incision and the thoracic fistula closed. The chest was then aspirated while pressure was applied to the chest wall to reconstitute the negative pressure in the pleural cavity and to balloon the lung.

Convalescence was uninterrupted and complete. Respiration was never more than 30 per minute after the first twelve hours following the operation. The wounds were dressed upon the tenth day and the stitches were removed, no subsequent dressing being necessary. The patient was discharged to resume his work, as a "tapping" coolie on a rubber estate, on the nineteenth day after the operation.

Eighteen months after the operation the manager informed me that the coolie had been in full work ever since he returned to the estate.

Conclusions.

The practical points of interest in these cases are:

CASE I.—The immediate improvement in the then alarming condition of the respiration and pulse by fixing the mediastinum with traction upon the lung. The splendid exposure, and comparatively easy suturing of the diaphragm and liver, got by the T-shaped flaps in the chest wall. The loss of the patient through deficient functioning lung tissue.

CASE II.—1. The splendid exposure of the diaphragm, with efficient room for suture manipulations, through the oblique subcostal incision.

2. The mechanism observed in the production of diaphragmatic hernia.

3. The powerful stimulating effect of heart massage observed and the lasting benefit thereof.

4. The great benefit to respiration by reconstituting the negative pressure in the chest, and the marked contrast in the respiratory comfort throughout convalescence contrasted with that of the patient in Case I, where a pneumothorax was left to be absorbed.

SENATOR J. W. DANIEL, of St. John, New Brunswick, has been elected President of the Canadian Association for the Prevention of Tuberculosis, in succession to the late Colonel J. H. Burland, who died recently in London. This year the annual meeting will take place in Vancouver on July 5th next.

A METHOD FOR THE BACTERIOLOGICAL EXAMINATION OF THE NASO-PHARYNX IN EPIDEMIC CEREBRO-SPINAL MENINGITIS CONTACTS.

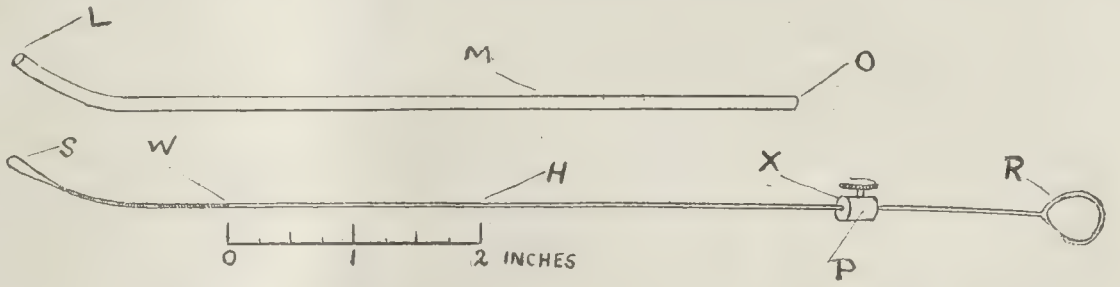
BY

WALTER H. FEARIS,

BACTERIOLOGIST TO THE CARDIFF AND COUNTY OF GLAMORGAN PUBLIC HEALTH LABORATORY; FORMERLY SPECIAL LECTURER ON BACTERIOLOGY, KING'S COLLEGE, UNIVERSITY OF LONDON.

IT is well known that the upper part of the naso-pharynx offers conditions favourable for the growth of the meningococcus of Weichselbaum. In the control of epidemic cerebro-spinal meningitis the value of the bacteriological examination of the naso-pharynx of "contacts" depends largely on the efficiency of the apparatus used for obtaining a "swab" from the region referred to. The apparatus should fulfil the following conditions: (1) It should enable the swab to be taken free from contamination by the bacteria of the mouth and the fauces; (2) it should avoid all risk of injury to the naso-pharynx; (3) the effective area of the surface of the swab which actually comes into contact with the naso-pharynx should readily permit itself to be smeared over the surface of the culture medium, such as nasgar, in a Petri dish. The instrument here described fulfils these conditions.

The essential part of this instrument is a flexible *spiral* spring, W, to which the swab, S, is attached. By this arrangement the effective area of the swab can be readily brought into close but *gentle* contact with the surface of the culture medium. The spring is fitted on to a rigid wire, H, along which runs an adjustable safety stop, P. This stop is fixed before use so that the swab, S, can be protruded a short



distance beyond the opening, L, in the metal cannula, M. The swab, S, is then drawn up into the cannula, M, and the whole is sterilized in a metal case. The action of this safety stop in preventing injury to the naso-pharynx is obvious. In the examination of a patient the end, L, of the cannula is passed behind the uvula. The swab is then pushed out as far as the safety stop permits. The thumb of the right hand is placed in the ring, R, when the swab is being pushed forward. After the swab has been brought into close contact with the naso-pharynx, it is drawn back into the cannula, and the instrument is removed from the patient's mouth. As soon as possible, the safety stop, P, should be unscrewed; then the swab is pushed out well beyond L and is smeared over the surface of a Petri dish of nasgar, the curved part of the cannula, M, being turned downwards. A second Petri dish of nasgar is inoculated by means of a sterile, L-shaped, glass rod, the shorter arm of which has been smeared over the first dish. The two Petri dishes are placed in the warm incubator (37° C.) and examined in due course.

The instrument has been constructed for the writer by Mr. A. W. Staniforth, surgical instrument maker, 6, Church Street, Cardiff.

ON April 29th and 30th the new buildings of the Washington University Medical School in St. Louis were formally opened. Addresses were delivered by the Dean, Dr. Opie, Dr. William H. Welch, President Lowell of Harvard, President Vincent of the University of Minnesota, and Dr. Simon Flexner. The cost of the new buildings, including the hospitals, is given as £600,000. One of the most interesting features of the ceremony was the presentation to the Washington University Medical School of a number of manuscripts and papers of William Beaumont, among them being the original notes of his experiments on Alexis St. Martin. A room has been set aside for the housing of these manuscripts in the library of the medical school.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE MARKING OF THE SKIN WHEN LOCALIZING BULLETS AND SHELL FRAGMENTS.

To ensure that skin markings shall be really useful it is necessary to be able to reconstruct at any stage of the operation the imaginary vertical line on which the bullet lies. (The patient is assumed to be lying either prone or supine.) The point vertically below the foreign body is marked on the skin by a pneumatic device or otherwise. It presents no difficulties, as it will not be interfered with by the surgeon. The point directly above the bullet is indicated in the first place by a dot. Next, two long lines should be drawn on the skin at right angles to one another, intersecting at the original dot. The lines should be of such an extent that their extremities are beyond the zone of any operative disturbance. By laying a probe along each of these intersecting lines the position of the dot may be recovered at any time; and therefore, also, the line in which the bullet lies, as the underneath mark is intact.

As to the exact point at which the bullet lies on this vertical line, direct cross-markings are appreciated by most surgeons in addition to a statement in inches or centimetres. Where they cannot be directly obtained by turning the patient on his side, the radiographer should himself furnish them by calculation. If Fig. 1 represent a cross section of the pelvis, and B a bullet located on the vertical line, X Y, 3 in. below the point Y, the surgeon may prefer to go in from the side, rather than from above; therefore a lateral guide must be furnished. A line is drawn from Y to X round the outside of the hip. The point, Z, opposite the bullet, B, is found by measuring 3 inches down the side by means of a T-square. A horizontal line is then drawn on the skin through Z at right angles to the curved line, Y Z X, which completes the surface marking. If now the surgeon cuts in at Z, in a direction at right angles to X Y, he will strike the bullet when his incision comes under Y. The actual distance, Z B, may also be measured by a T-square and furnished as an additional aid.

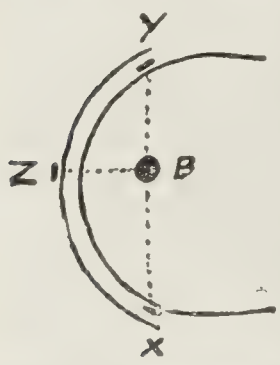


Fig. 1.—Diagrammatic cross section of bullet in neighbourhood of hip-joint.

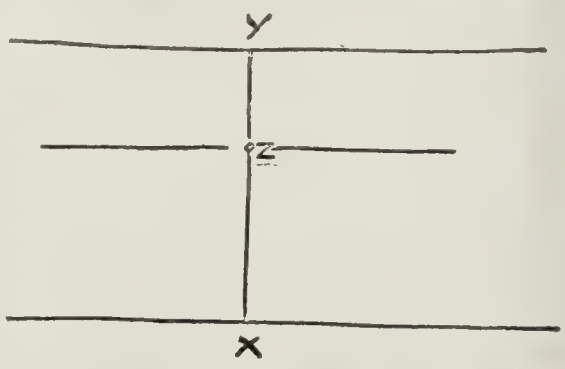


Fig. 2.—Diagrammatic view of outer side of hip when marked ready for an operation from the side. Letters correspond with letters in Fig. 1.

The greatest possible care is necessary in making these measurements and markings, but with practice as much accuracy can be obtained as when the bullet can actually be viewed in two planes at right angles to one another.

A minor cause of trouble is the rubbing off of the marks themselves. The prevalent custom of painting the skin with iodine has rendered silver nitrate unsuitable. I find that ordinary ink, provided it is allowed to dry on to the skin, is perfectly satisfactory.

Skin marks are of the utmost value in practically every case of bullet extraction, but, even apart from the diagnosis of injury to bone, plates are in many instances also necessary. To be of service in localization, they should be so taken that they can be correlated with the skin markings (see author's paper, BRITISH MEDICAL JOURNAL, January 16th).

FRANCIS HERNAMAN-JOHNSON, M.D.,
Captain (tempy.) R.A.M.C.; Senior Medical Officer to X-ray and Electrical Department, Cambridge Hospital, Aldershot; Consulting Radiologist to Military Hospitals in Aldershot Command.

ACETANILIDE AS AN APPLICATION TO WOUNDS.

THE condition of the wounds of many of our soldiers returning from France induces me to bring to the notice of the profession a discovery which I made in 1891 and published in the *Lancet*. This was the valuable bactericidal properties of the chemical acetanilide. During the course of twenty-five years' fairly extensive surgical practice I have used this chemical as a dressing for wounds and no other, and since that time I have, remarkable as it may seem to say so, seen no pus in any wound that has come under my treatment.

The nature of wounds treated by me have been amputation of leg and arm, hands and feet crushed and mutilated by machinery and shipping accidents, and also wounds produced by surgical operation.

For many years it has been my practice, after trimming a wound into shape, to apply a plentiful supply of the drug as a dry powder and bind up the affected part with Gamgee tissue; the wound is then left for a week untouched, and at the end of the time it is found to have undergone a process of dry healing. I have modified my process now slightly by giving the wound a wash with hydrogen peroxide.

I will quote one case only, since the value of the remedy can be so readily tested.

On March 1st a seaman came to me having had his thumb crushed in a winch. The thumb had been torn off just above the joint, a portion of the fractured bone was protruding—this I cut off with bone forceps; there was enough flesh left to bring together and secure by stitches, which was done. Dry acetanilide powder was dusted over the wound and a pad of Gamgee tissue bound over it. The wound has been looked at and more powder put on three or four times since the accident, but not a particle of pus was found, and although the stitches (silk) were left in, the whole healed under a dry scab.

I think that if the wounds received by our men were simply covered with this powder and bandaged up they would travel back to England without the slightest inflammation or suppuration. I have treated a foot crushed by a coal wagon with quite a quantity of mud and dirt left on, yet it healed up by dry healing without suppuration after being dressed in this manner. At the London Hospital I saw everything done that could be done under the old Listerian treatment. At the Charité at Berlin I saw what could be done by aseptic treatment, but I have never seen wounds heal as they do under the method I suggest.

EDWARD F. GRÜN, M.R.C.S.
(Now Edward F. Greene, Lt. R.A.M.C.)
Southwick, Sussex.

A CASE OF ACONITE POISONING.

ON March 7th, at 3.20 p.m., I saw Mr. D., aged 30 years. I was told that at 1 p.m. he had eaten a dinner consisting of beef, potatoes, cabbage, and horse-radish sauce. He partook rather freely of the sauce, and fifteen minutes after dinner experienced tingling all over his body, and also felt giddy and restless. He tried to "walk it off," but, as he was obviously getting worse, his friends sent for me. When I saw him, he complained of being very ill; his skin was cold and clammy, pupils equal and medium, heart beats 144 per minute and very irregular, pulse 70; he had not vomited.

From the history and symptoms I diagnosed aconite poisoning, and at 3.30 p.m. gave him $\frac{1}{100}$ grain of apomorphine. This produced vomiting in four and a half minutes, the vomited matter consisting of food and streaks of blood. I then injected digitalin and strychnine, of each $\frac{1}{100}$ grain, and gave him whisky and water to drink freely. At 3.40 p.m. the pulse could not be felt at the wrist. There was twitching of the left shoulder and facial muscles, respiration was very shallow and hardly perceptible. Shortly afterwards he felt more comfortable, and expressed a desire to go to sleep, and I left him at 4 p.m. I was called again at 4.40 p.m., when he was just recovering from a fit; the pupils were widely dilated, and the pulse 74. From this time he rapidly improved, and at 8.30 p.m. he was practically well.

The patient's mother, who had taken a very small quantity of the sauce the night before, spent a sleepless, restless night, and felt the same tingling all over the body.

It was found that the horse-radish was obtained from some friend's garden, which contained a large quantity of

"monk's-hood." The patient told me a few days later that he believed the proportion of aconite to horse-radish in the sauce was something like 4 to 1.

I give below the analysis made by Dr. Gough, of the Yorkshire Pathological Laboratory:

Extraction of the specimen by Stevenson's modification of Stas process yields a small amount of an *alkaloid* which gives the physiological test for *aconitine*.

In my opinion the sauce contains aconite.

W. GOUGH.

Barrow-in-Furness. JOHN LIVINGSTON, F.R.C.S.Edin.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

BROMLEY COTTAGE HOSPITAL, KENT.

LARGE OMENTAL CYST IN CHILD OF 2 YEARS AND 10 MONTHS: OPERATION: RECOVERY.

(Under the care of Dr. HERBERT J. ILOTT.)

A BOY, aged 2 years and 10 months, well grown but wasted and pallid, was admitted, supposed to be suffering from tuberculous peritonitis. The history given by his mother was that he was apparently healthy when born, was hand-fed, and had always been troubled with vomiting. The mother began to notice enlargement of the abdomen about twelve months before his admission. The swelling gradually increased, and the child was very fretful, especially at night. On examination, the abdomen was distended, dull all over, except at the upper part, and distinctly fluctuant; no enlarged glands were felt, and there were no signs of tubercle in lungs.

Operation.

On February 26th the abdomen was opened in the middle line below the umbilicus. There was no free fluid, but a large, thin-walled cyst came into view. Enlarging the incision upwards, the cyst was partly brought outside and opened; clear, straw-coloured fluid escaped. A further part of the cyst, which was seen to be multilocular, was then withdrawn, opened, and drained, and after this another large loculus similarly treated. In all, three pints of fluid were collected. It was then seen that the cyst had developed in the omentum. Several strands of vascular, healthy, omental tissue were next clamped and securely ligatured with silk, and the entire cyst removed. At this stage, the child being rather collapsed, the abdominal cavity was filled with warm saline solution, which improved his condition. The abdominal wound was closed with through-and-through silkworm gut sutures, supplemented by superficial sutures of the same material, for approximating their edges.

The child made a very good recovery. The wound united, and he left the hospital on March 20th. When seen on March 25th he had gained flesh, had a good colour and appetite, the wound was soundly healed, and the abdomen quite normal.

Omental cysts are quite rare; but some cases are recorded—one in the BRITISH MEDICAL JOURNAL for 1905, vol. ii, p. 1642, and others in the pages of the *Lancet* and BRITISH MEDICAL JOURNAL. Mr. D'Arcy Power tells me that in many cases they appear to be lymphatic in origin. It certainly seems to have been so in my case, as I saw no signs of tubercle on the peritoneum nor any enlarged glands, and the fluid from the cyst when examined by the Clinical Research Association was reported to show no evidence of tubercle bacilli in specially stained films from the centrifugalized deposit. Further progress of the case and child's steadily improving condition are against a tuberculous origin.

LIEUTENANT-COLONEL WILLIAM ALEXANDER GIBB, M.D., R.A.M.C.(T.), recently appointed to the command of the East Anglian Casualty Clearing Station, who died at the 1st Southern General Hospital, Birmingham, on March 10th, left estate valued at £7,947.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

AT a meeting on April 23rd, Professor LINDSAY, President, in the chair, Dr. C. M. O'BRIEN showed a boy, aged 14, who had suffered from *Dermatitis herpetiformis* since he was three months old. Up to the time of vaccination he was in good health. He then developed a rash, which was still present. In its early stages the rash caused much itching, was multiform and well marked on the arms and legs. The condition never totally disappeared. Dr. WALTER G. SMITH suggested dermatitis multiformis as a better name for the condition. He looked upon treatment of these cases as of no avail. Dr. WALTER G. SMITH read a paper on *Urinary concretions* and their modes of genesis. Stress was laid upon conditions of altered or perverted metabolism in the etiology of calculus, and attention was called to our ignorance of the pathology of gout, and to the exaggerated statements as to the alleged pernicious effects of uric acid in the blood. The conditions relating to relative solubility were discussed, and it was insisted that the relations between colloids and crystalloids were of prime importance in the etiology of urinary concretions. Sir JOHN MOORE recalled his experience of forty years ago at the Meath Hospital, and said at that time the surgeons were almost constantly engaged in operations for the relief of stone in the bladder. He could not help thinking that the prevalence of stone had decreased in recent years. He had always connected the subsidence of ordinary calculus with the introduction of Vartry water. Professor METTAM said that recently he had been looking into the question of calculi, and was surprised to find that sometimes he could get calcium reactions from sections cut from the kidney. In the lower animals calculi of enormous size were met with, such as calculi developing in the pelvis of the kidney, and in some of these cases there was no clinical history. Extraordinary collections of calculi were also met with in the urethra. It had been observed that rams fed on mangels, which were very rich in sugar, frequently developed calculi. Dr. PARSONS asked if any explanation could be suggested for the frequent occurrence of calcium oxalate crystals in the urine of diabetics. Professor MCWEENEY said that during the past twenty years he had examined from 50 to 60 ordinary calculi, and the majority of them were calcium oxalate. He was struck very strongly by the extremely dark colour which these oxalate of lime calculi occasionally presented. He suggested that this dark pigmentation seen in oxalate of calcium calculi might be correlated with the fact that their surfaces were so rough that they produced small haemorrhages. He had found by microscopic examination that in cases afterwards proved by operation or *x*-ray examination to be calculus, usually only a small quantity of pus and blood were present. He did not know that the presence of uric acid or oxalate of lime in urine was the slightest indication as to whether calculi existed. The PRESIDENT said that his experience in the North of Ireland was that calculus was rare, and he was disposed to the view that a decrease had come about in recent times. He suggested that the decrease might be accounted for by the extreme rarity of gout, which was much more common some years ago. Dr. WALTER SMITH, in reply, said he was sure that the dark colour of oxalate of calcium calculi was caused by haemorrhages which were originated by them. Professor LINDSAY read the notes of three cases of nervous disease: (1) *Landry's disease.* The patient was a woman, aged 36, unmarried. The family and the personal history were good. No causal factor could be assigned. She became ill suddenly in the night of October 2nd, 1913, with pains in the legs and back. Flaccid paralysis, with loss of the superficial and deep reflexes, rapidly developed, beginning in the feet and legs, and soon involving the respiratory muscles and the upper extremities. Deglutition was involved. Sensation was practically normal, the mind remained clear, the sphincters were only involved towards the close, and the temperature remained normal until a few hours before death, when it rose to 99.5°. Death took place on the tenth day. No autopsy could be obtained.

Professor Lindsay discussed the possibility of the case being one of acute ascending myelitis, acute poliomyelitis, or acute toxic polyneuritis, but was of opinion that these conditions could be excluded, and that the case was a genuine example of Landry's syndrome. (2) *Myasthenia gravis.* The patient was a man of good general physique and of good health history, aged 44. He had been a famous athlete, had played for six or seven years in International football, and had been a noted swimmer, cricketer, and hockey player. His father had been alcoholic and had died insane after a detention of thirty years in the Belfast District Asylum. The patient had suffered a great shock by the death of his wife by accident two years before the onset of his illness. There was no alcoholic or venereal history. The early symptoms, which showed themselves in 1912, were ptosis in both eyes, with a feeling of weakness and "deadness" in the legs after brisk walking. The ptosis disappeared in a few weeks. After a few months the patient's speech became affected. He had a lisp and a difficulty in pronouncing some words. Smiling and whistling became difficult. Deglutition was impeded, and the food tended to lodge between the cheeks and the teeth. At a later stage tremor and weakness of the hands set in, and the patient was obliged to relinquish his work, which was that of a cabinet maker. Stiffness, weakness, and tremor of the muscles of the neck were later developments. His walking power became much reduced. Palpitation became troublesome, and he lost weight decidedly. There was no complaint of pain, but the limbs felt cold and "dead." There were no mental symptoms, and intelligence was above the average. After a night's sleep the patient often felt quite well. He was admitted into the Royal Victoria Hospital, Belfast, on November 10th, 1914. His weight was 9 st. 3 lb. 11 oz. The temperature and urine were normal. The heart was normal, but the pulse was rather frequent, small, and of low tension. Passive tremor was present in the hands and arms. Sensation was normal. The reflexes were normal when first tested, but speedily became weak and disappeared, to return after a short rest. The sphincters were not involved. The myasthenic reaction in the muscles was well marked. All the symptoms tended to abate after rest. The patient remained nearly four months in hospital, and his condition, with some temporary fluctuations, remained substantially unchanged. Professor Lindsay discussed the points of distinction between myasthenia gravis and cases of aggravated neurasthenia, laying stress upon the predominance of muscle fatigue, the myasthenic reaction, the condition of the reflexes, the absence of pain, the absence of morbid introspection, and the alternating character of the symptoms as characteristic of the former disease. (3) *Automatism.* The patient was a gentleman, aged 60, of temperate habits and good health history. There was no history of hereditary nervous disease, alcoholism, or syphilis. His general health was excellent, and his weight was 14 st. 7 lb. There was no evidence of organic disease in any of the viscera. His story was that on several occasions he had found himself at considerable distances from his office without any recollection of what had happened in the interval. He had never had a convulsion, had never fallen or hurt himself, and had never passed water during an attack. On recovering from a seizure he felt perfectly well, and there were no after-phenomena. Physical examination was entirely negative. The patient was put upon a course of bromide and belladonna, and in a short time the attacks ceased. When last seen he had been free from attacks for a period of nearly five years. Remarks were made by Dr. DRURY, Dr. PARSONS, Dr. DAWSON, Dr. H. BEWLEY, and Professor LINDSAY replied.

THE Royal Dental Hospital, Leicester Square, has received a donation of £500 from the trustees of Smith's (Kensington Estate) Charity.

COLUMBIA UNIVERSITY, New York, is about to build one of the largest medical schools in the world. The University and the Presbyterian Hospital have joined forces for the purpose. The new medical school will replace the present College of Physicians and Surgeons, and the Presbyterian Hospital will be removed to a new site. Columbia University has, we learn from the *Medical Record*, set five years as the time limit for the raising of a fund of £1,500,000, which will include the cost of its share of the land, the cost of building a new medical school, and an endowment fund for the maintenance of the school.

Reviews.

HUMAN PHYSIOLOGY.

THE third volume of Professor LUCIANI'S *Human Physiology*[1] has been translated by Miss WELBY, and edited by Dr. GORDON HOLMES. The edition from which the translation was made was published in 1913, when a commemorative medal and an album containing the autographs of almost all the world's most eminent physiologists were presented to the author. The volume contains the general physiology of muscle, the mechanics of the locomotor apparatus, phonation and articulation, and the physiology of the nervous system. Miss Welby has done her work very well, and we are grateful to her for giving us this scholarly volume in English. The great value of Luciani lies in his admirable exposition of the historical evolution of the science. For example, in the discussion on the psychical importance of the brain, we read that "Rudinger (1882) noted the important fact that the parietal convolutions are extraordinarily well developed in men of high intelligence as compared with ordinary individuals and the lower human races. He was able to obtain eighteen brains of people with different claims to eminence, among them Döllinger, Bischoff, Lasaulx, and Liebig. In examining these he was specially struck by the exceptional development of the convolutions and fissures of the parietal lobe, which gives this region quite a different aspect from that of the brains of uncultured persons. The study of the skulls of Kant, Gauss, and Dirichlet also showed marked development of the parietal region. In the skulls of Bach and of Beethoven, which have been studied by His and by Flechsig, there was a marked development of the posterior regions of the brain, parieto-occipito-temporal, and the Rolandic region, while the pre-frontal lobes were of only comparatively insignificant dimensions. The brain of the astronomer Gyldén, examined by Retzius, showed considerable development of the parietal lobe, especially of the angular gyrus. In Helmholtz's brain, according to Hansemann, the precuneus and the parietal region included between the angular gyrus and the upper temporal gyrus were remarkable in size. Raffaelle's cranium, studied by Mingazzini in an authentic chalk drawing at Urbino, shows a striking contrast between the modest height of the forehead and the great expansion of the occipital and parietal lobes. The skulls of Gauss and Richard Wagner, according to His and Flechsig, on the contrary, exhibit a striking development not only of the posterior association area, but also of the anterior or prefrontal association area of Flechsig." S. Sergi (1909) "has also brought out the fact that the development of the frontal lobe is not in ratio with the degree of intellectual development, and that the highest races are characterized by predominating development of the parietal and occipital lobes." We note the inclusion of some interesting experiments by Kalischer (1907). He educated dogs to swallow pieces of meat only on hearing a given sound, and not to touch them at sounds of a different pitch. These animals retained a capacity for recognizing the "dinner sound" even when the cortex of both temporal lobes had been destroyed. He taught other dogs to touch their food only in brilliantly lighted surroundings, and not to take it in a dim light. This habit was preserved after removal of both occipital lobes. A "dinner colour," on the other hand, was lost. In the section dealing with the functions of the thalamus the interesting researches of Head and Gordon Holmes require mention. The editor has been too modest in not securing a reference to these, at any rate in the bibliography, which is supposed to include all important recent English researches.

Professor NOËL PATON has issued the fourth edition of his *Essentials of Human Physiology*.[2] The recent rapid growth of the science, the author says, "has rendered it

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[1] *Human Physiology.* By Professor L. Luciani. Translated by F. A. Welby; with a Preface by J. N. Langley, F.R.S. In five volumes. Vol. III, edited by G. M. Holmes, M.D., *Muscular and Nervous Systems.* London: Macmillan and Co., Limited. 1915. (Med. 8vo, pp. 677; 308 figures. 18s. net.)

[2] *Essentials of Human Physiology.* By D. N. Paton, M.D., B.Sc., F.R.C.P.Edin., F.R.S. Fourth edition, revised and enlarged. Edinburgh and London; W. Green and Son, Ltd. 1914. (Demy 8vo, pp. 576: 213 figures. 12s. net.)

necessary to rewrite a number of the sections and to thoroughly revise the whole, in order to bring it up to date. The opportunity has been taken to rearrange many parts and to delete less important details, in order to give greater prominence to those parts of the science which bear most directly upon medical and surgical practice." Professor Paton's power of clear exposition and of summarizing his teaching by diagrams has provided the student with a textbook which, while not large, is adequate for examination purposes and sufficient for his educational needs when amplified by practical work and the notes taken at his course of lectures. On page 504 we note an excellent table setting forth the decomposition products of proteins and the relation of these to the constituents of the urine. Turning to the subject of alcohol in diet we find Professor Paton's views expressed thus: "The tissues have the power of oxidizing a small quantity of alcohol, and since the combustion of 1 gram of alcohol liberates 7.06 calories of energy, alcohol must be regarded as a food just the same way as sugar is a food. The amount of alcohol which can be thus oxidized varies in different individuals, but the average man cannot use more than 50 grams per diem. This is isodynamic with 85 grams of proteins or carbohydrates. Any alcohol above the amount which can be oxidized is excreted in the urine and breath, and in its passage through the body it acts as a poison to the protoplasm, first diminishing its activity and so decreasing the rate of waste, and, secondly, killing it, and thus leading to the excretion of the nitrogenous products of disintegration in the urine. The poisonous action on the liver is demonstrated by the diminished building up of urea, so that a greater quantity of waste nitrogen is excreted in other forms. In moderate doses it stimulates the heart and dilates the arterioles, and no marked change in the blood pressure is produced; but the dilatation of the cutaneous vessels leads to an increased loss of heat. On the nervous system its action seems to be purely toxic. Its action in checking the activity of metabolism, along with its influence in producing dilatation of the cutaneous vessels, is taken advantage of in its use in the treatment of high temperature in some fevers, while the rapidity of its absorption and of its combustion in the tissues renders it of value in the treatment of some conditions of debility." This seems a fair statement and one with which physiologists would generally agree. Alcohol does harm to those whose metabolism is reduced by sedentary work in confined, over-warm atmospheres, and who indulge, considering their output of energy, in over-eating. The man who does strenuous physical work in the open air of cool climates burns off the alcohol he takes so rapidly that he can take far more than the other with impunity.

THE MEDICAL ANNUAL.

USEFUL as is any particular yearly volume of *The Medical Annual*,[3] it is satisfactory for the profession to learn from the pages of this new issue that the editor and his able assistants are engaged in preparing a *Synoptical Index* of the past ten volumes. The war has delayed the publication of the annual volume for 1915, yet all its contributors have brought their sections up to date, not one having excused himself on this occasion. The editor concludes that the issue of this volume, as complete as usual, is one of the numerous indications of the heroism of the medical profession, since not only those who have found glory on the battlefield have given proof that our profession is in earnest. The labours of the compilers, so heavily handicapped, have further been increased by the necessity of scrutinizing the new edition of the *British Pharmacopoeia*.

As might be expected, the volume contains much about bacteriology, and, as is ever the case year by year in these days, distinct advances in operative surgery and in the application of scientific methods to surgical procedures are recorded in the pages of the new volume. It is highly significant of the times, too, that the editor furnishes us with a glossary containing definitions of the newer terms in this and recent volumes. Wassermann's reaction, for instance, is a subject of extreme interest and importance, but the average medical man cannot understand by intuition what is meant by the statement that complement is the normal lipoid-globulin of the serum in an ionic state, and originates in the lymphocytes. "Ionic state" might be completely misunderstood without a technical explanation. Even after recourse to this glossary many of us will not feel much enlightened when it informs us that "complement is a substance present in blood serum, possibly of ferment nature, which, when linked by an amboceptor to a cell constitutes with that amboceptor an agent capable of acting upon the cell." It is fair to add that "amboceptor" is included in the glossary.

The department on naval surgery is edited by Deputy Surgeon-General Gascoigne Wildey, of Haslar, his review being published by permission of the Medical Director-General of the Navy. Military surgery is reviewed by Colonel Louis A. La Garde, U.S. Army (retired), Professor of Military Surgery, Medical Department, New York University. As usual there is at the end of the volume a useful alphabetical notice of new medical and surgical appliances.

[3] *The Medical Annual: A Year Book of Treatment and Practitioner's Index*. 1915. Thirty-third year. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. (Demy 8vo, pp. 944; 71 plates, 149 figures. 10s. net.)

NOTES ON BOOKS.

UNTIL the last few years, artificial illumination has been a Cinderella among the applied sciences, and the maiden has seen some of her revenge in the prevalence of myopia. In 1909, however, the drudge became endowed with a glass slipper in the shape of the Illuminating Engineering Society. Whether the name of the fairy in the case was GASTER, and the name of the prince was DOW, or whether it was the other way about, we do not pretend to understand, but in *Modern Illuminants*[4] these two gentlemen, who have shared in the secretarial burden of the society aforesaid, collaborate to tell us all about it, as well as to trace the story of illumination from the days of the Roman pine torch to this blazing epoch of the cerium mantle and the tungsten filament. The new specialism of illuminating engineering has called into consultation the physiologist, the photometrist, and the architect, as well as the expert in gas or electric lighting and the manufacturer of lamps and reflectors. All these phases of the subject are dealt with in the volume before us, which evidently aims at being encyclopaedic in character, with the inevitable result of a certain inequality in treatment. Some of the sections, on the physiological effects of light, for example, are little more than snippets from pre-existing literature, while others, such as the one on interior illumination, are written with the well assimilated knowledge of experts. Colour vision, again, is treated very popularly, while the chapter on the measurement of light is beyond the comprehension of those who are not accustomed to the use of a photometer. If the reader, however, is in search of a guide which, while holding the balance even between different kinds of illuminants, shall inform him what principles should govern the lighting of his reception rooms, his library, his hospital, his church, and club, and billiard table, and the street or square in which he lives, we can recommend him confidently to these pages.

The mental condition of the probationer during the first weeks of her life in hospital is not unlike that of a new boy at his first boarding school. Until the unfamiliarity of their surroundings has worn off, both are in need of a helping hand to steer them through the obstacles that lie in the path of the neophyte, "thick as the autumn leaves that strew the brooks of Vallombrosa." Whilst the schoolboy, more often than not, finds a friend and protector in one of his own schoolfellows, the girl who is just beginning her training as a nurse may be saved from many mistakes and gain much solid information from Miss C. SEYMOUR YAPP'S *Modern Medical and Surgical Nursing for Probationers*.[5] The author's long experience of nursing and her intimate knowledge of the trials and difficulties inseparable from the nurse's calling make her peculiarly fitted to act as guide, and her ready sympathy with the personal as well as with the professional side of the nurse's life is displayed in every line.

[4] *Modern Illuminants and Illuminating Engineering*. By Leon Gaster and J. S. Dow. London and New York: Whittaker and Co. 1915. (Demy 8vo, pp. 476; 201 illustrations. 12s. 6d. net.)

[5] *Modern Medical and Surgical Nursing for Probationers* (Selected Lectures). By C. Seymour Yapp, Matron, the Poor Law Hospital, Ashton-under-Lyne. London: The Poor Law Publications Co. 1915. (Demy 8vo, pp. 243. 2s. 6d.)

The *Medical Register*[6] for 1915 shows that on December 31st, 1914, the number of names on the *Register* was 42,378, a net increase of 438 on the year. The total number added by registration was 1,433; the total number restored was 73, and the total number removed 1,068. Of the latter, 761 were removed on evidence of death, and 300 under Section 14 of the Medical Act, which authorizes the removal of the name if a letter of inquiry addressed to the individual remains unanswered for a period of six months.

The *Dentists' Register*[7] for 1915, which has also been issued, contains 5,426 names; of these, 6 were registered with Colonial qualifications and 15 with foreign qualifications; 3,836 are those of graduates or licentiates in dental surgery of universities and colleges in the United Kingdom. The last named thus constitute 70.69 per cent. of the total number on the *Register*. The total number added in 1914 was 273, and 9 names were restored; the number removed was 131, so that the total gain was only 151.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

Owing to the motor trade having been turned topsy-turvy as a result of the war the publication of these periodical notes has been designedly interrupted. Obviously, on the one hand it would have been idle to write about British-built cars having interesting features when examples of them could not be obtained. Equally obviously it were idle to deal with the probable enormous expansion in the business in American-made motors in this country until the condition of the freight market enabled one to ascertain definitely which firms were able to get their cars over here at charges that would render the proposition really commercial.

The Situation To-day.

The situation to-day is such as to mark at least another definite stage of development in the motor business in war time. It is generally understood that the British motor manufacturers are now fully engaged on Government work. But when at Coventry the other day I discovered that this, the most important of our motor manufacturing centres, will be still further increasing its output of war requisites. This means that the small proportion of motor manufacturing reserved for the purchasing public's needs must be reduced to a still narrower margin. Again, in other parts in the Midlands, some motor factories are not required to supply anything except chassis; but in those circumstances the entire output of the given factory is taken up by the Government. This is the case with the Sunbeam Company of Wolverhampton, with the result that it is impossible to acquire one of these machines by private purchase during the period of the war. Vauxhalls, of Luton, Bedfordshire, are in much the same case. On the other hand, Rolls-Royce, of Derby, are now to be numbered among the makers of aëro engines for the Government, and Daimlers and Rovers, of Coventry, are examples of firms that are still able to supply a small proportion of their total output to the public.

Turning to Birmingham, we find that the largest concern, the Wolseley Company, owned by Vickers, is busy with an extraordinary variety of war requisites in addition to its large output of heavy vehicles and ambulances for the front.

Lastly, a general survey of what may be styled the minor firms in the motor industry, including notably those which make chassis of little or no use for war service, though in many cases precisely what is wanted to-day by the country doctor, are required in this time of national emergency practically to suspend their output and devote their resources to the production of shells, fuses, and parts of all sorts of instruments of war.

How the Car Shortage Arises.

We have besides to consider certain firms that so far remain in another category—those whose works have not yet been considered suitable for war production and which have therefore attempted to continue supplying the demands of the private purchaser. As far as small cars are concerned every circumstance of the war has tended enormously to increase the call for them. Being careful to have clearly in mind the distinction between cars that may chance to be in stock in this or that showroom about the country and the actual work of producing new cars for the general public in factories in this country, we have come to the stage in which there is undoubtedly a famine in British-built cars for private purchasers.

This state is largely due to the problem of raw materials. One of the first revelations of the war to the student of motor making was the proof it speedily produced that a great number of parts even of expensive cars marketed with a flourish of trumpets as being "All British" had been regularly purchased from the Continent. Those sources of supply became closed the moment hostilities commenced, with the result that makers of this class of alleged "All British" car rushed to place orders with British steel firms for crank-shafts and all such parts as they had previously bought abroad.

By one means and another they succeeded fairly well until all this extra business and the special demands for raw material for war vehicles resulted in such a state of muddle that at last the absolute necessity for beginning at the beginning by enabling manufacturers of war vehicles to receive their raw materials as they required them dawned on the authorities. One result has been that for some weeks past the factory inspectors employed in connexion with the work of speeding up output have been busy at steelmakers, foundries, stampers, and elsewhere, ordering all private work to be put aside in favour of the production of raw material to be supplied to the makers of motors and vehicles for the Government. This has meant that in one small car works, for example, the production is found practically at a standstill because they can get no front axles from the stampers, and at others because they can get no radiators, and so on.

A Timely Hint.

The difficulty is one which is likely rather to become aggravated than smoothed out, particularly as many of these smaller works are now being added to the list of producers of the munitions of war by adapting the shops to other than motor production.

The first advice to the medical man, therefore, is that if he has in mind the purchase of any sort of car, either of the smallest or the middle size, he would do well to set about at once ascertaining whether he can place an order for it on the terms of being guaranteed delivery by a definite date. The pond has not been fished quite dry, because, despite all the circumstances here enumerated, and many others that cannot be related in the space available, until lately deliveries continued to be made to agents about the country in accordance with the manner in which contracts had been placed last year. But it has chanced that the demands for motor vehicles arising more or less directly out of the war have resulted in a certain reshuffling of what may be styled purchasing centres. Thus, a little hunting about will reveal that in some towns agents have accumulated quite a stock of cars, because the ordinary trade conditions of the district have been entirely reversed; while in others, where ordinarily a much smaller business is done in the selling of motors, demands arising out of the war have been so exceptional that there is not a car to be had.

For the medical man the lesson of this is that there are still opportunities in some centres of securing immediate deliveries even of light cars. At the same time I have observed among the stocks of new cars in retailers' premises that, as a rule, the majority appear to be examples of the late 1914 models.

Points to be had in Mind.

This is a material point for the doctor to observe, because this light car movement is so much in its infancy that there is almost invariably very sound reason for the departures made in the 1915 models, wherein causes of failure or lack of reliability in the 1914 models have been eliminated either by employing other methods of designing the given details, or different materials for making them, or different processes of manufacturing the actual part.

A survey of the situation in which the medical man who thinks of acquiring a car to-day finds himself would not be complete unless it also included a brief consideration of the problem of importation. It is by now somewhat widely realized that the method most generally adopted by motor sellers for dealing with the shortage of British

[6] The *Medical Register*. London: Published for the General Medical Council by Constable and Co., Ltd. (10s. 6d.)

[7] The *Dentists' Register*. London: Published for the General Medical Council by Constable and Co., Ltd. (3s. 4d.)

cars available to the private owner has been or is for them to hurry over to America and try either to discover likely types of cars not hitherto placed on our market, or to secure more examples of those already known to the British public. In the main, those makers that have been known here for some years are more to be recommended than some of what may be styled the dug-out brands.

Allowing for the fact that the war has brought much prosperity to America, with the result that her own market for the cars she is producing this year is undoubtedly much larger than was anticipated, still the capacity of her factories is so huge that this factor itself should not put any difficulty in the way of our obtaining all the extra vehicles now needed in this country. For example, the production of the eight cylinder Cadillac, which is a car of extraordinary refinement, is now on the scale of 100 complete vehicles a day; while the scale of output of Willys-Overland machines is at present 350 complete vehicles every 24 hours, and will, during the next month or two, reach 600 a day. Of course, in yet a third category, Ford continues to make cars by the hundred thousand a year.

Problems of Importation.

The proposition in regard to obtaining American-made motor vehicles therefore resolves itself into a problem of freights. Already cars that used to be brought across at £7 apiece have cost £30 or more each to bring over. Freights, moreover, are rather likely to rise than fall. Some makers started adding increased cost of shipping on to the car; but so far most have striven to bear it themselves. Should there be any further rises of transport rates all dealers in American cars will presently have to charge the customer at least some proportion of the extra cost. This is a very appreciable item when considering a vehicle retailed at under £250, or even at under £200. On the other hand, in the case of some of the higher priced American vehicles, there must be a limit to the amount that can be added to the retail price on this account; or the car will be transferred into quite a different section of the market as far as concerns the purchasing power of the private owner. These are problems which we may quite safely leave the enterprise of the motor traders to solve. They concern us merely in this particular, that as far as we can foresee at present there is every prospect that the retail cost of the average imported car will tend to rise as long as war lasts, and that it will not fall during that period because it is impossible to give any guarantee that transatlantic shipping will not become interrupted at any time.

There is another motor phase born of the war. Hitherto we have imported complete cars or complete chassis from America, and also a more or less limited selection of accessories such as quick-lifting jacks, electrical engine starting systems, electric signal horns, and speedometers.

A Significant Development.

Now, however, the uncertainty of obtaining supplies of raw materials has brought about a development of almost a startling character, especially when we consider its possible effects on the future of the motor industry in this country. Perhaps the development is best illustrated by citing the latest enterprise of the makers of the well-known Morris-Oxford light car, who are next month introducing the Cowley-Oxford light car. This is much the same style of vehicle marketed at a lower price and having a larger engine, though one, perchance, of not quite such "sporting" qualities. The motor, gearbox, and back axle of the new Cowley-Morris light car are imported from America. In design the back axle is certainly second to none so far on the market, while the engine is made by the greatest specialists in the world on the production of engines only—the Continental Company of Detroit. Having been over these works I can speak from first-hand experience of the machines and methods employed. I confess that when to these are added the gigantic scale of output, enormously reducing cost, and the fact that in certain details of the valve design the engine of this new light car model is much more akin to English than American practice, I cannot but regard this as the beginning of a very significant movement.

It will be convenient, however, to survey light car development in another article. The purpose of the present notes is to acquaint the medical man with the factors at present governing and limiting the marketing of the various classes of motor vehicles he may require, and to advise him of the necessity of making his plans for purchasing rather early than late. On the present occasion it remains merely to add that, in face of the situation we have broadly surveyed, the average value of secondhand cars appears to be some 20 per cent. higher than it was before the outbreak of war. Meantime investments of this sort remain the same gamble they have always been.

AIR RAIDS.

Precautions Against Incendiary Bombs.

The British Fire Prevention Committee has prepared a placard of convenient size for posting in institutions or private houses, giving instructions for dealing with fires produced by incendiary air-bombs, and particulars as to the construction of these bombs. Copies of the placard (No. 17*a*) can, we understand, be obtained on application to Mr. Ellis Marsland, General Honorary Secretary, British Fire Prevention Committee, 8, Waterloo Place, Pall Mall, London, S.W. We reproduce the text of the warning itself, together with diagrams showing the general appearance of an incendiary bomb and a section exhibiting its construction.

WARNING!

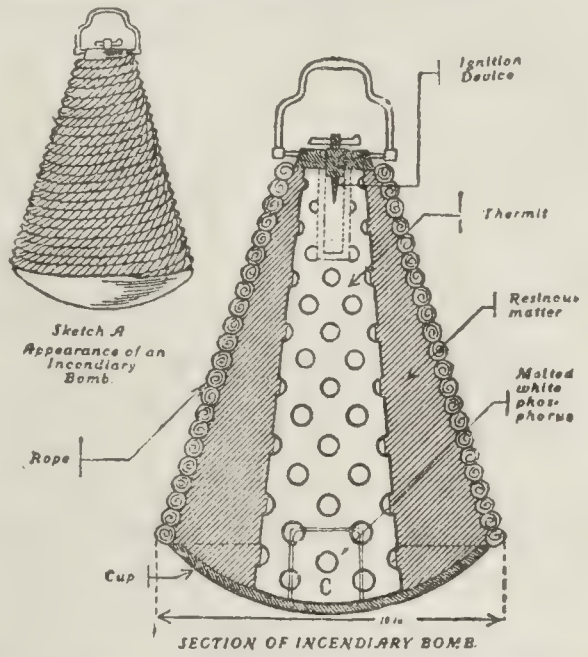
(Special Fire Survey Force War Caution.)

Fires Due to Air Raids.

Nature of Bombs Used and How to Deal with Fires Arising Therefrom.

Buckets of water (supplemented where feasible by ordinary hand pumps) are recommended as the most suitable and economical fire appliances, and, where oil or spirit is used, buckets of sand.

Don't wait until a fire occurs to find the best way out in the dark. Think of a couple of ways out beforehand.



If there is dense smoke from a fire remember that the air is clearer near the ground, so crawl on the floor, with a handkerchief, wet rag, or respirator in front of your mouth.

Ascertain the quickest means of obtaining assistance from the fire brigade and police. Post up the necessary particulars, nearest fire alarm, etc., on the ground floor.

Don't run or shout. Keep calm as an example to others.

1. *The ordinary explosive bombs* employed by the enemy rarely cause a fire *per se*, but where a building is injured or collapses fires are frequently caused by open lights or fires, etc., and their spread is assisted by escaping gas from broken mains or arcs from broken electric cables.

Fires thus caused indirectly by *explosive* bombs can as a rule be dealt with as ordinary fires in their incipient stage. Any gas or electrical supply not cut off prior to the outbreak should, if possible, however, be cut off at the earliest possible moment.

2. *The incendiary bombs* employed by the enemy readily fire buildings and their contents owing to the fierce nature of the flames and the molten metal generated by the chemical used.

Fires caused by *incendiary* bombs may be prevented from spreading, regardless of the high temperature generated at the actual seat of the outbreak, if water be promptly applied in fair bulk, force, and continuity,

say from a series of buckets energetically thrown, or hand pumps vigorously worked. Sand or loose soil similarly thrown might be useful in the absence of water, but would not have the necessary cooling effect. The application of single buckets of water, single shovels of sand, etc., would be comparatively valueless, a concentration of the available liquid first-aid appliances being required to obtain the necessary result.

Note.—In order to deal with fires from *incendiary* bombs, their make should be understood, and the following describes one of the types frequently used:

(*a*) The bomb, as a rule, is conical, of 10 in. diameter at the base, corded round, and has a metal handle at the apex (see A).

(*b*) The base is a flat cup, on to which a pierced metal funnel is fitted, having the ignition device and handle fitted at the top.

(*c*) The funnel is generally filled with thermit, which upon ignition generates intense heat, and by the time of the concussion has taken the form of molten metal of the extraordinary high temperature of over 5,000° F.

The molten metal is spread by the concussion.

(*d*) Outside the funnel is a padding of a highly inflammable or resinous material bound on with an inflammable form of rope. The resinous material creates a pungent smoke.

(*e*) There is generally some melted white phosphorus in the bottom of the cap which develops nauseous fumes.

(*f*) In some cases celluloid chippings are added, and occasionally a small quantity of petrol.

3. *Fumes.*—The fumes of the bombs are generally very pungent, and a simple form of respirator (that can be readily damped) should be kept handy and used where necessary.

Firemen and others whose duty it is to attend incendiary fires would do well to carry simple respirators in their uniform.

Precautions.

Should definite information be received of the approach of hostile aircraft or actual bombardment commence in the vicinity, refuge should be promptly taken in the cellar, basement, or lower floor.

All gas lights or stoves should be turned out, and the gas supply turned off at the meter.

All electric lights should be switched off, and the supply turned off at the main switch near the meter.

Further, if Time Permits :

All oil lamps should be extinguished and taken into the cellar or basement.

All open fires above basement level should be extinguished.

All doors should be closed.

All windows should be closed, also shutters where such exist.

Buckets of water should always be available, and where spirit is used also buckets of sand.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE usual quarterly meeting of the Association was held in the rooms of the Medical Society of London on Tuesday, May 18th, under the presidency of Dr. DAVID G. THOMSON, of Norwich.

The late Sir Thomas Clouston.

The PRESIDENT referred in feeling terms to the death of Sir Thomas Clouston, one of the founders of the association, who had been one of its most talented members. As a pupil of Sir Thomas, he could bear testimony to the capacity possessed by him to infuse his own tremendous zeal into those he came into contact with, and he represented that rare combination of the great administrator and the great physician which was so much required in the specialty, but was so rarely met with. Of Sir Thomas Clouston's works it was not for him to speak; they were known throughout the English-speaking world, and in foreign countries too. The meeting passed a resolution of sympathy with Sir Thomas's relatives, the members rising in their places.

Other Deaths.

Reference was also made to the death, in the service of his country, of Dr. Pierce Power, assistant medical officer at Bicton Asylum, Shrewsbury; and to that of Dr. Stuart, senior assistant medical officer at Chichester, from a motor car accident. The President also announced that Dr. J. Beveridge Spence and Dr. Seymour Tuke had recently lost their sons in battle, and the meeting expressed its sympathy with them.

Presentation of Books.

About 100 books were presented to the library by Dr. Hyslop, who was cordially thanked for his generous gift.

Anger.

Dr. THEODORE B. HYSLOP read a paper on anger. During the evolution of the animal world anger had served as a stimulus to aggression for the purpose of procuring food, as an aid to survival, and as a necessity for the acquirement and maintenance of supremacy. Anger, occurring in mankind, he regarded as an atavistic tendency, reversion, or retrogression; also as an indication of familial or individual devolution. Considered clinically, anger might range from a mere temporary defective inhibition, to conditions of suicidal and homicidal impulse, assuming a medico-legal and even national importance when communities became affected. He referred to some of the causes, symptoms, and methods of treatment of anger, as coming within the experience of the medico-psychologist. He spoke at some length on the "amok" (running amok) of the Malays. When the tendency to run amok, which was not confined to Malays, affected individuals of influence and authority, the amok was apt to assume the proportions of an epidemic of maniacal fury, in which even nations passed into furious homicidal passion, and became a grave danger to civilization. They were not without a tremendous illustration of this at the present day; for some authorities insisted that Germany was now running amok. The author regarded this as an instance of epidemic psychopathy, a repetition of which humanity was not likely to permit.

The subject was discussed by Sir GEORGE SAVAGE and DRS. HAYES NEWINGTON, SERGEANT, and W. F. SAMUELS.

Research.

Dr. DAVID ORR read a paper entitled "Research." He said that research into the causation of insanity in this country up to the present time had been either isolated, neglected, or starved. At one period of our knowledge isolated effort could make some headway, but now the problems were much more complex, rendering essential the co-operation of several species of workers. Research had come to mean specialization in a branch after a thoroughly broad preliminary training, and this must be given in a properly equipped central laboratory. Such laboratory must be prepared to give instruction in anatomy, physiology, pathology, bacteriology, chemistry, and serology as applied to the nervous system. There must be complete reciprocity between the laboratory and the asylum. Investigators in the domain of neuro-pathology must no longer recognize any line of demarcation between the brain and the nervous system. Clinical insanity was best taught in a clinic where the cases were seen in the stage of early development, and the clinic should be in close touch with the laboratory. Both should be conveniently near to a medical school, whose teachers could give special lectures and expert advice. Each asylum should have its own pathological department, in which those who had been trained in broad neurology could work out problems for themselves; when in difficulties, the central institute could be drawn upon for expert advice. The county asylum was not the best place in which to learn, because cases were seldom seen there in the early stage.

Dr. HAYES NEWINGTON hoped that those who would find the money for research would be impressed by what Dr. Orr had advanced; he had made out an excellent case for it.

Dr. HUBERT NORMAN expressed the view of many in the asylum service as to the small opportunity they received for doing any research, though they fully saw the necessity of it. To conduct this work, men must have the enthusiasm for it which the author had shown.

Dr. HARVEY BAIRD spoke of the good work being done at Cardiff Mental Hospital, due largely to the keenness of the superintendent, who succeeded in impressing the Borough authorities as to the need for supporting the work.

Dr. ORR replied, expressing the view that the necessary money would be forthcoming.

British Medical Journal.

SATURDAY, MAY 29TH, 1915.

THE MUDDLE OF THE REGISTERS.

THERE can be no doubt that some recent acts of the Insurance Commissioners have aroused in the minds of a large number of panel practitioners a degree of resentment and bitterness which has not been equalled since the time when medical benefit commenced. During 1913 there appeared to be grounds for hoping that many of the earlier forebodings as to the status of medical men under the Act would prove to have been to some extent unfounded; both the Treasury and the Commissioners seemed to be doing what they could to make the position of the panel practitioners at least endurable. The remuneration, though not princely, and the conditions of working, though by no means ideal, were such as with a little more experience and tact might have been made acceptable to the profession, while at the same time the efficiency of the service given to the insured was increased.

Then commenced an elaborate process of tinkering with the Act by means of orders, circulars, and regulations, which has gone on to such an extent that many of its original provisions are hardly to be recognized in the present system. Not only have Insurance Committees and Panel Committees been inundated with literature from the Commissioners, but officials of approved societies have been overwhelmed by a continuous bombardment of orders, circulars, and regulations, in many cases so ill-considered that they have had to be revoked or superseded within a few weeks of being issued. That this is no exaggeration is shown by the statement in a recently-published textbook on the Acts, written by a barrister specially for the officials of approved societies; the author calculated that down to the end of May, 1914, the Commissioners had published no fewer than 515 orders and regulations, not including orders constituting Insurance Committees nor the numerous drafts only some of which have ultimately developed into effective documents. The author states further that, roughly speaking, little more than half of this large number of orders and regulations were actually in force in July, 1914. The fact is that officials of societies have not been able to keep pace with the rain of fresh documents. No sooner have they commenced to adapt their books and methods to one system, than another has been sprung on them, wholly or partially revoking or altering the earlier. Is it, then, in the least surprising that the registers are fallacious, or that at the interview between the Commissioners and the deputation of the British Medical Association, reported in the SUPPLEMENT of January 30th, Sir R. Morant had to admit that the registers were inflated to an undetermined extent?

It may be granted that even under the best and simplest conditions the task imposed on the Commissioners at the beginning was enormous, but the way in which they have handled the task has added more and more to its complexity, and has eventually brought about a state of affairs which can only be described as a muddle. The fact seems to be that for statistical purposes the registers are hardly worth the paper they are written on. It is some consolation to be assured that the total pool for the doctors contains all the money in respect of all persons who are entitled to medical benefit, though no one, not even Sir R. Morant, knows how far this is strictly correct. But when we learn that the registers are in such a state that the money has to be distributed to the various Insurance Committees on a system which is only a step removed from guesswork, and find that individual doctors may be paid amounts which differ very materially from their just dues, sometimes being less and sometimes perhaps even more than is correct, we may admire the ingenuity spent in the vain attempt to get out of the muddle of the registers, but must blame the Commissioners for allowing that muddle to arise.

Before the war began the profession was already beginning to protest against being made to suffer for the faults of others, no matter whether the fault lay with the Commissioners, or the officials of the societies, or the insured, or with all three. After the war began everybody tacitly called a truce to internal disputes. The profession came forward with most generous and public-spirited offers of gratuitous medical attendance for the dependants of the men on active service, recruits were examined freely, large numbers of wounded soldiers were treated without any charge, and, more than all, a very large number of members of the profession gave up their practices in order to serve their country. The profession recognized, of course, that the Insurance Act provided that any man who joined the navy or army was taken off the list of his former panel doctor, and ceased to be entitled to medical attendance from him, while the doctor ceased to be entitled to any payment in respect of him so long as he was in the forces. But though this was a perfectly fair and reasonable provision in ordinary times of peace, in a war such as this, when an enormous number of insured men were joining the forces, it meant a great hardship to the panel practitioners. This was pointed out to the Commissioners and to the Treasury, but they took their stand on the strict letter of the law. The hardship is made the greater by the fact that those men who joined the army were the best lives among the insured, who had required an extremely small amount of medical attendance. Their withdrawal from the panel lists therefore completely altered for the worse the actuarial expectancy of sickness on which the remuneration of the panel doctor was based. Moreover it is certain that the effect of the war will be that a large number of what were the best lives will be returned to the panel lists maimed, or chronic invalids requiring an extra amount of medical attendance. The Commissioners have indeed suggested that invalided and discharged soldiers should be replaced on the panel list of the doctor under whose care they had previously been.

Thus, both during and after the war, the expectancy of sickness among the insured must be raised, and the panel doctors' work seriously increased in proportion to the number of persons on their lists. The chemists and the approved societies will be affected in the same way. All this was brought to the notice of the Commissioners, but, while the societies have obtained some promises that special provisions shall be made where societies suffer on this account, no attention seems to have been given to the case of the doctors. The Commissioners have still further aggravated the position by issuing to Insurance Committees a circular, dated March 31st, stating that the Committees can only safely make advances to the doctors to a total amount in each quarter not exceeding a sum

calculated at the rate of £72 per 1,000 of the count of their register at the beginning of the quarter. This is at the rate of about 5s. 9d. a year per insured person on the register, and has to cover all the purposes of medical benefit. It causes a most serious reduction in the incomes of the panel doctors at a time when they can least afford it.

In considering the position thus brought about we have to give full weight to three facts. The first is that the panel practitioners cannot legally claim to be paid for the men who have joined the forces, so long as they are in the forces; apparently they can expect no remedy for the injustice which flows from this if the Government backs up the Commissioners in demanding their pound of flesh. The second is that in making the calculation the number of the insured is taken as the register count in each area, and as the registers are inflated, slightly more than 5s. 9d. a year per insured person actually entitled to treatment may be paid; the Commissioners have been practically bound to take the incorrect registers as their basis, because they are in ignorance of the actual number of insured persons in each area. In the third place, it must be remembered that these payments are only in the nature of payments on account, and that when the exact number of persons actually entitled to medical benefit is known, if indeed it ever is known, a final payment of the balance will be made. It seems to be thought that the profession is so wealthy that it can afford to wait a year or two for a settlement. As a further reason for delay it might, perhaps, be suggested that any form of conscription which may possibly be introduced would still further reduce the panel lists, but whatever view be taken as to the probability of this drastic change of policy being forced on the country, it would not be just to make use of such an argument until that policy has actually been adopted.

After making the fullest possible allowance for all these facts, it is impossible to avoid feeling that the reduction in the advances to practitioners is greatly in excess of what is necessary for the safety of the funds. Seeing that the full amount for medical benefit is 8s. 6d. per insured person, which, of course, covers payments to both doctors and chemists, to say that only about 5s. 9d. can be advanced with safety is equivalent to saying that, roughly speaking, about one-third of the amount properly payable to practitioners and chemists is to be regarded as unsafe. The Commissioners have vouchsafed no reasons to justify such an estimate. Making every reasonable allowance for the inaccuracy of the registers, and taking the highest estimate of the number of men who have joined the forces, we refuse to accept the estimate of the Commissioners as either reasonable or just.

Under the terms of the regulations and the agreement between Insurance Committees and practitioners, the Commissioners may be able, as a strict matter of law, to impose their terms; but there is such a thing as equity, and if, after the protests that are coming in from all parts of the country, the Commissioners adhere to the letter while violating the spirit, they will stir up a feeling of the most bitter resentment, even amongst those who have consistently supported the working of the Act from the beginning. The Commissioners have themselves broken the truce which was tacitly agreed on when the war began. After the bitterness of two years ago, and in spite of a number of extremists in certain areas, throughout the country generally there was growing up a desire on the part of the panel practitioners to work the Act in a spirit of friendly co-operation with the insurance authorities. This tendency has been rudely and wantonly disturbed by the Commissioners. The profession would gladly have had peace, but it will not consent to peace at any price.

THE HEALING POWERS OF SUNLIGHT.

To return from a holiday with a well-tanned skin, whether it be from the seaside or from the mountain tops, has always been regarded as the outward and visible sign of sound health. Sunlight in each case, together with wind, has been the agency by which such hygienic perfection has been brought about. The application of this well-known fact to cases of disease, and particularly of tuberculous disease, has been slowly gaining ground of late years, and foremost among the advocates of sun-healing may be placed Dr. A. Rollier of Leysin, who has boldly applied the treatment on the wooded slopes 4,000 feet above sea-level with marked success. In a well illustrated volume he has now recorded the results achieved during the last ten years, and they merit careful attention.

That the value of sunlight as a healing agency is no new idea is well shown in a preliminary historical chapter. In olden days the good or evil effects of the solar action were generally attributed to the gods, and no profane attempts to explain them were deemed necessary. The modern spirit of inquiry is not so easily satisfied, but it cannot as yet be maintained that anything like satisfaction has been arrived at. The influence of light and heat rays and waves of varying length upon the human body has been steadily under investigation for many years, but there is still much diversity of opinion amongst the most skilled investigators. Hence the therapeutic value of direct sunlight must still rest upon clinical evidence, and the cases that Dr. Rollier is able to bring forward in support of his teaching are certainly convincing.

When dealing with climatic conditions by the sea and in the altitudes, he points out that the composition respectively of the atmospheric air must be markedly different, the sea air being demonstrably laden with emanations from the water, such as are not to be traced in the air of inland mountainous regions. The effects of the sunlight may be modified by these differences, and he claims for the altitude sunshine a degree of stimulating power which is not noticed at the seaside stations.

The cases most suitable for the direct solar treatment are those which in former days were classed as "strumous." Tuberculous diseases of skin, glands, bones, joints, peritoneum, and other internal organs are included in the list of cases treated, and the patients were for the most part of tender age. By abundant use of illustrations, many of the plates being coloured, Dr. Rollier is able to show the mode of life which he permits his young patients to lead during their respective stages of disease, and the conditions observed before and after treatment. Boys and girls from 7 to 16 years of age are seen to be at work and at play with no greater protection to their naked bodies than can be afforded by waist-cloths and sun hats. Outdoor schools on the high snow slopes, presumably reached on the ski, to be seen piled up in the foreground, and haymaking parties in the summer time, are recorded by colour photography. The tinge of skin which appears to be acquired in every case is a rich mahogany brown, of a somewhat redder tint in some of the fairer complexions. It is this pigmentation which is said to render the skin insensitive to changes of temperature, and it has to be taken as a

guide in the process of acclimatization of the individual patient when he is first given the sun baths. Extreme caution is necessary at first, and no child is allowed to arrive at the stage of complete exposure, except by very slow degrees. Every case calls for special treatment, and the mechanical devices employed in dealing with spinal and joint cases are many and ingenious. The use of the ventral position in cases of Pott's disease of the spine has proved most efficacious in reducing curvature by the force of natural gravitation.

Among the many striking effects produced after prolonged sun baths may be noted the gradual production of movable joints in cases where partial ankylosis appeared to have taken place; the healing of local suppuration whether from superficial or deep lesions, and the steady improvement in general health which followed the continued exposure of the whole body to the sun's rays, all point to the conclusion that the influence of pathogenic microbes is thereby annulled. No adjuvant medication seems to have been used, and the results achieved must be regarded as due to the direct effect of the exposure of the bare skin to sunlight and pure air. Success is not claimed in every case, and it must be noted that very definite changes are apt to be induced in certain joint diseases. Pain, as a rule, is eased almost at once, but it may happen that swelling and tenderness of the inflamed joint may follow with rise of temperature, but such cases would seem to be exceptional.

Dr. Rollier's[1] experience may be regarded as a definite landmark in the progress of a method of treatment which is already more than justified by its results.

A NEW SIGN FOR THE DIAGNOSIS OF SCARLET FEVER.

IN his recent study of experimental scarlet fever in the monkey, Mair[2] remarks that while several experimenters believe themselves to have infected monkeys with scarlet fever, there is no general agreement on the point whether such infection is possible. In fact, Draper and Handford, writing in 1913, from a review of the literature and the results of their own experiments, come to the conclusion that the monkey is probably insusceptible to the disease. Like other writers, they lay stress on the production of a rash followed by desquamation in the diagnosis of scarlet fever. But, as Mair points out, the rash is not invariably present even in the human subject, and his own experimental work leads him to the conclusion that it is generally absent in the monkey. He draws attention to the importance of Döhle's bodies in the diagnosis of scarlet fever. In 1912 Döhle described certain changes in the staining reactions of the polymorphonuclear leucocytes of patients with scarlet fever. In blood films taken during the acute stage and prepared by Leishman's method, a certain proportion of these leucocytes show patches of various shapes and sizes in their cytoplasm. In some leucocytes it is due merely to a change in the staining reactions of the granules, whilst in others the altered granules appear to have coalesced into more or less definite blue spots. Döhle interpreted the change as indicating the presence of inclusions of a parasitic nature. Mair shows that this conclusion is certainly erroneous, because the same bodies may be produced in the leucocytes of monkeys by the injection of sublethal doses of diphtheria toxin. But the sign is of considerable value, he says, in the diagnosis of scarlet fever in the human subject, and he believes it to be of the utmost importance in the study of the experimental disease in monkeys of the genus *Macacus*. In some cases, but not in all, he finds that the virus of human scarlet fever can be transmitted to the monkey by the intraperitoneal injection of the patient's citrated blood. More successful results, however, were obtained by the subcutaneous injection of mouth-washings from scarlet fever patients; and the infection could be passed on from one monkey to another rapidly, producing in each an outburst of Döhle's bodies in the leucocytes that lasted for from one to five days, usually for two or three days. From 50 to 90 per cent. of the polymorphonuclear leucocytes showed these bodies in cases where Mair considered that he had succeeded in giving his experimental macaques scarlet fever. He succeeded in isolating a diplococcus, resembling in morphology and staining reactions a non-capsulated pneumococcus, both from his infected monkeys and from the throats of two out of four scarlet fever patients; and he comes to the conclusion that if his view that the presence of Döhle's bodies in a high percentage of the leucocytes is evidence of scarlet fever in the monkey be accepted, then his diplococcus is the cause, or possibly one of the causes, of scarlet fever in the human subject. He remarks that Döhle's bodies appear in 1 or 2 per cent. of the polymorphonuclear leucocytes of normal macaques, and may be increased to a moderate extent by injections of various foreign substances, such as living or dead bacterial cultures; he would not diagnose scarlet fever in the monkey unless at least 20 per cent. of these leucocytes showed the bodies. He concludes that scarlet fever is a disease analogous to diphtheria, in which the infective agent, gaining only a slight foothold in the tissues at a local focus (the throat), is able to produce a toxin, which is poured into the blood. The pyrexia, the exanthem, the changes in the blood, and probably the arthritis of scarlet fever, would thus all be results of the action of this toxin. Whether his diplococcus has a better title to the name *Diplococcus scarlatinae* than its many predecessors only the future, as he says, can decide.

LATE X-RAY REACTIONS.

THREE or four years ago Spéder, in a French journal, drew attention to the possibility of *x*-ray reactions making their appearance long after treatment had ceased. The fact that these perplexing occurrences have not altogether disappeared, in spite of increasingly efficient technique, was proved in the course of a discussion at the meeting of the Röntgen Society on April 20th. Dr. N. S. Finzi, in a paper on late *x*-ray and radium burns, recorded three cases occurring within his own experience in which late reactions had appeared a considerable time after *x*-ray treatment. The reactions, at least in two of the cases, were characterized by acute inflammation and erysipelas-like swelling and redness. The fact that these late phenomena occur in cases in which heavily-filtered rays had been used is the disquieting feature, seeing that these filtered rays are the most valuable therapeutically. In one of Dr. Finzi's cases, the application being made in the groin, the aluminium filter used had a thickness of no less than 3.6 mm., and yet the reaction developed. Perhaps even more remarkable, in view of the length of time elapsing between exposure to the rays and the occurrence of the reaction, was a case cited by Dr. Robert Knox, of a young lady who had been treated more than three years ago for sweating of the palms of the hands. One dose of unfiltered *x* rays and three doses of filtered *x* rays were stated to have been given. The immediate result was excellent, but at the end of three years the patient developed sensations of tingling in the hands, and then telangiectasis appeared in both palms to a very marked degree. Dr. Finzi, Sir A. P. Gould, and other speakers urged that, although such cases undoubtedly occurred, they were so few in number compared with the cases which were treated with entire success, that the necessary treatment of grave conditions ought not to be diminished in

[1] *La Cure de Soleil*. Par le Dr. A. Rollier. Paris: Baillière et fils. Lausanne: C. Tarin. 1915. (Imp. 8vo, pp. 217; 107 plates. Fr. 20.)
[2] W. Mair, *Journ. of Pathol. and Bact.*, Cambridge, 1915, xxx, 443.

view of the rather remote possibility of the occurrence of such a reaction. Every precaution must be taken in the way of filtration, careful selection of the site for exposure, and regulation of intervals between doses. Sir A. P. Gould also suggested that an attempt should be made to demonstrate whether or not these cases were due to any microbic infection. Judgement, he said, must be suspended on that point for the present. Dr. F. L. Provis said that he had been carrying out the Freiburg treatment in gynaecological cases for the past eighteen months or two years, and had seen as yet nothing more than a brownish pigmentation make its appearance. In the paper already referred to, Spéder suggested that these reactions tended to occur in parts, such as the lower abdomen, where the nourishment of the skin was comparatively feeble; but Dr. Finzi's worst case was one involving the root of the neck and the upper part of the thorax, both regions well supplied with blood.

A PIONEER OF NAVAL HYGIENE.

THE name of James Lind, to whom beyond any one else we owe the abolition of scurvy, that terrible scourge of navies in the eighteenth century, is probably unknown to the medical profession of to-day except to a few students of history. This is all the more unfortunate since it was his fate in his lifetime to be a voice crying in the wilderness, and it was not till after his death that the Government took any steps to carry out the suggestions of one of its own chief medical officers. The indifference with which Lind's suggestions for the prevention of scurvy were received by the Admiralty is used by Herbert Spencer in his *Study of Sociology* as an instance of the "amazing perversity of officialism" in resisting innovation of any kind. An interesting account of his career by Dr. H. D. Rolleston has appeared in the *Journal of the Royal Naval Medical Service* (vol. i, 1915). Lind was born in Scotland in 1716, and after serving some years as a surgeon in the navy he took the degree of Doctor of Medicine at the University of Edinburgh in 1748, becoming a Fellow of the College of Physicians of that city in 1750. While at sea he had seen much of "ship diseases," and in the preface to his *Treatise on the Scurvy*, published in 1754, he says of scurvy: "This disease alone during the last war proved a more destructive enemy and cut off more valuable lives than the united efforts of the French and Spanish armies." So terrible were the ravages of scurvy that again and again it crippled our fleets and threatened to undermine our sea power. Lind did not claim that the use of oranges and lemons as a preventive of the scourge was his own discovery; he quotes B. Ronsseus, the first writer on the subject, who, in a book published in 1564, said that "in all probability the Dutch sailors had by accident fallen on this remedy when affected with scurvy on their return from Spain loaded with these fruits, especially oranges." Dr. Rolleston gives instances of the successful use of lemon juice long before Lind was born, and refers to a definite recommendation of it as a remedy by Woodall, author of *The Surgeon's Mate*, published in 1636. A second edition of Lind's book appeared in 1757 and a third in 1772. It was translated into French and his teaching was accepted by leading physicians throughout Europe. This makes it all the more extraordinary that the naval authorities of his own country turned a deaf ear to his advice for more than forty years. He was elected an honorary member of medical societies in Paris and Copenhagen. He was appointed physician to Haslar in 1758, a position which he continued to hold till 1783, when he was succeeded by his son. He died at Gosport in 1794. Besides his work on scurvy he wrote other books, among them being an essay *On the Most Effectual Means of Preserving the Health of Seamen*, which first appeared in 1757; a second edition was published in 1762 by the Lords Commissioners of the Admiralty as an honour "upon account of the discovery I had then made by rendering sea-water perfectly fresh and wholesome by a simple distillation." Here again Lind did not reap the reward of his labours, and in 1772 a grant of £5,000 was made by the House of Commons to Irving, a naval surgeon, for an inferior apparatus. Lind also wrote on fevers and infection (1763) and on the "jail distemper" (1773). He showed that "hospital fever," "jail fever," and "simple fever" were simply typhus under different names; he taught that the infective agent was carried in filthy clothes and rags, and that it could be destroyed by great heat. These observations, as Dr. Rolleston points out, are quite compatible with the modern view that the infection is carried by lice. In 1765 he published an *Essay on Diseases Incidental to Europeans in Hot Climates*, which passed through five editions in his lifetime, reached a sixth in 1808, and was translated into French and German. He was thus a pioneer in tropical diseases as well as the "Father of Nautical Medicine," as his contemporary, Trotter, by no means an indiscriminate flatterer, calls him. Dr. Rolleston has done well to remind the profession of a forgotten worthy who did so much for the health of that service to whose silent but sleepless vigilance we are at the present moment indebted for preserving the country from the horrors of war.

VITAMINES.

THE old-fashioned millstones crushed the whole grain, but the steel rollers of the modern miller separate the outer coats. Recent researches have shown that beriberi and scurvy, possibly rickets, and perhaps pellagra, are due to the deficiency of certain substances in the food, minute in amount but essential to nutrition. Funk gave the name "vitamines" to these substances, but their chemical nature is imperfectly known, and it is not certain whether the bodies which exert a beneficial action in one or the other of the "deficiency" diseases all belong to the same chemical group. The substitution of polished rice for the old-fashioned whole berry has been proved to be the cause of beri-beri, a disease characterized by peripheral neuritis and consequent paralysis. When the polishings are added to the diet, or the natural rice substituted for the polished, beri-beri is cured. The vitamines in the cereals, including wheat, oats, maize, and barley, are contained exclusively in the outer coat. They are necessary for the growth and nutrition of the embryo as it develops into a seedling, and are placed in the outer coat no doubt because they can there best be utilized. As the modern miller with his steel rollers separates these outer coats, white bread contains no vitamines, and cannot, with water, form an adequate diet. On the other hand, whole-meal or black bread suffices. Vitamines are soluble in water and alcoholic extracts may be prepared containing them. Such extracts added to polished rice or white flour make these foods far more sufficient, but they do not replace all that is in the whole berry. Potatoes, carrots, fresh green vegetables and fruits, lime juice, fresh milk, meat, and yelk of eggs, contain vitamines. Thus those who can add these foods to white bread do not suffer. Yeast is especially rich in vitamines. Foods are robbed of vitamines not only by modern milling processes, but by superheating in the process of canning, and by stewing if the stew water is thrown away.

THE DISCOVERY OF ANAESTHESIA.

MR. GEORGE FOY, of Dublin, writes to correct what he describes as a "historical error which occurs in a translation of a very valuable German textbook on pharmacology," the title of which he does not give. He says that on p. 51 there occurs the following sentence: "Medicine owes the discovery of general anaesthesia to experiments which were made to determine the effects of chemically pure gases on human beings." This, Mr. Foy contends, does

not correctly state the object Dr. Thomas Beddoes and his friend Watt had in building the Hotwells Hospital at Clifton. He also finds fault with the German writer's statement that the anaesthetic properties of nitrous oxide were discovered by Humphry Davy, who was Beddoes's assistant. Mr. Foy says that it was Mrs. Beddoes, a sister of Maria Edgeworth, who told Davy of the power of the gas to ease pain, an effect which she had herself experienced. The introduction of laughing gas as an anaesthetic in dentistry is attributed by Mr. Foy to Horace Wells of Connecticut, but he does not mention that it was from Colton, who had been a pupil of Professor Turner, of University College, London, that Wells got the idea, nor is any reference made to his failure in the Massachusetts General Hospital when he was hissed out of the room as an impostor. Mr. Foy also complains that the discovery of ether is attributed to W. T. G. Morton, who successfully administered it for a surgical operation in the same hospital in 1846 to a patient of Dr. Warren's, who, at first sceptical, exclaimed when all was over, "Gentlemen, this is no humbug!" It is true that some operations were performed under ether by Dr. Crawford W. Long, of Georgia, but he does not seem to have appreciated the importance of the discovery. As Sydney Smith said in the *Edinburgh Review* in 1826: "That man is not the discoverer of any art who first says the thing; but he who says it so long, and so loud, and so clearly, that he compels mankind to hear him—the man who is so deeply impressed with the importance of the discovery that he will take no denial, but, at the risk of fortune and fame, pushes through all opposition, and is determined that what he thinks he has discovered shall not perish for want of a fair trial." This Morton did and Long did not do; therefore, though Morton owed the suggestion of ether to Wells, we agree with Oliver Wendell Holmes, who, as a contemporary, was in a position to know the facts, that "this priceless gift to humanity went forth from the operating theatre of the Massachusetts General Hospital, and the man to whom the world owes it is Dr. William Thomas Green Morton." As for Mrs. Beddoes, if she told Humphry Davy of the anaesthetic properties of nitrous oxide gas, it would seem that she did not realize the momentous nature of her communication to her husband's assistant. Nor is it likely that Davy, who speaks of her as "the best and most amiable woman in the world," would have sought to hide any inspiration which he owed to her. His own account of the matter is given in his *Researches, Chemical and Philosophical, chiefly concerning Nitrous Oxide*, published in London in 1800. In 1799, experimenting with the gas, he found that it relieved pain. He says: "The power of the immediate operation of the gas in removing intense physical pain I had a very good opportunity of ascertaining. In cutting one of the unlucky teeth called *dentes sapientiae* I experienced an extensive inflammation of the gum, accompanied with great pain, which equally destroyed the power of repose and of consistent action. On the day when the inflammation was most troublesome I breathed three large doses of nitrous oxide. The pain always diminished after the first four or five inspirations, the thrilling came on as usual, and uneasiness was for a moment swallowed up in pleasure. As the former state of mind, however, returned the state of organ returned with it." In another passage Davy clearly indicates the use to which the anaesthetic properties of nitrous oxide might be put by surgeons: "As nitrous oxide in its extensive operation appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." It is a remarkable fact—which, however, by no means stands alone in the history of the healing art—that this statement, so clear and so definite, made no impression on the medical profession. Davy, doubtless absorbed by researches more interesting to him, did not cry his discovery from the housetops. This Horace Wells did, and therefore to him, notwithstanding his failure when the chance of demonstrating the value of his discovery came to him, properly belongs the credit of having proved the power of nitrous oxide and of having, in his own words, established the principle of anaesthesia. Mr. Foy makes the interesting statement that "Ireland's greatest chemist, William Higgins of Sligo, foretold in 1802 the discovery of an anaesthetic agent in the ethyl group of compound radicals." We may add that a full history of the discovery of anaesthesia was given in the BRITISH MEDICAL JOURNAL of October 17th, 1896, on the occasion of the fiftieth anniversary of the operation performed by Dr. Warren under ether administered by Morton.

"TOCANALGINE."

IN the EPITOME of May 22nd, paragraph 150, there appeared, under the title "Painless Childbirth: 'Tocanalgine,'" an abstract of a paper by Dr. Hellmann, of New York, published in the *American Journal of Obstetrics* for February, 1915. He says that he had been struck by the results obtained by Ribemont-Dessaignes, who reported to the Paris Académie de Médecine on July 1st, 1914, that by the hypodermic administration of "tocanalgine"—a substance said to be produced by subjecting the hydrochlorate of morphine to the action of fermenting beer yeast—he had made labour painless without interfering with delivery in a number of cases. Hellmann used the preparation in two cases with success. As misleading articles on the subject have appeared in the lay press and we have received inquiries about it, we have looked into the matter, and from an annotation which appeared in the *Lancet* of April 24th (p. 868) we gather that further experience has led Dr. Ribemont-Dessaignes to change his mind as to the composition of the preparation which he had commended to the notice of the Académie, and which had been supplied to him by a M. Paulin. That note is founded on information given by Dr. Ribemont-Dessaignes to a correspondent with permission to publish it. We think it well to quote it: "The product supplied to me by Paulin appeared to me to have a different effect on parturient women to that of morphia in the usual doses, and seemed at first sight to be justly considered a new substance. . . . The experiments on animals which my colleague Professor G. Pouchet undertook at my request led him to think that the treatment with fermenting beer-yeast had really modified the toxicity of the morphia, and made it more available for the accoucheur. But subsequent analyses made by several highly competent chemists seem to show that M. Paulin's product was simply hydrochlorate of morphia in solution, but of the strength of 3.24 per cent. instead of the usual 1 per cent. strength. Since September last I have only used in my clinic a solution of hydrochlorate of morphia pure and simple of 3.24 per cent. strength, to which I add a little strychnine and caffeine. I inject 1 c.cm. If the result is not satisfactory I make a second similar injection at the expiration of two or three hours. The clinical results which I obtain are identical with those yielded by Paulin's solution. We are therefore justified in affirming that we may thus attenuate, or even suppress entirely in some women, the pains of parturition without danger to the mother (I have over 200 cases), and with no great risk to the child. The dose of morphia solution which at 1 per cent. arrests labour, at 3.24 per cent. does not; this is the point to bear in mind. It has long been known that the parturient woman tolerates opium well, and the present treatment exemplified this tolerance. We have yet much to learn about morphia, and all this shows it. The desintoxication of morphia by Paulin's process has still to be proved." It seems to us only fair to our

readers to put the case before them in M. Ribemont-Dessaignes's own words, so that they may be in a position to form a judgement on the question for themselves.

THE SPECIFIC TREATMENT OF HAY-FEVER.

THE vaccination method of treating hay-fever, initiated by Noon and continued after his death by Freeman, is of so recent introduction that we cannot expect independent workers to have much experience of it as yet. It is interesting, therefore, to find Sormani,[1] although he has tried it in only a very small number of cases, confirming their statements and encouraging the hopes which their work has aroused. The method, as is well known, consists in injecting subcutaneously gradually increasing quantities of an extract of the pollen of *Phleum pratense;* the initial and subsequent doses are regulated according to the resistance of the patient, which is gauged by the reaction produced by dropping appropriate dilutions of the extract on the conjunctiva. The injections are carried out during the winter months to prepare the patient to resist the action of the pollen in the summer, and the results so far have been very encouraging, Sormani describes three cases, all of them subject to very violent attacks of the disease, recurring each summer for a period of several years. After a course of injections, one of them passed through a season without any attack whatever, and two with only slight disturbances at long intervals. Of the latter one was so convinced of his immunity that he gathered some pollen and snuffed it in order to test his resistance! This gave him a mild attack which lasted a couple of days—an excellent result of so severe a test. Sormani, however, has modified the technique considerably. He uses only freshly prepared extract, finding (unlike Freeman) that it loses greatly in strength on keeping; he prepares it differently, and he does not every time control the dosage by conjunctival instillation. The latter he considers unnecessary. The injections being given in winter, that is, prophylactically, and not during the season of exposure to the irritant, it is in his opinion sufficient to proceed on the general principles of graduated increase used in other prophylactic inoculations without the elaborate controls desirable in therapeutic inoculations; he gauges his dose by the reaction produced by the previous injection. His extract is prepared as follows: 50 mg. of rye pollen and 50 mg. of the pollen of *Phleum pratense* are ground up together along with 1 gram of sterile sand, and extracted with 4.5 c.cm. of 10 per cent. NaCl solution for two hours. The fluid is poured off and the residue again extracted with 40.5 c.cm. distilled water for one hour. The two extracts are mixed together, and 5 c.cm. 2 per cent. carbolic added. This gives him his extract, which he reckons to contain 20,000 units in the notation on Noon.

POISONOUS GASES AND INCENDIARY BOMBS.

IN commenting a fortnight ago on Mr. Tennant's statement that the respirators now issued to the troops contained cotton waste saturated with a solution of sodium bicarbonate and hyposulphite we pointed out that the action of chlorine on sodium hyposulphite, more properly called thiosulphate, was complex. The first products would appear to be sodium sulphate and chloride, and tetrathionate, together with some sulphur and free sulphuric and hydrochloric acids. The latter would be at once neutralized by the sodium bicarbonate; the proper proportion of the two salts in the solution with which the respirators should be moistened would be theoretically 1 part of hyposulphite to about 3.4 of sodium bicarbonate. But in practice the amount of free acids would probably be not so large, and a mixture of 1 part of sodium hyposulphite (thiosulphate) and 3 parts of sodium bicarbonate would contain an amount of bicarbonate at least sufficient for the purpose. It is possible that a smaller proportion of bicarbonate would suffice. The two salts will keep perfectly well if mixed in powder. Owing to the rather low solubility of sodium bicarbonate, the strongest solution which could be made of the mixture would be 10 per cent., and it would appear advisable to use the solution as strong as possible. Sodium hyposulphite, however, is very soluble in water, and if it proved to be feasible to reduce the amount of sodium bicarbonate a much stronger solution could, of course, be made. With regard to the relative merits of cotton waste and gauze or coarse cotton fabric to receive the solution, it is clear that a fairly large number of layers of either of the latter would be required to produce as good an effect as with cotton waste; otherwise the quantity of liquid retained by the material would be small, the removal of the chlorine from the air passing through the respirator would not be so complete, and the respirator would become useless sooner. We publish on page 933 a notice issued by the British Fire Prevention Committee with regard to incendiary bombs used by the Germans for dropping from aircraft; it gives an account of their construction and mode of action, and particulars of the precautions which can be taken to prevent the spread of fire. Thermit, the chief incendiary material used, was originally a mixture of equal parts of iron oxide and finely divided aluminium; the mixture may be ignited by a match of magnesium wire ending in a small quantity of aluminium powder mixed with a peroxide, such as barium peroxide. When started in this manner the ignition spreads through the whole of the mixture, reducing the iron oxide to metallic iron, with formation of aluminium oxide, and evolution of a very large amount of heat sufficient to melt the iron. Thermit has been largely used to weld wrought and cast-iron objects and to mend fractures in machinery, the operation being carried out by surrounding the point to be welded with a metallic box filled with thermit. Rather better results have been obtained by modifications of the original formula, in which powdered aluminium and calcium, or a powdered alloy of these two metals, are used instead of aluminium alone.

[1] *Nederlands. Tijdschr. voor Geneeskund*, November 28th, 1914, p. 1735.

Medical Notes in Parliament.

Proceedings of the House.

WEDNESDAY, May 19th, was chiefly occupied in various discussions which arose over the motion for the adjournment. There was a very crowded house in anticipation of the statement of the Prime Minister, who interposed for a few moments in the debate about tea-time. His statement and Mr. Bonar Law's reply are, of course, familiar to all our readers ere this, and the names of the members of the Cabinet in the Coalition Government were announced on May 26th. Among the appointments of special interest to the medical profession it will be seen that that of President of the Local Government Board has been accepted by Mr. Walter Long, who held the same office from 1900 to 1905, and had previously, from 1886 to 1892, been Parliamentary Secretary. The new Secretary of State for the Colonies, Mr. Bonar Law, was born in New Brunswick; he succeeds Mr. Harcourt, who during his five years' tenure of office has continued the best traditions of the office in all matters affecting the sanitary service and the preservation of the health of the white man in the tropics. Mr. Montagu vacates the office of Chancellor of the Duchy of Lancaster and reverts to his original office as Financial Secretary to the Treasury; he will, it is hoped, remain Chairman of the Joint Committee of Insurance Commissioners.

The only matters of professional interest raised during the debate on May 19th were those brought up by Sir Philip Magnus, who dealt at length with the deficiencies in the supply, both of men and material,

necessary for the production of scientific glass and instruments of precision into which lenses and other special glass enters. He dealt very fully with the whole subject, and his remarks were supported by Mr. Almeric Paget and Mr. Bartley Denniss. Later in the evening Dr. Addison replied, and in the course of his remarks revealed that the whole question of the provision of a school of technical optics, additional provision for the training of expert workers and facilities for research in glass, had been occupying the attention of the Board of Trade and the Board of Education for some time past. He also stated that special provision in connexion with these matters was under consideration at the Imperial College of Science and the National Physical Laboratory at Teddington, and also at the Northampton Institute. Questions on various matters connected with the War Office, to which Mr. Tennant replied, and with food supplies, for which Mr. J. M. Robertson, on behalf of the Board of Trade, replied, were raised during the evening, and the House adjourned until Thursday, June 3rd. It is anticipated that the meeting of the House on that date will be of a somewhat formal character to give approval to the new Government, after which a further Whitsuntide adjournment will be made.

Royal Navy.

Sick Berth Staff.

Mr. Leach questioned the Secretary to the Admiralty, on May 18th, as to the advance of wages given to the medical staffs of His Majesty's naval establishments and dockyards since June, 1914. Dr. Macnamara said that an advance of 1s. a week had been made to civilian male nurses at the Royal Marine infirmaries, and they also received the emergency increase. The attendants on lunatics at Yarmouth Hospital with under five years' service had been granted 2s. a week, and with over five years' service 1s. a week. They also would receive the emergency increase. As regards naval hospitals, active service ratings (sick berth staff) were employed, supplemented during the war by St. John Ambulance men; and no advances had been made to these other than those to which they were entitled under the Regulations, by service, and an additional ½d. a day messing or victualling allowance. The surgery attendants and assistant surgery attendants in the dockyards had participated in the emergency increase of 3s. a week as from March 28th, 1915.

Lord C. Beresford asked, on May 19th, if the Board of Admiralty could see its way to improve the rates of pay and prospects of the sick berth staff of the navy. Dr. Macnamara replied that improvements had been made in the conditions of service of the sick berth staff as regards pay and advancement in 1911, as a result of the Report of the Committee on the Naval Medical Service, and they also shared in the general increase of pay in 1912. It was not in contemplation to make any general change in the conditions sf service of the sick berth staff, which, as indicated, had already been carefully considered and considerably improved in recent years, but particular points would, as they arose from time to time, be fully gone into.

Royal and Admiralty Yachts as Hospitals.

Mr. Churchill informed Commander Bellairs, on May 19th, that His Majesty's yachts, with the King's approval, and the Admiralty yacht *Enchantress* were being kept available as hospitals for wounded officers in case of need. In accordance with the mobilization arrangements of the Admiralty, these vessels were paid off on the outbreak of war, and their officers and men joined the fighting fleet.

The Medical Service of the Army.

Numbers.

Mr. Tennant, in reply to Mr. Joynson-Hicks, on May 19th gave the following as the number of doctors in the R.A.M.C. on the active and special reserve lists, and the R.A.M.C. Territorial Force:

Army Medical Service and R.A.M.C. ...	1,008
Re-employed retired R.A.M.C. officers ...	174
Special Reserve R.A.M.C. officers ...	623
Temporarily commissioned officers ...	3,100
Territorial Force R.A.M.C.	2,122
	7,027

More than 5,000 medical men had offered their services during the war, and 3,100 had actually been appointed. This was in addition to officers of the Special Reserve. There was not at the moment any scarcity of medical officers either at home or at the front, but a further large number would be required.

On May 18th Mr. Ginnell asked the number of medical men in the Civil Service in England and Wales, Ireland, and Scotland, respectively, who had volunteered for service in the present war; the number of them serving; and the treatment of them in regard to Civil Service pay, provision of substitute, and keeping their positions vacant for them. Mr. Harold Baker said that the information could only be produced by a process of laborious compilation, and in the present pressure of work he could not undertake to impose the additional burden on the department. The last part of the question was a matter for the Treasury, which laid down the rules governing such cases.

Consultants.

Mr. Joynson-Hicks asked the Under Secretary of State for War, on May 19th, whether the following surgeons, Sir G. H. Makins, Sir A. A. Bowlby, Mr. F. F. Burghard, Mr. W. T. Lister, Mr. H. M. W. Gray, and the following physicians, Sir W. P. Herringham, Sir A. E. Wright, Sir J. R. Bradford, and Sir B. Dawson, were employed at the front at ordinary Royal Army Medical Corps salaries; and whether he had any difficulty in getting eminent doctors to serve in consulting positions either abroad or at home at the ordinary rates of pay given to the officers of the Royal Army Medical Corps. Mr. Baker said that the officers named were employed at the front with pay as colonels of the Army Medical Service, and so far there had been no difficulty in obtaining eminent medical men to serve in consulting positions either at home or abroad at the rates of pay offered.

Royal Army Medical Corps (Promotion).

Mr. Joynson-Hicks, on May 19th, asked the number of lieutenants, captains, majors, lieutenant-colonels, and colonels in the Royal Army Medical Corps on July 31st, 1914, and March 31st, 1915; and why there had been no promotions other than those arising in the ordinary course of service from the rank of captain to major. Mr. Tennant: The numbers were:

	Cols.	Lieut.-Cols.	Majors.	Captains.	Lieuts.	Total.
July 31, 1914 ...	29	128	341	379	127	1,004
March 31, 1915 ...	99	225	185	477	—	986

There had been fourteen promotions from captain to major other than in the ordinary course of service. Mr. Joynson-Hicks asked whether these figures did not show a very great lack of promotion from captain to major? Mr. Tennant said that that might be, but pointed out that it was not accurate to state that there had been no promotions; there had, in fact, been fourteen.

Invalided and Wounded Soldiers.

Colonel White asked the Under Secretary for War, on May 19th, if the machinery recommended by the Committee which recently considered the question of invalided and discharged soldiers had yet been set up; and if he could give details as to its operations in the future. Mr. Baker replied that he was not in a position to make any statement on this subject at present.

Mr. Anderson asked whether the bulk of the dispensing for sick and wounded soldiers was done by men who were not qualified chemists; whether numbers of chemists had offered their services to the army as pharmacists and had been refused; and whether there were vacancies for such men, and upon what terms. Mr. Tennant said that the dispensing of the army was mainly done by non-commissioned officers who had qualified as army dispensers after the authorized course of training. Others holding certificates of the Pharmaceutical Society or diplomas issued by the Societies of Apothecaries, or possessing other satisfactory evidence of being competent dispensers, were enlisted under the Special Army Order of August 4th. A number of chemists and dispensers had also enlisted in the ordinary way, and at present there was no need for more.

Mr. Ellis Griffith asked the Under Secretary for War whether wounded soldiers on their return from the war

were discharged before convalescence; and whether, when this took place, he would consider the propriety of continuing their army pay until the period of convalescence was completed. Mr. Baker said that a wounded soldier considered to be permanently unfit for further service was brought before a medical board and might be discharged from the service before complete convalescence was attained. He could, however, remain in hospital as a free patient until it was considered advisable that he should leave, and during this period he drew any pension or disability pension awarded him. All insured soldiers while suffering from disability were entitled, on discharge from the service, to full benefit under the National Insurance Act, except that, as provided by the Select Committee on Pensions, sickness and disablement benefits were reduced by 5s. a week for men who were drawing the total disability pension at the new rate.

Mr. Ellis Griffith asked whether wounded soldiers who had received their discharge might be allowed to wear their uniform during the continuance of the war. Mr. Tennant said that the suggestion had been carefully considered, but the Army Council did not think it was desirable to adopt it.

Provision for Insane Soldiers.

Mr. Raffan asked the Under Secretary for War whether, in the event of wounded soldiers becoming insane, they are dealt with as pauper lunatics and conveyed to the workhouse of their place of settlement; whether remonstrances have been received from boards of guardians on the subject; and whether arrangements could be made by which such men would be dealt with by the Red Cross Society and be eligible for pensions as disabled soldiers, thus avoiding the taint of pauperization. Mr. Tennant said that the War Department had endeavoured to prevent, as far as possible, any soldier who had served with the Expeditionary Force and who had become mentally affected being dealt with as a pauper lunatic and as such sent to a workhouse. Under present arrangements it was intended that all cases of mental disorder should be retained in a military hospital until after the war. The present accommodation at Netley would be supplemented by a military hospital which would shortly be opened at Napsbury. Cases which, after observation, proved to be cases of mental shock or nerve strain would be sent, as had already been explained, to certain hospitals specially adapted for the treatment of such cases.

Mr. Raffan asked whether there were not a number of cases in which these unfortunate men had been sent to a workhouse, and Mr. Tennant promised to inquire.

Mr. David Mason recalled that Mr. Tennant had stated on the previous day that a man had been sent to a workhouse asylum on being discharged from the army. Mr. Tennant said there was a difference between sending a man to an asylum and to a workhouse. He was not certain as to the specific instance given by the hon. member.

Gas Poisoning of Troops.

Mr. Ronald McNeill asked the Under Secretary of State for War on May 13th whether he had yet been able to ascertain that a fortnight before the Germans began to use poisonous gas as a weapon of war the official Eye Witness with the British Army stated that a warning had been received of the enemy's intention to use it; and if he would say what steps were taken in consequence of that warning to supply our troops with protection against the gas? Mr. Tennant said that as a regular practice prisoners were interrogated by the staff at the front. Any such statement as that referred to would be considered by the military authorities with reference to any possible action. He was not aware, however, that this prisoner gave information as to which of the many possible gases his compatriots would use, and it would hardly have been possible in a fortnight to have provided protection against all possible kinds of gases.

Lord Robert Cecil inquired if any steps were taken to provide protection. Mr. Tennant replied that the officers in command at the front did not make any application for any form of protection.

Lord Robert Cecil further asked if any intimation was conveyed during the earlier period of the war that the Germans were likely to use gas? Mr. Tennant said that there was no warning at all conveyed to the War Office. If any warning was conveyed it was conveyed to officers at the front.

Mr. McNeill asked if these officers conveyed it to the War Office? Mr. Tennant replied that they did not.

Mr. Denman asked, on May 18th, whether any convention exists whereby the use of asphyxiating gases, except when emitted from a projectile, was forbidden? Mr. Tennant said that the actual terms of the Hague Declaration forbade only the use of projectiles the sole object of which was to diffuse asphyxiating or deleterious gases. Obviously the diffusion of the gases was the object of the prohibition rather than the means by which they were diffused.

Immature Spirits (Restriction) Bill.—Amongst the many minor bills dealt with in Parliament, the above bill was considered in Committee on Monday, May 17th, and passed through the report and third reading stages on the following day. The point of most importance, from a professional point of view, was the effect that it would be likely to have upon alcohol required for medicinal purposes, and the British Medical Association and the Pharmaceutical Society were very active in seeking to secure the insertion in the bill of words designed to secure the freedom of medicines from the restrictions otherwise imposed on spirits for ordinary consumption. They found a very able and influential spokesman in Mr. Glyn-Jones, who put their case with great force during the Committee stage on May 17th. Notwithstanding the assurance given by the Attorney-General, Mr. Glyn-Jones was still unsatisfied as to the position under the bill, and on the report stage, on May 18th, the Chancellor of the Exchequer accepted Mr. Glyn-Jones's amendment, which adds the following words to Clause 1: "Provided that nothing in this clause shall interfere with the supply of rectified spirits of wine, for the purpose of making medicines, to registered medical practitioners, to hospitals, and to persons and firms entitled to carry on the business of chemist and druggist."

Alcoholic Duties (Exemptions for Medicines).

Mr. Lloyd George stated, in reply to Mr. Bridgeman, on May 19th, that he proposed to deal with the exoneration from duty of spirit used by hospitals for tinctures or other hospital purposes in the Finance Bill.

Cerebro-spinal Fever.—The Parliamentary Secretary to the Board of Education (Dr. Addison) stated, on May 19th, in reply to Mr. Wing, that during the recent outbreak of spotted fever at Salisbury the local education authority, acting on the advice of the medical officer of health (who was also a school medical officer), made arrangements for children whose parents wished them to be inoculated, but could not attend themselves, to be taken by the teachers. Lists of the children to be inoculated were prepared, and in one case the list was placed in a frame; but this could hardly be described as a roll of honour. He did not think that the local education authority had acted unreasonably in connexion with the matter. On May 19th Sir J. D. Rees asked whether, in view of the approach of summer any further effort was to be made to compel local bodies to force private owners of land near towns and villages to fence portions thereof used by the inhabitants for the deposit of insanitary rubbish. Mr. Herbert Samuel said he was about to issue a circular to all urban authorities in England and Wales urging them to do all in their power to prevent the accumulation of refuse in the neighbourhood of dwellings.

Infant Mortality.—Mr. Herbert Samuel stated, on May 18th, in reply to Lord Robert Cecil, that there could be no division of opinion as to the great importance of measures for reducing infant mortality. The Government had undertaken to make substantial grants in aid of maternity centres and other agencies for infant welfare which were approved by the Local Government Board. He thought it would be an advantage if the Notification of Births Act were amended so as to confer an express power on local authorities to provide health visitors, maternity centres, and similar arrangements for promoting infant welfare. Notifications were of little value unless they were followed up by health visiting and by the provision of advice and

skilled assistance to mothers. The Act itself conferred on local authorities no express power to do this work, and at present recourse had to be had to powers in other Acts which were not framed with infant welfare particularly in view. One result was that the powers of a county council adopting the Act differed from those of a district council. If it were shown that a small amending bill, such as was suggested, would meet with general support, he would be glad to consider the early introduction of such a measure.

Morphine and the International Convention.—Mr. Theodore Taylor asked the Secretary for Foreign Affairs on May 18th whether, with a view to restrict the use of morphine to medical and legitimate purposes, it was the intention of the British Government to sign the special protocol prepared as the result of the third Hague Opium Conference in June, 1914, which had already been signed by China, the United States, and the Netherlands. Sir E. Grey said that a protocol had been opened at The Hague to receive the signatures of those Powers who intended to put the Opium Convention into force without waiting for the ratification by all the signatory Powers. He did not, however, consider it practicable in the existing circumstances to take any action at present beyond depositing the ratification of the signature of the British delegates, which had already been done. It had been the guiding principle of His Majesty's Government throughout the protracted negotiations that, though fully prepared to make all useful sacrifices in the interests of humanity, they could only secure the objects of the Convention, namely, the suppression of the illicit trade not only in morphine but also in opium, cocaine, and other noxious drugs, by practically universal international co-operation. The attainment of those objects was not, in the opinion of His Majesty's Government, likely to be hastened by action on their part in the sense indicated.

Small-pox Patients in Chadderton Hospital.—Mr. Hogge asked the President of the Local Government Board on May 19th whether he would state the number of small-pox patients who had been treated in the Chadderton Hospital since January 1st last, with their ages and condition as regards vaccination, and, where vaccinated, the length of time that had elapsed since the last vaccination and the attack of small-pox. Mr. Herbert Samuel said that 23 cases of small-pox had been treated in the Chadderton Hospital since January 1st, and added that the following statement gave the information desired:

No. of Case.	Age.	Condition as to Vaccination.	Length of time between last successful vaccination and attack of small-pox.	No. of Case.	Age.	Condition as to Vaccination.	Length of time between last successful vaccination and attack of small-pox.
1	50	V. in infancy	50 yrs.	13	17	Not V.	—
2	27	Not V.	—	14	23	Not V.	—
3	57	V. in infancy	57 yrs.	15	22	Not V.	—
4	25	Not V.	—	16	19	Not V.	—
5	21	Not V.	—	17	8	Not V.	—
6	17	Not V.	—	18	19	Not V.	—
7	21	Not V.	—	19	14	Not V.	—
8	55	V. in infancy	55 yrs.	20	27	Not V.	—
9	15	Not V.	—	21	30	Not V.	—
10	58	V. in infancy	58 yrs.	22	29	V. in infancy	29 yrs.
11	28	Not V.	—	23	15	Not V.	—
12*	13 ms.	V. Mar. 15th	—				

V. = Vaccinated.

* Case No. 12 was removed to hospital on March 15th and vaccinated on that day. The rash of small-pox appeared on March 22nd, and I am advised that, looking to the ordinary period of incubation, the infection was acquired some days previous to vaccination.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE subscriptions received during the week include a cheque for £250 from the Agent-General for South Australia, on behalf of the South Australian Belgian Relief Fund. The continuance of open-handed support from the Colonies is a most gratifying feature, and accords thoroughly with the noble national spirit which the outlying parts of the Empire have displayed in every regard since the war began.

A handsome donation has been sent by the doctors and pharmacists of the city and county of Cork. The local committee spent a little money in judicious advertisement, the cheque received amounting to £116 11s. 10d.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Voeux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:

Twenty-sixth List.

	£	s.	d.
West London Medico-Chirurgical Society, proceeds from sale of tickets for Reception given on behalf of the Fund (per Dr. O. L. Addison, Hon. Sec.)—	44	12	10
South Australian Belgian Relief Fund (per the Agent-General for South Australia) ...	250	0	0
Dr A. Graydon... ...	1	1	0
Dr. Barrs (collected by)—			
Dr. Radcliffe	1	1	0
Dr. Robertson ...	2	2	0
Dr. Spong	5	0	0
Dr. Woodcock ...	1	1	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.) ...	2	2	0
Dr. C. J. Battle (per Drs. Morton, Wright, Battle, and A. N. Other) ...	4	4	0
North of England Branch of Fund (per Dr. J. Don and Mr. A. S. Percival, Hon Secs.) (11th donation—total £516 13s. 6d.)—			
Dr. A. Fairlie... ...	1	1	0
Dr. W. H. Dickinson ...	2	0	0
Dr. E. J. Burnett ...	1	1	0
Dr. H. W. Dixon ...	0	10	6
Fees for the examination of recruits by members of the Sunderland Division during 1914—			
Dr. D Allan... ...	11	2	6
Dr. Blair Aitken ...	10	2	6
Dr. Gordon Bell ...	4	12	6
Dr A. E. Legat ...	6	17	6
Dr. N. F. Rowstron...	8	12	6
Dr. J. Chalmers ...	8	12	6
Dr. A. Campbell ...	17	0	0
Dr. S. E. Murray ...	11	10	0
Dr. Pearcey... ...	14	5	0
Dr. R. S. Hubbersty	9	12	6
Dr. Easton	6	2	6
Dr. Renney... ...	19	2	6
Dr. Raw	6	10	0
Dr. Blair	8	0	0
Dr. W. J. Woodburn ...	2	2	0
Dr. M. O'Brien	1	1	0
South-West Wales Division, B.M.A. (per Dr. D. R. Price, Hon. Sec.).	1	15	0
Dr. E. Ryla Greves (2nd donation)	5	5	0
West Bromwich Pharmaceutical Association (collected by), (per Mr. J. Rex Allen)	4	8	6
Folkestone and District Chemists' Association (per Mr. F. C. Jones) ...	1	1	0
Mr. W. Riley, of Derby (collected by)	0	15	0
Mr. J. E. Owen	0	5	0
*Dr. J. Gair Johnston ...	1	1	0
Cork, City and County of, from doctors and pharmacists (total, £124 19s., less expenses, £8 7s. 2d., £116 11s 10d.)—			
Dr. D. D. Donovan ...	5	0	0
Dr. A. M. Sandford ...	5	0	0
Dr. P. T. O'Sullivan ...	5	0	0
Dr. C. T. Pearson ...	5	0	0
Dr. J. Cotter	5	0	0
Dr. H. R. Townshend	5	0	0
Dr. Sir Bertram Windle	5	0	0
Dr. James J. Fitzgerald	3	0	0
Dr. R. H. Barter ...	3	3	0
Dr. M. C. McFetridge	3	3	0
Dr. J. Dunden ...	3	0	0
Dr. J. J. McMahon ...	3	0	0
Dr. J. J. Harding ...	3	0	0
Dr. A. E Moore ...	2	2	0
Dr. N. J. Townshend...	2	2	0
Dr. R. W. Hodges ...	2	2	0
Dr M. Cagney ...	2	2	0
Dr. E. H Montgomery	2	2	0
Dr. R. Crosbie ...	2	2	0
Dr. T. J. O'Meara ...	2	2	0
Dr. Col. F. McCartie, I.M.S.	2	2	0
Dr. A E. Dixon ...	2	0	0
Dr. P. J. Cremen ...	2	0	0
Dr. T. Gelston Atkins	2	0	0
Dr P. G. Lee	2	0	0
Dr. R Barrett ...	1	1	0
Dr. J. B. Horgan ...	1	1	0
Dr T. H. Denny Townshend ...	1	1	0
Dr. R. R Leader ...	1	1	0
Dr. J. O'Connell ...	1	1	0
Dr. Ashley Cummins...	1	1	0
Dr. Robert Cummins...	1	1	0
Dr. T. O'Callaghan ...	1	1	0
Dr. R. P. Byrne ...	1	1	0
Dr H. Corby	1	1	0
Dr. J. Giusani ...	1	1	0
Dr. E. V. Cantillon ...	1	0	0
Dr. T. D. Barry ...	1	0	0
Dr. W. F. O'Connor ...	1	0	0
Dr. C. B. Pearson ...	1	0	0
Dr. P. J. Cullinane ...	1	0	0
Dr. P. Fitzgerald ...	1	0	0
Dr. R. C. Foott ...	1	0	0
Dr. D McCarthy ...	1	0	0
Dr. W. K. Verling ...	1	0	0
Dr. T. J. O'Donovan ...	1	0	0
Dr. T. P. Maguire ...	1	0	0
Dr. J. J. Kearney ...	1	0	0
Dr. J. J. O'Connor ...	1	0	0
Dr. D. Morrissy ...	1	0	0
Dr. R. Morgan ...	1	0	0
Dr. P. J. Hayes ...	1	0	0
Dr. Colonel Nicolls, R.A.M.C....	1	0	0
Dr. G. Gwynne, Crosshaven	1	0	0
Dr. G. Hegarty ...	1	0	0
Dr. D. F. Hegarty ...	1	0	0
Mr. E. McSweeney ...	1	1	0
Messrs. Kiloh and Co.	1	1	0
Mr. Ernest E. Wolfe ...	1	1	0
Cork Chemical and Drug Company ...	1	1	0
Mr. Thomas White ...	1	0	0
Mr. A. Nelson Cole ...	1	0	0
Mr. A. R. Lester ...	1	0	0
Mr. D. Enright ...	1	0	0
Mr. and Mrs. Wilson ...	1	0	0
Mr. A. H. Jones ...	1	0	0
Mr. R. Blair	1	0	0
Mr. W. Yeats	1	0	0
Mr. J. Scher	1	0	0
Dr Fielding	2	2	0
Newcastle and District Pharmacists' Association (collected by, per Mr. W. Kerse) ...	30	10	0

* This donation was credited last week in error to the Stewartry of Kircudbright.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments contributed by the following donors since the publication of the last list:

Dr. A. M. Ware, London.
Mr. J. W. McVitie, Hove.
Dr. H. J. Starling, Norwich.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

GAS POISONING.

SIR JOHN FRENCH has stated that on May 24th over a front of five miles gas was emitted by the Germans from cylinders throughout a period of four and a half hours, and at the same time the British line was bombarded with asphyxiating shells. The gas cloud rose in places 40 ft. from the ground. Details as to the number of casualties so produced are not at present available, but Sir John French states that it has been demonstrated that with due precautions this form of attack can be met and defeated.

Our correspondent in Northern France, writing on the events before May 24th, says that in the previous ten days very few cases had been received at the Boulogne base, and that those which had come down were light. Of the severe cases from the earlier poisoning those which eventually recovered seemed to have done so completely, though tardily. Mr. Barcroft's investigation of the blood conditions are not yet complete, but so far as they have gone they do not, our correspondent understands, support the theory that the panting respiration observed, though it may be due to a condition of acidosis, is of a specific nature. It is hoped that a report dealing both with the clinical features and the pathological conditions will be available before long.

HOSPITAL CHARACTERISTICS.

The levelling up towards a common standard of efficiency indicated in a previous note has not led to the hospitals in France losing their individuality. This can never be their fate, since in the majority of cases there are too many essential differences between them, alike in the matter of environment, habitation, and work. The environment of some is quite ideal—for instance, the Palais des regattes section of No. 2 General Hospital, Havre, and No. 1 General Hospital, Etretat; while others have to keep up a constant struggle against adversity in this respect. So, too, in respect of habitation; this in its general nature ranges from large roomed buildings like casinos, or great or small hotels—some new, some old—through boarding or day schools, dismantled warehouses and factories, abandoned barracks, to collections of specially erected huts, or of huts and tents, or of tents alone.

These differences are, as a rule, the inevitable outcome of circumstances. Occasionally, it is true, a certain building was deemed so exceptionally suited for the work that it was thought worth while to make special arrangements for utilizing it, despite any difficulties created by its distance from a beaten track. But this is quite exceptional; as a rule, a hospital is where it is simply because a certain number of beds had to be provided in a given area and no other equally suitable site or building was available.

Indeed, looking at matters from this point of view, it is rather surprising that the hospitals as a whole should be as well off as they are in the matter of environment and habitation. The towns within easy reach of the British section of the front are none of them very large; and of what they present in the way of suitable buildings or suitable sites, the French, generous as they are in these matters, have generally to retain a certain proportion for the housing of their own sick and wounded, or for other necessary purposes. In fact, what has saved the situation—in regard not only to hospitals but to other military establishments, and the accommodation required by them—is that, town for town and village for village, the proportion of large buildings would seem to be higher in Northern France than in Great Britain. It is a circumstance that often makes one feel grateful in particular towards a long bygone generation, and which at the same time arouses surmise as to how we shall fare in this connexion when the time comes to move up the hospitals into devastated Belgium.

To the differences between the hospitals in respect of the work done by them, much the same considerations apply, though these differences tend for the most part to distinguish from one another less individual hospitals than groups of hospitals.

As to these, it may be said that the general situation in regard to the wounded in France calls to mind a mountain lake whose waters escape through an ever-widening channel. Close to the lake the movement of the stream is swift, the area through which it flows confined; lower down the stream widens and slackens till a point is reached where it is represented merely by a series of shallow pools, whose waters remain undisturbed so long that they evaporate entirely.

So is it with the stream of our wounded in France. Emerging from the casualty clearing stations the stream runs rapidly through the hospitals of Boulogne, where also there is a kind of weir in the shape of hospital ships daily sailing for England, and slackens as it approaches the more distant bases such as Rouen and Havre. Hence it comes about that the hospital population of Boulogne is constantly and continuously changing, while that of the more distant bases is more stable. Ambulance trains, it is true, are sometimes sent through to them from the front, but even when this is done the graver cases are commonly removed from the train at Boulogne. It might almost, indeed, be said that Boulogne, though nominally a hospital base, is really only a second collection of casualty clearing stations, which evacuate their sick partly to England and partly to Rouen and its congeners. In any case, it is only the latter places which in France can be regarded as doing the work of real base hospitals, and this only to a very limited extent. The net result is that while both are usually very fully occupied they are busy in somewhat different ways.

At Boulogne the amount of operation work that has to be got through is often very great, but the opportunities for making really certain how the cases are going to turn out are comparatively small, and life from the point of view of a nurse must seem one endless round of bed changing. A few days ago, for instance, I took the trouble to analyse the admissions and discharges of one of the smaller, though not the least active, of the Boulogne hospitals. On every single day of the preceding four weeks it had changed its population to the extent of about one-third. At more distant bases the operations are also numerous, but they are less often procedures of extreme urgency, and the surgeons are in a more satisfactory position, since they can see a larger number of their cases well on their way to recovery before they have to send them off.

This question of relative distance from the fighting line is not the sole cause of differences between the work of different hospitals or of groups of such institutions. Even in the Boulogne area there is some tendency for different hospitals to be forced by circumstances—such as the ease with which they can be evacuated, their proximity to the station, and landing stages, etc.—to lead more strenuous lives than others; and in addition some hospitals, both at Boulogne and elsewhere, have been definitely picked out for special classes of work. For instance, one hospital has been appointed to deal with all cases of venereal disease, and does so on lines that are quite unique in the history of hospital enterprise, and No. 1 General Hospital at Etretat is fitted up for electro-therapeutic work, and thus numbers among its patients a large proportion of men suffering from muscular rheumatism and other conditions likely to benefit by the application of electro-therapeutic measures. Similarly, at Boulogne, No. 7 Stationary Hospital receives none but officers, while No. 11 General is the main resort of patients suffering from psychic conditions; No. 2 Stationary deals with wounded German prisoners; No. 14 Stationary confines its work to typhoid fever and infectious disorders in general, and No. 13 Stationary, besides ordinary ward work, has a special ward for walking cases and an out-patient department for eye and throat work.

More instances of the same species of differentiation could be adduced, but the foregoing suffice to illustrate the point in question. It may be added, too, that, judging by the standing orders in regard to the shipment of cases, there must be some degree of differentiation of work or of specialization among the military hospitals in England. Thus a C.O. of a hospital when reporting how many cases he has ready for embarkation, has to specify the number

of "special cases" among them and their character. There are a good many varieties of special case, but the more outstanding are, I am told, usually distributed as follows: Surgical head cases, to the London Hospital; cases of partial or complete blindness, to the 2nd City of London Hospital at Chelsea; cases of disturbances of the nervous system, to the 4th London Hospital at Denmark Hill (King's College Hospital); and cases of nephritis, to St. Bartholomew's. Also treated as "special" and marked for different hospitals are certain surgical cases and those of shock among officers, and of definite mental trouble among all ranks.

NEW HOSPITAL BASES.

Life in France tends to be so crowded with incident that, as was remarked in one of the earliest of these notes, things that happened a month ago sometimes seem ancient history. For a not dissimilar reason there is a misleading suggestion of permanency about quite temporary arrangements, as also an air of very long establishment about some hospitals, which, if they were early arrivals at all, at any rate did not start their labours where they now are. In such circumstances it becomes easy to forget the excellent work done by hospitals which no longer exist, or have moved to places off the beaten track, and it is not difficult to understand that while most of us have heard of the splendours of the early great hotel hospitals of Paris, there are many to whom the names of places such as Nantes, le Mans, St. Nazaire, and Angers, which were for some time of considerable importance, have no professional significance whatever.

Owing to the course taken by events in the earliest stages of the war a considerable time elapsed before more than a few of the general and stationary hospitals mobilized with the first detachment of the force now in France secured any regular quarters; and meantime a good many of them lead more or less adventurous careers. One general hospital in fact evaporated into space so to speak altogether, for most of its equipment having fallen into the hands of the Germans its personnel was little by little distributed among other units. Doubtless, an account of the peregrinations of some of the hospitals and of the rise and fall of different medical bases will form a chapter in the future medical history of the war. It will be long as well as interesting; length seems inevitable, since even if their cause be not traced, the changes to be recorded will be numerous. At the present moment, for instance, it is becoming a question how far and for how long the present main hospital bases—Boulogne and Rouen—will retain their existing pre-eminence. Increase in the number of hospital units is not yet at an end, and places will have to be found for all of them.

As things are, the Boulogne and Rouen areas, though their work is not identical, divide most of the work pretty equally, but at a spot intermediate between them a new base hospital has recently been started. This seems certain to equal either of them in size, but it is a little doubtful with which of the two it will compete in regard to the character of the work undertaken. This spot is Etaples, near which—at Le Touquet—hospital work has been going on for the last six months at what was formerly known as the Duchess of Westminster's Hospital, but now as No. 1 Red Cross Hospital. The latter used to be administered as one of those in the Boulogne area, but can now claim the position of chief hospital at the Etaples base. Etaples is about 25 miles by road and some two or more hours by hospital train further afield than Boulogne. In present circumstances it seems likely that the work done at it will resemble that of Rouen rather than that of Boulogne, as its distance will prevent its relieving to any material extent the pressure on the latter in regard to early and very serious surgical work. There seems, however, to be a possibility that arrangements may be made which from the point of view of hospital work would bring Etaples very much nearer the fighting line than it is at present. There are certain casualty clearing stations whose railheads are in such a position that ambulance trains leaving them on their way to the bases have to traverse a quarter circle on their way to Boulogne, and nearly half a circle before they reach Etaples. But there is a small railway line in existence which, if it could be utilized for hospital train purposes, would throw a kind of tangent between the extremes of the semicircle described, and would thus, so far as casualties in certain parts of the fighting line are concerned, bring Etaples as near to the front as is Boulogne itself. Should this be done it might modify correspondingly the general character of the work done at Etaples. Nevertheless, it would not enable Etaples to be developed into a second Boulogne, for though Etaples is a port, it is a very small one, and facilities for the direct transference of patients to England could hardly be created at it. On the whole, therefore, it is Rouen that Etaples is most likely to rival, and for a second Boulogne, or a substitute for Boulogne, if ever there is to be one, it is necessary to look elsewhere; and that "elsewhere" is already beginning to be visible.

NOTES FROM AN ANGLO-FRENCH HOSPITAL.

DR. J. CROPPER, B.C.Cantab., Assistant Surgeon, sends us some notes on the Anglo-Ethiopian Hospital, under the management of Mrs. Doughty-Wylie, who is well known for her Red Cross work in the South African and Balkan wars and elsewhere. The hospital was established towards the end of December, 1914, at Frévent, a French town of 3,000 people, 15 miles from Arras. The building, containing 65 beds, is a local hospital in peace times, served by the Sisters of St. Vincent de Paul. The nursing staff consists of ten British nurses, all working voluntarily at their own charges, with other helpers, as well as about the same number of *infirmiers*, or male nurses (mostly priests) provided by the French.

With a full complement of 65 beds there is ample work for three surgeons, and when many heavy cases arrive the nursing in the ward devoted to the gravely wounded is very onerous. At one time the writer had seven cases of compound fracture of the thigh or amputation of the leg, mostly in a highly septic condition.

The most severe was a case of gas gangrene amputated at a field ambulance, as the French say *en saucisson*, in the upper third. No attempt had been made to saw the bone and the muscles lay in putrid masses, exhaling a horrible odour. From the first this case offered little hope of recovery, and, in spite of free incision and injections of oxygen, he succumbed on the third day.

The next fatal case was in a fine young fellow of 22, who was riddled with shrapnel, receiving at least twenty-five wounds in his back, legs, elbows, and buttocks. Operation was greatly facilitated by the speedy attendance of the French *x*-ray motor car, which has on several occasions come to our aid in the most obliging manner. The day following eleven pieces of shrapnel, varying in size from ¼ in. to 1 in., were removed from the left shoulder, elbow, buttocks, and knees, the considerable depth from the skin at which some of them lay naturally increasing the severity of the operation. There was almost no attempt at healthy granulation; the left scapula and ilium became bare and necrosed, though neither of them had been exposed at first, and one day, when exploring the right knee under chloroform, the joint was found to be opened by ulceration spreading along the deep fascia, without the formation of sloughs. In spite of amputation above the knee, which was recommended by the médecin inspecteur of the district (amputation may not be performed, except under great urgency, without his permission in the French hospitals), the patient died two days later. In this case no antiseptic seemed to make any difference, and one learnt how little reliance should be placed on the temperature chart apart from other symptoms. In this case there was never any considerable rise of temperature, nor was any indication given by the thermometer of the involvement of the knee-joint.

Two cases of bullet wound of the femur, with the usual extensive comminution of the bone, arrived in a highly septic condition, and discharging freely. In one the fetor was extreme. The man, a hardy Breton sailor, had already removed two pieces of bone himself, and subsequently I removed a large sequestrum. Both these cases were put up in plaster-of-Paris, and, though I was much prejudiced against its use, I am bound to say that the result has exceeded my fondest expectations. The temperature at once began to fall, and the amount of shortening is insignificant.

It is not correct to say that a plaster-of-Paris splint cannot be kept sweet and clean, for this is merely a matter of the amount of care taken. However highly one may think of a well-made Thomas's hip splint at home, one has here to choose between such an apparatus made by an inexperienced workman, and a plaster-of Paris splint carefully moulded to the limb, suitable interruptions by hoops and bars being provided. No doubt the French use the latter too much, and in some cases they are made altogether too massive and unwieldy, but when well made they are far the best form of splint, particularly when a

patient has to be moved from a field hospital along rough French roads in an ambulance. It may, of course, be necessary to wait for a few days for the discharge to diminish, but the sooner the limb is immobilized as perfectly as possible the sooner will this happen, free drainage being, of course, provided.

Several cases of severe injury to the shoulder-joint have occurred. The French practice here is to make an enormous anterior incision 8 or 10 inches long, and to remove all loose fragments of bone. I cannot help thinking that with such large exposure septic absorption is apt to be excessive, while adequate drainage is not always secured. In one of these cases thus opened in a field hospital, a second operation was found necessary here, owing to septic osteomyelitis of the humerus which entailed amputation.

Perhaps the most desperate case we have had, and one which is now in a fair way to recovery, was in a man who had his left hand blown off by a shell, and received over a dozen shrapnel wounds in the abdomen, some of them large, and all highly septic on arrival at this hospital. One of these perforated the peritoneum, and another ulcerated into the small intestine and omentum soon after. In spite of a considerable basal pneumonia, and the formation of at least two peritoneal abscesses, with haemorrhage from these on about six occasions, which caused us more than once to regard the case as absolutely hopeless owing to the condition of extreme anaemia, he has finally rallied, and is gaining ground daily, and promises to make a complete recovery.

The routine of hospital work has been varied by the visits of various military officers of high standing, to inspect the place or to present the "Médaille Militaire," which carries a pension of £5 annually. The ceremony of presenting the medal is picturesque. The general, having divested himself of his cloak, addresses the man as he lies in bed, presents the medal and a document stating his exploits, and in the name of the Republic salutes him with his sword in the French fashion, concluding by kissing him on both cheeks.

Only one case of tetanus was seen, and this died, being a very severe infection.

The medical cases received have been for the most part of less interest. We have had one case of pleurisy relieved by the removal of 3½ litres of blood-stained serum, and a considerable number of cases of typhoid fever, which were sent on to a fever hospital.

A case of cerebro-spinal meningitis of severe type, with well-marked petechial rash all over the body and limbs, was treated by lumbar puncture, which yielded a turbid fluid with heavy purulent deposit, diagnosed by a Government bacteriologist as containing the typical diplococcus. In two or three instances surgical conditions in natives of Algeria have been complicated by malarial fever.

GERMAN EXPERIENCES OF TYPHOID FEVER.

THERE have been many rumours of serious outbreaks of typhoid fever in the German army, particularly in that section which has been opposed to the British and Belgian armies in Flanders. In the accounts appearing in the German medical press figures are not given, but enough is published to show that these outbreaks have given great trouble, and that they have in several respects differed from the classical, accepted picture of typhoid fever.

Speaking at the eighth conversazione of military surgeons in Metz, Dr. Soldin said that cases of typhoid fever had been treated in the military hospital since October 12th. An epidemic, which began on this date, reached its maximum virulence during the end of November and the beginning of December. After this period the disease again ran a milder course. When the disease was most virulent, nothing could be done to save the patients, and cardiac tonics, including camphor, caffein, and digalen, proved futile even when injected into a vein. It was noticed that certain regiments or battalions were much harder hit than others, and that the virulence of the disease varied with the area from which the patients came.

In the *Deutsche medizinische Wochenschrift* for March 4th, Professor Grober gave an account of the principal clinical features observed in outbreaks of typhoid fever in the western war area. He maintained that there had not been more typhoid fever during the war than in times of peace, and explained the outbreaks which had occurred on both fronts by assuming that in the hostile territory occupied there had not been that systematic campaign against typhoid fever which in times of peace had practically freed the soil of the Fatherland of the disease. The recent epidemics differed, he said, in many respects from the textbook accounts of the disease as observed during the last decades. He did not suggest that the cases of the disease recently seen had necessarily been atypical, but rather that typhoid fever was a disease the features of which varied considerably with the mode of infection, the locality, and the class of patient. The unusual character of the disease, however, rendered diagnosis difficult, and from 15 to 25 per cent. of the patients admitted to hospital as suspected cases of typhoid, were found on further observation not to be suffering from the disease. There were also many cases in which the symptoms were so slight that the patients remained at work, and the disease was not recognized till a bacteriological examination was made or a severe relapse had occurred. Bacteriological methods of diagnosis were less useful than in times of peace owing to exigencies of life at the front. Widal's reaction was of little use, particularly when suspects had previously been inoculated. On the other hand, bacteriological methods proved of great value in deciding whether the faeces and urine of convalescents were still infected. The heart was affected more often than usual, owing probably to the unusual strain undergone by the soldiers before infection occurred. It was found that slight movements, and certain drugs and baths, which could usually be given with impunity, proved fatal on account of the exhaustion of the vascular system. One patient had reached the third week of the disease without, apparently, needing special cardiac treatment. But his heart suddenly failed, the tone of his blood vessels collapsed, and he died in a few hours. Sitting up and turning in bed, and even an uncomfortable position in bed were sometimes enough to embarrass the heart seriously; in many cases terminating fatally owing to heart failure, the stomach and intestine were found loaded with food which must have hampered the movements of the diaphragm and embarrassed the action of the heart. Possibly the same cause, by limiting the movements of the diaphragm, was responsible for the frequency with which pulmonary complications, including atelectasis, bronchitis, and aspiration-pneumonia, occurred. The dazed condition frequently observed among the patients was probably due, in many cases, to an accumulation of cerebro-spinal fluid; for after lumbar puncture and aspiration of the fluid this symptom disappeared for hours and even days. Intestinal symptoms were often slight, severe intestinal ulceration was rare, and intestinal haemorrhage and perforation were seldom observed. On the other hand, thrombosis and disease of the middle ear were common, and there were many cases of transient deafness. Skin affections were common, and included single papules, erythema, and extensive eczema, which was sometimes bullous, and sometimes weeping. The single papules were often mistaken for the roseola of typhoid fever. As they occurred most frequently on the trunk it was thought that they might have been provoked by the wet compresses prescribed. The employment of boracic compresses failed to prevent the eruption. In many cases, and in every stage of the disease, severe and slight cutaneous haemorrhages were observed.

To illustrate the difficulties of diagnosis, Professor Grober recorded the case of a man suffering from slight fever and bronchitis, but with no intestinal symptoms. The right knee joint and both ankles were swollen, and the skin showed some ecchymoses. Purpura rheumatica was diagnosed. Although the heart had apparently been healthy, the patient suddenly collapsed two days later and died. The necropsy showed slight typhoid changes in the intestine, in which recovery had already begun. The heart was extremely flabby, and there was a little fluid in the right knee-joint. On account of the frequent occurrence of heart failure, prophylactic doses of digitalis were given to patients about to be shifted from one place to another. Although injections of camphor oil and caffein were very efficacious, particularly if given when the first sign of cardiac weakness appeared, they were apt to cause small epidemics of abscesses at the site of injection, the frequent staphylococcal infections of the skin, and the want of cleanliness of the nurses being responsible for

these outbreaks. In the most severe cases of collapse the subcutaneous injection of suprarenin and adrenalin was found a useful supplement to camphor and caffein. When large doses of digitalis had not already been given, the intravenous injection of strophanthin was very beneficial in serious cases.

Professor Grober expressed the opinion that baths had no direct action on the febrile condition, even though they might reduce the temperature for a few hours. Cold baths no doubt had a tonic effect on the circulation, but the only certain indication for baths was the combination of great apathy with imperfect respiration, which favoured pulmonary complications. The temperature of the water should be 30°C. to 32°C. at first, and should not fall below 25°C. This treatment made the patient breathe more deeply, and often banished apathy or delirium. It also relieved the difficulty in swallowing, which was sometimes responsible for aspiration pneumonia. Professor Grober had nothing good to say for the cold flannels which, when the nurses were careless in sterilizing the cloths, were sometimes responsible for the spread of cutaneous eruptions. He also objected to the popular treatment with small frequent doses of pyramidon; it was a tax on the circulatory system, and was, in his opinion, responsible in several cases for the patient's collapse, and was also apt to mislead the physician by reducing the temperature and not accelerating the pulse, the imminence of collapse being thereby masked. It was risky to deprive the physician of the guide to treatment afforded by a temperature undisguised by drugs. But when the fever was very high and protracted, it might be advisable to control it with small doses of antipyrin or aspirin. The greatest care should be taken to give only small quantities of food at a time; and small, frequent meals of appetising food, not confined to slops, should be prescribed. Alcohol might occasionally be of some use, but its prescription for convalescents was superfluous. Professor Grober opposed the early return of convalescents to active service. Not only was there considerable danger of toxic myocarditis for several weeks during convalescence; but enough was not yet known of the conditions under which convalescents ceased to be infectious. They sometimes showed slight fever in the evening, and it might well be that these slight relapses were associated with the reappearance of bacilli in the faeces.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed.

MAJOR JAMES WOODS, of the Indian Medical Service, is reported as killed in Flanders, in action, in the casualty list of May 20th. He was born on February 22nd, 1877, educated at Edinburgh, where he took the M.B. and Ch B. in 1901, and entered the I.M.S. as Lieutenant on January 29th, 1902, becoming Captain on January 29th, 1905, and Major on January 29th, 1914. He served in the operations in the Mohmand country, on the North West frontier of India, in 1908; in the engagements at Matta, April 24th, 1908, and at Kargha, May 24th, 1908; was mentioned in dispatches in G.C.O. No. 521A of 1908, and received the medal and clasp. In the last ten years he had been medical officer of the 53rd Sikhs, but previous to the war was officiating in civil employ in the Punjab, and was serving with the 39th Garhwal Rifles at the time of his death.

Lieutenant George Martin Chapman, R.A.M.C., was reported as killed in action in the casualty list of May 22nd. He was killed by a shell while attending to a wounded soldier. He was by birth a New Zealander, and was educated at the Universities of Otago and Cambridge, and at London Hospital, taking the B.A. at Cambridge and the M.R.C.S. and L.R.C.P.Lond. in 1912. He was a noted boxer and football player. At Cambridge he got his blue for Rugby football in the three years 1907–08–09; he also played for London Hospital and the Harlequins; he also got a half-blue for boxing at Cambridge, and was hospital champion as a heavy-weight boxer. When the war began he was serving as house-surgeon at the London Hospital, and joined the R.A.M.C. Special Reserve as lieutenant on September 10th, 1914. Early in 1915 he received a decoration from the French Government for saving the lives of several fishermen wrecked in a rough sea off Boulogne. At the time of his death he was attached to the 2nd Dragoon Guards as medical officer. One of his teachers writes: Chapman, or "George" as he was known to more than his intimates, was one who received in the most generous measure the respect and affection of all who knew him. Perhaps at his age it was inevitable that his athletic gifts should attract more attention than his high mental abilities and sterling moral sense, which in later years would have surely won him a new renown. He was cast in a heroic mould, and, while it is no doubt true nothing became him more than the manner of his death, it is but cold comfort to the many who mourn the early end of so admirable a life—the sudden quenching of so much vital and kindly force.

Died as Prisoner in Germany.

Captain Stephen Field, R.A.M.C., died as a prisoner of war at Wittenberg, in Saxony, on April 10th. He was the only surviving son of the late Mr. G. P. Field, aural surgeon and dean of St. Mary's Hospital, and of Mrs. Field, of Mortimer West End. He was educated at St. Mary's, took the M.R.C.S. and L.R.C.P.Lond. in 1906, and entered the army as Lieutenant on January 28th, 1907, becoming Captain on July 26th, 1910. Previous to the war he was serving in Jamaica. He was taken prisoner in the retreat from Mons, and was reported as missing in the casualty list of September 26th.

Died of Wounds.

Captain G. C. Glidden, of the Canadian Army Medical Corps, was reported as having died of wounds, in the casualty list of May 24th. He was attached to the 10th Battalion, West Canada Regiment.

Wounded.

Major G. S. Mothersill, Canadian Medical Corps.
Captain F. C. Bell, Canadian Medical Corps.
Captain H. F. Panton, R.A.M.C.
Captain E. A. P. Brock, R.A.M.C.
Captain H. S. Hollis, R.A.M.C.(T.F.).
Lieutenant F. H. Sprague, R.A.M.C.(T.F.).
Lieutenant (temporary) J. R. Marrack, R.A.M.C.
Lieutenant (temporary) P. Cagney, R.A.M.C.
Lieutenant (temporary) W. K. Fry, R.A.M.C.
Lieutenant (temporary) W. A. Stewart, R.A.M.C.

Lieutenant P. Cagney, R.A.M.C., was reported as wounded in the casualty list of May 10th, and again in that of May 22nd.

Lieutenant (Special Reserve) W. T. Quinlan, R.A.M.C.
Lieutenant (temporary) D. G. Watson, R.A.M.C.

Suffering from Gas Poisoning.

Lieutenant (temporary) P. W. James, R.A.M.C.
Lieutenant (Special Reserve) A. C. Perry, R.A.M.C.

Prisoner of War.

Lieutenant J. A. Stenhouse, R.A.M.C.(T.F.) (shown as missing in casualty list of May 3rd).

NOTES.

THE KING GEORGE HOSPITAL.

AFTER anxious and strenuous weeks of preparation the King George Hospital, Waterloo Road, London, was ready this week to receive the first convoys of wounded. The two uppermost floors having been prepared, arrangements were made to admit 200 men a day during Wednesday, Thursday, and Friday, and the first cases were arriving in motor ambulances at midday on Wednesday. Each floor contains 324 beds, so that the number of admissions contemplated will account for all the space available at present. A sufficient number of operating theatres (which are provided on each of the five floors of the hospital) has been prepared to meet immediate requirements. As the kitchens are on the roof, the hospital, as far as it is ready at present, is self-contained, and is not affected by the carpentering work still proceeding on the lower floors. The solidity of the concrete floors of the enormous building dulls to a great extent the sound of hammering. Some of the intermediate floors are in an advanced stage of preparation, and the hospital will soon be ready to receive its full complement of 1,620 patients.

SERBIA.

Professor Strong, head of the American Red Cross Commission, who has arrived in Serbia, has reported that he believes it will be possible to control the epidemic in a short

time if proper facilities are furnished, but there is a great lack of hospital supplies of all kinds. He asks that at least 175 additional physicians, medical inspectors, and fourth-year students should be sent. The report further states that an international board of health has been established at Nish, with Prince Alexander of Serbia as President, and Sir Ralph Paget as Vice-President. It consists of the heads of Serbian, French, and English sanitary commissions and representatives of the Serbian military and civil medical departments. The remainder of the American commission, which numbered ten sanitarians and bacteriologists, have reached Salonica, and will join Dr. Strong at Nish shortly.

The Wounded Allies Relief Committee will shortly send R.C.H. touring cars to Serbia for use in connexion with its Kragujevatz hospital. It is believed that their comparative lightness will be of advantage in the transport of the wounded over the heavy Serbian roads. An appeal is made to the British public to supply the Serbian sick and wounded with boots and overcoats. The committee has been notified that, the typhus epidemic being already on the decline, the Kragujevatz unit will shortly be employed for purely surgical purposes. All necessary equipment will therefore be forwarded without delay. Gifts in kind should be sent to the Committtee at Sardinia House, Kingsway, and money to the Honorary Treasurer, T. O. Roberts, Esq. (manager), London County and Westminster Bank, 217, Strand, W.C.

Miss Polgreen, of the Swedish Gymnasium, in Aberdeen, has accepted an invitation to join the second unit of a British Field Hospital in Serbia, which will work up at the firing line and under canvas. This unit will sail early in June. Miss Polgreen, who is a member of the Incorporated Society of Trained Masseurs and of the Almeric Paget Massage Corps, has been on duty at the 1st Scottish General Hospital since December 1st.

MONTENEGRO.

The Wounded Allies Relief Committee has decided to send to Montenegro a fever hospital of 200 beds. The unit will consist of four doctors, a nursing staff of about twenty, and complete equipment.

AMERICAN RED CROSS DONATIONS.

The *New York Medical Record* of May 8th states that between September 12th, 1914, and April 17th, 1915, the American Red Cross sent to Europe more than 1,200 bales, of an average weight of 500 lb. each, of absorbent cotton; surgical gauze that, if stretched in a single line, would reach from the Battery, in New York, to Niagara Falls; more than 32,600 lb. of chloroform and ether; over 65,000 yards of bandages, and 1,123 cases of surgical instruments. To Germany were forwarded 85,000 lb. of medicated cotton, 10,300 yards of bandages, 122,000 yards of plain and surgical gauze, 4 automobile ambulances, 66 cases of surgical supplies, 5,500 lb. of chloroform and ether, and large quantities of miscellaneous supplies, such as antitoxins, rubber goods, hospital clothing, etc. To Austria-Hungary were shipped 67,600 lb. of cotton, 113,000 yards of gauze, 4 automobile ambulances, 5,000 lb. of chloroform and ether, in addition to large shipments of surgical crinoline, drugs, surgical instruments, hospital clothing, and other Red Cross supplies. Similar gifts have been sent to relieve the sufferings of English, French, Russian, and Serbian soldiers.

MEDICAL OFFICERS WANTED.

2/1st South Wales Mounted Field Ambulance.

There are vacancies for medical officers for this unit. Application should be made to the Officer Commanding, Lieutenant-Colonel Herbert Jones, The Barracks, Hereford.

3/3rd East Anglian Field Ambulance.

There are vacancies for medical officers (carrying commissions as Lieutenants, R.A.M.C.(T.)) in the 3rd (Foreign Service) Line 3rd East Anglian Field Ambulance. Applications to be addressed to the Officer Commanding, Drill Hall, Walthamstow.

2/1st Lowland Field Ambulance, R.A.M.C.(T.).

Two medical officers are required in the above unit to complete establishment. Must be prepared to undertake Imperial Service obligation. Pay and allowance as in the regular army. Applications should be addressed to Lieutenant-Colonel W. F. Somerville, T.D., Yorkhill Parade, Glasgow.

3/2nd South Midland Mounted Brigade Field Ambulance R.A.M.C.(T.).

Two medical officers are required to complete the establishment of this unit. Officers are mounted at the expense of the Government, and join as First Lieutenants. The unit is for service with a cavalry brigade in the field. Applications to the Officer Commanding 3/2nd South Midland Mounted Brigade Field Ambulance, Great Missenden, Bucks.

Sanitary Section, 3/1st South Midland Division.

A medical officer to take command of the above section is required immediately. Applications to Officer Commanding 3/2nd South Midland Mounted Brigade Field Ambulance, Great Missenden, Bucks.

2nd and 3rd Line Welsh Border Mounted Brigade Field Ambulance.

There are vacancies for five medical officers, prepared to serve abroad, in the above units. Pay and allowances as in the regular army, together with outfit and camp kit grants. Full particulars can be obtained on application to Major D. C. Leyland Orton, Officer Commanding 2nd Line Welsh Border Mounted Brigade Field Ambulance, Lambton Park Camp, co. Durham.

2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C.(T.)

Three medical men are urgently required to complete the establishment of the 2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C.(T.) Full particulars as regards pay, duties, etc., will be given by Captain A. Mowat, Officer Commanding 2/1st Highland Mounted Brigade Field Ambulance, R.A.M.C., Houghton Hill House, Houghton, Huntingdon.

Scotland.

THE LORD HIGH COMMISSIONER AND EDINBURGH MEDICAL INSTITUTIONS.

ALTHOUGH on account of the war the annual stay of His Grace the Lord High Commissioner (the Marquis of Aberdeen) in Edinburgh has been shorn of some of its pomp and circumstance, his visits to the prominent medical institutions have not been omitted. On May 18th His Grace and Lady Aberdeen paid a visit to the Royal Victoria Hospital, which is being used by the British Red Cross Society as an auxiliary hospital for the treatment of neurasthenia and mild psychosis amongst soldiers of the expeditionary forces; they were received by Lord Mackenzie, Chairman of the Edinburgh Committee of the Red Cross Society, and amongst others present were Major David Wallace, C.M.G., Professor Harvey Littlejohn, Dr. Graham Brown, Dr. Carswell, and Dr. R. W. Johnston. On the following day (May 19th) the Lord High Commissioner visited the Royal Infirmary, and went through several wards, including one occupied by wounded soldiers. His Grace said he wished to leave with the men a few lines which had been quoted before in a surgical ward:

> In this abode a welcome kind
> Is with the best of skill combined;
> So when at last with cure complete,
> The patient leaves this calm retreat,
> The lingering memories that remain
> Shall be of peace and not of pain.

Among the medical and surgical staff present were Sir Halliday Croom, Dr. McKenzie Johnston, Dr. MacGillivray, Professor James Ritchie, and Professor Caird. On May 20th the Royal Hospital for Sick Children and the Children's Feeding Centre at North Canongate School were visited; on May 21st the Marchioness of Aberdeen spent a short time at the Edinburgh Royal Maternity and Simpson Memorial Hospital, and on Saturday, May 22nd, she attended a meeting of the Health Visitors in connexion with the Public Health Department.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

The annual report on the medical inspection of school children in Dunfermline for the year ending July 31st, 1914, by Dr. Alister Mackenzie, chief medical officer of the Carnegie Dunfermline Trust, states that 3,994 children made 23,591 attendances at the various branches of the school clinic. The value of visits by nurses to the schools in the early detection of infectious disease is emphasized, and it is insisted that no child excluded from school on account of infectious disease should be readmitted without passing through the school clinic. The medical officer notes with apprehension the fact that the proportion of children who have no vaccination marks, and are therefore presumably unvaccinated, is much greater among the younger children than among those above 5 years. The fact appears to be evidence of increasing indifference to the value of vaccination as a protection against small-pox, although it is not many years since cases occurred in a neighbouring community. Measurements of the children showed that both sexes were taller but lighter than the standard of the Anthropometric Committee. In commenting on the Mental Deficiency Act, stress is laid on the value of special schools or classes for the treatment of mentally defective children. The comparatively large number of children with mental endowments intermediate between the normal and the hopelessly defective constitute, it is considered, the chief problem for school boards, which cannot be met merely by transferring cases of extreme defect to institutions.

Ireland.

VICEREGAL VISIT TO BELFAST.

THE Lord Lieutenant and Lady Wimborne paid a visit to Belfast during the week ending May 22nd. Their Excellencies arrived on the evening of May 18th, and on the morning of the 19th some twenty-five addresses of welcome to the Lord Lieutenant and loyalty to the Crown were delivered from various public bodies, including the Queen's University; from the Ulster Medical Society, signed by Dr. J. S. Morrow, President, and S. T. Irwin, F.R.C.S.I., Honorary Secretary; and one from the Royal Victoria Hospital, signed by the honorary officers, including Sir John Byers, chairman of the medical staff.

On the conclusion of the presentation of these addresses their Excellencies left for the Royal Victoria Hospital to perform their first public function of opening the King Edward VII Memorial. Lady Pirrie, now president of the hospital, to whom is due so much of its inception and completion, presented Lord Wimborne with a beautifully engraved gold key. The Lord Mayor presided. Mr. Milne Barbour, D.L., on behalf of the executive committee, gave a brief account of the project. Shortly after the death of King Edward VII a public meeting of citizens and residents from the adjoining counties was convened, and it was resolved that the proposed memorial should take the form of the erection and equipment of an additional building, the upper story of which should furnish additional sleeping accommodation for nurses, and the ground floor should be used for electrical and vaccine out-patient rooms with rooms for the necessary apparatus for these subjects, and for electro-cardiography and radiology. Much of the apparatus for these departments had been ordered and were in process of delivery, but had been taken over by the Government, so that the furnishing and equipment of the laboratories would have to be postponed; £18,000 had been collected, and the widespread support from all classes testified to the affectionate popularity of the late Sovereign, so that his memory might be associated with those bright principles of humanity for which he laboured during his lifetime. Sir John Byers, in seconding the motion that the best thanks of the subscribers be given to Lord and Lady Wimborne for graciously opening the building, drew attention to the long connexion between the hospital and the royal family. The Royal Victoria Hospital was a memorial to Queen Victoria and was opened by her son; the new building was a memorial to that son, and was now opened by the representative of his son; £5,000 was subscribed for the erection of the old hospital in 1817; £150,000 had been subscribed for this present one, and they rejoiced that Lord Wimborne had made his first State visit to Belfast memorable by opening a most useful institution, and a memorial to a king who in his short reign of nine years did so much to maintain the peace of the world and to promote the happiness and welfare of his subjects. Their Excellencies then made a tour of inspection of the hospital, and talked to many of the wounded soldiers who are at present patients in the wards.

After luncheon in the City Hall, their Excellencies visited the Mater Infirmorum Hospital, and were conducted through the buildings by Sir Alexander Dempsey, M.D., chairman of the medical staff, and chatted with many of the patients, including about fifty wounded soldiers.

THE ULSTER VOLUNTEER FORCE HOSPITAL.

This hospital has received several batches of wounded, and has earned golden reports on its equipment and management, both from visitors and also from more responsible quarters. A letter has been published from the Assistant Director of Medical Services recognizing the generous provision up to the present of 136 beds, and asking, in view of the increased number of sick and wounded that may be expected in the near future in Belfast, that this number should be raised to 200. The responsible committee at once complied with the request; the university authorities granted the space, and already plans are in preparation to meet the suggestion. It must be extremely gratifying to the committee which undertook the onerous task, to all the public boards who helped, and to the medical men who form the honorary staff, to find their labours thus highly appreciated.

Canada.

CANADA AND THE WAR.

THE establishment of reciprocal relations between the medical councils of Great Britain and the province of Ontario has enabled Ontario physicians to respond to the appeal for volunteers made by the War Office. The situation has been facilitated further by the announcement that the Imperial Government will accept any medical men for service in field or home hospitals who are approved by the Dominion Government.

The physicians of Peterborough have organized a base hospital for service in any part of Europe, including Serbia. The equipment will be provided by the provincial government, and the expenses of maintenance, while on active service, will be defrayed by the citizens of Peterborough, the physicians and the lawyers each contributing 50 dols. a month.

The military hospital offered by Queen's University, and accepted by the War Office, is designated No. 5 Stationary Hospital. The unit will be in command of Lieutenant-Colonel Etherington. Two hundred beds will be provided, and, in addition to the initial expense of equipment, an effort will be made to send 300 dols. a month towards the maintenance of the unit while on active service.

No. 4 Stationary Hospital is the French Canadian hospital now being recruited at Montreal. It will be in command of Lieutenant-Colonel Arthur Mignault, and will accompany the third contingent. It was due largely to the efforts of Lieutenant-Colonel Mignault that the 41st and 22nd French Canadian regiments were formed; and in the case of the former, he was personally responsible for a considerable proportion of the cost of equipment. The personnel of this unit will consist of a lieutenant-colonel, two majors, four captains, and a quartermaster, with ninety-five rank and file, and thirty-five nurses.

The McGill General Hospital, No. 3, left on May 5th for Boulogne.

India.

CIVIL SURGEONS' OFFICES IN BENGAL.

THE difficulties under which civil surgeons in Bengal carry out their clerical work is shown in the following extract from the report of the Surgeon-General of the Presidency recently issued.

"What markedly struck me during my visits to most districts was the generally unsatisfactory conditions under which the civil surgeon's office work has to be carried on. Most civil surgeons are not only handicapped as regards office accommodation, but the clerical staff is mostly insufficiently and always underpaid. The small accommodation provided for their offices is no longer sufficient for the daily increasing records of the sanitary, vaccination, and medical departments. There is barely sufficient space for the clerks and the civil surgeon to sit and transact their daily work. Then the vaccination inspecting staff have to be accommodated, and require some place to transact their business. Government have recently sanctioned additional hands for a few districts, and increased the pay of some of the existing clerks, but there is a great deal of room yet left for the improvement of the pay and prospects of a very hardworking class of Government servants who, with very few exceptions, perform their duties thoroughly, conscientiously, and uncomplainingly."

HONOUR FOR THE DIRECTOR-GENERAL I.M.S.

The Indian Volunteer Officers' Decoration has been conferred on the Hon. Surgeon-General Sir Pardey Lukis, K.C.S.I., K.H.S., Director-General of the Indian Medical Service. Although this decoration is not infrequently given to officers of the Indian Medical Service, it does not seem to have been previously conferred on the head of the service.

WORK OF A HOSPITAL SHIP.

Recently at Madras, before a crowded house, Colonel Giffard, superintendent of the hospital ship *Madras*,

delivered a lecture illustrated with lantern slides on the usefulness of the hospital ship. Lord Pentland was present, and introduced Colonel Giffard, who held the audience spellbound with interesting details. A vote of thanks was passed to the lecturer, and the Governor at the close thanked Colonel Giffard and his staff for their splendid work.

THE NAGPUR MEDICAL SCHOOL.

The Nagpur Medical School, which has been closed for some years past, has been reopened and renamed the Robertson Medical School, after Sir B. Robertson, K.C.M.G., Chief Commissioner of the Central Provinces.

Correspondence.

"HYPERTONIC" TREATMENT OF WOUNDS.

SIR,—May I be allowed very briefly to add my testimony to that of your Special Correspondent in France as to the efficacy of the "hypertonic" treatment of the wounds caused by projectiles in this war?

The dressing which in the early days of the war was most usually applied was that with which we were familiar in civil life—a few layers of a sterile or antiseptic gauze, a pad of wool, and a bandage. So copious, however, were the wound secretions, that in many cases this form of dressing resulted in the wounds being poulticed by their own purulent discharges. The appearance of such a dressing on removal confirmed the accuracy of its description as a "pus poultice." When I acted as the surgical consultant in Rouen I had an early opportunity of hearing of the work of Sir Almroth Wright, and of receiving from him the suggestion that the application of a 5 per cent. to 10 per cent. solution of salt, with the addition of sodium citrate, would probably prove to be the most rapid means of cleaning the surface of these very dirty and septic wounds. From the first it was evident that the wounds, all of whose surfaces were accessible to the application of gauze soaked in and continually moistened by this solution of salt, very quickly gained a healthy appearance and lost their offensive and purulent discharge. The wounds upon which we failed at first to make impression were those whose hidden or remote recesses could not be reached by the fluids, bathing the outer surface only. But when such wounds were drained, and a saline suppository introduced (a suggestion which came, I believe, from No. 8 General Hospital) it was hoped that an equal effect would be noticed. My later experience at home has amply confirmed that which I gained in the early days of this mode of treatment in France. And I think there can now be no doubt in the minds of those who have given the method a full trial under proper conditions that it is the best and the most speedy in securing a healthy condition of the wound. A wound with a grey, dry surface, discharging little or nothing, and wounds with a dirty sloughing surface which pours out a large quantity of offensive discharge alike respond to this method. The former quickly gains the ruddy hue of health and discharges, often copiously, a thin serous fluid. The latter cast off their dead areas, and the discharge becomes thinner, more abundant, and inoffensive. If saline applications are too long continued bleeding is apt to occur, and it is better therefore to change the dressing when this stage is reached; for this hint, as, indeed, for the whole method of the "hypertonic" treatment of wounds, we are indebted to Sir Almroth Wright alone. I have been told many times that there is nothing new in this method. That is true, for Sir Almroth Wright called attention to it many years ago; but the conditions favourable to the full demonstration of its extraordinary efficacy are certainly new.

There are, of course, many other points worthy of earnest consideration in regard to wound treatment. But I write to-day merely to emphasize the importance of, and the remarkable and rapid results attained by, the "hypertonic" method of Wright.—I am, etc.,

Leeds, May 25th. BERKELEY MOYNIHAN.

THE APPLICATION OF STRONG ANTISEPTICS TO INFECTED AND NON-INFECTED WOUNDS.

SIR,—In reference to the article of March 6th by Mr. Bond, I think any surgeon of experience in India, where we see so many wounds in an advanced septic condition, will endorse his statement that treatment by strong antiseptics is advisable, and that tr. iodi is of very little value in such cases. I am sorry his experiments have not extended to the use of a solution of equal parts of camphor and carbolic acid. For some years I have regularly used this in the hospitals under my control, and have obtained better results than with any other treatment. Simple incisions, however septic, may be cleaned, dried, and treated with this solution. They can then be sutured, and expected to heal rapidly without further suppuration.

Large, irregular, contused wounds should have all sloughing or gangrenous tissue removed; they must be thoroughly dried, and then treated throughout with the camphor and carbolic, care being taken to enter every smallest pocket. The edges are then drawn together as far as possible. It is often advisable to leave a gauze drain in place. Wounds so treated heal very rapidly, with no danger of extension of the inflammation.—I am, etc.,

L. E. GILBERT, M.B.Lond., M.R.C.S.,
Lahore, April 21st. Major, I.M.S.

RECOGNITION OF EPIDEMIC CEREBRO-SPINAL FEVER.

SIR,—The article by Dr. Lundie and others in the JOURNAL of May 15th on the recognition of cerebro-spinal fever contains several points which must be new to many practitioners, as no mention of them is made in the text-books on the subject. The opinion of observers who have seen the number of cases mentioned in the paper should be given due weight, but I think that one is justified in asking for the evidence on which the statements are based.

It is stated that the course of the disease may conveniently be divided into three stages—(1) catarrhal, (2) septicaemic, and (3) meningeal.

With regard to the first stage, what evidence can be adduced to show that the catarrhal symptoms which undoubtedly often, but not always, precede the acute ones are due to the meningococcus? In elucidating this point, it would be helpful to hear how many cases of cerebro-spinal *meningitis* have been "swabbed" during the catarrhal stage with positive result.

The statement that in Stage 2 the cerebro-spinal fluid "is always sterile" is rather startling. Many practitioners confronted with a case presenting a comparatively small number of the twelve symptoms stated to be characteristic of Stage 2 would, I think, be more likely to diagnose a condition of meningitis than septicaemia. The statement would bear more weight if the writers would say how many cases they had seen presenting a majority of the symptoms mentioned, and from whom they had obtained positive cultures from the blood and negative ones from the spinal fluid.

Would the writers also say how the disease is to be diagnosed for certain in Stages 1 and 2? This is important, as it is stated that, with appropriate treatment, if undertaken in Stage 1, recovery is certain, and may be reckoned on in Stage 2.—I am, etc.,

Norwich, May 18th. G. P. C. CLARIDGE.

THE SUPPLY OF MEDICAL MEN.

SIR,—Your correspondent "M.D.," in your issue of May 22nd, draws attention to a subject of very great national importance, and the footnote which you append seems to show that the Association has the matter under consideration.

The object of this letter is not to suggest a scheme which would solve the question of compulsory medical service. "M.D.'s" letter sufficiently shows that no cut-and-dried scheme would meet all difficulties.

It is permissible, however, to ask whether the British Medical Association realizes that conscription must speedily come, and whether it is prepared for the inevitable call for information and assistance which the Government will certainly make. It may with confidence be asserted that the present system of substituted service has reached its limit, and that the removal of more doctors

from their practices cannot be adequately met by any scheme of redistribution. The elasticity of the profession, already severely extended, cannot bear a further strain. If, therefore, more men should be required to staff our greatly increased armies, an entirely fresh personnel must be drafted into general practice to replace them. This can be done to a considerable extent by the employment of lady doctors in urban districts and by a re-establishment of the apprenticeship system in rural areas.

The crux of the matter is the possibility of liberating the country general practitioner, and so far as I can see, the only possible way to do this is to relax the regulations governing the employment of unqualified medical students in their last year.

I am not in possession of the information necessary to show the number of such men, but I believe that if sufficient be forthcoming the system would be found to work satisfactorily.

Incidentally I may say that the apprenticeship system is bound to come again sooner or later, and that the information provided by an experiment of this kind would be invaluable when the medical profession comes to be reorganized after the war. We are all learning lessons, most of us unwillingly; and no thinking man can deny that the old order is changing. It would be folly on our part not to realize that our profession can never, in its relations to the State, be the same as before this war. It behoves us, therefore, to be prepared for the inevitable call which the State will make upon us. Correspondence may do much good, but we look to our governing body to have in readiness all the information necessary to enable the Government to obtain the fresh supplies of army medical men which the national emergency so imperatively calls for.—I am, etc.,

Kington, Herefordshire, May 25th. J. M. LAZENBY.

SIR,—Since it appears that compulsory service will probably come soon, it behoves us to consider at once the conditions under which it could be applied to the medical profession.

Dr. Vincent Moxey, in his interesting letter (p. 912), discusses the vital subject of compensation for loss of practice. While agreeing with him in general, I should like to enlarge further on one or two points.

I wish first to draw attention to the question of keeping a practice open while the incumbent is away on active service. Is it practicable?

Even on the supposition that fees charged by locumtenents could be limited to a reasonable amount by law (for apparently no other compelling force would be adequate), the patients would still be free to call in any doctor they prefer, and a great diminution in the value of the practice would result. It would therefore be more advantageous in the majority of those practices which depend mainly on private work to sell outright.

Now let us consider the question of compensation where a certain class of practitioner is concerned. I refer to the married man of 30 to 35 years of age who has been in practice for himself for three or four years, and perhaps has two or three children. Such a man is in the prime of life, and would be a valuable asset to the medical service in the field. But is it realized what a great loss he must incur if he enlists? When the average man invests his capital in a practice for the first time, does he get the income he expects in the first three years? The general experience is that he does not, and if the nominal value of the practice is small, he must expend further capital or depend on loans to make a living for the first year or two. Now, if compensation is to be adequate in such a case, the sum granted must represent not only the purchase price of his practice (usually one and a half years' gross receipts), but also the extra capital or loans just referred to, *minus* any sum he may be fortunate enough to realize from the sale of his practice. In addition he must have enough to keep him on service and to provide for his wife and family in his absence.

The problem will be less difficult in the case of a man with private means, or one who has been able to save appreciably out of his income; but what I want to demonstrate is that the young man who has had no time to save money, nevertheless has more to lose than is at first sight apparent.—I am, etc.,

Callington, May 22nd. HUBERT E. JOHNSON.

SIR,—In recent correspondence several writers have criticized the method, or want of method, in which temporary commissions in the R.A.M.C. have been granted to civil practitioners during the present war. It has been pointed out that the most recent graduate is given the same rank and pay as the graduate of ten, twenty, or more years' standing, and that the clinical teacher has to work on an equality with former pupils, or even in some cases under his direction. Criticism has been mainly directed at the rank given, though great financial sacrifices have been made in many cases. Some solution of the difficulties might be met on the following lines:

1. *Pay.*—To remain as at present—that is, 24s. per diem—but specialists to be granted "specialist" allowance when employed on such duties.

2. *Uniform.*—Civil practitioners to be distinguished by wearing waved braid on the sleeve of the tunic instead of the straight braid worn by Regular and Territorial officers.

3. *Rank.*—Civil practitioners to rank as lieutenants unless falling into one or other of the following sections:

(*a*) Those who have been graduates for ten years, or who have devoted themselves for five years to *whole-time* specialist work, to be captains.

(*b*) Those who have been graduates for twenty years, or who have been engaged in *whole-time* specialist work for ten years, and *who are engaged in such specialist work with the forces*, to be majors.

(*c*) Ex-members of the Officers' Training Corps, Volunteers, or Territorial forces to add one year for every two years' training in such forces to the number of years graduate—that is, a graduate of eight years with four years in the Officers' Training Corps would rank as ten years, and consequently would be promoted captain. This allowance would not be made in the case of specialists.

Applications for change in rank would be made to and granted, after investigation, by the War Office.

As all lieutenants in the regular R.A.M.C. have now been promoted to be captains, and these and other officers, in addition to drawing the pay and allowances of their rank, are granted a bonus or pension after so many years' service, no hardship would be placed on them. The Territorial R.A.M.C. officer should receive, if necessary, a "service" allowance, but he has the compensation of receiving higher rank than the civil practitioner. Lieutenants might be made captains, as in the regular R.A.M.C. The special service officer for the home defence hospitals is in a peculiar position, as he has no annual training to put in, receives rank automatically, and is practically a "part-timer," as he can usually carry on his private practice with little inconvenience. The conditions might remain unaltered.

While these points might bring more general practitioners forward to serve with the army, some consideration might also be given to the remuneration of "part-time" medical officers. These officers receive practically the same pay as the "whole-timer," are allowed to live at their own homes and carry on private practices, and run no risks as from foreign service. These conditions were not given earlier in the war, and it would seem that patriotic enthusiasm has in some cases proved a bad investment.

Lastly, discrimination might be exercised in utilizing medical practitioners to the best advantage. Some effort was evidently intended in this direction, for each candidate was asked at the War Office to state his speciality. While giving this he usually stated he was "willing to serve in any capacity," and he frequently found that he might have been employed in more useful work to that given. It was a case of finding qualified men, and not specialists, early in the war, but with time to reorganize every man should be drafted to duties for which he is most suited by ability and experience. In too many cases the officers performing "specialist" work have had to gain their experience since joining the army.—I am, etc.,

May 26th. OLD GRADUATE.

JUNIOR MEDICAL STUDENTS AND THE WAR.

SIR,—I observe from the press that there is a dearth of first-year medical students owing to those eligible having mainly joined the forces. May I, as the father of a boy who hopes to begin his medical education in October, who is extremely anxious to join the forces, suggest that those who are beginning their medical studies soon should be utilized in the hospitals as dressers, etc., until the session starts? The boys would then feel they were "doing their bit," and yet at the same time they would be gaining invaluable experience. Owing to the cost of living and the altered circumstances of many parents owing to the

war, quite a number of students will have to seek other careers.

But if the services of the boys could be utilized now and as remuneration their fees paid during the next year, it would greatly help to swell the ranks of budding medicos.—I am, etc.,

May 25th. HARD HIT.

WASTE AND OVER-EATING.

SIR,—If oleomargarine is to be used fairly universally, as is intended, then the problems connected with its use cannot merely, as Dr. E. Lloyd Owen asserts, "concern persons with normal digestions, and not the unfortunate minority of dyspeptics." Quite apart, however, from the physiological imperfections of and drawbacks to oleomargarine as a substitute for butter, the fact must not be overlooked that butter is a definite entity, and that in this country we have set up a definite standard of its purity. Who shall make bold to say what oleomargarine is? What it is to day it may not be to-morrow. In some countries oleomargarine is forbidden to be *artificially* coloured for the purpose of making it look like and be as tempting to the eye as butter. This difficulty has during the last year or two been overcome through the discovery that certain vegetable oils—like peanut oil, soy-bean oil, and mustard oil—carry naturally a large amount of yellow colouring matter, and the practice of utilizing these oils for the purpose of imparting *naturally* a yellow colour to oleomargarine is now being adopted. Whatever may be said to the contrary, the question of a deficiency of calcium in the organic form in our dietary is not mythical but real, and any foodstuff which, like margarine, removes from and deprives the body of organic lime, if not banned, should at least not be extolled by the medical profession.—I am, etc.,

London, W., May 15th. JAMES OLIVER.

THE SURCHARGING OF PANEL PRACTITIONERS.

SIR,—I see a letter in your last edition from Dr. Bateman of the Medical Defence Union, stating that this body intends to challenge the right in the High Courts to surcharge practitioners who, in the opinion of their colleagues, represented by the Panel Committees, have prescribed extravagantly and improperly.

As a member of the Medical Defence Union I shall strongly oppose any of the funds of that body being used for such a purpose. If Dr. Bateman had had the opportunity, as I have had, of seeing the extraordinary concoctions ordered by certain panel practitioners, the total disregard as to the cost, even when a drug with a similar therapeutic action is much cheaper, and the preference shown by some to drugs that are unknown to the general run of practitioner and particulars of which are only to be found in advertisements, he would realize that it is absolutely necessary to have a check of some kind. In the insurance area of Buckinghamshire three-quarters of the doctors who prescribe are able to keep to the level of sevenpence per prescription, the other quarter are mostly at the eightpenny level and seldom above a shilling. Yet we know that in the London area the cost is much higher, and there is no doubt whatever in my mind that there are many men who are prescribing expensive medicines solely with a view of making the Act unworkable. If they succeed in doing so and have a State Medical Service they will only have themselves to thank for it.

It is sincerely to be hoped that an important body like the Medical Defence Union is not going to be captured by enemies of the Act.—I am, etc.,

Buckingham, May 24th. ARTHUR E. LARKING, M.D.

Universities and Colleges.

UNIVERSITY OF LONDON.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

THE Queen has given £250 from the gift from the wives of Freemasons to help members of the professional classes who may be in difficulties owing to the war, to pay for the training and expenses of a student at the London (Royal Free Hospital) School of Medicine for Women for a five years' course. The scholarship will be awarded in July, 1915, to a student who intends to begin her course of study in the October following, and will be of the value of £50 a year for five years subject to the student pursuing her course to the satisfaction of the Council. Candidates must have passed a preliminary arts examination recognized for the purpose of registration by the General Medical Council or the London Matriculation, or an examination which gives exemption from it. Forms of application and further particulars can be obtained from the Secretary of the School, 8, Hunter Street, Brunswick Square, London, W.C.

KING'S COLLEGE.

We are requested to state that, owing to Professor Brodie's services being required for military purposes, the course of advanced lectures in physiology arranged to be given at King's College on May 31st, June 2nd, 7th, and 9th will not be delivered.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following gentlemen have been admitted Fellows:

John Coffey, N. G. W. Davidson, A. Graham, C. R. Halloran, G. Laurence, J. C. Lorraine, V. L. Miller.

The bronze medal and microscope presented to the College by Colonel William Lorimer Bathgate in memory of his late father, William McPhune Bathgate, F.R.C.S.E., Lecturer on Materia Medica in the Extra-Academical School, has been awarded to Mr. J. H. Neill (Edinburgh).

ROYAL COLLEGE OF SURGEONS IN IRELAND.

A Question in Medical Ethics.

SOME time ago a practitioner, "Dr. A.," wrote to the council of the Royal College of Surgeons in Ireland to inquire what attitude he should adopt to a neighbouring doctor who had accepted the post of "medical adviser" under the National Health Commissioners. The following reply has been forwarded to "Dr. A.":

Royal College of Surgeons in Ireland, Dublin.

To "Dr. A."

Dear Sir,—The President and Council of the College, having carefully considered your letter dated March 18th, have directed me to say that your letter implies the following questions:

1. What is the opinion of the President and Council with reference to "Dr. B.'s" conduct in breaking his written promise not to enter into any arrangements with the Insurance Company or Approved Society under the National Insurance Act? To this the President and Council have no hesitation in replying that unless "Dr. B," can prove that he signed the undertaking under a misapprehension as to its scope and meaning, his violation of his written undertaking calls for the severest condemnation.

2. Are you to consider yourself justified or even compelled to boycott "Dr. B." as a punishment for the latter's violation of his signed undertaking? To this the President and Council would reply that whilst the legal status of a medical man confers on him certain privileges, it also places on him grave responsibilities of which he cannot divest himself. No medical man can be compelled to associate with a person of whose conduct he disapproves, but neither is a medical man at liberty to carry this freedom so far as at any time to endanger the well-being of any member of the community for whose protection he has been granted by Parliament the statutory privileges already referred to.

As to the threat conveyed to you of being boycotted by your professional brethren in your district, the President and Council desire me to point out that in this connexion they have no power to control either your action or that of your professional neighbours, but they are of opinion that the enforcement of such a threat would be an act of which the President and Council, mindful of their responsibility to the community, cannot express approval.

[The letter goes on to state that the President and Council are prepared to deal severely with any Fellow or Licentiate of the College who knowingly visits, examines, or otherwise interferes in a professional capacity with patients without the knowledge and consent of the medical attendant, should satisfactory evidence to this effect be forwarded to the Council. The letter concludes as follows:]

The President and Council, in conclusion, desire to express their sympathy with the efforts being made by various medical organizations to remove the injustices which the working of the Insurance Act has demonstrably inflicted on so many practitioners, and hope that in the near future such alterations in the working of the National Insurance Act may be made by the Legislature as will render it possible for the entire profession to co-operate in making the Act of benefit to the community.—I am, dear Sir, yours faithfully,

C. M. BENSON, F.R.C.S.I.,
Secretary to the Council.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—†C. D. Banes, *†A. U. L. Bennett, *†H. A. De Morgan, *†C. S. Dodson, *J. C. Lee, †L. N. Lee, *†H. B. Padwick, *M. C. Stark, *T. J. Thomas.

MEDICINE.—†W. Bailey-Thomson, *J. A. A. Boddy, †A. Butterfield, †W. Fox, *†J. C. Lee, *W. F. Matthews, *†S. Rawlinson, *†A. H. Taymour.

FORENSIC MEDICINE.—L. M. Arnold, A. Z. Abushady, L. S. Goss, J. C. Lee, I. H. Lloyd, A. H. Taymour, T. J. Thomas.
MIDWIFERY.—L. M. Arnold, A. Butterfield, F. W. Chamberlain, K. M. Dyott, J. C Lee.
* Section I. † Section II.

The diploma of the society was granted to Messrs. C. D. Banes, A. U. L. Bennett, C. S. Dodson, L. N. Lee, H. A. De Morgan, and H. B. Padwick.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

THE British Medical Association, being anxious to assist in facilitating exchanges between medical officers of the Territorial Force in accordance with the War Office letter of December 10th (BRITISH MEDICAL JOURNAL, February 27th, p. 402), is prepared to publish in the JOURNAL applications for exchange. In all cases officers desiring exchange should furnish information on the following points:

1. Rank and name.....
2. Regiment *or* medical unit.....
3. At present stationed at .....
4. For home or for foreign service .....
5. Amount and nature of work, special allowances drawn, and living conditions generally ....
6. Home address to which it is desired to exchange .....
7. Terms offered .....
8. Whether a junior medical officer with temporary commission would be accepted .....

Present address and date .....

Lieutenant D. Durward Brown, R.A.M.C.(T.F.), 2/19th Battalion, London Regiment, at present stationed at Coggeshall, Essex, for foreign service, desires to exchange. The duties are the usual battalion work, the pay 14s. a day and 4s. 9d. allowances, and the billets are good. He wishes to exchange to Harrogate, Yorkshire, or to a base hospital. His present address is Idono, Coggeshall.

INDIAN MEDICAL SERVICE.

THE Government of India have decided that the period for which an officer of the Indian Medical Service is retained on the active list, in consequence of the war, after his retirement ordinarily becomes due, will be allowed to count towards pension—that is, his pension will be calculated with reference to his total service at the time of his retirement.

Obituary.

RICHARD SEPHTON, M.R.C.S., L.R.C.P.EDIN.,

CULCHETH, LANCASHIRE.

DR. RICHARD SEPHTON, one of the oldest practitioners in Lancashire, passed away at his residence, Springfield, Culcheth, near Warrington, on May 18th. He had been in failing health since Christmas, but had attended to his professional duties until a month before his death, which was due to cystitis.

Dr. Sephton was born at Rightington on September 25th, 1834, and received his medical education at the Royal School of Medicine, Manchester. He had a very successful career as a student, and, along with the late Sir William Broadbent, took most of the prizes. He was a prizeman in anatomy, physiology, materia medica, medicine, and surgery.

He took the diploma of L.S.A. in 1857, that of M.R.C.S. in 1858, and that of L.R.C.P.E. in 1860.

After acting as assistant at Holmes Chapel, Cheshire, he went to Culcheth in 1857, where his success was rapid. His easy, frank, genial, hearty, and sympathetic nature soon endeared him to his patients, in whom he took the deepest and most sincere interest. He was generally known in the district as "the poor man's friend." For over fifty years he was Poor Law Medical Officer for the Culcheth District of the Leigh Union and Croft District of the Warrington Union, public vaccinator for the above District, and medical officer of health for the rural district of Warrington. He was a Fellow of the Incorporated Society of Medical Officers of Health and a member of the British Medical Association.

On starting practice he did his rounds on horseback, and many of the older inhabitants of Culcheth will remember his short figure mounted on his grey mare "Polly." Later on he used a gig and brougham, and about ten years ago he reluctantly gave up his seven horses and took to motoring. He was extremely fond of horses, and had many exciting times with his racing stud at the local meetings. Always a great lover of nature, he took a great interest in gardening, and his roses were known for miles round. He was a Churchman and a Conservative.

He was twice married; his first wife was the daughter of the late Dr. Burrows of Liverpool and his second the daughter of Mr. Buckland of Windsor.

Among many expressions of regret his mortal remains were carried by the village choir from his residence to the family vault at Newchurch Parish Church on May 22nd, 1915.

The sympathy of the medical profession and a wide circle of friends will go out to his widow, son, and two daughters in their bereavement.

MANY on both sides of the Atlantic will learn with profound regret of the death of Dr. PATRICK SARSFIELD DONNELLAN, formerly of Philadelphia. He was born at Limerick, and studied medicine at Trinity College and the Royal College of Surgeons in Ireland. He also worked at Edinburgh, Paris, and Frankfurt. He obtained the diploma of L.R.C.S.I. in 1883, and that of L.R.C.P.I. in 1887, shortly afterwards obtaining a post as surgeon on an eastern-going steamer. His professional ability and the conscientious way in which he discharged his duties, as well as his striking social qualities, were soon recognized, and he was promoted to be doctor of the celebrated *City of Rome*, then a record breaker in the Atlantic trade. On this vessel Dr. Donnellan was fortunate in making the acquaintance of a millionaire from Philadelphia, who induced him to settle in that city. He took the M.D. of the Philadelphia University in 1892, and soon acquired a lucrative practice. He was fortunate also in obtaining a valuable appointment as medical officer of a large American Insurance Company. He was by this time well and favourably known in Philadelphia, in which he was a prominent member of medical and other societies, and also of the University Club. During his holidays he frequently visited Europe, where he added to his medical knowledge, especially in the domain of diseases of the ear, nose, and throat, in which he eventually specialized. He was medical director and visiting physician of St. Mary's Hospital and otologist and laryngologist to St. Agnes's Hospital, Philadelphia. He was lecturer on clinical medicine in the Philadelphia Medico-Chirurgical College. He contributed a paper on the practical value of intratracheal medication to the *Therapeutic Gazette* (1902); one on medical allusions in Shakespeare's plays to *American Medicine* (1902), and one on acute suppurative mastoiditis complicating influenza to *Medicine* (1904). He married a daughter of Mr. and Mrs. Ryan, of Williamsport on the Hudson, the union proving a particularly happy one. In their beautiful home in Spruce Street, Dr. Donnellan and his wife delighted to welcome and entertain their many friends, especially those who chanced to visit them from the old country. The strain of a large practice and the enervating effects of the climate eventually began to affect Dr. Donnellan's health, and symptoms of a serious nervous disease slowly made their appearance. He sought and obtained the best advice in America, the Continent, and at home, with but only temporary benefit. Eventually he gave up his practice in Philadelphia and went to California, where he lived quietly for two years on the Pacific coast. Some three years ago he returned to the east, where his devoted wife contracted pneumonia and died. This was a great shock to him in his already weakened condition. His mother was still living in London, where three of his brothers are well-known medical practitioners. Deciding to spend his remaining days in England, he settled in Twyford Abbey, Willesden, where, gradually becoming more helpless and weaker, but perfectly resigned, he peacefully passed away on May 5th. He was a broad-minded cultured gentleman, a loving son and brother, and a devoted, helpful friend, without a trace of selfishness. His illness forced him in the prime of life to give up the work which he loved, and for the doing of which he had

taken infinite pains to qualify. Yet he never complained; throughout a long illness he comported himself with admirable Christian fortitude.

DR. JOHN GREASLEY, of Canterbury, who died on April 23rd in his 71st year, began his medical studies in 1868 as a pupil of the late Dr. Denne, then senior surgeon to the Kent and Canterbury Hospital. After working there for two years he entered the London Hospital in 1874, and became M.R.C.S. and L.S.A. in 1877. Three years later he was appointed honorary surgeon to the Kent and Canterbury Hospital, a position which he continued to hold till February 1913, his period of service having thus extended over nearly thirty-three years. The Board of Management recorded in their minutes an expression of the regret with which they accepted his resignation, and their warm appreciation of his services. In 1877 Dr. Greasley was appointed surgeon to the City of Canterbury Lodge, Manchester Unity of Oddfellows, with whom he was so popular that some four years ago he was presented with an address, together with a centenary jewel and an album of subscribers as a mark of esteem and of appreciation of his "thirty-four years of faithful service." Dr. Greasley, whose panel of patients (1,300) was the largest in the city, was also doctor to the old Canterbury Friendly Society, the Rechabites, Lion, and other societies. He took no part in the public affairs of the city until during the last two years of his life, when he occupied a position on the Canterbury Insurance Committee. His devotion to his work was such that for over twenty years he was hardly known to take a day's holiday. The large attendance at his funeral proved the general respect in which he was held.

MR. FREDERICK LAWRANCE, of Hammersmith, who died on May 1st, in his 85th year, was one of the oldest practising members of the medical profession. He was the son of the Rev. Robert Lawrance, for twenty-one years rector of Bleadon, near Weston-super-Mare, and was born at Kingston St. Michael, near Chippenham. He received his medical education at St. Bartholomew's Hospital, and became M.R.C.S. in 1857 and L.S.A. in 1859. He entered into partnership with Dr. Loadman, of Hammersmith, on the border of Chiswick, and for some time occupied a house in Chiswick Lane in which Alexander Pope the poet and his parents had at one time lived. Dr. Lawrance had a large practice, and was one of the best known men in the district. Although his health began to fail during the last eighteen months, he worked almost up to the day of his death, and attended his last case of midwifery this year. His energy was such that he continued active practice until he went into a nursing home two months ago for an operation, from which he made a good recovery; indeed, he insisted upon giving directions about his patients till within three or four days of his death, notwithstanding the impairment of his speech due to partial hemiplegia of which he had two attacks during the last month. Mr. Lawrance took an active part in public life. He was Chairman of the Conservative Association of Hammersmith, a member of the Board of Management of the West London Hospital, and a churchwarden; he was also associated with very many local charitable and other institutions. He was an original member and an ex-president of the West London Medico-Chirurgical Society, and one of the most regular attendants at its meetings. He was a member of the British Medical Association. Mr. Lawrance was initiated in Freemasonry in the Lodge of Harmony, and was a founder-member of several lodges and chapters. He was a Director of Ceremonies at the Grand Lodge of England for the year during which King Edward VII, when Prince of Wales, was installed Grand Master. He was fond of all kinds of sport and of riding and driving, was a good judge of a horse, and in his younger days enjoyed fishing, shooting, and hunting. Mr. Lawrance married Miss Matilda Clark, youngest daughter of the late Dr. Clark of Twickenham, by whom he had one child, a daughter. Both died some years ago.

DR. CHARLES GRINLING BUNN, who died at Laxfield, Suffolk, on March 30th, within a few days of completing his 60th year, received his medical education at Charing Cross Hospital. He took the diplomas of L.S.A. in 1879, L.R.C.P.Edin. in 1880, and M.R.C.S.Eng. in 1882, and graduated M.D.St. Andrews in 1897. After serving the office of Resident Medical Officer at Charing Cross Hospital in 1879–80, he settled at Upper Norwood, where he quickly acquired an extensive general practice. He had a high ideal of professional duty, and this, combined with a sound knowledge of his work and a most kind and sympathetic nature, gained him the affection and confidence of his patients to an extraordinary degree. Failing health led him last summer to retire to the country, where it was hoped that rest and freedom from the exacting demands of a large practice would give him a new lease of life; but the end came suddenly after two days of illness. Dr. Bunn was a member of the British Medical Association. He was the author of reports of cases of profuse haemoptysis and of cerebral haemorrhage, published in the *Medical Times and Gazette* in 1880, and of other contributions to medical journals. He leaves a widow, one son, and two daughters.

DR. C. J. FAGAN, M.D.Dubl., L.M.Rot. Hosp., of Victoria B.C., died February 10th, in the fifty-eighth year of his age. Born in co. West Meath, he went to Canada about thirty years ago, and settled in British Columbia. He became medical superintendent of St. Mary's Hospital at New Westminster, and later Chief Health Officer for the province of British Columbia. His resignation, proffered in 1913, was received with regret, so much were his services appreciated. Dr. Fagan took a particular interest in the prevention of tuberculosis, pointing out the advantages of early treatment, and it was due largely to his untiring efforts that the antituberculosis movement was started in the west. As a result a provincial institution—the excellent Tranquille Sanatorium—was established at Kamloops.

DR. OTTO MARKUS, assistant in the medical clinic of the University of Würzburg, was killed by a shell in the battle of the Argonne. He was the author of valuable contributions to neurology and psychiatry, and leaves unfinished a work on the histology of the ganglion cells of the vegetative nervous system.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. M. Bernhardt, professor of neurology in the University of Berlin, aged 70; Dr. A. Birnbacher, professor of ophthalmology in the University of Graz; Dr. C. W. Chancellor, sometime professor of surgery and dean of the Medical School of Washington University, Baltimore, aged 84; Dr. S. C. Chew, professor of materia medica and afterwards of medical practice in the University of Maryland, of which he was dean for five years, aged 77; Dr. Colayevitch, formerly physician-in-ordinary to King Peter of Serbia; Dr. Combalat, professor in the Marseilles School of Medicine and surgeon to the hospitals; Dr. Erwin von Esmarch, son of the famous Friedrich von Esmarch, professor of hygiene and medical chemistry in the University of Goettingen, aged 69; Dr. Homer Gibney, professor of orthopaedic surgery in the New York Clinical School of Medicine, aged 55; Dr. José Pereira Guimaraes, formerly professor in the University of Janeiro; Dr. Orris E. Herrick, formerly professor of gynaecology in the Cincinnati Medical College, and editor of the *Obstetric Gazette*, aged 66; Dr. Eduard Jacobi, professor of diseases of the skin and genito-urinary organs in the University of Freiburg, author of *Ikonographia Dermatologica* and other works, aged 57; Dr. Samuel W. Langmaid, of Boston, consulting laryngologist to the Massachusetts General Hospital, aged 77; Dr. D. Matto, professor of bacteriology in the University of Lima, and for many years editor of the *Cronica Medica* published in that city, a senator of Peru, and formerly a member of the Cabinet, aged 56; Dr. Onimus, author of well known books on medical electricity; Dr. Edward Sprague Peck, of New York, professor of ophthalmology and otology in the University of Vermont; Dr. J. D. Pinero, professor of anatomy in the University of Buenos Aires; Dr. Theodore Potter, professor of principles of medicine and clinical medicine in the University of Indiana, aged 53; Dr. J. H. Raymond, professor of hygiene in

the Long Island College Hospital, Brooklyn, New York, editor from 1888 to 1903 of the *Brooklyn Medical Journal*, and author of a textbook on physiology and of a *History of the Long Island College Hospital and its Graduates*, aged 69; Dr. Giuseppe Resinelli, director of the clinic of obstetrics and gynaecology at Florence; Dr. M. Roy, formerly deputy for the Charente Inférieure; Dr. J. J. Scannell, director of the bacteriological laboratory of the Boston Board of Health, aged 39; Dr. Jay W. Seaver, professor of hygiene in the University of Yale, aged 60; and Dr. O. K. Sprengel, surgeon-in-chief of the public hospital of Brunswick, and President of the German Surgical Association, aged 62.

Medical News.

THE Cavendish lecture before the West London Medical Chirurgical Society will be delivered by Professor Arthur Keith, F.R.S., at the West London Hospital on June 25th.

THE monument to Cesare Lombroso was to have been unveiled at Verona at the International Congress on Pellagra, which was fixed for October of the present year. As the congress has been postponed the ceremony will not take place till some later date.

A DISCUSSION on the co-ordination of military and civil sanitary services in war time will be opened at a meeting of the Royal Sanitary Institute at Bristol on Friday, June 11th, at 11 a.m., by Dr. D. S. Davies, M.O.H., and Mr. L. S. Mackenzie, City Engineer, Bristol.

THE Council-General of the Morbihan Department has voted £2,000 towards the installation of a sanatorium for tuberculous soldiers in a building belonging to the department. It has also voted £120 for the purchase of artificial limbs for use in the hospital dépôts of the department.

THE Swedish colony in Paris has established a hospital within the premises of the Swedish Church in the rue Guyot. It is under the auspices of the Princess de Foix, and is under the direction of Dr. Périer. Swedish massage is applied under the direction of Mons. and Madame Molandier, of the Institute of Medical Gymastics, Stockholm.

DR. LANGLET, Mayor of Rheims, who has already been decorated by the President of the French Republic, has recently received the order of SS. Maurice and Lazarus from the King of Italy in recognition of the good treatment accorded by the municipality of Rheims to Italians who took refuge there from the Briey Basin in the Meurthe-et-Moselle Department.

A SHORT time ago Dr. A. E. Shipley, Master of Christ's College, Cambridge, contributed a description of the First Eastern General Hospital to *Country Life*. This hospital, as is well known, is an open-air hospital, the wards having only three sides. The proprietors of the paper now state that they are about to publish a small book by Dr. Shipley on the open-air treatment of the wounded, illustrated by photographs taken at the hospital at Cambridge, and containing contributions from Mr. Souttar and Professor Simpson.

IN the JOURNAL of March 27th (p. 554) there appeared a report of the proceedings of the annual meeting of subscribers to the Cremation Society of England. We have now received the *Transactions* of the Society (No. XXVIII) in which full details as to its work during the year 1914 and information as to its constitution, officers, and so forth, are given. Any one interested in cremation will find all he wants to know in this publication, which can be obtained by application to the head quarters of the Society at 324, Regent Street, W.

THE Central Control Board (Liquor Traffic), appointed to deal with the drink problem in the munition, transport, and camp areas, under powers given by the Defence of the Realm (Amendment No. 3) Act, contains representatives of various interests. The Chairman is Lord D'Abernon, better known as Sir Edgar Vincent, Financial Adviser to the Egyptian Government, and afterwards Governor of the Imperial Ottoman Bank at Constantinople, and among the members are Sir George Newman, Principal Medical Officer to the Board of Education, and Major Waldorf Astor, M.P., well known for his interest in social questions.

THE Local Government Board has issued a circular letter, dated May 21st, to local authorities emphasizing the recommendation of a previous circular (March 11th) that all possible facilities should be given by local authorities to persons in their employment to join the army, and only men not eligible for the army and unsuited for occupations of paramount importance during the war should be engaged as substitutes. The Board states that cases have been brought to its notice in which men eligible for the army or for special occupations have been selected to fill vacancies by local authorities when some other arrangements might have been made. The Board therefore advises local authorities to avoid making fresh appointments by rearrangement of duties among other officers, or by securing the services of a retired officer; when neither course is possible, then persons not eligible for the army or special occupations, and not possessing the standard of qualification required in the case of permanent appointments, should be temporarily engaged.

A SCHEME for antenatal hygiene formed the subject of a lecture by Dr. H. J. Cates at the Royal Society of Medicine on May 10th. He said that in order to ensure the best possible conditions for the expectant mother and her child it was necessary for each district to have a maternity centre, which would serve as a sort of clearing house to which prospective mothers could go for advice, medical examination, and assistance. It should, he thought, be under the direct supervision of the M.O.H. The staff should consist of a specialist and trained nurses, each possessing the certificate of the Central Midwives Board and a certificate in hygiene. Each nurse should be apportioned a district not containing more than 10,000 inhabitants, and her duties should include visits to the homes of the women to supervise the hygiene, and to advise and assist the women up to the time of confinement. The centre should have a supply of beds in different hospitals where patients suffering from complications could receive the necessary treatment; a milk dépôt for the babies and a food dépôt for the mothers; and an infant consultation, to which babies might be brought for advice and treatment all through infancy and childhood until they reached school age. To this should be attached an infant clinic, and a crèche for the supervision of babies whose parents were too careless or too much occupied to look after them themselves. In many districts a nursery school also would be of untold benefit in taking children under school age out of the unwholesome surroundings of their own homes for some hours at least every day. Lastly, some sort of laboratory accommodation was needed to which specimens might be sent for examination, and classes should be held where the mothers might learn to safeguard not only their own health but that of the coming generation.

THE annual general meeting of the Asylum Workers' Association, founded in 1895 to raise the status of asylum nurses and attendants and to promote their general welfare, was held at 11, Chandos Street, W., on May 19th, the President, Sir John Jardine, K.C.I.E., M.P., in the chair. On proposing the adoption of the annual report for 1914, he referred to the patriotic spirit shown by asylum workers. In some asylum staffs 50 per cent. of the male officers were serving in the army and navy, and the association had been engaged in guarding their interests during their absence as regards superannuation claims, etc. Legislation had necessarily been held up, but previous to the war an understanding had been arrived at with the Home Secretary as to the amending bill promoted by the association. If clauses proved to be needed to safeguard the interests of asylum workers on service, he would be pleased to add them to those already agreed upon. Sir James Crichton-Browne, in seconding, spoke of the heavy strain thrown upon the depleted asylum staffs in their care of the patients, whose number, so far from diminishing, seemed likely to increase in consequence of the war. He gave instances of delusions tinctured, if not originated, by incidents of the conflict. He thought that asylum workers left behind to struggle with enhanced duties were entitled to liberal treatment as well as those who had gone to the front. The re-election of Sir John Jardine as President was proposed by the Rev. H. Kirkland-Whittaker, M.D., and seconded by Dr. W. A. Chapple, M.P., who spoke of Sir John's untiring work in Parliament for the association. The election of vice-presidents, Executive Committee, and executive officers was moved by Dr. Hyslop and seconded by Dr. Shuttleworth, the latter referring to the valuable services of Dr. James Nicoll as editor of *Asylum News*, and expressing his personal obligations to Dr. Farquharson Powell for taking over not only the editorship, but also the post of honorary secretary, from which the speaker had for some time desired to retire in favour of a younger man. In the course of the meeting two gold and two silver medals and eight bronze medals, awarded by the association for long and meritorious nursing service in asylums, were distributed by the President, one of the gold medallists having a record of forty-six years' continuous service in the same asylum.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Mediocra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MATERNITY would like to know of a small book as guide to the equipment and management of a small lying-in establishment.

LETTERS, NOTES, ETC.

MR. W. H. MARTINDALE (London, W.) writes: With regard to the abstract in the Epitome of May 8th, p. 39, on the use of oleum sinapis by inhalation, may I suggest that a word of warning would be useful? In the first place, it is evident that the essential or volatile oil of mustard is intended, which consists mainly of allyl-iso-sulphocyanate. This has a violently pungent odour, and I believe that no person could inhale into the nostril even a small quantity vigorously without the effect being exceeding drastic.

SODIUM CHLORIDE AND ECZEMA.

DR. WM. BRAMWELL (Liverpool) writes: In the Epitome of Current Medical Literature for May 8th the interesting account of two cases of "paroxysmal oedema" caused by "inability of the kidneys to excrete chlorides" recalls a case of my own in which an excessive ingestion of common salt caused not only oedema, but also an extensive eczema of exudative type, the patient being a girl of 8 years, who had acquired a voracious appetite for salt, which I was told she ate by the spoonful at every meal, sometimes emptying the salt cellar. The urine, of which the specific gravity was 1002, was comparatively colourless, and showed an almost complete absence of the usual urinary constituents, and that this was the prevailing condition I gathered from the remark that her water was generally "as clear as crystal"—a fact which points to the effect of the chloride so lowering the vitality of the kidney selective cells as to hinder not only the elimination of chlorides, but also of katabolic products circulating in the blood; and the skin, proving the easiest means of exit, had given way before the vitiated serum, thus affording an outlet for toxins which must otherwise have been of considerable danger to life. On withdrawal of excess of salt the urine steadily rose in specific gravity, and after depositing a considerable quantity of urates became normal, the result being a complete and permanent cure. Eczema of this type is of course a parenchymatous oedema, and some years ago several letters appeared in the JOURNAL respecting the excessive ingestion of common salt as a cause of oedema, but in my case eczema was much the more prominent symptom, which, being of the weeping variety, would naturally lessen the oedema.

METRORRHAGIA OF THE MENOPAUSE.

L. T. S. writes: Having been called to attend a woman, aged 50, I found her suffering from metrorrhagia of the menopause to a profuse extent. She went about her work till loss of blood forced her to take to bed from sheer weakness and send for a doctor. I tried the usual remedies, including subcutaneous injections of ernutin, all to no purpose. After about a fortnight the condition became so grave that, though unaware whether it had been tried before, I resolved to try intrauterine injection of Parke, Davis's suprarenal extract, using ʒij of the solution (as supplied) with ʒvj warm water. A Fergusson's speculum showed a steady stream of blood running from the os. An indiarubber No. 9 catheter supported on a wire belonging to a metal catheter was introduced to the fundus of the uterus and the wire withdrawn. The renal extract was then drawn up into a diphtheria antitoxin syringe. The end of the catheter was next fitted over the nozzle of the syringe and the whole syringeful injected. The syringe held about half an ounce. This was followed by immediate improvement, though she complained of continuous cramp all night resembling slight labour pain. Where two large cloths had been soaked every night, one was only soiled in parts the night following the injection. This continued the next day and night, and the following morning, fearing lest it might increase, I repeated the injection, this time using the whole ounce, ʒij P.D.'s solution to ʒvj water. The discharge then ceased, and the patient recovered. A Belfast linen catheter would be more easily introduced to the fundus of the uterus, but the rubber catheter was necessary as it required holding down on to the syringe with the fingers to prevent escape of the fluid, the grip of the uterus resisting the injection strongly, which escaped slowly again at the os. The delay caused by the difficulty of getting the catheter into the os, and also the coldness of the weather on both occasions rendered the solution practically quite cold.

COMPLETE EXPULSION OF THE UTERUS AFTER PARTURITION.

DR. W. G. WILLIAMS (Liverpool) writes:—I would be glad if you will let the following account of a unique case appear in the JOURNAL: Multipara, 38 years old; third pregnancy. The midwife was sent for at midnight on April 3rd, and stayed till all was over. Labour quite normal; pains not excessive; membranes ruptured at 5.30 a.m., April 4th; baby born at 6.30 a.m.; head presentation; placenta came away at 7.15 a.m. Patient would not allow nurse to exert pressure upon the uterus. Directly after expulsion of placenta the patient went very pale—said she was dying. Another pain came on, and nurse saw what she thought was a second baby coming away. Nurse had sent for me when patient went pale. I arrived at 7.30 a.m. Patient was just dying. Two basins were shown me: in one was the complete placenta; in the other was the uterus, well contracted. The rupture had taken place through the vagina at the junction with the cervix. It was the uterus alone, and nothing else. I went back in half an hour—but found that placenta and uterus had been burnt. The previous history was as follows:—First pregnancy: Ill for three months after the confinement; puerperal fever. Second pregnancy: Ill for three months after the confinement, "white leg." Third pregnancy: Quite well all through. Instruments had never been used. The patient was rather thin.

MAJOR J. H. HOBLING, R.A.M.C.(T.) writes: I was very interested in reading Dr. James Oag's letter (April 17th, p. 677), as some months ago I was called to see a very similar case. The patient, a woman of about 28, was attended to by a midwife in her second confinement. I was called about 2.30 a.m. to a very poor and not over-clean house. I found the patient lying in bed cold, livid, with feeble sighing respiration, and an almost imperceptible pulse at the wrist. On lowering the bedclothes I saw a large oval mass of a dusky red colour between the patient's thighs. On examination I found the whole of the uterus completely inverted and prolapsed. I found that I was able to return it, fortunately, without much difficulty. There were no membranes or placenta adherent. I gave an intrauterine injection of lysol and a draught of ʒij of liquid extract of ergot. The patient made an uninterrupted recovery, but later on underwent an operation in a hospital, where, I believe, the uterus was stitched to the abdominal wall. She is now working in a factory, and came to see me some time ago to say how well she was getting on. I regret I am unable to give any further details of the case, as I am on active service and have no notes to refer to.

SWEATING THE ANAESTHETIST.

DR. REGINALD POLLARD desires to make it plain that the point of his note published in the JOURNAL of May 22nd, p. 916, was that the Royal Dental Hospital, though it offers a little over 4½d. a case to the anaesthetist, is receiving 2s. 6d. from the War Office.

WASTE AND OVER-EATING: A CORRECTION.

DR. E. LLOYD OWEN (Criccieth) writes: I regret that in my letter (BRITISH MEDICAL JOURNAL, May 15th, p. 869) I quoted Dr. Cameron as having said that butter (whereas I should have said margarine or vegetable oils) did not contain phosphorized fats. I trust, however, that your readers from the context were able to detect the mistake for themselves. Dr. Cameron kindly drew my attention to the error.

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An Address
ON
IRREGULAR ACTION OF THE HEART.

DELIVERED AT THE ANNUAL MEETING OF THE KENT BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

BY CLAUDE WILSON, M.D.EDIN.,
(TUNBRIDGE WELLS) PRESIDENT OF THE BRANCH.

IN selecting this subject for my address to the Branch I have been influenced by the following considerations:

1. Irregularity of the pulse and of the cardiac rhythm is a phenomenon which, though it confronts us every day and, when noticed, invariably arrests attention, has very generally puzzled the thoughtful observer. It has long been known that it may convey grave warning, or that it may be almost negligible. But, until quite lately, it has not been possible to differentiate the serious from the harmless varieties of arrhythmia. The chief reason for this ignorance lay in the fact that our usual methods of clinical investigation (the pulse, the apex beat, and almost all heart sounds) refer us to the ventricles alone. The importance of the auricles was unsuspected, and no means were at hand whereby to examine their action.

2. Within recent years a flood of light has been thrown upon this question, primarily by James Mackenzie, who, working with the polygraph, was enabled, chiefly by a careful analysis of the undulations of the jugular vein, to differentiate the auricular from the ventricular contractions. This paved the way for Thomas Lewis, who, with the electrocardiograph, first demonstrated the condition known as fibrillation, and thus cleared up and explained certain points which Mackenzie's work had left obscure. Other names might be mentioned, but it is mainly due to the work of these two clinicians, supplementing the researches of certain anatomists and physiologists, that our knowledge of the cardiac mechanism, both in health and disease, has been greatly extended, and that we are now for the first time in a position to understand and to classify the various irregularities of the heart and the pulse.

3. The prognosis of heart cases, and their management, more especially as regards permission or limitation of effort, is a matter of prime moment to our patients. We can hardly do a man a worse turn than to cut him off needlessly from his work or his recreation—yet to allow him freedom to his undoing is a still more serious mistake. Few more difficult decisions confront us in our daily work, and a careful survey of all the aspects of a case should be made before a conclusion is reached. Mistakes are often made, and anything which helps us towards a right decision is of value. The ability to differentiate the variety of a pulse irregularity puts an important weapon in our hands, and one which will not infrequently turn the scale.

4. My last reason for selecting this subject is that, in addition to being new, it is far from easy, and its importance is not universally recognized. Medicine is wide and widening, and we can none of us keep up with it all round. The interest of some has not yet been awakened to these matters, and others have yet to realize that such terms as "sinus arrhythmia" and "extrasystole," "heart-block" and "auricular fibrillation" refer, not to new and rare conditions, but to the ordinary cases of irregular heart action, with or without valve lesion, which we meet with on our daily rounds. Further, the conclusion is easily drawn that the recognition of such conditions is too complicated for the routine of general practice. The papers which appear in the journals are generally illustrated by numerous tracings of the synchronous undulations of various blood vessels, obtained by ingenious appliances, with which we are most of us unfamiliar; and the meaning of these tracings is not only by no means self-evident, but is sometimes revealed only after close scrutiny even to the experts, who are, in Lewis's words,[1] "fully conscious of the burden which awaits the student or practitioner who has yet to bring himself abreast the times in this field of knowledge"; and it is, indeed, the difficulty I have myself experienced in attempting to extract the kernel from the large amount of material now available, which has given me the courage to hope that, in endeavouring to put these matters before you in as simple a manner as possible, I may be employing the time usefully. But the task of reducing so technical a subject to simple terms is not light, and in its attempt I feel sure I may rely upon the sympathy and the indulgence of those who have already mastered its intricacies.

Methods of Investigation.

Though our present knowledge of cardiac irregularities and their significance could not have been arrived at without the use of the polygraph and the electrocardiograph, and though doubtful cases can only be differentiated by recourse to these methods, yet, thanks mainly to the patient labours of Mackenzie, the underlying principles can be grasped without much difficulty, and typical examples of each variety of arrhythmia can be recognized by the simple and familiar means of the finger and the stethoscope. It is this aspect of the subject that I wish to emphasize to-day; but, while I do not propose to depart from my aim of simplicity by referring you to diagrams and tracings, there are one or two points in this connexion to which it may be helpful briefly to allude.

When we "feel" the pulse at the wrist, we should learn a good deal about the action of one—but only one—of the four chambers of the heart—namely, the left ventricle. Further, we learn of it only during that period when the aortic valves are open—that is to say, not quite the whole of systole; and the sphygmograph and stethoscope, though amplifying, refer us in the main to the same portion of the ventricular cycle. Still, while an irregularity of the pulse doubtless indicates an irregularity of the left ventricle, it does not follow that all irregularities originate there. Some do, but some originate in the auricles, and others again are due to delay in transmission of the impulse from the upper to the lower chambers; and the way to find out more about any individual case is to take a tracing from the internal jugular vein, from which we may learn much both about the systole and the diastole of both auricles and ventricles. The "venous pulse" is not invariably present, but it is present in most hearts, healthy or diseased. There is a "ventricular type" present in certain conditions where the undulations correspond to those of the carotid artery, but the normal or "auricular type" is that from which we learn most, and to the characteristics of this tracing I wish very briefly to allude. The contraction of the right auricle gives, so to speak, a back-kick to the blood in the jugulars, and a wave—the "auricular wave"—is produced. Later the contraction of the right ventricle, stretching the closed tricuspid valve, or not uncommonly causing a slight regurgitation through it, gives a second back-kick and produces a "ventricular wave." Again, the proximity of the carotid artery gives a third or "carotid wave," which, in point of time, comes between the other two. In this tracing, then, we get a direct record from three different chambers of the heart—the right auricle and both ventricles. Much skill is needed in interpreting some of these records, for it will be obvious that in varying types of irregularity the characters of these various waves and the spacing between them will vary, and synchronous tracings from the heart itself or from an artery are commonly needed to point out which wave is which.

I have said, perhaps, enough to indicate how much information may be gained in this way by a sufficiently skilled observer, and, with this short allusion to an all-important subject, I turn for one moment to the visible undulations sometimes seen in the neck in cardiac cases. They merit study, and occasionally give us direct help; but, as they may originate in the superficial or the deep veins, or in the carotid artery, or may be due to a mingling of these causes, it is only in exceptional cases that their characteristics are sufficiently defined to be distinctive, though in the ventricular type of venous pulse they are often sufficiently obvious.

Illustrative Cases.

Having now explained my reasons for selecting the subject of cardiac irregularities, and having briefly alluded to the measures by which their differentiation has been rendered possible, it may be useful, before proceeding further, to cite a typical instance of each of the four varieties of arrhythmia already referred to, and in so

doing to select cases which can be at once pigeon-holed by very simple means, and in each of which important information is secured by so doing.

While these four groups do not exhaust all the varieties of arrhythmia which have been differentiated, they probably embrace nearly 90 per cent. of the cases met with in general practice, and if we understand these types we shall possess a key which will render the further study of the subject comparatively easy.

Case I.

We are asked to examine a boy or girl as to general fitness, or perhaps on account of a tendency, not uncommon in perfectly healthy adolescents, to occasional attacks of syncope; and we find a marked irregularity of the pulse. The heart sounds are normal and their rhythm corresponds with that noticed at the wrist. On careful timing, the irregularity is found to bear a definite relation to respiration, the pulse quickening during inspiration and slowing during expiration. The patient is told to run quickly up and down a flight of stairs, after which the pulse, though quickened, is found to have become quite regular, only to become more irregular than before when the heart has had time to slow down. The case is one of *sinus arrhythmia*, and it may be quite ignored, and indeed is only found in healthy hearts. Such a patient should on no account be debarred from any form of exercise he may feel equal to.

Case II.

A patient comes complaining that he feels his heart stop now and then, and that this gives him some concern; and we notice an occasional intermission of the pulse, or, perhaps, many. The stethoscope detects an occasional irregular flutter of the heart, which is found on careful timing to synchronize with the intermissions of the pulse. The case is one of *extra-systole*, and this, too, may be ignored. The thing is of no consequence in an otherwise healthy heart, while in case of a valvular lesion the prognosis is no worse than if the pulse were regular.

Case III.

In a patient recovering from an attack of acute rheumatism, or it may be from influenza or from some other fever, we notice, on feeling the pulse, precisely the same phenomenon as in the last case—an occasional intermission. On auscultation, however, we find a silence of the ventricle corresponding with the dropped beat at the wrist. The intermission is due to *heart-block*, and it means that a widespread implication of the myocardium has resulted from the illness. A guarded prognosis is indicated, and great care and limitation will have to be imposed to secure the best chance that a temporary condition shall not become permanent.

Case IV.

We are sent for to see a patient whom we have known for years as the subject of mitral stenosis, but who has suffered comparatively little therefrom, and whose pulse has always been regular. He may have sent on account of urgent cardiac symptoms, or his wife may have sent simply because "he has not been so well the last few days." We find a very irregular pulse, and that his presystolic murmur is no longer recognizable. This is sufficient to establish a diagnosis, though we may probably also observe an obvious pulsation in the jugular synchronizing with the ventricular systole. The patient has developed *auricular fibrillation*, and it indicates serious disease of the heart muscle. He may live for some years if the pulse be fairly slow, or if it can be slowed down under treatment, and he may be able to resume his occupation. But the irregular rhythm in the majority of cases will be permanent, and if so his days are numbered. Few cases, says Lewis, have been known to survive the onset of this rhythm for ten years; while, on the other side, rapid progress towards a fatal conclusion is not uncommon.

The Normal Heart Beat.

The first step towards understanding the nature and significance of these irregularities is to grasp something of the mechanism of the normal heart beat, a matter on which much light has been shed since the days when most of us studied physiology in the schools. In referring to these matters I must confine myself to such points as have a direct bearing on our subject.

In the early embryo the heart is represented by a cylindrical dilatation of the simple vascular system—the *primitive cardiac tube*. It is divided both anatomically and physiologically into three parts: (1) the "sinus venosus" at the back, where the veins enter; (2) the auricular canal in the middle; and (3) the ventricular portion in front, which becomes continuous with the aorta. As development proceeds the lumen of the tube becomes lost, the auricles and ventricles being developed as diverticula (and not as dilatations), from their respective portions of the tube, while the sinus venosus shrinks.

In the fully developed heart the primitive tube is recognized in three groups of neuro-muscular tissue which correspond to the three portions of the tube.

1. The *sino-auricular node* in the right auricle, and near to which both the veins and the nerves enter the heart. From this point, the only recognizable remnant of the sinus venosus, fibrils doubtless permeate the auricles.

2. The *auriculo-ventricular node*, situated also in the right auricle, and doubtless representing the ventricular end of the primitive auricular canal.

3. The *auriculo-ventricular band* or *bundle of His*, a well defined structure which, starting from the auriculo-ventricular node, traverses the auriculo-ventricular septum, and splits into two branches, one going to each ventricle, where they again split up into fibrils which become incorporated in the muscle wall.

Physiologically, the primitive cardiac tube, and the tissues which represent it in the developed heart, are those which alone in the vascular system are capable, on stimulation, of originating contraction and of conducting it. The sinus venosus in the primitive tube, and its representative the sino-auricular node in the developed heart, are the most sensitive parts of the tube and the heart respectively, and consequently a stimulus acting generally is first taken up here, and it is at this point that the normal heart beat starts.

But the tissues of the primitive tube are capable of originating contraction if stimulated anywhere; though if the stimulation be applied to any other point than the sinus venosus, the character of the resulting contraction will be abnormal. Experiment has shown that each of the three portions of the tube is capable of originating a rhythm of its own. Much the same is true of the heart. The natural stimulus, which is supposed to be of the nature of a secretion evolved by the heart cells during their contraction, reacts first upon the most sensitive part—the sino-auricular node. The systole spreads rapidly through the auricles, which contract simultaneously; the stimulus is then taken up at the auriculo-ventricular node, and travels by the bundle of His to the ventricles, which again contract synchronously. Then comes the "pause" and the process is repeated; the normal regular cardiac rhythm results.

But stimulation at any other point than the sino-auricular node will produce an abnormal rhythm; while if the bundle of His be divided, or its integrity completely broken, say by a gumma, the ventricles take on a rhythm of their own. To this "blocking" of the route by which the contraction impulse travels from the auricles to the ventricles the name "heart-block" has been given, and we are thus led to the study of the irregularities.

THE IRREGULARITIES.

Heart-block.

In the study of the irregularities, I take heart-block first, partly because we have been led up to it by a natural process, and partly because it seems logical to take first the only type in which one half of the heart—the auricles—continues to act with uniform regularity. Further, heart-block, though in its more typical phases somewhat rare, is capable of causing great diversity of pulse irregularity; and to understand its variations and its degrees is to travel far upon the road towards understanding the general problem of the arrhythmias.

Heart-block means that there is some interference, little or much, with the conducting power of the auriculo-ventricular bundle, and this, though sometimes due to toxic and perhaps to functional causes, is frequently the result of organic disease. The lesion may be limited to the bundle, or to a part of it; but more commonly

it is an indication of a widespread implication of the myocardium, and hence the importance of recognizing the condition. The disease may be permanent, the result of syphilitic, of chronic rheumatic, or of senile sclerotic change; or it may be temporary, left as a legacy by any of the acute fevers—rheumatic, scarlet, pneumonia, diphtheria, or influenza. And while in all of these the myocardial changes may subside, leaving a healthy heart unimpaired for the activities of life, in all of them, on the other hand, and especially in rheumatic fever, there is danger that the temporary condition may become permanent, and leave a legacy of enduring cardiac inefficiency. There may or may not be a murmur, depending on dilatation or on endocarditis. Of these matters we know enough, and on them we are apt to lay at least sufficient stress. Of far more importance is the integrity of the cardiac muscle; and after any fever the presence or absence of minor degrees of heart-block will go far to show whether the myocardium has been seriously involved or not, and consequently whether convalescence may be safely hastened, or should, on the other hand, be guided by what may seem an over-cautious hand. The clinical manifestations of heart-block are seldom continuous—they come and go. A quick heart action seems to push impulses through which get "blocked" when the rate is slower, and it is during the phase of slow pulse that often follows fevers that a careful watch should be kept for the slighter indications of this condition. Digitalis, which tends to slow the heart's action, has a marked effect in emphasizing heart-block, and it often renders latent cases manifest. The drug should be prescribed with caution after fevers, and should be discontinued if signs of blocking are discovered.

Heart-block is divided into two groups—"partial" and "complete." The first comprises those cases in which there is merely delay in the transmission of the impulse, and those also in which some of the auricular contractions fail altogether to reach the ventricles.

In *complete heart-block* no impulses get through at all, and in this case, while the auricles continue to beat at the normal pace of 70 or thereabouts, or at an accelerated rate, the ventricles take up a regular rhythm of their own, which is usually at the rate of about 30, though it may be more. Here we have complete dissociation between the action of the upper and lower chambers, and the time relations of the two contractions, which are apt to vary independently, bear no relation whatever to each other. The condition is a clinical curiosity, and possibly none of us will ever see a case.

Partial heart-block is probably much more often present than discovered, even when looked for. Its minor phases can only be determined by very careful examination of instrumental tracings, while its more obvious manifestations are apt to come and go, and consequently may easily be missed unless prolonged and frequent examinations are made. On the other hand, we may happen upon it any day, and we shall all of us see recognizable cases before long if we look for them.

In the normal heart beat the commencement of the ventricular contraction takes place about one-tenth of a second after the commencement of the auricular contraction. This period is called the auriculo-ventricular *interval*, and it is shown on the jugular tracing in the distance between the auricular and carotid waves, where the normal interval is one-fifth of a second.* In the slightest grades of heart-block this interval is more prolonged in some beats than in others—that is to say, in some beats the impulse takes longer than the normal time to travel from the auricles to the ventricles. A more advanced phase—the first recognizable by ordinary clinical methods, and the type which should be looked for—is where occasionally the stimulus from an auricular systole fails altogether to reach the ventricles. Here we get (1) a dropped pulse beat, (2) absent heart sounds, and (3) a missed apex beat. The same complex may sometimes occur in the case of extra-systole, and it will be referred to under that head; but in heart-block a polygraph tracing will show that the auricle did not miss the beat, and probably some "interval" irregularities will also be detected.

A little thought will show that a wide diversity of pulse irregularities can be evolved from these premisses, and the actualities correspond with what can be reasoned out. Where all the auricular impulses get through to the ventricle, though at varying rates, the arterial pulse is not, as a rule, recognizably affected, but minor irregularities may be shown by the sphygmograph, and may sometimes be detected by the finger. When, however, some or many auricular stimuli fail to reach the ventricle, the effect upon the pulse is very marked. A single missed beat produces a single intermission of the pulse, and several consecutive misses produce a long pause; dropped beats, single or in sequence, and occurring at frequent or irregular intervals, will obviously produce great variety of pulse irregularity.

But in heart-block there is apt to be a method in the madness of the pulse, and regularly recurring dropped beats at varying intervals produce conditions which are sufficiently common to have received definite names. Sometimes every alternate auricular contraction fails to get through, and "2 : 1 (two to one) heart-block" results. Here we get a regular radial pulse, perhaps about 40, while the auricles are beating at exactly double the pace. Similarly we may have "3 : 1 heart-block," where one beat in three gets through. Again, if every third beat is missed, we get one cause of "pulsus bigeminus," where, after each two beats, an intermission occurs, and similarly a "pulsus trigeminus" may be caused. Similar phenomena may be due to other causes, and often enough no diagnosis can be made without a jugular tracing; but nearly all heart-block phases are apt to come and go, and these regular irregularities may alternate with periods where odd beats alone are missed; and, when these are detected, accompanied by heart silence, the nature of the other manifestations can be inferred.

Heart-block may occur at all ages, but as a large proportion of cases are due to sclerotic change the condition becomes commoner as years advance. The minor phases, though generally indicating some organic change, are seldom of grave import, but the lesion giving rise to them may be progressive, and definite dropped beats have a decided prognostic significance. The higher grades are associated with infrequency of the pulse, and in advancing years a slow and regular pulse, alternating with a quicker rate, is highly suggestive of this condition; undulations in the neck may suggest that the auricles are acting much more rapidly than the ventricles, and during the quicker pulse phases a watch should be kept for the characteristic occasional dropped beat of the ventricle and the pulse. Complete heart block, once permanently established, is compatible with considerable cardiac efficiency, but when occurring intermittently it resembles high grades of the "incomplete" variety in producing symptoms which culminate in what is called the "Adams-Stokes syndrome." Attacks of giddiness, fainting, and transient loss of consciousness, associated with marked slowing of the pulse, are caused by deficient cerebral blood supply, and in the epileptic form (Adams-Stokes fits) venous congestion is added to deficiency of arterial supply.

Definite heart-block is always serious, and the patient should be kept well within his limits, as his life is insecure. Rapid heart failure may occur, and probably many cases of sudden death, where no heart disease had been ever suspected, may be due to this cause; for until some simple method is contrived by which the auricular systole can be easily observed, a large proportion of these cases will doubtless remain undetected. Still, by following the lines already indicated, the serious cases will generally be recognized, provided the possibility is kept in mind.

Sinus Arrhythmia.

Turning from a condition comparatively rare, decidedly serious, and in many cases difficult of recognition, we approach one of which precisely the opposite may be said. Sinus irregularity is immensely common, occurring frequently in healthy children and adolescents whose hearts never come under suspicion. It is absolutely innocent, and its nature need never be mistaken. Yet the pulse irregularity may be very pronounced; and as a matter of fact doubts often arise in the mind of the medical adviser, to the profound disadvantage of the patient, who is frequently debarred from beneficial occupations, and rendered both apprehensive and introspective.

Sinus irregularity, though not universal, may be said to be physiological in the young, and in a certain proportion of individuals it persists throughout life. It is, however, comparatively rare after 20.

* The extra tenth of a second is accounted for by what is called the "presphygmic interval."

It will be recalled that the normal cardiac contraction starts at the sino-auricular node, and that this node corresponds with the sinus venosus of the embryo. Sinus irregularities start at this point; hence the name. Lewis has suggestively called the node the "pace-maker" of the heart. It is here that the nerves enter, and here that the heart rate is determined. Many factors are concerned in determining the rate at which the heart beats, and among them nervous impulses are notorious. Emotional and reflex influences, the effects of exertion and repose, make their impression at the sino-auricular node, and the heart's action is quickened or slowed accordingly. Emotional influences are self-evident to all, and various forms of irregularity may be affected thereby, but in adults, though the pulse rate may be thus profoundly altered, no true "irregularity" results from this cause alone.

In the young, however, vagus influence is often exerted on individual beats and groups of beats, and pulse irregularity having special characteristics results. These irregularities start at the normal starting-point, and spread through the auricles and ventricles, and on to the radials, in a perfectly healthy manner. The irregularity is essentially one of time. If carefully observed, it will be found that the strength and volume of the pulse varies but little, and, further, that the time differences are due exclusively to differences in the duration of the heart's "pause." Yet, to the finger, the pulse may be constantly varying, and the sphygmograph may show great irregularity. Frequently, however, the arrhythmia bears an obvious relation to respiration, the pulse quickening during inspiration, and slowing during expiration; and, even when this factor is not obvious, it can often be rendered so by telling the patient to take long, slow breaths. In occasional cases the respiratory influence is absent or barely recognizable, but a polygraph tracing will always clear up any doubt by demonstrating that the auricle participates, and varies precisely with the radial pulse—a condition peculiar to this type of irregularity.

Sinus irregularities are occasional and not constant; they are abolished by atropine, which paralyses the vagus, and by exercise, or by any other influence, such as fever, which quickens cardiac action. But during the slow pulse which so often follows fevers this condition is often very evident, and here it is obviously important to recognize its nature and to distinguish it from other forms of irregularity, and especially from heart-block, for, according to Mackenzie, its presence, even though a murmur should exist, is strong presumptive evidence that the heart muscle is essentially healthy—stronger evidence, indeed, than if the pulse were uniformly regular, for sinus irregularity would seem to occur only in healthy hearts.

It follows that no boy or girl exhibiting this form of arrhythmia should be debarred from any occupation or recreation suited to the general physique, nor should any treatment be prescribed except on other grounds.

Extra-systoles.

If among the forms of arrhythmia sinus irregularities are really the commonest type, it is not because we encounter them most frequently, but because they exist in numberless cases where they are never suspected, and consequently never discovered. Among the pulse irregularities noticed by the physician extra-systoles are certainly the commonest, accounting, perhaps, for 50 per cent. of those recognized in general practice; while in the case of the patients themselves becoming conscious of intermittent "bumpings" or of the "heart stopping," probably 90 per cent. are of this type; though far more frequently still extra-systoles cause no sensations at all. Extra-systoles can generally, though not always, be recognized with comparative ease, and their prognostic significance is important and reassuring, for in an otherwise healthy heart they may be safely ignored, while in cases presenting evidence of disease the prognosis, based on other data, is not adversely modified by their presence. But the condition may give rise to sensations which often cause anxiety to the patient, and it is capable of causing such variety of pulse irregularity that an astonishing series of dissimilar tracings can sometimes be obtained from a single case. Consequently a serious idea not infrequently arises in the mind of the physician, and the patient's activities are often needlessly limited and his spirits needlessly and injuriously depressed.

This term, "extra-systole," has now been long enough in use to have become fairly fixed, and it will probably endure; though, as Lewis points out, "premature systole" is more accurate, for the cardiac contractions which produce the irregularity are not "extra," and they are premature. The condition is defined by Mackenzie as cardiac contraction originating at some point other than the normal. For reasons not yet understood, some portion of the heart muscle (doubtless always in the remains of the embryonic tissue) becomes temporarily more excitable than the normal point of maximum excitability (the sino-auricular node), and contraction arises in the auricles, or in the ventricles, or in the "bundle" connecting them. In all these cases a premature and weak contraction results, producing either a feeble and premature pulse beat, or a wave which fails altogether to reach the wrist.

If, then, we come across a pulse which occasionally "intermits," we palpate and auscultate the heart while still "feeling" the pulse, and, in this case, instead of an entire absence of impulse and sounds as in heart-block, we feel an irregular and premature flutter, and we hear a couple of quick, short, premature sounds. A longer pause than usual ensues, and then the normal beating recommences. This, then, is a single "extra," or "premature" systole. It is easily recognized, and is what we must look out for in a case where this form of irregularity is suspected. Whether the auricle or the ventricle be the starting point (a matter difficult to decide and generally immaterial) the effect upon the heart sounds is the same; for, with the exception of diastolic and presystolic murmurs, all heart sounds refer us exclusively to the ventricles. The normal heart sounds are commonly described as resembling the vocal sounds "loob-dup," and not less truly does the extra-systole bear resemblance to the word "bubble"; and, apart from other evidence, this "bubble" sound ensuing quickly after a normal second sound and followed by a noticeable pause, is practically diagnostic of this condition; the single extra-systole cannot fail to be detected. It is true that occasionally the systole may be so feeble as to give rise to no audible sounds, and here the confusion with heart-block is obvious. But heart-block is rare, whereas extra-systoles are common, and it will not be all the extra-systoles that fail to produce the characteristic sound. The co-existence of the two conditions is possible, but is rare; and here, as with other instances of extra-systoles co-existing with other forms of arrhythmia, we must look for other signs to help us out, and we shall seldom look in vain.

So much, then, for single extra-systoles; but following the argument already discussed under heart-block, it is evident that a series of extra-systoles occurring in various sequences, or quite irregularly, may give rise to a pulsus bigeminus, or trigeminus, or that a bewildering irregularity of pulse may result. In all these cases the "bubble" sounds will help us, and as the condition is occasional and not constant, we shall be sure with patient observation to detect instances of the single extra-systole. A polygraph tracing, too, may be a help, but in the doubtful cases the tracing is apt to be complex, and to require very careful analysis.

Extra-systoles, as already stated, are not constant; they are occasional, or they come in bouts, with periods of normal rhythm between them. Quickened cardiac action tends to abolish them. but in the slow pulse which follows a quick one they, like the other forms of arrhythmia already studied, are exceptionally frequent. They occur at all ages, but in advanced years they may be considered as almost physiological in undamaged hearts. While common in healthy hearts, no form of heart disease is exempt from them, and they are frequently present in all sorts of systemic disorder. Sometimes the erect posture seems to favour them, sometimes the recumbent; and excitement, dietetic indiscretions, and tobacco may induce them.

Speaking generally, patients showing this form of arrhythmia may be reassured, and encouraged to exercise their activities to the extent of comfort, even where heart disease exists, and they need not live in fear of sudden death; while where there is no direct evidence of cardiac mischief, the irregularity may be absolutely ignored. Digitalis and strychnine are apt to emphasize and exaggerate the tendency to extra-systole, while in those cases in which the subjective sensations are from time to time

disquieting, much relief is generally afforded by a few days' course of bromides prescribed in liberal doses.

Auricular Fibrillation.

The word "fibrillation" is an abbreviation for "fibrillary contraction." The auricles in this condition are in diastole, and they never contract as a whole or even partially. Their musculature is, however, not at rest, but, on the contrary, in a state of constant ineffective fibrillary movement. This has been observed experimentally, and is demonstrated by electrocardiograms. The auricular walls may be thin or hypertrophied, but in either case remain in diastolic dilatation. The auricles, as a part of the circulatory mechanism, are put out of action, and they become practically mere extensions of the great veins. One result of this is that the venous pulse tracing loses all signs of auricular activity, and exhibits what is called the "ventricular type," where only a single jugular wave exists, a wave corresponding with the ventricular systole. This characteristic ventricular type of venous pulse had been recognized by Mackenzie before Lewis demonstrated fibrillation, and Mackenzie, unable to account otherwise for the fact that the jugular and carotid pulses corresponded, and that there was no evidence of separate auricular activity, concluded that a simultaneous contraction must occur in auricles and ventricles, and that any such contraction must commence in the tissues between the two, most likely at the auriculo-ventricular node, and he named the condition "*nodal rhythm*," a term now discarded, but with the meaning and origin of which it is well to be familiar.

What effect has the fibrillating auricle upon the ventricle? In the first place the ventricle may fibrillate too, but in this case speedy death ensues. This state has been observed in chloroform poisoning, and it may take place in cases of sudden cardiac failure, where its existence can only be inferred. Ordinarily, however, the ventricles continue to contract, but in a manner which is characteristic. Tiny impulses from the trembling auricles are constantly reaching the auriculo-ventricular node, where we may assume they collect until a sufficient "current" (to use an electrical simile) has accumulated to produce a ventricular contraction. This assumption will account for the extreme irregularity of pulse which characterizes auricular fibrillation; "absolute irregularity" is the accepted descriptive epithet, and it implies an irregularity both of time and volume so marked that a sphygmogram seldom shows two consecutive beats of like character and duration.

Auricular fibrillation is never found in healthy hearts, but it may occur in hearts whose musculature has been damaged by any and every kind of inflammation and degeneration. As a single cause rheumatic damage is far the commonest factor, and among hearts damaged by rheumatic fever those showing evidence of mitral stenosis are especially prone. It is evident that the narrowed orifice must throw an extra strain upon the auricle, which eventually gives up the struggle and ceases to contract. An obvious result of this is that the characteristic presystolic murmur, which depends upon the systole of the auricle, abruptly ceases with the onset of fibrillation, though a softer murmur placed earlier in the diastolic period may persist or may develop.

Auricular fibrillation may occur in paroxysms lasting from a few minutes to a few weeks; but, as a rule, when once established, it continues as a permanent condition to the end of life. It imposes a considerable extra burden upon the ventricle, whose reserve power in response to extra calls is notably diminished, while the tendency to heart failure is increased, and becomes, indeed, a constant menace. The tenure of life becomes extremely insecure, and, though the end may be delayed for years, it may come suddenly, or be heralded by the usual signs of cardiac failure at any time. Fortunately, if the condition be recognized, much may be done both to prolong life and to make the most of it. Effort must be limited, and if there be signs of failure, complete rest must be enjoined. It is in these cases too, and especially in the class which own rheumatic origin, that the triumphs of digitalis are most marked. By pushing the drug, patients apparently moribund may be recalled to a life of useful if limited activity; and, while such disquieting signs as dropsy and orthopnoea subside, a quick and violently irregular pulse is reduced to one of fairly normal rate, sometimes so nearly regular in rhythm that only by careful measurement of the intervals shown on sphygmographic tracings can the presence of continuous irregularity be recognized. It is seldom necessary to reduce the pulse rate to below about 70, after which digitalis may be discontinued for a time, to be resumed, when the pulse again quickens, in smaller doses, varying in different cases, but just sufficient to keep the pulse rate down. Patients soon learn to regulate the dose themselves, and may keep at their occupation for months and years without having to call in medical assistance. But in some cases digitalis fails, and in all a time comes sooner or later when the cardiac muscle ceases to respond, and when this period comes the end is not far off.

Auricular fibrillation can often be diagnosed simply from feeling the pulse. An "absolute irregularity" which persists is in itself sufficient, but where the arrhythmia is not characteristic there is one difference between this type and all of those hitherto discussed which will seldom fail us. In heart-block, sinus arrhythmia, and extrasystole, exertion or any influence which quickens the pulse, tends to reduce or perhaps abolish the irregularity, while in fibrillation precisely the opposite effect is produced. In a bed-ridden patient such slight exertion as a change of posture may be sufficient to elicit this point, while in others simple tests to this end are easily devised. In fibrillation the quicker the pulse rate, the more obvious is the irregularity.

Auricular fibrillation is very common in damaged hearts. A majority of the cases of heart failure exhibiting dropsy are associated with this condition. Cases described as "delirium cordis," and many cases described as "heart strain," are simply good examples of fibrillation. I conclude with a quotation from Mackenzie's last edition[2]: "The recognition of this condition and the symptoms associated with its presence, is the most important discovery yet made in the domain of the functional pathology of the heart; and few physicians are aware of its significance."

Having now discussed, in, I trust, sufficient detail to render clear their nature and significance, the four leading types of pulse arrhythmia, it must suffice to allude in the briefest possible manner to the three remaining forms which have been isolated.

Paroxysmal tachycardia is a condition we all see now and then. It may occur with irregular rhythm in the course of fibrillation, or it may be due to auricular flutter, but "simple paroxysmal tachycardia" exists as an entity *per se*. In this condition the rhythm is regular and the pulse rate often reaches 150 or 200; it lasts from a few seconds to a few hours, and occasionally a few days, and its onset and subsidence are always absolutely abrupt. It may occur at any age, but is rare in childhood, and it may or may not be associated with cardiac disease. It is sometimes fatal, but more often passes and leaves the patient but little worse till the next attack occurs, which may come soon or may be delayed for years. In its origin it is supposed to resemble extra-systole in that the impulse appears to start at some abnormal point. It often gives rise to very distressing symptoms, which are sometimes relieved by alterations of posture and often by strong sedatives.

Auricular flutter is generally associated with the sclerotic changes of advancing years. It is a condition in which the auricle beats at rates of 250 or 300, or even more. The ventricle may follow suit, and an uncountable tachycardia results. But varying degrees of heart-block commonly co-exist, producing almost any variety of rhythm and irregularity. Often, however, the 2 : 1 heart-block rhythm is established, so that an auricular rate of 300 is represented by a pulse of 150, and sometimes the ventricular rate may be extremely slow, while the venous pulse shows very rapid visible oscillations. The condition has been but lately discovered, but is believed by Mackenzie to be less rare than general clinical experience would suppose. It may occur as transient attacks of short duration, but it may persist with fair cardiac efficiency for long periods, or, again, may be the precursor of fibrillation. A persistent rapidity of pulse, regular or irregular, in an elderly man, or a slowish pulse with rapid visible jugular pulsation, suggests its presence. A jugular tracing may elucidate a

doubtful case, but often only by means of the electrocardiograph can its presence be definitely proved.

Pulsus alternans differs in many particulars from all of the forms of arrhythmia already discussed. It is essentially an irregularity of strength and volume and not of time, and even as such it is a regular irregularity, in which each second heart beat is a weak one. More often than not the differences in the volume of pulse wave are so slight as to escape detection by the finger, even when suspected, though a sphygmogram will render them plain enough. The condition depends on a physiological principle not as yet alluded to in this paper—the law, that is, that each cardiac systole uses up the whole available energy of which the heart is capable at the moment of contraction. In pulsus alternans the available energy is so reduced after each full beat that the succeeding systole is a weak one. The condition often occurs only as a terminal phenomenon and as a prelude to early dissolution, and as such it has, when recognized, a grave prognostic significance.

Rare and undifferentiated types of arrhythmia are alluded to in a special chapter by Mackenzie. Some of them afford problems for future investigation, and their complete elucidation may throw much light on the cardiac mechanism; for, far as we have travelled on this road of knowledge, all investigators agree that there is much still remaining obscure. The differentiated rhythms, though largely explained as to their mechanism, leave many problems as yet incompletely solved.

Mixed rhythms and changes from one type to another are known to occur, and have already been incidentally alluded to more than once. Deficiency of conducting power—in other words, partial heart-block—enters as an integral factor into most cases of flutter, and into the slower pulses of fibrillation, while the action of digitalis is largely operative in depressing undue conductivity. Extra-systoles may occur in children and be mixed up with respiratory rhythm. Again, extra-systoles of ventricular origin may occur in the course of fibrillation, or may even co-exist with heart-block, while not infrequently a damaged heart which has shown frequent extra-systoles for years may suddenly take on the rhythm of absolute irregularity, which proves that the auricles have passed into a state of fibrillation. These facts may somewhat disconcert the student at first sight, but a little thought will show that the general conclusions based upon the diagnosis of each type of arrhythmia are but little affected thereby. In two types only—sinus arrhythmia and extra-systole—is the prognosis quite reassuring, and should these co-exist the conclusion is not vitiated. As to extra-systole alone, the prognosis is only good where no evidence of heart disease exists; and in cases that eventually turn to fibrillation evidence of heart disease will certainly be present, very likely in the shape of presystolic murmur. Here, of course, the possibility of eventual fibrillation amounts almost to likelihood, but none the less does the rule hold good that the irregularity due to extra-systole may be ignored, and the patient allowed to exert himself as much as he can do without undue discomfort.

CONCLUSION.

Many aspects of cardiac pathology have received much elucidation within recent years, yet we and our patients have as much to look for in the work which is now being done and in that which lies ahead as in what has already been accomplished. But among the latter, Mackenzie's work on arrhythmia and its developments are of epoch-making importance, and form solid ground on which we can base more accurate opinions and more definite statements than were formerly possible. Two baleful influences in connexion with heart cases have long been at work—vague speaking, and the needless limitation of our patients' activities—and it was the recognition of these facts years ago that led me to take a somewhat special interest in the heart. I came across numerous cases where patients had been told they had "weak hearts," and in which, though there occasionally was a murmur, and sometimes a loud one, I could discern no more evidence of "weak heart" than one might discover in a biceps whose owner had been told that he must only use it with great caution. "The heart is a muscle," said Oertel[3]; "by exercise a muscle becomes hypertrophied, and its functional power increased. Also for the heart muscle exercise is the only means we have of strengthening it." What Oertel accomplished even for badly damaged hearts was marvellous, and only too often do we ensure that a weak heart shall remain weak by withholding from it its physiological opportunities for gaining strength. Yet we fear to be bold because we fear catastrophe. But many means are at our disposal for estimating a heart's reserve capacity; and among them a knowledge of the irregularities and their significance now occupies a prominent position. Ability to differentiate the rhythms will restore far more patients to activity than it will condemn, while in the case of those who may have to be restricted it brings to us the satisfactory assurance that our patients' lives will not be limited on insufficient grounds.

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SOME FACTORS CONCERNING AMPUTATIONS WITH REFERENCE TO THE PRESENT WAR.

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BEFORE the outbreak of the present war in August last operations for amputation of limbs had received little attention for many years. This was due to the fact that modern surgical methods of asepsis had rendered surgeons more and more conservative with regard to diseases and injuries of the limbs, so that the necessity for amputations but seldom arose; in fact, except in hospitals which, owing to their situation, dealt largely with accidents from large machinery works or railways, amputations were very seldom performed. I think it is no exaggeration to say that many of the large hospitals did not have more than half a dozen major amputations in the course of a year. Amputation had, indeed, become a very rare operation. War unfortunately results in injuries of such a nature that amputation is frequently necessary, and an enormous increase in the number of amputations performed has resulted from the present war. A good deal of the facility with which the patient will subsequently be able to make use of an artificial limb depends upon the method in which the amputation is performed, and I venture to bring forward the following remarks and suggestions in the hope that they may correct some fallacies which still appear to be prevalent in medical textbooks, and may so assist in rendering more tolerable the condition of those of our fighting forces who may have the misfortune to lose a limb.

It is often supposed that in the case of the amputation of the lower limbs the weight in standing and walking is borne upon the end of the stump. This is, of course, not the case. Where the amputation has necessitated sawing through the bone the end of the stump will never be able to withstand the pressure which must be borne by the stump in standing and walking, no matter how cunningly the stump may be formed. In practice the weight of the body is supported upon the bony structures, around the joint immediately above the amputation. Thus, in the case of amputation of the leg, the weight is borne upon the head of the tibia and fibula and the sides of the stump, while in the case of amputations above the knee the patient practically sits upon the top of the artificial limb. The only stumps in which it is possible for the weight to be taken on the end of the stump are Syme's amputation at the ankle-joint and amputation through the knee-joint. With these exceptions the weight cannot be taken on the extremity of the stump. As a rule, the end of the stump is not allowed to touch the bottom of the bucket of the artificial limb as it is impossible for it to bear any useful weight, and if it does so it soon gets sore. No matter how much muscle flap has been left over the bone ends the resulting stump will ultimately be the same, as the muscle left over the end of the bone will, in time, completely waste, and there will be little more than

skin between the bone and the surface. The tendency is for the end of the bone in course of time to become pointed or at least conical, quite irrespective of what its condition was immediately after the amputation. Efforts to leave a good thick flap of tissue over the bone ends are wasted except in so far as they prevent the formation of an adherent cicatrix. The important point is to leave as long a stump as possible so that the patient may have plenty of leverage over the artificial limb for walking. This is of far more importance than the type of flap, position of the scar, or the way in which the end of the bone is cut. For the same reason there is no particular object to be gained by keeping the scar away from the end of the stump. As a matter of fact the worst place for the scar is where it will be subjected to pressure from friction in walking, and this is on the back of the stump in swinging the body forward (see Figs. 1 and 2). The ordinary amputation at the "seat of election" gives a very bad stump for an artificial limb, as there is not enough length in the leg part of the stump to control an artificial limb, and also flexion of this short stump below the knee is apt to occur, and is difficult to correct. This stump is only of use if an ordinary peg leg is to be used of the type in which the patient kneels into a groove in the peg leg. This was a very popular type of artificial leg in the old days before the present instruments were invented; in fact, it was the only satisfactory artificial leg of those days, and hence the popularity of this particular type of stump.



Fig. 1. Fig. 2.

Fig. 1.—Full length leg. Dotted area shows parts on which weight is borne, and arrow where pressure comes in walking.
Fig. 2.—Below knee leg.

Most men, however, nowadays, will prefer some better type of apparatus, which will allow of a movable knee, and which will not be unsightly, and for this type of apparatus amputation at the "seat of election" gives an exceedingly bad stump.

Another point often overlooked in choosing the situation at which to amputate a limb is the provision of room for an artificial knee-joint in the limb. It is obvious that an amputation through the knee-joint does not allow for the fitting of a joint in the artificial limb. The only way in which a joint can be fitted to such a stump is by making stout steel hinges on the sides of the limb and outside the line of the stump, and when proper allowance has been made for strength in the apparatus and for the prevention of any possibility of friction on the end of the stump in walking a very ugly and ungainly looking knee will be the result, the knee on the artificial leg being nearly half as wide again as that of the good leg. A patient will therefore often prefer an amputation through the lower end of the femur which will give room for a joint in the artificial limb.

The oldest form of amputation was circular amputation, and it has for a long time seemed to me that the reasons for this method of amputation being discarded were not sound. As already stated, there is no particular objection to the scar being on the end of the stump since pressure is not borne on this situation under any circumstances. As a rule it involves the least sacrifice of sound bone, it allows of the best possible drainage where the stump is likely to be septic, and it leaves the smallest possible scar. These are very great advantages, and it is interesting to note that there is a considerable tendency amongst those who are doing most of the amputations at the front to revert to this type of amputation. Their reason for doing so is that most of the stumps are of necessity septic, and this type of amputation leaves better drainage and consequently better chances of recovery, while it is also most rapidly done. I believe, however, that, quite apart from these advantages, it is the best all-round amputation in the lower limbs as well as in the upper. Another point in favour of circular amputation is the fact that the nerves are less liable to be caught in a cicatrix. Where long flaps are made, even though the nerves are cut short, they still may be involved in the cicatrix, especially where the stump is septic. With circular amputation this is less likely to be the case. If nerves are involved in the cicatrix at the end of the stump considerable neuralgic pain, often lasting for years, always results, and it is very desirable that this should be avoided.

In the case of amputations of the upper limbs, circular amputation, except in special cases, will almost always give the best results. Here the best possible place for the scar is on the end of the stump, the sides being most exposed to pressure and friction in the movement of the limb, while length of the stump is again of primary importance.

Another point to which I should like to draw attention is the desirability of the patient being fitted with an artificial limb as soon as possible after the wound has healed and his being encouraged to use it at once. There is nothing to be gained by waiting, and, on the other hand, it is most important that the muscles which will have to move the stump should not be allowed to waste. If much time is allowed to elapse between the amputation and the fitting of an artificial limb, the wasting of these muscles may be a very serious factor in preventing the subsequent successful use of any artificial limb. It is quite surprising how rapidly a patient can learn to use an artificial limb if his muscles have not been allowed to waste. I had a patient under me recently who had had his foot amputated some 2 in. above the ankle. An artificial apparatus was fitted almost before the wound was healed, and in less than three weeks after the complete healing of the wound this patient was walking without the use of sticks, and with very little limp, although, of course, he was not able to walk for very long without the skin becoming rubbed, as it takes some time for the skin over the lower part of the head of the tibia to get used to the unaccustomed pressure.

It is often stated that much wasting of the stump will occur after the amputation, and that it is better to wait until this wasting has taken place before fitting an artificial limb, as otherwise a new limb, or at least a new socket, will very soon be required. This is true, but what is often overlooked is the fact that most of the serious wasting occurs only after the artificial limb has begun to be used, and is due to the pressure. Therefore there is nothing to be gained by postponing the time when the limb is to be used.

With regard to the artificial limbs themselves, it is often supposed by patients that there is some special patent limb which possesses peculiar advantages and is very much superior to any other. There is, however, nothing in the idea of these special patent limbs. It may be compared to the idea common among golfers that some special club which they see a professional using will enable them to achieve equally wonderful shots. It is not the club that matters so much, but the man behind it. And this is equally true of artificial limbs. The important factors in regard to artificial limbs are that they should be thoroughly well made of first-rate materials, that they should be as light as possible and yet, at the same time, be of sufficient strength to stand hard usage without breaking. Lightness is of particular importance where the stump is short, or where the amputation is above the knee; but the ease with which a patient will walk always depends very much upon the weight of the artificial limb. Light weight and a good fit are the only really important points.

Some very light limbs are now being made of an aluminium alloy. These are certainly an improvement upon wooden limbs, as for the same strength they are less than half the weight. They should, however, not be fitted in the first instance for the following reasons: Shrinkage of the stump is usually very rapid when the patient first begins to use an artificial limb, with the result that constant alterations have to be made in the socket, and at the end of a few months it is necessary to refit the socket or make a new artificial limb. With a wooden limb this is easily managed, parts of the socket being removed where rubbing occurs, or padding being put in as may be required; and, as a rule, considerable alterations have to be made during the first few months in which an artificial limb is worn. This is not possible with metal limbs, and

the best plan is for the patient to start with a good light wooden leg which he can change for a metal one after he has become thoroughly used to the artificial limb, and the stump has had time to assume a more or less permanent form. This is more particularly to be advised as metal limbs are very expensive.

One often sees a patient wearing an artificial leg which the instrument maker has taken great trouble to make as light as possible, with a heavy boot on the end of it. The weight of the boot does away with the advantages in the lightness of the limb. The patient should wear the lightest possible shoes—at any rate, at first, for by so doing he will learn to walk much more easily and quickly.

It is advisable to avoid limbs in which there are a number of joints; they should be as few in number as possible. Lateral motion, for instance, in the ankle-joint is not only of no value, but is a distinct disadvantage. The important thing in joints is that they should be strong and should move without noise.

It is an advantage for the patient to have a spare artificial limb, but it is better that this should not be made until the first one has been worn for about six months, as considerable alterations will probably be necessary, and at the end of six months these can be incorporated in the new limb.

It must not be thought that I am advising that patients' limbs should be trimmed to suit the convenience of the artificial limb maker. Far from it. But it seemed to me that some of the points mentioned here are not sufficiently well known, and that they might be of assistance to those of our surgeons who have a large number of amputations to perform at the present time.

A CASE OF ACUTE ANEURYSM OF THE SUPERIOR MESENTERIC ARTERY, WITH RUPTURE.

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PRIVATE W., aged 26, was admitted to the 2nd Scottish General Hospital on February 28th, 1915, at 1 p.m. He was complaining of severe abdominal pain, and was considerably collapsed. His temperature was subnormal, and his pulse thready and irregular. His bowels had not acted for three days. He had not vomited. His tongue was moist and clean. The abdomen was somewhat distended with gas; there was no abnormal dullness to be made out in either flank or elsewhere. Subjective pain was felt all over the abdomen, but tenderness on pressure was not noticed over any area in particular. A small enema was given, and this was followed by a slight normal evacuation of the bowels. After this he felt easier, and slept for a short time. The heart sounds were feeble, but not otherwise markedly abnormal.

At 8 p.m.—that is, seven hours after admission—he suddenly collapsed, and died at 8.30. It was considered likely that internal haemorrhage had taken place, but he was too collapsed during the few hours he was under observation for laparotomy to be performed.

NECROPSY.

A *post-mortem* examination was performed on March 1st. The body was that of a well nourished and well developed young man. Rigidity was marked in both upper and lower limbs. There was extreme pallor of the skin. Slight adhesions were present in the left pleura. The pericardial sac contained a considerable amount of fluid. The peritoneum contained a large quantity of fluid and clotted blood. The omentum and mesentery were also infiltrated with blood clot. The small intestine was to a great extent collapsed. The spleen was enlarged, firm, and showed a recent pale infarct. The kidneys and liver were pale but healthy. In the bend of the duodenum and around the pancreas there was a large amount of blood clot. All the abdominal organs were searched for a source of the haemorrhage. Eventually a thin-walled aneurysm about the size of a walnut in connexion with the commencement of the superior mesenteric artery was found. This had ruptured into the substance of the mesentery and into the peritoneal cavity. The heart was enlarged and conical in shape. The cavities were uniformly dilated, and the muscle pale. The mitral valve was healthy. The segments of the aortic valve were thickened and covered with large friable vegetations. The lungs showed congestion and oedema. Cultures were made from the vegetations on the aortic valve and from the spleen. Those from the spleen showed no growth. The cultures from the valve showed a pure growth of a staphylococcus which failed to develop pigment.

Microscopic Appearances.

The vegetations showed a granular amorphous thrombus in process of organization; large masses of cocci were visible at the margin. The spleen infarct showed the usual appearances of an early pale infarct with large numbers of polymorphonuclear leucocytes infiltrating it, thus indicating its septic character. The kidneys, liver, and heart showed cloudy swelling, but no evidence of metastatic inflammatory foci in them. The portion of lung examined showed oedema and some catarrhal pneumonia.

Aneurysm and Mesentery.—The tissue of the mesentery is infiltrated with blood clot, which in parts shows distinct evidence of organization. In other parts there is infiltration with polymorphonuclear leucocytes. The larger vessels show well-marked infiltration of their walls with inflammatory cells, and in the aneurysm wall this is accompanied by marked thinning. No organisms were found in the aneurysm wall or in the tissues around.

REMARKS.

The chief interest about the case lies in the rarity of the condition. We have only seen one other example of an acute aneurysm in this situation. Apparently both the endocarditis and the haemorrhage had been in existence some days, as evidenced by the considerable amount of organization which had occurred. At the *post-mortem* examination we were struck by the absence of smell, pus, or other evidence of sepsis. Whether this is explained by the nature of the causal organism we are unable to say. The presence of the *Staphylococcus albus* may be quite accidental, but the large numbers of cocci in masses found microscopically in the vegetations indicates that the germ belonged to that group.

SOME GENERAL NOTES ON SUFFOCATION BY POISONOUS GASES, WITH DETAILED NOTES ON ONE FATAL CASE.

BY

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AND

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DURING the last two weeks we have had under our care in this hospital several cases of suffocation by poisonous gases.

We have attempted to divide them into clinical groups from the severity of the symptoms and physical signs.

GROUP I.—THE MILD CASES.

Class A.—In these the cough has been frequent, painful, and harsh; the physical signs in the chest were rough breathing with sonorous rhonchi, indicating an essentially "dry" condition of the chest, suggesting a reddened and roughened bronchial apparatus.

Class B.—The cough was frequent and painful in these cases, but the harshness was not so apparent; the sounds in the chest were moist, and there was some secretion of a greenish, viscid character which was expectorated by the patient.

In both these classes of Group I the patients complained of headache, pain in the eyes, and abdominal pain, but they were not cyanotic, and the symptoms tended to disappear rapidly with the exception of some increased

frequency of respiration which persisted for days, and had not entirely subsided upon their discharge to convalescent camp.

GROUP II.—THE MODERATELY SEVERE CASES.

These patients were actually ill. They were cyanotic, with frequent panting and painful respiration, which caused them the greatest discomfort. Headache was very marked, and pyrexia up to about 100° F. was common for three or four days. The physical signs varied in different parts of the chest. In the upper part the sounds were loud, with sibilant rhonchi. Lower down, especially at the back, there were submucous râles, indicating a "bronchiolitis." Such patients were usually drowsy, and tended to get much worse at night.

GROUP III.—THE VERY SEVERE CASES.

The only case of this group which came under our care, and of which we propose to give some detailed notes together with the *post-mortem* findings, exhibited signs of extreme poisoning which led to a fatal result. The man was admitted in a semi-comatose condition twenty-four hours after being exposed to the fumes. He was intensely cyanotic, respiration-rate 30 to the minute, pulse 88, throat dry and red, tongue cracked and furred.

When roused—which could only be done with great difficulty—the patient indicated by signs that he had severe pain in the chest. He was unable to cough, and there was much rattling with the breathing. Physical signs showed râles all over the chest, front and back. The fremitus of these râles was easily palpated by the hand. The condition was diagnosed from these signs as acute pulmonary oedema following exposure to irritant fumes. The blood pressure appeared to be raised, though apparatus for verifying this was not at our disposal. Bleeding was resorted to, and 12 oz. of blood were withdrawn from the median basilic vein at the elbow. The intensely dark colour of the blood and its remarkable rapidity of clotting were the special features noted, and the latter condition made the operation very tedious and difficult. The patient seemed to be relieved for a time but never regained consciousness, and died in twenty-four hours from the time of his admission, and forty-eight hours in all from the time of being exposed to the fumes. Oxygen was administered throughout without any benefit. Postural treatment resulted in large quantities of frothy secretion pouring out of the nose and mouth, but at no time was the patient able to expectorate this for himself.

Post-mortem Examination. — The body was that of a moderately developed adult man. There were no external signs of interest. Rigor mortis was complete two hours after death. Examination of the chest showed very firm old pleuritic adhesions between the left lung and the chest wall. The lungs were fully expanded, crepitant throughout, and floated in water. On section they emitted a very tenacious frothy and slightly blood-stained exudation from all parts of both lungs. The same was also found filling the trachea, bronchi, and bronchioles, indicating a condition of general acute pulmonary oedema. Subpleural haemorrhages were also found in various places. The heart showed some hypertrophy of the left ventricle, but was otherwise normal. The liver was congested. The left kidney was enlarged, and showed two infarcts, one pale, the other red, but the capsule of the kidney stripped easily, and there were no signs of nephritis. The right kidney was normal. The spleen was not enlarged nor congested. The other abdominal organs were normal, likewise the brain, which was carefully examined. The urine was normal in colour, acid, specific gravity 1020, and contained no pathological products. Smears taken from the blood, and stained by Leishman's stain, showed a remarkable number of cells indistinguishable from myelocytes, and also an increase in the lymphocytic elements of the blood. The polymorphonuclear leucocytes were diminished to about 30 per cent. The red cells were unaltered. We would wish to call attention to this condition of the blood, and should be glad to hear if such changes have been observed in other cases of a similar kind that have been investigated.

Treatment varied according to the group under which the patient was diagnosed. Those of Group I, Class A—that is, those with dry physical signs—received a purge and a bronchial sedative. Those of Group I, Class B and Group II—that is, those with moist physical signs—received a hypodermic injection of atropine sulphate $\frac{1}{100}$ gr., and for a few days were put on a mixture containing belladonna. In two cases emesis was produced with good results. In our one case of Group III we found no treatment of any value. Transfusion with normal saline after bleeding might have been done, but, in our opinion, it was contraindicated on account of the possibility of increasing the pulmonary oedema. The administration of atropine to this case also occurred to us, but, owing to the lungs being already so full and the paralysing effect of the drug on the coughing reflex, we considered its use inadvisable.

We shall be interested to hear of other investigations carried out on similar cases, and especially shall we be interested to note if such findings agree with ours also; we shall be glad for some suggestions for the treatment of the severe cases.

ANEURYSMAL VARIX OF POPLITEAL VESSELS FROM GUNSHOT WOUND.

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WOUNDS of blood vessels are always interesting surgically, and are particularly so at the present moment; and this fact, and my sympathy with Sir William Osler's desire that all such cases should be put on record, is my excuse for the following note.

Private O. M., 2nd Northants Regiment, aged 22, was at Neuve Chapelle, and on January 29th was shot in the left leg while on the way to bring up the company's rations. He was carried to a dressing station, and subsequently sent to England, arriving at St. John V.A.D. Hospital, Chester, on February 8th. He complained of pain in the neighbourhood of the left knee, and inability to use the limb. On examination it was found that a bullet had entered the outside of the leg immediately behind the fibula, and about an inch below the level of the head. It passed horizontally through the limb, and made its exit behind the tibia on the inner side, the track being on a level with the lower part of the tibial tuberosity. The wound was clean and healing well.

The lower part of the left popliteal space was rather full, but there was no definite tumour. On palpation what Sir William Osler, who saw the case, described as a "remarkable pistol shot shock" could be very distinctly felt in the lower part of the popliteal space, and could be traced in diminished force some way down the leg. There was a marked impulse, and a very distinct thrill was discernible. On auscultation the typical bruit was heard, loud, harsh, and roaring. The limb did not appear to differ in temperature from the sound leg, but no pulse could be felt in the posterior tibial or dorsalis pedis arteries, and the skin presented a slightly dusky hue, which may have been caused to some extent by a moderate degree of "frost-bite" from which the patient suffered. When he had recovered from this complication an operation for the cure of the varix was performed on March 26th.

On exposing the vessels it was found that the bullet had passed between them exactly where the popliteal vein crosses behind the artery, wounding their coats, and they were closely adherent, without any intervening sac. The artery was neither generally nor locally dilated. The vein seemed unusually large. The internal popliteal nerve was uninjured. I divided the artery between two ligatures above and below the anastomosis, and then applied Crile's clamps to the vein with the intention of separating it from the artery and stitching it. It struck me, however, that I might find it possible to put a ligature round the venous side of the anastomosis without occluding the lumen of the vessel, and the attempt proved successful. The gastrocnemii, which had been somewhat freely split, were brought together with a few interrupted catgut sutures, and the deep fascia sutured continuously. The patient made an uneventful recovery, with the exception of suffering great pain in his toes for the first two or three days. This I have found in other patients who have undergone operations on apparent recovery from "frost-bite." The present condition of the leg is normal, except for a little

stiffness. The shock, thrill, and bruit have all disappeared, and the pulse can be felt in the posterior tibial and dorsalis pedis vessels. It will be seen that the popliteal vessels must have been wounded just above the division of the artery.

I am much indebted to Sir William Osler for his interest and loan of recent literature; to my colleagues, Dr. Jephcott (anaesthetist), and Mr. Blagden who assisted me, and to the nursing staff for their excellent arrangements.

ANGLO-FRENCH HOSPITAL, NO. 2, CHATEAU TOURLAVILLE, CHERBOURG.

BY

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AND

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THIS hospital was organized by the Women's Imperial Service League (Mrs. St.Clair Stobart administrator). It arrived at the Chateau Tourlaville, Cherbourg, on November 6th, 1914, and patients were received two days later, on November 8th. It closed March 24th, 1915.

As a hospital, a sixteenth century chateau is not ideal, but with proper organization it became adapted for its purpose of a temporary military hospital. The sanitation was primitive, a pail system being necessary. The extent of the grounds surrounding the chateau enabled the trenches to be placed at a sufficient distance, so that contamination of the water supply was not possible. The greatest hardship has been the lack of water taps, except on the ground floor, and the lack of gas for heating. Water had to be brought up two flights of stairs, and all boiled for surgical use over oil stoves.

The medical staff consisted of Miss Florence Stoney, M.D., Médecin-en-Chef and Radiographer; Miss Kathleen Gibson, M.B., Miss Helen Hanson, M.D., Miss Mabel L. Ramsay, M.D., Miss Mildred Staley, M.B., Miss Joan Watts, M.B., and, later, Miss Ina Clarke, F.R.C.S.I., and twelve nurses, with Sister Bailey in charge.

The hospital was well equipped with four motor ambulances and two touring cars. Also there were some twenty orderlies to help in multifarious ways. It was due to their untiring exertions that the many wheels have run so smoothly. Patients were fetched from the arsenal in the ambulances, having been brought by steamer from Dunkirk or Calais to Cherbourg. Only the gravest cases remain in the local hospitals, the greater proportion being entrained for other districts in France. In November last some 5,000 to 7,000 wounded were being landed.

From November 6th to January 5th there have been admitted to this hospital 106 patients. During the first six weeks it was one constant struggle to overcome sepsis; in fact, pus was chased up and down the limbs.

Notes of some of the cases are appended. The majority have been compound fractures, and almost all horribly septic.

Fractures of the Cranium.

CASE I.—A gutter fracture of the vertex of the skull from a sabre or bayonet cleaving the skull in an antero-posterior direction and exposing the grey matter of the brain. He was quite unconscious when admitted, and also completely paralysed. When not sleeping he moaned, "Oh! mon majeur." There was a constant outpouring of pus, and brain substance came away freely in the dressings. He died four days after admission of septic meningitis, no operative procedure being possible in this case.

CASE II.—A marine with a compound fracture in the neighbourhood of the external angle of the frontal bone, caused by an exploding shell, and exposing the left frontal lobe for about two square inches. The dura mater was not torn, only pierced by some sharp spicules of bone. The flesh wound also tore the outer part of the eyebrow. The patient when admitted was in a state of great cerebral irritation. The next day he was chloroformed, and several pieces of the depressed fracture were removed.

The after-treatment consisted of boric douching and use of weak hydrogen peroxide, with four-hourly fomentations. He made a rapid recovery, and fifty-five days after admission he was discharged completely healed. The mental condition showed signs of some instability.

CASE III.—This was a fracture of the right external angular process of the frontal bone, and also involved the orbital plate. The right eye was ruptured by an exploding shell. The clinical picture was one of panophthalmitis. The day following admission the eye was removed and orbit freely drained. At the time of operation no foreign body was felt in the orbit. By an *x*-ray photograph a piece of shell about ¾ in. long and ⅛ in. thick was shown to be lying far back in the orbit. This was subsequently localized and removed.

For a time after the removal of this foreign body he had severe headaches, and one feared the complication of cerebral abscess. He, however, considerably improved under potassium iodide grains x t.i.d. The orbit drained freely, several pieces of necrosed bone (orbital plate) gradually detached. Repeated exploration with a probe failed to reveal any fissure in the roof of the orbit. The general condition was improving.

After being in hospital 101 days there was a recurrence of headaches, but they were of an intermittent character. Pulse 70; temperature normal, with an occasional rise to 99° F. in the evening. He never had any cerebral vomiting. Once or twice he had complained of nausea. At this date the left eye was examined by an oculist; vision ⅝; there was no evidence of papillitis, only some floaters in the vitreous.

Three days after this examination, that is, on the 104th day, he had an attack of severe bilious vomiting, which lasted two days. On the 106th day the hitherto free purulent discharge lessened and the headache increased. He became queer and was disinclined to get up. The temperature rose to 99° and the pulse fell from 70 to 65, then to 58 in the next three days. A diagnosis of cerebral abscess was made, and on the 109th day he was brought to the theatre with a view to exploring the frontal lobe through the fractured orbital plate.

Half an hour before the anaesthetic ($CHCl_3$) he was given a hypodermic of morphine gr. ¼. He had just had ʒiv $CHCl_3$ when respiration suddenly failed. Artificial respiration was at once begun and kept up for one and a half hours; stimulants of ether, atropine, and intravenous saline were given, but all of no avail. The heart continued to beat for one and a quarter hours and then failed.

Post-mortem Examination.—The orbit was explored, and a large fissure on the outer side of the orbit was found. It admitted the finger, and dura was felt. A trephine opening through the temporal bone revealed a bulging dura, through which, on incision, pus welled up. A large abscess cavity was found occupying at least one-third of the frontal lobe.

Apparently this was a case in which some portion of the septic bone had been carried into the brain substance, and whilst the orbit drained freely the symptoms were quiescent. The closure of the fissure with granulations rapidly produced symptoms of cerebral compression. Also, one fears that the administration of morphine given before the operation was a contributing factor for the onset of respiratory failure.

Throughout the period of observation—that is, 109 days—there were few symptoms to assist a diagnosis of cerebral abscess, the temperature and pulse being no guide; the headache was intermittent, and did not seem of sufficient intensity to warrant a diagnosis of cerebral abscess.

CASE IV.—In this case the bullet entered the left cheek and came out behind the right ear. In its passage it had fractured the left superior maxilla, crossed the spheno-maxillary fossa, and out through the right temporal bone on a level with and behind the external auditory meatus, the passage of the bullet being well shown by the *x*-ray photograph. His chief symptom was headache, and tenderness of the temporal bone when touched. He was discharged quite healed twenty-seven days after admission.

Fractures of the Jaws.

CASE I.—A compound fracture of the lower jaw, the whole of the chin being blown away. He was in a state of suffocation when he came in, and required immediate tracheotomy. The history given was that he had been unable to swallow liquids or solids since being wounded, eight days previously. The whole neck was in a state of cellulitis, the tongue was swollen, and the wounds involving upper and lower lips were foul and stinking. Tracheotomy was done with some difficulty owing to the enormous swelling of the neck. The trachea was opened and a tube inserted, but he died a few minutes after, artificial respiration being of no avail.

CASE II.—A fracture of upper and lower maxilla on the right side due to an expanding bullet fired by a German up a tree. The bullet passed through the mouth, shattering the alveolus posteriorly of the superior maxilla, and the entire vertical ramus of the inferior maxilla, producing a large stellate wound of the face. The bullet then dented a metal button and passed down below the right coracoid process, splintering the coracoid, and finally ending in the axilla, breaking up into numerous pieces. For a time the external carotid artery was exposed, and with so much sepsis there were fears of a secondary haemorrhage from this artery. Portions of the jaw have been removed, but now the face wound has completely healed up. Most of the pieces, carefully localized by Dr. Stoney, have been removed, and the long track from below the coracoid process into the axilla after three months' suppuration has now completely healed. A few pieces remain, but as they are not giving trouble they will be left *in situ*. He is able to eat well, and there is good movement in the shoulder.

CASE III.—A very bad case, with the whole of the bony portion of the chin and lower lip blown away, the upper lip being split. His condition was one of foul sepsis. He can only take food when lying down. He awaits a plastic operation to re-form the lower chin and lips.

CASE IV.—The bullet passed through the right cheek and across the mouth through the angle of the left inferior maxilla, fracturing it, and then behind the clavicle downwards and outwards, grooving the skin over the scapula. The angle of the jaw is much splintered and suppuration continues, but is decreasing, numerous pieces of necrosed bone being shed at intervals. He continues under treatment.

Injuries to the Lungs.

CASE I.—The bullet went in just below the left acromial process, and made its exit between the right tenth and eleventh ribs posteriorly, about 3 in. from the spinous process of the vertebra. He was in the crouching position when hit. In its course the bullet must have damaged some branches of the sympathetic plexus, and also possibly the posterior roots of the ninth and tenth thoracic nerves, as he suffered from an enormously distended abdomen, with paresis of the intestines. There was also hyperaesthesia of the abdomen in the belt region. He shortly after admission developed an attack of shingles in the same region. The left pleural cavity was full of fluid and the right border of the heart was displaced to the right 4½ in. from the mid-sternal line.

For two and a half months he was quite unable to be out of bed, owing to breathlessness and palpitation. To date all the fluid in the lung has quite cleared up, and the heart has returned to its normal position. The patient is now convalescent, but is not yet able to over-exert himself. He suffers from cardiac weakness and has considerable palpitation on the slightest over-exertion.

CASE II.—The bullet entered close to the left border of the heart in the third interspace, and came out just above the superior angle of the scapula on the same side. The pleural cavity is full of fluid, and the right border of the heart is displaced 4½ in. from the mid-sternal line. He had been treated for a month at a hospital in Dunkirk, and arrived at this hospital with a normal temperature, but very breathless on the slightest exertion. He gave a history of bad haemoptysis just after being wounded. At intervals he has attacks of spitting up dark blood-stained fluid, which looks like old blood clot, accompanied by a rise of temperature—101° to 102°—and cough. There was very little increase in the rate of respirations. There is marked dullness over the whole of the left lower lobe and no breath sounds. In the upper lobe in the attacks moist râles are heard. The chest has been punctured, but only sanious fluid has been withdrawn. No doubt the bullet track is septic, and he is gradually expectorating the contents of the septic area. There is no evidence of a cavity in the upper lobe. Since admission he has had three of these attacks of expectorating this dark blood-stained fluid. Temperature, pulse, and respiration return to the normal after a few days. He has been placed under open-air treatment and considerable improvement has resulted; he is now able to get up. Later *x*-ray examination showed the heart in its normal position and the left lung clear except for a few patches.

CASE III.—This patient came in with a bullet wound of entrance an inch to the outer side on a level with the sixth thoracic spine, and an exit wound in the right axilla, which produced a large tearing wound, exposing the intercostal muscles. A second wound of entrance in the ninth interspace and an exit in front of the right humerus, splintering the head of the humerus. There was also a burn on the right foot. These wounds were made by the bursting of a shell in his vicinity. The left lung was completely collapsed, and there was blood in the left pleural cavity, as proved by puncture. He subsequently developed septic pneumonia of the left base. An *x*-ray photograph shows that there is a piece of shell lying close to the coracoid process and also another piece just above the heart in the second interspace on the left side. The shoulder was drained and necrosed bone removed. His condition, after being in the hospital three months, is that all the wounds are healed. The shoulder gives a good range of movement. The fluid has disappeared and both lungs are now acting equally. His respiratory capacity is normal. Open-air treatment has considerably assisted his complete recovery.

Fractures of the Humerus and Forearm.

We have had nine cases of fracture of the humerus; one only involved the shoulder-joint, and one the elbow-joint. All the cases have united and the bones are in good position, and good functionating arms have been obtained. In all cases operations have had to be done before finally healing, to remove dead sequestra. These results have been materially assisted by the services of a very skilful masseuse—Miss Cowles.

In two cases there has been temporary musculo-spiral paralysis, but this subsequently cleared up with use of a faradic battery.

The case involving the elbow-joint—a much comminuted fracture of the lower end of the humerus—has recovered in a position midway between pronation and supination, with the joint ankylosed. He will require an excision of the elbow-joint.

There have been three cases of fracture of the forearm, one of the radius, one of the ulna, and one of both bones. In the two former cases good results have been obtained; but in the case of fracture of both bones the position of the bones is bad, but it is hoped a useful limb may ultimately be attained. This limb was in a bad condition of sepsis, and the wounds on both aspects of the forearm close to the wrist were such that an extension apparatus could not be used. Finally, a plaster-of-Paris splint was applied and union obtained after six weeks' severe sepsis.

Fractures of the Hand.

There were only four cases, one with fracture of the phalanges in which gangrene developed, and the line of demarcation reached the middle of the palm, and required disarticulation at the wrist. This case did well after operation.

Two cases remain under treatment. One has a fracture of the second and third metacarpals, and numerous pieces of shell in the palm. Another case died from tetanus, and will be referred to under this heading.

Fracture of the Pelvis.

There has been one case. The bullet entered close to the pubic ramus of the left side, passed through the scrotum without injuring the testicle, and then across beneath the perineum to the opposite vertical ramus of the right pubes. It produced no injury to the bladder. The bullet had been extracted before admission. Necrosed bone has been removed. He is now able to get up and walk with the aid of sticks. A sinus persists, leading to some necrosing bone not loose.

Fractures of the Femur.

Ten cases of compound fracture of the femur have been admitted. These cases proved the most difficult to treat and nurse.

Five of the cases were comminuted fractures of the lower end of the femur, two in the middle third, and three have been fractures of the upper end of the femur close to the great trochanter.

Five of the fractures united and are in good position.

In four cases there is shortening of less than one inch, and in one case there is 3½ in.

One case (fracture of the lower third of femur) united well, and was allowed up with a healing, although septic, sinus, after being in bed two months. He caught a chill and developed an acute osteo-myelitis of the lower fragment, and subsequently pus in the knee-joint. He was desperately ill. Amputation was performed above the united fracture. He is now progressing well.

Two other cases required amputation. In one there was a compound fracture of the tibia and fibula, and also the lower end of the femur was cracked. Incision and drainage of the knee-joint was attempted, but a condition of general septicaemia supervened which necessitated amputation.

The third case requiring amputation is interesting owing to the multiplicity of his fractures and wounds, due to the bursting of a shell in his vicinity. He had a compound comminuted fracture of the middle of the right femur, a large wound of entrance in the front and to the outer side of the lower end of the thigh, and a large exit wound just above the popliteal space; also a compound fracture of the left radius and second metacarpal, a large lacerated wound on the outer aspect of the left thigh, and a bullet wound of entrance and exit between the left tibia and fibula in the upper third of the leg. Every effort was made to save the right leg. It was put up in a Liston's splint, the wounds enlarged and freely drained. The patient was, however, in a state of great shock and anaemia from loss of blood previous to admission. The tissues for a long time showed no signs of healing. The temperature was never very high, the pulse 80. On the ninth day after admission he began to have secondary haemorrhage. Further incisions for better drainage were made, but with only temporary improvement. The discharge was foul and fetid. Also he began to spit blood, and, although the lungs do not show any definite clinical signs of phthisis, his aspect is distinctly tuberculous. Finally, on the twenty-third day after admission the limb was amputated through the upper third of the femur. His troubles were not at an end, for on the third day after amputation the inner margins of the flaps showed gangrene. There were also three secondary haemorrhages from the stump. The whole of the flaps were opened up and pine sawdust dressings applied. In three days the effect was marvellous, the sloughs came away, and a clean granulating surface replaced the foul suppurating area. He was then moved to a wooden hut, and placed under strict open-air treatment. He forthwith began to improve generally. His blanched appearance soon gave place to one of a ruddier hue; the haemoptysis ceased, and all his wounds have now healed except a small sinus in the stump. The left radius has also united, and he has a useful arm. The tearing of the external lateral ligament of the wrist causes a displacement of the whole of the hand to the inner side. This arm required an enlargement of the wound to let out pus, which developed after his general condition began to improve. His grip is good, and he is now able to get about on crutches. His nervous system, however, is very bad, and he will require careful treatment and management.

CASE IV.—A compound fracture near the level of the great trochanter has as yet failed to unite. There was a great deal of sepsis, which spread in front and behind into the buttock. It is due to the persistence of Dr. Joan Watts, who succeeded in overcoming the sepsis, by making repeated large incisions, that this limb has been saved. The Balkan splint has been of great service in this case, as the ordinary Liston's did not permit easy access to the wounds in this region.

CASE V.—Also a case of fracture near the great trochanter. He died three days after admission. He had repeated secondary

haemorrhages, and it was impossible to control them. The question of disarticulating at the hip was considered, but his general condition precluded all thought of his being able to stand such an operation. In view of reports of similar cases in the BRITISH MEDICAL JOURNAL, it probably would have been wise to have removed the limb through the fracture, tied the femoral artery, thus securing drainage and control of the haemorrhage, and when the condition of the patient permitted to proceed, if required, at a subsequent operation to disarticulate at the hip-joint.

CASE VI.—This limb was badly comminuted high up by a rifle ball which broke in the wound. It has united with the metal *in situ*, and the result is a shortened but quite useful limb. The recovery of useful limbs after these fractures is largely due to early and constant massage, which gives the patient mobile instead of stiff joints.

Fractures of Tibia and Fibula.

Three fractures of tibia and fibula were admitted.

CASE I.—A compound fracture of the right tibia and fibula. There was a reversed bullet in the inner side of the foot. The foot and leg were drained. Suppuration began in the ankle-joint. The general condition did not improve, and the limb was amputated through the middle of the leg. A good stump has resulted.

CASE II.—Also a compound fracture of the right tibia and fibula in the lower third. The patient had had multiple incisions made for the cellulitis of the leg. He required further incisions for drainage, but the limb has been saved. Unfortunately the union of both tibia and fibula which has taken place has not resulted in a good position. He continues under treatment, and will require further operative measures to remove sequestra.

CASE III.—A compound fracture of the lower end of the right tibia and fibula, with a large portion of the tibia blown away. There was a large gangrenous entrance wound in front of the tibia, and a large exit posteriorly in the lower third of the leg. Sepsis travelled upward between the gastrocnemius and soleus, and the flexors of the foot, and finally the ankle-joint became involved. The lower fragment of the tibia necrosed, and as the general condition was not improving, this limb was amputated just above the condyles of the femur, as, owing to incisions for drainage, good flaps could not be obtained. A good stump has resulted, which healed by primary union.

There were two cases of fracture of the tibia only. One case developed erysipelas, and was transferred to the fever hospital. The second case united well and in a good position.

There was one fracture of the head of the fibula; this will be described under tetanus.

Fractures of the Feet.

There have been five cases of fracture of the tarsal bones. One case was very interesting, as practically every tarsal bone was pulped except the os calcis. This, case, however, recovered, and although the foot was rigid and enlarged with callus, he had finally quite a useful foot.

There have been also six cases with fractures of the toes. Only in one case was it necessary to amputate a toe. These cases have all done well.

Nerve Injuries.

Two cases have shown temporary musculo-spiral paralysis after fracture of the upper third of the shaft of the humerus. Both ultimately recovered.

Two cases have paralysis of the extensors of the foot following bullet wounds, one through the thigh and one through the buttock, thereby injuring the sciatic nerve. In the latter case there was complete anaesthesia on admission, but sensation returned within ten days, and the motor movements are slowly returning and the foot-drop is lessening. All the extensors show movement. Faradism and massage have considerably assisted this good result. The former case, however, has not improved, and there is no doubt some sectioning of the sciatic nerve by the bullet.

Tetanus.

Two cases, both of whom died. Neither of these cases received a prophylactic dose of antetitanic serum on admission. It was at first our custom to give a dose in cases regarded as suspicious. Later, every case admitted, if a prophylactic dose had not already been given, received a dose of 1,500 units as soon as possible. None of the cases so treated developed any symptoms of tetanus.

CASE I.—Symptoms of tetanus developed on the eighth day after being wounded, and thirty-six hours after admission. He had a shrapnel ball in the left leg and a shrapnel wound in the right thigh, and a bullet had passed through the palm of the right hand. He also had paralysis of the extensors of the left foot, the ball having sectioned the popliteal nerve. The temperature on admission was 104° F. The first symptom of tetanus was a slight trismus of the jaws and difficulty in swallowing, reported at 8 a.m., but from his statement he himself noticed the symptoms six hours earlier, but he did not say anything about it. In fact, he had diagnosed his condition but did not wish to prolong his life. His wife and children had died recently under tragic circumstances, and he stated he had nothing to live for. The treatment adopted for this case was the injection of 500 units of antitetanic serum into each side of the brain through a small trephine opening;* 3,000 units were also given subcutaneously. He recovered from the effects of the operation, and was quite conscious. During the day of operation there were no convulsions, and he was able to take liquids by the mouth. He was also given morphine gr. ¼ in his milk and chloretone gr. xxx in olive oil per rectum. The next day the temperature fell to 98°. The wounds were dressed under chloroform. As the temperature began to rise at 10 a.m., a further dose of antitetanic serum (3,000 units) was given subcutaneously. In the afternoon there were some severe general convulsions. Chloretone gr. xxx was again given per rectum; liquids were swallowed almost to the last. At 7 p.m. the patient developed symptoms of cardiac failure. Treatment with cardiac restoratives were of no avail, and he died at 7.45 p.m., on the third day after onset of symptoms.

CASE II.—The patient developed tetanus five days after admission—that is, on the eighth day after being wounded. He was wounded by a bullet, which passed through the left leg and then across into the right leg, lodging in the outer side of and fracturing the head of the fibula. The temperature on admission was 100° F. Both wounds in the legs were very septic, but that in the right leg was the worst, and the pus was fetid and foul. On the second day after admission the bullet was extracted through a fresh incision on a level with the outer side of the head of the fibula, the *x*-ray photograph and the localization done by Dr. Stoney greatly aiding this operation. Both wounds in the legs were freely drained. On the fourth day after admission—that is, the seventh after being wounded—it was noticed that he complained bitterly of sharp lanceolating pain in the right leg when the dressings were done, and also the right ankle was held very rigidly.

On the morning of the fifth day after admission—that is, the eighth after being wounded—whilst taking his *déjeuner* he complained of stiffness in the jaws and difficulty in swallowing; also severe darting pain in the right leg. The tongue, on being projected, was also noticed to deviate to the right, and had a faint tremor. A diagnosis of tetanus was made. Within an hour he was taken to the theatre, and treated with 1,500 units of antetanic serum intracerebrally under $CHCl_3$, forty minutes being taken over the injection. All the wounds were thoroughly cleansed, and around them was injected two drachms of 50 per cent. carbolic acid in glycerine. The temperature before operation was 99° F., and after 103.2° F. He recovered consciousness, but the spasms continued, and soon became generalized. Morphine was given on account of pain in the right leg.

The next morning the temperature fell to 98.2°, and rose in the evening to 100.6°. There were marked spasms in the right leg, and also of the throat muscles. Even with deep anaesthesia of chloroform an endeavour to pass the stomach tube to enable his being fed *per vias naturales* failed.

During the second day the spasms became generalized, but he was quietened with morphine and chloral gr. xxx in olive oil per rectum, and fed with nutrient enemas. The wounds were dressed under $CHCl_3$, and a further 1,500 units of antetanic serum injected intracerebrally. Two drachms of 50 per cent. carbolic acid was injected around the wounds.

On the third day the patient's condition was much worse, and it was decided to amputate the right leg, with a hope of cutting off a further supply of toxins. The amputation of the right leg was performed through the middle of the femur. At the same time a further injection of antitetanic serum was given on the left side of the brain—that is, 1,500 units. A second attempt was made to pass the stomach tube, but failed owing to the tight spasm of the throat muscles. The wound of the left leg was treated with carbolic acid. He recovered consciousness from the anaesthetic, but, like Case I, died of cardiac collapse 4½ hours after operation.

Notes.

From the experiences of the above two cases it would appear that antitetanic serum fails as a curative agent for tetanus. It probably has its place as a prophylactic.

A visit was paid to the local infectious diseases hospital (the Casino) of which Dr. Sainton is in charge. He has treated some 30 cases where the onset of tetanus occurred from the sixth to the thirtieth day after wounds were received. He reports that he has saved 25 per cent. of his cases. His opinion agrees with ours, that serum is of no avail once the definite symptoms of tetanus are established, and he has abandoned its use. The treatment he now uses is as follows:

The patient is kept as quiet as possible, and all active interference avoided save necessary dressings of wounds, and for them he only uses mild antiseptics, such as hydrogen

* The point trephined was found as follows: A line was taken from the external meatus across the vertex. From its mid-point a line was taken to the external angular process. This was divided in half. At this point the trephine was made. The serum was injected slowly. In Case II the trephine was not used, but simply a small hole bored with a large size drill straight through the skin and bone, and this permitted easily the insertion of the serum needle.

peroxide or potassium permanganate. Per rectum twice a day an enema of the following is administered:

Chloral	...	...	...	4-8 grams.
Eggs	...	...	...	1 or 2.
Milk	...	...	...	200 c.cm.

And also, subcutaneously, in the neighbourhood of the wounds, or if too much irritation is caused elsewhere, 40 to 80 c.cm. of a watery solution of 2 per cent. carbolic acid twice a day, these injections being continued for three to four weeks until every symptom has subsided.

This treatment has been adopted with considerable success in the other hospitals, including the chief naval hospital, L'Hôpital Marin, Cherbourg. There has been a great decrease in the number of tetanus cases brought to Cherbourg, due, no doubt, to the more prompt administration of a prophylactic dose of antitetanic serum given as soon as possible after the wounded are received into the clearing hospitals, and before being sent to the base hospitals.

If another case comes our way we shall endeavour to treat it upon the methods advocated by Dr. Sainton.

Dr. Sainton was also kind enough to point out the symptoms he regarded as indicating an onset of tetanus:

1. Elevation of the temperature out of proportion to the wound. Not always seen.
2. Greater pain, especially of a sharp lancinating character; also out of proportion to the wounds.
3. Slight fine tremor of the tongue and deviation, when projected, to one or other side.
4. Sometimes profuse sweating.

In regard to the last symptom, in Case II it was noticed by the anaesthetist at the time of the first operation that the patient came out in a profuse perspiration in the middle of the operation. It could not be attributed to the overheating of the theatre.

Case of Traumatic Aneurysm.

This man was shot through the right thigh, the entrance wound being on the inner side. The shell was removed after location by *x* rays, and an extremely foul abscess opened. The man had severe pain. An arterio-venous aneurysm low down in Hunter's canal appeared requiring ligation of the femoral. A week later the thigh was amputated for secondary haemorrhage. On examining the limb the artery was seen to have developed a second small aneurysm just about the seat of ligation. The sciatic nerve was infiltrated with pus, accounting for the pain.

Some fifty pieces of shrapnel, bullets, and bullet coverings have been extracted, and for their extraction the *x*-ray work, especially the exact localization done by Dr. Florence Stoney, has been invaluable. The exactness with which the localization was done on many occasions saved the surgeons to whom fell the lot to make the search a vast deal of trouble, and also saved useless incisions. Another valuable thing the localization did was that useless searches were not undertaken—for instance, to search for a bullet well within the pelvis but giving rise to no trouble, and difficult of access. In only a few cases, however, were shrapnel balls or bullets not extracted.

Owing to the amount of sepsis quick healing was not usual. But as soon as good drainage obtained the cases healed. In five cases retardation of healing can be definitely ascribed to specific disease, and with the use of mercury and potassium iodide healing was hastened.

Medicated Sawdust.

We found that medicated pine sawdust was a valuable adjunct for clearing up offensive odours and cleansing gangrenous and septic surfaces. It is used put up in sterilized muslin bags, about 1 in. thick, and placed over the wound. Especially valuable it was found where there was a large lacerated surface. It is essentially an absorbent and cleansing agent, and acts much in the same way as repeated boric fomentations, but it has the advantage that it does not require to be changed so often. It is a substance worth a trial wherever there is fetid pus, such as is too often seen in the wounds of the present war.

Summary of Eleven Amputations Performed.

Eight cases amputated through the femur: Four cases for suppuration in the knee-joint, two of whom died; one case for secondary haemorrhage and gangrene following ligature of the femoral artery; one case for compound fracture of femur, necessitated owing to secondary haemorrhage and general septicaemia of the patient; one case on account of tetanus, which died.

One case amputated below the knee-joint on account of suppuration in ankle-joint and general septicaemia.

One hand disarticulated at the wrist on account of gangrene.

One toe (phalanges of second digit).

Mortality.

Ten deaths have occurred out of 120 patients: 3 from general septicaemia following suppuration and shell in the knee-joint; 1 due to oedema of glottis—tracheotomy no avail; 1 from septic meningitis; 1 from suppurative peritonitis; 1 from secondary haemorrhage and septicaemia; 2 from tetanus; 1 from failure of respiration under $CHCl_3$, due to cerebral compression from abscess in the right frontal lobe.

X Rays.

The *x*-ray localization was done partly by Mackenzie Davidson's method and partly by stereoscopic photographs. The *accurate* localization of projectiles proved very useful. The telephone probe was helpful with small pieces of metal, which would otherwise have been undoubtedly missed.

X rays showed the actual condition of fracture before and after being set, and one could watch the progress of healing. It is a point to note that necrosed fragments can be successfully diagnosed by the darker shadow they throw. Small pieces of bone get absorbed, but larger ones have to be removed by operation.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

"LYMPH LAVAGE" OF WOUNDS.

I BEG to bring to the notice of your readers a method of the lymph lavage treatment of wounds adopted by myself, as the result of my own investigations some two or three years ago. I have found it very successful, and it is apparently much simpler to use than the hypertonic salt solution now being brought forward.

The basal fact by which it produces a continuous lymph lavage depends upon the hygroscopic properties possessed by glycerine. If pure glycerine (specific gravity 1260) is exposed to the atmosphere it will absorb moisture from it. If exposed long enough 69 parts by weight will absorb 31 parts of water. It is then a eutectic mixture, being in a state of balance. If additional water is added it will evaporate back to the same proportion. Hence, if such a mixture be applied (on lint) to a wound, the temperature of which is about 98° F., whilst that of the atmosphere varies, say, from 40° to 80°, the warmer wound will evaporate a certain amount of the water; but this loss will be immediately made good by the glycerine absorbing a similar amount of water (lymph, etc.) from the wound below, and will thus maintain a constant flow of lymph to the dressing. By virtue of this property also the lymph is stopped from coagulating, and there is, therefore, no interference with its free exudation.

In order to prevent decomposition in the discharges, I add a little perchloride to the water which is used to dilute the glycerine. My practice is as follows: To make the solution, I take any given quantity of *pure* glycerine (specific gravity 1260) and add to it one-half its volume of a solution of mercury perchloride (1 in 1,000). This gives roughly a solution containing glycerine 2,000, water 1,000, mercury perchloride 1.

When dressing a wound, I wash it out with plenty of warm water (in my own case drawn from the common hot water supply of the house), suture the skin where it will meet easily, wash next with perchloride solution, and then wipe off the surplus moisture. I wring out some ordinary white lint with sufficient of the glycerine solution to leave it in a rather moist but not a dripping condition. I make this just sufficiently large to cover all the wound, and upon the top, and sufficiently large to overlap the margins of the wound by about 1 inch I lay a strip of oiled silk, and then cover this with a little more lint and bandage loosely. I leave it for twenty-four hours if much discharge is expected. In lesser wounds it may be left for forty-eight hours. The oiled silk is used to prevent

the superficial dressings sucking up the glycerine solution. It does not interfere very much in practice with the aqueous osmotic action of the glycerine.

The perchloride of the strength named has practically no irritating action upon the sound skin adjoining the wound. The advantages of the method are obvious. There is no trouble about sterilizing dressings. The perchloride sterilizes that next in contact to the wound. Glycerine and ordinary dressings are the only other things required. In deep wounds the glycerine-saturated lint acts as a drainage tube. An additional recommendation is that it gives practically no pain.

The method is exceedingly simple, and, so far as I can see, gives all the advantages and is less trouble than the hypertonic salt solution so favourably spoken of.

Middleton, Lancs. JOS. J. H. HOLT.

EARLY ADMINISTRATION OF VACCINE IN PNEUMONIA.

A WOMAN, aged 18, complained one day of headache, with vomiting and shivering. A few hours later she felt pain in the left side. I saw her on the second day of her illness. The pain in the side was evidently severe, and interfered with breathing, while percussion was dull, and some crepitations and a few sibilant sounds could be heard. The sputum was bloodstained, and the skin hot and dry. Temperature 102°, pulse 114. I gave her 10 million organisms pneumococcus vaccine. On the third day of illness, at 10 a.m., temperature 104.2°, pulse 116, respirations 32; sputum free from recognizable blood, skin slightly moist, patient looking distressed. Fifty million organisms given. At 8 p.m., temperature 99.2°, pulse 112, respirations 30; sweating profusely, distress not so apparent. Fourth day, 9 a.m., temperature normal, pulse 108, respirations 26; 9 p.m., patient flushed, skin again hot and dry; temperature 103.4°, pulse 120, respirations 28. Fifth day, pulse 100, respirations 28, and although the temperature had dropped to 100.6° I again gave her 50 million. At 9 p.m. the temperature was normal, and has remained so ever since. Yet the pulse was still as high as 104, and the respirations 26. Three days later the pulse was not accelerated, and the lung dullness had cleared, while air was entering freely. A few crepitations were heard. The first dose of 10 million was too small. The effect of the second was startlingly apparent, and, judging by Wynn's results, had it been a larger dose I think it would have prevented the secondary rise in temperature during the fourth day of illness. I never saw any one with a solid lobe of lung look so comfortable, or take so intelligent an interest in what went on in the room. I had been trifling with insufficient doses in previous cases, and have to thank Dr. Wynn for enlightenment. This single case, however, did not show a return to normal of pulse and respiration simultaneously with the temperature.

Dundee. W. S. MALCOLM, M.D.

BLOOD-LETTING IN PNEUMONIA.

I HAVE performed blood-letting in hospital, gaol, and private practice, with much success for many years. I did not select my cases in the beginning, but when I found that a pneumonia patient's temperature rose very high, and remained stationary in spite of antiphlogistic medicinal treatment, when the breathing was very hurried, when the pulse was full and bounding, when delirium and restlessness were prominent features, with, perhaps, severe headache, I always abstracted an ounce or two of blood by wet-cupping from the base of the lung or lungs, according to circumstances. The effect was magical. Within an hour or so the pain was relieved, the breathing made easy and almost normal, the patient falling into a sound sleep, and the temperature falling to 99° or 100° from 104° to 106°.

I husbanded the patient's strength by giving him an ounce of brandy three times a day. With the brandy the patient might require a little potassium iodide, ammonium carbonate, and digitalis; should the temperature rise again, try a second wet-cupping.

No doubt the robust stand the treatment the best, but I would certainly recommend it in other cases, except in the weak or aged, under the conditions mentioned above, with due care taken as to the quantity of blood that requires to be removed.

EDWARD BALM,
Graduate of the School of Medicine, Hyderabad, late Civil Surgeon, Aurangabad, Deccan.

Reports of Societies.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on May 11th, Dr. JANE WALKER in the chair, Dr. HAMILTON WILLIAMS read a paper on *Rheumatism in children*. She defined rheumatism as an infection due to a micrococcus, giving rise to symptoms in the muscle and valves of the heart, pains in the joints and muscles, excitability of the brain and nervous system, sometimes leading to chorea, anaemia, and continued pyrexia. True rheumatic "growing pains" were always worse after exercise, and in many cases were worse at night. The affection could be differentiated when the child first entered school, aged 5, and possibly earlier. At that age, though the child was often well nourished, the mother complained that it was nervous or mincing with its food; there was a constant state of jerky movement of the hands, so marked that the pulse could not be counted for 60 consecutive seconds. This condition was not found in healthy or in tuberculous children. The pulse-count was 100 to 120, whereas in tuberculous children of 5 it was under 90. The temperature was raised to 99.4° to 100.4°, persisting thus, often for years; this was not the case in healthy children. On auscultation of the chest, the breath sounds were often loud and harsh over the bases or the whole back, and not in patches as in tuberculosis; a creaking sound due to muscular rheumatism could often be heard and felt in the scapular region. The apex beat was found in or outside the nipple line in rheumatic, but not in healthy, children. The heart sounds were sometimes muffled, but there was not very often valvular roughening. Between the ages of 5 and 12 there was frequently complaint of abdominal pain and bilious attacks; these had no connexion with meals and were not accompanied by definite tenderness. The bilious attacks were definitely connected with appendicitis; and experiments on rabbits had shown that the same diplococcus could give rise to arthritis and appendicitis. Sore throats were common in rheumatic children. Enucleation of the tonsils was not advisable as the tonsils might conceivably act as barriers to the rheumatic organisms. Rheumatism and pulmonary tuberculosis were antagonistic; the heredity of rheumatism was 0.46, and rheumatism in the parent tended to protect the children from pulmonary tuberculosis. The treatment of rheumatism in elementary school children was a difficult problem, as the essentials of rest, warm clothing, and good food were difficult to obtain, and the children were obliged by the authorities to attend school. Dr. CHARLOTTE KING advocated the establishment of homes of rest for these children. Dr. LETITIA FAIRFIELD and Dr. ROSE JORDAN discussed the transference of rheumatic and choreic children to open-air classes, which was at present on trial in some of the London County Council schools. The choreic children seemed to improve rapidly under this treatment. Dr. JANE WALKER was under the impression that there was a diminution in the incidence of rheumatic fever in recent years. She agreed that rheumatism and pulmonary tuberculosis were antagonistic, and had found that choreic children improved very rapidly under the same régime as tuberculous children. Dr. WILLIAMS, in replying, stated that rheumatic and tuberculous children had been treated together at a convalescent home, and the tuberculous children gained twice as much in weight as the rheumatic; the latter seemed to become definitely worse, though the choreic children did well. Dr. ESTCOURT-OSWALD, in opening a discussion on the *Present status of women in public health work*, deplored the fact that women were never appointed to the more senior posts, and were often placed in subordinate positions to junior and less well-qualified men. Dr. LETITIA FAIRFIELD considered that inspection should form a part and not the whole of a medical officer's duty; it should be combined with either clinical or other public health work. Part of the prejudice against appointing a woman to the position of medical officer of health was the alleged dislike of men to work in a subordinate position to a woman. Dr. MARY BELL pointed out that a woman was now acting as medical officer of health for the county of Buckinghamshire for the period of the war, and that no difficulty had been encountered in her case.

Reviews.

MALAY CHARM CURES AND POISONS.

WITCHCRAFT, in the form of exorcisms and the practice of magic, still plays a large part in the life of Malaya. Witch doctors, who give advice in matters of sorcery, propitiate devils, and chide or coax evil spirits as the occasion demands, have a large practice. Medicine men, who use drugs with or without the aid of magic art, usually crafty old men, are the recognized Malay practitioners. Illnesses are generally believed to be due to spirits or jin, devils, familiars, or ghosts, coming from the sun, earth, food, fire, or from within the body. Hence disease is amenable to magic, and the practical Malayan medicine man recognizes the value of noise and unintelligible incantations in the exercise of his art. Dr. J. D. GIMLETTE, of Kelantan, who has worked for eighteen years in the service of the Federated Malay States, quotes[1] the following as an example of these incantations; it is a charm to cure a patient of small-pox:

> Verily, I know Small-pox! that in the beginning
> Thou didst dwell formless in the depths of Hell,
> Whence issuing thou didst enter the children of Adam in visible form,
> Seven brothers were ye in all:
> Born of the black exudings, of black pores, of black skin,
> Of black flesh, blood, veins and sinews, of black bones.
> Not mine this charm but that of the *Dewa Sang Sarimba*,
> Not mine this charm but that of the *Dewa Bentara Narada*,
> Not mine this charm but that of the very dregs of Hell.
> Well versed am I in all poisons
> And can quench fiery pains:
> Poison do I charm away, fiery pains I soothe:
> Helpeth me my teacher, yea, I too help my very teacher's self!

Poisons—vegetable, animal, and mineral—are to be found broadcast all over Malaya, and are used extensively to cause annoyance or injury less serious than death, and also by thieves who wish to stupefy or paralyse their victims as a preliminary to the main venture. The Malay men lend themselves by their lazy habits to the rather easy administration of poison in food; the medicine men give vegetable and animal antidotes for every kind of poison, but all are combined with the use of magic spells. Emetics are rarely exhibited, but the prompt administration of the slightly acid and diuretic fresh milk of the coco-nut is regarded as very valuable. Dr. Gimlette gives long lists of the poisons and medicines employed. They include such things as the poisonous fins, spikes, or teeth of fish; the bile and bones of animals and birds, especially the goose; numerous plants growing wild in the jungle or cultivated in villages; and inorganic substances, such as powdered glass, potassium cyanide, mercury, and arsenic, introduced into Malaya by civilization. Two of these poisons are, perhaps, worthy of particular mention—namely, those derived from the upas tree and datura. The upas tree, *Antiaris toxicaria*, has been famous in English literature as the *ne plus ultra* of poisonousness ever since the publication in 1783 of a wholly mendacious account of it attributed to one Foersch, surgeon at Semarang. The tree was said to be so poisonous as to destroy all animal life within a radius of fifty feet; the poison was fetched by malefactors, of whom scarcely two out of twenty returned from the quest. Pure fable! As a matter of fact, the juice of the upas tree contains a glucoside, antiarin, investigated by Kiliani, Hedbom, and others, acting like digitalis or strophanthus on the heart. The inspissated juice has been used by the Malays as an arrow or dart poison, smeared for an inch or more on the wooden or iron blade of the missile; it kills by paralysing the heart in systole, also acting as an acute gastro-intestinal irritant. The datura plant, the *D. fastuosa* of our pharmacopoeia, is a common weed in Malaya, and its seeds, containing hyoscine, are given in tea, coffee, or curry, by thieves to narcotize the victim before they break into his house and steal. The dose appears to be about fifty of the seeds, containing, say, one-fortieth of a grain of hyoscine. Alternatively, the drug may be burnt, and the fumes conveyed through the floor into the room above, when the victim will fall into stupor and unconsciousness, and the theft may be committed in safety. Insensibility often follows within a quarter of an hour; the after-effects may last for two days, but are seldom fatal when the drug is thus used by the Malays for purposes of plunder or profligacy.

For the most part Malays are Sunnite Mohammedans, though many of the tribes have retained their pristine paganism. They are described as a courteous and self-respecting race, indolent, lovers of ease, gamblers, warriors with the belief that all is fair in war, loyal to their rajahs, cruel and selfish when left to their own resources. From the medical point of view they are of interest from their habit of committing suicide by running amok when reduced to desperation, and because they are prone to the nervous tic or psychopathy known as "latah," the "jumping disease of Maine" in America, and the "myriachit" of Siberia. Like all uneducated people, they are firm believers in the mystery of magic. Dr. Gimlette's interesting book shows that while we may learn much from them as to the multiplicity of poisons, they can teach us nothing in the more useful knowledge of antidotes to poisons.

[1] *Malay Poisons and Charm Cures.* By J. D. Gimlette, M.R.C.S., L.R.C.P. London: J. and A. Churchill. 1915. (Cr. 8vo, pp. 135. 3s. 6d. net.)

GYNAECOLOGY.

IT comes somewhat as a surprise to find that *A Manual of Gynaecology*,[2] by Dr. SAMUEL J. CAMERON, is the first textbook on the subject to have emanated from the Glasgow School, considering the vast amount of material that must pass through the hands of specialists in that city. Dr. Cameron has very ably supplied this deficiency by his book, and the lectures and demonstrations he has given to his students have formed the basis of an exceedingly practical manual which will appeal, undoubtedly, to a wider circle of students, and especially to general practitioners, and to not a few gynaecologists. We are accustomed to look to American medical textbooks for excellent illustrations, but this book will hold its own with the best of them in that respect. The author seems to have been particularly fortunate in his choice of an artist. All the illustrations are original, and, in addition, the microscopic drawings and photomicrographs are models of what these should be; in fact, it is sometimes difficult to say at first sight whether one is looking at a photomicrograph or a microscopic drawing. Amongst the rare specimens illustrated we may pick out those of twin tubal pregnancy (p. 496), ovarian pregnancy (p. 514), rupture of the uterus (p. 180), and hydatid cysts of the uterus (p. 363). Altogether there are some 230 illustrations. The first chapters of the book, devoted to the anatomy and development of the female organs, have been contributed by Dr. W. K. Hutton. Usually this is a part of a textbook that one reads in a haphazard fashion, if at all; but Dr. Hutton writes very clearly and interestingly, and no student, at any rate, will miss these two chapters. In fact, lucidity is all through the book one of its most attractive characters. The style, as might be expected from an author accustomed to teach a large number of students, is simple, convincing, and sufficiently didactic. The diagnosis of gynaecological conditions and the non-operative methods of treatment will appeal most forcibly to the general practitioner, whilst the well illustrated description of operative methods will enable him to be conversant with what he may not have many opportunities of seeing performed. There is a welcome absence of pseudo-scientific embroidery, though the essentials of up to date pathology are fully set forth. It is difficult to pick and choose chapters for particular notice. Perhaps those dealing with fibroids and cancer are the most valuable in the book, and show a familiarity with the most recent teachings of pathology as well as an intimate practical experience with their treatment. The paragraphs, for example, dealing with radio-therapeutic treatment are especially to be commended. As befits the enormous importance of tumours in gynaecology, these parts of the book are very full. The chapter on adenomyomata is fuller than in any textbook we know, and the remarkable potentiality of such growths for invasion of neighbouring structures, unknown till recently, is clearly set forth. The author's methods of treatment

[2] *A Manual of Gynaecology for Students and Practitioners.* By S. J. Cameron. London: E. Arnold. 1915. (Med. 8vo, pp. 568; 238 figures. 18s. net.)

of uterine prolapse and chronic salpingo-oöphoritis are examples of his originality in surgical treatment. Altogether, it is safe to forecast for this work a welcome amongst students and practitioners that will not be confined to this country.

The address of the President, Dr. Henry C. Coe, delivered at the 38th meeting of the American Gynaecological Society at Washington in 1913, heads the papers contained in the volume of the society's *Transactions*[3] for that year. He lays great stress on pathology, and, on the other hand, warns the gynaecologist against too much zeal in practising radical operations for carcinoma. Many innovations have come and gone—intrauterine galvanization, vaginal hysterectomy for diseased appendages, nephropexy, and others equally promising, and Dr. Coe observes that these *Transactions* are the burial place of many methods of treatment which were tested and found wanting. He trusts, but not implicitly, that the same may not be the case with the now popular radical operation for cancer of the uterus, which seems to hold much promise for the future. In the new volume there is a goodly array of papers filled with matter of some depth, not long tables of successful operations. Most characteristic of the present day is Dr. McGlinn's article on the heart in fibroid tumours of the uterus. We know only too well what the conclusion was in most papers on fibroids not many years past. All roads led not to Rome, but either to hysterectomy or oöphorectomy. Dr. McGlinn concludes that, after all, "fibroid heart" cannot be sustained as a definite entity. If the fibroid tumours of the uterus were the cause of all the heart lesions which really existed in the long series which he has collected and tabulated, then every tumour, regardless of its size and situation, should be removed, "a contention that the most radical would hardly admit." Dr. Brettauer dwells on a subject on which he has already written—the nasal treatment of dysmenorrhoea. Even hypermetropia and other defects of accommodation may, he thinks, be directly related at least to the symptoms of dysmenorrhoea. But as there are thirty-six papers, not including the president's address, it is impossible for us to do them justice even by mere enumeration. Among the best, or at least the most important, are contributions on uterine inertia, and on cancer considered as a public evil. The *Transactions*[4] of the society for 1914 include communications of considerable originality. We find, as usual, many papers on familiar subjects of perennial interest by authorities known on this side of the Atlantic, such as the President, Dr. Whitridge Williams, and Dr. Reuben Peterson, who gives a critical review of 500 published and unpublished cases of abdominal Caesarean section for eclampsia, a solid monograph recalling the well-known writings of Dr. Amand Routh on the same operation as generally undertaken. When we made use of the word "originality" above, we had more particularly in mind Dr. Cadman (Boston, Mass.), whose remarkable "Study of hospital efficiency as represented by product" should be seriously considered by all hospital surgeons. He lays great stress on results of surgical treatment which lack perfection, and classifies bad results after a highly systematic manner, which he explains at full length; we should place in "case reports" and registrar's books special marks distinguishing bad results, not only due to the uncontrollable calamities of surgery, but likewise to errors. Such errors are to be subdivided as to their cause under the following headings: (1) Lack of technical judgement or skill, "E.S."; (2) lack of surgical judgement, "E.J."; (3) lack of care or equipment, "E.C."; (4) lack of diagnostic skill, "E.D." These four are in part to be controlled by organization. There remain bad results caused by (1) the patient's enfeebled condition, "P.C."; (2) the patient's unconquerable disease, "P.D."; and (3) the patient's refusal of treatment, "P.R." There might be active opposition to thorough registration on such lines, but Dr. Cadman's scheme is a great deal more than a mere good idea, and he takes pains to show how it might be carried out by a free discussion of detail.

[3] *Transactions of the American Gynaecological Society.* Vol. xxxviii, for the year 1913. Philadelphia: W. J. Dornan. 1913. (Med. 8vo, pp. 694; 21 figures. Numerous charts.) [4] Vol. xxxix, for the year 1914. Philadelphia: W. J. Dornan. 1914. (Med. 8vo, pp. 584; illustrated.)

CHARING CROSS HOSPITAL.

DR. JOHNSON thought that, although Fleet Street had a very animated appearance, the full tide of existence was at Charing Cross. Yet Johnson does not seem to have been aware that in his own day work of the highest importance in the development of human knowledge was being carried out close to Charing Cross. In Leicester Square John Hunter was collecting the materials for his museum and laying the foundations of medical science, but, although Johnson had some acquaintance with William Hunter, there is no mention of John in Boswell's *Life*. Till the middle of the sixteenth century Charing was a scattered village separating Westminster from London; then a street was gradually built, the houses on the south side having fine gardens running down to the river, while those on the north were of a meaner order. In the early years of the nineteenth century the region between Charing Cross and Ludgate, though densely populated and containing within its area some of the worst slums in London, was without a hospital. Charing Cross Hospital owes its origin to the philanthropic enthusiasm of Dr. Benjamin Golding, who in 1815, when he was only 22 years of age, conceived the idea of founding a hospital and a medical school. This enterprise, which must have seemed to those who realized the difficulties in the way a quixotic dream, he carried to a successful issue in 1821. The story of this remarkable achievement was well worth telling, and Dr. WILLIAM HUNTER has done this in a handsome volume, the compilation of which has evidently been a labour of love.[5]

In the Charing Cross foundation a medical school was from the first combined with the hospital. This is its distinctive feature among London schools. The plan of education drawn up by Dr. Golding was far beyond the scope of any school of his day. It included every branch of medicine in the largest sense of the word and its ancillary sciences. It is interesting to note that among the subjects in which teaching was to be provided special places are assigned to diseases of tropical climates, to the operation and use of baths, to "anatomical machinery, including bandages and artificial support (orthopaedics)" and to the professional duties of the public services (army and navy). In addition to these subjects the medical officers were to investigate the "hitherto much neglected science of mental diseases and of mental pathology." Dr. Golding lived to see in the report of 1862, the year before he died, that the total number of patients the hospital had relieved since its foundation was 370,000. The school had grown rapidly and its founder had the satisfaction of knowing that it had always paid its way without being a burden to the hospital. On the contrary, it had contributed year by year to the charity to the total amount of £5,000.

Dr. Hunter gives a full account of the development of Dr. Golding's foundation from its first conception to the present day when, without losing its individuality, it has become an integral part of the University of London. Every important document bearing on the subject is quoted; if this gives the book something of the character of a collection of *mémoires pour servir* it inspires the reader with confidence in the absolute truth of the record. An account of Dr. Golding and of those associated with him in the work of establishing the hospital is given. Sketches of the physicians and surgeons who made the reputation of the school lighten the massive solidity of the book. Among the students of whom Charing Cross is legitimately proud are David Livingstone, Thomas Henry Huxley, Sir Joseph Fayrer, and Sir William Guyer Hunter. Huxley was a student there from 1842 to 1846. Together with his elder brother James he was elected to a free scholarship; he had at the time only the career of an apothecary before him, and it was this scholarship that saved him for science. In after-life he showed his interest in his old school on several occasions, and his connexion with it is appropriately commemorated by the lectureship founded in his honour.

Dr. Hunter's book contains a mass of information about the origin of the Royal Foundation and other hospitals of London, and is abundantly illustrated with beautifully

[5] *Historical Account of Charing Cross Hospital and Medical School (University of London). Original Plans and Statutes, Rise and Progress. Founded 1818.* By W. Hunter, M.D., F.R.S.Edin., F.R.C.P.Lond. London: J. Murray. 1914. (Med. 4to, pp. 329; 40 plates. 21s.)

executed plates. The book is a noble monument of his devotion to the institution to whose fame in these later days he has largely added.

NOTES ON BOOKS.

THE *British Journal of Surgery* is a quarterly publication issued by Messrs. John Wright and Sons, Ltd., of Bristol, under the direction of a committee of surgeons, representing the colonies as well as the United Kingdom, of which Sir Berkeley Moynihan is chairman. The January number is largely devoted to war surgery. Mr. Hey Groves writes on the application of the principle of extension to comminuted fractures of the long bones, with special reference to gunshot injuries. Lieutenant-Colonel C. B. Lawson, R.A.M.C., and Mr. Beckwith Whitehouse contribute (from Rouen) a preliminary communication on the treatment of acute emphysematous gangrene, and there are a number of notes on naval and military surgery by various writers. Among these, one by Mr. Seymour Barling of Birmingham, on the transference of the sick and wounded from overseas by ambulance ships, and another by Mr. Charles A. Pannett on the medical aspects of modern warfare, with special reference to the use of hospital ships, seem to us of special interest, as comparatively little has been heard of surgical work in the navy during the war. In view of the open-air treatment of wounds, which was used with great success by Nussbaum at Munich in 1870, and which is strongly advocated by some surgeons now working among the wounded, it may be interesting to quote what Mr. Gilbert Barling says in an account of his experience at the 1st Southern General Hospital, Birmingham (p. 509): "Much has been said of the virtues of open-air wards; it has yet to be shown that they offer advantages over buildings which already exist and are available for hospital purposes. This is not the place to discuss the advantages of the open air as opposed to the indoor-ward system with regard to the two points of expense and convenience. It is, however, necessary to say that, as far as the well-doing of the wounded is concerned, it has yet to be shown that one system gives better results than the other under modern conditions and with the kind of work remitted to hospitals of the type I am referring to." There are other valuable papers of which want of space prevents mention. The *Journal of Surgery* is excellently printed, and contains a number of beautifully executed illustrations.

MEMORIAL TO MADAME DEPAGE.

THREE weeks ago we referred to the death of Madame Depage, drowned in the sinking of the *Lusitania*. The manner in which she had helped her husband in the establishment and conduct of the International Surgical Society was mentioned, and it was said that we had reason to believe that many British surgeons would desire that some permanent memorial should be set up to the woman who had done so much for surgical science and the cause of international amenity. A fortnight ago we mentioned that a fund had been opened to defray the cost of erecting a bronze memorial in some suitable place. We are informed that the following subscriptions have already been received:

	£	s.	d.		£	s.	d.
Sir T. Lauder Brunton, Bt., F.R.S.	10	10	0	Professor Sinclair White	2	2	0
Mr. D'Arcy Power ...	5	5	0	Mr. Robert Jones ...	2	2	0
Mr. Clifford White ...	4	4	0	Lieut.-Col. A. W. Sheen, R.A.M.C.(T.)	1	1	0
Captain W. J. Greer, R.A.M.C.(T.)	3	3	0	Mrs. D'Arcy Power ...	1	1	0
				Mr. W. D. Spanton ...	0	10	6

Friends who wish to contribute are requested to send their subscriptions to Mr. D'Arcy Power, 10A, Chandos Street, Cavendish Square, W.

Mr. Clifford White, F.R.C.S., reminds us that Madame Depage, before she went to America, was acting as Directrice of the Belgian Military Hospital at La Panne, of which Professor Depage was director, and where Mr. White acted as surgeon for some months. The nurses at the hospital were, he tells us, about 90 per cent. British, there were several Danes, the remainder being Belgians. Nothing, he said, could have exceeded the tact and charm with which Madame Depage treated and worked with all the nationalities concerned. She had had nursing experience in Constantinople, and was able to help the ward work during such a rush as occurred in December, soon after the hospital was first opened.

HYPODERMIC INJECTIONS OF OXYGEN GAS IN THERAPEUTICS.

HYPODERMIC injections of oxygen gas were used therapeutically for the first time in the year 1900 by Ewart[1] and Domine, independently of each other. Soon afterwards Chabas[2] and Domine[3] obtained good results in certain infectious diseases. With the publication of F. Ramond's work[4] in 1910 began a series of clinical studies on the subject. Béraud's experimental and clinical work[8] showed that hypodermic injections of oxygen enabled animals to resist asphyxia better than animals not so treated; that they controlled carbon monoxide poisoning, stimulated cell activity, acted as antitoxic and anti-infectious agents, slowed the pulse, usually lowered temperature in fever, diminished cyanosis, led to euphoria and diuresis, and in chest affections rendered expectoration easier and more abundant. It appears from the extensive experiences of these two writers and numerous others that hypodermic injections of oxygen have proved either very beneficial or curative in the following conditions: Toxic dyspnoeas—for example, uraemia, with or without bronchitis or pulmonary oedema, diabetic coma, the pulmonary complications of diabetes; in mechanical dyspnoeas of the respiratory tract as a useful adjuvant treatment; in asthma and the asthmatic dyspnoea of aortic disease; in poisoning by carbon monoxide and dioxide, deleterious gases, and vapours of ether or chloroform; bronchitis, emphysema, bronchopneumonia, either lobular or lobar; massive pneumonia, empyema, pulmonary tuberculosis, both in early slight and later severe cases; pertussis, acute endocarditis (one case), typhoid fever; oedema of the glottis or lungs, marked dyspnoea with defective oxygenation as in cardiac and renal disease, asphyxia neonatorum, syncope, and electrocution.

Ramond successfully treated by this means two cases of Raynaud's local asphyxia. Dumarest used it in early gangrene of the foot due to arteritis, and found it very useful in a large number of cases of "frost-bite" in the war. Toulouse and Puillet[13] record rapid cure in four cases of acute psychoses of the acute confusional type; marked mental improvement began on the first day of treatment, confusion and agitation giving place to lucidity and calm, with improved sleep and euphoria. Dardel[14] records great benefit in nervous and mental disorders: sleep improved and became deep and natural; euphoria was constant; benefit occurred even in organic cerebral diseases. His cases comprise neurasthenia, epilepsy, constitutional psychopathy with chronic depression, ideas of persecution with violent attacks of anger, circular insanity, chronic gastritis with obstinate insomnia, and catatonic dementia with remissions. Léger[16] tried this therapy in three cases of tetanus, two of which were very severe, and seemed absolutely hopeless; they all recovered.

We are indebted to Dr. H. O. Howitt, of the Board of Health, Guelph, Ontario, and Mr. D. H. Jones, professor of bacteriology in the Ontario Agricultural College, Guelph, for an advance copy of a paper on injection of oxygen as a treatment for tetanus, which they propose to publish in the *Canadian Medical Association Journal*.

Dr. Howitt reported in that journal (1914) the beneficial results from the subcutaneous injection of oxygen in the dyspnoea of tuberculosis, in gas poisoning, pneumonia, oedema of the lungs, bronchial asthma, and after operations. In making experiments with regard to tetanus a fresh culture of *B. tetani* was obtained from the Parke Davis Co., and subcultures made from this in dextrose beef extract bouillon and dextrose beef extract agar, incubated under anaërobic conditions at 37° C. for three days, and kept later at room temperature. The cultures were shown to be virulent by inoculation experiments on a guinea-pig.

In the experiments oxygen was injected into the subcutaneous tissue through an aspirating needle fitted with a long rubber tube connected with the source of supply. In the first series of experiments four guinea-pigs were inoculated with *B. tetani*, and in the case of two sufficient oxygen was given to produce emphysema over an area 3 to 5 cm. in diameter in the immediate neighbourhood. In the two control animals symptoms of tetanus were observed after thirty to thirty-six hours, and death occurred after forty-six and seventy-two hours. Of the two treated with oxygen one survived. In the other tetanic symptoms were observed after forty-four hours and death

occurred after eighty-four. In this series of experiments an eight-day bouillon culture was injected on the inner side of the right thigh.

In the second series agar plate cultures were used. The skin was punctured with a sterile instrument, and a platinum needle drawn through the surface growth of the culture was then inserted into the wound. In the two control animals symptoms of tetanus were observed in thirty-six and thirty-eight hours, and death occurred in fifty and sixty-six hours. In the animals treated by injection of oxygen after inoculation, symptoms of tetanus developed in one animal in fifty-one hours and in the other in ninety. The former died after seventy-two hours, the other seemed to be recovering apparently eight days after inoculation.

The authors consider that though the experiments are limited they justify the use of oxygen in tetanus in the manner indicated.

The earlier observers, and some of the later also, used a simple apparatus consisting merely of a rubber tube connected with an oxygen bag or cylinder and a Pravaz syringe; this apparatus has often worked well, but the method is not accurate. Ramond[4] (1911) interposed the rubber ball of a thermocautery between the oxygen balloon and the needle; it allowed quicker injection, so that three litres of gas could be easily and safely injected within the space of a few minutes. Derose[11] gives a description of a simple but satisfactory arrangement invented by Sapelier. The special "oxygenator" of Bayeux[7] is praised by Brelet[12] as portable and very accurate; the gas can be injected either slowly or quickly. A description of Martinet's oxygenator is given by Dardel.[14] The rate of injection varies according to the nature of the case. As a general rule, urgent dyspnoeic conditions need fairly quick injection, but never so violent as to produce any marked pain. In chronic disorders, however, slow injection is desirable. Thus Gouget[9] advises that each injection should take from five to twenty minutes, but never more than thirty. Dardel urges that the patient should lie down for at least half an hour after injection whenever possible. Some slight pain on pressure may be felt over the site of injection for several days, and pricking sensations are common. The swelling produced by the injection may reach within a minute to half the size of a football (McCrae[15]), and the subcutaneous crepitation may be felt digitally and heard on auscultation for one to three days, or longer. The site of injection may be the interscapular region (Ramond), outer part of thigh or abdomen (Béraud), buttock, lumbar region, outer thigh, or outer abdomen (Bayeux). Injection near the thorax should be avoided (Pouy[6]), because it is hampering auscultation by the subcutaneous emphysema that follows; and Gouget says that the emphysema produced, if the injection be made in the back, may spread to the neck or mediastinum, and so cause pain or respiratory embarrassment. Light massage favours the diffusion and absorption of the oxygen; sometimes the skin becomes rosy during injection and shows local hyperthermia. Ramond says that "a few c.c." are enough for a case of Raynaud's disease; but for a general asphyxia he uses two or three litres at each sitting, repeated several times daily according to the needs of the case. In pulmonary tuberculosis Bayeux[7] gives seldom more than half a litre a day; in milder cases one injection in three days, in graver one daily (up to a litre), but always slowly. In nervous and mental cases Dardel[14] used Ramond's minimum doses (300 to 500 c.cm.).

The method is free from risk, and has never produced any bad effects. Probably the reason why oxygen has been so little used by hypodermic injection outside France and Switzerland is that gaseous embolism has been feared, but it has never been known to occur either in man or animals. In conclusion, there are many diseases, accidents, and cases of poisoning in which the hypodermic injection of oxygen seems worthy of trial, such as apparent death by drowning, lightning stroke, all acute poisons that kill by asphyxia or coma; many acute exanthemata, especially early in their course; croupous pneumonia as soon as the diagnosis is made, for at this early stage the oxygen-combining power of the blood is probably but little diminished; anthrax, glanders, malignant diphtheria, septicaemia, and snake-bite. It may prove also worthy of a place in the treatment of chronic diseases such as chlorosis and the incoercible vomitings of pregnancy, for inhalation of oxygen is sometimes beneficial in both these conditions (Hayem and Pinard respectively). And it may yet find a place as an adjuvant in the treatment of pernicious anaemia, marasmus in children, various visceral diseases, chronic alcoholism, syphilis and its sequelae, subacute combined degeneration of the spinal cord, tabes, disseminated sclerosis, syringomyelia, and status epilepticus.

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THE NINTH REPORT OF THE ROYAL COMMISSION ON SEWAGE DISPOSAL.

THE ninth report of the Royal Commission on Sewage Disposal deals with two important branches of the work of sanitary authorities: the disposal of liquid wastes from manufacturing processes, and the disposal of liquid and solid domestic refuse in rural areas.

The Commission has attacked the problems dealt with in its usual comprehensive and effective manner, and it is a pity that, as the report recognizes, it has not been possible to devote sufficient time and attention to the large questions that arise. This report is much more readable and better arranged than many of its predecessors, and offers ample evidence of the great pains which the Commission and its officers have taken. If it is necessary to criticize the recommendations somewhat stringently, it must be taken as an acknowledgement of the importance and weight of the opinions expressed.

The Disposal of Liquid Wastes from Manufacturing Processes.

The report recapitulates the recommendations of the third report (paragraph 22) to the effect that it should be the duty of the local authority to provide such sewers as are necessary to carry trade effluents as well as domestic sewage, and that the manufacturer should be given the right, subject to the observance of certain safeguards, to discharge trade effluents into the sewers of the local authority if he wishes to do so.

In the third report it was also recommended that where a manufacturer complies with the regulations of a sanitary authority for the preliminary treatment of his trade refuse he should, generally speaking, not be required to pay for its disposal. The Commission now, however, reports (paragraph 10) "that it may be desirable that local authorities should have a general power to make a charge, provided that the charges were lower in the case of effluents which had been subjected to preliminary treatment in accordance with the regulations."

The necessity is emphasized for the formation of Rivers Boards throughout the country and of a Central Authority with a staff of experts, one of whose functions would be that of "discovering the most efficient and economical means of treating the different classes of trade liquids."

With regard to some trade waste liquors the Commissioners state (paragraph 32) that it has not been found possible to purify them at reasonable cost, whereas the Commission of 1868 reported (first report, paragraph 96) that "of the many polluting liquids which now poison the rivers there is not one which cannot be either kept out of the streams altogether, or so far purified before admission as to deprive it of its noxious character, and this not only without unduly interfering with manufacturing operations, but even in some instances with a distinct profit to the manufacturer; and even in those cases where a certain amount of expense must be incurred in unremunerative operations, the use of the purified stream will more than recompense this expenditure."

In the new report the Commission deals mainly with cases in which, for one reason or another, the "manufacturers must remain responsible for the treatment of their own trade liquids." Different liquid wastes, and the processes by which they may be purified are described, and the standards with which in the opinion of the Commission the purified effluents ought to comply are set out. The liquid wastes are classified in three groups:

(1) Those which are polluting by reason of the suspended matter which they carry with them.
(2) Those which are polluting mainly because of the suspended matter which they carry with them, but also to a considerable extent because of the dissolved impurities which they contain; and
(3) Those which are polluting mainly because of the dissolved impurities which they contain.

The Commissioners have investigated the results obtained by means of the purification plant in existence at various mills, and apparently in only two or three instances are their conclusions based on their own experiments. The information given with regard to the treatment of trade refuse is not nearly so complete as that given with regard to the purification of sewage in former reports, and would not indeed be of much service to a manufacturer who desired to construct works for the purification of his refuse. The Commissioners state that they can only indicate the lines on which the appropriate solutions should be sought (paragraph 12), and that further time and experiment are necessary for the elucidation of the subject.

In the concluding part of this section of the report the existing law in regard to manufacturing pollution and its defects are discussed, and suggestions are made for its amendment. The most important of these suggestions is that a system of legal standards should be set up, and the basis upon which such standards should be founded are discussed. It is to be noted (paragraph 102) that the Commissioners have, for the present at least, departed from the principle which guided them in fixing a standard for sewage pollutions—the effect of the discharges upon the streams. They recognize (paragraph 113) that it is important that the standards for different trade wastes should be uniform as far as practicable, but at the same time suggest standards which vary somewhat even for liquids of similar character.

With regard to the establishment of fixed standards, all the officers of Rivers Authorities and of county councils interested in rivers pollution have given evidence before the Commission that in their opinion it was not practicable, and a committee of experts advising the Association of Municipal Corporations have reported to the same effect with regard to a standard for sewage effluents. It is still more impracticable to fix standards for trade effluents. The Commission has adopted different standards for sewage and for trade refuse, and these vary for sewage in different circumstances and for different classes of trade refuse. The Commission proposes that the law should be altered so as to allow that in any case there may be an appeal against the requirements of the standard either by the Rivers Authority or by the manufacturer.

The Disposal of Liquid and Solid Domestic Refuse in Rural Areas.

This subject is not dealt with in any great detail, nor is there anything very striking in the recommendations of the Commission. It is pointed out that where the population is at all dense and where there is an abundant water supply, sewerage and a water-carriage system are almost necessary. The Commissioners' remarks will be taken in many cases as rather too favourable to the provision of cesspools, which can only be looked upon as evils even when unavoidable. It appears to be suggested that in villages of scattered houses excreta and slop water should be disposed of upon the gardens, somewhat after the well-known method advocated by the late Dr. Vivian Poore, but all sanitary officers who have had rural districts under their charge know how difficult it is to ensure the prevention of nuisance when such methods are resorted to. In theory the plan is excellent and has the advantage that it prevents pollution of the streams, which might otherwise be caused; but it calls for constant supervision, and in practice may lead to intense local nuisance.

Sir William Ramsay has been so struck with the gross waste of nitrogen caused by ordinary methods of sewage disposal that in a separate memorandum he lays great emphasis on the advisability of disposing of sewage and slop water in the soil in rural districts. He also supports a contention which is constantly raised in connexion with schemes of sewerage and sewage disposal for villages in agricultural districts, that these should not be paid for by the whole district, including farms and scattered houses which are not served by the scheme, but only by those which directly benefit. This raises the very large question of the general incidence of rates, which cannot be settled without much consideration. It might be argued that if Sir William Ramsay's views were adopted the childless man should not pay education rates.

Sir William Power has written a separate memorandum regretting that the Commission has been unable to set out more fully what should be the powers, duties, and functions of Rivers Boards, and speaks of memoranda which he has prepared dealing with these subjects. It is unfortunate that these have not been published, for, coming from a man of Sir William Power's well-known administrative ability and experience as Chief Medical Officer of the Local Government Board, they would have had quite exceptional weight. They will no doubt be available when legislation is being prepared.

The Final Report of the Royal Commission on Sewage Disposal.

The immense amount of work which the Commission has accomplished and the large number of volumes which it has published have led the Commissioners to issue, as a final report, a general summary of the conclusions and recommendations contained in their previous nine reports.

None can be more thankful than the Commissioners themselves that they have completed their monumental labours of over sixteen years, and although naturally there is much diversity of opinion with regard to the conclusions at which they have arrived, the importance of their labours and the care they have bestowed upon them are universally recognized.

The subject is one which can never be exhausted, and not the least important of the recommendations, and one with which everyone agrees, is that which suggests the establishment of a Central Authority as soon as possible, so that the work of the Commission may be continued.

The report closes by confessing that the Commissioners have been quite unable to complete the investigations which they desired to make. It is much to be regretted that the Central Authority whose establishment they recommend is not immediately to be brought into being, so that the skilled observers of the Commission who have for so many years done such excellent work could continue their labours without any interruption.

The Commission has received evidence fully and fairly from all sorts and conditions of men interested in the subjects of its investigation, and although there are many who will not agree with their conclusions, no one will doubt the intense interest the Commissioners have taken in their subject, and the care with which they have considered it.

The various reports have been reviewed as they have been issued, and little regarding them need be repeated here. From the point of view of the medical officer, they may be summarized as follows:

The First (1901) recommended that artificial processes are sufficient to purify sewage, and that the Local Government Board would be justified in modifying its rule requiring the application of sewage to land, and also that a central Rivers Authority should be created.

The Second (1902) contained the results of scientific experiments carried out by officers of the Commission.

The Third (1903) recommended that manufacturers should have the right to discharge their refuse into the public sewers.

The Fourth (1904) dealt with the pollution of tidal waters, with special reference to the contamination of shellfish; and it no doubt influenced the Local Government Board in framing the Shellfish Regulations, which came into force on March 1st.

The Fifth (1908) discussed the relative merits of the various methods of sewage purification, and recommended that legal standards for sewage effluents should be prescribed by the proposed central authority.

The Sixth (1909) showed that distillery refuse can be treated so as to produce a satisfactory effluent.

The Seventh (1911) dealt mainly with nuisances due to green seaweeds in sewage-polluted estuaries, with special reference to Belfast Lough.

The Eighth (1912) discussed fully the question of standards for sewage effluents.

The Ninth (1915) recommends that there should be standards

for the different kinds of trade waste effluents, and that the legal procedure with regard to trade pollution should be altered.

The summary of the conclusions and recommendations in this final report is the more useful, in that the Commission might with advantage have been a little more systematic and concise in drawing up its reports. The reader has been burdened with too great an amount of material, although it is true that the subjects dealt with are exceedingly difficult and have manifold complications, and that the stupendous task has been attacked in such an effective manner that the work of the proposed Central Authority will be considerably lighter than it would otherwise have been.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE annual general meeting of the London and Counties Medical Protection Society, Limited, was held at the offices, 32, Craven Street, London, on May 26th, Dr. G. A. HERON, President, in the chair.

The annual report of the Council stated that the steady progress the society had made ever since its commencement, twenty-three years ago, still continued. The number of fresh applications from members asking for advice was 621 during 1914, as compared with 608 during 1913 and 575 in 1912. In the great majority of cases the applications were dealt with successfully without recourse to litigation, and the results when litigation was necessary were also satisfactory. The plan adopted four years ago of indemnifying members to the amount of £2,000 for any one member in any one year against costs of the other side and damages in unsuccessful lawsuits, as well as against their own costs, had proved most beneficial, not only to the members, but also to the society itself, since the sum necessarily set aside for the payment of such indemnities had so far left each year a balance of profit to the society. It was an important point in favour of the society that the indemnity applied in cases where members were the plaintiffs and was not limited to cases in which they were the defendants. The report was principally devoted to a survey of the legal cases undertaken by the society during the year. These involved questions arising out of health insurance practice, the relations of medical officers with public bodies and of practitioners with coroners, matters relating to professional competence and ethical practice, cases in which the laws of libel and slander had been contravened, and many questions of lesser importance. Advice in fresh matters was given to 184 dentist members; dental surgeons comprise about one-fourth of the membership, and it is an index of the state of the law relative to dental practice that the applications for legal advice from dentist members were proportionately more numerous than from medical members. Four hundred new members joined the society during the year, thus maintaining the progressive increase in membership noticeable for some years past. The number of members entitled to benefit on December 31st, 1914, was 5,191.

Dr. G. A. HERON, in moving the adoption of the report and financial statement, emphasized the liability of every medical practitioner, however experienced, careful, and respected, to find himself sooner or later the target of adverse criticism. It was surprising, therefore, that so many members of the profession remained outside the protection that such a society offered. He wished the medical journals and the teachers in the medical schools would impress on all concerned the desirability of securing protection against the risks of medical practice. The President also referred to the difficulty which the society often experienced in obtaining payment of damages and costs awarded, although the opposite parties were able apparently to pay their own legal charges. This state of things appeared to indicate the need for legal reform. The finances of the society were in a satisfactory state. The insurance fund guaranteed to members payment of costs even in unsuccessful cases, and in that respect the society went further in meeting the expenses of litigation than did any other body working on similar lines. The President quoted a paragraph in the *Medical Press and Circular* to the effect that the time was ripe for another attempt to amalgamate the Medical Defence Union and the London and Counties Protection Society. Speaking for himself, he was entirely of the opinion that it was unfortunate to have two societies doing work which, in his judgement, could quite well be done by one. He was quite willing to help to bring about a union, and he knew there were members of the Medical Defence Union who shared that feeling.

The report and financial statement were then adopted.

Dr. Heron was unanimously re-elected President, the retiring members of the council were reappointed, Dr. C. M. Fegen was re-elected treasurer, Dr. Hugh Woods general secretary, and Mr. A. G. R. Foulerton financial secretary.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee fifteen cases were considered, and grants amounting to £104 voted to twelve of the applicants. The following is a summary of the cases relieved:

Daughter, aged 59, of M.R.C.S.Eng. who practised at Liverpool. Until the war broke out managed to earn a living as a teacher of singing, but practically all her teaching work has ceased. Has an invalid brother partly dependent on her. Voted £10 in two instalments.

Widow, aged 52, of M.B.Aberd. who practised at Watlington, Oxon. Left totally unprovided for at her husband's death after a long illness. Has one son, who is an invalid. Relatives allow her £5 per month, but this is not sufficient to provide all that is required for herself and son, and applicant unable to work. Voted £10 in two instalments, and referred to the Guild.

M.R.C.S.Eng., aged 77, who practised at Manchester and Brighton. Has been in failing health for some years, and is partially blind and suffering from right hemiplegia. Only income the old age pension. Has one daughter, who has had to give up her situation to nurse her father. Voted £18 in twelve instalments, and referred to the Guild.

Daughter, aged 60, of L.R.C.P.Edin. who practised at Cheadle, Cheshire. Health very indifferent, and unable to undertake regular employment. Only income £30 per annum. Relieved nine times, £76. Voted £12 in twelve instalments.

Daughter, aged 64, of M.D.St. Andrew's who practised at Dover. Has a sister and niece dependent on her. Resides at seaside town, and takes in paying guests, but recently had difficulty in obtaining them. Relieved once, £10. Voted £10.

Daughter, aged 64, of M.R.C.S.Eng. who practised at Derby. Health very indifferent for many years. Only income £5 per annum from a friend. Lives with a sister, who provides her with a home. Relieved five times, £60. Voted £12 in twelve instalments.

Daughter, aged 66, of M.R.C.S.Eng. who practised at Durham. Has been an invalid for years and unable to leave her bed, and practically blind. Only income a pension from another charity. Relieved three times, £30. Voted £5.

Wife, aged 49, of M.R.C.S.Eng. Deserted by her husband. Has one daughter who was a governess, but has lost her employment in consequence of the war. Applicant very delicate. Only joint income recently 10s. per week. Relieved twice, £14. Voted £12 in twelve instalments.

Widow, aged 68, of M.R.C.S. who practised in Jamaica. Has three married sons, but none able to help. Only income £26 per annum from another charity. Too old to work. Relieved twice, £20. Voted £12 in twelve instalments, and referred to the Guild.

Also three emergency grants of £1 each, pending further inquiries.

Six additional annuitants at £20 each were also elected, making the total number 148.

Subscriptions may be sent to the Honorary Treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

The Royal Medical Benevolent Fund Guild appeals for gifts of secondhand clothing, boots, and shoes in good condition, also household linen. The gifts should be sent to the Secretary, Royal Medical Benevolent Fund Guild, 43, Bolsover Street, W.

SURGEON-GENERAL SIR GERALD BOMFORD, K.C.I.E., late Director-General of the Indian Medical Service, who died on April 12th last, left estate of the gross value of £15,880, of which the net personalty has been sworn at £15,599.

A DIVISION of statistical research is to be organized within the Bureau of Records, Department of Health of the City of New York, on January 1st, 1916. The establishment of such a division has been contemplated by the department for many years, and has repeatedly been recommended by special committees.

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MEDICAL STUDENTS AND THE WAR.

DURING the past few weeks occasional letters have been appearing in the local newspaper press of Edinburgh in which it has been hinted that the medical student is among the shirkers. It is therefore interesting to find that the great majority of the candidates now sitting for the final examination of the University are pledged to give their aid in bringing to an end the stupendous struggle in which the nations are engaged. We understand that almost every one of the ninety men, or thereabouts, who are up for their final professional examination in the University is going into the service in one way or another. Mr. Tennant stated in the House of Commons on May 19th that the number of temporary commissioned officers of the R.A.M.C. was at that time 3,100. These are nearly all young men recently qualified; this total is irrespective of those who have recently taken commissions in the Territorial Force, many of whom also are young men.

Any suggestion that medical students are showing any tendency to shirk their duties to the country to-day is utterly unfounded. The War Office, with the hearty support of the President of the General Medical Council, has urged all senior medical students to pass their final examinations at the earliest possible date, so that they may be in a position to take temporary commissions in the Royal Army Medical Corps, and a good many medical students who were serving in British hospitals in France in various capacities were instructed to return home last winter in order that they might prepare for their final examinations. In addition, some of the medical schools, and most, or all, of the licensing bodies, are giving facilities to students who have reached the stage when they must attend clinical practice, to offer their services as dressers in hospitals at home or abroad. In view of the present needs of the army for medical officers, any one who deters medical students from making themselves competent and qualified in the profession of their choice is doing the country a disservice. Casualties have been extremely heavy during the last couple of months, and those who are in the best position to judge tell us that they may be expected to increase in the near future. Already, according to Mr. Tennant's figures, nearly 6,000 medical men have been taken out of civil practice by the army, and it will undoubtedly be difficult greatly to increase this number from among men actually in practice without seriously dislocating civil work and the work of hospitals at home, where so many medical men are giving part-time service.

Sir Donald MacAlister, in his address at the opening of the summer session at the General Medical Council on Tuesday, said that inquiries at the several schools as to the number of students actually in attendance at the courses of medical study showed that the number was considerably over a thousand fewer than in 1913. The recall of senior students from active service to resume their professional studies had had a favourable effect on the fifth year, now drawing to a close, but he anticipated that the falling off during the next few years must be expected to amount to some 250 a year in the number who become qualified as medical practitioners.

The army has received most valuable help from the medical profession in the Dominions, but Canada has been somewhat hampered owing to the fact that the local registration laws of certain provinces have stood in the way of many able and efficient surgeons there resident who desired to come to the aid of the mother country. Sir Donald MacAlister said that the response to a communication he had addressed to the medical authorities of the provinces concerned, pointing out the imperial bearings of the question of reciprocity, had exceeded all expectations. From Ontario, British Columbia, Saskatchewan, Manitoba, and Alberta messages were received, often by cable, stating that legislation had already been initiated for the removal of existing provincial restrictions. When the necessary steps are completed, all the provinces of Canada will have severally entered into reciprocal relations with the United Kingdom, and the way will be open for the application of the Medical Act, 1886, to the Dominion as a whole, as it is now applicable to the Commonwealth of Australia.

But when we look at actual numbers, it will be seen that useful as the help of the profession in the Dominions will be, and grateful as the nation is for the readiness of the provincial legislatures in Canada to remove all technical difficulties, the majority of medical officers required must be furnished by the home countries. The President of the General Medical Council, in referring to the organized efforts now in progress throughout the United Kingdom for such a readjustment of civil practice as will liberate all who can possibly be spared for the medical service of the navy and the army, spoke with gratitude of the efforts made by the Scottish Emergency Committee and by the British Medical Association through its local organizations, and referred to the fact that the services of qualified women had been freely offered and accepted for many of the places now vacant at home. But, as he truly observed, our professional reserves are at no time large, and the timely and valuable help received from these various resources must, if possible, be supplemented. Moreover, the casualty lists, and the lists also of the awards for conspicuous gallantry, have, as he said, testified to the magnitude of the losses incurred by the Army Medical Service, and the medical profession will agree with him that a duty lies on it as a whole to endeavour to fill the vacant places by men whose training and skill can be guaranteed and whose devotion will not be inferior to that of their fallen comrades. He appealed to the medical schools and corporations to aid the Council in its endeavour to maintain even in the present emergency the standards of teaching and testing which were regarded as essential to efficiency

THE TUBERCULOSIS PROBLEM—ON PAPER.

ACTING on the lines laid down by the Local Government Board and by the London County Council respectively, a large number of municipal and other authorities have established dispensaries for dealing with tuberculous persons in town and country areas. In London itself the work has been started by voluntary agencies, well in advance of the more slowly moving Government departments, but the general idea underlying the work actually done and the work proposed to be done is practically the same, although many

minor differences of method have been adopted in different localities. An attempt has been made to bring these methods into line, and to establish a uniform scheme for dealing with consumptive persons in London, by Dr. Barty King, who has devised[1] a detailed plan by which every conceivable case may be dealt with in accordance with his home surroundings and the stage at which the disease may have arrived at the time of notification.

In general outline the directions are not far removed from those approved by the County Council, but there are important differences which are worthy of careful consideration. It should be noted that the prevention of the disease is not here in question, the treatment of the individual being the sole consideration. The main point of difference between the scheme proposed and the present practice is the institution of a sort of court of appeal, to be called a Central Bureau and consisting essentially of a small committee of medical referees, with clerical assistance. The centralization of all the work done in a given area reads well on paper, but in its practical working out is full of difficulties. Under the rules that are gradually gaining acceptance by municipal and other tuberculosis dispensaries, ample provision is made for the medical investigation of each individual case. The general practitioner or panel doctor detects the disease and notifies the medical officer of health; he causes the case to be examined by the tuberculosis officer, who in his turn may consult with the physician before deciding on the line of treatment to be adopted. The further reference to a committee of medical referees, even in cases of disagreement, would not bring any advantage to the patient, but on the other hand would add greatly to the delay in starting treatment. Under the suggested scheme it would appear that, when the attendance of the patient could not be secured, this committee would have to decide many difficult or disputed points on the strength of reports alone. Such reports would be utterly insufficient in a large proportion of the numerous cases to be dealt with. The fact that the final decision must rest with the committee might conceivably lead to very superficial work on the part of the busy tuberculosis officer, who has hitherto been designated as the responsible man, as far as treatment is concerned. The appointment of a Consulting Physician to be attached to the tuberculosis dispensary has not been fully recognized by the two chief authorities in London, but where such appointments have been made they have proved of great advantage, ensuring full investigation of his case to the patient and providing a second opinion for the responsible officer in cases of difficulty.

The scheme under consideration makes no provision for domiciliary treatment, except by reference to the home doctor. It has become increasingly evident of late years that domiciliary treatment can be effective only if the methods of the sanatorium be carried out in the domicile. This can be done only when the help of trained visitors, working in connexion with medical authority, is available. It is of far greater practical value to the community than the separation for a period of the consumptive member of the household.

The futility of incurring expense in the attempt to stamp out the disease so long as its disseminators remain uncontrolled has often been commented upon in our columns, and it is to be noted that the provision of establishments for advanced cases is included in Dr. King's programme.

It does not seem probable that anything short of legislation can ever provide satisfactorily for segregation of the main source of the disease, but the fact is always shunned, or postponed, or referred to other authorities, when practical steps have to be taken. In the scheme of the London County Council the question is not even considered.

Sir William Osler has written a foreword to introduce the elaborate scheme that Dr. King has suggested, and commends it to the consideration of the profession. He recognizes that, like every piece of complicated machinery, it can only do its work effectively if every part is "oiled by mutual good feeling." As a well thought-out plan it is worthy of careful study by those who are charged with the care and control of tuberculous persons, but as a practical machine it appears to bristle with points of probable friction, needing more of the oil referred to than could be reasonably looked for in the daily round of practice.

[1] *Scheme for dealing with Tuberculous Persons in the County of London.* By D. Barty King, M.A., M.D.Edin., M.R.C.P.Lond. and Edin.; with a foreword by Professor Sir W. Osler, Bt., F.R.S. London: John Bale, Sons, and Danielsson, Limited. 1915. (Sup. roy. 8vo, pp. 64; 15 charts. 5s. net.)

THE CASE OF THE TERRITORIAL MEDICAL OFFICER.

THE *Westminster Gazette* for June 1st contained an article by Mr. Arnold Bennett on "the case of the Territorial medical officer." Mr. Bennett pointed out that the lieutenant R.A.M.C. (Territorial) attached to a combatant unit gets 14s. 6d. a day; when he has served three and a half years he can be promoted to captain, with 15s. 6d. a day, but must be eight and a half years captain before he gets his majority with 22s. 6d. a day, so that Mr. Bennett estimates that the R.A.M.C. Territorial officer must serve twelve years to reach a salary of £410 a year, whereas the temporary lieutenant R.A.M.C. who has received a commission begins with a salary which he calculates to amount to £447 a year. Yet the permanent officer with less pay may be of mature age and considerable experience, and has already incurred family ties, responsibilities and expenses. Moreover, the permanent officer has devoted the spare hours and the holidays of years in peace time to the service of his country, yet he not only draws less pay but will receive no bonus after the war. As an instance of the hardship which officers R.A.M.C. Territorial are suffering, he gives the case of a regimental captain: "A Territorial R.A.M.C. regimental captain, aged about 45, with eight years' military service and twenty years' experience as a general practitioner, was earning about £1,000 a year when war broke out and he was mobilized. (For obvious reasons, most Territorial R.A.M.C. officers are men of good position.) He was, of course, obliged to leave his practice at a moment's notice. In ordinary circumstances he could have obtained a locumtenent at, say, 4 guineas a week, and the elements of the practice might have been saved. But precisely here comes part of the hardship. The terms offered by the War Office to temporary R.A.M.C. officers have produced an earthquake in the locumtenent market. Except at a prohibitive price, the locumtenent has practically ceased to exist in the civilian world. The private practice of my Territorial R.A.M.C. captain has vanished, and his insurance practice is being imperfectly kept together by a doctor living at a distance. When the visiting doctor is paid, the margin of profit left over for the owner of the practice is almost negligible. Thus my Territorial R.A.M.C. captain finds his income suddenly reduced from about £1,000 to about £280 per annum. He has no other resources, for all his capital has been put into his practice. He is married and has three children, whose ages range from 14 to 4. Needless to say, among other consequences of the financial catastrophe, a serious check has occurred to the education of the two elder children.

The officer has applied for promotion, which has been refused because, according to the rules, he has not served long enough to merit promotion. Nevertheless, these rules do not prevent other R.A.M.C. officers, much junior to himself, but differently circumstanced in regard to the service, being promoted to majors and even to higher ranks when there are vacancies in the home unit." Mr. Bennett thinks that the attitude of the War Office is "very human." It had, he says, the Territorial officer safely in hand. It wanted temporary officers, and it had to go out into the market and tempt them with a fair price. He also criticizes the attitude of the War Office as to the lieutenants of the Special Reserve R.A.M.C. They have, he says, "been to the front; some have been killed, some wounded, some decorated. But apparently none has received promotion, whereas new regular lieutenants in the R.A.M.C. have been promoted wholesale. At least one Cabinet Minister, and probably many permanent officials, has enunciated the axiom that injustice is bound to happen in war time. Still, it behoves the authorities concerned to minimize injustice so far as lies in their power. And their power is great." This is a matter which is engaging the attention of the British Medical Association, but it is satisfactory that public attention should be called to it by so distinguished a layman as Mr. Arnold Bennett. The public, we believe, has a very imperfect idea of the sacrifices entailed upon the Territorial medical officers who were called away from their practices on mobilization, or who have since joined. Members of other professions have responded most nobly to the country's call, but, with the exception perhaps of the Bar, there is no profession in which a man's practice is so largely individual as medicine; it is very difficult for his colleagues, with the best will in the world, to prevent a loss of connexions which in many instances must reduce the medical officer from a position of ease to one of great embarrassment. Often he will have, after the war, to begin over again.

THE ELECTRO-MAGNET IN MILITARY SURGERY.

A FOREIGN body of magnetizable nature, even when deeply embedded in the tissues, can under favourable circumstances be brought under the influence of an electro-magnet and attracted little by little until it causes a projection at the cutaneous surface, whereupon it can be extracted through a small incision. This method involves long and frequently repeated sittings, but Professor Bergonié of Bordeaux, having observed that interruptions of the continuous current used in these cases accelerated the result, has conceived the idea (*Arch. d'électr. méd.*, No. 390, 1915) of employing simply an alternating current with the magnet, for the purpose of causing a vibratory motion of the projectile, and so facilitating its localization, when it can be removed through a deeper incision. His first experiments were made, not with the massive core of the electro-magnet, but with the inductor of an old coil used in *x*-ray work. Upon the approach of this inductor, excited by alternating current, the projectile comes under an attraction less powerful than that exercised with the electro-magnet employed with continuous current, and the displacement, as shown by the *x*-ray photograph, is insignificant; but a new phenomenon occurs, inasmuch as the projectile vibrates when placed within this alternating field. The vibrations synchronize with the alternating current, the frequency being usually between 48 and 55 a second. The fact that an electro-magnet excited by alternating current causes magnetizable fragments to vibrate has hitherto scarcely been noted, and has been utilized very rarely in industry, and in medicine not at all. The projectiles capable of being influenced are fragments of shell, and, to a smaller but sufficient degree, the German bullets having a sheath of ferronickel. With lead projectiles the results are negative. Bergonié's procedure is to pass the extremity of the core of the magnet backwards and forwards over the suspected part, but never allowing it to come into contact with the skin. If on superficial palpation any vibration of the tissues is observed, it indicates that there is an embedded projectile which is magnetizable. The point of maximum vibration is then found by deeper palpation, and the projectile is localized as being nearest the surface at this point. Here, if it is possible, the incision is made, but as all surgical instruments will share in the vibration, the current must be switched off when they are in use. After the making of the incision the magnet (which should have a sterilized covering) is again used, and, making a digital exploration, the surgeon is able to discover the direction in which the vibration continues. The incision is deepened in that direction and, if the projectile is still undisclosed, the magnet is used again. These alternations of surgery and magnetic action rarely number more than four or five, even in thick parts when the bullet is deeply embedded. Bergonié makes it clear that it is purely by surgery the bullet is extracted, and not by magnetic attraction; the function of the magnet is ended when the surgical instrument or the finger of the surgeon is upon the projectile. Care must be taken, if the operating table is of iron, that the magnetic instrument does not approach too near its plane. From the electrical point of view the essential instrument is the magnet itself excited by an alternating current of 110 to 120 volts or 220 to 240 volts. As the magnet is heavy it requires a strong support; preferably it should be suspended from a wall bracket and admit of displacement in all planes. A good cut-out for sudden rupture of the current is also necessary. Professor Bergonié appends reports of 28 cases in which projectiles were found, localized, and in the greater number of instances extracted surgically by this procedure; he urges that it is purely objective, requires no resort to geometry or calculation, and brings into play that fine tactile sense of which the surgeon should be abundantly possessed. Bergonié's method is also the subject of a French "dépêche ministérielle" (No. 13,835 C/7), in which it is stated that splinters of shell and bullets of a magnetizable nature now form four-fifths of the projectiles extracted. Shrapnel, so frequent at the beginning of hostilities, is very rarely found among recent wounded. Extractions with magnet-localization diminish in large measure the number of cases of infection associated with projectiles not promptly extracted. Bergonié does not put the method forward as a substitute for *x* rays, but as an additional means of localization.

EHRLICH'S RECENT MODIFICATION OF SALVARSAN.

PROFESSOR WECHSELMANN of the Rudolf-Virchow Hospital in Berlin and Dr. G. L. Dreyfus of Frankfurt have recently published their experiences of sodium-salvarsan (salvarsan-natrium).[1] After discussing the defects of the original salvarsan and of the more soluble neo-salvarsan, Wechselmann stated that he was provided a year and a half ago by Ehrlich with a new salvarsan preparation, 12,000 injections of which he had since given. He found it satisfactory in every respect, as it combined the advantages of the two earlier preparations with none of their failings. At first two preparations were tested, the only difference between them being the presence of "hyraldit" in the one. The other, No. 1206 A, had the same action as the first preparation, the chemical and physical properties of which were inferior. Ehrlich, accordingly, decided to introduce only No. 1206 A under the title of "salvarsan-natrium." This was a fine golden-yellow powder, which was easily soluble in water and which, on exposure to air, acquired a dark brown colour, became almost insoluble, and increased in toxicity. It contained the same proportion of arsenic, 20 per cent., as neo-salvarsan, and the dosage was, accordingly, the same. For more than a year the dosage of sodium-salvarsan ranged from 0.3 to

[1] *Muench. med. Woch.*, February 9th, 1915.

0.45 gram. Later, the dose was occasionally raised from 0.6 to 1 gram, and though these larger doses caused but little discomfort, the smaller doses of 0.3 to 0.45 gram were preferred for ambulatory treatment. In these quantities the drug was found to be absolutely atoxic, and the injections were not followed by the slightest reaction as a rule. After the first injection in florid syphilis the only reaction was an occasional slight rise of temperature, which was unaccompanied by any discomfort. Only in four cases did slight vasomotor phenomena, suggestive of anaphylaxis, occur; but two cases within a week showed a measly rash, and the preparation was accordingly considered unsuitable for subcutaneous injection. This method of administration was also contraindicated by occasional slight necrosis at the site of injection, due rather to the alkaline constituent of the preparation than to the salvarsan element in it. Being practically atoxic, the preparation could be given even in cases of apoplexy, diabetes, and other diseases, including nephritis, so long as the functional activity of the kidneys was not much reduced. Albuminuria was never provoked by the injections, nor increased in cases in which it already existed. From 40 to 50 injections were given in each case over a considerable period, two or three injections being given every week. It was hoped that equally good results would be obtained by increasing the dosage and decreasing the number of injections. In early cases a total dose of 4 to 6 grams was sufficient, practically without exception, to banish all the clinical signs, and in about 93 per cent. to render Wassermann's and other syphilitic reactions negative. In cases of old standing the clinical results were also good, but Wassermann's reaction sometimes remained positive for a considerable period. As concentrated solutions were apt to cause not a little discomfort and vomiting, a dilution of 0.1 sodium salvarsan to 10 of a 0.4 per cent. saline solution was usually given and found satisfactory. Though the drug was given by subcutaneous and intramuscular injections in some cases, it appears that the intravenous method of administration was generally preferred. The account given by Dr. Dreyfus of sodium-salvarsan was also very favourable. He pointed out that sodium-salvarsan was chemically the same substance as old salvarsan when this had been rendered alkaline immediately before injection. In other words, it was old salvarsan modified so as to be as easily given as neo-salvarsan. So atoxic was this preparation that in a series of 138 injections there was no rise of temperature above 37° C., and no subjective reaction. In a short editorial note, the *Muenchener medizinische Wochenschrift* expresses the hope that, by this advance in salvarsan therapy, the ambulatory treatment of syphilis among soldiers on active service will be greatly facilitated. At present it appears that the difficulties of preparing and injecting solutions of salvarsan are a great hindrance to ambulatory treatment in the field.

MENTALITY OF THE WOUNDED.

ALL who have seen our wounded men in hospital agree that they bear their sufferings not only without complaint but with a cheery optimism which is a powerful aid to recovery. In a private letter from a medical officer in a hospital ship in the Dardanelles, after speaking of the severity of the wounds, which suggest the use of soft-nosed bullets, he says the fortitude of the men is very fine and admirable. Dr. C. K. Austin, writing in the New York *Medical Record* of November 7th, 1914, said: "The fortitude and philosophy of the Allies' wounded has attracted universal comment, and is one of the most serious warrants for the ultimate success of the allied cause; what mortal man can be got to put up with, without complaint, the apparently unnecessary hardships and dangers that many thousands of these brave soldiers have had to undergo, simply leaves one speechless." Of course all are not cast in the same heroic mould, and, as Velpeau pointed out long ago, wounded men, according to their constitution and their mentality, either exaggerate or make light of pain. There is usually a great difference between the wounded of a victorious and those of a defeated army, the latter showing much less resistance to pain and to the effects of injury than the former, whose vital power is raised to the highest point by the triumph of their arms. He said also that the seasoned veteran accepts his fate with greater indifference than the young soldier who has been wounded in his first battle. This makes the lightheartedness shown by our men, to the vast majority of whom the hardships of war had become a mere tradition, all the more remarkable. Larrey cites many instances of the courage with which the soldiers of Napoleon's Old Guard bore the severest amputations, and Dr. Bonnette in the *Quinzaine Thérapeutique* gives a number from other sources. One of the most striking testimonies to the hardiness of the French soldier is that of Sir Charles Bell, who went over to Belgium after Waterloo to work in the hospitals of Brussels. Writing to his brother on July 1st, 1815, he says: "I have just returned from seeing the French wounded received in their hospital. When laid out naked, or almost so, 100 in a row of low beds upon the ground, tho' wounded, low, exhausted, tho' beaten, you would still conclude with me that those were fellows capable of marching, unopposed, from the west of Europe to the east of Asia. Strong, thick-set, hardy veterans, brave spirits and unsubdued, they cast their wild glance upon you, their black eyes and brown cheeks finely contrasted with their fresh sheets; you would much admire their capacity of adaptation. These fellows are brought from the field after lying many days on the ground, many dying, many in the agony, many miserably racked with pain and spasms, and the fellow next to him mimics him and gives it a tune: 'Ah, ha! vous chantez bien!'" That the French soldier has not deteriorated is shown by the evidence of a number of medical officers, who, under the command of Colonel de Montmollin, surgeon in chief of the second division of the Swiss army, lately visited France. After seeing the wounded in the hospitals, they declared that their mentality was superb. On the other hand, at a recent meeting of the Société de Médecine, Dr. Paul Guillon gave an account of impressions formed during some months he was in charge of wounded in a hospital in Brittany. For a long time the majority of his patients were Germans. He said that while he could not say how they behaved in battle, he could testify that they showed little courage in hospital. They groaned when tincture of iodine was applied to their wounds, and for the most trivial operation they begged for an anaesthetic. While the French wounded do what they can for each other, without regard to social rank, the Germans, on the contrary, showed a barbarous selfishness; the least service from one to the other must be imposed on them by command. They would ask to be placed in another bed because a neighbour's wounds smelt ill, and when a "Kamarad" groaned in the night all asked whether he could not be taken away as quickly as possible as he was dying. When one was taken to the operating room, the others took the opportunity of emptying his pockets of any small objects they might contain. As soon as one died, it was necessary to keep a strict watch on the others to prevent their seizing all the property he had. Dr. Guillon concludes by saying in general terms that the German soldiers are robbers whatever be their rank. "Their selfishness and shamelessness are revolting. If any one does not feel disgust for them, it can only be that he has not been among them." This, of course, is the testimony of an enemy, and as such must be accepted with some reserve. But there is plenty of independent evidence as to the behaviour of the German wounded in the present war, and the conclusion to be drawn from it is that when they are not cowardly they are often intolerably arrogant and ungrateful.

GERMAN SANITARY CONTROL OF A PRISONERS' CAMP.

IN the *Muenchener medizinische Wochenschrift* for January 5th and 12th, Dr. G. Seiffert described the sanitary measures adopted in the prisoners' camp in Lechfeld. Here it was found that, owing to the mixed composition of the prisoners, there was little use in giving lectures on hygiene. Instruction in hygienic measures was therefore confined to placarding the doors of barracks, kitchens, and privies with the most elementary rules of hygiene. Among these may be mentioned the following: "If infectious diseases break out in a prisoners' camp where many people are collected, there is great danger to the companions of the sick. It is, therefore, necessary in your own interests to take sanitary precautions. Any one suffering from fever, colic, diarrhoea, severe vomiting, or sore throat must report himself to the sanitary police, who must notify the medical officer. Such a notification has nothing to do with immunity from work. Do not, therefore, simulate disease, for you will be punished, and your companions will suffer, as a careful examination will no longer be undertaken. Typhoid fever and dysentery are particularly dangerous. These diseases need not necessarily be severe, but those who suffer from them in a slight form are a great danger to their companions. Only great cleanliness prevents disease. Keep, therefore, the privies clean, do not dirty yourselves, and always wash your hands when you come from a privy. Wash your hands before eating, and wash your eating utensils only in running water. Particles of decomposed food can also cause disease. Kitchen attendants must be particularly cleanly. They must always wash their hands before beginning work. Any one suspected of illness is admitted to a special department and is kept there while careful examinations are made. Here he enjoys the same freedom as his companions, but receives better attendance." The sanitary police were chosen from among the French and Russian prisoners, and were put in charge of men of their own nationality. They were recruited from the respective Army Medical Services, and in matters of public health were in control of prisoners of every rank. They were given the full freedom of the barracks, and were directly responsible to the medical officer in charge. All their reports were handed into a bureau under the control of two French officials, who gave a daily report to the German medical officer in charge. The duties of the sanitary police were the detection of infectious cases, the notification of insanitary conditions, the supervision of sanitary measures, and the collection of material for bacteriological examinations. Each sanitary policeman had only 1,000 prisoners, or less, to supervise, and some of the sanitary police were given special duties, such as disinfection of clothes, the maintenance of the privies in a sanitary condition, and the supervision of prisoners in quarantine. Every morning the sanitary police entered the barracks and inquired after cases of fever, diarrhoea, colic, severe vomiting, and sore throat. The names of suspects were taken and sent to the bureau, where lists were drawn up for the medical officer in charge. In urgent cases he ordered the immediate isolation of the patient, but in less urgent cases the suspects were inspected by a French doctor at midday. He then decided what course to pursue in each case. Records of all illnesses were kept with a view to a subsequent statistical analysis, and it was hoped thereby that a comprehensive survey would be obtained of the effect of the French inoculation against typhoid fever. Great care was taken to learn which of the prisoners had been in the tropics, in order that relapsing tropical diseases could be the more easily detected. In addition to the inspection of the prisoners by the sanitary police, it was the duty of the medical officer in charge to inspect the prisoners personally, and to look out for signs of disease. It was found impracticable to separate the unvaccinated from the recently vaccinated; but, as a rule, it was considered desirable for every prisoner who was not suffering from open and suppurating wounds to be vaccinated. Even pock-marked prisoners were not exempt from vaccination.

THE ENDOCRINE GLANDS.

SIR EDWARD SCHÄFER is known to the world as one of the leading authorities on the endocrine glands, or glands with internal secretions, and he occupied the chair at the important discussion on these glands that was held in London at the International Congress of Medicine in 1913. In the same year he delivered the Lane Medical Lectures at Leland Stanford Junior University, California, choosing as his subject the endocrine glands and internal secretions. The result lies before us in the form of a pamphlet[1] containing an excellent and concise summary of the chief facts known to us concerning this much-debated province of physiology. So many busy writers occupy themselves with the production of facile speculations and baseless hypotheses as to the functions of these glands, taken singly or together, as to the share they may take in regulating the economy of the system, and as to their importance in the production of the obscurer diseases or pathological states, that it is most refreshing to come back to so solid a basis of fact unobscured by superstructures of theory as is furnished by Sir Edward Schäfer's lectures. The first of the five lectures contains general considerations regarding internal secretions and the organs furnishing them. It may be noted that the endocrine glands are not identical, as is sometimes supposed, with the ductless glands. Among the latter are the thymus, spleen, tonsils, lymphatic glands and follicles, and the bone marrow; but no satisfactory evidence has been produced hitherto to show that any of these tissues actually has an internal secretion, and so they were excluded from his survey by the lecturer. As for their constitution, the internal secretions are not enzymes, but no doubt simpler chemical compounds comparable to drugs in their mode of action. Some stimulate the activities of other cells in the body, and so are called "hormones" or starters; others tend to inhibit cellular activity—extract of placenta contains a substance that inhibits the secretion of milk—and such inhibitory internal secretions have been christened "chalones," or slackeners. Both are called "autacoid substances," or, simply, "autacoids," by Sir Edward Schäfer, because their mode of action resembles that of drugs such as the vegetable alkaloids. He classifies the principal endocrine glands into three main groups, and devotes a lecture to each group—the thyroid and parathyroid glands, the suprarenal apparatus with its cortex and medulla, and the pituitary or hypophysial apparatus built up of epithelial and neural components. The fifth and last lecture offers a mixed bag to the reader, describing the internal secretions of the pineal gland, of the alimentary mucosa, of the pancreas, and of the sexual organs. Here, speaking generally, we have comparatively little certain knowledge to go upon, and further investigation is urgently called for. In the case of the pancreas, for example, we know that it is profoundly concerned in the carbohydrate metabolism of the body, producing an inhibitory agent, either a chalonic autacoid or an enzyme, that restricts the mobilization of the sugar. But exactly what this substance is, and how it is related to the liver, which stores carbohydrate in the body, and to the suprarenal apparatus that promotes the appearance of sugar in the blood, we still have to learn; the matter is undoubtedly of the utmost importance in the treatment of that common disorder diabetes mellitus. Sir Edward Schäfer writes clearly and temperately, and his lectures may be warmly recommended to all students of

[1] *An Introduction to the Study of the Endocrine Glands and Internal Secretions.* By Sir E. Schäfer. California: Stanford University. (Roy. 8vo, pp. 94. 75c.)

physiology, to medical students, and to practitioners of medicine, as a first-rate account of a rapidly progressing branch of physiological and pathological science.

THE HEALTH OF VIENNA.

IN a short note in the *Ugeskrift for Laeger* for April 15th a review is given of a report by Dr. Bohm on the health of Vienna during the war. The first patient brought from the front to Vienna was a soldier suffering from dysentery. Many other cases of this disease followed, and altogether about 400 soldiers were treated. Down to March, 1915, there had been 334 cases of dysentery among civilians; most of these cases, however, occurred during the autumn, and only isolated cases were reported after the middle of November. The first patient suffering from cholera was sent to Vienna in September. Subsequently 393 soldiers and 25 civilians were treated for this disease, but only two of the civilians were natives of Vienna. After the middle of November there was no further outbreak of cholera in the town, all the patients coming from districts outside Vienna. There was a steady increase in the cases of typhoid fever until February, when 1,433 soldiers and 317 civilians had been treated for this disease. Until March 19th, there had been 1,098 cases of small-pox, of which 1,046 occurred among civilians. This epidemic, the mortality of which was as high as 21.5 per cent., began to wane in February and March. There were 24 cases of typhus fever, all of which were drawn from the scene of fighting. It was anticipated that a much more serious outbreak of this disease would occur, and two isolation hospitals, each with accommodation for 2,500 beds, were being equipped, so as to supplement the small hospital, with 100 beds, already in use. With regard to the incidence of small-pox, it should be borne in mind that, though a bill making vaccination compulsory was drafted some time ago, it never became law, and vaccination is still voluntary in Austria. This state of affairs is vigorously denounced in the *Wiener medizinische Wochenschrift* for March 6th, 1915, by Professor v. Pirquet, Senior Physician to the Children's Hospital of the University of Vienna. He writes: "When we consider the history of the great epidemic of 1870–73, we can with certainty prophesy that the present war epidemic will not cease to-morrow nor next year, and that it will affect hundreds of thousands, unless energetic legislative measures are taken. . . . Unless we at once decide on compulsory vaccination, we shall have to adopt it in three to five years, for this epidemic will not cease until we have introduced those measures with which the German nation suppressed small-pox, once for all, forty years ago."

BIRTHDAY HONOURS.

THE birthday list is for the most part concerned with honours conferred for services in the present emergency at home or in the field, but there are a few exceptions. The knighthood conferred upon Dr. James Mackenzie follows the recognition by physicians and physiologists of the great scientific and practical value of his investigations of the physiology and pathology of the heart. The same honour conferred upon Dr. Frederick Needham, one of the Commissioners of the Board of Control, recognizes many years of able and unwearying service to that Board and the Lunacy Commission. Dr. Arthur W. G. Bagshawe, Director of the Tropical Disease Bureau, receives the C.M.G. The Distinguished Service Order is conferred on Major E. J. O'Neill, M.B., New Zealand Medical Corps, and Captain A. G. Butler, Australian Army Medical Corps, attached to the 9th Australian Infantry Battalion (Queensland). Several awards of the Distinguished Conduct Medal will be recorded in an early issue. The list further contains honours for officers serving in India. The Companionship of the Bath, Military Division, is conferred on Surgeon-General T. M. Corker, M.D., A.M.S., Deputy Director of Medical Services, 9th (Secunderabad) Division of the Southern Army in India. The C.I.E. is conferred upon Lieutenant-Colonel C. C. Stewart Barry, I.M.S., Medical Superintendent of the General Hospital, Rangoon. The Kaisar-i-Hind gold medal is conferred upon Lady Lukis, the wife of the distinguished Director-General of the Indian Medical Service, and Dr. T. F. Pedley, Rangoon, Surgeon-Lieutenant-Colonel in the Rangoon Port Defence Volunteers. The Imperial Service Order is conferred upon Rai Chuni Lal Basu Bahadur, M.B., first assistant chemical examiner to the Government, and teacher of physics and chemistry in the Campbell Medical School, Calcutta, and on Dr. J. E. A. Ferguson, Government Medical Officer, British Guiana.

Medical Notes in Parliament.

The New Government.

THE new Government is now complete. Mr. Charles Roberts, who has succeeded Mr. Montagu as Chairman of the National Health Insurance Joint Committee, was previously Parliamentary Under Secretary for India; he was a Balliol scholar, and a Fellow and tutor of Exeter College, Oxford; he has represented the city of Lincoln in the Liberal interest since 1906. Both the President and the Parliamentary Secretary of the Board of Education have been changed. Mr. Arthur Henderson, who has replaced Mr. J. A. Pease as President, was born in 1863, was apprenticed at Messrs. Robert Stephenson's works at Newcastle, was a member of the Newcastle City Council, and in 1903 Mayor of Darlington, before becoming in that year the parliamentary representative in the Labour interest of the Barnard Castle Division, Durham. Mr. Herbert Lewis, previously Parliamentary Secretary to the Local Government Board, where his place has been taken by Mr. Hayes Fisher, has become Parliamentary Secretary to the Board of Education in succession to Dr. Addison, who has received the important appointment of Parliamentary Secretary to the new Ministry of Munitions, of which Mr. Lloyd George is head. His selection for this appointment seems to have caused a certain amount of surprise among politicians, but it may be taken as a measure of the esteem and respect which his abilities and character have inspired in those who have been most closely associated with him during his short but brilliant political career, which only began in 1910, when he was elected to represent the Hoxton Division of Shoreditch. The earlier part of his life as professor of anatomy in the University of Sheffield and lecturer on the same subject at St. Bartholomew's Hospital, was given to science, and this scientific training and experience fit him in a special manner for the important office he now occupies.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE DISTRIBUTION OF THE FUND.

OFFICIAL reports of recent meetings of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés reached the Secretaries of the British Committee on May 28th through the kind offices of Professor Jacobs. This, it will be remembered, is the title of the committee formed in Belgium for ascertaining where the need is greatest among the Belgian doctors and pharmacists and for providing systematic relief. The president is Dr. Péchère, the secretaries M. Delacre and M. Laruelle, and the office is in Brussels; it is upon this body, now strongly organized, that the British Fund is relying for distribution of its resources in Belgium.[1] When a representative of the Aide et Protection aux Médecins et Pharmaciens Belges met the Central Committee of the British Fund late in March he explained the way in which the Belgian Committee was compiling information to guide them in their work, and it was then decided that a substantial

[1] BRITISH MEDICAL JOURNAL, April 3rd, p. 610, and April 24th, p. 734.

sum of money should be dispatched immediately to Belgium, through the medium of certain banks and with the help of Mr. Herbert Hoover, the chairman of the National Relief Fund. An acknowledgement of this money was received from Dr. Péchère, and details as to its distribution are now briefly supplied through the reports of three meetings, held on April 15th, 22nd, and 29th. The physicians and pharmacists relieved include such cases as the following, which have been extracted from the fourth report of M. Laruelle dealing with the medical men, and the report of M. Breugelmans dealing with pharmacists:

To Dr. C——, of D——, it proposes to make a grant of Fr. 700. Dr. C—— has had his house burnt with all its contents. He was obliged to take refuge at Ciney and afterwards at Waulsort. D——, the population of which has been reduced to one-half, shelters now only a population which is deprived of resources, not affording, therefore, any opportunity to practitioners to gain their livelihood.

To Dr. R——, of T——, a grant of Fr. 400. Our old colleague (aged 86 years) has seen his house with all its contents burnt. He was obliged to take refuge at M——. He would accept the temporary aid of the Committee, not being able at the present time to realize his resources.

Madame D——, of T——. Husband killed; three houses burnt with the pharmacy. Took refuge with a servant in the dwelling of a cousin who had left for Nice before the war. Had Fr. 2,000 in ready cash when she departed from T——. Was obliged to live ten days at B—— with her husband suffering agonies. Had to pay after the death of the latter the expenses of living, nursing, and attention, and the funeral expenses. Was obliged to borrow from one of her parents at Brussels, to-day himself deprived of resources, the money which served to provide the food of M. D—— and his servant in the borrowed dwelling which they occupy. Life of privation. Rarely eats meat. Has only one outfit of mourning, bought at the commencement of her widowhood. Merits assistance, which will be well bestowed. The Committee to grant Fr. 700.

M. P. V. M——, of T——. Now at M—— and at S—— alternatively. The pharmacy and druggist's business completely burnt out. Family responsibilities: wife, five sons, and servant. The man who has suffered this loss is 51 years old, has personal resources which the war has much encroached upon. The Committee has decided to make a further inquiry to learn if the need for urgent intervention is corroborated.

All the recommendations of M. Laruelle and M. Breugelmans were agreed to. The fifty cases of medical material dispatched last December by the Central British Committee were found to have been of use to the medical men, who were able to distribute them gratuitously to their poorer clients; they have been used exclusively in this way. At the meetings on April 15th and April 22nd the most expeditious way of allocating the relief was discussed, and it was decided to rely on the reports of the delegates. At the meeting on April 29th it was agreed to pay monthly subsidies to those who cannot support themselves, even if they have been relieved before.

The Responsibility of Great Britain towards Belgium.

A letter having reached the Central Committee from Dr. Riddle Goffe, of New York, from which it was clear that the attitude of the British Government in respect of its monthly subsidies to the American Commission for Relief in Belgium was misunderstood in the United States, the questions raised by Dr. Goffe were submitted to the British Foreign Office, from whom the following reply was received. It has been decided to publish the reply of the Foreign Office, as from certain references to the situation in American newspapers and publications it is evident that there is still a complete misunderstanding of what occurred, which might act to the prejudice of any funds being raised in the United States.

Foreign Office, April 26th, 1915.

Sir,—With reference to your letter of the 21st instant, enclosing a copy of a letter from Dr. J. Riddle Goffe regarding the question of Belgian relief, I am directed by Secretary Sir E. Grey to inform you that your correspondent appears to allude to the following facts.

The work of the American Commission for Relief in Belgium consists of two departments—the Benevolent Department, which is concerned with the furnishing of foodstuffs to the destitute in Belgium, and the Provisioning Department, which is concerned with the purchase and sale of foodstuffs to the rest of the population who are still able to pay. The first department has been financed out of private contributions, except for a grant of £100,000 made by His Majesty's Government in October to start the work. The second department has been financed by the Belgian Government.

Last December the Commission asked His Majesty's Government to make a monthly contribution out of public funds to the Benevolent Department. After prolonged negotiations His Majesty's Government decided that they would not be justified in doing so, as it was found impossible to induce the German Government to abandon their extortionate levies of money on the Belgian population. This department of the Commission's work is, therefore, still financed out of private contributions. But your correspondent does not appear to be aware that out of the total private contributions in money and kind received by the Commission up to the date of their last report (April 17th), while the United States has with great generosity subscribed about £980,000, the British Empire has subscribed about £700,000, and this in addition to the military burdens borne by the empire, the very large sums subscribed to the maintenance of Belgian refugees, and also the credits placed by His Majesty's Government at the disposal of the Belgian Government, out of which that Government is providing for the work of the Commission's Provisioning Department.

As regards the non-interference by the German authorities with the Commission's imports, it must be pointed out that those authorities are thereby acting in their own interests, since the Commission is relieving them of a clear responsibility which they have refused to assume.

Apart altogether from the assistance consistently given in various ways by His Majesty's Government to the Commission, of which it is rather for the Commission itself than for His Majesty's Government to speak, Sir E. Grey feels it to be only just to private persons in this country and the British Dominions who have so largely subscribed to this work and are probably about to subscribe still more largely, that these facts should be made clear, and he has no objection to a copy of this letter being communicated to Dr. Goffe should you desire to do so.

I am, Sir, yours, etc.,
EYRE A. CROWE.

Subscriptions of the Week.

We call special attention to the generous and fruitful action of the Sunderland doctors who have paid into the Fund their fees for the examination of recruits. Last week we acknowledged from fourteen of these gentlemen a donation in the aggregate amounting to no less than £142 2s. 6d. This week from sixteen gentlemen the Fund has received a cheque for close upon £170, making over £300 received from this one source. Considering the numberless directions in which the work of medical men at the present moment is being increased in bulk and curtailed in emolument, the action of the Sunderland practitioners is a very open-handed one.

The subscriptions received by Dr. Des Voeux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:

Twenty-seventh List.

	£	s.	d.
Southern Branch B.M.A. (per Dr. James Green, Hon. Sec.), (7th donation — total, £62 5s. 6d.)—			
Dr. J. P. Watkins ...	1	1	0
Sheffield and District Branch of Fund (per Dr. A. E. Naish, Hon. Sec.), (2nd donation—total, £350)	100	0	0
Knowle, Bristol, Doctors at (per Dr. H. F. Devis)	3	10	6
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.), (12th donation total, £686 7s.)—			
Dr. S. Vernon Robinson	1	1	0
Further fees for examination of recruits by members of Sunderland Division during 1914—			
Dr. McPherson	14	12	6
Dr. G. E. Welford ...	2	2	6
Dr. G. B. Morgan, jun.	2	17	6
Dr. J. C. Hamilton ...	8	2	6
Dr. G. Murray ...	7	17	6
Dr. W. K. Russell ...	10	7	6
Dr. J. B. Morton ...	20	2	6
Dr. W. Hunter ...	16	15	0
Dr. R. Stobo	12	0	0
Dr. J. Martin	6	17	6
Dr. J. Smith	7	12	6
Dr. J. A. Ross ...	9	10	0
Dr. W. H. Maling ...	16	10	0
Dr. R. H. Dix... ...	5	7	6
Dr. W. Hay	18	10	0
Dr. S. McNaughton ...	9	7	6
Dr. C. A. Rayne... ...	3	3	0
N.E. London Pharmacists' Association, collected by (per Mr. W. A. Scott)—			
Mr. T. F. Tabor ...	1	15	0
Chemists' Assistants' Association (per Mr. E. Thompson)	5	0	0
"Formulae" (per Mr. A. Chapman)	0	10	0
Mr. A. Chapman ...	0		
Australasian Pharmaceutical Conference (per the Agent-General)—			
Victoria	50	0	0
S. Australia	34	0	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

WE have received the fifth volume of the *Arquivos de Higiene e Patologia Exoticas*, published under the direction of the Lisbon School of Tropical Medicine. It presents a handsome appearance, and contains sixty-eight full-page illustrations, with six coloured plates of varieties of trypanosomes, and three maps showing the distribution of sleeping sickness in the Ilha do Principe, in the Gulf of Guinea, West Africa. The volume contains the final report of a scientific mission which was engaged from 1912 to 1914 in investigating the whole subject. It is a valuable contribution to tropical medicine.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

ANTISEPTIC PASTES.

I SHOULD have preferred to make no further mention of antiseptic pastes, but the reasons for their introduction and other circumstances give them so definite a place in the history of the treatment of wounds in this war that further reference to them is inevitable.

In my previous note on the subject it was indicated that the clinical results of a certain treatment, the introduction of which was ascribed to Sir W. Watson Cheyne, were not happy, and gravely disaccorded with the laboratory results on which advocacy of its use had been based. I have now to add that these clinical results were duly weighed at a recent meeting of the kind of Advisory Board constituted by the consultants to the army in France and the officers of the general staff of the D.G.M.S., and it was decided that use of the treatment should be no longer countenanced.

This treatment is one the devising of which was definitely foreshadowed as long as seven months ago, and, thanks to the references that have been made to it in the BRITISH MEDICAL JOURNAL, those out here have been able to follow its development not only with interest but with some closeness.

In an address to the Medical Society of London, published in the BRITISH MEDICAL JOURNAL of November 21st, 1914, p. 865, Sir W. Watson Cheyne gave his views as to the treatment that ought to be adopted in dealing with the gravely septic wounds seen in this war. The outstanding or differentiating feature of the treatment was the recommendation that all ordinary wounds coming under observation within twenty-four hours, and all earth-soiled wounds within forty-eight hours of the time of their infliction, should have their interiors carefully painted with liquid carbolic acid. After the lapse of the periods stated all antiseptics ought to be avoided in dealing with the interiors of wounds—even in wounds which had not been painted—though washing them out with hydrogen peroxide was relatively harmless. When circumstances permitted the wounds to be painted as described—by a surgeon, of course, and under an anaesthetic if necessary—their septicity would be abolished and their subsequent progress satisfactory. Still it would be a great advantage if even initial sepsis could be avoided, and it seemed possible that this might be effected by providing a strongly antiseptic bougie or something of that kind, which the soldier himself, or a first-aid orderly, could pop into his wound forthwith.

Despite the fact that to those personally acquainted with the condition of wounds at the front the idea of painting them with liquefied carbolic acid did not seem very hopeful, Sir W. Watson Cheyne's advice on the subject did not go unheeded. The treatment, in short, was duly applied by surgeons attached to the advanced medical formations. But definite reasons for abandoning it were soon perceived. While at the best it was no more effective than the simpler process of douching wounds with iodine, its use imported some very distinct risks.

This failure did not, however, in itself lessen interest in Sir W. Watson Cheyne's allusion to his endeavours to prevent sepsis altogether, and to this subject he returned in his Hunterian oration before the Royal College of Surgeons. He then gave some account of the laboratory work done by a Naval Medical Research Committee of which he was president. It had devised an effective destructor of septic organisms in the shape of a paste containing lanoline, white wax, and cresol, which, under the title of cresol paste, could be introduced into wounds out of a collapsible tube.

About the same time Dr. Albert Wilson recorded in the BRITISH MEDICAL JOURNAL some clinical results obtained by him in a French Red Cross Hospital with salicylic acid and some laboratory experiments performed by a colleague at his request, and this led a member of the committee mentioned to state in the JOURNAL that salicylic acid was one of the drugs with which it had been experimenting, and to indicate that, very happily, fruitful results seemed in view. In the same issue (March 6th), moreover, a general account of the work of Sir W. Watson Cheyne's committee appeared in the form of an editorial on the antiseptic treatment of wounds; and on March 20th Dr. Seligman again drew attention to the outstanding statement in Sir W. Watson Cheyne's Hunterian oration by mentioning his experience many years previously with a paste of somewhat similar composition to that of the remedy advised by Sir Watson Cheyne.

Information as to scientific researches in progress at home naturally spreads somewhat slowly among men so preoccupied with clinical work of instant importance as are the surgeons over here. Nevertheless, as a consequence of the foregoing circumstances, most men were already fairly conversant with the general idea of "borsal powder and cresol paste" treatment, when, on May 8th, p. 812, the BRITISH MEDICAL JOURNAL again made reference to it, and suggested that it might be worth while to try it, despite the conclusions which it seemed must be based on Sir Almroth Wright's work in France itself. The acquaintance of a certain number with the treatment was at that time something more than theoretical, for the suggested trial had already commenced.

That trial was continued for about a month, the net outcome being that already stated—namely, that it was decided that "the Watson Cheyne treatment," as it was colloquially termed, should not be used any longer. This decision was based on a consideration of reports received from various quarters tending to show that the remedy could not safely be served out for use by all and sundry; that even when applied by skilled persons the results were liable to be very unhappy, the cases arriving at the base hospitals with blocked drainage and an even graver degree of sepsis than usual; and that the most that could be said in its favour was that when applied to widely open, superficial wounds, and used not as originally designed, but much like any other antiseptic, such wounds acquired and preserved a healthy character, though not demonstrably more quickly or assuredly than by other means.

This result will not surprise those who fully realize the character and extent of the infection of the wounds seen in this war, as also the patience, ingenuity, and skill that surgeons at the front have long since shown in their endeavours to bring chemical antiseptics effectively to bear upon it. Nevertheless, the result will be deeply regretted by all, for apart from the fact that a remedy such as Sir W. Watson Cheyne and his colleagues believed they had produced would be of untold value, this particular one arrived in France better fathered than any of its predecessors. Nevertheless, it is well that the facts should be promptly recognized and the failure be frankly acknowledged, so that men's thoughts may be turned in other directions.

When the consignments of this remedy reached France it was distributed to certain advanced medical formations and applied by the officers attached thereto, the results being gauged by these if they could keep the cases, and otherwise by the surgeons at the base hospitals to which the cases were sent. Nor were such officers left to apply the remedy according to their own lights, but were enabled to do so in a fashion in keeping with the intentions of its inventors, thanks to being supplied with printed copies of the instructions for its use sent to France by Sir W. Watson Cheyne. Furthermore, it was not only at these particular formations that borsal powder and cresol paste treatment was used. It was applied also to a large number of cases at other advanced medical units by a temporary officer of the Royal Army Medical Corps who had had the advantage of studying under Sir W. Watson Cheyne's own guidance the work done in the laboratories of the Naval Medical Research Committee. It is on the basis of the reports received from these various sources that the verdict stated was delivered.

GAS POISOINING.

After about a fortnight, during which very few cases of gas poisoning arrived at the Boulogne base, and those only light ones, there has been a fresh set of cases. During a recent night attack the Germans managed to use gas with success, the result being that the wards were once more full of gas cases of varying severity. After a general inspection of them I brought away an impression that in some

cases the superficial phenomena were somewhat different from those accompanying the first set of cases; but this impression, I found, was not shared by colleagues. Nevertheless it is worth mentioning, for it now seems to be clear that the underlying cause of the general phenomena of gas poisoning cannot in all cases be the same.

I saw, for instance, yesterday the remains of a leaden shell which had been dug out of the ground just behind the trenches occupied by the men who had been gassed. Despite the number of days that had elapsed since it was fired, the mud in its interior had a strong smell. I could not identify the odour, but it very closely resembled that of a hyacinth. After inhaling it strongly several times, I seemed to experience a certain "fullness" in the head. This may have been auto-suggestion, but I do not think so; for I was afterwards told that the sappers who had dug it up—bending closely to the ground the while—had turned giddy and sick.

The explanation of this last set of gas casualties would seem to be double. Most of the men were asleep in their dug-outs when the gas cloud reached the trenches, and were already half stifled by the time they awakened. There is also some tendency in regiments which have not previously undergone gas attacks for the men to discount its dangers, so that they are careless about keeping their respirators handy; moreover, not all units had been supplied with the finally approved pattern of gas protection outfit. All these loopholes are now being steadily closed, a respirator drill having been instituted as a feature of daily life.

In regard to the effects of gas poisoning as seen in the *post-mortem* room, I gave some details in a note about a month ago. The cases then in question were comparatively late cases—that is to say, cases which had not succumbed until they had reached a base. The phenomena in very early cases seem to be of the same general character, but nevertheless present some differences. Thus, in the cases seen at Boulogne, a striking point was the intensely cyanotic condition of the kidneys. In cases which died, self-drowned within a few hours of inhalation of the gas, this condition did not exist, the kidneys being merely somewhat congested. Other points observed were submucous haemorrhages in the stomach (subpleural haemorrhages I saw at Boulogne), as well as on the surface of the lung, dilatations of the right side of the heart, and its blockage with fresh, not *ante-mortem*, clots, congestion of the respiratory mucosa in the neighbourhood of the trachea, and a very marked condition of emphysema along the edges of the lungs, the divisions between the alveoli being obliterated. It was also found that the blood-clotting period in still living patients was materially reduced, and that the liquid coughed up from the lungs was almost pure serum. In four cases there was an especially curious feature. The patients were the subjects of well marked surgical emphysema, extending from the neck down to the top of the thighs. All these cases recovered, so that the precise cause of the emphysema was not ascertained. An observation in an ordinary case seen *post mortem* suggested, however, a possible explanation. There was a large submucous haemorrhage at the base of the trachea, and it was easy to imagine this quickly becoming an ulcer and allowing air to escape from the peritracheal tissue during coughing and straining.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

DURING the three days May 25th to 27th the British navy lost three ships, the battleships *Triumph*, 11,985 tons, and *Majestic*, 14,900 tons, torpedoed in the Dardanelles, on May 25th and 27th respectively, and the *Princess Irene*, an armed merchantman, one of the Canadian Pacific Line, blown up in Sheerness Harbour on May 27th. In the first two cases, fortunately, the loss of life was small—3 officers and 53 men on the *Triumph* and 49 men on the *Majestic*—but small proportions of the crew of a battleship. On the *Princess Irene*, on the other hand, the loss of life was great, the whole ship's complement of 130, with only four exceptions (three men ashore at the time and one picked up alive), and 76 dockyard artificers who were working on her at the time. According to the last *Navy List* available on this point, the medical officers on the *Triumph* were Staff Surgeon G. M. Eastment, Surgeons David G. Arthur, and A. J. Patterson; on the *Majestic* Fleet Surgeon Edwin Folliott, Surgeon Richard F. Quinton, and temporary Surgeon Arnold Viney. The *Princess Irene* carried only one medical officer, Surgeon Frederick Whitby Quirke, R.N., who perished in the explosion. He was educated at St. Mary's, took the M.R.C.S. and L.R.C.P.Lond. in 1908, and entered the navy as surgeon on November 6th, 1908. The January *Navy List* shows him as serving on H.M.S. *Hannibal*.

Wounded.—Surgeon E. G. Schlesinger, R.N., Howe Battalion (Dardanelles).

ARMY.

Died of Wounds.

Captain Gordon Clunes McKay Mathison, of the 5th Australian Medical Corps, who is reported in the casualty list of June 1st as having died of wounds, was educated at Melbourne, where he had a very distinguished career. He graduated M.B.Melb. in 1905, B.S. in 1906, and M.D. in 1911; he took first class honours in chemistry, physiology, medicine, and surgery, had filled the posts of house-physician and house-surgeon at Melbourne Hospital, medical tutor of Ormond College, Melbourne University, and Sharpey scholar and assistant in physiology at University College, London. In 1910 he was appointed a Beit Memorial Fellow to make researches at the Institute of Physiology, University College, London, into the nervous control of respiration, the effect on respiration of changes in the chemical composition of the blood, and the mechanism of biliary secretion and its general effect in digestive processes. He contributed a paper on the estimation of ammonia in urine to the BRITISH MEDICAL JOURNAL, and on phosphorus in urine to the *Bio-Chemical Journal*. He had also written on heart-block during asphyxia, and on the action of asphyxia on the spinal cord and medullary centres.

Wounded and Suffering from Gas Poisoning.

Captain L. C. Hayes, R.A.M.C.

Wounded.

Major H. L. de Legh, R.A.M.C.(T.F.).

Captain H. B. Cunningham, R.A.M.C.(T.F.) (Dardanelles).

Captain W. E. F. Tinley, R.A.M.C.(T.F.).

Captain E. U. Russell, R.A.M.C.

Captain J. Murdoch, R.A.M.C.(T.F.).

Lieutenant (Special Reserve) J. P. Mitchell, R.A.M.C.

NOTES.

THE KING GEORGE HOSPITAL.

AN article appeared in the *Daily Express* of May 29th, headed "The Medical Muddle," in the course of which it was suggested that the resident medical officers at the King George Hospital might be more suitably employed at the front, and that the work of the London military hospitals, consisting in many instances of "attending to convalescent soldiers and those suffering from minor ailments (practically out-patients) could be done in three or four hours a day by local practitioners." The article also suggested that the salaries attached to the appointments were unduly high.

Mr. Edmund Owen has been good enough to inform us that when Sir Frederick Treves and he were asked to select the honorary visiting staff of the King George Hospital they got together what they considered an extremely strong body of physicians and surgeons, whose names would command respect all through the profession. Their anxiety was to do the very best possible for the sick and wounded soldiers, and it was realized that many of the patients admitted would be suffering from extremely serious lesions, and that a large proportion of the injuries would be suppurating wounds. As the risks of secondary haemorrhage would always be great, it was felt that the surgeons should have allocated to them a staff of resident medical officers who would be constantly at hand to deal with emergencies. It was considered that a rota of general practitioners to carry out the duties of resident medical officers would not be convenient and satisfactory. They could not give the kind of service required unless they devoted their whole time to the duties. Mr. Edmund Owen added that he had heard suggestions that the resident medical staff was unnecessarily large, but he could not admit that, having regard to the fact that so large a proportion of the patients were likely to be in a serious condition. Moreover, not only were there twenty-five surgeons operating in the course of

the week, but the staff also included six honorary dental surgeons, six surgeons in the throat and ear department, and several in the ophthalmological department, all of whom would require help in their departments. When the selection of resident medical officers was begun some months ago it was found that practitioners having the necessary experience could only be secured by offering the pay of lieutenants in the R.A.M.C.

In reply to an inquiry as to whether it would have been possible to limit the appointments to men beyond the age at which they would be accepted for military service abroad, Mr. Owen said that some of the resident medical officers were over 40 years of age. Apart from the difficulty of obtaining older men already established in practice, he believed that younger men were best suited to the position of resident medical officers.

SERBIA.

Typhus which wrought such terrible ravages in Serbia in the early part of the present year is now said to be almost stamped out. Relapsing fever and enteric also claimed a large tribute of victims, and cholera and smallpox threatened to add to the horror of the situation. The origin of the typhus and relapsing fever infections was traced to Valjevo, where these diseases broke out among the Austrian prisoners and spread over Serbia. Nish and Kragujevatz in particular were for a time like hospitals without sanitary arrangements, baths, or even beds.

The efforts of this country and America to help in checking the ravages of the epidemics have been briefly described in the BRITISH MEDICAL JOURNAL, but the story is far from complete. An account of the work of some of the hospital units sent out from this country, including the Serbian Relief Fund, the Wounded Allies' Relief Hospital, and the Scottish Women's Hospital, appeared in the *Times* of May 28th. On February 15th the British Army Medical Service sent out a sanitary mission under Colonel Hunter and Lieutenant-Colonel Slammers. They reached Salonika early in March, and at once proceeded to Nish, where they were warmly welcomed by the Serbian Government.

Apart from the wounded, there were 37,000 sick in the army, including 15,000 cases of fever, of whom more than 8,000 were suffering from typhus. There were also nearly 8,000 cases of relapsing fever, and nearly 1,500 cases of enteric. It was difficult to ascertain precisely the condition of the civil population; but in Kragujevatz alone, a town of 20,000 inhabitants, there were 1,400 cases of typhus, and the number of deaths in three months had been 3,400, or thirty-four times the normal. By all indications typhus and relapsing fever were increasing rapidly.

Vigorous measures for disinfecting the hospitals and destroying lice were at once taken by the sanitary staff. Lieutenant-Colonel Slammers fitted up wine barrels as disinfectors, and distributed them through the towns and villages. "Clothes, blankets, or linen treated in these were free of vermin in half an hour." Among preventive measures one of the chief was inoculation against cholera. Whenever it was possible bacteriological laboratories were established where the investigation of the sources of the various infections was carried out. After several weeks of strenuous work the scourges began to be got under control. "On April 5th there were 8,198 cases of typhus in hospital; on April 18th only 948. In the same period relapsing fever had declined from 7,693 cases to 4,861, and enteric from 1,443 to 1,126."

Experiences of a Dresser.

Blackwood's Magazine for June publishes the diary of Miss E. L. Fraser, a dresser in the Serbian Unit of the Scottish Women's Hospital. She gives a graphic description of the conditions in which they had to work, which recall the worst one can imagine of mediaeval hospitals when there was no attempt at sanitation, and when several patients suffering from different diseases and injuries were crowded into one bed or lay huddled together on the floor where they could conveniently exchange microbes. She worked at Kragujevatz. Speaking of Dr. Ross (who has since died), she says:

She is working in a fever hospital here, where there are also two Greek doctors, and she told us that conditions there are really terrible. It is shockingly dirty, of course, alive with vermin, and with no nursing at all; the patients are never even washed. It is very overcrowded; one finds a recurrent fever, a typhus, and a dysentery case lying three on two mattresses and exchanging germs. There is not even enough food. It is really heart-breaking work for one doctor or nurse from our country to offer service to a hospital like this. Several are doing it, including three nurses who came out here with us. They feel almost hopeless, as there is so much to do, and fine men are dying like flies daily from sheer neglect.

Afterwards Miss Fraser visited the First Reserve Hospital, where the typhus wards were under the charge of Dr. Ross. She says:

They say that twenty-five doctors have died there of fever since the war began. Six are ill of typhus now, mostly Greek doctors, and most of these will die. There are other fevers as well, but we saw only the typhus wards. There are long, connected corridors, and here the patients were lying so closely together on mattresses on the floor that one could not pass between them, and the doctors must walk on the mattresses to get to a patient. The air was quite indescribable; it was like entering a sewer. We saw Dr. Ross's own room, which opened off a dark corridor crowded with beds, on which one could dimly see patients lying in the dark. She took us through her typhus wards, and here we walked carefully, keeping well away from the beds to avoid the swarming vermin which carry the disease. The air was even fouler than in the corridors. I have seen some of the worst slum dwellings one can find in Britain, but never anything to approach these wards in filth and squalor. Men lay crowded together on mattresses. We saw three shivering together on two mattresses. No one washes them; they lie there in the weakness of fever, becoming filthier and filthier. When a man dies the next comer is put straight on to the same dirty mattress, between the same loathsome sheets. . . . This town is terrible; but they say that Valjevo, farther north, is worse still, that more than 3,000 men lie there untended!

This gives an indication of the state of things in January. Yet Miss Fraser, who is enthusiastic about Serbia, says that there was "never a word of complaint, never a question of surrender."

SCOTTISH WOMEN'S HOSPITALS COMMITTEE.

Girton and Newnham Colleges have collected £1,800, which they have given to the Committee of the Scottish Women's Hospitals for Foreign Service. At the request of the French military authorities the committee proposes to use the money to equip a hospital unit of 200 beds for the wounded at Troyes. It will be established in the Chateau Chataloup, and the patients will be under canvas.

MONTENEGRO.

The Wounded Allies' Relief Committee has sent a typhus hospital unit to Montenegro. It left England on June 3rd. Dr. Gerard Carré is the head of the unit, and the other members are Dr. Lillias Hamilton, Head of Studley Horticultural College; Dr. Isobel Ormiston, Chief Medical Inspector of Schools to the Government of Tasmania; and Dr. Slater, a lady who has practised many years at Lucknow. There is a matron with seven nurses and one male nurse attendant, besides a compounder, a secretary, and a storekeeper. Another matron and five other nurses will go out later. Colonel Joseph A'hearne, V.D., who has been appointed medical superintendent of the Committee's Serbian hospital, will travel with the party. It will take large quantities of stores and equipment, the unit being entirely self-supporting. The hospital will have 200 beds, and its initial work will be to assist in checking typhus in the Ipek and Djakora district. Later it is hoped that the decline in the epidemic may permit of the unit being adapted for surgical purposes, a transformation which is already contemplated in the case of the Committee's Serbian unit now stationed at Kragujevatz.

MEDICAL OFFICERS WANTED.

1st East Anglian Field Ambulance.

Two medical officers are required at once for this unit, about to proceed abroad. Applications to Officer Commanding, 1st East Anglian Field Ambulance, Watford, Herts.

King George Hospital.

A staff of anaesthetists has been appointed to the King George Hospital, and arrangements have been made so that only one attendance is required in each week. There are still vacancies for those who can help on Tuesday mornings, Tuesday afternoons, Thursday mornings, and Friday mornings.

THE Crown Prince of Serbia has invested Sir Thomas Lipton with the insignia of Grand Commander of the Order of Saint Sava, in recognition of the work done by him in supplying help in the epidemic of typhus, which is now virtually extinct.

THE James Buchanan Brady Urological Institute of the Johns Hopkins Hospital, the foundation of which was made possible by a gift of £30,000 from Mr. Brady, was formally opened on May 4th. Addresses were delivered by Dr. Hugh H. Young, head of the institute, and by Dr. William H. Welch.

India.

THE INDIAN RED CROSS AND THE NORTH-WEST FRONTIER.

A LARGE public meeting was recently held in the Victoria Memorial Hall, Peshawar, for the purpose of re-establishing the North-West Frontier Provincial Centre of the St. John Ambulance Association on a sound basis. The Chief Commissioner opened the proceedings, and introduced Lieutenant-Colonel R. J. Blackham, C.I.E., V.H.S., R.A.M.C., the General Secretary of the Indian branch of the association, who, after dealing with the origin, organization, and aims of the association, said that it might appear that their work began and ended with first aid, but such was not the case. It went much further, for the association sought to be a means of spreading a knowledge of elementary nursing and hygiene throughout the length and breadth of the empire. Commenting on the latter feature of their work, His Excellency the Viceroy, speaking at a meeting of the Indian Council in Simla, had said: "As is well known, the diffusion of a knowledge of sanitation is one of the greatest desires of the Indian Government, and, judging by its thorough organization and the success which has attended its labours so far, there is every reason to hope that the St. John Ambulance Association may be a very real help to the Government in this direction." The North-West Frontier Province offered, Colonel Blackham said, a limitless field for this feature of the association's work. Many, if not most, of the diseases which claimed such a heavy toll annually in the province were preventable, and might be prevented by better sanitation, or very frequently cured by some knowledge of sick nursing. Malaria, cholera, and tuberculosis were all preventable diseases. India had at last awakened to the commercial importance of her preventable death roll. She wanted her men and women, and the education of the latter was specially important. For every four children in India, at least one died in the first year of life. In every village, in every year, perhaps 100 children were killed—not by cruelty, far from it, but by ignorance and often by mistaken kindness. He gave a full account of the work the association had been able to do in the great national emergency, and explained the principle of which the collection of gifts in India had been worked. He acknowledged the generous help of certain Indian rulers. The Indian Red Cross, as the St. John Ambulance Association in that country might be called, had supplied Red Cross gifts for the forces operating in Egypt, East Africa, and the Persian Gulf. Up to date, it had been able to supply everything they had been asked for, from a fishing line to a motor launch. The Government of India had placed the association on its list of State-aided institutions, but no body of that kind could flourish without public support. He confidently appealed for help for the association in its threefold mission: to aid the sick and wounded, to nurse the sick, and to prevent disease.

The Chief Commissioner having thanked Lieutenant-Colonel Blackham for his address, Sir George Roos Keppel gave an account of what he had seen of the work of the association in France, and explained how the association had been able to supplement and assist the work of the Medical Corps. The North-West Frontier Province Centre had been in existence for some years, but, owing to a variety of circumstances, it had not developed to any extent except in the police department, where already 12 per cent. of the total force were trained in first aid. He expressed the hope that local centres would soon be started in every district in the province, and that the Provincial Centre would shortly be placed on a satisfactory basis. This, he added, was impossible without funds, and announced a provincial grant in aid of Rs.4,000, together with an annual grant of Rs.1,500. At the termination of the proceedings a large number of gentlemen were enrolled as life and annual members, the total amount of subscriptions being nearly Rs.10,000.

HOSPITALS FOR INDIAN TROOPS.

The Lady Hardinge War Hospital at Bombay was opened in December, and during the four months ending March 678 patients had been admitted, 577 had been discharged, and 16 had died. Owing to the large forces sent to the Persian Gulf in addition to those employed in Egypt and East Africa, together with the serious cases of wounds and sickness arriving from Europe, the hospital has been fully and constantly utilized, and there is every prospect of its usefulness being still further manifested. Although, owing to the provision of hospitals in England for Indian sick and wounded, the hospital at Alexandria had not proved to be required for its original object, it had been of great assistance to the Allied cause, having been made use of by the Australians and French.

The secretaries of the Bombay branch of the Imperial Indian Relief Fund have issued a report of the work done since the beginning of the war, in which it is stated that the field hospital at Alexandria had been equipped with 530 beds. Half a lakh had been spent in structural alterations at the Lady Hardinge Hospital, Bombay, and another half lakh in initial outlay in equipment, while recurring expenditure amounted to Rs.64,000 a year. The initial outlay on the hospital at Alexandria, including cost of equipment, was 2 lakhs and the recurring expenditure Rs. 185,000 per annum. Five motor ambulances had been purchased for the hospital at Alexandria, and it was hoped that these ambulances would revert to Bombay on conclusion of hostilities and inaugurate a motor ambulance service in that city. Three motor ambulances which had been given by Sir Shapurji Broacha, Mr. Mathuradass Gokuldas, and Sir Fazulbhoy Currimbhoy were already in use in Bombay.

Sydney.

THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

THE annual report of the Council of this Branch states that the total membership now amounts to 968; 14 members died during the year. The report refers to various matters which have engaged the attention of the Branch; of special interest is its attitude towards the public health proposals of the present Socialistic Government. An energetic public health policy has been developed during the past year, and the Department of Public Health has been placed under the care of a Minister of the Crown. At present this office, instead of being in the hands of a medical man, is in charge of a Socialist member of the Legislative Council, who makes no secret of his opinions, and whose disposition is towards nationalization of the hospitals. Consequently we find that following the conversion, some two years ago, into State hospitals of three institutions which had previously been conducted as asylums for destitute persons, and the encouragement of bush nursing schemes and of tuberculin dispensaries, the programme of the Government has recently been extended by the introduction of several special public services, including baby clinics and baby hospitals, convalescent homes, venereal clinics, and schemes for subsidizing resident medical practitioners in remote places, and adding maternity wards to public hospitals in country places. The Council has watched some of these developments with no little anxiety. At a special meeting of the Branch on January 29th very strong opposition was manifested to the action of the Minister of Health in seeking to extend the benefits of a State public venereal clinic, instituted by him, to persons able to pay for their treatment at the hands of medical practitioners in private practice. Subsequently the Council conferred with the Minister in reference to the establishment at the Board of Health of the venereal clinic, of which all classes of patients were invited to take advantage, irrespective of their means. The President and other members pointed out to the Minister the futility of secrecy and concealment of identity aimed at in his scheme. The Minister has apparently modified his views.

In order to protect the interests of members who have gone on active service in connexion with the war, the following resolution was passed at a general meeting of the Branch:

> That with a view to conserving the interests of those members of the Branch who undertake naval or military service during the existing state of war, the rest of the members individually engage—in the event of being called upon to fill their positions or to attend upon their patients—to restore the same to them upon their return to civil practice, so far as it may be in their power to do so.

Dr. George Armstrong has been elected President and Dr. Gordon Craig Vice-President of the Branch for the present year. Dr. Todd has been appointed Secretary and Dr. Crago Treasurer.

AN AMENDING PUBLIC HEALTH ACT.

An Amending Public Health Act was passed during the last session of the New South Wales Parliament, and is now in operation. Under its provisions the health authorities have powers which they have long sought; it gives them the power to isolate cases of small-pox, plague, and cholera. Hitherto the health authorities have had to exercise their power as Federal officers in quarantining cases, but this Act gives them the right to take independent action. In cases in which the local authority—the municipal or shire council—is slow to move in the interests of the public health, the Board of Health has now the power to step in. In each case it is necessary for the Board, through its officers, to make a personal examination, and, if action be necessary, the local council will be notified. Should the local authority then fail to do what is necessary within a certain time, the Board will take action and recover the expense from the council.

Scotland.

SCOTTISH WOMEN'S FIRST AID CORPS.

THE report presented to the annual meeting of the Scottish Women's First Aid Corps, held last week in Edinburgh, stated that it was started six years ago to train women to be in readiness to render help to the wounded in the event of war, that since April, 1914, the number of new members who had joined was 219; and that the corps now numbered 356. In addition classes given by the corps had been attended by about 300 non-members. The Aberdeen University Branch had increased its membership from 35 to 57. The corps was supporting a bed in the Scottish Red Cross Hospital at Rouen. Mrs. Maxtone Graham, the corps commandant, stated that the hospital equipped by the corps in a house lent by Mr. Frank Deas in Magdala Place was receiving soldier patients from the City Hospital and from the Deaconess Hospital. The whole of the work was entirely done by ladies, with the exception of a little help from a charwoman at night. The hospital was recognized by the Scottish Command and received the capitation grant, but this was not sufficient to keep the hospital going, so that further subscriptions were desired.

CHILD WELFARE.

A conference on "child welfare and the urgent need of protecting child life, in view of the ravages of war," was held at the City Chambers, Edinburgh, on May 26th. After the assembly had been welcomed by the Lord Provost, Lady Aberdeen delivered an address, and resolutions were adopted asking the Standing Committee of the Scottish Union of Women Workers to communicate with the different unions in Scotland, with a view to establishing child welfare centres, and calling upon the Government to encourage the establishment of such centres by subsidies and by extending the powers of the public health authorities in Scotland.

NURSING CERTIFICATES.

On May 4th, and subsequent days, the Local Government Board for Scotland held an examination for certificates in general nursing and in fever nursing. The examinations were held at Glasgow, Edinburgh, Dundee, and Aberdeen. The subjects were elementary anatomy and physiology, hygiene and dietetics, medical and surgical nursing, midwifery (for Poor Law and general trained nurses only), and infectious diseases (for fever-trained nurses only). Altogether 439 candidates presented themselves, and of these 36 obtained the certificate in general training and 101 in fever training.

Ireland.

ULSTER MEDICAL SOCIETY: ANNUAL MEETING.

THE annual meeting of this society was held in the Medical Institute, Belfast, on the evening of May 27th, when the President, Dr. Morrow, occupied the chair. The honorary secretary, Mr. S. T. Irwin, F.R.C.S.I., read the report of Council. Mr. Howard Stevenson presented the Honorary Treasurer's report, which showed a debit balance of £38, but against this two commutation perpetual subscriptions of 20 guineas each had been placed to capital account. The report of the honorary librarian, Dr. W. L. Storey, stated that the *Transactions* of the Old Sydenham Society and of the New Sydenham Society, and the *Journal of Dermatology* were now complete. The reports were received and adopted, and it was stated that nineteen of the members were serving in the army. The following officers for 1915–16 were then elected: President, Dr. Gardner Robb; Vice-Presidents, Dr. T. G. Davidson and Dr. Hadden (Portadown); Treasurer, Dr. Fielden; Librarian, Dr. W. L. Storey; Secretary, Mr. S. T. Irwin, F.R.C.S.I.; Editing Secretary, Dr. C. G. Lowry; Council, Dr. Hicks, Dr. O'Doherty, Dr. Rankin, Dr. Rentoul (Lisburn), Dr. Smyth, and Mr. H. Stevenson.

Correspondence.

LEGAL RESPONSIBILITY FOR CRIME.

SIR,—I have recently received a copy of the Report of Crime and Punishment Subcommittee on the Present State of the Law with Regard to the Legal Responsibility for Crime,[1] which has been approved by the Council of the British Medical Association for submission to the forthcoming annual meeting. As I am greatly interested in this subject, and had the honour of reading a paper on crime and punishment before the Section of Medical Sociology at the Brighton meeting in 1913, when a resolution was passed recommending the appointment of a committee to consider and report on certain legal aspects of the matter, I trust I may be excused for venturing to express my opinion of the great importance and value of the report, and also for calling attention to a certain omission which, though clearly unintentional, should, I think, be rectified.

The notable value of the report is manifest not only in all of the six well-considered "opinions" marked from A to F, but also in the reasoned appendices, which set forth the grounds of the opinions given, as well as the grounds for rejecting certain suggested alterations of the law. Of these, I would specially mention the subcommittee's rejection of the proposal that medical assessors should be appointed to assist the judge in cases where the question of "responsibility" arises, and the reasons for the rejection which are so conclusively given in the supplemental report by Mr. Roland Burrows and Dr. James Scott.

But, from the medical point of view, the criteria of responsibility for crime proposed under A (*a*) and (*b*) of the report may be regarded as of still greater, or indeed of paramount, importance, offering, as they do, a practical solution of the long-vexed dispute between law and medicine on this cardinal question. The subcommittee add to the well-known ruling laid down by Sir James Stephen the words printed below in italics, so that part of their proposed definition now runs as follows: "No act is a crime if the person who does it is at the time when it is done prevented . . . (*a*) from knowing *and appreciating* the nature and quality of his act *or the circumstances in which it is done;* (*b*) or from knowing *and appreciating* that the act is wrong."

With the weighty addition of these italicized words the subcommittee adopts, for the rest, the ruling of Sir James Stephen as it stands.

In Dr. Charles Mercier's work on *Criminal Responsibility*—a work perhaps even more widely known to jurists than to medical men—*one* of the "conditions of responsibility" is laid down in these words: "That the actor must know and

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, May 8th, 1915, p. 220.

appreciate the circumstances in which the act was done"; and this condition was propounded by Dr. Mercier for the first time in this book about ten years ago. It seems to me that as the whole of the definition now adopted by the sub-committee consists of a combination of the proposals made by Sir James Stephen and Dr. Mercier, the due attribution given to the late eminent judge should be supplemented by an equally due attribution to the living physician who has placed before the legal and medical professions in the above-named work the acutest study that has ever appeared, not only of Sir James Stephen's opinions, but also of the well-known "Answers of the judges on the Macnaghten case."—I am, etc.,

London, W., June 2nd. H. BRYAN DONKIN.

THE IMPORTANCE OF POSITION IN DRAINAGE OF WOUNDS.

SIR,—The appearance of so many wounded with bandaged hands and arms in slings and never one with a bandaged hand hanging down—usually the hand appears to be considerably larger than a boxing glove, owing to the mass of dressings—induces me to record a few observations which have been made since some of the medical beds in my charge have received wounded patients.

When I see a bandaged hand and arm in sling I am filled with curiosity to examine the hand and note whether one of the most important rules has been obeyed in the treatment of suppurating wounds.

Every medical man recognizes the extreme importance of efficient drainage, and probably most realize that for drainage to be efficient the opening of the wound must be at a lower level than the rest of the damaged tissues.

I am very far from satisfied that every one in charge of patients with wounded hands seriously considers the exact position of the wound and its opening when the arm is placed in a sling. My experience is that when the opening of the wound is nearer the fingers than the wrist healing is often accelerated by allowing the hand to hang. When discomfort arises from this position (which is comparatively rare), naturally some other attitude has to be adopted.

At the same time, I should like to draw attention to the size of the dressings applied. In the majority of cases three or four layers of cyanide gauze, and one or two layers of white gauze to keep the cyanide gauze in position, are all that are required. The quarter or half inch of cotton-wool and an impervious bandage become soaked with protein-containing fluids in which micro-organisms multiply with great rapidity.—I am, etc.,

London, W., May 29th. OTTO GRÜNBAUM.

THE SUPPLY OF MEDICAL MEN.

SIR,—Dr. Johnson, in your issue of May 29th, has mentioned the difficulties which are, I am sure, keeping many of the younger men from answering the urgent call of the nation. Many I feel, like myself, would be most willing to serve in any capacity, at home or abroad, if it were reasonably possible. My position is this: I am under 30, strong and well, ready and desirous of doing my duty, but I had six months before the war commenced purchased the practice I am now in. The capital, of course, I have not replaced yet. I have a wife and family, and depend wholly on my practice. The practice is a good one. I have done exceedingly well, but I simply cannot afford to leave it at the present without compensation. It would be madness to leave it with the idea of taking it up again after the war.

In spite of the fact that my future here is of the brightest—financially, at any rate—I would willingly offer my services to the nation if I could be given ordinary compensation.—I am, etc.,

May 30th. YOUNG G.P.

SIR,—In your issue of May 22nd there is a letter signed 'M.D.," and headed "The Supply of Medical Men," in which the writer propounds a scheme for supplying the medical needs of the country during the present crisis by a method which he describes as "extremely simple." Permit me to give a concrete example of the manner in which his scheme works out in practice.

A medical man, aged 33 years, with a wife and three children, is forced to take up military duties. His income during 1912 was £800; during 1913, £1,200; and during 1914, £1,500—average income, £1,160 gross. His practice, a country one, requires two motors and a motor car driver. This medical man is to have his place taken by a retired gentleman of over 50 years of age, who has no personal interest in the practice, and who, if very conscientious, will do perhaps about two-thirds of his work. The patients, who are not to be compelled and cannot be compelled to take this substitute, will in many cases take another practitioner, and will not necessarily return to their former medical man after the war is over. Being only allowed his average income for the last three years, the medical man on active service begins by dropping £334. In addition he has to keep up his staff, his cars, and pay for the keep of his locumtenent out of the reduced income allowed him. He leaves his practice with the comforting knowledge of increased burdens, reduced income, and the almost certain knowledge of a ruined practice. But "M.D." has not yet done with him. If he is killed or disabled his sufferings are made easier to bear by the thought that a grateful country is going to give his wife and children a capital sum of £1,700, which, if very well invested, bring in an income of £100 per annum as a compensation.

"M.D." truly writes, "By this means the medical profession will gain nothing extra." This letter, without exception the most absurd production that has ever been seriously put forward in your JOURNAL, was actually considered by the Special Committee of Chairmen of Committees. There is too much of this fooling about the sacrifices which the medical profession are willing and ought to make. Many of us are already slaving night and day doing civil and military duties without hope of reward or compensation, and still we have men putting forward schemes which would not for one moment be tolerated by any other profession or trade. What is even more serious, these schemes are apparently being considered by those in authority, and are being published to the world as a possible basis for future action. It is no wonder that the public, in the case of every movement requiring the services of our profession, take advantage of our readiness to sacrifice ourselves when members of our profession are to be allowed to publish in our leading journal schemes such as "M.D." has devised, and which, in their very essence, are void of common sense. If we are to be organized to meet the present crises, it is high time those in authority were devising a scheme, but it must be a scheme which safeguards our interests, and our future or the future of our dependants, and which recognizes our experience and our value in a satisfactory manner. If this were done, the medical profession will do their duty with that spirit which is their characteristic.—I am, etc.,

Tain, May 22nd. ENEAS K. MACKENZIE, M.D.

JUNIOR MEDICAL STUDENTS AND THE WAR.

SIR,—As the mother of a junior student may I join "Hard Hit" in asking if some place cannot be found for these young men in our national service? My son was under canvas with the O.T.C. at Rugeley when the war began, but being under military age had to exchange his uniform for civilian clothes, to his great chagrin. He is now preparing to take the First M.B. examination in July, and if, after that, his services could be utilized in one of the four military hospitals which are within a mile of his college, he would feel he was doing his bit without leaving the profession he chose in the peaceful time of a year ago.—I am, etc.,

May 31st. HIS MOTHER.

THE SURCHARGING OF PANEL PRACTITIONERS.

SIR,—The letter by Dr. Larking in your issue of May 29th makes it clear to me that he has failed to understand the position which the Medical Defence Union has taken up in respect of the surcharging of panel practitioners. The union, by raising certain actions on behalf of members who are panel practitioners, is not attacking the National Insurance Acts or seeking to hamper the working of the Acts, but is merely endeavouring to protect its members against the effect of certain regulations of the Commissioners which the union is advised are not in conformity with the Acts, and are therefore *ultra vires*, and also to defend them against any action of the

Insurance Committees which may appear to be arbitrary and wrongful. The union therefore desires to take the opinion of the court as to the regulations, and the procedure of Insurance Committees in administering the Acts.

We have already obtained a decision by the Commissioners in the Sheffield case whereby the proceedings taken by the Panel Committee in surcharging were quashed at our instance. In raising test actions in the High Court we are merely seeking to confirm and to extend the scope of that decision of the Commissioners. We are not seeking to destroy the Act; Parliament alone can either amend or annul it. As long as the Act exists it is imperative that we should, on behalf of our members, see that it is carried out legally and impartially; and we shall continue this duty, I trust, as long as the Act or the Medical Defence Union lasts.

Dr. Larking appears to consider that the administration of the Act is unassailable. Well, that is his opinion, but it is not mine, which is based upon the record of past successes in the High Court and elsewhere. If Dr. Larking could only see and read my daily correspondence from panel practitioners, he would realize that a rapid rise of discontent as to the working of the Act is setting in all over the country.—I am, etc.,

A. GEORGE BATEMAN,
General Secretary.

Medical Defence Union,
4, Trafalgar Square, W.C., June 2nd.

SIR,—I think my friend Dr. Larking's letter would have been more convincing to your readers if he had given us instances of our colleagues using an expensive drug when a cheaper drug having the same therapeutic action would have sufficed; it will be necessary to know the character of the case and the actual condition of the patient at the time the drug was prescribed. I entirely agree with him that proprietary remedies are to be avoided. I think that his remark about many men prescribing expensive medicines solely with a view of making the Act unworkable is, to say the least of it, unwise and unjustifiable. Before making so sweeping and damning a statement about his colleagues, which amounts to a charge of dishonesty, he should produce irrefutable evidence in proof of his statement. A statement such as this made in a medical journal, which is read not only by the members of our profession but also by laymen, is calculated to do a considerable amount of harm. Dr. Larking has a perfect right to form and hold any opinion he likes, but there are occasions when "Silence is golden," and surely this is such an occasion.—I am, etc.,

S. J. Ross.

Monkhams, Bedford, May 31st.

EAR DEFENDERS.

SIR,—I have just received a report from my brother-in-law, Lieutenant-Colonel of the Highland Howitzer Brigade, at present at the front, who has been using the Mallock-Armstrong ear defenders. He says:

> They are splendid! When wearing them you can hear ordinary conversation with ease, also the telephone—and not a particularly good telephone at that!. The sound of the gun firing seems to be just the same, but one never gets the sharp, painful jar in the ear that is usually felt. I think they are a great success, and those of us who have them swear by them. One of my section commanders took one out of his ears and got a nasty surprise with the gun firing; he says he could not have believed that the difference would be so great.

I think it wise to draw attention to this matter, and I trust that the ear defenders will be helpful in many other cases. I got them from Messrs. Krohne and Sesemann, of 37, Duke Street, Manchester Square, W., who are the agents.—I am, etc.,

PETER H. ABERCROMBIE.

London, W., May 31st.

*** The Mallock-Armstrong ear defender was described and illustrated in the JOURNAL of January 2nd, 1915, p. 25, and plastic plugs, believed by some to be better, were described and discussed in the JOURNAL of January 23rd, 1915, p. 160.

EMERGENCY BILL FOR MENTAL TREATMENT.

SIR,—I am much pleased to see Dr. G. M. Robertson's name appearing as your correspondent *re* the Mental Treatment Bill, even though it appears for my correction, since it is a name, like that of his predecessor, deservedly held in the highest esteem.

I am glad to find that Section 13 of the Scottish Lunacy Act, 1866, does not go so far as Earl Russell's bill and the late Mental Treatment Bill in permitting one doctor to commit for six months to an *institution* for the insane any person whom he alleges to be of unsound mind. It empowers him, however, to authorize the "patient" being compulsorily detained in a "nursing home" for gain in the absence of any check of the nature of judicial intervention. This seems rather hard on the "alleged patient" who perchance may not be a lunatic at all, and who is thereby deprived of the right of any hearing, since it is only through appeal to a magistrate that he has any opportunity for self-defence.

It will readily be acknowledged that Section 13 is shorn of a large part of its power for evil, when the weapon is wielded by a physician of the character and standing of Dr. G. M. Robertson, whose sway is marked with such benignity. But that does not alter the fact that a power for evil is inherent in it, leaving the way perilously open to abuse; and that the *alternative* method of genuine hospital treatment, if carried out on purely medical lines, would result in great gain to the community, and ought to present itself as an infinitely superior proposal for the avoidance of "*stigma*." The risk of incurring stigma is in many cases a minor evil compared to the possibility of six months' detention becoming the prelude to something much more serious.

Not a few instances have been known, both inside and outside of asylums, of sane and uncertifiable persons undergoing unjust detention in agonized perplexity and misery, simply because at the beginning they were deprived of their right to be seen by a magistrate, and were debarred from any means of ascertaining or refuting the allegations made against them.

Coming to the root of the matter, it is after all *not* lunacy experts, "official or other," who are in a position to pronounce upon the satisfactory working of S. 13 of the Scottish Act, since they naturally look upon it from their own point of view. It is not the detainer, but the compulsorily *detained*, whose voice should be heard, since it is the latter who experiences its detrimental tendency, when misapplied. The public also have a right to express their estimate of its consequences, and more especially at this crisis in regard to the fair treatment of our soldiers, seeing that it is upon the public that the risk and damage falls when unfair advantage is taken of an alteration in the provisions of the Lunacy Act.

The late Sir T. S. Clouston told me, in a very illuminating interview which he was so kind as to grant me in 1913, that it was the wish of his heart to see general hospitals open their wards to mental patients. He told me that twelve years ago he, along with Sir John Batty Tuke and Dr. McPherson (now Lunacy Commissioner), did their utmost to persuade the Royal Infirmary of Edinburgh to open a ward for this purpose, but they were defeated by a majority of *one*. A revolution of the kind thus aimed at would transfer at a stroke the hidden realm of lunacy into the light and bring to bear on what has hitherto been an exclusive *speciality* the help derivable from every other branch of medicine.

It is in this direction that really hopeful progress in the science of the mind is to be looked for, whether in the case of nerve-shattered soldiers or in early instances of loss of mental balance. And in order that doctors may have a proper opportunity of studying the beginnings of insanity, it is an absolute essential that *places* should be provided where early cases will not be afraid to enter voluntarily as they would enter an ordinary hospital without dread of detention. Such an opportunity might be most hopefully afforded in the new "Maudsley Hospital" about to be opened if it is prevented from becoming an asylum.—I am, etc.,

S. E. WHITE, M.B.

May 17th.

THE Regent Palace Hotel, opened recently close to Piccadilly Circus, which it is claimed is the largest in Europe, is under the same management as the Strand Palace Hotel, and the policy will be on the same lines, with no "tips" and no "extras" as special features. The restaurant, grill room, and rotunda court will be open to non-residents. Mr. T. P. O'Connor, M.P., has written a description of the hotel, a copy of which, amply illustrated, can be had post free on request to D. G. Turrell, Enquiry Office, Regent Palace Hotel, London, W.

The Services.

INDIAN MEDICAL SERVICE.

Medical Specialists.

THE Government of India has, we are informed by a correspondent in India, sanctioned the following procedure with regard to the extent to which the services of medical specialists are to be available:

(*a*) *Officers.*—In addition to being allowed travelling expenses when transferred to a hospital at another station, officers contracting any disease or injury on duty will be allowed to visit specialists, at stations other than their own, or receive visits from specialists from other stations, at the expense of the State, provided there is no specialist in the particular subject on which advice is necessary in their own stations.

(*b*) *Military Subordinates, etc.*—When it is not considered desirable to move the patient or patients, a specialist may, subject to the condition in Clause (*a*) above, be ordered to proceed at the public expense to the station where his services are required, irrespective of the pay of the individual to be treated.

(*c*) Indian soldiers, sub-assistant surgeons of the Indian Subordinate Medical Department, and public followers, will be allowed under the orders of competent authority to visit specialists at stations other than their own, accompanied by any attendants considered necessary, or to receive visits from specialists from other stations, at the expense of the State, provided there is no specialist in the particular subject on which advice is necessary in their own stations. A specialist will be summoned to see a patient only when the latter is certified to be unfit to travel, or when, having in view the existence of several patients requiring his treatment, his journey would cost less than their combined journeys. Movements of specialists within the divisional or independent brigade area will be ordered by general officers commanding concerned. In cases involving movements from one division or independent brigade to another, arrangements will be made under the orders of divisional or brigade commanders in communication with one another.

TERRITORIAL FORCE.

TERRITORIAL DECORATION.

THE King has conferred the Territorial Decoration upon the following officers, who have been recommended for the same under the terms of the Royal Warrant, March 17th, 1908: Major J. S. Y. Rogers, M.B., attached 4th (City of Dundee) Battalion, Black Watch (Royal Highlanders); Lieutenant-Colonel James Young, M.D., 3rd South Midland Field Ambulance; Lieutenant-Colonel Alfred W. Sheen, M.D., 2nd Welsh Field Ambulance; Colonel Henry G. Falkner, Assistant Director of Medical Services; and Major James B. Simpson, M.D., 5th Sutherland and Caithness Highland Battalion, Seaforth Highlanders. Territorial Force Reserve.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved at this examination (May, 1915):

THIRD M.B., B.S.—*†Dora Challis Colebrook, *†Clement Cooke, Lilian A. Clark, H. Davies, R. H. Fleming, Norah Hamill, Mary E. Joll, W. E. Kingdon, Olive G. M. Langmead, S. G. Papadopoulos, G. H. Roberts, G. F. Rodrigues, F. H. A. Sayed, Hilda M. Scarborough, J. F. H. Stallman, Katherine A. Waring.

* Honours. † Distinguished in Medicine.
‡ Distinguished in Midwifery and Diseases of Women.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

MEDICAL CERTIFIERS UNDER THE INSURANCE ACT.

THE letter addressed by the Council of the Royal College of Surgeons in Ireland to "Dr. A." published in the JOURNAL of last week, p. 952, has, we are informed, now been sent to all Fellows and Licentiates of the College, together with the following resolutions passed by the Council of the College:

1. That in the opinion of the Royal College of Physicians and Surgeons, Ireland, the existing arrangements for obtaining evidence of incapacity entitling to benefit under the National Insurance Act (1911) have given rise to serious abuses.

   In forming a judgement as to whether a person is "incapable of work" it is essential, alike in the interests of the public and of the claimant, that the fullest possible information as to the medical condition of the claimant should be before the person whose duty it is to adjudicate on the claim. This information is, as a rule, in the possession only of the claimant's medical attendant.

   The Colleges are of opinion that medical certificates under the Insurance Act should be accepted *only* if given by the claimant's medical attendant (if any), unless such medical attendant refuses to certify.

   If the body claimed against desires to review a certificate the Colleges are of opinion that the medical referee should have before him the certificate originally given by the claimant's medical atttendant, and should give such medical attendant sufficient notice of the time and place of examination and an opportunity of stating the grounds on which he arrived at the opinion expressed in his certificate.

2. That the Colleges resolve that the manner in which the duties of the office of "medical adviser" either to the Insurance Commissioners or approved societies are being discharged at present in many parts of Ireland is contrary to medical ethics and deserving of punishment by the Colleges.

Obituary.

DR. FARQUHAR MACRAE, tuberculosis medical officer of the county of Aberdeen, who died recently at the age of 30, was a native of Inverness. He received his early education at the Central School of that town, and in due course proceeded to Aberdeen University, where he had a distinguished career as a student. In 1908 he took the degree of M.B., Ch.B., and in 1913 that of M.D. with honours, the subject of his thesis being "A four years' hospital experience of vaccine, serum, and tuberculin therapy." In his short professional career Dr. Macrae acquired a varied experience of his profession. He was assistant in general practice to Dr. Mather, of Bristol, for ten months; house-surgeon of Cossham Hospital, Bristol, for three months; and house-surgeon and resident medical officer at the Northern Infirmary in his native town for a period of two years. Later he held, during nine months, the office of house-surgeon and senior house-physician in the Queen's Hospital for Children, London. He was house-physician at the Mount Vernon Hospital for Consumption and Diseases of the Chest, London, for six months, attending meantime the City Dispensary for Tuberculosis. In addition, he attended the course of tuberculosis at the City Road Hospital for Diseases of the Chest, London, and a similar course at the Brompton Hospital. He was appointed to the post of tuberculosis officer under the Aberdeen County Council on July 25th, 1913. In the course of his short period of effective service as a local official, Dr. Macrae proved his high qualifications for the post of county tuberculosis officer. He was unmarried.

Medical News.

THE late Sir William Gowers left unsettled estate valued at £13,988.

Nine cases of plague and 7 deaths from the disease occurred at Hong Kong in the week ending May 29th.

THE Croonian lectures before the Royal College of Physicians of London will be delivered on Tuesdays and Thursdays, June 17th, 22nd, 24th, and 29th, by Surgeon-General Sir David Bruce, C.B., F.R.S. The subject of the lectures, which will be delivered at 5 p.m., is "Trypanosomes causing disease in man and domestic animals in Central Africa."

DR. SHIPLEY, Master of Christ's College, Cambridge, will give a lecture for the National Health Society, on flies, lice, and minor horrors of war, at the house of the Royal Society of Medicine, 1, Wimpole Street, on Wednesday, June 16th, at 5 p.m. The National Health Society has issued a useful leaflet on flies and disease, and also a note by the Secretary, Miss Fay Lankester, on war professions for women. The address of the society is 53, Berners Street, London, W.

THE part of the *Times History of the War* issued on June 1st is wholly occupied by an article on medical work in the field and at home during the earlier stages of the present war, an interesting chapter of the history of military medicine, which cannot yet be written in full. It indicates the difficulties which the Royal Army Medical Corps had to meet in the early stage when the military outlook was uncertain and when the chief medical base had to be shifted from Boulogne to Havre and Rouen, and finally to St. Nazaire, and also those which arose when, after the arrest of the German advance, the front had to be so enormously extended from the Aisne to the North Sea. The medical service of the British Army, it is truly said, rose splendidly to the occasion, and was well supported by the Red Cross Society and the Order of St. John. The part contains notes on the hospitals for Indian troops and for the wounded in Egypt. It is illustrated by a number of photographs, including portraits of Sir Alfred Keogh, Surgeon-General T. P. Woodhouse, C.B., Director of Medical Services, Expeditionary Force, and Sir Arthur May, D.G., R.N.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Mediscera, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

W. J. L. asks for information concerning the precautions necessary in the use of hydrofluoric acid by employees in engineering works.

HYPODERMIC MEDICATION.

J. D. asks what is the most up-to-date work on this subject.

*** The most recent would appear to be the *Manuel pratique de la médication hypodermique*, published by the Laboratoire d'Hypodermie, 15, Avenue Perrichont, Paris, of which the second edition was issued in 1914. It was compiled by six physicians, a dentist, and a pharmacist, and includes summaries of the principles and practice of hypodermic, intradermic, intramuscular, intravenous, epidural, and intrarachidian injections, and also gives details concerning the application of hypodermic methods to general therapeutics, local anaesthesia, syphilis, tuberculosis, serotherapy, vaccinotherapy, and toxinotherapy, quinine treatment of paludism, dental anaesthesia, and diagnostic purposes.

VITTEL AND BATH.

W. R. writes: One of my patients, who suffers from the gouty diathesis and hepatic inadequacy has been for some years past taking Vittel water with considerable benefit. Owing to the present conditions there is now considerable difficulty in obtaining this water. "W. R." wishes to know of any other water which can be readily obtained and which has a similar action.

*** Vittel (Vosges) belongs to the class of earthy calcareous waters to which the water of Bath may also be held to belong; both waters are of very low mineralization, and the salts they contain are somewhat similar. The chief constituent in the King's Well at Bath and the Source Salée at Vittel, is calcium sulphate—1.3 per mille at Bath, 1.4 per mille at Vittel. Both contain also calcium carbonate—0.3 at Vittel, and 0.1 at Bath. Vittel contains 0.8 magnesium sulphate, and Bath 0.01 magnesium carbonate. It is just a question whether in such a case the old-fashioned sodium sulphate (Glauber salts) is not quite as efficacious, a small dose of 30 to 60 grains being taken dissolved in boiling water every morning before breakfast. A somewhat more palatable form is the effervescing sodium sulphate of the *British Pharmacopoeia*. It contains about one-third of sodium sulphate and one-third of sodium bicarbonate.

ANSWERS.

IODIDE-CREOSOTE TREATMENT OF PNEUMONIA.

A. D. will find the desired information in Dr. Arthur Mathison's memorandum, "Treatment of Lobar Pneumonia," published in the JOURNAL, vol. i, 1906, p. 1401, and in his paper bearing the same title in vol. ii, 1910, p. 1611. The prescription is:

Creosoti	♏ xx
Sp. vini rect.	ʒjss
Pot. iod.	ʒj
Ext. glycyrrhizae liq.	ʒiij
Aq. ... ... ad	ʒvj

Misce. ʒss q.q.hs.

"CURICONES."

W.—"Curicones" is a secret proprietary preparation sold as a remedy having "no equal for rheumatism, gout, lumbago, rheumatoid arthritis, sciatica, neuritis, headaches, etc., etc., and all other pains due to a uric acid diathesis." A recent analysis showed that the substance contained the following ingredients: Sulphur, lactose, guaiacum resin, acetylsalicylic acid, sodium benzoate, and a powdered vegetable drug which resembled cimicifuga rhizome but whose characters were not sufficiently distinctive to say positively that it was this drug. The sodium benzoate was present in largest quantity (about 26 per cent.) and the guaiacum resin in the smallest proportion (about 10 per cent.), while the other ingredients varied from 13 per cent. to 17 per cent. A bottle, price 2s. 9d., contained 31 capsules; the average weight of the contents of one capsule was a little over 2½ grains.

LETTERS, NOTES, ETC.

PRECAUTIONS AGAINST INCENDIARY BOMBS.

DR. B. JONES (Boscombe) writes: It is surprising that neither in the instructions issued by the British Fire Prevention Committee nor in your own comments thereon is mention made of the proverbial wet blanket as a fire extinguisher. Each house in a dangerous locality, especially London, ought to have one or more buckets of water and a loosely-folded blanket standing ready on the landing of each floor. On the outbreak of fire the blanket should be placed in a bucket of water, another bucket of water carried in the other hand, and the blanket thrown over the outbreak, whilst the remaining water should be emptied upon it, and more water obtained if necessary; whilst all carpets and rugs on the floors should also receive a douche of water, repeating as may be necessary. It is surprising how fire-resisting a wet blanket is. It can easily be proved in this way. Take a piece of old blanket or flannel of any kind of, say, 9 by 6 in., dip it in water, squeeze it nearly dry, and place it flat over a kitchen or other hot fire; it will take quite several minutes before the blanket begins to consume, whilst if water be dropped on it from a tablespoon repeatedly it will remain unscathed for a long time, even over a very hot fire. The exclusion of air and the presence of water together form the very best kind of fire extinguisher. In outbreaks of fire in country districts where there is no great supply of water horse rugs or blankets wetted and spread over contiguous buildings would effectually prevent the spread of conflagrations which sometimes happens, as in a case recorded this week, where the fire spread from building to building until many buildings were destroyed.

TREATMENT OF WOUNDS.

A CORRESPONDENT writes: I have just read Sir A. Wright's treatise on wound treatment. *Quâ* treatment, it amounts to this: Bring about a centrifugal lymph stream, and so prevent absorption of poison. I have more than once pressed the claims of carbolic glycerine upon the notice of the profession in this respect. For carbuncles, for soiled wounds, for punctured wounds I find it absolutely reliable. In a few hours an inflamed wound becomes soft, pale, and painless, and after forty-eight hours, or at most three days, any dry dressing will complete the healing. It only needs application by injection in punctured wounds, or by a soaked pad in others, under some waterproof substance, so that the glycerine may exert its hygroscopic action and the carbolic its anodyne and antiseptic action.

A WARNING.

R.A.M.C. writes: By way of warning, I hope you will find space for this in your correspondence column. Whilst on duty at Walton-on-Thames recently, a lady, posing as a nurse, requested the loan of a few pounds, as she was short of money. She frequently referred to a "worthless cheque," which she did not produce, given to her by her father, a wealthy tea merchant, at present away on a honeymoon trip with his very young wife. She was a "certified nurse," and had worked at Netley Hospital. Such was her story, which I did not quite "swallow." However, I assisted her to the extent of 10s., not giving the full benefit of the doubt. I later made inquiries, and found that the lady was quite unknown to the firm of tea merchants whose name she gave as her own; I wrote to Netley, and the registrar of the Royal Victoria Hospital replied: "I have to inform you that Miss —— —— has never been employed at this hospital as a nurse." She is 26 or 28 years old, light hair and complexion, face non-similar, the right-side face being quite different from the left; height about 5ft. 8 in.; usually dresses in blue.

LONGEVITY.

PEAKITE writes: The following ages of persons have been recorded consecutively in my death certificate book between the dates of February 1st, 1915, and May 12th, 1915, and are, I think, worthy of mention: 83, 77, 84, 75, 74, 37 (phthisis), 88, 79, 90, 81, 89, 77, 80, 65.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

URETERAL STONE;

WITH SPECIAL REFERENCE TO THOSE IN THE PELVIC URETER.

By JOHN H. WATSON, M.B., B.S., F.R.C.S.,
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CALCULI in the urinary tract nowadays present few difficulties in diagnosis and treatment for the expert; but for the unwary there are many pitfalls. All practitioners do not possess the facilities for detailed examinations which the specialist provides or has at his command. We have not yet come to the time in this country when the surgeon works in conjunction with a skilled pathologist and radiologist. Too much is left to the responsibility of one individual, and, unless some definite routine is followed, the chances are that mistakes in diagnosis and in treatment will occur.

Unfortunate sufferers from ureteral stone have far too frequently been submitted to operations with a diagnosis of appendicitis or inflamed ovary, or even mobile kidney, and have had the presumably offending organ removed or stitched in place. The patient, instead of being relieved, becomes morbidly depressed from the continued pain. Even now his real condition may be misunderstood, and he is classed as a neurotic or neurasthenic, or something equally unfair, until at last he seeks other advice or is lucky enough to pass the stone.

The ureter is about 30 cm. long, with a diameter of 5 mm. It may be divided into two parts: (1) abdominal, (2) pelvic.

The abdominal part runs almost vertically on the psoas muscle, from the lower level of the first lumbar vertebra to the sacro-iliac joint. In nearly the whole of its course it lies just beneath the peritoneum, to which it is united by connective tissue, so that when the peritoneum is stripped the ureter comes away with it. The abdominal ureter is crossed obliquely by the spermatic or ovarian vessels, while the genito-femoral nerve passes behind it.

The relations of the pelvic ureter differ according to the sex. This part may be subdivided into a parietal and visceral portion. The parietal part takes a curved course in both sexes to the ischial spine; it is covered on its medial aspect by the peritoneum, and laterally is in relation to the hypogastric vessels. This part is 10 to 12 cm. in length, and in the female it usually forms the posterior and lower boundary of the ovarian fossa.

The visceral portion in the male is crossed by the vas deferens, and is divisible into an extravesical and an intravesical portion. The extravesical part lies above the seminal vesicle, and is closely related to the vesical plexus of veins. After a course of one or two cubic centimetres it passes obliquely through the bladder wall, terminating at the orificium ureteris.

In the female the visceral part is longer than in the male, and lies in relation to the uterus and vagina, as well as to the bladder. As the ureter traverses the bladder

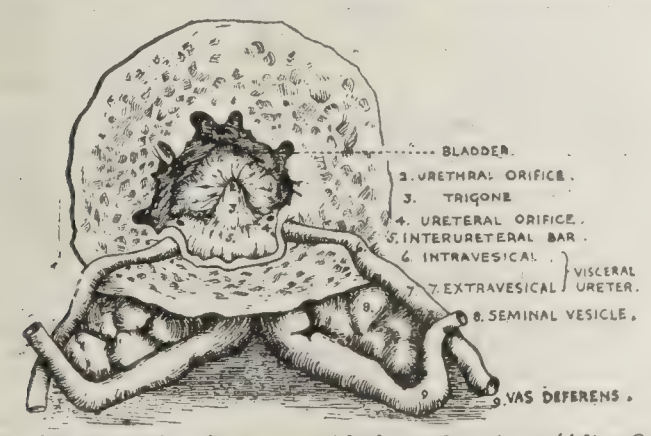


Fig. 1.—Diagram showing course of visceral ureter. (After Quain.)

wall it retains its independence and is separated from the muscular coat of the bladder by a layer of connective tissue. The ureteric sheath of Waldeyer is an extra covering of longitudinal muscular fibres enveloping the extramural ureter (Fig. 1).

The arterial supply is most generous, coming from the renal, spermatic, hypogastric, and vesical arteries. Sampson has shown that the ureter may be dissected out in its whole course without suffering necrosis, by virtue of its intramural anastomosis. That it has an extremely good blood supply is shown by the fact that impaction of a stone never gives rise to necrosis.

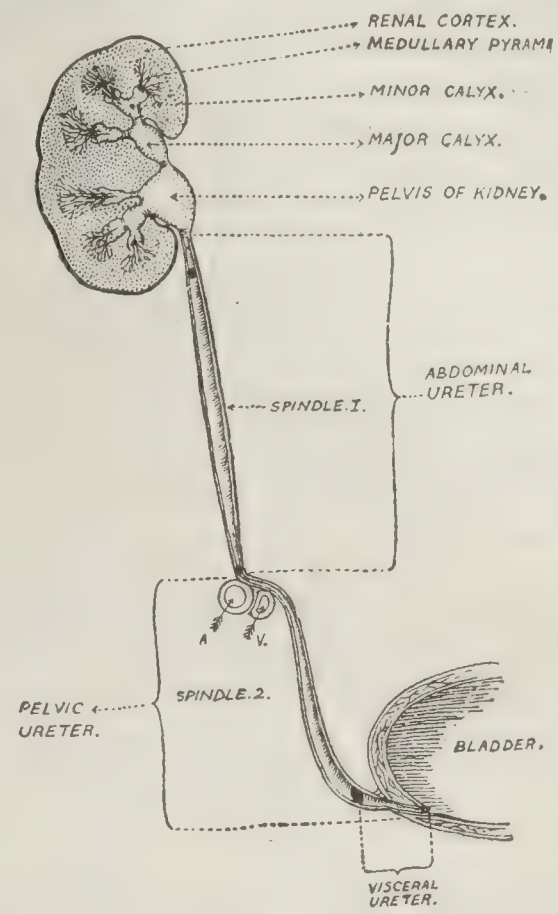


Fig. 2.—Diagram showing common sites of impaction of ureteral calculi.

The calibre of the ureter is not uniform. There are three points at which it narrows:

1. Where it joins the pelvis of the kidney the diameter measures 2 mm.
2. Where it crosses the iliac artery it is 3.5 mm.
3. At the opening in the vesical wall 2.5 mm.

Nature's tightest barrier is therefore at the beginning of the ureter.

Bryan [1] quotes Schenk as recording 84 cases of ureteral stone which had been operated upon, the location being as follows:

50 per cent. at or about the vesical opening.
24 per cent. in the upper ureter.
10 per cent. at or near the pelvic brim.
16 per cent. other locations.

Between these constrictions the lumen is dilated, the abdominal part forming a long spindle obtaining a diameter of 8 mm. in its widest part. As is well known, the flow of urine is assisted by contractions of the ureter every few seconds. What part the nervous system plays in this is not definitely known. The contractions can and do occur when the ureter is cut off from its nervous connexions. The nerve supply is very elaborate, and is derived from neighbouring visceral plexuses. There are four points where a rich anastomosis of nerve fibrils occur:

1. Where the plexus ureteris and the renal plexus join in the upper ureter.
2. Where the plexus ureteris and the ovarian or spermatic plexus coalesce.
3. Where the plexus ureteris anastomoses with the plexus uterinae or vesicae.
4. Where the plexus ureteris comes in contact with the pelvic plexus.

We may now plan out a routine examination utilizing the simpler methods first. The general detail is not very laborious, nor does it require an excessive amount of time. After all, the patient depends on his medical attendant for the primary diagnosis. It cannot be maintained too forcibly that the best interest of the patient is also that of the doctor. Every patient has a right to the proper working up of his case, and he will, as a rule, appreciate a systematic examination. The following plan is on the lines of one suggested by Lilienthal,[2] and begins with:

I. *History.*—Remote and immediate, especially as to pain and its distribution, colic, strangury, frequency of urination, time

of attack, fever or chills, changes in nutrition, remedies that appear to have given relief, painful emissions, pain in defaecation.

II. *General Examination*—that is, the examination of all easily reached parts of the patient's body by the usual methods: Inspection, palpation, auscultation, percussion. The average patient appreciates such attention, and it gives useful and important assistance. The rectal and vaginal examinations should not be omitted. Stones have been detected by manual palpation of both these canals; not only this, but tender areas may be worked out after the manner of Mackenzie or Head. A tender area over the course of the ilio-inguinal nerve or in the loin is very suggestive of calculus.

III. *Examination of the Urine.*—This may reveal blood, pus, bacteria, phosphates, or there may be polyuria, or even anuria. This is no place to go into the detail of urine analysis, but any suspicious case should have an immediate examination of the urine for blood with the microscope, a centrifuged urine being taken. If this is not possible, it is far better to have the examination made at a clinical laboratory. The demonstration of blood, pus, or crystals of calculus-forming salts demands further inquiry, and may save a doubtful case of chronic appendicitis from an unnecessary operation.

IV. *Radiography.*—This is the most reliable means of diagnosing ureteral stone. It should be done by an expert, who should be capable of demonstrating his results, for his plate records the number, size, and location of the stone or stones. The assistance of such a skilled operator cannot be too highly estimated, on account of the confusion which is apt to arise from shadows cast by calcareous glands, phleboliths, or appendicular concretions, and these must be excluded. This is rendered possible, to some extent, by taking another skiagram with a leaded ureteral catheter in position; or, again, it has been suggested for cases in which the stone is suspected in the visceral ureter, that the patient be skiagraphed in the sitting posture, thus eliminating considerably the sacral shadows.

A point which Thelwall Thomas[3] lays great stress upon is the need for repeating the *x*-ray examination on the day of the operation, for, he says, in the case of small stones they have a tendency to move downwards, and in those cases in which there is a dilated ureter the stone may even travel upwards into the pelvis of the kidney.

When radiography does fail, it may be traced to the composition of the stone; oxalate of lime stones giving the deepest shadow, whereas a uric acid calculus gives a very faint shadow or none at all.

Thomas makes the important statement from a large experience of cases of renal and ureteral stones, that he has yet to come across a pure uric acid stone, but that they invariably contain insoluble calcium salts.

According to Leonard,[4] the Roentgen ray gives less than 3 per cent. of error.

V. *Cystoscopic Examination of the Ureter and Bladder.*—Cystoscopy should always follow radiography, and this should be strictly observed, because cystoscopy is apt to be attended with the greatest inconvenience.

A stone caught in the orificium ureteris can be plainly seen.

In those cases of stone in the pelvic ureter there is a distinct pathological appearance of the ureteral mouth caused by pressure of the stone on the venous and arterial radicles, the result being an oedema of the orifice which may appear more open and congested, with ecchymoses of the peripheral vessels, and which is decisively apparent on comparison with the fellow of the opposite side.

A pouting ureter discharging small quantities of blood-stained fluid may convince one of the presence of a calculus not discovered by the radiographer.

Ureteral catheterization with wax-tipped bougies is only available in women, and seems to the writer a questionable refinement.

The ureteral catheter will cause intense pain on impaction against a stone which may absolutely block its further passage, or, if small and lying like a ball valve, may allow the catheter to slip and pass on to the pelvis of the kidney, thus deceiving the operator.

By carefully following out this sequence many complicated conditions may be cleared up which formerly were only suspected, so that by the time the patient arrives in the operating theatre the surgeon has every detail at his disposal whereby he can arrange his operation with every prospect of success.

There are, however, certain general facts which may be well worth recalling in these cases. In the first place stone in the ureter is certainly more prevalent than is supposed—according to some writers it is of greater frequency than renal calculus. They may arise in the ureter, but as a general rule they form in the renal pelvis and then pass into the ureter; the etiology is therefore practically that of renal calculi which is still a vexed problem.

Stone in the ureter is usually single, occasionally they are multiple, and rarely bilateral.

The general effects of ureteral calculi may be set down as:

I. Those due to mechanical obstruction—
- (*a*) Retention of urine behind the calculus.
- (*b*) Interference with the function of the kidney of the same side, for example, hydronephrosis, and pressure atrophy of the gland.
- (*c*) Reflex effect on the other kidney may give rise to anuria.

II. Those due to infection—pyelitis, pyelonephritis, pyonephrosis.

III. Secondary effects on the nervous system resulting from constant pain and irritation giving rise to that protean ailment neurasthenia.

IV. Local effects on the ureter:
- (1) Mechanical — dilatation with or without hypertrophy.
- (2) Inflammatory—leading to changes in the wall, for example, ulceration, fibrosis, and, rarely, abscess.

The clinical symptoms of ureteral stone are essentially those of long standing—discomfort, with acute exacerbations of intense pain lasting from a few minutes to several hours, referred to some definite somatic area corresponding to the ureteral nerve supply, coming without warning or any apparent cause, and accompanied by urinary and gastric disturbances.

I can now give details of 3 cases which have recently come under my care which expose avoidable errors in diagnosis and treatment, and which at the same time will give opportunity for discussing certain predominant symptoms, so that one may more clearly see the writing on the wall.

CASE I.

T. L., motor driver, aged 23, unmarried. Two years ago I was called to see this man, who had been taken suddenly ill with intense pain in his right side. The history I then obtained was that he had had two previous attacks, which another doctor had called appendicitis. This diagnosis I confirmed, although the lad had neither temperature nor increased pulse-rate, on the sole grounds, I believe, that he was tender over McBurney's spot, and also, on deep palpation, over the appendix, and that his attack began with vomiting. I advised him to have his appendix out, but this he declined.

In August last he called upon me, complaining of pain when he made water. This pain, he said, came on at the end of the act; moreover, he was troubled with greater frequency, accompanied by straining. He informed me that the pain had made him very miserable and depressed—which, by the way, he looked—and that he had now come to me to have his appendix out. On further questioning, he told me that he had had several attacks of pain in his right side since I last saw him, but the pain had shifted.

On examination I found that there was now no tenderness in his right iliac region. Rectal examination revealed nothing, so I passed a sound, and I distinctly heard and felt the click of a small stone. I suggested his going into hospital, and he complied.

Operation: August 18th. Suprapubic cystotomy was performed, and I was surprised to find on putting my finger into the bladder that the stone was very small and deeply placed, and moreover it was fixed. It at once dawned upon me that I was dealing with a stone in the process of extrusion from the ureter, and I thereupon located it at the base of the trigone and issuing from the right ureteric orifice. With a little difficulty I was able to dislocate it with my finger. The bladder was closed completely, but a small drain was left in the lower angle of the skin wound leading to the supravesical space to be removed in forty-eight hours.

Three days later he again began to have attacks of acute pain in his right iliac region and loin. These became intensely severe and almost unbearable, and were accompanied by retching and vomiting and a constant desire to micturate, with strangury. On August 25th he suddenly obtained relief whilst straining to make water, and felt the stone impacted in his urethra. This eventually gave rise to complete obstruction, and had to be removed by incising the penile urethra under local anaesthesia. His convalescence was marred by an acute infective nephritis setting in on the right side; but under treatment he got perfectly well, and he is at the present time actively engaged in the Army Service Corps.

This case illustrates a double error in diagnosis. In the first instance it was accepted as an ordinary case of recurrent appendicitis, and secondly it was labelled vesical calculus. Why? Because a routine examination was not made it was deemed so unmistakable that neither the Roentgen rays nor the cystoscope was employed. Without these aids to diagnosis, appendicitis may easily be confounded with impacted stone in the ureter. Although a diagnosis of renal stone may on clinical grounds be definitely and accurately made, its frequent

confusion with appendicitis leads me to contrast roughly and briefly certain symptoms:

	Symptoms.	Ureteral Stone.	Appendicitis.
1	Mode of onset	Sudden and intense	Gradual and less intense.
2	Referred pain	Urogenital area	Iliac region.
3	Temperature	Normal or subnormal	Elevated.
4	Pulse	Quickened temporarily	Increasing frequency.
5	Vomiting	Present	Present.
6	Bowels	Tenesmus may be present	Constipation.
7	Bladder	Frequency and tenesmus, if impacted in lower ureter	Frequency may be present.
8	Urine	Albumin, blood, pus	No change.
9	Blood count	Normal	Leucocytosis.

CASE II.

J. B., mechanic, aged 31, had always been a healthy man up to ten months ago, when he was taken with a sudden attack of pain in the right side which made him fall to the ground. He felt sick and vomited—the attack lasted four to five hours. A similar attack occurred about one month later. He got very depressed, lost all his energy, could not work, slept badly. Other less severe attacks came on, but he felt himself becoming gradually worse. A doctor saw him frequently, and found that he was tender over his appendix, and suggested his going to hospital for removal of that organ. He was admitted to the Victoria Hospital in August, but presented no symptoms of appendicitis in hospital, so he was discharged, but on returning home immediately had another attack. These attacks, though less severe, have recurred—one or two in the month, up to the present time. November 20th, 1914, after an attack he passed blood in his urine for about three days. He noticed now the character of the pain had changed, that after passing water he felt pain at the end of his penis for a variable time, sometimes as long as two or three hours, and although he had a more frequent desire to urinate, the pain after micturition only occurred during the attacks.

In his general appearance he is a well-built, healthy-looking man. He has no lesion of the heart or lungs, reflexes superficial and deep exaggerated, gait normal—that is, there was no bending forward to relax the psoas muscle which Bovee calls attention to. Hyperextension of the thigh caused no pain (Meltzer's sign); but he was tender on fist percussion in the right loin (Jordan Lloyd's and Murphy's sign). No tenderness on deep palpation over iliac fossa. Rectal examination revealed tenderness to the right. His urine showed the presence of a slight haze of albumin. The radiograph, taken by Dr. Crump, shows beautifully a stone impacted in the lower pelvic ureter.



Fig. 3.—Sketch of Radiogram 1, showing position of calculus in Case II. Largest diameter of stone, 1 cm.

I advised him to come to hospital to be cystoscoped. In the meanwhile he was told to drink large quantities of water, tea, coffee, and a diuretic was prescribed. Three days later, December 5th, he returned with a stone which he had passed that morning after most acute pain. I cystoscoped him two days later, and observed his right ureteric orifice still dilated, irregular, and congested. He has now returned to his work, and says he never felt better.

Both these cases strikingly demonstrate the similarity of the referred pain in stone in the ureter to the predominant symptom of stone in the bladder. To explain this one must refer to the nerve supply of the ureter, which is chiefly composed of an anastomosis of sympathetic fibres in the outer and muscular coats of the ureter, which is derived from the various plexuses lying in relation to it—namely, in the abdominal portion the plexus ureteris is derived from the renal and spermatic plexuses, the pelvic portion deriving its nerve supply from the hypogastric and vesical plexuses.

For all practical purposes Mackenzie's[5] theorem may be adopted as the best explanation of referred pain in ureteral colic. Put briefly, hollow muscular organs when violently

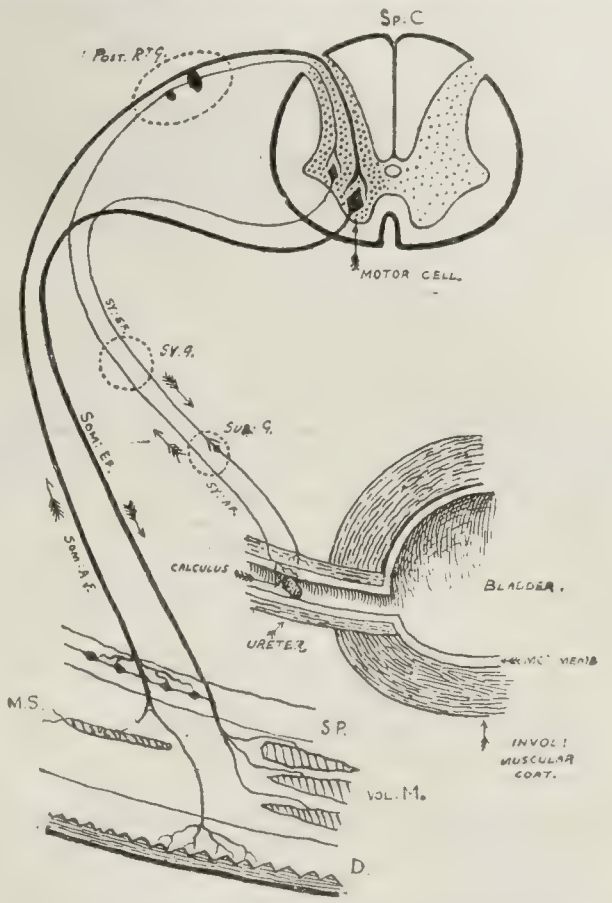


Fig. 4.—Diagram to illustrate the concept of a viscero-sensory and viscero-motor reflex, instanced by stone in ureter. Stimuli are conducted to the right half of the spinal cord (SP. C.) by the splanchnic nerve (SY. AF.) from the area of the ureter in contact with the calculus, and there give rise to an irritable focus in the cord which is most intense in the right half segment indicated by the coarser stippling. The neighbouring cells and centres are then stimulated to activity—namely, (*a*) an efferent sympathetic fibre (SY. EF.), having its origin in this area, conducts impulses viâ the subsidiary ganglia (SUB. G.) to the musculature of the bladder; (*b*) motor impulses are conveyed to the voluntary muscles supplied by this same segment viâ the efferent somatic nerves (SOM. EF.) = viscero-motor reflex; (*c*) sensory impressions are referred and intensified by the afferent somatic nerves (SOM. AF.), belonging to the segment to (1) the skin (D.), (2) the subperitoneal tissues (S.P.), (3) the muscles (VOL. M.), the general effect being a viscero-sensory reflex.

contracting produce severe pain; this pain is not felt in the organ itself, but is referred to the external body wall by sensory nerves derived from the same spinal segments to which the afferent automatic fibres of the viscus proceed. The diagram (Fig. 4) shows this in detail, and more vividly than any lengthy text.

The nerves reaching the ureter come from the last dorsal, upper lumbar, and sacral segments viâ the aforementioned plexuses. Strong afferent impulses to the cord will set in play, by over-stimulation, one or other nerves of the lumbar or sacral plexuses, according to the segment most involved, bringing about what Mackenzie calls a viscero-motor and viscero-sensory reflex, and resulting in increased muscular rigidity and painful sensibility in the referred area.

In order to explain the pain at the end of the penis one must recall the constitution of the vesical plexus which is responsible for the innervation of the lower ureter (Fig. 5). The vesical plexus is formed by nerve fibres from the upper lumbar segments viâ the hypogastric plexus and from the upper sacral segments viâ the pelvic plexus. Moreover the two plexuses intercommunicate; so to explain the referred penile pain in J. B.'s case we surmise the visceral nerves are so intensely stimulated by ureteric contractions that an irritable focus is produced in the cord involving especially the part from which the dorsal nerve of the penis originates—namely, the second and third sacral, causing a true viscero-sensory reflex; but we must remember that the location of referred pain in low ureteral trouble may arise in other parts, for example, around the

anus with painful sphincteric contractions, or lumbo-sacral pain may be felt, also through communication between the

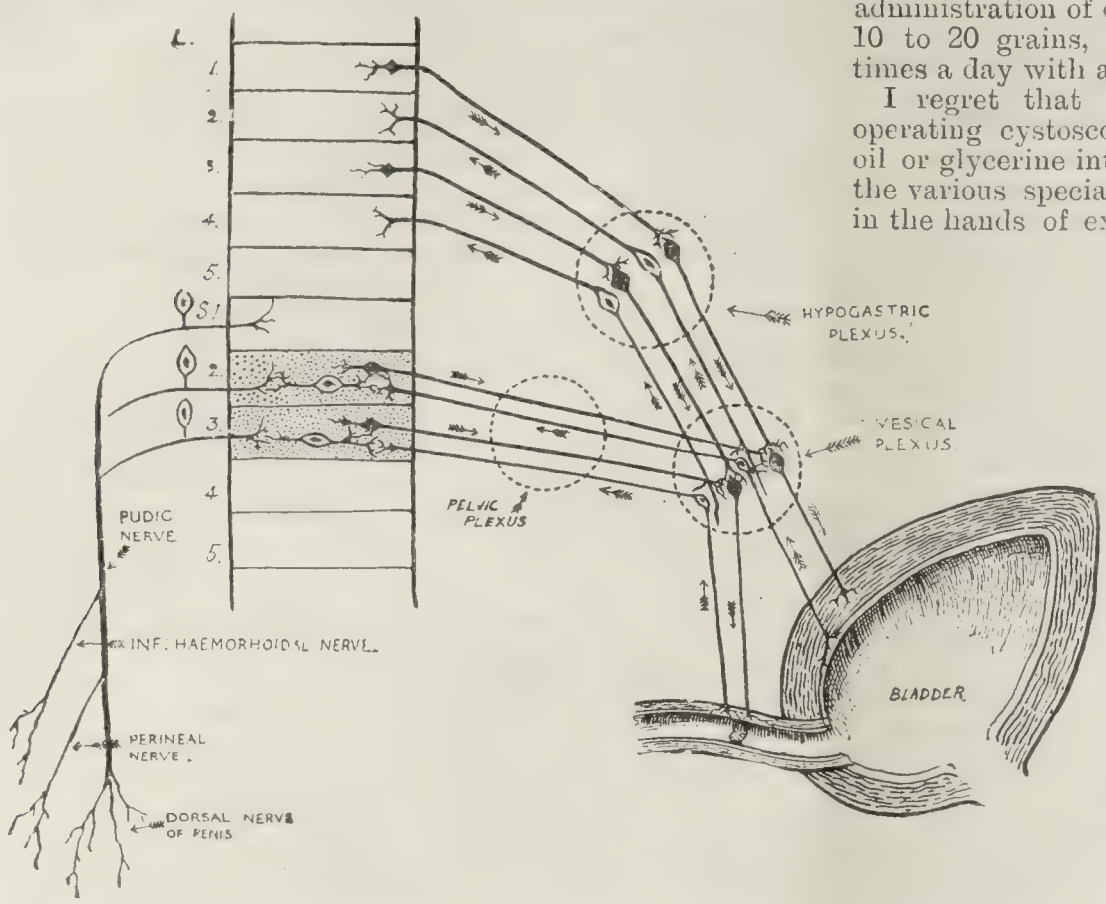


Fig. 5.—Diagram to show connexions of vesical plexus and path of referred pain from irritable focus in sacral cord.

second, third, and fourth sacral nerves with the vesical plexus (*vide* Fig. 5).

CASE III.

As an instance of sensation referred to other areas I relate briefly the case of E. C., married, aged 25, who had had attacks of pain in his right iliac region and back for about ten months and was eventually sent to the hospital. He also noticed occasionally that just before an attack was coming on he felt pain in his groin when walking. Latterly the pain altered in character. Besides penile pain he experienced a peculiar sensation at his seat associated with straining, and to obtain ease during the attacks he spent most of his time in the squatting posture. This unfortunate man got very despondent. Moreover he had not been married long, and he found that any marital act caused him further suffering, and he was now anxious to submit to any form of treatment to obtain relief. Without going into details of his physical examination, I will simply state that the diagnosis made previously was renal calculus, but Dr. Crump demonstrated with the *x* rays a ureteral stone (Fig. 6), and this was removed by operation.

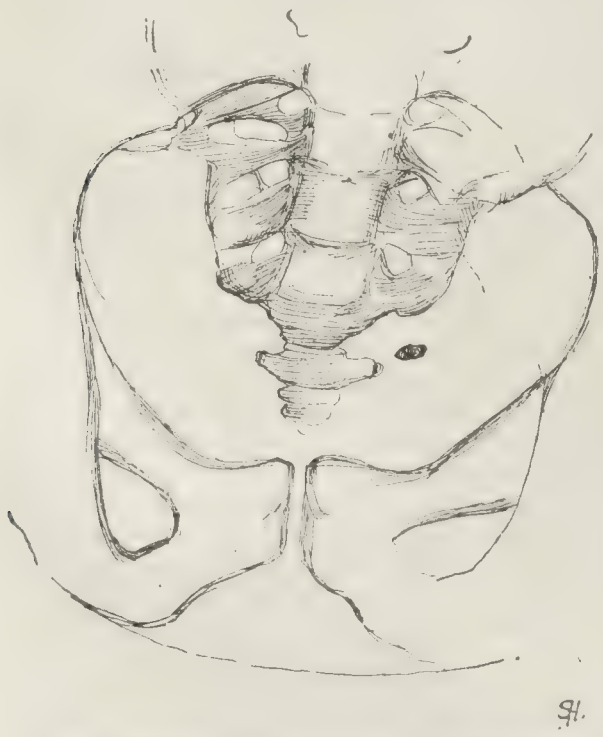


Fig. 6.—Sketch of Radiogram 2, showing position of calculus in CASE III. Largest diameter of stone, .65 cm.

This brings me to the subject of treatment. My own experience is too limited to be dogmatic. During the last four months I have had to deal with five cases of ureteral stone. Three have submitted to operative treatment; two were going to, but, under medical treatment, passed the stone. Previous to this I have had odd cases, but I am sure I have failed to recognize several others.

The first question to decide is, Should the treatment be non-operative or operative? By non-operative treatment I mean the drinking of large quantities of fluids and the administration of diuretics. I have used potassium citrate 10 to 20 grains, with decoction triticum repens, three times a day with apparent success.

I regret that I have had no experience with the operating cystoscope; neither have I tried injections of oil or glycerine into the ureter by means of a catheter, or the various special ureteral dilating devices. These last in the hands of experts have undoubted advantages, but, failing these simpler methods, in reasonable time—say two to three months—one must resort to more radical steps unless the life is an absolutely unsafe risk for any major operation.

We decide to operate because we know the integrity of the kidney is being menaced, and because of the suffering incurred by the patient. The only good reasons I can ascribe for non-interference are: (1) When the stone is small and making reasonable progress down the ureter, as shown by the *x* ray; (2) so-called cases of chronic stones without severe symptoms, therefore not giving rise to acute obstruction, in people who are otherwise bad surgical risks.

Certain general principles should be remembered. In the first place, the incision should give an exposure that will enable the operator to deal with the ureter freely and without constraint. The ureter must be well freed in order that it may be brought into the wound. This is, of course, not possible in the lowest portion.

It is a good precaution to place a weak clamp above the point at which it is to be opened to prevent contamination of the wound with septic urine, or at least take care to prevent soiling the wound with gauze packs, before incising the ureter.

Some authorities advise opening the ureter over the stone; this may not be possible, and it may be taken for granted that the stone will already have damaged the ureter at this point. I have opened the ureter about an inch above the stone with no evil results. The stone may be then extracted with forceps—for example, Desjardin's, or a scoop. If this is not possible an attempt may be made to push the stone forward with a flexible sound into the bladder.

Before incising the ureter a couple of guy sutures for traction purposes may be inserted with advantage and the incision made between.

The closure of the ureter seems to be an important detail, although I am aware that even without suture leakage may be quite trivial. I have employed the finest catgut and obtained excellent closure, for although I have used a fine drain I have had no evidence whatever of leakage. It is advisable to retain the drain three or four days, as leakage has been known to occur at this time.

Other essential aids to the operation are a good head light and the Trendelenburg posture.

The operative plan must necessarily vary with the position of the stone in the ureter, and consequently that method should be adopted which will give the best exposure with the minimum risk to the patient and the least disturbance of the anatomical structures. The ureter is usually exposed either by what are known as the retroperitoneal or the transperitoneal routes, the latter being reserved for operations chiefly on the pelvic ureter, and is upheld, more especially by Sinclair White,[6] in this country. Other routes—such as those devised for exposure of the lower ureter through the vagina, rectum, perineum, or even by a parasacral incision—have been for the most part abandoned on account of the difficulties of technique or the risk of infection.

My own personal experience has been limited to retroperitoneal operations, and to carry these out successfully an exact knowledge of the location of the stone is necessary. Hence it is advisable to operate as soon as possible after the position has been verified by the radiographer, and for practical purposes we must adopt a

regional incision according a good exposure to one or other of the following sections of the ureter:

1. Abdominal section.
2. Parietal section of the pelvic ureter.
3. Visceral section of the pelvic ureter.

Under these numbers I will briefly allude to the operations I have myself used.

1. *For Stone in the Abdominal Ureter.*—An oblique lumbo-iliac incision extending from just below the twelfth rib in the angle which it forms with the erector spinae, passing obliquely downwards about one inch internal to the anterior superior iliac spine, then inclining forwards parallel to Poupart's ligament as far as the rectus if required. The muscles are then divided in this line to the peritoneum. The peritoneum is retracted inwards, pulling the ureter with it, but the latter can be comparatively easily isolated.

2. *For Stone in the Parietal Portion of the Pelvic Ureter.*—A McBurney incision lengthened some inches as suggested by Thelwall Thomas; the muscles are split to the required extent and forcibly retracted. The peritoneum is then exposed and stripped upwards until the ureter is seen crossing the iliac vessels.

3. *For Stone in the Visceral Portion of the Pelvic Ureter.*—A median abdominal incision, as described by Judd[7] will be found satisfactory. Starting from just below the umbilicus and extending to the pubis, the recti are retracted, and the peritoneum well exposed and pushed upwards by gauze dissection. The bladder is then pulled out of the wound as far as possible, and towards the side opposite to that in which the stone is located. By this means the ureter can be seen in its lowest part. An equally good exposure can be obtained by Kelly's modification of the Pfannenstiel incision.

And now a few words of warning. The search for ureteral stones is by no means always successful. The surgeon may fail to find the stone, or perhaps, what is more disappointing still, he may find the stone and be unable to extract it. This has happened to me on two occasions after prolonged operations. In one instance where I had used Thomas's incision a stone was found impacted just outside the bladder wall. The ureter was opened above and the fine forceps (Desjardin's) passed down to it, but every endeavour to grasp it failed. A small flexible scoop was then used to try and dislodge it, without success. Finally, I was able to push it forward with the Desjardin's searcher and a long probe. The ureteral incision was closed with catgut, a small rubber drain inserted, and the wound rapidly closed.

The other case was even more trying. I had used Judd's incision. The position of the stone was found after great difficulty, and could just be felt outside the bladder wall. I could not get a good exposure to see what I was doing, partly on account of general oozing and partly owing to the depth of the wound. Moreover, the ureter was so small that it would not have taken my extracting forceps. As a last resort I opened the peritoneum and inserting a finger hooked the base of the bladder and ureter forward, and, working with another finger in the wound, I was able to milk the stone onwards to the bladder.

These two cases were extremely tedious and trying, but despite the disappointment to both the patients and myself at not being able to see the stone after the operation, they had the satisfaction of voiding it without much difficulty a few days later, and made a speedy and complete recovery. I myself was equally pleased that these simpler measures were more than justified. I hesitate now to think what might have happened had I persisted in making more heroic efforts. The mortality is said to vary from 15 to 20 per cent. with such open operations, not so much from the operation itself as from the after-effects, such as persistent suppuration, fistula formation, thrombosis of the iliac vessels, embolism and even gangrene of the lower extremity, which have been recorded. My own personal experience is that the open operation for stone in the lower ureter may be one of extreme difficulty, not to say danger, more especially should the surgeon, in his intense desire to demonstrate a stone, proceed to slit up a ureter recklessly or combine an intravesical operation after an extensive extraperitoneal dissection, and these dangers are again multiplied with the presence of an infected urine. To corroborate this I will simply quote Deaver,[8] who says that the operation for the removal of a calculus situated low down in the ureter may be one of the most difficult undertaken.

I have here purposely insisted on the difficulties of the surgery of the lower ureter, because I believe less hazardous operations are being undertaken with more than encouraging success. I refer to the use of the operating cystoscope, such as the later models of the American type of Buerger and Bransford Lewis.[9] The procedure with this plan and equipment undoubtedly requires a careful technique and no mean skill, but this should be acquired by the surgeon attempting these cases, and from its comparative harmlessness, it is to be commended in the future as a first step before resorting to the more serious open operation.

My best thanks are due to Dr. Crump for his excellent radiographs; to my house-surgeon, Mr. G. Stevenson, for getting together notes of the cases and assistance with the diagrams; and finally, to Mr. Noel H. Leaver, A.R.C.A., for the trouble he has taken in converting crude drawings into finished diagrams.

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THE MORTALITY OF APPENDICITIS.

BY

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IN the opening sentences of his interesting article on "Acute Appendicular Obstruction," which appeared in your issue of April 3rd, Mr. S. T. Irwin says that the mortality of this disease "under modern scientific treatment still runs to from 5 to 25 per cent., according to its type." This, if true, ought not to be, and even in these busy times must not be allowed to pass without comment.

I quite admit in some of the worst cases the mortality may be even higher than 25 per cent., but I am satisfied, as the result of the experience of the last fifteen years, that the over all mortality should not reach more than 5 per cent., and that if the disease is treated by operation sufficiently early the mortality of acute cases need not be more than 1 or 2 per cent. There is nothing inherently dangerous about appendicitis—it is for the most part a question of the extent of peritoneal involvement and of the stage at which interference is carried out.

If, in the practice of any large general hospital or individual surgeon, the over all mortality is higher than 5 per cent., there is some fault either with the surgeon, the contributing doctors, or the public. I must at once say that the better results which we have obtained in this district during the last ten years are largely due to the the promptness with which practitioners in our contributing area send their patients for operation. At the present time over 60 per cent. of the cases reach us while the inflammation is still limited to the neighbourhood of the appendix (Groups 1, 2 and 3), while ten years ago it was exactly the reverse. This is well brought out in Table 1, showing the grouping of my cases for last year:

TABLE I.

		Cases.	Deaths.
Group 1	Acute appendicitis without peritonitis	10	0
Group 2	Acute appendicitis with localized peritonitis	47	0
Group 3	Acute appendicitis with flank or pelvic peritonitis or both	19	1
Group 4	Acute appendicitis with diffuse peritonitis	13	1
Group 5	Appendicitis with residual abscess	7	
Group 6	Appendicitis with primary localized abscess	27	2
Group 7	Appendicitis—interval removal	58	0
		181	5 (2.76%)

The campaign on the early surgical treatment of acute abdominal emergencies started and persistently carried on by Professor Rutherford Morison has certainly borne good fruit with us, and that surgeon deserves the greatest credit for his work.

During the last ten years there have been treated in the wards of the Newcastle-upon-Tyne Royal Infirmary a total of 3,951 cases of appendicitis with an over all mortality of 5.41 per cent. Naturally I am especially interested in my own figures, and Table II sets out the total number of cases operated upon by me since I first commenced to practise surgery, and up to the end of last year.

My practice is to operate on practically every case of appendicitis that comes under my care. For a time cases of general septic peritonitis with distension were not operated upon, but I now nearly always make a small incision or incisions for drainage only, the removal of the appendix being left to a later date. In cases that are in an extremely toxic state when first seen I may deem it wise to wait for twenty-four hours, until the bowels have been got to move, and until a greater or lesser amount of saline has been absorbed, and in cases of localized abscess I may defer the operation for from twelve to twenty-four hours as a matter of convenience. In all other cases the operation is carried out as soon as possible.

I attach great importance to the use of ether administered by the open method; to a proper exposure by the oblique muscle cutting incision of Rutherford Morison;[1] to saline given by intermittent rectal injection or by subcutaneous infusion, and to the early evacuation of the bowels. In almost every case the appendix is removed as an essential part of the operation. As junior assistant surgeon up till a few months ago I was not in a position to hand patients on, and the tables therefore show the results in a consecutive series of unselected cases of appendicitis extending over a period of about a dozen years.

TABLE II.

Year.	Total Cases.	Deaths.	Percentage.
Previous to 1907	66*	8	12.00
1907	68	8	11.76
1908	89	7	7.86
1909	102	3	2.94
1910	107	2	1.86
1911	131	5	3.81
1912	118	2	1.69
1913	143	7	4.89
1914	181	5	2.76
Total	1,005	47	4.67

* The figures for this year were published in a letter in the BRITISH MEDICAL JOURNAL, in the issue of July 20th, 1912, and the total number of cases for this period given as 64. Since then the figures have been carefully scrutinized, necessitating the addition of 2 cases.

But the most interesting statistics are those furnished by grouping the cases, as in Table III, for it shows that when cases of acute appendicitis are operated upon before infection of the peritoneum has become extensive (Groups 1, 2, and 3—389 cases with 10 deaths) it is possible to keep the mortality as low as 2.57 per cent.

TABLE III.

		Cases.	Deaths.	Percentage.
Group 1	Acute appendicitis without peritonitis	62	0	—
Group 2	Acute appendicitis with localized peritonitis	219	3	1.36
Group 3	Acute appendicitis with flank or pelvic peritonitis or both	108	7	6.48
Group 4	Acute appendicitis with diffuse peritonitis	57	19	33.0
Group 5	Appendicitis with residual abscess	49	5	10.20
Group 6	Appendicitis with primary localized abscess	241	9	3.77
Group 7	Appendicitis — interval removal	257	0	—
Group 8	Appendicitis with primary complications	12	4	33.0
	Total	1,005	47	4.67

In the above table the cases in Group 8 include such complications as intestinal obstruction and pylephlebitis. In Groups 3, 4, 5, and 6 a considerable number of secondary operations have been necessary for pelvic or other secondary abscesses, intestinal obstruction, faecal fistula, secondary haemorrhage, and empyema. Other complications, as pneumonia and acetonuria, have also occurred, and as every kind of case is included the list shows the mortality of appendicitis together with its complications. Although each case is only counted once some of the worst varieties have necessitated multiple operations. The following are typical examples:

R. C. (Reg. No. 3744), aged 16, Group 5, was admitted to hospital on September 2nd, 1910, with a pelvic abscess, the result of a localizing general peritonitis. This was opened per rectum on the day of admission. On September 6th a large abscess in the hepatic pouch was incised. The boy slowly improved, though a faecal fistula developed through the incision in the right iliac fossa. On October 12th he developed acute intestinal obstruction necessitating a median laparotomy below the umbilicus, a band being found and divided. On November 4th the appendix was removed and a large hole in the caecum closed, but it was not until January 4th, 1911, that he was well enough to be sent home.

J. F. (Reg. No. 5733), aged 44, Group 5, was admitted very ill with a large abscess in the right iliac fossa, the result of a localizing general peritonitis. On May 11th the abscess was opened and drained. On the 23rd a large subphrenic collection was similarly dealt with, and on the 31st an empyema on the right side required incision. After this operation he did very well for a time, but on June 3rd acute intestinal obstruction developed necessitating laparotomy. When recovery seemed almost assured pylephlebitis supervened and led to the death of the patient on July 19th.

In surgery, as in common affairs of life, ideals are necessary, and so far as my experience goes the higher they have been the greater the benefits conferred. Nothing is worse than an attitude of complacency, and the profession must not be content with a mortality of even 5 per cent. in appendicitis. When this disease is always treated by the early surgical interference which it demands there is no reason why the mortality ought not to be as low as the 1 or 2 per cent. represented by operations conducted in the earliest stages—nay, barring occasional accidents, mortality from this disease might nearly vanish if the profession and public both realized that the only treatment is by operation.

REFERENCE.

[1] *Lancet*, February 23rd, 1901.

A CASE OF CEREBRO-SPINAL FEVER SIMULATING ACUTE NEPHRITIS WITH URAEMIC CONVULSIONS.

BY

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THE following case is interesting in that at first it closely simulated acute nephritis, and in addition had a curious onset. The case was the only one that occurred in the particular area occupied by the unit.

The medical officer was called at noon to see Private H. in his billet. He said that at 4 a.m. he had awakened with "pain in the calves" and both loins, and found he had lost the use of his legs to the extent that he could not stand up. On the arrival of the medical officer he woke up from a slumber. The expression of his face during the beginning of his account of his illness indicated that very little would have produced a flow of tears. He was distinctly deaf. A history of a slight cold in the head for a few days suggested that his unusual deafness might have been due to catarrh extending up the Eustachian tubes, but the absence of pain or noises or sensation of fullness in the ears, coupled with the subsequent history, make it more than likely that this was due to the commencing meningitis. He said that his slight cough caused intense pain in the head each time, but that otherwise he had no headache though his head felt "heavy." He had not passed urine since the previous afternoon, and complained of great thirst. His face was distinctly puffy all over, including the eyelids. The non-commissioned officer present informed the medical officer that this was so marked that he could scarcely recognize him. The man was a moderate beer drinker. He complained of no sore throat and had not vomited; the temperature was 101° F. and the pulse 105; the tongue looked very dry, and was coated with a dirty brown fur; there was no rash. Nothing of note was found in

the chest or abdomen, and no sign of fluid in either. Neither tenderness nor swelling could be made out in the kidney regions, and there was no oedema anywhere apart from the puffiness of the face. The urine contained a considerable cloud of albumin, and was of a strong colour. The patient had no photophobia, or double vision, or squint, and his mentality was practically normal except for tardiness. While lying down he could lift his legs to any position, and was able to turn over quite well, and to support himself half recumbent on his right side while micturating. He was also able to stand up when supported on one side but seemed very nervous about it. The knee-jerks were slightly less brisk than normal; there was marked tenderness of both calves on being grasped moderately firmly, as in alcoholic neuritis, but no evidence of numbness or anaesthesia. On the possibility of the case being cerebro-spinal meningitis the medical officer examined for Kernig's sign in the usual way by trying to fully extend the leg on the thigh after first bending the thigh to a right angle with the trunk. On neither side could the leg be completely extended owing to rigidity of the calf muscles and intense pain produced in them. According to the patient's own statement, no pain was produced in the muscles of the back of the thigh as is described in a typical Kernig's sign.

The patient was removed, with a temporary diagnosis of possible acute nephritis with neuritis of the legs, to the field ambulance, where the medical officer, at 4 p.m., found the temperature to be 100.8° F. The medical officer agreed with the possible diagnosis of acute nephritis, and the subsequent watching of the case gave neither he nor his colleagues any reason to change their opinion up to the time (forty hours later) when the patient was transferred to the motor convoy. He was given calomel gr. iv, aspirin gr. x, and a slight diet of fluids. The temperature at 10 p.m. was 101.4° F., and the cheeks were flushed. During the next day the temperature, taken every four hours, was 100.8° F., 101.4° F., 101.3° F., 99.4° F. About 6 a.m. the patient vomited, and then gradually became quite unconscious and developed fits. At 10 a.m. the medical officer found him very restless, struggling convulsively, and unconscious. His condition was such as could be explained by uraemia. The face had now become pale as well as puffy, and there was slight oedema of the ankles; purpuric spots had developed on the forearms and lower limbs. The reflexes were normal. The pulse was rapid, but not of high tension. He was ordered hot packs, 1 pint saline per rectum every four hours, and a dose of pilocarpin gr. $\frac{1}{4}$.

By 8 p.m. the patient's general condition had improved a good deal, and he had ceased struggling. There was no definite head retraction. As no urine had been passed since admission a catheter was used, and 4 ounces of urine were withdrawn; it was almost solid with albumin on boiling. The treatment was continued as before, with caffeine citrate gr. vi every four hours in addition, and another dose of pilocarpin gr. $\frac{1}{8}$.

On the morning of the third day the temperature was 100.2° F., and pulse 68. His general condition had further improved, and he had recovered consciousness to the extent that he would protrude his tongue on loud demand; $3\frac{1}{2}$ ounces of urine were withdrawn by catheter, making a total of $7\frac{1}{2}$ ounces for over two and a half days. A spinal puncture two or three hours later revealed cerebro-spinal meningitis.

Points of interest in the case are the early deafness and paresis of the legs, with exceptional type of Kernig's sign and marked tenderness of the calves; the marked puffiness of the face, the marked urinary changes, and the improvement under treatment for acute nephritis.

ACUTE GONORRHOEA TREATED BY ELECTROLYSIS.

BY CHARLES RUSS, M.B.LOND., M.R.C.S.ENG.

ON account of the prevalence of gonorrhoea in the military Continental hospitals I have been requested to publish this article. Before doing so it was my intention to complete the treatment of 100 cases, but in order that its advantages might be available for the allied forces I bring forward a study of 28 private and hospital cases of gonorrhoea under my care treated by electrolysis.

Hitherto the treatment of acute gonorrhoea has been unsatisfactory and that of chronic gonorrhoea more so. Remembering that chronic cases were once acute I decided to work at the disease in its early stage. If the disease can be promptly cured we shall see few (if any) of the depressing pictures which occur so often in the chronic stages. I have already published sufficient on the treatment of suppuration by electrolysis,[1] and shall therefore avoid repetition of the experimental and other work on which its principles are founded. During 1914, by the courtesy and interest of Mr. J. E. Lane, I had access to the patients in the wards of the Lock Hospital, Dean Street, W. Patients are only warded if they suffer from some complication of gonorrhoea—for example, arthritis, ophthalmia, epididymitis—which hinders their occupation. After an encouraging study of some of those cases, all chronic and with complications, I decided, as above-mentioned, to deal next with the acute disease. During the last few months the out-patients' staff have favoured me with uncomplicated cases of acute gonorrhoea—the discharge not having existed more than fourteen days—and I have treated these patients in an annexe of the hospital out-patient department.

The Method.

The patient is made to retain urine for a few hours and the rate of discharge is visible on a disc of cotton-wool retained within the prepuce. A Gram-stained smear is made of the discharge at the outset of the treatment. The patient is directed to pass about half of the urine he is retaining, and keep the rest back. This preliminary urination washes the urethra from behind and is the only lavage I employ. He then reclines on the couch and a platinized catheter is lubricated and passed gently down to the compressor urethrae. This catheter is quite smooth, has numerous perforations, and it is furnished with a stylet of platinum wire and a rubber collar which just enters the meatus. I also use rubber perforated catheters. A lint-covered pad lined by a flexible metallic core is wrung out in warm saline and applied to the perineum, scrotum, and root of the penis. A 2 per cent. solution of sodium iodide is then gently injected into the catheter. The rubber collar prevents its flowing away between the instrument and the urethra. The pad is connected to the negative, and the stylet (within the catheter) to the positive pole of the battery. A current of one to two milliampères is passed for twenty-five minutes and the catheter is kept full of the solution from time to time by means of a syringe. The current being turned off, the catheter is withdrawn and placed in a glass of water. After the first few treatments the perforations in the catheter will be seen choked with masses of yellowish muco-pus which are laden with gonococci and these have been drawn from the urethra. On shaking the catheter in the water, most of these masses become detached from the instrument and soon settle at the bottom of the vessel. The patient now passes the rest of the urine, and similar masses of muco-pus will be seen in it. As the patient progresses this harvest diminishes, and when the discharge has ceased there is nothing visible in the perforations at the end of such treatment.

I have applied this treatment every day to these cases of acute gonorrhoea, and the signs of progress are: (1) The abolition of the scalding during urination. (2) Reduction and disappearance of the discharge. The amount of the discharge can be visibly measured by comparison of the patient's disc of wool from day to day, provided the number of hours' abstinence from urination is the same. When the discharge has ceased the battery is applied every other day, and after three to six more applications the urine is free from purulent threads. The treatment is painless, and apparently produces no bad effects. Provided the patient receives this treatment whilst avoiding alcohol and other abuse, I expect to cure him in three to four weeks. The present prospect is that this period will become shorter after more extended application.

In comparing this with other treatments I have noticed the following advantages:

1. Its effect is more certain than by other methods.
2. After arrest of the discharge, the threads and flakes disappear more rapidly from the urine.
3. There is marked absence of complications.
4. It is a powerful controller of gonorrhoea, to be administered by qualified experts. This is a desirable contrast to the casual or over-zealous self-administration of some treatments which is so frequently permitted in this disease.

REFERENCE.

[1] Royal Society's *Proceedings*, 1909; *Lancet*, 1909; *Lancet*, 1914 (February and October).

M. LOUTREUIL, a French engineer, has left £284,000 for the promotion of the advancement of science. The sum is distributed as follows: The Académie des Sciences, £140,000; the University of Paris, "in aid of scientific work in every direction," £100,000; to the fund for scientific research, £40,000; the Pasteur Institute, £4,000.

SURGICAL WORK AT THE MILITARY HOSPITAL, CAIRO.

BY

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THE following is an account of the most important of the surgical work done amongst the men of the East Lancashire Division (T.F.) at the Military Hospital Citadel, Cairo, during the five months from the beginning of October, 1914, to the end of February, 1915.

The troops amongst whom this work was done were for the most part cotton or woollen operatives, used to a confined and somewhat sedentary life, who had been hurriedly mobilized and hastened abroad, to a country and climate very different from those to which they were accustomed. There were during five months 406 admissions to the surgical side and 271 operations. We have dealt with 54 cases of herniae, 47 being inguinal and 7 ventral. Of the ventral herniae, 6 were post-operative in origin, and, with the exception of 1, were present on mobilization, while a seventh was umbilical, appearing after mobilization. Of the cases of inguinal hernia, 18 were on the left side, and of these only 2 were accompanied by varicocele. In type they were practically all oblique, only 5 being direct. The method of radical cure of the former was in all cases a modified Bassini operation, consisting of ligature of the sac as high as possible, and fixation of the internal oblique to Poupart's ligament over the cord. In the direct variety it has been our practice to stitch down the oblique beneath the cord, and in one case, where the aperture in the abdominal wall was very large, a flap was cut from the rectus muscle and used to make good the deficiency.

Of the cases of oblique herniae, all except twelve have been of the incomplete funicular variety, and a number, as is usual, gave a very definite history of accident. In one such case, where the patient was admitted on the day of an accident, which, in the mind of the patient at any rate, had caused the appearance of a rupture, and operated upon two days later, the sac was found to be small, about 1 in. in length only, and of an extremely delicate texture.

In one case only was inguinal hernia associated with undescended testicle. In this the right side of the scrotum was undeveloped, and the testicle was situated at the internal ring, but a sac was found running parallel with the ramus of the pubes as far as the margin of the anus.

The number of herniae given here is not the exact total of the number which were found in the division, for some men refused operation, and so were not sent into hospital.

It should be noted that an operation for hernia is, during war time, a very serious interference with the life of a soldier. Thus, though we have discharged all these cases from hospital at the end of three weeks, we have advised that they should continue on "light duty" until the end of the third month after operation.

Lastly, it is perhaps remarkable that we have not met with a single case of femoral hernia, or one of strangulated hernia, though one case was sent in as strangulated hernia but was reduced and operated upon at leisure. In three cases only was the omentum adherent to the sac a short distance distal to its neck.

There have occurred 12 cases of varicocele and 10 of varicose veins requiring operation. The latter, of whatever degree, have been treated by excision, together with ligature of the internal saphenous vein at the saphenous opening. There have been 4 cases of hydrocele, all present before mobilization.

Abdominal surgery has been practically limited to appendicitis, of which we have dealt with 20 cases. The acute cases mostly occurred soon after our arrival in Egypt, when the heat was great, and there was an epidemic of diarrhoea among the troops. Four cases were accompanied by general peritonitis of extreme gravity, and owing to delay in diagnosis due to the prevalence of diarrhoea and abdominal pain, a condition known locally as "gippy tummy," they did not come into our hands until a week after the onset of the disease. One followed the sudden rupture of a large pelvic abscess, and the whole abdomen from pelvis to diaphragm was found filled with pus. A second was accompanied by gangrene of the caecum. Both these cases died. There were 3 cases of localized abscess, one of which was followed by faecal fistula, which, however, soon cleared up. Of the remainder, in 3 cases the appendix was gangrenous and perforated at the tip, though the surrounding peritonitis was localized; 3 cases were subacute and 7 cases were quiescent. In one quiescent case the straightening of a typical "Lane's kink" was followed by most gratifying relief of flatulence and constipation, from which the patient had suffered for many years.

We have met with one case of liver abscess following amoebic dysentery. This also did not come into our hands until very late, and was drained by the transpleural route. The abscess cavity was of large size and typically placed in the right lobe. A very large quantity of pus was evacuated, but the patient succumbed a day later. It was noteworthy that this patient had spent some years of his life on the West Coast of Africa, where he had had several attacks of dysentery.

A remarkable case of rupture of the spleen and left kidney was met with. The patient, following a fall of 15 ft., was found to be suffering from fracture of the left humerus and collapse. Shortly afterwards he began to pass blood in the urine, and there was some increase of dullness in the left flank. When operation was on the point of being undertaken, the patient rallied, haematuria stopped, and he seemed well on the way to recovery. Seven days later, however, while using the bed-pan, he suddenly became faint and collapsed, showing all the signs of severe internal haemorrhage. There was neither blood in the urine, nor increase of dullness in the left flank at that time. Abdominal exploration showed that the pedicle of the spleen was in great part torn away from the posterior abdominal wall, being attached only at its lower part. The abdomen was full of bright red blood, but around the spleen there were old clots dark red in colour, some already organizing and attached to the diaphragm. Haemorrhage was taking place from the stump of the torn pedicle, and, in addition, from a longitudinal laceration near the apex of the gland. The spleen was removed, though, owing to the shortness of the stump of the pedicle, it was extremely difficult to ligature this satisfactorily. The patient lost a great quantity of blood, and died the following day. *Post-mortem* examination showed that, in addition to the lesion of the spleen, there was a small laceration in the anterior surface of the left kidney, with organizing blood clot within the perirenal capsule. We are of the opinion that the pedicle of the spleen was torn away from the posterior abdominal wall by torsion, and that in this way the vessels were partially closed, only to be opened again by the exertion and straining of using the bed-pan.

Surgical tuberculosis has been rare, and, so far, only five cases have been met with. One was a tuberculous osteitis of the femur, a second a tuberculous elbow, a third a diseased rib, a fourth tuberculosis of the lower cervical spine, and a fifth tuberculosis of the testicles. The latter is worthy of further comment, as excision of the left testicle was followed by rapid involvement of the right, on which epididymectomy was performed. Though both vesiculae seminales were involved there were no bladder symptoms, no bacilli in the urine, and, as far as could be ascertained, no primary lesion in either kidney or any other organ.

With regard to diseases of the bones, we have met with one large abscess in the head of the tibia in a boy of 19. Practically the whole head of the bone was one abscess cavity, and the pus had just managed to perforate the anterior surface of the bone when the case came into our hands. Bacteriological examination showed it to be staphylococcal in origin, and there was a three months' history of "rheumatism."

As to joints, apart from the tuberculous elbow already mentioned, our experience has been confined to the knee-joint. We have operated upon 12 cases. Of these, 10 were displaced internal, and one displaced external, semilunar cartilage. There was one case of loose body. The case of loose external cartilage was interesting, in that, following a comparatively slight injury, the cartilage was found detached, both in front and behind, being bound down only in its middle third, with its two extremities

rolled up, and thrust outwards between the external lateral ligament and the femur. The case of loose body was one in which a nodule of cartilage as large as a kidney bean was removed from the suberural pouch, and was of further interest in that, before leaving hospital he showed definite signs of further internal derangement of the same joint, for which we removed a loose internal cartilage. The patient's incapacity had dated from a severe crushing injury to his knee some months previously. Our practice in the treatment of these cases has differed markedly from that which we would adopt in civil life. We have found that under war conditions it is impossible satisfactorily to employ conservative measures, and that the course leading to the quickest return to military efficiency is to operate as soon as a definite diagnosis has been made.

We have seen one curious case of compound fracture of the foot, following a crushing accident. There was a fracture and displacement outwards of the heads of the second, third, and fourth metatarsal bones, with a fracture and upward displacement of the base of the first metatarsal. This fracture, which was treated by toilet and manipulation gave ultimately a very fair functional result.

Cases of enlargement of the lymphatic glands have been frequent, and mostly of venereal or simple septic origin. In addition we have met with 8 cases of unilateral enlargement of the inguinal glands, with no apparent primary focus. When admitted to hospital the glands in all these latter cases were found in parts to be breaking down. We have found that the only satisfactory method of treatment is complete excision of the glands. Though to the naked eye the appearance of the glands removed has been strongly suggestive of tuberculosis, microscopical and bacteriological investigation has shown that this is not the case. The organism present is a staphylococcus, and it would appear that its virulence is not very great, for there has been rarely any fever present on admission, and the wounds granulate quickly after operation, though swabbing out with iodine and immediate closure has not been a success.

There were only 12 cases of bullet wounds admitted to hospital during this period. Of these, 10 were shrapnel wounds received in action. The remaining 2 were accidental wounds. In one, where a wound in the right mid-axillary line was caused by a small-bore pistol, pneumonia and double pleurisy with effusion followed, although examination with *x* rays failed to show any trace of the bullet in the chest. Indeed, from the appearance of the wound and a consideration of other circumstances, it would appear highly probable that the wound was only a glancing one, and that the bullet, although it lacerated the skin, did not penetrate the chest wall.

Among other cases we have met with one temporo-sphenoidal abscess following otitis media. Though free drainage was established the patient died two weeks later.

Venereal disease has called for no less than 47 circumcisions, while there have been 6 from non-venereal causes.

Among cases of minor importance we have met with a considerable number of small abrasions on the legs, due most frequently, in the first place, to the rubbing of boots. These have been extremely troublesome and slow in healing. We are told that they resemble very closely the Veldt sores met with during the South African war, and, so far, we have been unable to find any special method of treatment which hastens in any way their progress.

On our first arrival in this country the weather was extremely hot, and it would seem that the men had their heat governing centres thoroughly upset, so that comparatively trivial complaints caused immediate rises in temperature. Thus we observed many temperatures of 102° on the night following aseptic operations, and one even of 105°. In all early cases the temperatures were uneven for a few days, but finally settled down without untoward results, though a first experience of these phenomena was not a little disturbing. It was noticeable that in the case of regular soldiers who had been in the country some years these changes did not take place. With the advent of cool weather temperatures once more behaved as they do in England.

In conclusion, we would point out that, though the total number of cases dealt with is small, they are perhaps of special interest in that they include the surgical repairs necessary to fit a division of nominally sound citizen soldiers for the field.

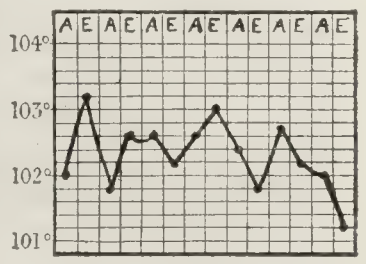
NOTES ON THE TEMPERATURE IN A CASE OF ADVANCED PULMONARY TUBERCULOSIS.

BY

J. C. VOIGT, M.D.EDIN., M.B., C.M.,

SOUTHPORT.

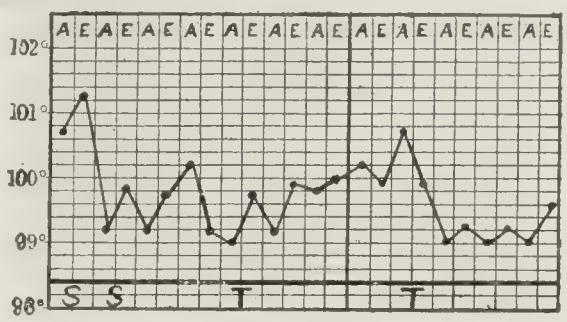
ON October 26th, 1911, A. R., aged 33, applied to me complaining of cough, much laryngeal irritation, profuse thick yellow, or sometimes greenish-yellow expectoration, loss of flesh, anorexia, headache, and night sweats. She had been under my care for an abscess in the axilla fourteen years previously, and had resided from January to April, 1910, in a sanatorium on account of pulmonary and laryngeal tuberculosis. There was no definite family history. Her height was 5 ft. 6 in., and her weight 6 st. 7 lb., and she had lost over 14 lb. during the past year. She stooped a great deal when walking, and suffered from pains in the back and joints. The finger-nails were clubbed, the right cervical glands slightly enlarged; both ears discharged pus freely, and there had been deafness for four years. The mesenteric glands were not enlarged, and there was no history of haemoptysis or diarrhoea, except recently. The temperature at 3 p.m. was 102° F., at 9 p.m., 103.2° F.



Afternoon (3 to 4 o'clock) and evening (8 to 9 o'clock) temperatures during first week of treatment without tuberculin. (October 26th to November 1st, 1911.)

There were all the physical signs of advanced pulmo-laryngeal phthisis, and the sputum gave a positive result when examined for tubercle bacilli by Gabbet's staining test.

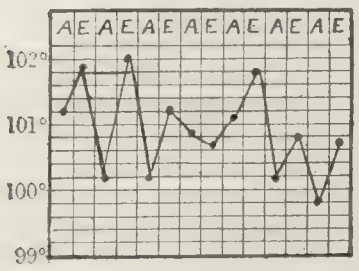
The patient had not undergone tuberculin treatment at the sanatorium, but had been taught there to keep notes of her own condition, her relatives were reminded that her case was hopeless, and nothing more could be done beyond relief of the more distressing symptoms. Absolute rest in bed was advised, and guaiacol with small doses of quinine and sp. vin. rectif. prescribed. At about 3 p.m. she took daily a powder containing phenazone gr. $2\frac{1}{2}$ and quinin. hydrochlor. gr. $3\frac{1}{2}$. On November 15th tuberculin treatment was commenced, a dose being given of 1 c.cm. new tuberculin T.R. dilution containing $\frac{1}{8000}$ mg. by weight of bacilli, increased on November 19th to $\frac{1}{8000}$ mg. These doses, very gradually increased, were repeated every four days. For a fortnight there was improvement, then the patient would not keep in bed, and ceased to progress.



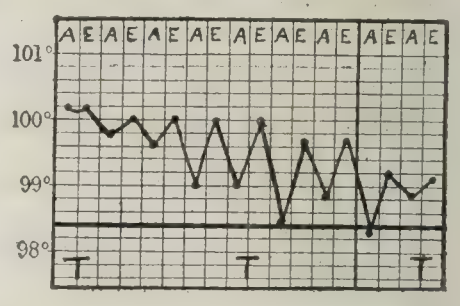
Afternoon (3 to 4 o'clock) and evening (8 to 9 o'clock) temperatures during first week of tuberculin treatment following two injections of sea-water plasma. (November 15th to 22nd, 1911.)

The tuberculin treatment was followed by a course of subcutaneous injections of radio-active menthol iodine (ampoules Jaboin, Radium Inst. de Lisle). For ten days, half an ampoule at first and then the whole contents of an ampoule were injected daily under the skin of the forearm, the patient being kept strictly to her bed. The temperature, however, increased instead of falling, so that by the tenth day it reached 103° F. at 3 p.m. and 103.4° F. at 9 p.m., and, as none of the symptoms improved, the injections were discontinued. Five grains of aceto-salicylic acid were then given in a tablet at 3 p.m., the dose being repeated in the evening. The temperature fell at once to 99° F., and was normal throughout the next day. The two doses, afternoon and evening, were repeated. For ten days after the cessation of the radio-active menthol iodine treatment the temperature remained almost normal. One afternoon, when the patient got up, it rose to 99.4° F. and

one evening 99.6° F., but at no time during the week when the tablets were given did it reach 100° F. (See chart, January 10th–19th, 1912). The appetite, too, even for fatty food, had improved, but the pulmonary and laryngeal symptoms, and the headache associated with the ear complication, were unrelieved. This condition remained unchanged for three weeks, and then, when the throat and ear symptoms were beginning to lessen in severity, the temperature rose to its former afternoon and evening height, to be only a little reduced by 5-grain doses of aceto-salicylic acid. Then the drug was repeated every three or four hours after noon, and at once a most marked effect was observed. The patient found that she did well if she took three 5-grain tablets of aceto-salicylic acid daily between 11 or 11.30 a.m. and 6 or 7 p.m., the temperature remaining practically normal till bedtime; not only the hectic symptoms, but also the ear- and headaches left off, and she could even take a little exercise out of doors. Formalin inhalations were used, and the laryngeal irritation was relieved by cocaine and adrenalin spray or by a mixture in parolein of menthol, ol. pin. pumil., eucalyptol, ol. gualther., ol. cinnam., and camphor. Then an injection of Koch's new tuberculin T.R. was once more given subcutaneously once a week, the first dose of $\frac{1}{40000}$ mg. being increased in the course of five weeks to $\frac{1}{4000}$ mg. Then this treatment was interrupted, to be resumed on September 18th, 1912; $\frac{1}{80000}$ mg. was given in the forenoon, after 5 grains of aceto-salicylic acid had been taken at 11 a.m. The temperature was 101.2° F. at 4 p.m., and 99.4° at 8 p.m. following another dose of aceto-salicylic acid, and it remained relatively low, till it was as high as 102.4° F. on September 20th.

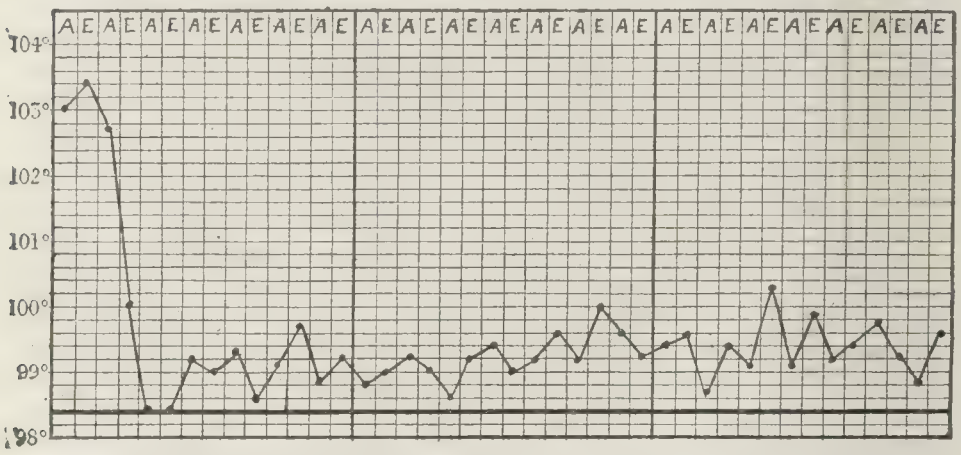


Afternoon (3 to 4 o'clock) and evening (8 to 9 o'clock) temperatures during sixth week of tuberculin treatment. (December 21st to 27th, 1911.)



Afternoon (3 to 4 o'clock) and evening (8 to 9 o'clock) temperatures (with small doses of tuberculin every four days) during last week of year's treatment. (October 20th to 26th, 1912.)

The dose of tuberculin was not increased either on September 21st or on September 25th, by which time the temperature in the afternoon was only 99.6°, and at night 100°. The next day showed the same low temperature readings, although the patient was up and about. On September 27th it rose to 101° F., and therefore again, on September 28th, as on the previous Wednesday and Saturday, only $\frac{1}{80000}$ mg. was injected. During the latter half of the following week—from Wednesday night to Saturday night—the temperature ranged from 99.2° to 99.8° F. only, although the patient was no longer confined to bed. During all this period aceto-salicylic acid tablets were continued, as throughout the previous months, one at 11, another at 2 or 3, and another about 6 or 7 o'clock. When occasionally the patient forgot to take her tablet she was reminded of the omission by recurrence of the headache, with a feeling of chilliness. On such occasions, when the temperature was taken, it was nearly always found to be once more over 100° or 101° F. Another 5-grain tablet of aceto-salicylic acid would then stop the rigor and remove the headache, bringing down the temperature to 99° or 99.6°.


A E A E A E A E A E A E A E A E A E

woman, aged 35 years, came to consult me a few days ago for an acute and almost universal eczema, accompanied by symptoms of toxaemia. No cause could be elicited until she casually disclosed a large wound over the skin, which she had been treating by filling it with boric acid and sealing with a bandage. She was induced to omit this treatment, and in a few days appeared to be well. There seems little doubt that almost all our meddlesome methods of medication do more harm than good.

Dublin. J. C. McWALTER, M.D.

THREE ATTACKS OF SCARLET FEVER WITHIN ONE YEAR.

THE following case, I think, is worth reporting, as from the clinical signs it appears to be one of recurrent attacks of scarlet fever.

Between the first and the second there was a marked period of good health, but the third came on a few days after discharge from hospital.

N. G., aged 6, contracted tonsillitis on June 17th, 1914. I suspected scarlet fever, but could find no definite rash, though the patient was carefully examined every day for one week. The parents stated that they saw a faint rash, but it was hardly definite enough to be sure of. On July 14th the hands and feet were peeling, the desquamation on the hands being typical of scarlet fever. The disease took a normal course.

On December 14th I was called to see the same patient and found all the signs of typical scarlet fever. This time there was a marked rash. Dr. Ransome, M.O.H. of Southgate, was notified, and the child removed to the fever hospital. Again there was marked peeling of hands and feet. An attack of otitis media occurred while in hospital, but on leaving there was no discharge.

On February 18th, 1915, three days after discharge from hospital I saw the patient again with all the symptoms and signs of scarlet fever. The disease ran its usual course, and once more the hands and feet peeled in the manner one sees in scarlet fever. There were no complications.

The tonsils were large, but if this be a case of septic infection through these channels I cannot understand why on each occasion there was a typical peeling of both hands and feet.

To eliminate this source of infection Mr. George Waugh enucleated both tonsils. After each attack these organs seemed to enlarge.

London, N. M. STEWART SMITH, M.B., B.S.Lond.

A CASE OF MELAENA NEONATORUM.

THE patient is a second child and a female. Birth was normal, save that there was a little trouble to stop umbilical haemorrhage. The baby was a particularly fine one.

On the third day there was further haemorrhage from the stump of the cord which easily responded to pressure. On the fourth day the child vomited an ounce of meconium, and a few hours later passed a motion consisting of about two ounces of tarry blood clot. The subsequent motions gradually changed to bright red blood clot, the melaena reaching its maximum on the sixth day, when about twelve ounces of fresh clot and blood were passed, constituting eight evacuations. On the seventh day there were four evacuations of blood and clot, on the eighth no motion, and on the ninth one motion of tarry blood and one normal motion; since then, for ten days, the motions have remained normal.

As to treatment, the child was allowed its natural food, which it took well, and on the fifth and sixth days it was given liq. adrenalin hydrochloridis ♏ ij and calc. chloridi gr. ij every hour with no apparent effect, and so the medicine was changed to ext. hamamelidis liq. ♏ iv every hour, the astringency of which seemed to have the desired effect.

The father is healthy, the mother slight Graves's disease; there is no history of haemophilia. The child has very blue sclerotics and some mastitis developed on the fourth day but has now quite resolved.

Liverpool. G. FRANCIS OLDERSHAW, M.D., D.P.H.

DR. FRANCIS JOHN AUGUSTUS BALDWIN of the West African Medical Staff, Southern Nigeria, who was lost in the torpedoing of the *Falaba*, left unsettled property of the gross value of £3,628.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

DORSET AND WEST HANTS BRANCH.

THE annual meeting of this Branch was held at Weymouth on May 19th, when the President, Dr. C. D. MUSPRATT, delivered his presidential address on some clinical cases of interest.

1. *Hystero-epilepsy, passing on to Insanity.*—Male, aged 27; always delicate, but family history good on both sides; was thrown out of a cart and was insensible for four hours, but subsequently walked home and continued at work for eight weeks, feeling out of sorts. On getting out of bed one morning he fell and was unconscious all day, after which he remained in bed nine years. For nine months following his fall he had two fits weekly, lasting about six hours. In the fits his hands were so firmly clenched as to draw blood from his nails sticking into his palms, and his legs rigidly extended. He gradually lost the use of all his limbs and also his speech. Five years later he recovered the use of his right arm and right thumb and forefinger. At this time his legs were rigidly extended, the right crossed over the left. His left arm was flexed across his chest and pressed with such force on it that the latter had become quite flattened. The elbow, wrist, and fingers were all strongly flexed and without any voluntary movement. The mental condition was good and the sphincters unaffected. About this time after several fits he had delusions, refused food, and showed evidence of catalepsy. Shortly after he suddenly recovered the power of walking and got up for the first time in nine years, but soon relapsed and became depressed and speechless, passing everything under him. Three months later he improved again and recovered the use of his limbs for a time, but again relapsed, and had to be transferred to an asylum. The points of interest in the case were the long duration of the paralysis, the deformity of the chest, and the condition of the joints, which, when movement was recommenced after nine years, were found to be quite free and without any trace of adhesions.

2. *Phthisis and Chronic Pyaemia: Death from Acute Ascending Myelitis.*—Man, aged 69. Admitted to hospital with the history that within the previous few days his legs had become paralysed, then his arms, and, lastly, his bladder. Soon after admission respiration suddenly ceased. He was kept alive as long (two and a half hours) as artificial respiration was continued, the heart continuing to beat for a few minutes after the latter was stopped. The history obtained was to the effect that during the previous ten months, during which he had been in the workhouse, he had always been strange in manner, and had twice been removed to the lunatic ward. Except for a little crepitation at the bases of the lungs and a swelling over the right ankle-joint, which was regarded as bursal, nothing was noticed until three days before his removal to hospital, when he suddenly lost power and sensation in his legs. The right leg, however, drew up on tickling the sole of the foot. His bladder was found distended, and had to be emptied by catheter. Two days later his arms became weak. At the autopsy the membranes were found rather adherent to the vertex of the brain, which was itself normal. There was some softening of the cord in the cervical and mid-dorsal regions. Localized abscesses were found over the first lumbar vertebra, in the left sterno-clavicular joint, and over the right external malleolus, the latter communicating with the ankle-joint. Hard grey tubercles were found in both lungs, with small cavities containing cheesy material at the apices. There was no recent mischief. The heart showed mitral stenosis. The diagnosis was chronic pyaemia associated with old-standing phthisis, death being due to a rapidly ascending myelitis. The loss of sensation in the legs, and the loss of control over the sphincters, were against its being classed as a case of Landry's paralysis, which it otherwise somewhat resembled.

3. *Ulcerative Endocarditis.*—Recovery. A polo pony trainer, aged 28. Four days after contracting a chill he was found to have a large amount of albumin and some

blood in his urine, with a high irregular temperature which continued for six weeks, when his condition was aggravated by an attack of influenza. He then developed an aortic systolic bruit with constant high temperature, sweats, occasional delirium and rigors. Later a systolic bruit at the apex was observed. Blood cultivations on three occasions were negative, and gradual improvement took place, so that at the end of five to six months from the onset his temperature became normal, there being still a little albumin in the urine. Ultimately complete recovery took place. Treatment was chiefly by rest, diet, warmth and fresh air, with cardiac tonics, and on one occasion sod. sulphocarb. gr. xxx t.i.d., for several weeks.

4. *Tuberculous Meningitis: Recovery.*—Male, aged 11. The onset was gradual, with evening temperature for several days, some swelling beneath the upper part of the left sterno-mastoid, and a short convulsive seizure affecting the muscles of the face only, with unconsciousness lasting for half a minute. This was followed by diplopia, a constant high temperature, on one occasion vomiting, and on the fourth day by Kernig's sign. The fundi oculi showed nothing definite. The symptoms continued for nine to ten days, the temperature rising to 102.6° and then gradually falling. The cervical glands remained large and one suppurated, tubercle bacilli being found in the pus. These were removed later and Marmorek's serum used for the wound, which, after healing, broke down again. The ultimate recovery was perfect. Treatment was by half-drachm doses of hyd. perchlor. thrice daily, with inunctions of ung. hyd. oleat.

5. *Symmetrical Pigmentation of the Skin of the Face.*—Woman, aged 74. The skin of both eyelids, of the lobules of each ear, of the tragus, and of the tip of the nose, was deeply pigmented, and for the most part was quite black in colour. Duration fourteen years, commencing as a discoloration of the skin of the right lower lid following influenza and pneumonia. After ten years it ceased to spread. One year ago induration, almost keloid in character, set in about the right eye, causing contraction of the palpebral aperture. This yielded completely to injections of fibrolysin, which also seemed to have some effect on the pigmentation.

6. *Death from Swallowing Artificial Tooth Plate.*—Male, aged 37, admitted to hospital with the history that, following a cold, he had been strange in manner for two days. On admission he had a fit, and some blood came up in his mouth. A few days later a left parotid abscess formed, and was opened. Five days later he suddenly died. The *post-mortem* examination showed some irregular reddish patches in the lenticular and caudate nuclei, but the point of interest was the discovery of an artificial denture lying a little obliquely in a foul irregular cavity in the oesophagus, its upper end being about one inch below the cricoid. The trachea was healthy, but there was a small ulcer at the base of each vocal cord. The stomach contained two pints of blood, and death was evidently due to haemorrhage, but the exact site of this could not be found. The patient never complained of his throat, and took easily liquid, and on one occasion solid food, up to the time of his death. The teeth were apparently swallowed during a fit nine days before death.

Some minor pathological conditions not mentioned in the textbooks were next referred to:

1. Symmetrically disposed lines of *Slightly elevated pigmented growths in the skin* radiating in curves from the lower end of the sternum sometimes found in elderly women. They caused no symptoms, were not found elsewhere in the body, and were apparently due to the pressure of the corsets.

2. Multiple, small, often pedunculated but never pigmented, *Warty growths on the neck in elderly women.* They caused no inconvenience.

3. A *Wart on the sole of the foot* having all the appearances of a corn, and occurring in young adults. Only on removing the superficial layers of epidermis could the true nature of these warts be determined. They caused much pain and tenderness, and, if not treated energetically, tended to persist for a long time.

4. A *Small nodule on the dorsal aspect of the terminal phalanx of the fingers*, found in elderly patients with rheumatoid arthritis. On opening the nodule a drop of clear viscid fluid escaped, which, although suggestive of, was probably not, synovial fluid. They exist for years and only occasionally give trouble by becoming inflamed. The remainder of the paper was devoted to a number of interesting points in connexion with medical work, but which were not themselves strictly medical.

Reports of Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Obstetrics.

At a meeting on April 30th, Dr. R. D. Purefoy in the chair, Drs. R. E. Tottenham and E. C. Crichton presented the *Report of the Rotunda Hospital.* During the year ending October 31st, 1914, 2,083 patients were delivered in the extern department and 2,303 patients were admitted to the maternity wards. Of the latter number, 367 who were not in labour were discharged, and 1,936 were delivered. Thus a total of 4,019 labours in all were attended by the hospital staff, showing a decrease of 117 on the previous year. Five deaths occurred in the extern department and 17 in the intern. The morbidity rate was appreciably lower than the previous year, and is represented by the figure of 4.43 as against 6.07. There were three cases of concealed accidental haemorrhage. The rest of the report dealt with some cases of special interest, and tabulated statements of the various complications of labour met with during the year, together with a short summary of the work done in the gynaecological side of the hospital. Dr. Hastings Tweedy congratulated the assistant masters on the manner in which they had fulfilled their arduous task without any help, for their Master, Dr. Jellett, was serving his country in France. This completed the thirty-third consecutive report which had been published from the Rotunda, and throughout the United Kingdom there was no record which could compare with these statistics in regard to the amount of material dealt with. Remarks were also made by Dr. Madill, Dr. Solomons, Sir William Smyly, Dr. Gibbon FitzGibbon, and the Chairman. Dr. Crichton and Dr. Tottenham replied.

Section of Pathology.

At a meeting on May 7th, Professor E. J. McWeeney in the chair, Dr. T. T. O'Farrell read a paper on a specimen of *Adeno-carcinoma (mesothelioma) of the kidney.* It was a tumour of the left kidney removed by Dr. Staunton. The patient was a girl, aged 6 years. There were no marked symptoms apart from occasional attacks of pain; there had been no wasting, haematuria, or evidence of any secondary deposits. Since operation the child appeared much improved, and at the present time was running about apparently in the best of health. To the naked eye the kidney was uniformly enlarged, showing some prominences in places; the tumour seemed continuous with the organ, but in part, more particularly towards the pelvis, the kidney substance was flattened out and formed a shell about the tumour. The specimen measured 15 by 9 by 7 cm. On section the tumour was soft and divided into distinct lobules, which varied in size from 8 cm. to 0.5 cm. in diameter. The greater bulk of the tumour was towards one pole, but the kidney substance was almost everywhere infiltrated by the growth. Microscopically sections taken from different parts showed typical adeno-carcinoma, with regular and irregular acini. After careful examination no other neoplastic cellular element, such as sarcoma, could be found. Dr. O'Farrell said the naked-eye appearances of the specimen, taken with the youth of the patient, were strongly in favour of a diagnosis of teratoblastoma, a not uncommon kidney tumour of children. But, though he kept in mind that in these tumours one element—the carcinomatous one—might preponderate, the specimen exhibited could not be regarded as such, for not even a trace of other element than the carcinomatous one could be found, and hence he thought it should properly be called a true blastoma, a tumour arising from unpotential cells, in this case a mesothelioma, and accordingly an extremely rare one in such a young patient. The paper was discussed by the Chairman and Professor Mettam, and Dr. O'Farrell replied. Dr. Rowlette read the *Pathological report of the Rotunda*

Hospital for the year ending October 31st, 1914: 774 specimens had been reported on, including 128 fragments removed for purposes of diagnosis, 169 operation specimens, and 25 specimens of lochia from septic cases. Vaccines were now extensively used on the gynaecological as well as on the obstetric side of the house. Summaries of 10 *post-mortem* reports were given, and the history of a fatal case of acute yellow atrophy related in detail. The following exhibits were shown and described: Embolus in pulmonary artery, naevoid polypus of cervix, sarcomata of uterus, fibrosed uterus, malignant papillomata of ovary, malignant dermoid of ovary, fibroma of ovary, thrombosed ovarian vein, fibroma of rectus muscle, retroperitoneal sarcoma. The prevailing organism among the specimens of lochia examined was the streptococcus. Remarks were made by the CHAIRMAN, Sir WILLIAM SMYLY, Dr. NEILL, and Dr. O'FARRELL, and Dr. ROWLETTE replied. Professor MCWEENEY exhibited *Congenital cystic kidneys* from a man, aged 47, who died in the Mater Misericordiae Hospital in a uraemic seizure. He was alcoholic, but had enjoyed good health until three weeks prior to admission, when he began to suffer from "fits." He complained of headache, tenderness over the left hypogastrium, violent pains in the calves of his legs, and diarrhoea. The seizures consisted of clonic spasms lasting about fifteen minutes, giving place to coma, with stertorous breathing, which lasted about three hours. Pupils unequal, knee-jerks absent. After a seizure he was quite collected and intelligent. On palpation a large tumour could be felt in the left hypochondrium. The patient lived only two and a half days after admission. Shortly before his death, a white frost-like efflorescence was noticed on the skin of the face. The urine had a specific gravity of 1010, and contained a small amount of albumin. Samples were difficult to obtain, and it was not fully examined. At the autopsy the left kidney measured 20 by 10 by 10 cm. and weighed 1,250 grams. The other measured 17 by 10 by 8 cm. and weighed 850 grams. The pelves and ureters were remarkably small. The kidney substance was reduced to small patches of parenchyma wedged in between innumerable cysts, and there was no distinction between cortex and medulla. The cysts were of all sizes up to that of a walnut, and the contents of some were thinly liquid, whilst others contained solid translucent brownish material like inspissated glue. Some of the cysts contained minute yellow spherical concretions with laminated and radical structure, and consisting of an albuminous matrix with lime salts—chiefly carbonate. The largest seen measured 0.3 mm. in diameter. Microscopically very few glomeruli were visible, and of these the majority were hyaline, with a laminated Bowman's capsule. The cysts were lined with a single line of cubical epithelium tending to disappear in the larger ones. The connective tissue was much increased, and contained patches of lymphoid cells and unstriped muscle. There were patches of cells of epithelial aspect lying free in the connective tissue and suggestive of carcinoma, but presenting no evidence of mitotic activity. Dealing with the etiology, Professor McWeeney described how the metanephric vesicles, which gave rise to the secreting tissue, came into relation with the terminal branches of the collecting tubules. The cause of the condition should no doubt be looked for in a failure of this junction to take place; but, apart from the distension of the secreting tubules, there appeared to be a chronic inflammatory or neoplastic process.

NORTH STAFFORDSHIRE MEDICAL SOCIETY.

AT a clinical meeting held on May 27th, Dr. RUSSELL, the President, in the chair, Drs. GILL and JOHN showed a man of 23 with *Transposition of the viscera*, and a demonstration was given in the *x*-ray department. Dr. KING ALCOCK showed a specimen of *Anguillula aceti* in the urine of a boy aged 4 years, suffering from nephritis with haematuria. In a second specimen, taken with every possible precaution, the Anguillula was present in large quantities. The male could be differentiated from other worms by the presence of two spicules; the size of the worm was about 1 mm. The child's blood had not been examined. A discussion took place as to the cause of the nephritis and the origin of the worm. Mr. ERIC YOUNG showed a man, aged 63, upon whom he had operated three years previously for *Carcinoma of the tongue*, the right half being excised after preliminary laryngotomy; ten days later the glandular contents of the right anterior triangle were removed. The man remained quite well, and his powers of speech were exceedingly good. Dr. MOODY showed a case illustrating a connexion between *Nystagmus and alcohol*. The patient was a miner whom he had examined before enlistment six weeks previously, when there was no nystagmus. In the next six weeks he was drinking a large quantity of alcohol, nystagmus developed, and he was referred back, and again examined. Since then he had given up alcohol, and the nystagmus had cleared up. The case was discussed by Mr. DICKSON. Dr. SHUFFLEBOTHAM showed a case of *Miner's nystagmus aggravated by incipient cataract*. The man had worked in an ironstone pit, and the speaker pointed out the rarity of nystagmus in such works when compared with those who work in coal. A discussion followed, in which Drs. DALY, DAWES, Mr. CARTER, and Mr. DICKSON took part, Mr. Dickson mentioning a patient with double cataract and nystagmus, on whom he had operated—removing both lenses—some time ago, and the nystagmus completely disappeared. Any refractive error will aggravate nystagmus. Mr. REGINALD ALCOCK showed three patients who had had *Salvarsan* intravenously one month previously (these patients were shown at the meeting in April before treatment—the first a man with glossitis, the second a man with tertiary ulceration of the face, and the third a woman with a broken-down gumma of the leg). All the cases had improved in a most remarkable manner. Mr. CARTER showed a man, aged 57, with an *Inoperable extrinsic carcinoma of the larynx* and large secondary glands in the neck. The growth was situated in the right aryepiglottic fold, and had extended very rapidly. In the beginning the symptoms were practically non-existent. The patient was just beginning to have the characteristic pain shooting up to the ear. Attention was drawn to the importance of palpating with the finger in the differential diagnosis between tubercle, syphilis, and malignant disease. Mr. Carter also demonstrated a simple *Substitute for a spirit lamp*, for heating mirrors, *boiling urine*, etc., by setting light to a 5-grain tablet of hexamethylene tetramine on a silver surface. The flame was smokeless and odourless, and left the surface of the silver more polished than before. Mr. WEBSTER pointed out that this was introduced from America five or six years ago by Messrs. Parke, Davis and Co., who supplied it in a urine testing case. Dr. DAWES showed a man, aged 60, with *Ulceration of the left tonsil and floor of mouth*, which the patient first noticed in September, 1914. There was no history of syphilis; the growth felt very hard, and there was glandular enlargement. The speaker considered that the ulceration was malignant in nature, and inoperable. Mr. ALCOCK considered the possibility of syphilitic ulceration, and suggested that a Wassermann test should be carried out. Mr. HARTLEY pointed out that it might be both syphilitic and malignant. Mr. R. H. DICKSON showed cases of *Entropion and trichiasis*, demonstrating the results of treatment by transplantation of buccal mucous membrane. It was of no use pulling out eyelashes in these cases; the grafts must be cut as thin as possible, and all the fat from the under surface removed. The buccal mucosa was chosen because it contained no hair follicles. If the graft sloughed, the operation could be done again. Mr. HARTLEY showed an *Undescended testicle* removed by operation for strangulation in the inguinal canal.

THE RÖNTGEN SOCIETY.

THE Röntgen Society, at its June meeting, under the chairmanship of Sir A. PEARCE GOULD, held a discussion on the *Protection of the x-ray operator*. The question was considered whether the methods of *x*-ray protection commonly employed were sufficient. Some remarkable figures were brought forward by Mr. Sidney Russ, who had been investigating the value of the protective materials commonly supplied. In the case of lead rubber used for *x*-ray installations he found great differences in thickness and quality. The

following figures relating to various samples received from three manufacturers, X, Y, and Z, were given:

	Thickness of lead rubber in millimetres.	Percentage of x-ray energy transmitted.
X	... 2.2	1.4
Y	... 1.54	4.9
Y	... 3.07	1.1
Z	... 1.25	5.0
Z	... 5.8	0.1

With some installations, therefore, as much as 5 per cent. of the energy coming from the bulb actually penetrated the protective material, and it should be remembered that during screen examination the operator stood very near to the bulb. In the case of lead glass used for screens the figures were more perplexing:

	Thickness of lead glass in millimetres.	Percentage of x-ray energy transmitted.
X	... 3.63	2.9
Y	... 3.87	5.5
Y	... 5.0	4.1
Z	... 3.25	4.3
Z	... 3.65	3.4

While the thickness of lead rubber appeared to be more or less a measure of its efficiency, the thickness of lead glass seemed to have no relation to its absorptive power; on the other hand, a slight addition of density apart from thickness reduced the percentage transmitted in a most marked degree. The density of the glass, therefore, was the only criterion of its efficiency. Mr. J. H. GARDINER, F.C.S., the President-elect of the Society, pointed out the part played by secondary radiation whenever x rays of any considerable intensity were produced. As a means of guarding against these vagrant radiations, mere protection in the plane of the anticathode was not enough, and Mr. Gardiner advocated the complete enclosure of the tube in good and heavy lead glass. Dr. FINZI also considered it important to enclose the tube as completely as possible and to use the smallest diaphragm. A resolution was adopted, on the motion of Mr. C. R. C. LYSTER, embodying the opinion of the society that it was of the greatest importance that the personal safety of the operator making the examination should be secured by the universal adoption of stringent rules. It was added that the council of the society would hold a special meeting at an early date to give effect to this resolution.

Rebiews.

FLIES, LICE, AND MOSQUITOS.

PROFESSOR MAXWELL-LEFROY, of the Imperial College of Science and Technology, has issued a little pamphlet,[1] in which he puts together, as briefly as possible, information on the most trustworthy methods for avoiding and destroying flies, mosquitos, lice, and other vermin, for the benefit of those who are suffering from, or who are fighting, the diseases transmitted by these pests. The appalling typhus mortality in Serbia is associated with the spread of lice, and the consequent diffusion of this fever, and perhaps relapsing fever, has drawn attention to the fact that no efforts should be spared not only to destroy the lice but their eggs, for there is some evidence that the virus of typhus fever can be transmitted by lice through their eggs to their offspring.

To rid one's body or one's clothes of lice Professor Lefroy recommends smearing the skin or washing the clothes with "crude oil emulsion," the formula of which we give below:

Crude mineral oil (sp. gr. 0.8)	56 grams (70 c.cm.)	5½ pints
Soft soap	... 30 ,, ...	or 3 lb.
Water	about 6 c.cm. ...	about ½ pint

This should be rubbed into the hair and applied to all clothing that touches the skin. As it contains a large quantity of soft soap it can be used as a soap, which should be allowed to some extent to dry on the skin. The same emulsion should be used when washing clothes. Verminous clothing should be boiled in water or treated with steam. The author points out that this preparation is non-poisonous and may be retained on the skin indefinitely.

With regard to flies, of course the main point of attack is the manure heap. It is well known that flies will breed in any moist fermenting matter, and the real solution of the difficulty is to find some cheap and effective substance which, if mixed with manure, will destroy the ova, the larvae, and the pupae of the fly without destroying the fertilizing value of the manure. Neither the house-fly nor the blow-fly bite; what they do is to convey the bacteria of enteric, cholera, anthrax, tuberculosis, plague, and infantile diarrhoea mechanically. As in other insects, the legs and proboscis of flies bear many sticky hairs, and these carry away disease-causing bacteria from the putrid matter in which they lay their eggs. The bacteria of these diseases they deposit on the food and in the drink of mankind. If the manure could be conveyed straight to the land and at once spread out the difficulty would to a great extent be solved. Flies cannot breed except in moist surroundings, and scattered dung soon dries up. Another method that the professor suggests is surrounding the heap at a distance of a foot with a ring of straw or other dry material for the maggots to crawl into when fully grown, for at this stage, just before pupating, they always seek the dry outer rim of the manure heap, so that the issuing adult fly is near the surface and has a good "jumping-off" place. This ring, full as it will be of "chrysalides," should be swept up every four days and burnt.

The distinguished Italian entomologist Berlese has succeeded in freeing an Italian village of flies by hanging up bunches of grass which had been steeped in various poisons. The solution Professor Lefroy suggests is a mixture of treacle or brown sugar with sodium arsenite or potash and water. The formula is as follows:

Treacle	100 grams	10 lb.
Sodium or potassium arsenite...	20 grams	or 2 lb.
Water	1 litre	10 gallons

For inside treatment, as Dr. Gordon Hewitt has pointed out, the Minnesota fly trap is, perhaps, as useful as any, whilst the burning of feathers or pyrethrum powder will drive flies out of a room, as also creosol vaporized by heating, a tablespoonful of which is sufficient for a moderately-sized room. To protect a room from the entrance of flies, coarse wire gauze with eight meshes to an inch is quite sufficient.

It is not necessary to dwell on the extreme importance of keeping all food, whether fluid or solid, from contact with these most persistent diptera.

The methods of dealing with mosquitos are, perhaps, better known than those which limit the activities of lice and flies. A little oil floating on the water kills the larvae, whilst the mosquitos themselves can be trapped by exposing open biscuit tins lined with dark blue cloth. Here they come to rest, and when the box is fairly full the lid is put on and the mosquitos can easily be killed by dropping a little benzine or chloroform into the box through a tiny hole. They can also be driven away by burning pyrethrum powder or by vaporizing creosol. Citronella oil, eucalyptus oil, or other essential oils will keep mosquitos from the body if applied to the neck and hands. This is a really valuable "tip" if one is forced to live in areas where mosquitos abound. In such districts the buildings should be made mosquito-proof by the use of screens. If this cannot be arranged, mosquito curtains of sixteen to eighteen meshes to the inch should be used at night. Such screens should be hung upon supports which are placed outside and not inside the curtain, and it is extremely important that the curtain should be tucked under the mattress and should never touch the floor.

THE EXPERT USES OF TUBERCULIN.

THE great divergence of opinion which is still to be traced through the records of routine users of tuberculin would seem to indicate that the application of the remedy, rather than the remedy itself, must be occasionally at fault. *A Guide to the Use of Tuberculin*[2] has recently appeared in which Majors COCHRANE and SPRAWSON, of the Indian Medical Service, have given a good account of the whole theory and practice of tuberculin treatment. Taking as their text the axiom that only an expert can form an approximately correct opinion as to the dosage

[1] *Measures for Avoidance and Extermination of Flies, Mosquitos, Lice, and other Vermin.* By H. Maxwell-Lefroy, M.A., F.Z.S., Professor of Entomology, Imperial College of Science and Technology, late Imperial Entomologist to the Government of India.

[2] *A Guide to the Use of Tuberculin.* By A. W. R. Cochrane, M.B.Lond., F.R.C.S.Eng., Major I.M.S., and C. A. Sprawson, M.D., B.S.Lond., M.R.C.P., Major I.M.S. London: John Bale, Sons, and Danielsson, Ltd. 1915. (Cr. 8vo, pp. 187; 84 charts. 5s. net.)

required in individual cases, their work might well be described as showing the way to become an expert. Their task has been to indicate the means by which the dose may be raised from that which the patient can first stand without reaction, to the highest possible dose that can be given. Needless to say, the whole-hearted co-operation of the patient and unshakable faith are essential conditions for success.

The book, divided into several chapters, deals first with the technique recommended by the writers and with the phenomena of reaction, and then with the working hypothesis which underlies all the theoretical and practical considerations described later on.

Although other indications are usually present, the disturbance of normal temperature is looked upon as the real test of a positive reaction. While some workers maintain that the dosage should be kept below the strength necessary to produce a rise of temperature, the writers affirm their belief that a rise to 99.3° should be regarded as the limit, as tending to save time in arriving at a positive conclusion. The indications provided by evidence of focal reaction, loss of weight, the opsonic index, and general symptoms are duly discussed, but the temperature is held to be the safest guide.

Much attention is paid to the estimation of the dose; but here, as elsewhere in the book, there is a good deal of repetition of previous statements. The condition described by the writers as "supersensitivity" may be produced either by too large or by too small dosage.

Recognizing the inutility of laying down positive rules for dealing with infinitely varying conditions, the writers have classified certain types of febrile forms of pulmonary tuberculosis, quoting actual cases, and illustrating their progress by charts. Many interesting points, not commonly known, are brought out by these methods. The possible occurrence of mixed infection is passed over rather lightly, and some of the results attributed to the special line of treatment might doubtless have been obtained without it. The occurrence of auto-inoculation on active movement is apt to mislead in diagnosis among dispensary patients, and care has to be taken to eliminate its influence before correct explanations can be ventured upon with respect to reactions produced by artificial means

The ultimate aim of tuberculin treatment is to produce immunity to the infection by pure tuberculin, by the slow and steady advance of dosage, spread over a very long period. That this result may be achieved in the long run has been fairly well proved, and although by far the larger proportion of cases can only be said to be benefited, still there is every reason to look forward to improvements, both in the theory and practice of inoculation, which may lead to a much greater percentage of success in time to come.

The small work under review is a step in the right direction.

PUBLIC HEALTH.

ALTHOUGH within recent years the British Parliament has endeavoured by successive Acts to simplify local administration, it is still a little difficult, except for those who are engaged as officials or in other ways in local government, properly to understand the various powers and duties of local authorities. Mr. ARTHUR DEAN and Mr. E. J. RIMMER have therefore done good service in bringing together in one volume[3] an account of local government in England and Wales. In successive chapters they deal with the meaning of central and local government and trace the growth of local government from the earliest times to the present day; they classify the existing local authorities, deal with the Government departments having jurisdiction in local government affairs, discuss the powers and duties of local authorities, and refer specifically to local administration as it is concerned with public health, education, and insurance. A separate chapter is devoted to an explanation of the complicated system of local government prevailing in the metropolis. The authors have managed to impart to a subject not usually considered attractive more than passing interest. The information given is for the most part correct and reliable though there are one or two noticeable exceptions. On page 49 it is stated that a county council has power to appoint a medical officer of health who may engage in private practice. The authors have apparently overlooked the fact that Section 68 of the Housing, Town Planning, etc., Act, 1909, enacts that every county council *shall* appoint a medical officer of health, and that every such officer appointed after the passing of the Act shall not engage in private practice. On page 93 it is stated that the duties of medical officers of health are fixed by the local authorities who appoint them. This is not strictly accurate, for the duties of these officers are set out in an Order of the Local Government Board. We have no doubt that in future editions of the work, which are almost sure to be necessary, the authors will take care that these small misstatements are corrected.

The Bacteriological Examination of Food and Water,[4] by Dr. WILLIAM G. SAVAGE, is to be recommended as a very useful addition to the library of the public health worker. The increasing importance of bacteriology in relation to sanitary science calls for accurate and practical descriptions of laboratory methods in relation to the bacteriological examination of water and foodstuffs, to which the ordinary textbooks on bacteriology do but scant justice. Dr. Savage's book deals with the examination of water, soil and sewage, shellfish, milk and milk products, meat and meat products, air, and also the determination of antiseptic and germicidal power. Not only are full details given for conducting bacteriological inquiries along these lines, but, what is equally important, a considerable portion of the work is given up to the consideration of the proper interpretation of results. This is indeed the most difficult side of the question, and is beset with pitfalls which the perusal of Dr. Savage's little book will help in avoiding. A large section is devoted to the examination of water, and the author draws attention to the paramount importance of the finding of *Bacillus coli* as an "indicator organism" for evidence of excretal pollution; the isolation of *Streptococci* and *Bacillus enteritidis sporogenes* being chiefly of value for confirmatory purposes. The identification of the colon bacillus by means of MacConkey's bile salt media is, moreover, exceedingly simple and satisfactory. The examination of milk and its by-products is also treated in considerable detail, and the important question of the detection of tubercle bacilli in milk, cream, and butter is fully considered. The book concludes with a useful appendix, giving full details for the manufacture of media, and of the formulae of staining reagents mentioned in the text.

The Metropolitan Board of Sydney has issued a handbook[5] with regard to the water supply and the disposal of sewage for that town and locality. It contains a short history of the evolution of both systems which is interesting, especially when compared with similar experiences in this country. It indicates how the Board has surmounted the difficulties of the requirements of an increasing population in the production of a potable water, and how it has grappled with the more difficult question of the disposal of sewage. The compilation, as a handbook, does not enter into any generalities, but is in the main a permanent and detailed record of the existing works and undertakings of the Board, which to any one with some knowledge of the locality will be extremely interesting. The constitution and conduct of the Board is governed by Acts of Parliament dating from 1880; it consists of seven members, who hold office for a period of four years. The water mains extend for 1,864 miles; the hydrants—ball, spring, and screw-down—number over 54,000; and the water meters, 64,000; the population of nearly 800,000, which uses on an average forty-two gallons a head daily. The water rate amounts to 6d. in the pound upon the assessed annual value of the premises liable. The charge by meter for 1,000 gallons varies from 11d. to 9d., according to the amount used. It is worthy

[3] *A Digest of the Law and Practice Relating to Local Government in England and Wales (including London).* By A. D. Dean, F.L.G.A., Solicitor of the Supreme Court, and E. J. Rimmer, M.Eng., B.Sc., A.M., Inst.C.E., of Lincoln's Inn and the Northern Circuit, Barrister-at-Law. London: Butterworth and Co. 1914. (Cr. 8vo, pp. 323. 5s. net.)

[4] *The Bacteriological Examination of Food and Water.* By W. G. Savage, B.Sc., M.D.Lond., D.P.H., Cambridge Public Health Series, under the editorship of G. S. Graham-Smith and J. E. Purvis. Cambridge: The University Press. 1914. (Demy 8vo, pp. 181; 16 figures. 7s. 6d. net.)

[5] *Metropolitan Board of Water Supply and Sewage, Sydney, Official Handbook, 1913.* Sydney: Bloxham and Chambers. 1913. (Med. 8vo, pp. 159; illustrated: two maps.)

of note that the Board shows its public spirit by providing water to the value of £28,650 per annum gratis to public hospitals and charitable institutions, for public parks, street watering, cleansing, and other municipal purposes, and to His Majesty's Navy. The Board controls nearly 900 miles of sewers, covering some nine distinct drainage areas, for which it has been necessary to provide some two dozen pumping stations and four ejecting stations, with three outfalls into the sea, and one sewage farm. On the same financial basis as the water, the sewage rate amounts to 9½d. in the pound. The population concerned numbers 776,065. The handbook contains some thirty-two illustrations, which are good and useful, and two maps, both interesting, but especially the one on sewerage. As has already been indicated, the subject matter concerns largely the details of a sanitary engineering department, and as such will be interesting to surveyors engaged in similar work.

NOTES ON BOOKS.

THE *Bibliographies of Guy's Men*[6] reflect much credit on their compiler, Mr. J. H. E. WINSTON, Wills Librarian. They consist of bibliographies of the published writings of members of the staff of Guy's Hospital, classified under the headings of separate publications and papers in periodicals and transactions. Perhaps the most interesting of the series from a literary point of view is that devoted to Mr. Thomas Bryant. His separate publications amount to twenty, and his papers, monographs, and other work of the kind issued in periodical publications exceeded 350, yet we all know that Bryant wrote wisely, and well to the point. The bibliographies of Bryant and Pye-Smith begin with a biographical notice absent from that which enumerates the writings of Sir Henry G. Howse. Each is furnished with a portrait. These pamphlets will afford great assistance as works of reference in the preparation of monographs. Already bibliographies of Sir Samuel Wilks, Mr. Targett, and Sir W. Arbuthnot Lane have been issued. The librarians of other great hospitals will doubtless follow Mr. Winston's example.

Mr. F. J. MOORE'S *Outlines of Organic Chemistry*[7] differs from the average textbook on this subject in that it is not written for students of organic chemistry, but is described on the title-page as "designed especially for the general student," while the preface explains that it is based on a course of lectures found suitable for candidates for a bachelor's degree in physics, biology, or sanitary engineering. The author's concern is therefore to give a clear account of the outlines of the subject, and the book is not loaded with details about a large number of organic compounds; it consists of a connected and progressive discussion of this branch of chemistry, beginning with the simplest compounds and advancing to the elementary facts and hypotheses in regard to proteins, dyes, and other classes of complex substances. The result is a work which makes very interesting reading, and should prove very useful to the class of students for whom it is written.

The National Society for the Prevention of Cruelty to Children has issued a report of a year's work (1914–15) under the title *For King and Country*. The society is able to place at the head of this pamphlet, with justifiable pride, the commendatory words recently penned by the Secretary of State for the Colonies: "It is unnecessary for me to add how greatly I appreciate and value the splendid work which is being done by the society all over the kingdom." Besides the relation of the year's cases, the report treats of the step-parent question. The society, it is stated, knows of innumerable instances of great kindness shown to troublesome step-children. It touches also on child labour and the war, and "war babies," and it kills the slander that soldiers' wives are as a class intemperate or neglectful. Lastly, it is highly satisfactory to find that the most remarkable change of the year is the large decrease in the number of cases due to drink. It appears that the worst effects of intemperance on offspring and step-children is neglect, not brutality. This seems natural, as the votaries of Bacchus are known to be careless but are often good-natured. Citizen Simon was brutal but not a drunkard, and it was neglect that killed Louis XVII when he passed out of his "tutor's" hands.

A great many people will be grateful to Sir ARTHUR CONAN DOYLE for writing and publishing just now *The Valley of Fear*.[8] It is so absorbing and, though gruesome enough in parts, so wholly unrelated to the war, that it takes the reader out of himself and his daily obsessions. It is a Sherlock Holmes story with a difference. In the first part we have Sherlock Holmes in his best form, but making a small mistake which causes him to lose the rubber to Professor Moriarty in the epilogue. The second part is a story, which might stand by itself, of the terrorism of an organized gang of desperadoes masquerading as a friendly society, and of the activities of a Pinkerton detective in bringing the gang to justice. The story may seem almost incredible, but we believe that the records of the United States courts would justify every incident. In the art of telling a story the skill of Sir Conan Doyle seems to grow greater; at any rate, his hand has by no means lost its cunning, and the particular reviewer had to read the book through before putting it down.

[6] *Bibliographies of Guy's Men.* No. 4, Sir Henry Greenway Howse, D.Sc.Vict., M.S., F.R.C.S.; No. 5, Philip Henry Pye-Smith, M.D., F.R.C.P., F.R.S.; and No. 6, Thomas Bryant, Hon. M.D.Dubl., Hon. F.R.C.S.I. Compiled by J. H. E. Winston, Wills Librarian, Guy's Hospital. 1915.

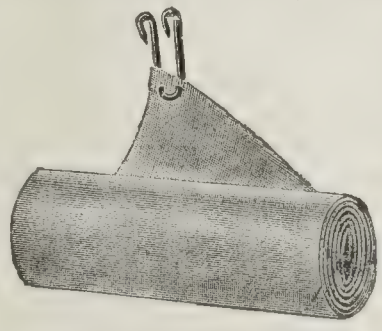
[7] *Outlines of Organic Chemistry: A Book Designed Especially for the General Student.* By F. J. Moore, Ph.D. Second edition, rewritten. London: Chapman and Hall, Ltd.; New York: John Wiley and Sons, Inc. 1914. (Cr. 8vo, pp. 336; 15 figures. 6s. 6d. net.)

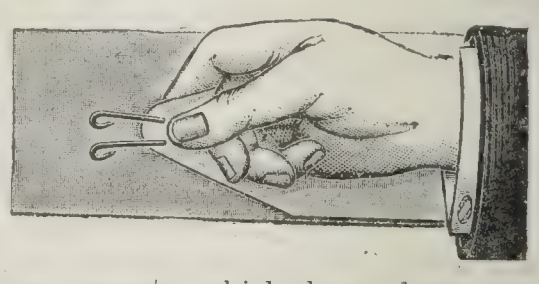
[8] *The Valley of Fear.* By Sir Arthur Conan Doyle. 1915. London: Smith, Elder and Co. (Cr. 8vo, pp. 306. Price 6s.)

MEDICAL AND SURGICAL APPLIANCES.

A Hook Pin for Puttees and Bandages.

A FEW months ago, when trench "frost-bite" was an urgent matter, we observed that if somebody would devise an effective way of fixing the top of the puttee which would do away with the tape wound round just below the knee, he would do a real service to the soldier. We are glad to say that this remark has stimulated invention, and that Dr. Reinhardt Rutland has devised a "hook pin" which appears not only completely to answer the purpose in respect of puttees, but is likely also to replace the safety-pin for fixing bandages. As shown in the drawing, it is an extremely simple device. It consists of a piece of wire shaped like a staple, but with the points turned over and sharpened. The staple is pushed from the under side through the end of the bandage, and the hook can at once be securely fixed into the bandage itself, wherever the end may come. The manufacture of the hook has been undertaken by Messrs. Kirby, Beard, and Co., Ltd., of London and Birmingham, and the device will be known as the "Kirby Hook Pin." We are told that these hooks have already been supplied to the Royal Army Clothing Department, the Royal Army Medical Corps, the Red Cross, and to many hospitals. Their use with puttees entirely does away with the need for a tape round the leg under the knee, and from some reports which have been received it would appear that the marching power of the soldier has been perceptibly improved. They afford also a very simple, rapid, and secure way of fixing bandages over dressings, and have, we are informed, been used for this purpose, not only in the military hospitals, but also in veterinary surgery, which affords very severe tests of the security of any such appliance. A very simple but quite ingenious box-pin cushion has been devised from which pins can be easily taken when used for fixing dressings. The retail price of the hook pins is, we are informed, 3s. 9d. a gross or 3¾d. a dozen on cards.





MISS MARJORY SHANKS SCHAW, of Glasgow, who left personal estate of the value of £421,210, bequeathed £5,000 each to the Glasgow Royal Infirmary and the Glasgow Western Infirmary, and £2,000 to the Royal Hospital for Sick Children, Glasgow.

ONE HUNDRED YEARS AGO.

JAMES MCGRIGOR, THE CHIEF OF THE MEDICAL STAFF OF WELLINGTON'S ARMY.

ON June 13th, 1815, six days before the battle of Waterloo was fought, Sir James McGrigor was appointed Director-General of the Army Medical Department, and he held the post till the year 1851, when, being 80 years of age, he retired on a pension which he enjoyed till his death in 1858. It is true that Sir James McGrigor's appointment offended against the canons of promotion, for by it His Royal Highness the Duke of York put a comparatively young man over the heads of two very much senior members of the Army Medical Department—to wit, Sir Charles Kerr and Sir William Franklin; but McGrigor, fully entering into the feelings of the disappointed officers, endeavoured, to use his own words in his autobiography, "to make himself as little unacceptable as possible." In a few months Sir Charles Kerr retired from the service, and with Sir William Franklin there could be no lasting difficulty, for, to quote again from McGrigor's autobiography, "he was as noble-minded an individual as I ever met with, and to the mildness of his nature added the manners of a perfect gentleman." So Sir James ruled in the Army Medical Department, and during the succeeding thirty-six years—which, as it happened, were times of peace—he was able to do great things both for the department and the soldier. It was indeed time, for the deplorable expedition to Walcheren and many things which had come under McGrigor's own eyes in the medical arrangements during the Peninsular War, showed clearly the need for reform. Before, however, reference is made to the Director-General's work after 1815 the events of his life prior to that time may be traced.

James McGrigor was a Highlander, having been born in Inverness-shire in 1771; he was educated in Aberdeen at the Grammar School and at Marischal College. After taking his A.M. degree he was in doubt as to his future; but he was soon attracted to medicine, and being impressed also with a great admiration for the military service, arising mainly from the fine appearance of a fellow student who was in the army, he found his way ere long to unite the two in a surgeoncy in the Connaught Rangers. Before this came to pass, however, he had studied medicine in Edinburgh under Monro and Gregory and in Glasgow under Hope, and had during a brief return to Aberdeen been instrumental in establishing the Medical Society in that city. This was in 1789, but it was not till the year 1804 that he graduated M.D. in Marischal College. He was anxious to join a Scottish regiment, but was advised, as he notes with quiet humour, to enter an English or an Irish corps, for the reason that in a Scottish one he would have found his fellow countrymen standing in his way, whereas he would soon push his way to the front in the others. The officers of the Connaught Rangers formed part of the general detachment mess at Chatham when McGrigor (whose name was spelt with an "e" in the regiment's records, thus *McGregor*) joined them, and it is an interesting fact to record that these men were endeavouring to check the excessive amount of drinking which was prevalent in the army. Their method was not, it is true, very drastic; it was that when each had drunk a pint of wine they should all leave the table. This custom led McGrigor into a scrape which nearly ended for him in a duel, one of the officers of another regiment endeavouring to detain him at the table when the Connaughts had left; the trouble passed, but it left a profound impression on his mind, and he states in his *Autobiography*[1] that during the eleven years he was in the Connaught Rangers, as well as afterwards, he was noted as one of the most temperate members of the mess. He saw service at the sieges of Bergen-op-Zoom and Nimeguen, and was much impressed by the ravages of typhus; indeed, he wrote that the want of system in the hospitals and the inexperience of medical officers in the duties in which in after-years they became so expert was then very striking. He was himself a victim to typhus, and only the devotion of a comrade and his servant saved him alive. He went with his regiment, on his recovery, to Norwich, where there were many soldiers, for the revolutionary feeling was very strong at the time, and troops seemed to be required; typhus fever broke out there, too, and McGrigor was appointed superintendent surgeon of the hospitals, where so many of the garrison were lying ill. With no little insight, he endeavoured to keep the hospitals clean and sweet, and fought against the habitual drunkenness and other irregularities of the men, but the value of fresh air in fighting typhus was not so well known then as it is now.

McGrigor's lot was next cast in the West Indies, where he suffered many things, including shipwreck and dysentery, and noted that in Grenada the number who died of yellow fever was four times that of those who fell by the bullet and the bayonet. After a brief visit home, the army surgeon next saw service in India and Ceylon, but it was not long before he was sent, as head of the medical staff, with an expedition to Egypt, under Sir David Baird, although it had been intended that Colonel Wellesley should command, and McGrigor had already made his acquaintance. On the voyage the guinea-worm raged on board, and it is interesting to read what the surgeon thought of it:[2]

> The disease is a very extraordinary one, and was new to me when I first met with it, although I was very well stocked with books, having had, I have reason to believe, a larger stock than most surgeons when we went to India. I looked in vain for an account of this loathsome and painful disease; I found mention merely of its name and antiquity, and that the only treatment was to pull it out daily.

It is an interesting coincidence that in the spring of 1815, when Sir James McGrigor was receiving his appointment as Director-General of the Army Medical Department, an article should be appearing by C. Chisholm[3] in the *Edinburgh Medical and Surgical Journal* on the Malis Dracunculus or Guinea-worm, in which Sir James's own observations on the disease were utilized. McGrigor had written on the subject in his book, published in 1804, entitled *Medical Sketches of the Expedition to Egypt from India*[4] (pp. 202–217); but he added little of value, and Chisholm came much nearer to the truth when he stated that the embryos of the worm either penetrated through the skin, or, *what was infinitely more probable*, were received into the stomach. Modern research has shown Chisholm to have been right in his second and preferred supposition.

It was not the guinea-worm, however, but bubonic plague, which gave McGrigor in Egypt most anxiety with the troops under his medical care, half of them natives of India and half of them European. He himself admitted that his attempts to cure the malady were not attended with conspicuous success, but he claimed in his *Medical Sketches* (p. 142) that prevention worked well, and he laid stress upon frequent medical inspection; upon the early supervision of all cases of illness, even although the symptoms were slight; upon the attachment of an observation room or tent to every hospital; upon frequent changing of quarters and encampments, and upon nitrous fumigation.

It was in 1801 that McGrigor served in Egypt with the Indian Expeditionary Force, and he did so under a commission from the East India Company; when the army evacuated the country he returned for a time to Bombay, but ultimately was sent to England, where he exchanged from the Connaught Rangers into the Horse Guards Blue, and so came under the notice of George III. It was during these years with the Irish regiment in various parts of the world that he was forming his views as to the necessity there was of improving the health conditions of the soldier. Here are some of his opinions:

> It is not only in the sense of humanity, but in that of a sound policy and real economy, that the State should provide able medical and surgical advice for the soldier when sick or wounded. I look upon it to be an implied part of the compact of citizens with the State, that, whoever enters the service of his country as a soldier to fight its battles, should be provided with the same quality of medical aid, when sick or wounded, which he enjoyed as a citizen. In every large town, whence the great bulk of recruits is drawn, there are public hospitals and dispensaries, which, supported by the subscriptions of the rich, are always open to the sick and poor, and to persons of the

[1] *The Autobiography and Services of Sir James McGrigor, Bart.* London, 1861, p. 17.

[2] *Autobiography*, p. 108.

[3] Chisholm, C., on the Malis Dracunculus or Guinea-worm, *Edin. Med. and Surg. Journ.*, xi, 145, April 1st, 1815.

[4] *Medical Sketches of the Expedition to Egypt from India*, by James McGrigor, A.M., Member of the Royal College of Surgeons of London, pp. 202–217. London, 1804.

middle classes; in fact, to those ranks in life from which the soldier comes. The physicians and surgeons of these public institutions are always the ablest men in the profession of medicine. After the enjoyment of such medical aid, the soldier should not, therefore, be consigned to the ignorant and uneducated of the profession; he is clearly entitled to the same quality of medical advice as when he was a citizen, and is not to be put off with a cheap article of a doctor, and with one who could not afford the expense of a regular medical education.[5]

When, therefore, McGrigor came to power in the Army Medical Department in 1815 one of the first investigations he caused to be made was a gradual collection of the facts concerning the education and services of every medical officer in the army. Then each officer who was found to be deficient was told that there would be no further promotion for him till his medical education was brought up to the standard which the Medical Board had decided upon. As a result many took further classes, what we should to-day call post-graduate work, and added to their qualifications.

McGrigor was not long the surgeon to the Horse Guards Blue, for in 1805 he was appointed Deputy-Inspector-General of the Army Medical Board, first for the Northern and then for the South-Western District and for Portsmouth. This was a big step in the matter of promotion, but the new Deputy-Inspector rose to the required level, and not only did his work with the completeness which his natural love of statistics inspired, but also introduced reforms of considerable value. Yet there were, of course, men who had been disappointed when McGrigor was moved so rapidly up the ladder. One of these men, James Grant, was generally looked upon as certain to obtain the vacant deputy inspectorship; but he generously received McGrigor with cordiality, and the latter after a time cemented the friendship thus begun by becoming Grant's brother-in-law. During McGrigor's term of office at Portsmouth the wounded soldiers from the glorious but dearly paid for battle of Corunna arrived, and, with the inevitable typhus causing crowds of sick also, no little difficulty was experienced in finding hospital accommodation and medical attendance; but by engaging the services of the civil practitioners in the neighbourhood, by obtaining use of the large naval hospital at Haslar, by converting barracks into hospitals, and by employing transports, prison ships, etc., as floating hospitals, the Deputy-Inspector as usual made his way through difficulties which would have overcome other men.

In 1811 McGrigor was appointed head of the medical staff of the Portuguese army under the command of Lord Beresford, but before he could sail his services were called for in connexion with the ill-fated Walcheren expedition and the reported death of Sir John Webb, the head of the medical department of the army there. He was shipwrecked on the way to Flushing, and so bad was the state of matters when he reached Walcheren that even McGrigor, with all his thoroughness and power of saving situations, could extract no glory out of the affair and had to be content with honour. It must have been with renewed hope that he set sail for Lisbon in the early days of January, 1812, to act as Chief of the Medical Staff under Lord Wellington.

From the moment of his arrival in the Peninsula the new Chief of the Medical Staff took a grasp of affairs with a firm hand. He was alarmed to find so many sick in Lisbon, and immediately sketched out a plan for the establishment of temporary hospitals for every regiment and brigade so as to lessen the number of slightly wounded men who were constantly being sent to the rear and even to England, whence, as can easily be imagined, they were not readily recalled to the front. He sent on his suggestions to Wellington, who doubtless was not long in realizing that he had an able man in McGrigor, especially as his suggested reforms would add considerably to the strength of the army under his command. From this time onward through the varying fortunes of deadly Badajoz, disastrous Burgos, glorious Vittoria, and costly Toulouse, Wellington and his Chief of Medical Staff worked admirably together, the latter adding not a little to the final success which attended the British arms in Spain and France. One incident must be recorded, for it formed a precedent of great importance. It happened after the taking of Badajoz, when McGrigor found Lord Wellington writing his dispatches:

"He received me most cordially," said McGrigor, "and after I had given him my detail, thanked me much. He was in excellent spirits; I therefore said: 'I trust, my lord, you are satisfied that the medical officers during last night did their duty, as well as the military officers, and that you will receive my testimony that they discharged their arduous and laborious duties most zealously, and often under circumstances of personal danger of which they were regardless.' He answered that 'he himself had witnessed it.' I then added, 'Nothing could more gratify these officers, nothing could be a greater incentive to their exertions on future occasions, than his noticing them in his public despatches.' He asked, 'Is that usual?' My reply was, 'It would be of the most essential service;' and I ventured to add that 'really their extraordinary exertions gave them in justice a claim to this.' He rejoined, 'I have finished my despatch—but, very well, I will add something about the doctors.' When the gazette appeared, the medical officers of the army in England saw with delight that the merits of their brethren had been publicly acknowledged, in the same manner as those of the military officers. This was the *first time* that their merits had been thus publicly acknowledged; and the example of Lord Wellington has been followed after every great action that has since been fought; and some time afterwards the navy followed the example."[6]

That McGrigor's aid was not imaginary or overstated is supported by Napier in his *Peninsular War*, when he writes:

> During the ten months from the siege of Burgos to the battle of Vittoria the total number of sick and wounded which passed through the hospitals was 95,348. By the unremitting attention of Sir James McGrigor and the medical staff under his orders, the army took the field preparatory to the battle with a sick list under five thousand. For twenty successive days it marched towards the enemy, and, in less than one month after it had defeated him, mustered, within thirty men, as strong as before; and this, too, without reinforcements from England, the ranks having been recruited by convalescents.

It is little wonder, therefore, that in 1814 McGrigor was knighted, and retired on an allowance of £3 a day, but it speaks volumes for his popularity that the medical officers who served under him—physicians, surgeons, apothecaries, and purveyors—should have at the same time presented him with a service of plate valued at £1,000. In his *Autobiography*[7] Sir James, with a touch of the naïveté which readers of Boswell's *Johnson* know so well, tells how, when the Duke of Wellington informed him of his coming knighthood, he replied by saying that he had hoped the honour would be the permanent one of the baronetage. The Duke, not without some dryness, as we can imagine, said, "You are the best judge of what you will take, but I would recommend you taking the knighthood in the meantime."

June, 1815, saw Sir James McGrigor out of his retirement again and fully installed as Director-General of the Medical Department at a salary of £2,000 a year, with the relative rank of major-general. During the years which followed after the return of the peace for which Europe was then so hungrily waiting, the Director-General was not idle. Allusion has already been made to his investigation into the professional equipment of all the medical officers in the army; but no less important was his statistical research into the health and condition of the troops at all the home and colonial stations, the diseases prevalent, and the modes of treatment pursued. Through the reports and returns which he thus received half-yearly from all over the world he collected a mass of materials of the greatest value bearing upon the health of the army. He found out the average duration of the life of the soldier in different climates, the causes of their diseases, the mortality in various years from cholera, yellow fever, and other maladies, and the effects of new sanitary methods both of prevention and of cure. His name will also ever be honourably associated with the Army Medical Friendly Society for the relief of widows of army medical officers, which he started in 1816, and with the Army Medical Benevolent Society for the benefit of the orphans of medical officers, which he established four years later. He formed, too, at Chatham a Museum of Anatomy and Natural History bearing upon military surgery and the library attached thereto, to which he contributed no fewer than 1,500 volumes.

The baronetage which he had longed for in 1814 came to him in 1830, and in 1850 he was invested with the Order of a Knight Commander of the Bath. He was also made a Fellow of the Royal Society of London, and thrice (in 1826, 1827, and 1841) was he elected Lord Rector of

[5] *Autobiography*, p. 94.

[6] *Autobiography*, p. 278.
[7] Ibid., p. 357.

Aberdeen University; Edinburgh, too, whose university claimed to have played a part in his education, gave him her freedom; and he was honoured by Portugal for his services in the Peninsular war.

Sir James McGrigor was an eminent example of a hard-headed, hard-working Scotsman of the Aberdonian kind; and in the northern city between the Dee and the Don an obelisk of Peterhead granite, 70 ft. high, can be seen in Duthie Park, commemorating his outstanding career. From the day when his father bought for him the surgeoncy in the Connaught Rangers he made his way forward and onward to the highest place in the Army Medical Department by sheer energy, determination, and devotion to detail, aided, perhaps, by some good fortune in his association at the right time with the very men who were best able to further his interests. He had ambition in plenty, and when George III said to him, "All you Scotsmen are ambitious," he was not so rude as to disagree with his Sovereign. If, however, he were ambitious overmuch, and if he took the opportunities which came to him of going up, not one step but two or three at a time in the ladder of promotion, it must never be forgotten that he placed foremost in his desires the health of the soldier; that he worked hard to raise the professional and educational status of the army medical officer; and that he showed a true devotion to the scientific aspects of medicine which was admirable in a life so full of departmental worries and absorbing preoccupations.

FIRES DUE TO AIR RAIDS.

THE British Fire Prevention Committee has issued information to householders supplementing previous warnings (Memo. 18b). They are advised as follows:

> Ordinary domestic buildings, shops, and offices should have an *ample supply of buckets* (kept ready filled with water), and, where funds permit, one or or more *small hand-pumps*. Occupants should know how to use these simple appliances efficiently.
>
> *Pitchers* and other minor household vessels should be kept filled ready for use, and where there are *baths*, wash-tubs, etc., these should be kept filled, so that a supply of water may be available independently of the water mains. Where there are *garden utensils*, such as syringes, garden pumps, etc., they should be readily accessible.
>
> *On no account should money be expended on powder extinguishers* (tubes), *hand grenades* (glass bottles or tubes), extinguishers and squirts containing carbon tetrachloride or similar chemicals which are liable to form noxious gases. *Such appliances are unreliable and unsuitable.*
>
> If portable liquid chemical fire extinguishers are desired, they should be of *2 or 3 gallons capacity*, and a warranty should be obtained that they *comply* either *with the Specifications* of the Board of Trade, H.M. Office of Works, the Metropolitan Police, or of this Committee, these specifications being mainly intended to prevent accidents from bursting.
>
> Fires caused by incendiary bombs, if *promptly* tackled with *water in fair bulk, force, and continuity*, need not spread, and are not quite the terrifying problem to deal with that the enemy would make them. It is mainly a matter of concentrating the available liquid fire appliances and applying water energetically so as to obtain the necessary *cooling effect*. The incendiary bombs so far used by the Germans *do not as a rule contain petrol*, but *thermit* —which, on combustion, takes the form of molten metal of high temperature, resultant fires having none of the characteristics of spirit fires, which latter require the use of sand.
>
> In any event every effort should be made by the public to assist the fire brigades in their onerous duties, but they should not omit on any account *immediately to notify any outbreak* that comes to their notice by telephone or otherwise—the method of calling assistance to be posted up.

Those who desire additional useful hints on the fire question arising from possible air raids should apply for the British Fire Prevention Committee's "Warnings," which are provided gratuitously upon written application to the Registrar at 8, Waterloo Place, Pall Mall, London, S.W. (enclosing large size, stamped, and addressed envelope). These "Warnings" give useful information as to the necessary precautions, and how to act when the emergency arises.

THE DOCTOR'S HOLIDAY.

IN the JOURNAL of April 24th, p. 730, an account was given of the scheme of the medical profession at Bury for giving all local doctors an opportunity of taking a summer holiday. The scheme is now, we understand, in working order. A card has been printed in the following form:

> Dr. B..... requests one of the following doctors:
>
> | | | | |
> |---|---|---|---|
> | Dr. B. | Dr. G. | Dr. L. | Dr. S. |
> | Dr. B. | Dr. H. | Dr. L. | Dr. S. |
> | Dr. D. | Dr. J. | Dr. M. | Dr. V. |
> | Dr. F. | Dr. L. | Dr. N. | Dr. W. |
>
> to attend Mrs. S. .....
>
> Address.....
>
> until August 16th.
>
> (date of doctor's return)
>
> Attended by .....

If the patient is an insured person the doctor accepting the case puts the letter "I" in the top right-hand corner. When a patient goes to the doctor's surgery during his absence the person left in charge of the surgery or house fills in the absent doctor's name, strikes it out of the list of doctors willing to attend, inserts the patient's name and doctor's. The patient then takes it to any doctor on the list, who signs it and uses the other side to keep a brief record of visits and attendances and medicines supplied. As each doctor is due to return the following postcard is sent to the patient:

> Dr. B.....returns home to-night. His Representative will call this evening for the Records of any Patients you have attended for him.
>
> Yours truly,
> P. F. BRAITHWAITE,
> Hon. Sec.
>
> .....1915.

In addition there is a notice in each doctor's surgery asking patients of doctors on active service, or on holiday, to give their own doctor's name.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE CENTRAL COMMITTEE.

A MEETING of the Central Committee was held on June 3rd, when full details were reported as to the distribution of relief to medical men, pharmacists, and their families and dependants in Belgium. This distribution takes place through the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés, extracts from whose recent official reports were published last week. The Belgian Committee works in the following way. A strongly constituted central committee sitting in Brussels has appointed a sub-committee for eleemosynary purposes, and to this sub-committee inspectors report on the merits of the individual cases which have come under their ken in particular districts, and make recommendation as to what grants should be given. Papers are filled up for the information of the subcommittee, and the grants are made on the recommendations of the subcommittee, which has, on the whole, been less stringent than the actual inspectors. Four examples of the kind of cases that have been succoured were published last week, and to these the following may be added:

Dr. C—— L——, of T——, is married, and has one dependent son. His money is exhausted, his premises are completely burnt, he has no means of daily subsistence, and an elder son with whom he hoped to shelter is now a refugee. A grant was made of 700 francs.

Dr. L——, of V——, has two dependent children, his house and all the contents have been burnt, and his economies are exhausted. A grant was made of 700 francs.

Dr. C——, of L——, has also two dependent children. His house and all the contents have been destroyed, and two other houses belonging to him have been burnt. His clientèle is

ruined and dispersed. He still has some savings. A grant was made of 400 francs.

Madame G——, of A——, saw her husband and one son killed in front of her, and her house was pillaged. One son of 15 remains. The returns of her husband's pharmacy have become very small indeed. A grant was made of 700 francs.

At the meeting of the Belgian Committee on April 29th an important departure was made, as it was agreed that monthly grants should be made to families of medical men and pharmacists in want. It was pointed out that it would be of great advantage to those who were helped if they had more security and had not always to renew their applications in the face of complete want. As a result it was agreed by the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés that allowances should be made in suitable cases of from 300 francs to 600 francs a quarter. Already the distribution of three monthly allowances is being made to families of pharmacists. Complete accounts were furnished to the British Committee by the detailed reports of the proceedings at the meeting on April 29th and the two previous sessions, so that it was possible to judge of two things: first, that the resources had been very closely husbanded; and, secondly, that more money is wanted, especially in view of the system of quarterly grants. Sir Rickman Godlee, the chairman of the British Fund, and Dr. Des Voeux, the treasurer, were accordingly authorized to send out a substantial sum of money to Belgium through the medium of Mr. Herbert Hoover, the chairman of the International Relief Fund. The cheque is being accompanied by a letter from the chairman of the British Central Committee to Dr. Péchère, the chairman of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés, pointing out that the British Committee cannot undertake to send the same amount monthly or even at stated intervals, but that the amount sent must depend partly on the funds at the disposal of the British Committee and partly upon the actual necessities of the time. In this letter the approval of the British Committee is also expressed of the way in which the relief of distressed doctors and pharmacists and their families has been undertaken by Dr. Péchère's committee.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Voeux up to Tuesday evening last, in addition to those previously acknowledged, are as follows:

Twenty-eighth List.

	£	s.	d.
Hampstead Division, B.M.A. (per Dr. Coode Adams, Chairman and Sec.)	21	0	0
Dumfries and Galloway Division, B.M.A. (per Dr. J. Dewar Robson, Hon. Sec.)—			
Dr. R. B. Lorraine ...	1	1	0
Mrs. R. B. Lorraine ...	1	1	0
Dr. Cowan	0	10	6
Dr. Robson (supplementary)	0	9	9
Dr. W. Bramley Taylor	2	2	0
Brussels Medical Graduates' Assoc. (per Dr. Major Greenwood, Treas.) (eighth donation—total, £127 15s. 6d.)... ...	1	1	0
Greenwich and Deptford Division, B.M.A. (per Dr. C. G. Wallis, Hon. Sec.) (second donation—total, £45 8s. 6d.)—			
Dr. Allan Massey ...	0	10	0
Dr. A. Whitehead ...	0	5	0
Mr. F. A. Williamson (from weighing machine)	0	6	6
Mr. A. Peake	2	12	9
Mr. J. W. Reed (per British Drug Houses, Ltd.)	2	2	0
Mr. John Cooper ...	0	10	6
Northamptonshire Division, B.M.A. (per Dr. S. E. Baxter, Hon. Sec.)—			
Dr. A. W. Cooke ...	1	1	0
North of England branch of Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.) (thirteenth donation, total £709 15s. 6d.)—			
Dr. E. Gofton... ...	1	1	0
Dr. J. R. Mitchell ...	1	1	0
Dr. C. Franks... ...	1	1	0
Dr. W. Misselwhite ...	2	2	0
Dr. W. W. Stainthorpe	0	10	6
Dr. F. T. Hare ...	1	1	0
Dr. J. Danholm ...	1	1	0
Dr. J. Malcolm Shaw...	4	0	0
Dr. J. Johnstone Weir.	1	1	0
Dr. W. H. Bishop ...	2	2	0
Dr. W. J. Phillips ...	1	1	0
Dr. F. F. Foster ...	2	2	0
Dr. G. R. Fortune ...	1	1	0
Dr. Craigie Gray ...	1	1	0
Dr. A. Pain	1	1	0
Dr. G. H Harbottle ...	1	1	0
Dr. W. Horsfield ...	1	1	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments contributed by the following donors since the publication of the last list:

Mr. T. P. Beddoes, London.
Mrs. W. J. C. Johnstone, Weybridge.
Mr. F. W. Smallwood, Handsworth.
Mrs. E. G. Roberts, Uxbridge.

SOME OLD CALCUTTA SURGEONS.

IN an article entitled "British Medicine in India," which appeared in the JOURNAL of May 25th, 1907, some account was given of the doctors who played so considerable a part in laying the foundations of our Indian empire. Among them was Gabriel Boughton, who was surgeon at the Court of Shah Suja, Viceroy of Bengal, and son of the Great Mogul. In 1645 or thereabouts Boughton obtained for the East India Company a concession which gave it a secure footing in India. Then there was William Hamilton, who accompanied an embassy of which John Surman was chief to the Court of the Emperor Furrukh-Siyar at Delhi. In 1715 he cured the imperial patient of a "malignant distemper" with swelling in the groin; the gratitude of the Great Mogul for the skill of the surgeon prevented the mission ending in failure. John Zephaniah Holwell was Principal Surgeon to the Bengal Presidency about the middle of the eighteenth century and afterwards Mayor of Calcutta. When that city was sacked by the Nawab of Bengal in 1756, and the governor and chief military and civil officers fled from the doomed city, Holwell took command of the garrison, and was one of the prisoners confined in the Black Hole. When Clive came home in 1760 Holwell succeeded him as Governor of Bengal, but after a few months he resigned the appointment. Another surgeon who won the highest popularity in Calcutta is Michael Cheese, who is commemorated by a monument in St. John's Church, Calcutta. The epitaph is sufficiently remarkable to be quoted:

Sacred to the Memory of the late
RICHARD CHEESE, Esqre.
Surgeon to the Honble Bengal Company's Establishment
and Garrison Surgeon of Fort William
Dedicated by Public Contribution
In token of the high and well merited Esteem of the Community
For the Enlarged and Practical Philanthropy of that Gentleman's character.
Perhaps never had the remains of a Christian in India been followed to their tomb
With more heartfelt and Expressed Regret
Than were manifested by the Numerous Assemblage
Of all classes of the Society of the Place
Who attended the Funeral on the 15th Jan. 1816.
He had long exercised his Professional Talent
With an Ability which did Honour to Him as a Practitioner of Medicine,
And with a Munificence Worthy of the Religion he professed.
If a change of Air, or Expensive Nutriments were desirable
But could not be afforded from the Resources of the Patient—
Mr. Cheese supplied the Means.
And when all Human Endeavours proved Unavailing
His Purse was ever open to clothe and support the destitute Mourners.
In the Society of His Equals
Such was also the cheerful benignity of his Manners
That he was ever a Welcome Guest
Alike to the children and to the Heads of the Family.

Surely no man could have a nobler ambition than to deserve so fine an epitaph. It makes our regret all the keener that we are unable to give any particulars of the personal history or career of one whom his fellow citizens thus delighted to honour. Cheese has no place in the *Dictionary of National Biography;* stranger still his name is not mentioned in Brigade-Surgeon Henry Busteed's well-known *Echoes from Old Calcutta.* All we have been able to discover from a search in the records preserved in the India Office is that Cheese went out to India as assistant surgeon on September 21st, 1792; was appointed surgeon on November 8th, 1806; and died at Fort William on January 14th, 1816, aged 58.

WE are informed by the honorary secretary, Dr. A. G. C. Irvine, that the Birmingham Medical Assistance Committee, formed to protect the practices of medical men employed in military service and to look after the medical attendance or the necessitous dependants of men serving with the colours, has now been dissolved. The local War Service Committee of the British Medical Association has taken over its work, co-opting all its members not already on the War Service Committee. Drs. Ratcliffe and Irvine, members of both committees, will continue to represent the medical profession on the Citizens' Committee (Prince of Wales's Fund). All communications concerning the work of the Medical Assistance Committee should now be addressed to Dr. Bekenn, Monument Road, Birmingham.

British Medical Journal.

SATURDAY, JUNE 12TH, 1915.

THE WAR AND PARTNERSHIP DIFFICULTIES.

SOME medical men still continue to ask us whether the need of the military forces of the Crown, and especially of the army, for more whole-time medical officers is in truth as urgent as it has been represented to be. Judging from the communications received these doubts are usually founded either upon instances within the writer's observation in which the acceptance of an offer of whole-time service has not at once been followed by employment, or on cases in which a whole-time medical officer is attached to some unit which he finds does not give him very much to do.

With regard to the second class of cases, we believe that the answer is that the unit is in training and will presently be sent to take its place in the fighting forces which are defending this country either at home, for the possibility of invasion still exists, or abroad, by attacking the enemy where he holds his line in Flanders or the Dardanelles. It seems to us almost to stand to reason that each such unit must have a medical officer, and if he fully understands his duties he ought to be able to find plenty of work. If the medical officer has not fully appreciated all that it is incumbent upon him to do we would recommend him to read the reports of the lectures on military hygiene and the efficiency of the soldier given by Major Lelean, R.A.M.C., before the University of London, and published in our columns during the first quarter of this year; or better, study them in the excellent little handbook which that officer has recently published.[1] It has to be realized that for the new armies an entirely new army medical corps is required. The medical officer who gives a couple of hours a day to routine duties is lamentably lacking in understanding what he owes to his unit. The organization and supervision of sanitation, the inoculation of men against typhoid fever, the examination of the men's teeth, the inspection and treatment of their feet, including the organization of a chiropodist department, the giving of instruction in sanitation generally, and in the prevention of infestation by vermin, and the general superintendence of the physical training of the men by gymnastic exercises and otherwise should go far to keep him busy during the working hours of the day. The study of the problems of the disposal of refuse, the methods of obtaining pure water, the climates and geography of the countries to which he may be sent, and the general theory of the relation of the position of the medical service towards other departments of an army in the field, may well occupy any leisure hours that remain.

With regard to the other point, it is common knowledge that the enlistment and organization of the new armies are not yet complete. The War Office is quite right in looking to the future, and not calling away from civil employment medical men willing to give their whole time until the place which each is to fill has been prepared for him. At any rate, we know how the matter has been understood in Scotland and the steps which the Scottish Emergency Committee and the Divisions and Branches of the British Medical Association considered it imperative to take in that country. After an interview between the Scottish Committee of the British Medical Association and the Deputy Director of Medical Services for Scotland the Divisions and Branches were notified that, while it was not possible to give exact figures as to the total number of medical officers likely to be required, the Committee had come to the conclusion that Scotland should be asked to provide at the beginning of next month at least 400 whole-time officers for military service. Taking this estimate, England ought to provide about six times as many—say, 2,400—Wales about 120, and Ireland about 300. The Scottish Committee has set to work in a very systematic way, and the various Divisions have been notified how many whole-time medical officers should be provided by each. So far, in England, Wales, and Ireland, no such precision has been given to the demand, though the Special Committee of the Association holds a meeting to consider the point on June 11th, but the totals must be somewhere about those mentioned above. It is not for a moment suggested that the demand on the profession is not serious and embarrassing, or that it may not cause great inconvenience to individuals, but it is up to the profession to get over these difficulties, and, in the absence of compulsion, which, no doubt, would cut many Gordian knots, to succeed by its own initiative in meeting the demand, than which there is to-day none more imperative and urgent.

To one specific difficulty in the way of some medical men ready to volunteer we may take the opportunity of referring. From information which has reached us recently, we gather that the terms of partnership agreements are in some cases preventing medical men who are desirous of giving their whole-time services to the army, and are in age and in other respects eligible for temporary commissions, from coming forward. Partnership agreements, we believe, usually provide that the partnership shall not be dissolved, save by mutual consent, before the expiration of a certain number of years, and that a partner must not absent himself from the practice without the consent of the other partner or partners. This provision is usually guarded by heavy penalties, such as expulsion from partnership without compensation, which would involve forfeiture of the capital sum invested. Such provisions are no doubt quite proper in ordinary times. It is otherwise to-day. If one member of a partnership is willing and fit to go, it becomes a point of honour for the other or others to consider very seriously whether it is not a patriotic duty to make such sacrifices of convenience, leisure and holidays, and to undertake such additional work as his absence may entail. Provisions made in ordinary times to prevent the wanton or unscrupulous breaking up of a partnership ought to be waived, and not only so, but the other partner or partners should do all that is possible to minimize the pecuniary loss to the man who goes. To him it must in many ways be considerably greater than to those who remain, but any general diminution in the income of the partnership should be shared by all in proper proportions fixed by mutual agreement on equitable lines; his place should be kept open for the absent man until his return and everything done to make him feel that he is, as it were, the joint offering of the partnership to the service of the country.

The political events of the last few weeks, the disappearance of party government, and the formation

[1] *Sanitation in War.* By Major P. S. Lelean, F.R.C.S., D.P.H., R.A.M.C. With an introduction by Surgeon-General Sir A. Keogh, K.C.B., M.D., F.R.C.P. London: J. and A. Churchill. 1915. (Fcap. 8vo, pp. 277; 31 figures. 5s. net.)

of a Coalition Ministry must have gone far to convince everybody in the country of the greatness of the emergency; in sinking their differences and personal ambitions politicians have, for once at least, set an example to every profession. The members of the new Government have told the country in no uncertain terms that the needs of the nation now demand that every individual shall fill his or her proper place in the national service, working with a single purpose for the nation, and not for self. Members of the medical profession cannot live in a water-tight compartment, but, like every other section of the nation, must show their patriotism by subordinating personal and private interests to the national need. If watchmakers can be set to making fuses, civilian doctors must be set to do military work where and when they are needed, notwithstanding any inconvenience caused to individuals or partners or employers. The employer or partner who stands in the way shows himself selfish and unpatriotic. Partners in medical practice, we feel certain, now that the matter is brought home to them, will see their duty, and the central Government departments will, we trust, vigorously enjoin all local authorities to show greater readiness to liberate whole-time officers. The Insurance Commissioners in England may, we hope, presently see their way to suspend regulations which impose on medical men working under the Insurance Act time-consuming technicalities which, though they may have a certain theoretical, academic, or statistical value, are not essential to the efficient and adequate treatment of sickness among insured persons.

A PLACE IN THE SUN.

FROM the earliest times to the present a place in the sun has been associated in the human mind with physical comfort and well-being. The Roman emperors built their gigantic baths and luxuriated in the sun's rays as a part of their hydropathic curriculum. With the advent of Christianity the promiscuous association of the sexes in these establishments was held by ecclesiastical authority to savour more of immorality than of hygiene and the sun-bath gradually fell into disuse. Nor was it brought up again for many centuries. It was, indeed, not until the nineteenth that the sun's rays were again applied to the human body as a means of scientific treatment. In the last decade the employment of light and heat by direct exposure has been widely studied and practised with marked success. An excellent account of the rise and progress of heliotherapy has lately been put forward by Dr. Jaubert,[1] of Hyères, who is able to quote personal experience of 400 cases in which partial or complete exposure has been used for the treatment of a variety of cases, but chiefly of non-pulmonary tuberculous lesions. Without entering upon the theoretical aspect of heliotherapy, he indicates with sufficient precision the limits within which it should be employed and the class of case most likely to benefit from it, the best means of applying it, and the precautions that have to be observed. The latter are numerous. Common experience tells of the danger of sudden or prolonged exposure of any part usually covered to the unclouded sun's rays. To expose the whole body to the influence of unmitigated sunshine, without preliminary acclimatization, would inevitably lead to disaster. Even where graduated exposure has been practised the physiological disturbance has sometimes been very marked. Embarrassed action of the heart, nausea, vertigo, and vomiting have all been found to occur in intolerant subjects. The common result of insolation is the appearance of erythematous redness in the exposed part, but this can be kept within limits by appropriate treatment if the greatest care is taken to graduate the daily sun-bath. In children this graduation can proceed rapidly and toleration is soon established, so that the whole body may be exposed, back and front, for several hours daily without evil consequences.

The effects of such treatment upon chronic tuberculous lesions of the skin, joints, or bones are remarkable. Not only is a distinct improvement observed in the general health, but the cessation of discharge and the rapid healing of sores that have been uninfluenced by other forms of treatment appears to have been very striking.

Sun baths, however, are available for practical use only in places where continued sunshine can be relied upon; hence they are of limited application in those countries where the sun's rays are powerful only for a few weeks in every year. The shores of the Mediterranean and the southern slopes of the Alps offer the greatest opportunities, and the sun's rays are being freely utilized at Hyères and at Leysin. In addition to the remarkable effects produced in cases of the types formerly described as strumous, it has been found that arthritis, anaemia, and certain other blood diseases have derived considerable benefit. The range of sun temperature is fixed between the limits of 84° and 104°, as a general rule for guidance, but higher and lower ranges may be well borne, when toleration has been established. Every case, therefore, must be dealt with in accordance with the experience gained in the course of slow acclimatization. Local disease may be treated by limited exposure, but in all cases it is essential that the head should be well protected by a hat of straw or white linen. Morbid conditions in other organs, and especially of the heart, may contra-indicate the use of the sun-bath. Where evidence of previous pericarditis or myocarditis is present it should not be advised.

The remarkable effects of insolation upon surface ulceration would seem to point to bactericidal action, but no positive statements can be made as to the action of the direct sun rays upon the whole organism. The scientific explanation has yet to be discovered, but the practical application has already established itself as an effective remedy for a class of case that has hitherto proved slow and refractory in responding to local treatment.

[1] *La pratique héliothérapique.* Par le Dr. Jaubert (d'Hyères). Les Actualités Médicales. Paris: J. B. Baillière et Fils. 1915. (Cr. 8vo, pp. 96; 21 figures. Fr.1.50.)

DIET OF PRISONERS IN GERMANY.

THE note on prisoners' camps from the neutral correspondent in the *Times*, published on June 5th, states that the prisoners in the Prussian camps receive a diet containing 2,700 calories a day on the average. The menu for one day was bread 10 oz., potatoes 1 lb. 4 oz., pork 3¼ oz., dry vegetables 1¼ oz., margarine 1.8 oz., preserved vegetables 3¾ oz. This makes, according to the German calculation, 2,899 calories at a cost of 7d. "Bread is the only food given in solid form; everything else is boiled into a thick soup, which is served at all meals." The correspondent explains that this is done because the prisoners are only allowed a spoon and a metal plate. Another reason, and one which no doubt appeals far more to the German hygienists who control the action of the authorities, is that by giving the food as soup there is no waste. Everything can be stewed down so that it gives its nutritive value—sinew, outer leaves of vegetables, potatoes of doubtful appearance, and so on—food-

stuffs which are wasted wholesale in this country, but can support life equally with that which is most expensive and pleases the fastidious eye. What the nutritive value of the war bread is we do not know. We have seen a sample of German war meal. It contains 10 per cent. of ash and practically no starch, and would appear to be ground up straw used as a diluent. Added to the bread it may help to keep the bowels open, but can contribute nothing to the nutritive value of the bread. According to the *Times* correspondent complaints are many—chiefly by the British—concerning the food. The black bread and monotonous soup disgusted them. The punishment is bound to fall heaviest on our men, who have been used to a higher standard of living, and have had ample food of excellent quality supplied to them in the army. The Russian or French peasant will take the bread and soup with little complaint, inured as they are to this frugal diet. If our men really get 2,700 calories a day they receive a diet the energy value of which is equal to that ordinarily taken by professors of physiology doing laboratory work—that is, nothing strenuous in a physical sense. The prisoners are allowed to amplify the diet by purchase at a canteen, but of course their monetary power to do so varies, and is probably *nil* in many unfortunate cases. The best off are those who work in the fields, and thus escape the monotonous and depressing inactivity of the camps. Those who work earn a trifle and receive somewhat better fare. Even though they help to keep up the enemies' supplies, we hope our prisoners will willingly undertake agricultural labour, for nothing will help more to return them to us healthy and unbroken in spirit. The most desirable foodstuffs to send to the prisoners are meat extracts (to flavour their soup and stimulate appetite), sugar, and biscuits. White bread is most desired by them, but it must be very well baked to keep in transit, as a package dispatched from this country by post, the best way to send, usually takes from ten days to three weeks to reach a prison camp.

GERMAN WAR BREAD.

THE anxiety in Germany about her food supply has found expression in almost countless articles in the lay and medical press, dealing with the most ingenious plans for economizing the available supplies. It would appear that some of these economical devices have not pleased the Teuton stomach, which has rebelled against the frugal fare prescribed by the authorities. This is particularly the case with the "Kriegsbrot," which contains rye flour and a large proportion of potatoes. In the *Berliner klinische Wochenschrift* for April 5th no less an authority on diseases of metabolism than Professor Carl von Noorden has discussed the dyspeptic sequels to the national use of this bread. The symptoms most commonly complained of were diarrhoea, hyperacidity, flatulence, and constipation. In some cases this unpalatable diet was an excuse for, rather than the true cause of, symptoms complained of by the subjects of neurasthenia; but the number of these cases was negligible compared with those in which the war bread was undoubtedly to blame. The diarrhoea was most troublesome among patients who had eaten large quantities of the bread (400 to 500 grams a day) and who had gulped it down after imperfect mastication. When the daily consumption of the bread was reduced to about 225 grams, and the patients learnt to masticate it slowly, the diarrhoea ceased. It would therefore seem as if the compulsory reduction of the Germans' daily bread benefited the individual as well as the nation. The complaints of hyperacidity were most persistent, but in Professor von Noorden's opinion it was only in a few cases due to the war bread, and in these small doses of sodium bicarbonate gave quick relief. The complaints of flatulence were the most common, and in some instances this symptom assumed positively epidemic proportions. Suggestion probably played an important part, but much of the flatulence was certainly due to the war bread, which, particularly when new, was difficult to masticate adequately. Consequently large and tough lumps of bread reached the intestine in an unsuitable condition for pancreatic digestion. Having evaded the pancreatic juices, the war bread in its further passage through the intestine formed a good medium for the growth of the intestinal flora, the particles of starch and cellulose constituting a suitable nidus for gas-producing organisms. In some cases the body adapted itself to the new diet, and the flatulence became less embarrassing. This improvement was probably due to a readjustment of the intestinal flora, for, as Klotz and others have shown, the intestinal organisms are capable of considerable modification to meet altered circumstances. But in many cases the flatulence persisted. The best treatment was found to be the prescription of animal charcoal, in the form of Merck's carbo sanguinis. At first 10 to 20 grams were given daily. Later, only 2 to 4 grams a day were found just as effective, and cured the flatulence in two to three weeks. Constipation was relatively rare, and was probably due rather to the want of fat in the food than to the war bread itself.

A MILITARY OPEN-AIR HOSPITAL.

WITH the title *The Open-air Treatment of the Wounded*, *Country Life* has published as a pamphlet (price 1s.) the description, with some additions, which the Master of Christ's College, Cambridge, wrote some time ago of the 1st Eastern General Hospital, Cambridge. It is illustrated by photographs giving a bird's-eye view of the wards, the open south front of a ward, and the interior of a ward, and a general block plan. To this is added in the pamphlet a note by Professor W. J. R. Simpson, C.M.G., Professor of Hygiene, King's College, London, on the general subject of the advantages of open-air in the treatment of wounds and infectious diseases. The scheme for the hospital was thought out some years ago by Dr. Joseph Griffiths, who is now its colonel-commandant. Its general arrangement has already been described in the JOURNAL, but the special feature is that while the east, west, and north of each ward is closed, with the exception of "louvres" in the roof on the north side, they are entirely open on the south side to sun and air, except for a low open railing at the floor level and ordinary sun blinds, such as are used over shop-fronts. Each ward contains two parallel rows of thirty beds. The hospital originally had 520 beds; it now has 1,240. The total cost of the operating theatre, designed originally to serve 500, was, for its erection, including heating and electric light, about £550; the cost of *x*-ray apparatus, instruments, operating tables, sterilizers, and other appliances was about £960. The theatre has since been enlarged. The hospital has a general pathological laboratory, and, in addition, a special research laboratory for the investigation of rare and interesting cases, the expense of which is met in part by the Medical Research Committee established under the Insurance Act. There is a room for massage and electric massage, where six nurses are employed, a receiving-room, electrical room, storerooms, an officers' mess-room, and rooms for the Cambridge University Officers' Training Corps. There is a special block where kit is disinfected and stored, and a recreation-room containing a small theatre. Quarters for orderlies are also provided. Dr. Shipley tells us that there are sentimental ladies in Cambridge who think that the patients suffer greatly from the cold, and we have heard of a man—an inmate of the hospital last winter—who, when asked what was the matter, replied doubtfully: "I *was* told I was suffering from exposure." But according to Dr. Shipley the only people who have felt the cold are the nurses, the patients having comfortable beds, with plenty of blankets and hot water bottles; Professor Simpson states that though the day on

which he visited the hospital last January was very wet and windy, he came away after a very careful investigation convinced that the treatment of sick and wounded soldiers in an open-air hospital, even in the very varying British climate, was a great success.

POISONOUS GASES.

IN the JOURNAL of May 29th, in response to inquiries we had received, it was stated that from theoretical considerations it appeared that the proper proportion of sodium bicarbonate and hyposulphite for use in respirators designed to neutralize chlorine and similar poisonous gases would be about 3 parts of the former to 1 of the latter. Several formulae containing a comparatively small proportion of alkali have been recommended elsewhere. They, however, differ very considerably among themselves. A formula was given in the *Chemist and Druggist* on May 29th, in which the proportion suggested was sodium hyposulphite 16 oz., sodium carbonate 1 oz.; a week later, however, the same journal gave another formula, in which the proportion was sodium hyposulphite 15 oz., sodium carbonate 5 oz. The context rather seems to suggest that the latter formula is approved by the War Office. It is noticeable that both the above formulae give carbonate and not bicarbonate as the alkali; the former has the advantage of much greater solubility, but the latter would be more efficient, the only objection to it being that a strong solution is decidely irritating to the skin. According to a Reuter's telegram the Academy of Medicine in Paris has recommended a solution containing glycerine. The proportions stated are sodium hyposulphite 1,000 grams, sodium carbonate 200, glycerine 150, water 800. We have not been able to verify this formula as the *Bulletin* of the Academy is not yet available, but the suggestion of glycerine is probably of value, since it would tend to prevent the respirators from becoming dry during use. With regard to the discrepancy between the proportions of hyposulphite and bicarbonate (or carbonate) recommended elsewhere and the proportions given in the JOURNAL on May 29th there is no room for doubt that the proportions of alkali elsewhere recommended are much too small to neutralize the acid which would be formed, if anything approaching the whole of the hyposulphite in the respirator were used up. It is, however, possible that it is not necessary to provide sufficient alkali to neutralize the whole of the acid formed, owing to the water present being able to stop a certain proportion of it, or that it is desirable to have a rather large excess of hyposulphite present in order to render the absorption of the chlorine more rapid and complete; in this case, however, the respirator would become less effective as soon as the alkali present was wholly neutralized, and long before the whole of the hyposulphite had been used up. We learn that the proportions of the salts in the respirator designed by Dr. James Cantlie, and made by Messrs. Allen and Hanburys, are 2 of sodium hyposulphite to 3 of sodium bicarbonate. The whole material of the mask is dipped into this solution and dried, but the salts are also put into the pad. With any form of respirator it would be necessary to wash and recharge the fabric after use on more than one or two occasions. In another column is published a letter from Professor Rushton Parker of Liverpool, embodying a note by Mr. Henry Brunner, a director of the firm of Brunner, Mond, and Co., suggesting that the inhalation of alcohol would be valuable in the treatment of men recently "gassed." From theoretical considerations it appears quite possible that it might be of some use, since, as stated by Mr. Brunner, alcohol absorbs chlorine with avidity. It should be pointed out, however, that hydrochloric acid is one of the products of the interaction, and therefore it would be desirable either to use alcohol containing a little ammonia, or to take alternately inhalations of alcohol and ammonia. Ammonium carbonate has already been recommended, and it would be quite worth while to try alcohol in conjunction with this on men who have been "gassed" fairly recently. As Mr. Brunner says, alcohol is hardly likely to be of much use for men suffering from after-effects. It has been suggested that ammonium carbonate allowed to diffuse in a room would neutralize chlorine or bromine, or any other gas of an acid nature, and it is true that ammonia has been found useful in laboratories as an antidote to an involuntary dose of chlorine or bromine; the suggestion therefore seems worthy of note, but the use of ammonium carbonate in respirators is another matter. It would be difficult to avoid the wearers getting rather more ammonia vapour than would be desirable, and it seems to have no obvious advantage over sodium hyposulphite.

INOCULATION STATISTICS.

AT the meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on June 4th, Messrs. Major Greenwood, jun., and G. Udney Yule read an important paper on the interpretation of statistics relating to inoculation, with special reference to the cases of typhoid and cholera. In their first section the authors formulated the material conditions necessary to be fulfilled in order to allow of valid conclusions being drawn, calling attention to the impropriety of combining records of inoculated persons for one year with similar data respecting uninoculated cases derived from another year; they also described the statistical methods by means of which it was possible to measure the probability that any given arrangement of data has arisen through the operation of chance. In the second section they applied the principles defined in the first section to the cases of typhoid and cholera. They analysed the data of the Antityphoid Committee and the cholera statistics of Haffkine, Powell, Murata, Nijland, and Savas, and concluded that in certain cases the differences between the incidence rates for inoculated and uninoculated persons were too large to be dismissed as consequences of random sampling. They illustrated also the serious fallacy involved in drawing conclusions from the results of inoculations performed during an epidemic, a matter to which we alluded in a recent article. The third section of the paper was devoted to the elaboration of a hypothesis enunciated by Mr. G. D. Maynard, of Pretoria, in his recent monograph upon pneumonia in South African natives, in accordance with which inoculated and uninoculated persons should not be deemed to form part of a single frequency distribution, but should rather be regarded as constituting separate distributions homologous one with another, but having different mean resistivities. Messrs. Greenwood and Yule point out that, if this hypothesis were accepted, Professor Karl Pearson's coefficient of correlation derived from a four-fold table was inadmissible in the case of inoculation statistics. The concluding section of the paper dealt with the question of comparing the statistical results of various immunizing processes. The authors insisted that a distinction must be drawn between the advantage of a method of immunizing, in the sense of its value as a practical measure, and its efficiency in the sense of the actual decrease of mortality or morbidity it produced, as compared with the possible success it might have achieved. Thus a process which reduced the fatality of one disease from 50 to 30 per cent. might in a sense be more advantageous than one which reduced the normal fatality of some other disease from 10 per cent. to zero, although the efficiency of the second process would be complete in that the fatality had been reduced to a vanishing point. The authors maintained that no inferences could be drawn with respect to these matters when only a single set of data was available in the case of each of two diseases, and they concluded that none of the customary coefficients of correlation or association could be employed. The paper was naturally of a technical and, in parts, controversial character, since the authors traversed various conclusions reached by Professor Karl Pearson and his associates. Its perusal would, however, be of advantage to the large number of medical men who have occasion

to deal with the statistical arguments founded upon data of inoculations, the various theoretical deductions being fully illustrated by arithmetical examples and diagrams. The paper has value also in another way, since it brings together the results of observers published in different journals.

RACIAL ADMIXTURE IN EGYPT.

THE history of mankind, at least during the last sixty centuries, has been one of racial admixture and the development of culture by the contact of peoples from different regions. This principle was placed at the forefront of the address on the races of Egypt which Professor Elliot Smith, F.R.S., delivered before the Eugenics Education Society on June 4th. He pointed out that the valley of the Nile afforded a rare opportunity of studying this principle of anthropology, not merely because the evidence had been so well preserved, but also because Egypt in past millenniums had been the home of three distinct racial types which met and intermingled at a time when each of them was in a state of comparative purity. The land of Egypt resembled a tube, open at one end to the Mediterranean, at the other to negro (Soudanese) Africa, and insulated at the sides by the Libyan and Arabian deserts. The first of the three races was the proto-Egyptian, whose skulls were characterized by a certain amount of bulging at the back, a low-bridged nose, and a feeble jaw. Then, reaching the Nile valley by way of the north about 3,400 B.C., came broad-headed and assertive-jawed alien elements from western Asia; and, finally, a negro element came filtering up from the south. The ascendancy of one or other of these factors determined the physical and cultural history of Egypt. The Egyptian head of the pyramid-building epoch was of a much more pronounced character than that of the Egyptian aboriginal, and, as the lecturer showed by exhibiting casts of the interior of skulls, the brain of the Egyptian at this period was not dissimilar in mass and contour from that of such a modern as Dean Swift. His conclusion was that the Asiatic people who came into Egypt from the north, while possibly they introduced no specific element into Egyptian culture, and contributed no particular art or craft, were yet so vigorous and large of brain as to stimulate the striking development of civilization which coincided with their entrance upon the scene. In his prominent nose and obtrusive characteristics the ruler who was supposed to be the Pharaoh of the Exodus bore a striking facial resemblance to the race which had infiltrated Egypt from Syria and western Asia, whereas his feeble successors tended to conform to the purely Egyptian features. From 600 B.C. to the present time Egyptian skulls resembled those of the proto-Egyptians more than anything else. It was not so much a case of reversion to type as of the disappearance or subordination of many of the alien elements which had disguised the type. The truth seemed to be that when the power of the stimulating northern race began to wane in Egypt, the influence of the negro from the south became more and more manifest; originality was numbed, earlier traits reappeared, and now the modern Egyptian, with his effeminate features, was probably even less distinguished for initiative than was the aboriginal of Egypt before the first alien immigration began. In the course of the subsequent discussion an evolutionist complained of having been cut off from his bearings; but Major Leonard Darwin, who presided, agreed that in all eugenic studies the idea of the mixing of races must be kept prominent; indeed, the science of eugenics was largely concerned with the sifting out of good strains from bad.

THE INDEX CATALOGUE.

THÉOPHILE GAUTIER, it is said, read dictionaries for pleasure, but the most ardent student of medical literature could hardly read the *Index Catalogue* of the Surgeon General's Library at Washington without, in the words of Touchstone, staggering in the attempt. Invaluable as a work of reference, it can only be consulted, as indeed it is intended to be, for business purposes. Still it is worth the while of anyone who has the opportunity of doing so to glance through its successive volumes as they drag their slow length along. The contents serve, by the space occupied by particular subjects, to give an idea of the place such of these as come within the range of a given volume have held in medical thought during the period which it covers. The nineteenth volume of the second series of the Catalogue published in 1914[1] includes 3,046 author titles, representing 1,353 volumes and 2,744 pamphlets, and contains 3,736 subject titles of separate books and pamphlets besides 32,739 titles of articles in periodicals. It is devoted entirely to the letter U (U to Uzielli). Of its 674 double-columned pages, no fewer than 291 are occupied by Uterus, a fact which shows the far-reaching importance of that organ in female physiology and pathology. In ancient times and all through the middle ages the womb was believed to have an independent life of its own. Not only was it held that the psychology of woman lay hidden in it, a belief embodied in the formula *propter uterum mulier est id quod est*, but it was generally taught that it could move about the body and by its action in different parts cause the infinite variety of the manifestations of hysteria (*ὑστέρα*, the womb). For instance, it was supposed to rise up into the throat and by pressure on the trachea cause the feeling of suffocation expressed by the term *globus hystericus*. Rabelais caricatures, but scarcely exaggerates, the doctrine when he describes the womb as an animal: "For nature hath posited in a privy, secret, and intestine place of their bodies, a sort of member, by some not impertinently termed an animal, which is not to be found in men. . . . Let it not here be thought strange that I should call it an animal, seeing therein I do no otherwise than follow and adhere to the doctrine of the academic and peripatetic philosophers. For if a proper motion be a certain mark and infallible token of the life and animation of the mover, as Aristotle writeth, and that any such thing as moveth of itself ought to be held animated, and of a living nature, then assuredly Plato with very good reason did give it the denomination of an animal, for that he perceived and observed in it the proper and self-stirring motions of suffocation, precipitation, corrugation, and of indignation, so extremely violent, that oftentimes by them is taken and removed from the woman all other sense and moving whatsoever, as if she were in a swounding lipothymy, benumbing syncope, epileptic, apoplectic palsy, and true resemblance of a pale-faced death." "Urine" takes up eighty-three pages, not an excessive number when one recalls the saying of a famous physician that the translation of the old philosopher's maxim "know thyself" into medical terms was that a man should know the state of his renal excretion. Among the other headings the principal of purely medical interest are "uric acid," "urethra," and "ureter." "University" extends over thirty-three pages; the various universities of the world are conveniently arranged according to locality. The name of Louvain causes a feeling of sadness not unmingled with hope that the ruined seat of learning may rise from its ashes and have a future before it worthy of its glorious past. The Library of the Surgeon-General's Office, United States Army, to give it its full style and title, now contains 189,171 bound volumes and 325,639 pamphlets.

"BRAXY" IN SHEEP.

IN the *Transactions* of the Highland and Agricultural Society for 1915, Dr. J. P. McGowan, Assistant Superintendent of the Laboratory of the Royal College of

[1] *Index Catalogue of the Library of the Surgeon General's Office, United States Army. Authors and Subjects.* Second Series. Vol. xix, U to Uzielli. Washington: Government Printing Office. 1914. (Imp. 8vo, pp. 680. 2.00 dols.)

Physicians of Edinburgh, gives an interesting account of his investigations into the curious and enigmatical disease of sheep known as *braxy*. Even the derivation and definition of the word are surrounded with mystery, and its very form is uncertain. In addition to braxy there are the forms *braik* (singular), *bracks* (plural), *braxes* (plural), and *braxit*. Sir James Murray in the *New English Dictionary* states the opinion that *braxy* is either originally an adjective *brax-y*, formed from a collective plural *bracks*, *brax*, or an erroneous singular deduced from *braxes*, as if this were *braxie-s*. He thinks that "the bracks" is the original, being a special use of the plural of *brack*, in some sense derived from *break;* and he draws attention to the O.E. *braec*, rheum or catarrh, and *braec-seocnes*, falling sickness, and *braec-seoc*, ill with falling sickness. He points out also that there has been an analogous dealing with the term *jaundice*, which has appeared as a plural *jaundys*. Braxy is defined in the *Dictionary* as the popular name in Scotland of splenic apoplexy in sheep; used as an adjective it means either, absolutely, the flesh of a braxy sheep, or, generally, of one that has died by disease or accident. Dr. McGowan, however, deals not with etymology but with pathology. He criticizes the Braxy Committee's Report, with which the late Professor Hamilton of Aberdeen had to do, published in 1906, and in particular he thinks the committee made a mistake when it accepted the work of Nielsen and Jensen and the conclusion that the "braxy bacillus" was the cause of the disease. Dr. McGowan holds that this bacillus is simply one of a group of putrefactive organisms and not the causal microbe. He looks upon the haemorrhages which are to be found throughout the body, and especially on the surface of the heart and in the fourth stomach, as the most important of the pathological appearances. The primary cause is the *Bacillus bipolaris septicus ovium*, for the injection of a pure culture of it into rabbits reproduces the conditions found in the sheep. This bacillus was not found by Nielsen and Jensen, for they worked with dried or preserved pieces of kidney, muscle, or stomach, and in tissues thus treated the microbe could not live. Dr. McGowan is also of opinion that two other diseases—"grass-sickness" in lambs and "head-grit" in sheep—may possibly be due to the same bacillus. The secondary cause is to be found in the eating, especially in large amount, of frosted food; for the disease is found particularly in hilly districts of the country facing the rain-bearing winds—that is to say, in circumstances when and where hoar frost tends to form. The fact that the most thriving sheep in the flock are usually the sufferers is to be explained by their more vigorous appetite, which enables them to eat more of the frosted food. The bacilli are normally present in the mouth and nose of healthy sheep, but they only become pathogenic when the animal's vitally is lowered, as by chilling. Dr. McGowan's conclusion, therefore, is that whilst the *B. bipolaris septicus ovium* is the primary cause, the main secondary cause is the gorging of itself by the animal with rank, succulent, easily eaten food covered with hoar frost, which reduces its vitality by producing a severe internal chill at the same time that the external atmosphere remains cold. For treatment, recourse might be had to a vaccine prepared from the causal bacillus; but it is thought that more beneficial results will result from careful herding, which shall have as its object the prevention of the eating of such frosted food by the sheep.

GERMAN EXPERIENCES OF GAS GANGRENE.

JUDGING by the reports in the German and Austrian medical press, the bacteriology of gas gangrene is still regarded as obscure, and there seems to be a difference of opinion as to the relation of gas phlegmon to gas gangrene. Some writers regarded one as an early stage of the other, while others assumed that different organisms were responsible for the two conditions. Again, widely different opinions were held as to the virulence of the disease, and while some considered gas gangrene an almost inevitably fatal complication, others, with considerable experience, had scarcely seen one fatal case. Schloessmann recognizes two forms of gaseous infection of a wound. The first, gas phlegmon, was probably due to a mixed infection of anaërobic and pus-forming organisms; the second, gas gangrene, was due to the *Bacillus aërogenes capsulatus*. Gas phlegmon he considers[1] a benign disease, successfully treated by incisions, and characterized by slowly progressive inflammatory phlegmonous changes of the skin, by subcutaneous crepitation, and frequently by purulent necrosis, and gaseous offensive abscesses. Gas gangrene destroyed every structure involved, and caused severe general disturbances. Owing to the haemolysis induced, the skin acquired a yellow or coppery tinge. The muscles involved formed dirty yellow masses, and a cloudy, brown, gas-containing fluid oozed out of the wound. Of the two, gas gangrene was the more common; its prognosis was very serious. Treatment consisted of large incisions freely opening the diseased area, or amputation of the limb through healthy tissues. According to Bingold,[2] infection of a wound with Fraenkel's *Bacillus phlegmones emphysematosae* caused two different conditions—the first, a local infection, giving rise to the so-called gas phlegmon; the second, a general infection characterized by quite definite features. When the infection was localized, the destruction of the organisms *in situ* was instantly followed by the disappearance of all the symptoms. This result was often effected by free incision of the phlegmon, and energetic irrigation with hydrogen peroxide, which was also applied on tampons. In severe cases amputation was necessary to save the patient's life, but when the infection became generalized by the spread of the organisms through the lymphatic channels, a condition arose which produced death very rapidly. G. Seefisch[3] seems to assume that gas phlegmon is an early stage of gas gangrene. His experience of this disease in Belgium and in France, after the battle of the Aisne, convinced him that wounds inflicted by shells and shrapnel were more liable to this complication than simple wounds caused by rifle fire. The three conditions favouring this disease were: (1) Severe laceration and loss of vitality of the tissues; (2) contamination of the wound with earth, straw, and dung; (3) exposure of the wound in the open to sunlight, cold, and moisture. Early diagnosis might be difficult, but was an essential to successful treatment. When a first dressing was taken off, a watery, dirty yellow, frothy discharge was sometimes found escaping from the wound, particularly when pressure was applied to the surrounding structures. This condition was suspicious, but in most cases it represented no more than a process of local, harmless decomposition, and it was usually sufficient to open the wound freely and provide for the free discharge of fluid. If crepitation could be detected under the skin in the neighbourhood of the wound, or if a boxy note could be elicited, incisions should be carried into healthy tissues and the wound irrigated with hydrogen peroxide. If amputation had to be done, he had not found it necessary to sacrifice much healthy tissue for fear of operating too near the gangrenous area. Indeed, the limb might be severed at a level where the tissues had already become oedematous. In his experience of 12 severe cases, Dr. Seefisch did not lose a single case, thanks to early operation. He added that treatment of the wound with oxygen was seldom feasible in a field hospital, and irrigation with hydrogen peroxide might be superfluous when free incisions were made and gangrene was combated by amputation.

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[1] *Wien. med. Woch.*, January 2nd, 1915.
[2] *Deut. med. Woch.*, February 11th, 1915.
[3] *Deut. med. Woch.*, February 25th.

AUSTRALIAN INSTITUTE OF TROPICAL MEDICINE.

THE opening of this institute at Townsville, Queensland, by the Governor, Sir William MacGregor, on June 28th, 1913, was duly announced in the JOURNAL, and we added an illustration of the premises in our issue of August 30th, 1913, with a leading article on the aims of the institution. We have just received the half-yearly report, from January 1st to June 30th, 1914. Much work has been undertaken in investigations as to the health and general condition of school children in Townsville. The question of changes of the blood in children born, as well as bred, there involved deep and long-continued research. Altogether 580 complete blood counts and haemoglobin estimations on boys and girls between the ages of 7 and 15 were performed. The average number of red corpuscles and their haemoglobin content corresponded to figures considered normal for Europeans living in a temperate climate. Previous investigations known to the profession had been made solely on persons not born nor long resident in the tropics, or on picked subjects such as United States soldiers in the Philippines. Full details will shortly be published in the *Annals of Tropical Medicine*. The Director, Dr. Breinl, returning from New Guinea, claims to have discovered a cryptococcus which is the cause of "gangosa" or rhinopharyngitis mutilans, a phagedaenic sore which disfigures the face. Researches as to the nature of other sores in the same country were undertaken, cases of sprue investigated, and experiments made on the effect of table salt and other substances in arresting and preventing the development of the human hook-worm. The eggs of the *Ankylostoma* in any infective material resist, for at least a week, a strong solution of salt. Experiments were also made to throw light on the bacteriology of potable waters in the tropics. Much entomological work has been carried on. Mosquitos have, naturally, received great attention. The Northern Territory shows wide distribution of *Nyssorhynchus annulipes*, a probable transmitter of malaria; *Stegomyia fasciata* (an important fact, as it is associated elsewhere with yellow fever), and *Culex fatigans*, the filaria and dengue fever mosquito. Mr. Hill, the collector of these insects, has also discovered *Stegomyia scutellaris* in Port Darwin, the first record of this species in the mainland of Australia.

Medical Notes in Parliament.

Territorial Force Medical Officers.—Colonel Greig asked the Under Secretary of State for War, on June 7th, whether any steps were being taken to remedy the hardships of medical officers of the Territorial Force who had been mobilized with regard to promotion and the question of a gratuity. Mr. Forster said that he hoped to be in a position to make a statement on this question before long.

Incapacitated Medical Officers.—Mr. Newdegate asked the Under Secretary of State for War, on June 3rd, whether he would arrange that medical practitioners who had undertaken to look after the health of troops during the war would be allowed pay while incapacitated through temporary illness contracted in the performance of such duties; and whether, if these medical officers became totally incapacitated through illness contracted while performing these military duties, he would arrange that they received compensation for loss of health and practice. Mr. Harold Baker, in a written reply, stated, that he understood the question to refer to civilian medical practitioners who had not received a commission. Proposals to meet such cases were under consideration.

Visits to Wounded.—In reply to Mr. Hugh Law, who on June 8th asked what were the most recent requirements as to passports, visa, and other permits or papers required to be produced by relatives of wounded officers desirous of visiting them at the base hospitals in France, Lord Robert Cecil said that British subjects wishing to travel to France must first obtain passports from the Passport Office, for which application should be made in the proper form, which could be obtained either from the Passport Office or from any of the banks, shipping offices, or other agencies. Duplicate photographs of the applicant were required. The passport must then be presented in person at the French Bureau des Passeports, 18, Bedford Square, for the necessary visa, which must be obtained not more than three days from the date of departure. If the hospital to be visited was situated within the "zone of the armies," a permit must be obtained from the Permit Office before the passport is taken to the French Bureau for the visa. The permit would be granted on production of a telegram signed by the commanding officer of the hospital in which the wounded man was. It was necessary to have a passport, the permission, and the visa in every case.

Sick Soldiers on Furlough.—Sir J. D. Rees asked the Under Secretary of State for War, on June 8th, whether commanding officers had been instructed to accept certificates given by duly qualified medical men to sick soldiers on furlough residing at a distance of over two miles from military hospitals; if so, whether any such certificates had been ignored and the sick soldiers who obtained them punished; and, if so, whether such action was approved by the superior military authorities. Mr. Tennant said that the rule in force was that, when a man forwarded a civil medical practitioner's certificate recommending an extension of furlough, arrangements were made for his readmission to the nearest military hospital, where he would remain under treatment until he was fit to rejoin his unit or dépôt. He was informed that no cases had come to notice, prior to the issue of the instructions mentioned, of civilian medical practitioners' certificates being ignored either with or without the approval of the superior military authorities, once it had been ascertained beyond doubt that the certificates were genuine. In reply to a further question by Sir J. D. Rees, Mr. Tennant intimated that he would be glad to hear of cases.

Defective Eyesight of Recruits.—General Sir Ivor Herbert asked the Under Secretary for War, on June 8th, whether any arrangements had been made for the special treatment of recruits found to be suffering from defective eyesight caused by the conditions under which they had been industrially employed before enlistment which rendered them temporarily unfit for military service. Mr. Tennant said that men suffering from the severer forms of defective eyesight should not, of course, be enlisted, and if by any chance they had got into the army they should be discharged. Men suffering from the milder forms would receive the same treatment that they would have in civil life—that is, correction of any error of refraction, tonic drugs, rest or modified exercises, and local treatment to the eye. Sir Ivor Herbert asked whether a very large number of men had not been discharged for temporary defects, especially men who had been working underground and who had not received treatment. Mr. Tennant replied that he would inquire into specific cases brought to his notice.

Leave after Inoculation.—Sir Clifford Cory asked, on June 8th, whether it was in order for the officer commanding the Devon and Cornwall provisional battalion, stationed at Tavistock, to refuse leave to all men not inoculated, whilst granting men who had been inoculated a week-end pass each week. Mr. Tennant said that he was informed that it was not the case that all men who had been inoculated were granted a week-end pass each week in the battalion in question. As he had already explained to the House on previous occasions, men who had not been inoculated were only granted leave in special circumstances.

Erection of Sanatoriums.—In reply to Mr. Nield, who on June 7th asked a question with regard to the sanatorium which the Middlesex County Council had proposed to erect, the President of the Local Government Board (Mr. Walter Long) made the general statement that, in his judgement, undertakings of the kind should be postponed in the present circumstances.

THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

ROUEN AS A MILITARY MEDICAL SCHOOL.

AT a very early stage in the war Rouen became a town of medical interest, and with the lapse of time the extent of this interest by no means diminishes. Indeed, as a school for the study of many of the more important principles of military medical science Rouen would be hard to beat. It lies at a spot where two of the three zones into which the medical organization of a British army in the field is theoretically divided overlap, and thus it comes about that there is only one function of the Royal Army Medical Corps that is not to be seen there more or less fully in operation.

With the collection of the sick and wounded Rouen has no concern, but it habitually deals with their treatment in hospital and their subsequent re-evacuation; with their pay, discipline, and clothing, as long as their names are on the books of any medical unit belonging to the area; with obtaining, storing, and distributing medical and surgical necessaries; and with measures aimed at the preservation of the health of the troops in general.

Furthermore, pretty nearly all the medical units at or near the city may be regarded as lying within a ring fence, even though the area enclosed be very large. From this arrangement many distinct advantages accrue. The men doing the work are neither physically nor mentally isolated; intercourse between them when off duty is facilitated; opportunities for exchange of views and experiences are promoted; and a man desirous of acquiring or perfecting his knowledge of the art and science of military medicine, including hospital extemporization and administration, corps and general discipline, the shifting of invalids, and the management of rest stations, as well as strictly professional work like surgery, sanitation, and war-time pathology; could do so more readily at Rouen than at most other stations.

The town itself lies in a half-circle recess at the foot of a bluff formed by the uplands of the Somme, which here suddenly drop to the level of the Seine valley. Only three of the British hospitals, I think, stand really within the municipal limits—one on the top of the bluff, two on its sides. The rest lie on a smooth gentle slope some two or more miles away from the town on the southern side of the Seine, and together with a variety of camps form the ring-fenced area mentioned. The site is commonly described as the Racecourse, though really the latter only forms part of the area which extends to the fringe of pine-woods seen on the horizon from the town level.

ROUEN HOSPITALS.

The outstanding feature of the Rouen hospitals, as a whole, is that though they present no example of the hotel and casino hospitals elsewhere so common, they otherwise exhaust pretty nearly the whole gamut of possibilities in the way of hospital extemporization. Schools and residential college, hospitals abandoned, hospitals building, pine-hut hospitals, hospitals with hutted administrative blocks and tented ward units, hospitals of tents alone, may all be seen in operation almost side by side, the extent to which they lend themselves to their purpose studied, and their advantages and disadvantages compared. No. 2 Red Cross Hospital, for instance, well illustrates the kind of fashion in which the resources of an ordinary French seminary must be modified to meet the needs of hospital work; and No. 3 is a good example of how much skill, ingenuity, labour, and money may be expended on an abandoned or neglected building.

The completely hutted hospitals were not quite ready for occupation at the time of my last visit, and it did not appear to me that either the medical or nursing staffs of the hospital units that were to move into them were disposed to welcome the change of habitation with much enthusiasm. They had grown accustomed to open-air life, evidenced its advantages by their countenances, and, like the rest of medical Rouen, seemed dubious as to whether huts as wards would, in summer time at any rate, really prove professionally advantageous as compared with well-arranged tents.

The feeling is natural, since when a boarded floor and electric light have been provided, a well-warmed, double-roofed, four-way marquee which can be converted into an open-air shelter merely by raising the flies, is from a surgical point of view an attractive proposition. There are, of course, other aspects of the question, but it is sufficient at present to indicate that the fact that these hutted hospitals are beginning to be used at Rouen just at the onset of summer is not the result of design. They were ordered, I believe, to be built by a sanitary committee from England which visited Rouen in the worst of last winter's wet weather, and did not probably foresee that shortage of labour and other causes might prevent their completion for many months. The huts themselves are large double-walled structures, raised well above ground, and in point of design exhibit a laudable respect for precedent on the part of the Royal Engineers. They appear, too, to be excellently built, but whether they really are so must remain uncertain until they have been subjected to the test of a few weeks' alternate rain and hot sunshine.

Other huts to be seen at Rouen in considerable numbers are those known as the Alwyn. To any one numbering many artists among his acquaintances they are strongly reminiscent of the studio, their sides and walls being formed of canvas-covered "stretchers," which are, in fact, practically identical, except in point of size, with the canvases used by artists. They afford seemingly about the same floor and cubic space as an ordinary bell tent, but it is rectangularly and therefore more conveniently disposed. They are easy to put up and presumably inexpensive, but the slant of their roofs seems rather too slight to ensure rain running off without penetrating.

SANITATION AT ROUEN.

Among other things, Alwyn huts make excellent camp offices, and as such I saw one of them in use by the sanitary specialists (Major Ainsworth and Captain Marett) stationed at Rouen. They had other offices in the building, used as head quarters by the D.D.M.S. of Rouen, but the need of an office actually in the area whose sanitation supplies their principal preoccupation was obvious. Besides the various hospital camps, there were remount and other purely military camps, and though none of them was very large, they were so numerous as to represent in the aggregate a very large job. This is specially true when it is remembered that the work, besides supervision of water and food supplies and guarding against epidemic disease, includes dealing with stable manure, with surface drainage, with ablution rooms, with kitchen waste (liquid and solid), with human excreta (liquid and solid), with clothing infected with germs or infested with parasites, and with the general rubbish that infallibly makes its appearance at any spot occupied for even a couple of hours by any considerable number of men. For several days previous to that on which I explored these camps the weather had been fine, but after making allowance for that fact, as also for the circumstances that over the greater part of the area a gravel stratum rises close to the surface, I could not avoid the conclusion that the work was notably well done. Full use was made of all natural advantages, including the facilities for digging effective soakage pits and those deep dry wells known by the French as *puitards*. There was no faddishness in the matter of incinerators, Horsfall's, Sialkote's, and Beehives all being used at one place or another; and in the treatment of latrines what may be called sanitary aseptic principles were applied—or, in other words, the aim seemed to be dryness and avoidance of disinfectants, unless painting the woodwork with paraffin to keep away flies may be so regarded. The net result was that the camps, besides being neat and free from smell, seemed well calculated to serve as a series of object lessons to civilian surgeons desirous of acquiring a practical knowledge of camp sanitation on the chance of their eventually having to serve as regimental medical officers.

SURGERY AT ROUEN.

Although the time I spent with the surgeons at Rouen while they were at work was brief, I nevertheless saw a

good many cases of interest, among which I recall the following:

1. In this case the abdominal wall had been torn by a fragment of shell, thus allowing a coil of small unwounded intestine to escape. The central and main portion of the intestine, measuring some six inches, had been excised, and the two ends joined together and pushed back just inside the opening. At the time I saw the case several days had passed since the operation, and complete recovery seemed assured.

2. A case of shell wound of the cervical region in which there had been complete sensory and motor paralysis of all four limbs. Under *x* rays the shell splinter had been located and removed by laminectomy, all the pre-existing phenomena then passing away.

3. A case in which a bullet had passed between the outer thirds of the subclavian artery and vein, establishing a communication between them. The external wound had healed without suppuration, and so far no operative interference with the arterio-venous condition had been undertaken or seemed immediately indicated. I did not ascertain whether that condition was most akin to an aneurysmal varix or to a varicose aneurysm, but, judging from what Sir George Makins has to say on the subject in *Surgical Experiences in South Africa*, the latter seems much the most probable. For some time the man's arm had been much swollen, but on being kept at rest and elevated became approximately normal in size.

4. A patient who had been struck in the back by a large fragment of shell casing, which, tearing through the muscles of the lumbar region, produced a gaping wound some seven inches long reaching down to but not injuring the spine. The wound was, of course, initially septic, but nevertheless had been induced to heal by first intention. It was first cleaned up generally and then all the superficial tissues were cut away, until a perfectly healthy stratum, so to speak, was reached. The wound having been thoroughly dried, was united from end to end by stitches, and the procedure completed by applying to it a special form of dressing.

The day on which I saw this case was the ninth after operation, and the original dressing was then removed in my presence. The wound was healed so perfectly that to enable the man to be discharged nothing remained but to remove the remains of the superficial sutures. The value to the patient, both as an individual and as a soldier, of the operation performed was very obvious, for in the ordinary course such a wound would take at least six weeks to heal.

I was also impressed by the character of the dressing that had been employed. It was one which has been introduced at Rouen by the surgical consultant to the area, Colonel H. M. W. Gray, who habitually uses it, I understand, in his work at Aberdeen. The dressing itself consists simply of two single layers of gauze, which are drawn tightly across the wound area after this has been painted with a varnish containing 45 per cent. of mastic, 54 per cent. benzol, and 1 per cent. picric acid. This varnish at once fixes the gauze firmly in place, and the free edges of the latter are then trimmed off with scissors. This dressing, besides supporting the edges of the wound, enables its progress to be watched almost from the beginning, for after thirty-six hours or so the top layer of gauze can be removed without any disturbance of the one next the skin. The effectiveness of the dressing against germ invasion would seem amply evidenced by this particular case, which was lying side by side with the kind of cases ordinarily seen in this war.

A Medical "Conseil de Prud'hommes."

A further point of interest in the surgical work of the Rouen hospital is the systematized use of chemically induced lymph osmosis, as described by Sir Almroth Wright in his address. No one I met in Rouen seemed to doubt that this hypertonic treatment is far the best of all treatments so far suggested; its dominance is not due solely to that fact. The practice of all the Rouen hospitals, whether small or great, is influenced by recommendations of the medical equivalent of a French *conseil de prud'hommes*, or council of elders. This is formed by the surgical specialists attached to each of the Rouen hospitals, and has Colonel Gray, the consultant for the whole area, as its president. This council as a whole advises from time to time what line of treatment should be followed in respect of different classes of injury, and the members individually use their influence to ensure that the institutions to which they are attached fall into line so as to give the treatment a fair trial as quickly and on as large a scale as possible. One recent result of the existence of this council—which, by-the-bye, does not seem to have any distinct title—has been the issue of a series of pamphlets describing the treatments at present in use and the grounds for their adoption. Surgeons whose experience has been acquired in other areas may not always agree with the suggestions made, but no one can fail to derive advantage from perusal of the views expressed. I understand that every few weeks it is intended to issue a leaflet giving the gist of any fresh experience that has been obtained. I also understand that each pamphlet originated in a paper read by request before a Branch of the British Medical Association which was inaugurated at Rouen some five or six months ago and holds fortnightly meetings. Such papers were first discussed in general conclave of the Branch and then rediscussed and revised by the council of specialists in the light of the criticism received.

The existence of this council at Rouen is certainly interesting in view of what Sir Almroth Wright had to say in the epilogue to his address, and as far as I have been able to ascertain there is no disposition whatever to cavil at its existence and its direct or indirect authority. It is obviously conceivable that such a council might retard progress, but of this there is not the slightest real risk. From above downwards all opinion in France is too fluid, the whole atmosphere is too virile, and the medical *plebs* can bring the weight of its opinion to bear on men of senatorial rank in too many effective ways for anything like surgical stagnation to occur as the result of the existence of a guiding body possessed of power to see that its views do not go unheeded, and which was disposed to exercise it.

NOTES OF SOME CASES UNDER TREATMENT AT THE 2ND EASTERN GENERAL HOSPITAL, BRIGHTON.

Compound Fractures.

The following cases are quoted as examples of one of the very common injuries caused by wounds from bullets of all descriptions—namely, compound fractures. Practically all fractures due to bullet wounds are compound, and the great majority of them are septic. Many are comminuted, but serious complications, such as injury to the main artery, vein, or nerve, have not been very common.

Compound Comminuted Fracture of the Fibula.

This man was struck by shrapnel at a range of unknown distance. The injury sustained was a compound comminuted fracture of the fibula. When admitted a few days after the receipt of the injury there were two wounds on the lower part of the leg—one on the inner and one on the outer aspect. There was not much difference in the size of the wounds, both of which were suppurating. A drainage tube had been passed right through from one wound to the other. The fracture was explored and several good sized pieces of loose bone removed, the wound well drained, and treated by irrigation and light dressings of 5 per cent. hypertonic solutions of common salt. This method of dressing wounds, since the publication of the memorandum on the treatment of the bacterial infections of projectile wounds, by Messrs. Burghard, Leishman, Moynihan, and Wright, has been largely adopted in the hospital. It is too early to say whether the results are superior to the old methods of treatment by carbolic, perchloride, and other antiseptic lotions. Free drainage is absolutely essential whatever lotions are used. In this case it was noticed that there was a considerable rise of temperature after the exploratory operation—a very usual occurrence, and due to the opening up of fresh channels for the absorption of septic material.

It is of very great importance that all septic comminuted fractures should be well opened up, explored, and all loose pieces of bone, foreign bodies, etc., removed. Fragments of bone attached by periosteum may be left, but if the loose pieces are not taken away, they necrose, become

enclosed in new bone, and months, or even years, after operations have to be performed to remove sequestra, which cause persistent suppuration through the sinuses leading down to them.

Compound Fracture of the Tibia.

In this case the man had been struck by shrapnel at an unknown range, the bullet passing through the leg from back to front, and shattering the tibia. An *x*-ray photograph showed the lower part of the tibia broken into many pieces, some large fragments projecting from the front aspect of the explosive exit wound. The same treatment was adopted as in the previous case—that is, opening up and exploration of the wound, with the removal of all loose and detached fragments, and dressings, and irrigation with 5 per cent. saline solution.

Comminuted Fracture of the Femur, from a Rifle Bullet, without Sepsis.

Of the large number of fractures admitted which were due to bullet wounds, only quite a small percentage have not been septic. Of these cases, most were rifle bullet wounds; only very rarely was a shrapnel bullet wound not septic. The following case is an instance of an aseptic comminuted fracture:

A man was shot by a rifle bullet, the distance being unknown, the bullet passing through the middle of his thigh from back to front. He was admitted about a week later with both entry and exit wounds quite healed (they were both quite small circular holes) and the thigh fixed in a Thomas's splint with extension to the foot end of it. An *x*-ray photograph showed a good deal of comminution of the middle of the shaft of the femur, but on the whole the bone was in a good position, and there was practically no shortening. The treatment was continued—that is, the leg was kept in the Thomas's splint with extension. Although the fracture was comminuted, it was not of course necessary to explore and remove loose pieces, as it was aseptic, and there was therefore no risk of necrosis.

In contrast to this aseptic compound fracture is the following: A man was shot through the back of the hand, the bullet fracturing the two middle metacarpal bones and making a large explosive wound of exit. The whole hand was very swollen and oedematous, and both entry and exit wounds discharging pus. It will probably be many months before it is well. The sepsis makes all the difference in the world to the healing process.

Severe Injury to the Left Leg from a Trench Bomb.

Amputation through thigh by the flapless method. This man had his left leg shattered by the accidental explosion of one of our own bombs in the trenches. After receiving first aid, he had to lie for some hours in a small farm before he could be removed to a hospital. The leg was so shattered that immediate amputation was performed by the flapless method—that is, by cutting all the tissues across at one and the same level, leaving the wound completely open. When he was admitted the stump had a most curious appearance: it was exactly as if the thigh had been chopped right through. Every muscle was clearly marked out in the section. The process of granulation is going on slowly; but it appears as if the ultimate result must leave a conical stump.

A second case of this nature—that is, severe injury to a limb necessitating amputation—was admitted at the same time. The patient was one of a party who had occupied a German advanced trench. He was struck by shrapnel at a range of 650 yards. The limb was so severely injured that amputation through the middle of the thigh was necessary.

WOUNDS OF THE ORBIT.

There have been many cases of men who have been wounded by the passage of bullets through the orbit, in almost all cases entailing the destruction of one or both eyes. In one man the bullet entered the outer side of the left orbit, damaging the eyeball very seriously. It passed just under the bridge of the nose, making its exit by a small circular wound, close to the inner canthus on the right side. It was necessary to remove the eyeball. If care is taken in excising the eyeball to leave good stumps of muscle and suture these to the conjunctiva excellent movement of the artificial eye is generally obtained.

RUPTURE OF THE LEFT KIDNEY.

The injury to this man was caused by a fall into a trench. He struck himself over the lower ribs of the left side, the injury causing him a good deal of pain. Some five hours afterwards he passed water containing much blood. The haematuria rapidly cleared up, and on admission, forty-eight hours after the injury, the urine was quite normal. He had a good deal of pain in the renal region, and the part was tender to the touch. There was slight pyrexia. Three days later marked haematuria came on suddenly from no apparent cause. It was arranged that the kidney should be explored, it being considered probable that the tear could not be very extensive on account of the history of perfectly clear urine soon after the accident. However, before any operation was performed the urine became quite clear of blood, and continued so when the man walked about. No operation was therefore performed.

GAS POISONING.

A few cases of gas poisoning have been admitted, but there have been none of the severe type. They were all mild, and simply presented the symptoms of bronchial catarrh, with slight pyrexia. No special treatment was adopted.

PENETRATING WOUNDS OF THE CHEST.

Many cases of this injury have been admitted. The early symptoms were much the same, namely, a bullet wound of the chest wall accompanied by immediate haemoptysis, pain, and cough. When admitted, the patients were all in the main in the same condition. The following is a typical instance: A man was shot through the chest, the bullet remaining in the body. When he came to the hospital he had pyrexia up to 102°, cough, muco-purulent expectoration, and fluid in the lower part of the pleural cavity. The *x* ray photo showed the bullet embedded in the lung. The entry wound had healed. The treatment which all the staff have adopted is one of masterly inactivity. No attempt is made to reach the bullet if one has been left in, unless it is just under the skin. To hunt for a foreign body deep in the cavity of the thorax is a difficult and dangerous operation, and one rarely attended with success. If the wounds be left alone, in the course of time the temperature gradually drops, the expectoration lessens, and finally ceases, the general condition improves, the patient eats and sleeps better and gains in weight. In the many cases admitted, this is in practically all instances the result obtained by simply carefully nursing the patient. Often men complain for a long time after of dyspnoea on slight exertion. This is said to be caused by contraction of the scar tissue in the lung, due to the track of the bullet.

FRACTURE DISLOCATION OF THE CERVICAL VERTEBRA.

The patient, a man of 18 years of age, was practising in the gymnasium when he fell on his head. He lost consciousness. He was transferred to hospital, and on admission, forty-eight hours after the receipt of the injury, he had complete paraplegia, and partial loss of power in the arms, the fingers and wrist showing no movement. There was loss of sensation up to the level of the fourth ribs, and he had no power over bladder or rectum. His temperature was and remains normal. It is evident that some portion of the brachial plexus (which derives its fibres from the four lower cervical and the first dorsal nerves) has escaped injury, for there is a fair amount of movement in the arms. The skiagram shows the laminae of the third and fourth cervical vertebrae fracture, and the bodies of the fifth and sixth fractured, but there is not much displacement, and therefore it was not considered advisable to perform laminectomy. Up to the present, twelve days from the receipt of the accident, there has been no change in the patient's condition. The treatment adopted has been to fix the head by sandbags, the patient lying on a water bed, a catheter being passed twice a day.

THE USE OF THE MACKENZIE DAVIDSON TELEPHONE PROBE.

This excellent adjunct to the means of bullet detection has recently been used in the hospital. The first case in which it was used was that of a man who had some small pieces of shell casing

embedded in the tissues of his hand. There was no difficulty in hitting the fragments by means of the telephone probe, the characteristic click being obtained at once. No sound was made when the probe needle struck bone, but it was at once heard when metal was reached. In this case the marks made on the hand by the skiagraphist would almost certainly have allowed the pieces to have been easily extracted without the use of the telephone probe, but in the next two instances very great assistance was undoubtedly given by the instrument. A man ran a needle into his arm. An attempt to extract it was made in camp, but failed. He was sent to hospital, *x*-rayed, and marks made to indicate the position of the needle. An operation was performed, but, after a prolonged search, no needle could be found, and the man was sent back to bed. A few days later he was again anaesthetized and the needle was located without difficulty by the telephone probe. In the third case a man had a piece of shell casing in his forearm, which was located by *x* rays, and the position of the fragment marked on the arm. An exploratory operation, undertaken for its removal, failed. A few days later the telephone probe was used and the bullet located with the utmost ease. These two last examples are of special interest, as the operations undertaken in the first place failed, although *x* rays had been used and marks made to indicate the position of the foreign bodies. Under similar circumstances the telephone probe revealed their positions with great ease. The Mackenzie Davidson instrument is a very valuable addition to the surgeon removing bullets and other metallic bodies from the body.

A Case of Bayonet Wound of the Leg.

This case is mentioned because so very few instances of this injury—namely, bayonet wounds—have been admitted to the hospital. The patient was wounded in the middle of the leg, the bayonet piercing the flesh to the bone. Cellulitis followed, necessitating several incisions.

GERMAN VIEWS ON BRITISH BULLETS.

In a series of papers in the *Muenchener medizinische Wochenschrift* for December 29th, 1914, several German writers asserted that the British service bullet, while apparently conforming to the usages of civilized warfare, was as destructive as the old dum-dum. These writers wax almost eloquent on the virtues of the French bullet, which, they say, is made of solid copper and inflicts as small and neat a wound as is possible under the circumstances. Though they confess that their own bullet is a composite one, and is therefore open to the same objections as the English bullet, they do not admit the logical conclusion that, from the French point of view, they are guilty of barbarous warfare.

Professor Kirschner of Königsberg, Senior Surgeon to the 3rd Bavarian Army Corps, after noting that the German, British, Russian, and Balkan service bullets were composite, consisting of an outer shell of hard metal and a core of lead, open to view only at the back of the bullet, stated that these bullets could be converted into the dum-dum type by exposing the lead at the point. He argued that the only convincing proof of a wound being inflicted by a dum-dum bullet was the discovery of the bullet in a sufficiently perfect state to make it quite clear that its hard point had been purposely removed before leaving the rifle. The service bullet might inflict terrific destruction when entering the body sideways, when carrying foreign bodies before it, and when fired at short range or at such close quarters that the gases of the explosion penetrate the wound. The parting of the outer casing from the lead core in a wound could not, he says, be regarded as proof of dum-dum tactics.

Professor K. Stargardt, of Hamburg, stated that most of the casualties admitted to the second Hamburg-Altona Reserve Military Hospital during the first two months of the war were inflicted by the French. In the later months of the war most of the wounds were incurred in fighting the British. The French bullet, as a rule, caused little destruction, even when it penetrated bones or vital organs, and the prognosis for wounds inflicted by the French was usually good, while it was much worse for wounds inflicted by the British. Fractures caused by British bullets were, he said, far more serious, the bones in many cases being pounded to a pulp—"zu Brei zerschmettert." Blood vessels and nerves were more often wounded, muscles were more extensively lacerated, and the wounds more frequently and severely infected when caused by British rifle fire. The large wound of exit occasionally observed did not, he said, indicate the use of a dum-dum bullet, for the same condition might be produced by a French bullet, particularly when this had turned in the body. A characteristic feature of skiagrams of wounds inflicted by British bullets were the dense shadows thrown by the scattered fragments of metal. So extensive were these shadows, that they were at first taken to indicate shell or shrapnel wounds. Usually there were one to three large, and countless minute, fragments distributed over a wide area. In a wound of the arm, for example, one large fragment would be found in the wounded radius, and another large fragment in the middle of the humerus, the tissues between these two points being freely peppered with minute fragments. When these large fragments had to be removed, as was often the case, one was usually found to consist of the point of the bullet, a little more than 1 cm. long; another consisted of the more or less deformed leaden core, 2 cm. long; and the third fragment consisted of the much distorted outer case of the bullet. Further, in the broken point of the bullet a core 1 cm. long was found, the posterior surface of which was smooth. From this Professor Stargardt concluded that the British bullet contains two cores, and he argued that a composite bullet which broke up into so many parts on contact with the body was as destructive as a bullet charged with explosives. On longitudinal section the German bullet showed a single leaden core, while the English bullet showed two cores, the one behind being 20 mm. long, and the one in front 11 mm. long.[1] This combination of two cores of different specific gravity must, he thought, have an explosive effect on contact with a hard substance like bone; owing to the differences in the shape and size of the component parts of the bullet they were bound to scatter, and this explained the severity of the injuries inflicted. Hitherto Professor Stargardt had never found in the wounds of his patients a British bullet which had not broken up. As he could find no ballistic excuse for the use of a double core in the British bullet he drew the conclusion that it had been designed simply to increase its destructive effect.

Other German surgeons, writing on the same subject, gave further "proofs" of the malignity of the British devices, and their general nature may be gathered from the fact that one went so far as to accuse the British of having a contrivance, fitted to the butt of the rifle, enabling the soldier in the field to convert the service bullet into a soft-nosed dum-dum by amputation of its point. The German medical press contains many other stories of the diabolical contrivances found on British soldiers. They are supposed to use an instrument like a cigar cutter, which shaves off the tip of the bullet. The German writers profess to believe that the English authorities serve out a pointed bullet as innocent-looking as the German. They do not supply ready-made soft-nosed bullets, as their trajectory is unsatisfactory at long range. But it does not matter if the flight of a bullet is a little erratic at close range. At long range, therefore, the British soldier is instructed to use the bullet as it is served out to him: but when at close quarters, he is told to cut off the tip of the bullet, which contains the short, front core, and to fire at his adversary with the stump of the bullet.

After these solemn denunciations of the British rifle bullet, it is surprising to find any German admitting that it may be no worse than the German bullet. But in the *Muenchener medizinische Wochenschrift* for January 12th, a report is given of a meeting of army surgeons in Lille, at which Dr. Braun stated that he had seen thousands of wounds inflicted by English bullets, and that they differed in no essential point from wounds inflicted by ordinary rifle bullets. He had experimented with English ammunition, and had found its action the same as that of German ammunition. He had also attempted to convert the English bullet into a dum-dum by the methods supposed to have

[1] BRITISH MEDICAL JOURNAL, December 12th, 1914, p. 1041.

been adopted by the English soldiers in the trenches, but he had found such "doctoring" interfered with the automatic loading of the rifle, and with the range and penetrative power of the bullet. He concluded by emphatically declaring that "the dum-dum bullets of the English are mainly a product of the fantasy."

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Wounded.

Temporary Surgeon J. R. Kay-Mouat, R.N.V.R.
Temporary Surgeon D. D. Pinnock, R.N.

ARMY.

Killed.

Official notification has been received of the death at the front of Captain Frank Miller Bingham, of Lancaster, serving with the 5th King's Own Territorials. He had only just returned to the front after three days at home and was shot through the left lung at 2.30 a.m. on May 22nd.

He was born in Derbyshire about forty years ago, and was educated at St. Peter's School, York. He proceeded thence to St. Thomas's Hospital, and obtained the diplomas of M.R.C.S. and L.R.C.P. in 1907. He was partner with Drs. Parker and Dean, of Lancaster. He had taken great interest in the territorial movement for some years. He formerly played county cricket for Derbyshire, and was a forward for the Blackheath Rugby team. He leaves a widow and three children.

Wounded.

Major R. Bruce, M.D., 1/7th Batt. Gordon Highlanders.
Major F. J. Oxley, 17th Batt. County of London (T.F.).
Captain K. B. MacGlashan, R.A.M.C. (Special Reserve).
Captain J. J. Black, Australian Army Medical Corps.
Lieutenant J. S. Ward, R.A.M.C.(T.F.).
Lieutenant R. O'Kelly, R.A.M.C. (Special Reserve).
Lieutenant (temporary) J. D. Maclean, R.A.M.C.
Lieutenant (temporary) J. T. Heffernan, R.A.M.C.

Major Bruce, Major Oxley, and Captain Bingham were acting as combatant officers.

Missing.

Lieutenant J. M. Gillespie, R.A.M.C., 2nd Battalion Northumberland Fusiliers.

NOTES.

GERMAN PRISONERS IN FRANCE.

IN the *British Review* for June M. Paul Parsy gives some account of the German prisoners in France. He was one of a body of representatives of the Paris press who were taken, under the auspices of the Government, to visit the camps of the German soldiers at Montford and Coetquidam, and those of the officers at Chateauneuf and Fougères, in Brittany. He contrasts the contented spirit of the privates with the insolence of the officers. Precise details are given of the regulations regarding food, quarters, post and parcels delivery, pay, etc., which are compared with those known to exist in the camps for Allied prisoners in Germany. Speaking of the medical arrangements, he says:

> The hospital service, which is particularly well arranged at the Coetquidam camp, is also organized with the collaboration of the Germans. The French major took a student of medicine, who was a prisoner of war, as his assistant. He also trained a masseur to give him satisfaction. In spite of the limited space at his disposal for starting his hospital the major was able to prepare a consulting room for seeing cases one by one adjoining a room where the patients wait their turn to come before him. This desire to secure privacy for consultation with sick prisoners of war, this initiative of the camp commandant who proposes to the prisoners to start a co-operative canteen—there you have the facts, and quite characteristic facts, of the humane way in which France treats her captives.

DISTINGUISHED CONDUCT MEDAL.

The Distinguished Conduct Medal has been awarded to the following in recognition of services rendered in the Dardanelles:

Private L. W. Burnett, Australian Army Medical Corps.
Lance-Corporal W. Singleton, New Zealand Field Ambulance.
Lance-Corporal G. Stedman, New Zealand Medical Corps.
Private A. T. Cooke, R.A.M.C.(T.F.).
Corporal J. W. Jones, R.A.M.C.(T.F.).

The medal has also been conferred upon the following in recognition of acts of gallantry and devotion to duty as indicated:

Private T. Bennet, R.A.M.C. For conspicuous gallantry and devotion to duty on October 19th, 20th, and 31st, 1914, in collecting and attending on the wounded whilst under fire.

Corporal J. Hart, R.A.M.C. For gallant conduct, ability, and devotion to duty on November 4th and 5th, 1914, when he established and maintained a field dressing station under a very heavy fire at Wulverghem. Corporal Hart, in addition to looking after our own wounded, treated a large number of the wounded French soldiers with great skill.

Private J. Hughes, R.A.M.C. For gallantry at Messines on October 31st, 1914, when he went into the trenches under heavy fire and assisted in carrying away the wounded.

Private C. F. Keen, R.A.M.C. For gallantry in conveying messages under heavy fire on October 31st, 1914, and also for gallant conduct in attending on the wounded under fire.

Private A. Whitear, 1st Battalion West Riding (attached No. 8 British Field Ambulance, Indian Expeditionary Force). For gallant conduct in voluntarily assisting in the removal of the wounded from the advanced dressing station at Rue des Berecaux on March 17th, 1915, whilst under fire.

WOUNDED AND MISSING.

The wounded and missing department of the British Red Cross Society has for the last eight months been acting as an inquiry office with regard to wounded and missing officers and men with the Expeditionary Force in France. A department was opened in Paris in September, another in Boulogne in November, and a third in Rouen in January. Information has been provided with regard to some 7,500 wounded and missing officers and men. The office is in receipt of all the lists of prisoners in Germany; they are sent to it weekly through the International Red Cross Society in Geneva. It is hoped shortly to open branch offices at Etaples, and Le Tréport as well as in Malta and Alexandria. All inquiries should for the future be addressed to the Head Office of the Inquiry Department of the Red Cross, 20, Arlington Street, W.

PROTECTION OF MUSEUMS, CHURCHES, AND HOSPITALS.

At a meeting of the special court of the London Hospital on June 2nd, it was stated that information had been received through the War Office to the effect that an agreement had been come to between the British and German Governments for the protection of museums, churches, and hospitals, which should be marked with a black and white square.

MEDICAL OFFICERS WANTED.

Royal Engineers, East Anglian Division.

A vacancy as Lieutenant, R.A.M.C.(T.F.), attached to the Royal Engineers, East Anglian Division. Unit at present stationed at Radlett, possibly be required for foreign service. Usual allowances Territorial Force. Address Medical Officer, Head Quarters, Royal Engineers, Radlett, Herts.

2/1st South Midland Mounted Brigade Field Ambulance.

Two medical officers are required for Imperial service to complete unit which is expected to go on foreign service in the immediate future. Applications to Major D. M. Spring, Officer Commanding, 2/1st South Midland Mounted Brigade Field Ambulance, Cirencester Camp, Gloucester.

2/2nd East Lancashire Field Ambulance.

There are vacancies for two medical officers in the above unit, to replace two officers who have proceeded overseas. Must undertake Imperial Service obligation. Pay and allowance as in regular army. Applications to be addressed to Lieutenant-Colonel Pallam, Heathfield Town, Sussex.

Ireland.

MONTGOMERY LECTURESHIP IN OPHTHALMOLOGY.

THE Board of Trinity College, Dublin, has appointed Miss Euphan Montgomerie Maxwell to the recently established Montgomery Lectureship in Ophthalmology Miss Maxwell is a graduate in medicine and surgery of the University of Dublin, a Fellow of the Royal College of Surgeons, Ireland, and holds the position of Assistant Surgeon and Pathologist at the Royal Victoria Eye and Ear Hospital, Dublin.

TREATMENT OF TUBERCULOSIS.

At the annual meeting of the Irish Tuberculosis Medical Officers' Association a resolution was passed informing the Local Government Board (Ireland) and the Irish Medical Committee that tuberculosis cases were not notified to the health authorities even in the very few districts where notification is compulsory in Ireland. The resolution urged that the Local Government and the Irish Medical Committee should use their influence with all medical practitioners to notify cases of tuberculosis. No country was in greater need of the tuberculosis scheme than Ireland, and so much was this the case that the county councils at the start most willingly struck rates to defray

the cost of their part of the scheme. It is, however, true that recently county councils have threatened not to continue levying rates to defray the expenses of the tuberculosis scheme, and have in some instances refused to appoint whole-time tuberculosis medical officers, justifying their action on the grounds that the scheme has proved a failure owing to defective administration.

On many occasions the Irish Medical Committee, county insurance committees, and county councils have addressed protests to the Irish Insurance Commissioners against the exclusion of the medical attendant certifying for sanatorium and sickness benefits, as it was the only means by which the early diagnosis and treatment of tuberculosis cases could be undertaken. The Departmental Committee on Tuberculosis strongly urged the co-operation of the patient's medical attendant for the early diagnosis and successful treatment of tuberculosis. Notwithstanding the great importance of all these representations, and what they meant to the well-being of a large section of the community, the Irish Insurance Commission alone, of all the National Health Commissions in the United Kingdom, ignored such important administrative and expert advice, with the result that several counties in Ireland are depending on two or three part-time medical advisers to certify for sickness benefits under the Insurance Act; in the most haphazard way, they occasionally discover a case of tuberculosis when the insured person looks for sickness benefit when no longer able to work, and his condition is too advanced to expect any good results from sanatorium or any other form of treatment. For this most serious state of affairs the medical profession in Ireland accepts no responsibility, but insists that the Irish Insurance Commissioners alone are to blame, owing to the offensive attitude they have adopted toward the most trustworthy members of the profession in refusing to accept, as medical attendants on the insured, their certificates for sanatorium and sickness benefits.

It is believed that the question of certification for sickness and sanatorium benefits under the Insurance Act in Ireland was about to be settled last August when the war broke out and gave a fresh lease of life to the present system, which is as objectionable and offensive to the profession as it is injurious to the insured working people. The continuance of the certification dispute between the Irish Insurance Commissioners and the Irish medical profession has not been a question of remuneration since August, 1913, when the Chancellor of the Exchequer admitted that his original grant for medical certification was inadequate, and that he was prepared to ask Parliament to vote a further grant, making the total reach the amount asked for by the Irish doctors. Twelve months ago Parliament voted the full grant for certification, and it has remained all this time in the Treasury, except the portion that went to the medical advisers and the panel doctors. For this state of affairs the Irish Commissioners and the largest Irish approved society with its officials, and with its parliamentary influence, are responsible.

The insured, as can be seen every day in the lay press, have little confidence in the part-time medical certifiers; they know these certifiers owe their appointments, in the majority of cases, to the influence of approved societies; they indeed seem to believe they were appointed for the purpose of depriving the insured of what they were justly entitled to, and that doctors appointed in this manner are not in a position to act fairly between the insured and the approved societies. The result is said to be that collusion between the employers and the insured to evade stamping insurance cards is becoming more frequent, and owing to this many approved societies realize that as the outcome of the present system of medical certification they are no longer in a position to pay their insured members what they are entitled to on the merits.

Scotland.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

DR. L. D. CRUICKSHANK, Medical Officer and Chief Inspector of Physical Training to the Scottish Education Department, states in his third report that the number of schemes of medical inspection had not been increased, being still forty-one. The Glasgow School Board is now the only board in Scotland that continues to carry on the work of medical inspection with the assistance of part-time officers. With the exception of Ayr, all the burghs that have separate schemes of medical inspection employ nurses, the number of whole-time nurses employed being 56. There are still seventeen counties that do not employ school nurses. Out of a total average of 839,049 scholars, 414,429 were examined during the year—that is to say, 40.9 per cent. of the children in the districts under medical inspection were examined by the medical inspector. In Edinburgh the four medical officers paid no fewer than 2,480 visits to the schools of the city for the purposes of systematic and special examinations, while the four nurses paid 2,656 visits to homes in connexion with the supervision and "following up" of defective cases. It would appear from figures available that approximately 4 per cent. of the school children suffer from defective nutrition. The percentage of cases which are the direct result of poverty is relatively small, and it seems evident that the majority arise from parental ignorance, ignorance of the relative value of foods, ignorance of the value of a clean and wholesome house, of quiet refreshing sleep, and of play during out-of-school hours.

India.

LADY MINTO'S NURSING ASSOCIATION.

AMONG the minor misfortunes caused by the world-wide conflict is the fact that many most deserving institutions suffer from the concentration of thought and philanthropic effort upon the one great problem of relieving the special distress caused by the war. One excellent institution which has already felt the effect of the war, and is likely to feel it still more, is Lady Minto's Indian Nursing Association. Since its organization in 1906 the association has made steady progress in efficiency and in public esteem, but the war has caused the removal from India of a large number of its regular supporters, and it is to be feared that the present year is likely to cause a strain on the finances unless new subscribers come forward to take the place of the old ones. The association commenced work in 1906 with an untrained lady superintendent and six nursing sisters; it had last year one chief lady superintendent, five lady superintendents, and 58 nursing sisters. It may be recalled that it was founded with the object of enabling Europeans in India to obtain skilled nursing at moderate charges. There are branches in the United Provinces, Baluchistan, Central Provinces, Central India, Burma, Assam, Rajputana and Bengal, and the funds are provided partly by subscriptions and partly by fees from the patients attended. During 1914 the nurses of the association attended 513 cases, of which 302 were medical, 77 of these being cases of enteric fever. The sum supplied by subscriptions was Rs. 39,069 and by fees Rs. 52,799. In the Punjab the staff consists of a lady superintendent and 13 nurses, and there are homes for the staff at Rawal Pindi and Murree. The nursing staff has gained well-earned popularity amongst both medical officers and patients. But the results of the year's work were rather disappointing, both the number of subscribers and of patients having fallen, partly owing to the departure of so many people for home, and partly owing to the general depression caused by the war. In the United Provinces, too, there was a slight decrease in the number of subscribers, attributed to the lack of nurses in the previous year, when many applications had to be refused and subscriptions were consequently withdrawn. In Baluchistan there was an increase of one in the number of corps subscribing, but a decrease in individual subscribers, and it is feared that the association will suffer considerably during the present year owing to the closing of the Staff College and the general depletion of the Quetta population. At Delhi, Hindu Rao's house was opened in 1913 as a hospital for Europeans, and it is staffed by two nursing sisters of the association, with a third nurse during the cold weather. The provision of this hospital is believed to be much appreciated by the European community of Delhi. It is impossible to read the report without recognizing the value of the work done, often in remote places, by the nurses of the association, and it would be a great misfortune if that work should be seriously crippled owing to

the demand that the war has made upon the regular supporters of the institution.

TUBERCULOSIS IN CALCUTTA.

The following extract from the annual report of the Surgeon-General with the Government of Bengal will be of interest: There has been a gradual decrease since 1911 in the number of patients treated at the hospitals for tubercle of the lung, the figures being 2,128 in 1911, 1,792 in 1912, and 1,743 in 1913. This decrease is more probably due to discrimination on the part of the hospital authorities in admitting patients suffering from advanced and incurable phthisis than to any actual diminution in the prevalence of the disease in Calcutta. There is, in fact, a strong belief among the practitioners qualified to judge that the number of patients suffering from phthisis is increasing. Judging from the high death-rate from this cause, many are inclined to rank tubercle of the lung as one of the principal causes of death in Calcutta, ranking next to such deadly epidemic diseases as plague and cholera. The increasing number of phthisical patients in the town has long been a subject of grave anxiety to the Health Committee of the corporation, and the question of establishing a special tuberculin dispensary in Calcutta is engaging attention. Though I am quite familiar with this form of treatment in large towns in Great Britain—for instance, Edinburgh, where it has been extensively tried, and where the results appear to be very promising—I should nevertheless be inclined to move very cautiously in the matter of starting tuberculin dispensaries for out-patients in Calcutta. It has to be remembered that the tuberculin treatment is still more or less in the experimental stage, and that some of the greatest authorities consider it a form of treatment liable very often to do more harm than good, unless administered by experts in carefully selected cases. At present we have very little experience of its use in India, but tuberculin is being given a very thorough trial in various places, and I am very hopeful that before long we may be in a position to advance the treatment still further in suitable cases.

Correspondence.

THE HEALING POWERS OF SUNLIGHT.

Its Potential Dangers.

SIR,—The interesting leading article upon this subject in the JOURNAL of May 29th, page 936, will undoubtedly influence many of your readers to utilize for the first time the healing powers of sunlight at home to an extent never before attempted in this country. Having had the opportunity of appreciating the fact that sun rays, like *x* rays and radium rays, possess the property of doing harm, instead of the good which is desired from them, if used without the care and knowledge which experience beget, I venture to utter a note of warning as to the reality of the dangers of over-dosage.

A year ago I visited Leysin, and was very much impressed by seeing scores of tuberculous patients lying in the sun for hours with a loin cloth as the only garment, but what struck me as being the most remarkable were the experience of the healing power of the sun upon intractable sinuses, and also of the great necessity for prescribing it in carefully regulated doses as regards area and time. The universally tanned skin takes many weeks to attain.

I have applied the sun rays for the treatment of some cases of surgical tuberculosis at the Glan Ely Sanatorium of the Welsh National Memorial to King Edward VII since my visit to Leysin, and the result has been very gratifying in a number of cases where iodoform, iodine, and bismuth had failed. On the other hand, we have had constitutional symptoms developing within many hours of exposure to the sun of only even a foot or portion of the legs, where the length of time prescribed had not been observed; the symptoms were pyrexia (2° or 3° F.), accelerated pulse, anorexia, headache, and lassitude; this reaction to sun rays acting upon the limbs alone entirely subsided in about a week. It is most important, therefore, to appreciate the fact that symptoms of mild sunstroke can be obtained in our country practically at sea level without the exposure of the head and neck to the direct action of sunlight.—I am, etc.,

Cardiff, June 4th. J. LYNN THOMAS, C.B., F.R.C.S.,
Hon. Surgeon to the Welsh National Memorial.

LEGAL RESPONSIBILITY FOR CRIME.

SIR,—I am much indebted to Sir Bryan Donkin for his letter attributing to me the credit for the formula of responsibility adopted by the subcommittee.[1] It is due, no doubt, to the legal element on the subcommittee that a doctrine of mine has been adopted straight from my own writings. My medical colleagues never venture to adopt any doctrine of mine until it has been stolen by a German and sent back here as having been made in Germany. It is curious that just when the rest of the world is waking up to the imposture of German "eminence in science" English alienists should be sinking deeper in the mire, and adopting holus-bolus the dirty tomfoolery of psycho-analysis. Within the last month or two I have been lectured by a reviewer for using the long established English word "alienist" in place of "psychiatrist"—a recent importation from Germany, which English alienists have not yet learnt how to pronounce correctly.

The report of the subcommittee seems to me upon the whole admirable, and does great credit to its authors, especially to Dr. (of Laws) Burrows, and Dr. (of Medicine) Scott. It is in no captious spirit, but as the candid opinion of one who has given much thought to the subject that I venture to offer the following criticisms.

"Opinion A (*c*). No act is a crime if the person who does it is at the time when it is done prevented . . . from controlling his own conduct unless the absence of the power of control has been produced by his own default."

As it stands this clause can scarcely be applicable to any case which is not already covered by the previous clauses, except the case of a person suffering from chorea or some other spasmodic and involuntary movement. From the last part of the clause it seems to be intended to cover cases of involuntary drunkenness, but such cases can always be brought under (*a*) or (*b*), and if not, it is difficult to see how they can be brought under (*c*). It is true that in at least one case the judge has left the question to the jury in the terms, "Could he help it?"; but if the judge had been administering the law as stated in (*a*) and (*b*) he would have had no need to resort to this formula. An epileptic in post-epileptic automatism would come under one of the first two clauses; and so would a woman overlying a child. I can imagine no case that would come under (*c*) and not under (*a*) or (*b*), except a choreic person, say, upsetting a lamp and setting fire to a house; and it is absurd, I think, to suppose that such a person would be tried for arson. The *animus comburendi* would manifestly be absent, and in such a case the question of insanity would not arise.

With respect to B, C, D, and F my approval is unqualified.

With respect to E, I prefer the solution offered by Drs. Burrows and Scott, that the return of a verdict of unfitness to plead should be considered equivalent to a plea of "not guilty," and that the trial of the facts, and if the fact of an offence is proved, of the sanity or insanity of the accused, should thereupon proceed. The reasons for this preference are fully set out in the report and its supplements, and need not be repeated. They seem to me conclusive.

The second paragraph of the supplemental report is not quite clear to me. The authors speak of "such cases" and "other cases" without, as it appears to me, distinguishing between the two classes; and on the vexed question whether a medical assessor should assist the judge their opinion wavers. They "think that in such cases it may perhaps be desirable that a medical man should advise the judge before he sums up to the jury," but they point out so many objections as practically nullify even this doubtful opinion. For my own part I have no doubt, and many years' study of the subject have removed what doubt I had when I began. Whatever guidance the judge wants he can get from the witness in the box, and any opinion that the witness then gives can be tested immediately by cross-examination prompted by experts. An opinion given privately could not be so tested, and this the reporters point out.

The last point considered is whether a judge or court should have power to call evidence *proprio motu*, evidence which would avoid the appearance of being partisan, and would have no pressure brought upon it to become partisan. To this proposal the reporters oppose three objections, which do not seem to me at all convincing:

[1] SUPPLEMENT, May 8th, p. 220.

"The examination-in-chief would be conducted by the clerk of the court, who, except in inferior courts, is not accustomed to examine witnesses."

This objection seems to me to be fully met by the next.

"Secondly, a witness so-called would be liable to cross-examination by both parties and not merely one."

This objection, if it is an objection—it seems to me rather an advantage to the elucidation of truth—may be met by the rejoinder that that side which the witness supported would not desire to cross-examine.

"Thirdly, if several witnesses, expressing divergent views, are called one after another, the jury will tend to exaggerate current notions about expert witnesses, and the risk that the witness whose evidence sounds best will be preferred to the witness whose evidence is right will be increased."

This seems to me going out into the highways and hedges to find trouble. The calling of several witnesses expressing divergent views one after another is precisely what happens at present in a disputed and difficult case, and the difficulty of the jury would not be increased, but would be diminished, by the calling of an independent witness, who would give, not a third opinion, but an opinion corroborating one side or the other; and the risk that the witness whose evidence sounds best will be preferred to the witness whose evidence is right already exists, and I see no reason to suppose that it would be increased by the course proposed.

No. These objections seem to me to be no objections at all; but there is an objection which seems to me fatal to the proposal. It is not needed. If there were cases in which there was good reason to suppose that justice is no done, and that sane persons are acquitted as being mad, or *vice versâ*, then there would be good reason to suggest some alteration or some addition to the present mode of procedure; but there are no such cases. There have been some such cases in the past; but in every one of these the reason of the miscarriage of justice has been the attitude of the judge, who had made up his mind early in the hearing, or even on reading the depositions, and who, if he had had the power of calling an *amicus curiae*, would certainly not have exercised it. In the only cases, therefore, in which such a provision would be of any use, it would not have been utilized. And such cases do not occur now. Whether it is that judges are better acquainted with the facts of insanity, or that juries are more intelligent, I do not know; but the fact is that it is many years since I have had any reason to quarrel with the verdict in any reported case, and my remarks in the *Journal of Mental Science* on these cases have never met with any protest.—I am, etc.,

Parkstone, Dorset, June 6th. CHAS. A. MERCIER.

EMERGENCY BILL FOR MENTAL TREATMENT.

SIR,—Dr. White has written in such kind terms of me in your issue of June 5th, and has the best interests of mental patients so obviously at heart, that I am induced to send you another letter on the above subject.

If I may venture to say so, Dr. White seems to be confusing certain aspects of two entirely different subjects. She is a strong advocate for special wards or blocks in general hospitals for early cases of mental disease, and she recounts some of the advantages of this method of treatment. The system she advocates is in full operation at the Phipps Psychiatric Clinique of the Johns Hopkins Hospital in Baltimore, and as two of the physicians and two of the chief nurses there were trained at Morningside, I may be presumed to be acquainted with all the facts.

Because there are very many advantages connected with the treatment of the recently insane in general hospitals, is this a reason why the proved advantages of Section 13 of the Scottish Lunacy Act of 1866, which are of a totally different nature, should be withheld from people residing in England? Dr. White calls "genuine hospital treatment" the *alternative* method to those possible under the powers conferred in Section 13, and she underlines the word "alternative" to give it emphasis. It is, however, not alternative but supplementary. The well-to-do are not in the habit of entering the wards of general hospitals for the treatment of ordinary diseases, and are not likely to do so for mental disease. Moreover, a large proportion of the insane have no insight into their condition; they do not realize that they are sick in mind, and as they will not ask for advice nor follow any treatment, it is desirable to be able to treat them for their own good against their wills. Section 13 confers the powers necessary for dealing with these two classes without requiring those benefiting by it to be certified insane or registered as lunatics. In Scotland at least three hospitals now receive early mental cases without certification, including the Royal Edinburgh Infirmary, and Dr. White's excellent hospital ideals run concurrently with the useful powers conferred by Section 13.

I wish also to allay Dr. White's anxieties on two other subjects. She states very properly that "the root of the matter" is not the opinion of lunacy experts as to the benefits of the powers conferred by Section 13.

It is not the detainer, but the compulsorily detained, whose voice should be heard, since it is the latter who experience its detrimental tendency, when misapplied.

The Scottish Act has now been in operation for fifty-seven years. Has the voice of any patient treated during that long period, who has since recovered his reason, been heard in complaint against this method of dealing with him? Have any brought legal actions against those who thus treated them? I know of none; on the other hand, I am acquainted with many who have never ceased to raise their voices in gratitude.

Lastly, Dr. White refers to persons undergoing unjust detention, in agonized perplexity and misery,

simply because at the beginning they were deprived of their right to be seen by a magistrate and were debarred from any means of ascertaining or refuting the allegations made against them.

In Scotland no certified patient has ever had the right to see a magistrate, and so little is this privilege necessary to ensure justice, with the other precautions which now exist, that although more than 150,000 persons have been certified insane, only one action for illegal detention has been raised, and that one failed. Even this hopeless action would not have been permitted to be brought into court had one of the medical certificates been signed by the patient's own doctor.

The Scottish Board of Control has the right to inquire into the management and treatment of any patient believed to be suffering from mental disease, whether certified or not, and the complaints of every patient should be carefully forwarded as a measure of self-protection to that authority for independent investigation, if this be considered necessary by it. With these simple precautions for fifty-seven years it has been found possible in Scotland to treat patients suffering from the recent and recoverable forms of mental disease in their own houses or in nursing homes, without certifying them to be insane and registering them as lunatics, to their great advantage and happiness, and I do not see why the same good work cannot be done in England. Must we in Scotland demonstrate these facts for one hundred years before the prejudices of lawyers, the scruples of the over-anxious, and the conservatism of the English be overcome?—I am, etc.,

Royal Edinburgh Asylum, Morningside, June 8th. GEORGE M. ROBERTSON, M.D.

POISONOUS GASES.

SIR,—In a conversation with Mr. Henry Brunner, a director of Brunner, Mond, and Co., and a highly trained scientific and practical chemist, I found that he had a suggestion for the treatment of persons "gassed" by chlorine. As the suggestion appears to be no less valuable than simple, I give it in his own words, which are the chief part of a letter that he wrote to me the same day. More than one method has, I believe, been employed at the front, and it remains to be seen which is the most effectual and the most easy to adopt. The letter was addressed to me from Huyton, near Liverpool, on June 4th, 1915:

"Now, as to my remedy for men 'gassed' in the trenches by chlorine. It is, that a man so 'gassed' should be made to inhale the vapour of alcohol through a cloth moistened with whisky, brandy, rum, or with pure alcohol (and/or) ether if available.

"My reasoning is this: There is great chemical affinity between alcohol and chlorine. Alcohol absorbs chlorine with avidity, and the compounds formed by the interaction of the two, such as chloroform, chloric ether, chloral hydrate, and possibly others, are freely used in medicine, as you know better than I. Now, if a man has inhaled chlorine and subsequently inhales alcohol vapour, one would expect that one or other of these compounds

would be formed in the lung. (But chloral hydrate would not be formed under these conditions: it is formed by the action of dry chlorine on absolute alcohol only.) And if the chlorine combined, or were to combine in any form with the alcohol, the destructive effect on the lung tissue would cease, and the patient should be greatly benefited.

"In talking over this suggestion of mine with one of my co-directors, Mr. Robert Mond, shortly after I had seen you, he told me that he himself had been 'gassed' while making laboratory experiments with chlorine, and had found the greatest and almost instant relief by inhaling mixed vapour of alcohol and ether.

"I do not suppose that my suggestion would be of any effect in the case of poor fellows at Fazakerley. They are suffering from after-effects. But where the sputum shows any sign of acidity, due to formation of hydrochloric acid in the lung, it might possibly afford some measure of relief from coughing."—I am, etc.,

RUSHTON PARKER,
Professor of Surgery in the University of Liverpool, Lieutenant-Colonel, 1st Western General Hospital, (Fazakerley, Liverpool); R.A.M.C.(T.F.).

Liverpool, June 6th.

SIR,—When the effects of asphyxiating gas on our soldiers were first reported, I suggested to an eminent surgeon at the front the use of oxygen by subcutaneous injection for those with much obstruction in the respiratory passages. He was so good as to send a reply, as follows: "We have tried oxygen subcutaneously in several cases as you propose. It has seemed to be useful, and we shall continue to try it, for it is right to try everything one possibly can."

As we may, from bomb-dropping, have to deal with similar conditions in this country, I hope the method may be borne in mind. It has been used for some years in France and Canada[1] in many forms of dyspnoea, including those in which inhalation is impeded mechanically.

The technique is simple, all that is needed being a cylinder of oxygen, a piece of rubber tubing, and a hypodermic or small aspirating needle. If the tube is not clean, a little wool or gauze might be put as a filter into the end near the needle. The disconnected needle is inserted anywhere into loose subcutaneous tissue (for example, in the flank). If it have entered a vein, as shown by blood issuing, it should be taken out and inserted elsewhere. Oxygen is turned on at low pressure and the cylinder joined up to the needle. When a swelling such as would be produced by 300 c.cm. (10 fl. oz.) of normal saline has slowly appeared, the proceeding is repeated in another place, the first swelling being gently massaged to aid diffusion; 1.5 litre (say 50 oz.) has been injected altogether and repeated twice in the same day. It is, however, not necessary to measure the amount. No ill effects have been recorded, nor even inconvenience, whilst in many cases immediate and considerable relief is stated to have occurred.—I am, etc.,

J. D. MORTIMER, M.B., F.R.C.S.,
Anaesthetist, Royal Waterloo Hospital for Children and Women.

London, N.W., June 3rd.

SIR,—Lieutenants Hendry and Horsburgh, in their communication on suffocation by poisonous gases (p. 964), ask for suggestions as to treatment. I offer one which I have already made to the military medical authorities. It is that the direct method of examination of the respiratory tract might prove of value in the treatment of some of these cases. The aim is twofold: To relieve the terrible respiratory difficulty and to treat directly the injuries caused to the larynx, trachea, and bronchi, with a view to preventing the septic pneumonia and bronchitis caused by them.

No doubt the actual cause of the respiratory difficulty varies, but in some cases, I imagine, this is mainly caused by oedema of the lining of the air passages. This not only interferes with inspiration, but it militates against the exertion which would take place by the lungs. In some such cases the application of cocaine and adrenalin to the mucous membrane down to the secondary branches of the bronchi would not only relieve the breathing but would make it possible to discover the injury done and to treat this directly. I quite appreciate the limitations of this method when the oedema has extended into the bronchioles, and I also recognize the difficulties due to the severity of the condition and the numbers affected. But these difficulties are not, it seems to me, insuperable.

It is quite possible that the method has already been made use of, though I have not seen it reported. Indeed, in some patients who have been returned to military hospitals in this country, I have no doubt a direct examination and direct treatment of the later effects of these poisonous gases in the air passages has been carried out. The method is now routine in throat clinics, and even in cases such as asthma, bronchitis, bronchiectasis, which are considered in the domain of the physician rather than of the specialist, it has proved of value.—I am, etc.,

W. S. SYME.

Glasgow, June 7th.

[1] See the *Medical Press and Circular*, May 1st, 1912, and December 23rd, 1914; also *The Practitioner*, July, 1911, p. 130; *Lancet*, June 22nd, 1912, p. 1726 (Anoxyhaemia of Altitude).

THE SUPPLY OF MEDICAL MEN.

SIR,—The scheme suggested in my letter in your issue of May 22nd, p. 913, was not put forward as likely to be accepted as final or as free from objections. The point I wished to make was that compulsion and compensation were necessary principles in the solution of the present difficulty. It is useless to make suggestions without showing a way of carrying them out.

Just a word of criticism about Dr. Mackenzie's concrete example:

1. This practice, a country one, increased by £400 in the second year and by £300 in the third. Being a country practice, such a rapid increase is most unusual, and such an increase could not be expected to continue indefinitely. In a country practice in a rich neighbourhood—for example, Sussex—the variations up and down from year to year are often large. In a poorer neighbourhood the variations are much less. While one must admit the three years' average would entail hardship in certain cases, yet in general it would almost certainly be willingly accepted. Cases of hardship might be met by a special committee of business and medical men appointed for the purposes of working whatever scheme is decided upon, for it is impossible to please every one.

2. The keep of the locumtenent would be counterbalanced by the principal being kept while on Government service.

3. If the doctor died or became disabled in times of peace he would get less probably, as a death vacancy is only worth one year's purchase. It is essential to get rid of the idea that the medical profession wish to make money out of the war. We want a scheme whereby we lose nothing that the rest of the community do not lose. There is no doubt at present many medical men are being very hard hit and unnecessarily hit by the war. If we must be hit let us distribute the burden evenly, but, in my opinion, without any extra expense to the country, the medical profession need suffer no more than does the country in general.

Schemes put forward for helping medical men who are hard hit do not, up to the present, consider the greatest difficulty, and that is not the loyalty of the doctors, but the loyalty of the patients.

What we want is a lead from the heads of our profession. Any mass of men want leading. The last stages of the Insurance Act are a glaring example. Leaders should be able to note the trend of opinion in the masses, and give the leads as the occasions arise. The qualities of a leader are to recognize the necessary lead soon enough and the time when to give it.

In the country generally the same thing is happening. Public opinion has for some time ripened for some form of conscription. The heads of the Government are being led to it by the force of public opinion, whereas, by striking the right note some weeks or even months ago, the country would have risen to a popular leader, and much time, to say nothing of valuable lives, would have been saved.

What we want in the medical profession—and, indeed, in the country, too—is a real leader and real lead. The time is ripe—indeed, over-ripe. There comes a time when one must say "Too late."—I am, etc.,

M.D.

June 6th.

SIR,—Let "Young G. P." (p. 989) and others who write in the same strain ask a few questions of any temporary R.A.M.C. man. They will learn that in every regiment there are half a score of officers—solicitors, business men, and so on—whose "sacrifices" are incomparably greater.

Tens of thousands of privates are gentlemen who have given up everything. Horrible, I say, that there are men in our profession who can put into print the fact that they can only answer the "urgent call" if they are guaranteed from loss. Where would Kitchener's army be to-day if that spirit had actuated Englishmen—aye, and where would the R.A.M.C. be, crowded as it is with G.P.'s, young and old? Practically non-existent. If "Young G. P." does join and is attached to a regiment, he will find that, with the exception of the commanding officer, he is probably the best-paid man of the mess. He will have sitting next him civil engineers or solicitors who get 8s. 6d. a day to his 24s. I only hope that he will then blush to think of the letter he wrote to the JOURNAL of June 5th. When he returns "after the war" he will find that there will be no difficulty in making a living, even if his colleagues have annexed every patient he now has, and, for my part, I do not believe our patients will consent to be annexed or that our brother practitioners will try to annex them.—I am, etc.,

June 8th. TEMPORARY LIEUTENANT.

ON THE CURVE OF THE EPIDEMIC.

SIR,—In Dr. Brownlee's article on this subject (May 8th) there was given a differential equation of an unusual form which Dr. Brownlee said he had been unable to integrate in a suitable shape. I submit the following solution, which may possibly be of use to him and other epidemiologists. I am wholly ignorant of epidemiology, and am only responsible for the mathematical solution of the given equation:

$$\frac{1}{y}\frac{dy}{dt} = log\,\frac{CD}{N}\left(N - \int_o^t y\,dt\right)$$

I have taken the liberty of writing the known constants in capital letters. N is the number of susceptible persons; C is the number of these an infected person is likely to come in contact with at the beginning of the epidemic; and D is the coefficient of the power of infecting, regarded as constant throughout the epidemic.

Put $y = a\cos^2(mt - \alpha)$

$$\therefore \frac{dy}{dt} = -2am\cos(mt-\alpha)\sin(mt-\alpha)$$

$$\therefore \frac{1}{y}\frac{dy}{dt} = -2m\tan(mt-\alpha)$$

and

$$\int_o^t y\,dt = \frac{a}{2}\int_o^t (1+\cos\overline{2mt-2\alpha}\,dt = \frac{a}{2}\left[t + \frac{1}{2m}\sin\overline{2mt-2\alpha}\right]_o^t$$

$$= \frac{a}{2}\left[t + \frac{1}{2m}\left(\sin\overline{2mt-2\alpha} + \sin 2\alpha\right)\right]$$

$$= \frac{a}{2}\left[t + \frac{1}{m}\sin mt\,.\,\cos\overline{mt-2\alpha}\right]$$

Therefore,

$$-2m\tan(mt-\alpha) = log\,CD - log\,\frac{a\,CD}{2N}\left[t + \frac{1}{m}\sin mt\,.\,\cos\overline{mt-2\alpha}\right]$$

If, when $t = o$, $y = o$, that is, there are no cases of the epidemic, of course

$$\alpha = \frac{\pi}{2} \text{ and } y = a\sin^2 mt.$$

Then under these conditions,

$$2m\cot mt = log\,CD - log\,\frac{a\,CD}{2N}\left[t - \frac{1}{m}(\sin mt\cos mt)\right]$$

Or

$$2m\cot mt = log\,CD - log\,\frac{a\,CD}{2N}\left[t - \frac{1}{2m}\sin 2mt\right]$$

—I am, etc.,

Newcastle-on-Tyne, May 28th. A. S. PERCIVAL.

THE TREATMENT OF DIABETES MELLITUS.

SIR,—In Dr. R. T. Williamson's very instructive paper on "The Treatment of Diabetes Mellitus with Casein and Cream," it would be interesting to know on what grounds he prescribes oatmeal porridge, if even for only a few days, in severe forms of this disease "with marked diacetic reaction." According to Dujardin-Beaumetz and Hardy's analysis oatmeal contains 64 per cent. of starch; but the fact that it also contains gluten-casein in considerable quantity could scarcely outweigh the disadvantage of this heavy percentage of carbohydrate, being more than three times the amount contained in the potato.

Besides which oatmeal is the richest of all the cereals in nitrogenous substances and fats, excess of which are believed to be the cause of the very condition which in these severe cases Dr. Williamson is endeavouring to combat. Hence, in such cases, which he seems to approach with much hesitancy and want of confidence in his system, one would naturally think it safer to substitute some food containing a much less dangerous percentage of starch, etc., than oatmeal, unless, of course, coma is actually threatening, when a full return to carbohydrates is imperative. But even then oatmeal would be inadvisable; for, judging by its pernicious effects in certain skin troubles, the peculiar chemical combination and percentage of its constituents appear to be particularly irritative, a fact which, in my opinion, strongly contra-indicates it in any of the conditions causing or resulting from glycohaemia. I would therefore suggest as a substitute for oatmeal in the preliminary treatment, which Dr. Williamson seems to think necessary in these cases, potatoes well roasted, the pulp finely powdered and then worked up into the consistence of gruel by the addition of water or cream. This, I think, would give sufficient carbohydrate for the purpose, and have none of the disadvantages of oatmeal.

In treating glycosuria it seems strange, having regard to the caution observed in the gradual return to ordinary diet that turnips should be generally preferred to carrots. Turnips, according to König, contain more than twice as much sugar as carrots, which, in spite of the fact that they contain slightly more cellulose, are more digestible than turnips, and "at Vichy are regularly served at breakfast to the invalids taking the waters there." Carrots, too, contain more than double the quantity of soda, which may have some influence in reducing the tendency to acidosis. Carrots are slightly richer in nitrogenous substances than turnips, and contain little more than half the quantity of sulphuric acid, a fact of considerable importance in glycosuria, if only for the dehydrating effect of this acid on the blood.

The deoxidizing effect of certain of the vegetable acids should not be lost sight of, and in treating glycosuria it is almost as important to exclude the more acid-forming foods as those which make sugar; and on this ground tomatoes, particularly in gouty glycosuria, in consequence of the oxalic acid they contain, would seem to be contra-indicated.

The different chemical constituents and their percentages in foods other than those containing sugar or its precursors may seem so inappreciable as to be unworthy of notice, but such small differences may be more frequently responsible for turning the scale in favour of acidosis or its culmination in coma than is generally supposed.—I am, etc.,

Liverpool, March 20th. WILLIAM BRAMWELL.

Universities and Colleges.

UNIVERSITY OF LONDON.

PRESENTATION DAY.

ON presentation day, after the public orator, Professor E. A. Gardner, had delivered a Latin oration, which was chiefly concerned with the disturbance of university work caused by the war, about 450 students who had obtained degrees and other distinctions during the year were presented to the Chancellor, Lord Rosebery.

The Chancellor, in the course of a short address, in referring to a passage in the annual report of the Principal, said that in the last week in July His Majesty the German Emperor, out of the fullness of his beneficent heart, had been pleased to send the university a present of books, for which it was duly grateful. Then, a day or two afterwards, he was sending out the ultimatums to Europe which deliberately lit up this horrible scene of disaster, savagery, and slaughter. In this tremendous evil there was one counterbalancing advantage: it had

produced such an uprising of the nation, such a fervour of patriotic spirit as many had hardly hoped ever to see in Great Britain again; and not only in Great Britain, but all over the world-wide empire. Cadets from the University Officers' Training Corps to the number of 1,300 had received commissions in His Majesty's army, and certainly not less than 6,500 from the different schools and colleges of the university had gone into the army. The Vice-Chancellor, Sir Wilmot Herringham, had himself gone out, and, sad to say, he had his own particular loss, the loss of his only son, and the meeting should not pass without some expression of its sympathy. The war, the Chancellor continued, had had a most disastrous effect on university teaching. The more the ranks of students were depleted the more was the university's income diminished; but that was not all. One certain result of the war must be that at its end all the combatants would be exhausted for an indefinite time, and the University of London, which had hoped to receive from the hands of the Government some bounteous endowment and some palatial home, must adjourn its expectations indefinitely. But there was one consideration not wholly devoid of consolation: it was that the members of the university would be thrown on their own energies, their own activities, and their own mentality for progress and development. There had been friction between the internal and external sides of the university, but both were necessary to its full development, and he appealed to the university to work out its own salvation in harmony and accord on the broad lines laid down for an external and internal side, both equally necessary to the free and majestic task which Nature and its founders had imposed on the university.

Sir Philip Magnus, M.P. for the university, then addressed the assembly. In the course of his speech he said that the assertion that, as compared with Gemany, we suffered from the lack of a national system of education, could not be lightly dismissed; but he had never been among those who had persistently held up for imitation German institutions. While they had some good points, they presented others which should serve rather as a warning. The schools and universities of Germany had been unable to escape from the withering influence of State control. The *Lehr-freiheit*, of which German teachers had been so justly proud, had been seriously checked. Their work was under incessant supervision, and only within certain well-defined limits could they be said to be free to make their teaching strictly accord with what they knew. In many branches of knowledge, especially in history, the liberty of the teacher was strictly circumscribed, and it was by no means an uncommon occurrence for a professor whose political views were suspect, to be reminded by a Government official that he must not lose sight of the possibility of his services being no longer required. This possibility might help to explain the wholly unexpected attitude of certain well-known and distinguished professors towards incidents in the war. The unceasing interference and guidance of officials, moreover, had seriously cramped originality of thought among the German people. Even in this country, Government departments entrusted with the disposal of large funds by way of grants tended to become autocratic, and all such tendencies needed careful watching.

MEETING OF THE SENATE.

A meeting of the Senate was held on May 19th.

Examiners.

Dr. F. E. Fritsch (East London College) was appointed a member of the Board of Examiners in general biology for the first examination for medical degrees to be held in July, 1915, in place of Dr. R. Assheton, resigned; Professor J. P. Hill was appointed chairman of the Board.

The following were appointed to act as examiners for first and second examinations for medical degrees, Parts I and II, the examiners whose names are marked with an asterisk being appointed chairmen of the respective boards.

Chemistry.—Dr. G. Senter (Birkbeck College), Dr. W. H. Hurtley (St. Bartholomew's Hospital Medical School), together with the external examiners, Dr. H. F Morley* and Dr. P. Haas.

General Biology.—Professor J. P. Hill (University College), Dr. F. E. Fritsch (East London College), together with the external examiners, Mr. M. D. Hill and Professor H. W. M. Tims.

Physics.—*Dr. A. O. Rankine (University College), Dr. H. S. Allen (King's College), together with the external examiners, Dr. S. Russ, and Dr. W. Makower.

Anatomy.—*Professor F. G. Parsons (St. Thomas's Hospital Medical School), Professor J. E. S. Frazer (St. Mary's Hospital School), together with the external examiners, Mr. A. Macphail and Professor R. W. Reid.

Pharmacology.—Professor F. Ransom (London School of Medicine for Women), Dr. P. Hamill (St. Bartholomew's Hospital Medical School), together with the external examiners, *Professor A. R. Cushny and Dr. J. A. Gunn.

Physiology.—Miss W. C. Cullis (London School of Medicine for Women), Dr. J. Mellanby (St. Thomas's Hospital Medical School), together with the external examiners, *Professor E. H. Starling and Professor D. N. Paton.

Graham Research Laboratory.

Dr. Arthur E. Boycott, M.D., F.R.S., was appointed Director of the Graham Research Laboratory as from April 1st, 1915, to December 31st, 1915, in succession to Dr. Charles Bolton.

Special Research.

It was reported that the Medical Research Committee had made a grant of £300 for one year to the bacteriological department of King's College for researches by Professor Hewlett and Mr. Revis upon the cellular elements of milk.

Appointment of Representatives.

Sir Alfred Pearce Gould, K.C.V.O., was appointed a member of the council of the East London College, vice Sir Henry Miers, F.R.S., resigned; Professor A. D. Waller, F.R.S., was re-elected a governor of the Imperial College of Science and Technology; and Dr. H. H. Fisher was nominated a member of the Sheerness and Queensborough Local Higher Education Subcommittee.

Physiological Laboratory.

The title of Assistant Director of the Physiological Laboratory has been conferred upon Mr. W. L. Symes. The report of the Physiological Laboratory Committee for 1914, which was presented, stated that meetings of physiological and biochemical societies had been held in the laboratory. It also gave particulars of lectures given, as well as reports on the researches conducted, together with a list of publications.

Personnel of the Senate.

The following have been re-elected members of the Senate by the bodies indicated: Sir Thomas Barlow, Bt. (Convocation of Medicine), Dr. S. R. Wells (Convocation of Science), Dr. F. Taylor (Royal College of Physicians of London), Sir Alfred Pearce Gould, K.C.V.O. (Royal College of Surgeons of England), Sir William Collins, K.C.V.O. (London County Council), Dr. H. L. Eason and Sir Wilmot Herringham, M.D. (Faculty of Medicine), and Professor A. D. Waller, F.R.S. (Faculty of Science).

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE COUNCIL ELECTION.

JUNE 4TH was the last day for nomination of candidates offering themselves for election on July 1st. Sir Rickman Godlee, Mr. Moullin, Mr. Charters Symonds, and Mr. Ryall retire, and, owing to the death of Mr. C. B. Lockwood, the vacancies amount to five. We are informed that Mr. Charters Symonds and Mr. Ryall offer themselves for re-election and that Sir R. Godlee and Mr. Moullin do not. Seven Fellows not on the Council are candidates, namely, J. B. Lawford (Member, November, 1879, Fellow, December, 1885), ophthalmic surgeon to St. Thomas's Hospital; Mr. T. H. Openshaw, C.M.G. (Member, January, 1882, Fellow, December, 1886), surgeon, London Hospital; H. B. Robinson (Member, July, 1883, Fellow, June, 1887), surgeon to St. Thomas's Hospital; Mr. Walter Spencer (Member, August, 1885, Fellow, June, 1887), surgeon to the Westminster Hospital; Mr. F. F. Burghard (Member, January, 1886, Fellow, March, 1889), surgeon to King's College Hospital; Mr. H. F. Waterhouse (Member, August, 1887, Fellow, June, 1890), surgeon to Charing Cross Hospital; and Mr. Percival Macleod Yearsley (Member, May, 1890, Fellow, December, 1893) senior surgeon, Royal Ear Hospital, Dean Street, Soho; in all, nine candidates for five vacancies. Our readers will remember that five out of the seven candidates not yet on the Council offered themselves for election last year.

Obituary.

DR. E. C. B. DE CÉRENVILLE, professor of clinical medicine in the University of Lausanne, who died recently in his 72nd year, was born at Sépey in 1843. He received his literary education first at the College of Moudon and afterwards at the Academy of Lausanne. From 1862 to 1868 he studied medicine at Zürich where he was assistant first to the chair of physiology and then to that of medicine. Afterwards working for a time as assistant to Rose, the professor of surgery, he took his doctor's degree, the subject of his inaugural thesis being typhoid fever. After visiting the clinics of Prague, Vienna, Paris, and London, he settled at Lausanne in 1869. When the Lausanne Academy was transformed into a university, de Cérenville was appointed professor of clinical medicine and internal pathology. This chair he held till 1898. He also held many other public appointments and was a member of numerous societies, not only medical but scientific, historical, and artistic. He was president of the Société Médicale de la Suisse Romande, a position which he held till 1908, and was for a number of years secretary, and

from 1903 till 1908 president, of the Swiss Medical Commission. Dr. de Cérenville contributed largely to medical literature. He was for several years coeditor with Marc Dufour of the *Bulletin de la Société Médicale de la Suisse Romande*, and continued to collaborate when the place of publication was removed to Geneva, and the *Bulletin* was transformed into the *Revue Médicale de la Suisse Romande* in 1881. The bibliography of his writings occupies almost two pages of small print in the issue of that periodical for May 20th.

DR. MORIZ ROTH, whose death is announced, was born at Basel in 1839, and after studying medicine there and at Würzburg, Göttingen, and Berlin, took his doctor's degree in the university of his native city in 1864. After lecturing as *privatdocent* at Basel from 1866 to 1868, he migrated to Greifswald, where he taught till 1872. In that year he returned to Basel as extraordinary professor of pathology. He became full professor in 1874. He made several contributions to the literature of his speciality, but he was probably best known as the greatest authority on the life and work of Andreas Vesalius, the reformer of anatomy. His monograph, *Andreas Vesalius Bruxellensis*, published by Georg Reimer of Berlin in 1892, practically exhausts the subject.

SURGEON-GENERAL GEORGE WILLIAM ROBERTSON HAY, Bombay Medical Service (retired), died in a nursing home in Edinburgh on May 26th. He was educated at Edinburgh University, took the diploma of L.R.C.S.Edin. in 1867 and the degree of M.D. in 1868, and entered the I.M.S. as assistant surgeon on April 1st, 1868. He became surgeon on July 1st, 1873, surgeon-major on April 1st, 1880, brigade-surgeon-lieutenant-colonel on December 3rd, 1892, surgeon-colonel on August 16th, 1897, and surgeon-general on April 1st, 1900, retiring on December 27th, 1904. The last post he held in India was that of Principal Medical Officer of the Madras Command, an appointment abolished some ten years ago. The *Army List* assigns him no war service.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. F. S. Coolidge, professor of orthopaedic surgery at the Rush Medical College, Chicago, aged 49; Dr. William H. Forwood, who in 1902 served as surgeon-general of the United States Army, aged 77; Dr. Georges Haltenhoff, professor of ophthalmology in the University of Geneva, aged 71; Dr. J. H. Salisbury, assistant professor of medicine in Rush Medical College, professor of medicine in Illinois Post-Graduate School, co-editor with Dr. Frank Billings of the Section on General Medicine of the "Practical Medicine Series," and joint author with the late Professor C. S. N. Hallberg of the *Physicians' Manual of the Pharmacopoeia*, aged 61; and Dr. Francesco Scordo, lecturer on pathology in the University of Messina, aged 38.

Medical News.

MEMBERS of the profession having votes in connexion with the approaching election for foundation scholarships at Epsom College may be glad to be reminded that among the candidates is William Eaton Milward, the second son of the late Dr. Courtenay Milward, who died suddenly at the age of 41 in April, 1913, leaving a widow and three sons—aged 15, 9, and 2—almost totally unprovided for. Dr. Milward, who was an old Oxford and Guy's student, worked so unselfishly for his profession as to undermine his health. The case is supported by a large number of members of the profession. Votes, which must be returned on or before June 19th, will be gratefully received by Mrs. Courtenay Milward, 5, Glossop Road, Cardiff.

OWING to the Insurance Commissioners having arranged for the removal of the non-commissioned officers and men, for whom beds had been reserved by the War Office in the King Edward VII Sanatorium, Midhurst, to institutions corresponding to the localities in which the patients propose to reside, the sanatorium has from June 1st reverted to its original purpose of receiving both male and female patients suffering from pulmonary tuberculosis who belong to the educated classes, whether in professional or kindred employments, but whose means are limited. The sanatorium has been reconstituted for this purpose from June 1st.

IN an address delivered at the recent Massachusetts Health Conference, Miss Ella Phillips Crandall, of New York, stated that in 1901 there were only 53 nursing organizations and 136 nurses in the United States doing what may be termed "community nursing." The municipal nurse was hardly known. There are now 2,066 nursing organizations in the United States, and over 5,000 nurses serving under departments of health or education, philanthropic organizations, insurance companies, and industrial and commercial agencies. The work of these nurses is primarily educational and prophylactic.

THE annual meeting of the South London Hospital for Women was held at Sunderland House, by kind permission of the Duchess of Marlborough, on June 2nd. The Marchioness of Londonderry, president of the board of management, who was in the chair, stated that the gifts of anonymous friends, amounting to £16,000, would make it possible to complete the main hospital buildings by the end of the present year. The average attendance in the out-patients' department was 500 weekly, and practically every one of the women had a husband, son, or other near relative serving in the army or navy. The Duchess of Marlborough spoke of the brilliant work done by medical women, and pleaded for better opportunities being given them to extend their clinical experience in staff appointments at hospitals. Mrs. Scharlieb, consulting surgeon to the hospital, also spoke.

THE usual monthly meeting of the Executive Committee of the Medical Sickness and Accident Society took place at the society's offices on May 21st, when Dr. F. J. Allan was in the chair. The sickness claims, which during the first few months of the year were heavy owing to the influenza epidemic have since fallen to normal. It was reported that since the outbreak of war the society had paid in claims arising from wounds, etc., received on active service, the sum of £250. The number of the society's members now serving in the R.A.M.C. steadily increases, and much satisfaction has been expressed at the treatment accorded them by the society in respect of their sickness and accident benefits. In spite of the adverse conditions experienced among all insurance companies, the society's business was maintained on the same level as previous years. The combined sickness and life assurance table for the younger members of the profession was becoming very popular owing to the low premiums charged for the first five years—a difficult time for a young man starting in a profession. Prospectus and all information can be obtained on application to Mr. Bertram Sutton, Secretary, Medical Sickness and Accident Society, 300, High Holborn, W.C.

FOLLOWING the example of the immortal islanders, who averted financial disaster by taking in each other's washing, the Germans and Austrians have apparently learnt to be sufficient unto themselves—in the matter of health resorts at least. While even in neutral countries such resorts are languishing, Marienbad has, according to a note in the *Wiener medizinische Wochenschrift*, maintained its activities even during the winter. A large number of military hospitals were organized for the reception of the wounded, for whom the baths and springs of Marienbad were prescribed by the medical service of the army. By this process of selection, the subjects of infectious diseases were kept away, and, while doing good work, the town was protected from those epidemics which so often follow the trail of the wounded. The beneficial results effected were striking even in severe cases, and, according to published figures, a cure was effected in 89 per cent. of the total. Only 11 per cent. remained unfit for military service, whereas 36.5 per cent. were drafted into the so-called "convalescent" companies, and 52.5 per cent. were sent back forthwith to the front. At the beginning of the summer season, which was officially opened on May 1st, most of the military hospitals were closed, and only a few of the convalescent soldiers were allowed to remain. Apparently this enforced exodus was prompted by the fear that the usual paying guest would be discouraged from attending the baths or be crowded out by the victims of the war. It is stated that no changes were to be made in the conduct of the baths during the summer season. Most of the personnel had not left their posts, and arrangements had been made by the local authorities with the Government so that the dietetic restrictions imposed on the rest of the country were not valid for Marienbad invalids. About 200 free tickets had been provided for needy German, Austrian, and Turkish officers, and the baths and music were free for all convalescent soldiers.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate. Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

L. H. would be glad to know of a suitable place in Scotland to which to send a rheumatic case in July and August. Gravel or sandy subsoil preferred, and with some amusements and society.

THE DISTORTION CAUSED BY LENSES.

W. M. H. asks advice on the cause of trouble caused by the wearing of cylinders with oblique axes, which have been prescribed after careful retinoscopy and subjective examination. The patients assert that straight lines, such as those of a door frame, are inclined, so that the top parts appear farther away than the lower parts. In one case the trouble was corrected by ordering weaker cylinders—albeit, the visual acuity was not so good.

*** The difficulty noted by "W. M. H." arises from the fact that glasses are at best an indifferent correction of an error of refraction. There is one, and only one, position in a lens through which vision is at its best; vision through any part of the lens other than its centre is subject to distortion, and this in proportion to the power of the lens. The defect in its maximum can be seen by holding a 10° prism before the eye; according to the position of the base, the wall of the room may be made to seem to be falling on one or away from one; with the base inwards the wall seems to be bulging forwards. For this reason prisms of more than low degree cannot be worn. So with spheres and cylinders; it may be found that a certain correction gives the best straightforward vision, but is not so comfortable as a rather weaker correction giving a poorer visual acuity, but a field less disturbed by distortions.

LETTERS, NOTES, ETC.

VITTEL WATERS.

THE agent in England of the Vittel mineral waters (Vosges), 12, Mark Lane, London, E.C., writes with reference to the note in the JOURNAL of last week to state that there ought to be no difficulty in obtaining Vittel waters in this country. With the exception of a month or so after the outbreak of the war regular supplies of the water have, he states, been coming through from France.

MARGARINE.

DR. C. STENNETT REDMOND (Tottenham) writes: It surprises me to see letters in your columns from time to time from medical men questioning the value of margarine as an adequate butter substitute, having regard to the fact that, in the 1904 edition of Dr. Robert Hutchison's standard work on *Food and Dietetics*, he states that 102 lb. of margarine are equal in nutritive value to 100 lb. of butter, its flavour is equal to that of an average sample of butter, and . . . that it should be welcomed as an admirable and cheap substitute for a rather expensive, but necessary food" (butter), p. 139. And again, in third impression, third edition, 1914, he iterates this opinion, and adds that "as the flavour of the best variety of margarine is equal to that of an average sample of butter, while having the advantage of being very much cheaper, there is every reason to wish that the prejudice against it, which is still rather widespread, should quickly disappear" (p. 136). Further, Dr. Chalmers Watson on *Food and Feeding*, second edition, 1913, p. 42, refers to margarine as "an admirable and cheap substitute for a necessary, but expensive food, which with advantage could be made more use of, especially in cooking." It is a well known fact that most of the high class pastry, cakes, etc., made in this country for many years are and have been made with margarine—and quite right, too.

My personal experience of margarine dates back to 1905, when, as the outcome of a lecture on cheap food and cookery delivered under the auspices of the Ancoats Healthy Homes Society at the Islington Hall to a large audience of working-class folks, I was asked by the Manchester agents of the largest manufacturers of margarine in Holland if I would visit and thoroughly inspect and examine their works and see for myself the materials used and the mode of manufacture and write them a detailed report thereof for publication.

This I did, and received the surprise of my life! No British dairy I ever saw, not excepting the travelling one of the Royal Agricultural Society, dealt with butter-making in a more thoroughly hygienic and scrupulously clean manner; the products of the great 200 gallon churns were never touched by hand from start to finish, and the men employed were as clean and tidy as plenty of soap and water and white linen could make them. I came away a convert to margarine, and have used it in my own household ever since and commend it to my patients.

COMPLETE INVERSION AND PROLAPSE OF UTERUS.

DR. F. L. POCHIN (Oldham): The case published by Dr. Oag in the JOURNAL of April 17th is a very interesting one to me, as it recalls a very similar case I reported some years ago. In mine the disaster was caused by traction on the cord exerted by a midwife, and the naked-eye appearances exactly resembled those described by Dr. Oag, the treatment being also similar. However, although the patient suffered from only a slight degree of shock, the uterus was replaced with great ease, which does not support Dr. Oag's theory that the operation was facilitated by the great shock in his case. My patient was exceptionally fortunate in making an uninterrupted and complete recovery.

THE HEALING POWERS OF SUNLIGHT.

DR. THOMAS DUTTON (London) writes with reference to the article on Rollier's work (May 29th, p. 936) to say that he practised sunlight healing over a quarter of a century ago, and that his cures of varicose ulcers by this means should be well known. He states further that he published some cases of tuberculous disease in the *Medical Press and Circular*, and other medical papers, and that his instrument for the better administering of the rays would have been available for the profession had it not been for the war. He adds that he does not go to extremes in his sun rays treatment, but takes every advantage of the sunlight and pure warm dry air, and the avoidance of cold damp air.

THE TREATMENT OF ITCH.

J. O. PINTO (I.M.S.) writes: The following prescription will be found neat, quick, and effectual in the treatment of itch: Sulphur. praecip. 8 grams; hydrarg. ammon. 24 cg.; acid. carbol. 24 c.mm.; creosoti 24 c.mm.; olei anethi 24 c.mm.; adipis benzoati vel paraffini mollis 8 grams. Misce; ft. ung. It should be applied at bedtime. The parts affected should be washed with soap and hot water, all the scabs being removed as much as possible and the pustules broken. The ointment should then be applied with a slight friction movement and be left in overnight. In the morning a warm bath or soap and water to wash off the ointment. The clothes worn overnight should be boiled; and the fingers and nails to be kept perfectly clean to prevent reinfection. A sulphur purge may be given if desirable; this is best administered in tamarind whey. The patient should avoid scratching himself with his fingers, but if the pruritus is intense, a blunt-edged spoon is best for the purpose; it should be dipped in carbolic lotion each time after use; the hands should also be washed in antiseptic lotion several times a day. A a rule, one application of the ointment should be sufficient, but if the body is extensively affected, one side only should be treated at one time, the process being repeated the next evening on the other side. The ointment may be diluted if necessary, especially in the case of children, and if it is to be applied to the head. On the whole, it may be said, it is not difficult to treat itch; it is less easy to prevent the patients from a fresh self-infection of it.

NOTIFICATION AMENITIES.

X. Y. Z. writes: I recently notified some infectious cases. The medical officer of health remarked to one patient that she was looking very well, and thereby made the mother think there was very little the matter. In the other case he remarked to the mother that he was surprised she had changed her doctor (he having attended previously to the family). Desquamation followed.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

FATIGUE DYSPEPSIA.

BY

GUTHRIE RANKIN, M.D., F.R.C.P.,

PHYSICIAN TO THE DREADNOUGHT AND ROYAL WATERLOO HOSPITALS.

It is almost necessary to offer an apology for introducing into the mass of literature in connexion with digestive disturbances any new element that may serve to increase the complexity of a subject already rendered sufficiently difficult by confusing and overlapping classification no less than by perplexing etiological considerations and a wilderness of suggestions for treatment both prophylactic and curative.

The question of food and its comfortable assimilation is one of universal interest. In order to live we must all eat and drink, and to live comfortably and work well it is essential that the physiological and chemical processes by which alimentation is maintained should be carried out efficiently and without any subjective knowledge of the unceasing efforts by which Nature keeps the balance true between bodily income and expenditure. The quicker pace at which life is now spent, the increasing demand upon energy-output to meet the requirements of a more bustling age, the restless ambition for greater prosperity, the increasing variety in foods, and the growing fashion of more luxurious elaboration in meals, are some of the factors that are insensibly compelling our digestive organs to accommodate themselves to a new order of things, and to rise to the occasion of a changing environment for which the march of events is inevitably responsible.

It cannot be doubted that in this process of adaptation to the requirements of a higher civilization the greater part of the strain imposed by present-day life falls upon the nervous system, and therefore it is not surprising to find that in the relationship of that system to the digestive organs new conditions are becoming established which, if not responsible for any actual change in anatomical fact or physiological process, are yet bringing about a functional response to altered demands which may be held responsible for a type of digestive disturbance formerly either unknown or so occasional in its occurrence as to require no separate classification.

We are familiar with the usual types of dyspepsia which declare themselves by discomforts directly related to the ingestion of food. They are conveniently classified as "acid," "atonic," or "fermentative," according to their prevailing symptoms, and are sufficiently differentiated from one another to justify individual description and to call for separate treatment. The causes upon which these varieties of dyspepsia depend are many—organic disease, faulty chemico-biological processes, unwholesome or excessive food, and unwise or badly regulated habits of life, are among the etiological factors which account for a large majority of cases. But in the variety of dyspepsia to which, in this paper, I desire to call attention, there is one additional and foundational cause met with in every case—namely, an irritable or exhausted state of the nervous system, the result of overstrain. It is essentially a dyspepsia sequential to wear-and-tear, but it would seem to be more closely associated with work whose nature makes excessive demands upon the central nervous system than with that which entails prolonged and exhausting physical effort. Its victims, therefore, are to be found almost exclusively among that section of the community whose labours are intellectual or originative rather than among those who earn their daily bread by the sweat of their brow. Further, it is met with among yet another class of men who are not hard workers in any sense of the term, but who, being affluent and therefore removed from any necessity for active effort, are free-livers, and are also, either from inheritance or acquisition, worriers. In their case the nervous system becomes exhausted from passive toxaemic influences almost more readily than from the over-active objective functioning common in those who are always working at high pressure. Under both conditions a general neurasthenic state is engendered which, under the guidance of unexplainable tendencies, somehow concentrates in a certain number of persons the full force of a depraved nervous energy on the processes of digestion. When once this gastric neurosis is established, a vicious circle is readily created whereby the toxaemia consequent upon gastric unrighteousness poisons the nervous system, which, in its turn, promotes a progressive increase of the digestive disturbance. Sooner or later the general nutrition begins to suffer, and the discomforts of an abiding dyspepsia, with its accompanying neurasthenic miseries, are seriously accentuated by loss of weight, sleeplessness, mental depression, and asthenia, all combining to make concentrated work impossible, and to render life a veritable burden.

ETIOLOGY AND SYMPTOMS.

The essential etiological factor in fatigue dyspepsia is a depraved innervation of the gastro-intestinal tract. The disorder therefore occurs either in persons born with a "shoddy" nervous system, or in those who have called upon a normal nervous system for efforts greater than it has been able to overtake. The end is the same in both instances—a breakdown, more or less complete, of nerve stability—with the incidence falling in the first instance and for the most part on the digestive apparatus. Every case of fatigue dyspepsia is accompanied by the same underlying phenomena of neurasthenia—loss of weight, dream-disturbed and broken sleep, capricious appetite, a constant sense of physical fatigue, failing powers of mental concentration, loss of memory, irritability, introspective uncertainty, depression of spirits, restlessness, and a firmly-established conviction that the world is "out of joint." These landmarks of the neurasthenic state stand out with greater or less prominence, and hall-mark, as it were, the type of dyspepsia.

The leading features of the dyspeptic element in the clinical picture may be summarized as follows: The appetite is not necessarily seriously impaired, but the patient becomes suspicious of one thing after another in his daily dietary, and cuts it out of his menu in the hope thereby of finding relief to the miserable discomfort which he comes to realize will inevitably succeed every meal. This discomfort is not experienced immediately, but declares itself from two to four hours after food by a gnawing and burning sensation in the epigastrium, gradually succeeded by a feeling of oppressive distension, with a commanding desire to find relief in constantly repeated eructations, or even actual vomiting. These efforts are at first accompanied by an excessive flow of saliva, gradually replaced by acid and acrid regurgitations of fluid from the stomach. The sufferer soon comes to know that temporary relief is obtained from sodium bicarbonate or soda-mint lozenges, and further discovers in time that the taking of more food gives him immediate, though temporary, immunity from his trouble. He is often aroused from sleep in the early hours of the morning with all the symptoms referable to his stomach in full activity, and so familiar does he become with the relief afforded by food of any kind that he adopts the plan of having biscuits by his bedside, in order to secure such comfort as will enable him to go to sleep again. Sickness is unusual except in advanced cases where dilatation of the stomach has taken place, but relief is sometimes sought by a voluntary emesis. As a rule, the bowels are obstinately confined, but they may be irregular in their action, with a liability to diarrhoeal evacuations from time to time. This is specially apt to happen when there are colonic complications. The subjective sensation of pain is accompanied by tenderness over the stomach region, and this may be so acute as to make even the pressure of the clothing uncomfortable. The ultimate effect on the general nutrition is not so marked as might be expected, and when assimilation fails, as it does eventually, the emaciation would seem to be due much more to a progressive general neurasthenia than to inanition from want of food. Though the patient fears his food because of the subsequent discomfort, he takes it well until he reaches the stage where he tries experimentally to cure himself by abstaining from one article of dietary after another because he believes this, that, or the other to be responsible for the pain. Sooner or later the participation of his nervous system in the disturbance of his health becomes such a predominating feature of his condition that the digestive phenomena, though the pivot round which all the other symptoms fluctuate, come to occupy a subsidiary place. The patient is now mentally wretched, and so obsessed with the increasing evidences of failing health, that he gets driven

from all successful participation in the duties and circumstances of his everyday life. All else is subordinated to anxieties about his health, and his fears of cancer or some other equally serious explanation of his symptoms are fed by the constantly recurring pain at his epigastrium, with its accompanying sense of over-distension and concurrent waterbrash or heartburn. The acidity is often so distressing as to lead to an excessive and unwise use of strong solutions of sodium bicarbonate or other alkali.

When a patient suffering from such a series of subjective symptoms is examined physically, he presents all the phenomena already adverted to as indicative of the neurasthenic state. In uncomplicated cases there are no evidences of disease outside the alimentary tract, but when this comes under investigation it will be found invariably that a definite group of signs accompany the subjective symptoms which have fixed themselves upon the patient's attention. There is well-marked localized tenderness on pressure over the right region of the epigastrium, intensified by causing the patient to take a deep inspiration, and accompanied by rigidity of the upper segment of the right rectus muscle. The stomach is flabby, or even in severe cases dilated, and splashing sounds can often be elicited on succussion. In many cases the colon is distended, and sometimes faecal accumulations can be discovered, especially in the ileo-caecal region or along the course of the sigmoid flexure. Collateral physical signs are frequent, and some of the more prominent are worthy of mention. Thus, in patients who are thin, the right, or more rarely the left, kidney is palpable, and may be abnormally loose. The urine frequently contains phosphates in excess, and in a fair proportion of cases the presence of indican can be demonstrated. The skin is inelastic and greasy; the complexion is muddy, and may be eloquently expressive of a toxaemic state of the blood. The teeth are often found to have been inadequately cared for, and the gums may show signs of a more or less pronounced pyorrhoea. Evidences of vasomotor instability are prominent and manifest themselves in cold and clammy hands and feet, waves of heat or cold radiating over the whole body, chilly perspirations, periodic attacks of polyuria, vertiginous sensations on sudden movement or change of position, and unexpected diarrhoea with offensive stools interrupting a chronic condition of obstinate constipation.

From a long series of cases illustrative of this condition which I have collected, the following may be quoted as typical examples:

CASE I.

A spare, active man, 61 years of age; a journalist. When a boy, over-indulged in games, and all his life had been overstrenuous. Had suffered from a feeble digestion for many years. Often experienced nausea, but had never vomited. Subject to attacks of vertigo. Sleep uncertain. Appetite good. Bowels very confined. Never had haemorrhage. His stomach contents had been examined after a test meal and found normal. Some years ago he was radiographed after a bismuth meal, and was told he had a "congested duodenum." For many months had suffered from hunger pain, which was relieved by sodium bicarbonate or more food; constant heartburn; waterbrash; recently some loss of flesh. On examination he was a spare man of distinctly neurasthenic type; introspective; impressed with the misery of his condition, and unfit for any continued exertion of mind or body. His thoracic organs were normal. The stomach was distended considerably below the costal arch, but there was no splashing heard on succussion. The tongue was wholesome and clean. The teeth had been well looked after. To the right of the epigastrium there was marked tenderness to pressure, which was intensified on breathing deeply, and the right kidney was palpable. His deep reflexes were exaggerated, but there was no evidence of organic change in his nervous system.

CASE II.

A robust-looking, active man, 45 years of age; a gentleman farmer. Family history distinctly gouty. For two years had suffered from recurrent attacks of dyspepsia, manifesting itself by pain in the stomach coming on about three hours after each meal, accompanied by much heartburn and flatulence, and relieved at once by more food. The bowels were usually very confined, but from time to time he got an unaccountable attack of diarrhoea. There had never been any haemorrhage. He lived a busy, but abstemious life. For some years he had unusual worries. On examination his tongue was slightly coated. The teeth were sound. His heart and lungs normal. His stomach was dilated to 1 in. above the umbilicus, and there was localized tenderness to the right of the epigastrium. He was subject to occipital headaches, which were most troublesome after an unusually strenuous day. His sleep at night was broken by dreams, and he was frequently waked at about 4 a.m. by his stomach discomfort. His deep reflexes were exaggerated. He suffered at times from polyuria, but his urine was normal. He was of the neurasthenic type.

CASE III.

A spare, pallid man, 57 years of age; a medical practitioner who had worked very hard and had lost about a stone and a half in weight. Four years ago operated on for suspected duodenal ulcer, but nothing found wrong with the duodenum. Appendix was removed. Had never felt well since his operation. Complained of fullness and pain coming on at varying intervals after food. Occasional heartburn. Frequent waterbrash. Discomfort always relieved by sal volatile and sodium bicarbonate, or by biscuits. Sleep at night uncertain. Bowels very confined. Suffered constantly from cold fingers and toes. No vomiting and no history of haematemesis or melaena. On examination his stomach was found dilated to the level of his umbilicus and splashing sounds were present. Resistance and tenderness marked over the right epigastrium. No "lump" felt and no glandular enlargement. Exaggerated reflexes and many subjective evidences of an unstable nervous system, but no symptoms of organic change. The urine contained no sugar or albumin, but phosphates were present in excess.

CASE IV.

A wiry, gouty type of man, aged 54; a soldier. Had enteric fever in India twenty-two years ago. After much worry had been suffering during past six months from flatulence, heartburn, loss of weight, disturbed sleep, and mental depression. Pain in the stomach three hours after each meal, which continued with more or less severity until he took more food, when it was at once relieved. Appetite good. No vomiting nor any history of haemorrhage. The bowels constipated. On examination, the tongue was coated and the stomach distended. Splashing sounds were readily produced. There was tenderness to pressure over the epigastrium, and the right rectus muscle was resistive to manipulation. The urine was high coloured, and gave a positive indican reaction. The colon was distended, but nowhere tender. The terminal joints of the fingers were thickened and bulbous. Heart normal, but with a moderate accentuation of the second aortic sound. The arteries were somewhat thickened and tortuous.

CASE V.

A robust, active man, aged 47; a manufacturer. Ten years ago, under the strain of excessive business anxieties, his nervous system broke down and necessitated a long period of rest. Eighteen months ago his appendix was removed. After this operation his health remained fairly good until February, 1914, when he began to suffer from abdominal discomforts, which were most pronounced before meals. He always felt hungry, and was never so free from epigastric uneasiness as immediately after food. He was constantly reminded that his digestion was wrong by waterbrash and regurgitations of sour acrid fluid. Frequently disturbed in the early hours of the morning by pain in the stomach, which he relieved by a glass of aërated water.

He was a well-nourished man with no evidence of organic disease, but there was deep-seated tenderness to the right of the epigastrium. The stomach was of normal size, and neither kidney could be felt. The muscles at the back of the neck were stiff and painful on movement, probably from a mild fibrositis. Occasionally he suffered from irritable patches of dry eczema over the instep of the right foot. The heart was normal in size and regular in rhythm. There was slight accentuation of the second aortic sound and comparative dullness to percussion over the manubrium sterni. The urine was of high density, very acid, and contained urates in large quantity.

CASE VI.

An anaemic spare man, aged 45; a director of public companies. He had an attack of jaundice in 1905, and in 1903 had malaria in East Africa. In 1909 he began to suffer from acute heartburn and pain in the stomach, coming on, not immediately after, but within two hours of each meal. Had never vomited, and there was no record of haemorrhage. Though thin, he did not think he had recently lost weight. His complexion was cachectic, and suggested the possibility of pernicious anaemia. His tongue was coated and his breath disagreeable. The bowels were as a rule confined, but occasionally he had diarrhoeal attacks. His teeth had given him much trouble, but had been carefully looked after. There were no important blood changes.

On examination the chest organs were normal except for a haemic systolic murmur over the base of the heart. The stomach was dilated to the level of the umbilicus, and loud splashing sounds were easily produced. There was acute tenderness to the right of the epigastrium, and the corresponding rectus muscle resented even the lightest pressure. He was constantly troubled with regurgitation of sour undigested food. The liver was felt 1 in. below the costal arch. The urine contained a trace of albumin and gave a decided indican reaction. Since first seen he has had several minor attacks of above description, but he has now acquired a normal complexion, and the cardiac murmurs have disappeared.

CASE VII.

A healthy-looking, active lady, aged 32, who until recently had never been seriously ill; a school mistress. Family history unsatisfactory, one sister being neurasthenic, and one brother hopelessly alcoholic. After unusually hard work and

home difficulties she broke down entirely in 1910; after a prolonged rest she returned to work, but almost immediately broke down again, and had a Weir Mitchell cure, together with electric baths, hypnotic suggestion, etc., but no permanent improvement resulted. Since 1912 she had been subject to pain coming on three hours after each meal, accompanied by acute heartburn, and replacing entirely an ordinary atonic type of dyspepsia, from which she previously suffered more or less continuously. She had never vomited, but often experienced nausea. The relief to her discomfort that came from taking more food was appreciable, but not very lasting. The bowels were obstinately confined. Menstruation normal.

On examination her stomach was normal in size, but tenderness to the right of the epigastrium was pronounced. There was no discomfort experienced on deep pressure over the appendix, but the right kidney was loose. A soft systolic murmur was audible over the cardiac area, but it was obviously haemic. The deep reflexes were exaggerated. Vasomotor phenomena were present, and particularly the fingers and toes were cold, blue, and defective in acuity of sensation. She always suffered from chilblains in cold weather. Mentally she was depressed and introspective. The urine contained a large excess of phosphates, but was otherwise normal.

CASE VIII.

A spare, energetic man, aged 68; a landed proprietor with no occupation. Family history gouty, but otherwise unimportant. For three years he had suffered from pain in stomach, coming on four hours after a meal, heartburn, flatulence, irregularity of bowels, and loss of weight. Had occasional vomitings, which at once relieved the discomfort. Never any bleeding. The pain at once disappeared on taking more food or sodium bicarbonate. Had been treated at Harrogate for colitis. Subject to attacks of vertigo on sudden change of position. His condition had been diagnosed by one physician as duodenal ulcer, and by another as early malignant disease at the pylorus.

On examination the heart was found slightly hypertrophied, with an accentuated second aortic sound and a definite systolic murmur over the aortic cartilage. The arteries were thickened and tortuous. The blood pressure registered 160 mm. The stomach was distended, and also the colon. There was tenderness in the epigastrium, most marked to the right of the middle line, and intensified on pressure. The urine was of low density and high colour; it contained a trace of albumin, and gave a deep indican reaction. The liver was of normal size. No gland could be felt anywhere.

CASE IX.

A stout, prematurely old man, aged 56; a stockbroker. As the result of overwork had for upwards of three years suffered from impaired digestion. Pain, flatulence, and heartburn coming on about three hours after meals and relieved by more food. Progressive loss in weight. Sleep disturbed at night by hunger-pain. Subject to nausea and retching, but never vomiting. No history of haemorrhage. The urine contained 1.2 per cent. of sugar, but neither albumin nor indican.

On examination the arteries were moderately thickened, and the sphygmomanometer registered a tension of 145 mm. of mercury. There was slight accentuation of the second aortic sound. The stomach was normal in size, but very distinct tenderness was experienced on pressure over the right epigastrium. The deep reflexes were *plus*. The small joints of the fingers were deformed from rheumatoid changes. The tongue was coated, and the bowels never acted except under the persuasion of aperients.

CASE X.

A gouty, well-nourished man of neurasthenic type, aged 57; a manufacturer. Had suffered for two years from gastric trouble, which had been diagnosed as duodenal ulcer, and for the relief of which an abdominal operation had been strongly urged. Uneasiness at the pit of the stomach coming on within two hours of a meal and becoming gradually accentuated until relieved either by vomiting, or bismuth, or whisky and water. He had been much impressed by the immediate comfort he derived from food. Waked almost every morning about four o'clock by sense of fullness giving rise to very acid eructations, and at once relieved by a cupful of Benger's food, which he always kept in a Thermos flask by his bedside for emergencies. The gastric contents had been examined after a test meal and were found to contain an excess of hydrochloric acid. After a bismuth meal, no abnormality was seen in the gastro-intestinal tract. The faeces had been investigated for occult blood, with a negative result. He was mentally depressed and his life was wretched from the continuance of his gastric discomforts. For years he had been subject to migrainous headaches. Accustomed always to live freely.

On examination, no physical signs of organic disease could be found anywhere, but there was localized tenderness to the right of the epigastrium and the liver dullness extended below the costal arch. The colon was distended and borborygmi were a constant source of annoyance. The urine contained phosphates in excess, but was otherwise normal. The deep reflexes were exaggerated, but, apart from various neurasthenic manifestations, the nervous system was intact.

This short synopsis of cases records clearly the main features of this variety of dyspepsia. It will be observed that there is only one female among the ten narrated. The condition is not, in my experience, often met with in women, and probably the sex incidence is fairly represented by the ratio here shown. On the question of diagnosis, the close similarity which exists between its symptomatology and that of duodenal ulcer must at once arrest attention. Hunger pain, acidity, epigastric tenderness, distended stomach, and constipation are leading features of both conditions. It may possibly be true that fatigue dyspepsia is a forerunner in some instances of actual tissue-change in the duodenal mucous membrane, but the contention that such symptoms are pathognomonic of an established ulcerative process cannot be maintained in face of cases such as are here described. The occurrence of occult blood in the stools or of actual haemorrhage is a confirmatory sign which ought to be established before the more serious interpretation of the symptomatology is accepted.

Fatigue dyspepsia is amenable to treatment by medical measures, and the question of surgical interference should only arise either when these measures fail or when the presence of blood proves that breach of the mucous membrane has actually taken place. The possibility of perforation is the terror held forth to justify an abdominal section, which has been advocated as the one and only safe procedure where hunger pain, acidity, and epigastric tenderness have become an established experience. But though the occurrence of perforation is a calamity which obviously ought to be prevented at any cost, it may be questioned whether it is of such frequent occurrence as some surgical enthusiasts would lead us to fear. In any case it is certain that a large number of cases presenting this triad of symptoms can be controlled and their comfort restored by therapeutic measures; it is therefore in the interests of every patient so suffering that he should be allowed to prove their inefficiency before giving himself over to the chances of a gastro-enterostomy, which, after all, may prove to have been unnecessary.

TREATMENT.

The treatment of fatigue dyspepsia may be considered conveniently under three headings: Dietetic, therapeutic, and disciplinary.

Dietetic.

The main indications to be observed in the matter of diet are avoidance of sugar, tea, sweet or effervescent wines, uncooked fruit or vegetables; and limitation of starches, red meats, and accessories.

It may conduce to brevity to give a short summary of the diet scheme I have found to answer best. It may be added that, as regards treatment generally, the plan about to be described has been adopted with gratifying success in the before-mentioned cases, and in a large number of others having a similar grouping of symptoms, with such variations as have been necessary to meet special circumstances or individual idiosyncrasies.

Diet.

8 a.m.—A tumblerful of piping hot water, made pleasantly alkaline by the addition of half a teaspoonful of potassium citrate.

Breakfast.—Café-au-lait sweetened with saxin; "energen"* or other bread containing a minimum of starch; butter; eggs, bacon, or white fish; sugarless marmalade.

Luncheon.—Lamb, mutton, tongue, ham or veal every other day alternatively with calf's head, tripe or sweetbread; cooked *green* vegetables in purée form, asparagus, globe artichokes, sea-kale, lettuce, or celery; stewed fruit, sweetened with saccharine, and taken with cream; "uga"† or other form of lactic acid cream cheese spread on a water biscuit; an alkaline aërated water.

Afternoon.—Cocoa, or boiled milk: torrified bread and butter.

Dinner.—*Clear* soup in small amount: white fish; chicken, or other bird; potato or artichoke chips; omelette or custard made with milk and eggs, or junket with cream; a glass of dry light wine (sherry, chablis, hock or moselle), or whisky in small amount well diluted in an alkaline water.

At Bed-time.—A cupful of hot milk, fortified, if so desired, with a tablespoonful of whisky or brandy.

* "Energen" is to be obtained from the Therapeutic Foods Co., Covent Garden. Each roll contains 300 gr. of starch.

† "Uga" cheese is supplied by Clay, Paget and Co., 71, Ebury Street, S.W.

Therapeutic.

The indications, so far as drugs are concerned, seem to be to control the abnormal activity of the gastric mucous membrane, to counteract hyperacidity, to provide against excessive fermentative processes, and to supply suitable tonics according to the requirements of each individual case.

The initial treatment should aim at combating the first two of these indications, while subsequent management must be directed towards meeting the others by an attempt to disinfect the gastro-intestinal tract and to restore the equilibrium of organic health.

In fatigue dyspepsia there is reason to think that probably the excess of acidity, which is a leading feature of the condition, is due to an excitable and over-active state of the gastric mucous membrane; and, on this hypothesis, the following prescription is calculated to exert a controlling influence:

℞ Liq. morphinae hydrochloratis } āā ♏ x
Tinct. belladonnae ... }
Sol. adrenalin. chlor. ... ... ♏ xx
Spts. menth. piper. ... ... ♏ xxx

To be taken in one tablespoonful of water half an hour before meals.

The hyperacidity will be chemically counteracted by such a combination of drugs as the following:

℞ Bismuthi carbonat. ... ... gr. xxx
Magnes. carbonat. ... ... gr. xx
Sodae bicarbonat. ... ... gr. xxx
Ft. pulv.

To be taken in a wineglassful of water, whenever there is heartburn.

As a rule, within a fortnight these measures suffice to overcome all discomfort if they are adopted in association with the diet scheme above suggested.

The further requirements must now be met by a combination of drugs suited to the symptomatic demands of the patient and based upon the principle of combining a tonic with an antiseptic and a nerve sedative.

In a large majority of cases the following will be found a useful formula:

℞ Ext. valerian. } ... ... āā gr. ij
Ac. carbol. pur. }
Strychninae ... ... gr. $\frac{1}{60}$
Codeinae... ... ... gr. $\frac{1}{4}$
Ext. rhei ... ... gr. jss
Ft. capsul.

To be taken three times a day, after meals.

With another class of patient, where anaemic tendencies are discernible, the formula may be modified in some such way as this:

℞ Ferri glycerophosphat. } ... ... āā gr. iij
B. naphthol. }
Ext. nucis vomic. } ... ... āā gr. $\frac{1}{4}$
Ext. cannab. indic. }
Pil. galban. co. ... ... gr. jss
Ft. capsul.

To be taken three times a day, after meals.

These formulae are quoted merely as exemplifying the plan upon which the indications are to be met; but in every instance the prescription must be fashioned so as to deal with constitutional tendencies as well as to correct symptoms.

All patients will not respond with equal success to the same combination of drugs. The person and not the disease demands treatment, and satisfactory results will ensue only when every factor is taken into consideration, and a prescription formulated accordingly. The haphazard use of drugs or formulae reputed to cure or alleviate dyspepsia is of no value whatever. It is a mere shot in the dark, and more frequently misses than hits the mark.

Therapeutics is an art which does not lend itself to generalization, but, to be effective, must endeavour to combat in detail the minutiae of the health disturbance against which it is directed. So applied it is of inestimable value, and is capable of achieving happier results than those who scoff at drugs give it credit for.

In almost every case of fatigue dyspepsia constipation is a conspicuous trouble, and is largely due to hepatic inadequacy and colonic inertia. These difficulties are often overcome by liquid paraffin given in a tablespoonful dose at bedtime, followed, if need be, by from 4 to 6 oz. of Rubinat water the following morning. Alternatively a homely but useful morning saline may be prepared in the following way: One ounce each of Epsom salts and cream of tartar, with a thick slice of lemon and two pellets of saxin, are added to a pint of boiling water; after cooling this solution is strained through muslin, and may be taken before breakfast in a dose of from a sherry to a claret glassful.

Once in four or five days the evening dose of paraffin should be replaced by an "antibilious" pill of this type:

℞ Hydrargyri subchlor. ... ... gr. j
Fel. bovin. purificat. ... ... gr. jss
Ext. colocynth. ... ... gr. ij
Ext. hyoscyam. ... ... gr. ss
Ft. pil.

Disciplinary.

The morning bath ought to be hot, 98° to 102° F., and the patient should be instructed to apply active massage to his abdominal walls for a few minutes while he is submerged in the water. On leaving his bath, and after an active towelling, he ought to practise a few simple exercises of such a kind as will supple and put into use all his voluntary muscles, and provide for the thorough expansion of his chest.

The day's work should be so ordered that no undue demand is put upon his energies, mental or physical, and it is of special importance that no work of any kind be undertaken after the evening meal. The relaxation afforded by an evening game of some kind has a therapeutic value of no small moment.

Eight hours out of every twenty-four ought to be spent in bed, and for those who are heroic enough a complete day in bed once a month is a counsel of perfection which will well repay the practice.

Holidays are essential, and though the popular week-end in the country is in every way excellent, it is even more important, from the point of view of conservation of energy, that once in every year a long rest should be provided for, away from the usual routine of business or professional necessity, and for choice in the quiet of the country where the peaceful companionship of nature is allowed to replace for a time the feverish activities of workaday life.

PROGNOSIS IN HEART DISEASE.

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IT is probably true that in no branch of medicine is an accurate prognosis more widely demanded and, withal, more difficult to offer than in diseases of the heart. The reasons are not far to seek. The ofttimes dramatic suddenness of the *exitus*, the general knowledge of the essential integrity demanded of the heart for the continuance of life, and the readiness with which its various disorders manifest themselves subjectively, make any observations, which can gain greater accuracy of forecast or, perchance, alleviate impending uncertainty, of great value. The difficulties depend upon the fact that we are dealing with a smooth muscle organ which responds with readier changes in its action, and to a wider field of possible stimuli, than does any other organ of similar type.

Accepting the fact that a gross lesion of the cardio-vascular system is known to be present, prognosis must be directed to answering two questions:

1. How long may the patient live?
2. In what manner may his life be affected?

The chief gross conditions one has to deal with come under four headings: (*a*) Valvular disease; (*b*) mechanical disabilities, especially adherent pericardium; (*c*) cardio-arterial degeneration; and (*d*) malignant endocarditis.

Ruling out, for the purpose of the following observations, malignant endocarditis, whose invariable fatal issue needs no comment here, and also adherent pericardium, which is so usually associated with other gross lesions as to demand no separate consideration, we find two major groups of cases—the one, valvular disease, following most usually upon an infection in early adult life; the

other, cardio-arterial disease, representing the strain imposed upon the circulation by causes of long and gradual incidence.

I. *Significance of the Myocardium.*

These headings represent diagnoses and are, up to a point, useful. But for prognosis they do not offer any court of appeal. Valvular disease does not kill; nor does vascular degeneration. The factor upon which life is dependent must be the myocardium itself, and the associated conditions are to be weighed in due proportion to the effects they induce upon this essential element.

Prognosis will be helpful in proportion to the extent to which we can assay the true value of the muscle force of the heart. Subjective signs, in spite of all our new appliances for investigating the heart, must still be regarded as the most trustworthy indications of the heart's efficiency. Breathlessness following an effort which could previously be done with ease—limitation of the field of cardiac response, as Mackenzie calls it—is of the greatest significance, and the degree of its intensity offers a useful guide to the progress of the case. To what extent in practice can this sign help us? Take valvular disease. A heart is crippled in its action at a comparatively early age. Experience tells us that with a gross lesion of this type life cannot in all probability be as prolonged as would otherwise have been the case; the insurance companies know this well enough. But the actual course of these cases is far from being a regular and progressive cardiac failure. The dyspnoea may be almost at its maximum at the start. For years it may not noticeably increase. Yet these cases certainly die at a comparatively early age in many cases. Why is this? It is because in these conditions there is an increasing liability to what one may term pathological accidents, and these are roughly four in number: (1) Embolism; (2) functional disturbances, auricular fibrillation, tachycardia, heart-block, etc.; (3) dilatation; (4) angina pectoris. To a less extent similar accidents may overtake the degenerative class of case.

The efficiency of the myocardium must be judged less by the initial lesion than by the effect one or more of these incidents may have upon it. Now, it is obvious that at the first undoubted appearance of the initial lesion it is quite impossible to foretell what is going to happen; a straight answer to the question, "How is it going to affect me?" cannot be given, for you are not to expect an equable and steadily progressive failure of cardiac activity. When such an event as any of the above occurs, something more may be said, as we will indicate later, but not before.

Evidence of Failure of the Myocardium.

Is there, then, no class of case which, from a symptomatic point of view, can be accepted as a standard of what to expect when there is a progressive failure of the heart's action? We believe there is, but it is not commonly to be found amongst the purely valvular cases. The type of case is one in which there can be demonstrated the particular type of pulse known as the *pulsus alternans*, in which large and small beats alternate without any disturbance of rate or rhythm. It is a form of arrhythmia of the greatest significance, seldom, unfortunately, to be made out at the wrist, never demonstrable by auscultation, requiring always graphic record.

But its significance is this: That it is universally regarded as indicative of failure of the power of contractility of the myocardium—the most essential function of all. The importance of this function is shown by the fact that evidence of its failure is almost invariably followed by a fatal issue. In my own series of 17 cases, death has followed in 14 out of the 14 in which the course of the case could be followed over two years.

The symptoms associated with such clinical findings are in an uncomplicated case exactly what one would anticipate. The case is something like this: A man, just past middle age, accustomed, perhaps, to a life of effort, finds that he is more easily fatigued than he used to be, pants a little after going up a hill which before he could mount with ease. Thinking little of it at first, he goes on until its increasing evidence suggests that he should see a doctor. His appearance may indicate little. The pulse may be of normal rate and tension, the heart not enlarged, the sounds normal. At rest, in fact, he is a normal individual, but it is after effort that more suggestive signs may be found. His breath does not so easily return, and the pulse may maintain a quickened rate for a longer time than is normal. Careful examination of the pulse might then detect the alternation, but this is improbable without graphic curves, nor must it be expected to be always present. Often it is only noted over a few cycles; it may be seen only after effort, or for the few beats following an extrasystole. But once its presence is revealed it is never absent again for long. The course of the case is steadily downhill. From being dyspnoeic only with unusual effort he now puffs and pants with ordinary effort, and at the last may be dyspnoeic even when lying in bed. Oedema may supervene, the pulse-rate maintains a higher rate, possibly anginal attacks may ensue, and the end comes.

This is an uneventful case from start to finish, but of much significance, for it exhibits in its purest form the train of symptoms which would be expected to follow simple loss of myocardial force. It is a progressive extension throughout of the earliest signs of cardiac weakness. It is, as I have suggested, seldom that the simple valvular case presents this condition. One or other of the intercurrent calamities diverts the case from this course; it is, in fact, in the degenerative cases, *par excellence*, that alternation is most often seen; and even in these cases it is not so often seen in the above pure form, for the arterial changes, so often, but not necessarily, present, convert the clinical case into one partaking more of the character of uraemia, the result of chronic interstitial nephritis; but even with this train of complicating symptoms the alternation may often be seen, indicating the cardiac disability under the added strain of an intoxication.

Accepting such a case as a standard, we must note that it is not common in pure valvular diseases for purely incidental reasons.

II. *Pathological Accidents in the Myocardium.*

It is necessary now to briefly note the character of the myocardial response and the associated symptoms in the more frequent accidents which characterize the valvular case. Before doing so, however, it is necessary to point out a fact, well known, that there exists a small but appreciable minority of cases of valvular disease in which life is maintained with little or no disability referable to the heart, and a fatal issue may, in the end, be caused by some condition wholly unrelated to this organ. Some cases, that is to say, do not give any evidence of myocardial exhaustion.

1. *Embolism.*

A common event, which obviously cannot be foretold, not necessarily dangerous to life, sometimes as in the case of cerebral embolism, crippling in its character, but even so it may, as regards life, prolong it by cutting down the possible sources of overstrain upon the heart.

2. *Functional Disorders.*

Of these, auricular fibrillation unquestionably is the most important and frequent. It is responsible for 50 per cent. of the fatal cases of heart disease. Objectively it is usually characterized by an irregular and often quickened pulse, present at all times, and persistent, as a rule, to the end. Its first onset is seldom noted by the patient, except in a minority of cases, where it is of paroxysmal type. The inception of this arrhythmia, however, generally modifies the whole course of the case, and this in an unfavourable manner. These cases form the large majority of those instances of so-called "failing compensation," with dropsies, tender liver, pulmonary congestion, and so on. Towards the end this train of signs cannot be considered as distinguishable from those the result of myocardial exhaustion associated with the pulsus alternans, but the course of the case up to this stage is more chequered and varied. Phases of comparative well-being alternate with periods of "broken compensation"; precordial pain may at one time or in one case be predominant, or it may be that dyspnoea or palpitation, or the many reflex visceral disturbances present the most striking features; generally, at one time or another, all these symptoms appear in a manner irresponsible, and fickle to a degree. Especially noticeable in these cases is the response to drugs of the digitalis series, and no prognosis can be offered until

the possibilities of this drug have been weighed. By its means alone some of these cases can be sustained in relative comfort for years; in others, again, little influence can be detected. Personally, I have met with more difficulty in giving a prognosis in this class of case than in any other. First and foremost, as a peg upon which to hang an opinion, should be an estimation of the digitalis effect—if this is good, that is an undoubtedly favourable element. Next, the type of case in which it is present. With mitral stenosis the course is usually worse than when associated with arterio-sclerosis, or when occurring in older patients. Lastly, the degree of cardiac enlargement, as estimated by percussion, offers some help, extension of dullness to the right of the sternum being an unfavourable sign. No single subjective symptom offers much aid, however, although, perhaps, the degree of dyspnoea is the most valuable index. A final reason of the uncertainty relating to the prognosis in auricular fibrillation rests in the fact that death may ensue in such cases in two ways: There is the gradual failure, with all the signs of loss of compensation; there are also many instances of sudden death, the cause of which is in all probability to be attributed to ventricular fibrillation. Whilst the former casts its shadow before it, the latter does not, and remains an ever uncertain factor.

Paroxysmal tachycardia, as the name implies, is an occasional and spontaneous incident whose onset or duration it is impossible to foretell. In these cases only general experiential evidence can help us. Such incidents are seldom fatal of themselves, but in some cases their incidence tends to be more frequent and sometimes more prolonged; this is a general tendency only. Such cases, however, are particularly liable to be incited by some reflex cause peculiar to the individual, such as gastro-intestinal disorders, and with treatment directed to these conditions a distinct check upon the paroxysms may be given, and, consequently, a more favourable prognosis can be offered.

Heart-block of a degree sufficient to cause the typical Stokes-Adams syndrome must always be regarded as a serious condition, despite the fact that some of these patients may live many years. Death may occur at any time, directly due to cessation of ventricular activity, an event which, like the fit to which it gives rise, cannot be foretold.

3. *Cardiac Dilatation.*

Next to the pulsus alternans, I consider that this condition is the most serious from the point of view of prognosis. It is, perhaps, less conclusively evidence of a fatal issue of the case than is alternation, but its onset is often more quickly followed by death. It is important to recognize what one means by this term "dilatation." It is exhaustion of the property of tonicity, and loss of this function is just as much a definite incident as is, for example, loss of the power of contractility. Of the causes leading to this loss of tone we admittedly know practically nothing. Dilatation is certainly not necessarily the result of muscle failure or weakness; dilatation need not be regarded as a natural accompaniment of failure of the heart's myocardium; rather might such failure be looked upon as the result of such loss of tone. A moment's consideration should show the truth of this relation. The *post-mortem* table shows us hearts whose muscle is well developed and healthy, and yet there is marked dilatation of all the chambers; conversely, advanced myocardial disease may show not the least dilatation. Equally difficult is it to explain dilatation on the exhaustion theory from the clinical point of view, for there is every reason to believe that it may be of abrupt onset, occurring within a few minutes or hours, and showing none of the steadily progressive characters which we should expect if the myocardium was becoming weakened. For these reasons we regard dilatation as a definite possible incident which can arise in the course of a heart case. This condition is clinically characterized by three signs: (*a*) Quickened pulse-rate of regular rhythm; (*b*) extension of the area of cardiac dullness, especially to the right; and (*c*) general signs of dropsies, etc. To be excluded from this group are those cases where dilatation may reasonably be the result of mechanical causes, such as that associated with emphysema or certain mitral cases. The quick pulse is especially significant. Its rate is maintained throughout, even when the patient is in bed and completely resting. Subjective symptoms may be remarkably few. Drugs fail to slow the pulse-rate; usually it progressively accelerates to the end. In some ways these cases resemble our type case; in them, too, alternation may occur towards the end; anginal attacks may occur just before death, but this is not the rule. Dilatation appears to occur indiscriminately in all classes of heart disease. There is, so far as I am aware, no sign which can indicate at the onset of the dilatation what the course is going to be. In younger people recovery may follow, but it will be slow, associated with a gradual slowing of the pulse-rate; recovery, when it occurs, can be very complete. In arterio-sclerosis the prognosis is almost hopeless; in mitral disease, too, the issue for long hangs in the balance, but certainly some cases recover.

4. *Angina Pectoris.*

Only to the severer type of this affection can we refer; the slighter forms—the shooting pains at the heart's apex, the vague referred pains up into the heart or around the epigastrium—all these transient and frequent manifestations, full of interest as they are, require no special note. Prognosis in angina has for years been regarded as very grave, and with this mature opinion one would agree. That patients may die in an attack—may die, we presume, from the intense severity of the agony—has given this dread condition an especial and peculiar prominence; but we do not think that this end is to be anticipated in all cases who suffer from this obscure but very real ill. Admitting as we do, however, its gravity, to what is death attributable in the remainder? We can suggest an answer for some, and this is that death is due to the same causes as those of the type case—namely, failure of contractility. Angina is met with especially in those cases which at one time or another have shown alternation; the clinical course of these cases often presents the same gradual but relentless downward trend which we have suggested to be typical of myocardial exhaustion; and it is again met with in exactly the clinical kind of case in which alternation is to be anticipated. Angina, then, owes its sombre prognostic significance not only to itself as an immediate killing agency, but also to what its presence signifies.

AN INVESTIGATION OF THE BEST METHODS OF DESTROYING LICE AND OTHER BODY VERMIN.

(A Preliminary Communication.)

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THIS investigation of the best methods of destroying lice was begun at the outbreak of the present war at a time when verminous conditions among soldiers were especially difficult to control owing to the continual arrival of fresh recruits. In former times it was customary to regard such verminous conditions as a necessary consequence of the bringing together of large numbers of men, and vermin were regarded as sources of discomfort and irritation rather than as an actual danger. But in view of the present known relationship between vermin and the transmission of disease, and in consideration of the prevalence of typhus in Serbia and elsewhere on the eastern front of the present war, it has seemed desirable to issue this preliminary note on the results of the experiments so far made.

No previous worker has succeeded in keeping lice alive and well apart from the human body. Murray,[1] in his *Economic Entomology*, describes how the Dutchman Leewenhoek, more than two hundred years ago, bred lice. Leewenhoek at first proposed to employ a poor boy as a fit subject for the experiment, but afterwards found that he could make the experiment with much more certainty on his own person, wearing for this purpose a special garter under which the lice were confined. In the present experiments it may be indicated that the laboratory boy proved equally disappointing, and that instead of a garter to confine the lice a finger-stall, while less artistic, had many points in its favour. Even when the experiments were long continued the finger suffered only from a condition somewhat analogous to a mild trench frost-bite as at present described.

The work of Mr. Cecil Warburton[2] on behalf of the English Local Government Board, in the investigation of rag flock as a possible distributor of vermin, is of interest. He succeeded after a great many experiments in breeding and rearing lice in a glass tube, which was kept close to the person night and day except when feeding was necessary, which was at least twice every twenty-four hours.

Early in the present experiments it became obvious that suitable and constant conditions for breeding and rearing lice must be secured before reliable results could be finally obtained. It has been found that in the incubator at body temperature and in the presence of the necessary amount of moisture lice can be bred and reared and kept alive for many days. The optimum temperature has still to be determined; it lies somewhere between 24° C. (75° F.), and 37° C. (98° F.), and the optimum humidity is dependent on the temperature. Previous observers have apparently experienced difficulty in removing lice for feeding purposes. I have found no difficulty. When taken by a claw in a pair of fine flat pointed forceps and lifted up tenderly, the louse suffers no hurt. Much work remains to be done in investigating the best breeding and feeding conditions. Further, there is at the present time no accurate knowledge of the physiology of the louse, of its habits, of the manner in which it conveys infection from one person to another. Thus it is not clear whether the louse introduces the infection of typhus or relapsing fever in the act of feeding on its host, or whether it is by means of its faeces that infection is conveyed. So far, I have observed that defaecation constantly accompanies feeding. These problems will form the subject of a later report. It is obvious, then, that in the following report of the value of insecticides, the results may be subject to future correction when accurate knowledge of the biology of the louse is available, and especially when constant conditions for breeding and rearing it have been determined.

A great many substances have been recommended as a means of destroying lice. In determining the values of such substances the experiments have to be repeated many times, and a great many lice have to be used in each experiment. Further, it is necessary to recognize that substances antagonistic to lice may possibly be differentiated into two great groups: One set of substances may have a true insecticidal or toxic value; the second group may have no direct or immediate insecticidal effect, but may, by their odour or otherwise, have a repellent effect on lice, and, if applied to the human body, may prevent them seeking such a body as a host. Both groups of substances may well have their place in the campaign against the louse.

Immersion.

As many substances recommended for the destruction of lice are fluids, it is of interest to observe the behaviour of lice under conditions of simple immersion. For this purpose 0.9 per cent. sodium chloride solution in water, a clear river water, and distilled water have been used in turn in a series of experiments, and it has been found possible in a few cases to revive the louse after immersion in the saline solution for sixty hours, in the river water after forty-eight hours, and in distilled water after twelve hours. The structure and functions of the louse that permit a continuation of existence under such conditions are so far entirely undetermined. In practice, and as was to be expected, frequent baths and frequent changes of clothing have been found to diminish greatly the prevalence of lice among troops, but these methods have failed to secure the ab ence of vermin.

Heat.

The influence of heat on vermin has long been a subject of controversy. The attendants at institutions for cleansing verminous children, and laundrymen in general, have maintained that boiling failed to destroy lice. I naturally received such statements with a considerable degree of scepticism. In the present experiments it has been found that, contrary to experience with ordinary animals, dry heat appears to be more destructive for lice than moist heat of equal temperature. Thus, it has been possible to revive lice after immersion for one minute in water at 100° C. Lice exposed to the same temperature for one minute in air never survive. Indeed, so far, neither lice nor their eggs have been found capable of surviving exposure for half an hour to a dry heat of 65° C. (149° F.).

Paraffin Bodies.

The paraffin bodies have long had a reputation as insecticides. Using petrol for this purpose, it has so far been found impossible to revive the lice or to rear the eggs after immersion in petrol for one minute. Moreover, even the vapour of petrol is sufficient to kill within half an hour all lice and apparently all nits. The ordinary paraffin oils are less effective, but appear to kill lice by immersion for a few minutes. The colza oils have little effect, and the higher hydrocarbons, such as vaseline, have no real insecticidal value. So far as the present experiments have gone it would seem that the activity of the paraffin series decreases with increase of the specific gravity. There is, therefore, reason to believe that the insecticidal action of the lower paraffins may depend on their greater diffusibility, and possibly also on their greater solvent power for some particular material of a fatty or waxy character in the cuticle of the louse.

Petrol having been found to be the most active insecticide of the paraffin series, its practical application demands attention. The destruction of vermin in body clothing and bedding raises no difficulty. They may be cleansed in a petrol bath such as is employed in a dry cleaning apparatus.

But the application of petrol to the human body is another matter. Its volatile nature renders its insecticidal value transient, and former experience in cleansing verminous patients in hospitals has shown that there is a danger from fire, even when using less inflammable paraffins than petrol. I have accordingly made some experiments with the object of devising a safe petrol application. I have experimented with various solutions of petrol and soap in alcohol, and emulsions of petrol in water, but, so far, with little success. I have found, however, that a 1 in 4 solution of petrol in vaseline when rubbed on the skin kills lice when confined on the rubbed surface. This preparation is non-inflammable under working conditions. The large proportion of vaseline reduces the vapour pressure in the solution, and thus sufficient petrol is retained to exert a destructive effect for some hours.

It has been shown that there is reason to believe that the insecticidal action of the lower paraffins may depend on their diffusibility and solvent power for fats, and in this connexion it is of interest to note the effect on lice of powerful fatty solvents other than the paraffins. I have found that benzene, toluene, and acetone are at least quite as lethal as petrol; they are, however, also very inflammable.

Chlorine Derivatives.

Certain chlorine derivatives of methane, ethane, and ethylene were next investigated, and these bodies required special consideration owing to their non-inflammable nature. I have found that chloroform and carbon tetrachloride are very actively insecticidal, but in practice the irritant action of chloroform on the human skin and the unstable nature of the tetrachloride preclude their use.

The Castner-Kellner Alkali Company of Liverpool and the Weston Chemical Company of Runcorn kindly supplied me with samples of chlorine derivatives of ethane and ethylene and their products. For these tests I have used tetrachlorethane and pentachlorethane, and dichlorethylene and trichlorethylene. As these solvents have only been made available during recent years, it seemed well to investigate briefly some of their general properties. I tested first the rapidity of their solvent action on lanoline and lard. I find that the chlorine derivatives of ethylene are more rapid in their action than those of ethane, and more rapid than any other of the fatty solvents I have used. To test their action on the skin, pieces of cotton-wool soaked in the separate preparations were applied to the skin and covered with aluminium foil to prevent evaporation. The chlorine derivatives of ethylene are thus found to be definitely more irritant than those of ethane. Again, it was necessary to test the toxic effects of the vapours of these substances for animals other than lice. I find that they have a convulsive anaesthetic action. Ten minutes' exposure to an atmosphere charged with these vapours induces convulsive movements and

finally coma in an average sized guinea-pig, which revives if removed in time to fresh air. Rabbits confined for three hours in such an atmosphere show some respiratory irritation, but are not gravely affected. Man under similar conditions suffers from headache and respiratory discomfort; these symptoms pass away on removal to fresh air.

I then tested the effect of the chlorine derivatives of ethane and ethylene on lice. I find that they are more lethal to lice than any other substances I have used. Immersion in these chlorine derivatives immediately destroys all lice and nits, and exposure to the vapour of these substances for five minutes is equally destructive. In these experiments dichlorethylene and trichlorethylene were found to be more active in this respect than tetrachlorethane and pentachlorethane, and it is interesting to note that they have also a lower specific gravity and lower boiling point.

The chlorine derivatives of ethylene and ethane cannot for economical reasons be applied like petrol and benzene in a dry cleaning process. The price of trichlorethylene and tetrachlorethane is at the present time 5s. a gallon, whereas petrol and benzene are available at less than a quarter of that price. But in the form of soaps they are on the market as "Westropol," containing 25 per cent. of trichlorethylene, and as "Westoran," containing 95 per cent. of tetrachlorethane, and I have found that immersion for half an hour at 12° C. (54° F.) in a soap solution containing 2 per cent. of trichlorethylene, or in an emulsion containing 10 per cent. of tetrachlorethane, appears to secure destruction of all lice and their eggs.

I have found that a 1 in 4 solution of either dichlorethylene or trichlorethylene in vaseline when rubbed on the skin kills lice when confined to the anointed surface, and that this action endures for about twenty-four hours. There is on the market a preparation, "Vermin Westropol," that is said to act as a deterrent to vermin. It is stated to contain, in addition to the ingredients of ordinary "Westropol," a "special kind of heavy mineral oil fraction." The "Vermin Westropol" is rubbed into the skin, and allowed to act for at least ten minutes before it is washed off. A thin film of the "special kind of mineral oil fraction" remains on the skin after rinsing, and this is said to act as a deterrent to vermin. It is strange that when the trichlorethylene is known to be the active insecticide, a mineral oil inferior in this respect should be substituted for it, and however that may be, I find that the hungry louse feeds on the human body through the "heavy mineral oil fraction," and continues to live.

It is apparent that soap preparations of trichlorethylene and of tetrachlorethane are among the safest and most efficient cleansers of the human body infested by vermin, and solutions of dichlorethylene and trichlorethylene in some such substance as vaseline, that allows their insecticidal action to be exerted for hours, act as deterrents to vermin. Further, when thus applied to the human skin, these preparations are only slightly irritant in their action, and their vapours have no toxic action on the human body.

Phenols.

The germicidal value of the phenols has been well established by experiment, but their insecticidal value, so far as I am aware, has not been proved and has been largely assumed, although they are in extensive employment, especially in laundries, as insecticides. Cyllin has been used in the present tests. It has been found that lice can be revived and their eggs can be reared after immersion for half an hour in a 5 per cent. emulsion of cyllin in water at 12° to 15° C. (54° to 59° F.). Lice and their eggs, however, appear to be destroyed after immersion for the same time in the same emulsion at 65° C. (149° F.). In practice it has been my experience that it is not usually possible to depend on laundrymaids keeping phenol steep-tanks at the required temperature. Immersion for five minutes in even a 1 per cent. emulsion of cyllin at room temperature certainly stuns the louse, and this fact may be of some practical value in the cleansing of verminous people.

Volatile Oils.

The volatile oils have always had a reputation as destroyers of vermin, and there is evidence that some oils have an indirect value in this respect. For experimental purposes oil of peppermint containing the alcohol menthol, oil of cloves containing the phenol derivative eugenol, oil of cinnamon containing cinnamic aldehyde, oil of carraway with its ketone carvol, oil of wintergreen with its ester methyl salicylate, and oil of turpentine with the terpenes as their main constituents, have been used. Other volatile oils, such as oil of eucalyptus, oil of thyme, oil of tansy, and oil of rue, have in turn been recommended as insecticides, and have been employed in these experiments. It has been found that over a moist vapour of any one of the volatile oils lice live for many hours at body temperature, and after immersion for a minute in such oils the lice can be revived. The experiments have also shown that, if permitted, the louse greatly prefers free life and fresh air to confinement in an atmosphere impregnated with any of these substances. Further experiments are being instituted to determine to what extent the several oils may discourage infestation of the human body by vermin.

Other Substances.

Many solid substances of widely varying nature and application have been advocated as means of destroying lice. I have tested the effect of the emanations of iodoform, camphor, and paraform, and find that over such substances, and in contact with them, lice live for many hours at body temperature, and thereafter remain alive and well in the incubator. In garments dusted with borax, sulphur, and black hellebore, lice are found to go on living, as also in clothing steeped in solutions of alum and salicin and then allowed to dry. It remains to be determined to what extent the presence of such substances in clothing may indirectly discourage the invasion of lice.

I have also made some experiments to ascertain the behaviour of lice towards the more common parasiticides. It was found that the hungry louse feeds and remains alive on the human body previously anointed with an ointment containing any of the following parasiticides—namely, sulphur, balsam of Peru, storax, mercury oleate, chrysarobin, stavesacre, and black hellebore. Without doubt the louse prefers the clean body to the body thus anointed, but the same holds good with the clean forearm and the arm anointed with lard.

Conclusions.

1. The louse can be bred and reared in the incubator under suitable conditions of temperature and moisture. Constant conditions for breeding and rearing lice in the incubator remain to be determined.

2. Dry heat is more effective than moist heat in destroying lice and their eggs. The louse can be revived after immersion for one minute in water at 100° C. Exposure to a dry heat at the same temperature and for the same time appears to kill both lice and nits.

3. The paraffin bodies are actively insecticidal, and of these petrol is the most effective. Lice and their eggs are destroyed by immersion in petrol for one minute, and they may be killed by exposure to the vapour of petrol for half an hour.

4. Powerful fatty solvents other than the paraffins are actively insecticidal. Benzene, toluene, and acetone are as toxic to lice as petrol. Certain chlorine derivatives of methane, ethane, and ethylene are more lethal to lice than any other substances, and have the important merit of being non-inflammable. Immersion in the chlorine derivatives of ethane and ethylene immediately destroys all lice and nits, and exposure to the vapour of these substances for five minutes is equally destructive. Even soap solutions containing 2 per cent. of trichlorethylene or 10 per cent. of tetrachlorethane are capable of killing in half an hour at ordinary temperatures all lice and nits.

5. A 25 per cent. solution of dichlorethylene or trichlorethylene in vaseline when applied to the human body has been found capable of exerting its insecticidal action for hours. The action of a 25 per cent. solution of petrol in vaseline is of shorter duration, but is also effective for some hours.

6. The common phenol disinfectants in their usual degrees of dilution for disinfectant purposes and at ordinary temperature fail to kill lice or nits, even after steeping for half an hour, but become efficient as insecticides if the temperature of the steeping-tank is maintained at 65° C.

7. The volatile oils have no direct insecticidal effect. In a moist vapour of oil of wintergreen, oil of cloves, oil of caraway, oil of turpentine, oil of eucalyptus, oil of thyme, etc., lice live for many hours at body temperature, and can be revived after immersion in these oils.

8. Over solid substances, such as iodoform, camphor, and paraform, and in contact with them, and in contact with garments impregnated with sulphur, borax, black hellebore, alum, etc., lice appear to remain practically unaffected.

9. The hungry louse feeds on the human body previously anointed with sulphur ointment, balsam of Peru, mercury oleate ointment, chrysarobin ointment, staves-acre ointment, and hellebore ointment. The louse certainly prefers the clean body, but it can feed on the body thus anointed and thereafter survive.

10. It has still to be determined whether some of these bodies that have been shown not to be actively insecticidal may not have, when rubbed on the body or placed in clothing, a useful repellent effect on body vermin.

Practical Application.

For practical purposes it has been found that destruction of lice and nits is best secured by immersion of verminous garments and bedclothes in a petrol or benzene bath. Danger from fire and waste of petrol are avoided by using such a bath and extractor as are employed in a dry-cleaning apparatus. In such an apparatus 90 per cent. of the petrol or benzene is recovered for future use. A petrol or benzene bath is necessary, especially for uniforms and woollen garments generally. Where the clothing is such that it is not injured by immersion in water, steeping the garments for half an hour at 12° C. (54° F.) in a soap solution containing 2 per cent. of trichlorethylene or 10 per cent. of tetrachlorethane secures destruction of lice and nits. It is only fair to say that the only soap solutions that I have so far experimented with are those sold as "Westropol" and "Westoran." Steeping for half an hour in a 5 per cent. solution of cyllin in water maintained at 65° C. (149° F.) is also effective, and this temperature has no injurious shrinkage effect on woollen articles.

For economical reasons the chlorine derivatives of ethane and ethylene cannot at present be used in a dry cleaning process, but their soap preparations are of value. Petrol has a wide application and is readily obtained.

For cleansing the body itself bathing or sponging with soap solutions containing 2 per cent. of trichlorethylene or 10 per cent. tetrachlorethane gives the best results.

In view of the known insecticidal action of these chlorine derivatives of ethylene and ethane it is probable that good results would be obtained by shampooing verminous heads with their soap preparations, and it is also probable that a 25 per cent. solution of trichlorethylene in vaseline would form an efficient insecticidal pomade.

It is almost certain that lice would not continue to live on the human body if anointed daily with a 25 per cent. solution of trichlorethylene in vaseline, or on the body anointed twice daily with a solution of petrol in vaseline of similar strength. The odour of such an ointment is not unpleasant. But living under verminous conditions constant precautions would have to be taken and every method of destroying vermin would require to be employed.

Means for the destruction of lice are available. Any attempt to render an army free from vermin in war time would require that all men occupying the same quarters at the same time, or for alternating short periods of time, would be regarded as a single unit for which a receiving station with cleansing apparatus would be provided. Such an attempt would also require that the movements of the men off duty were controlled. It would be limited by immediate military necessities.

There is reason to believe that vermin are responsible for the transmission of the infection of typhus fever,[3] and Nicolle[4] has shown that the louse can convey the infection. Epidemics of typhus fever come and go, and the amount of any epidemic will be influenced by the verminous conditions prevailing. In dealing with typhus patients vermin must first be destroyed by some of the methods above described. Ambulance men and receiving nurses are to be similarly protected, or, if available, a staff of ambulance men and receiving nurses already immune by a previous attack of the disease are to be employed.

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THE WASSERMANN TEST:

A Method not Necessitating the use of Guinea-pigs as the Source of Complement.

By OLIVER HEATH, M.A., M.B., B.C.Cantab.,

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When the writer came first face to face with the necessity of doing Wassermann tests two main difficulties appeared. First, it was found well-nigh impossible to learn the technique in default of personal instruction, and in the light of experience this appears to have been due to omission of details in many of the published descriptions, making it impossible to sit down and perform the test from the description. The second difficulty was the matter of extra space required and extra work entailed in housing and feeding guinea-pigs for the supply of complement-containing serum.

It is thought that these two hindrances, especially the latter, must be a source of trouble to workers in some other laboratories, possibly at the present time to some of those attached to military hospitals at home and abroad.

The first — and obvious — solution was to practise Fleming's modification, which is at once short, simple, and avoids the necessity of keeping guinea-pigs. But without entering into the discussion of the value of this "modification," one may perhaps say there are several valid reasons, well supported by recognized authorities, for preferring a method which includes the main principles of the original Wassermann method as now practised. These principles are:

1. Deviation of complement by syphilitic serums in the presence of antigen.
2. Inactivation of serums to be tested (and controls).
3. Use of added haemolytic amboceptor and complement in previously determined and sufficient quantities, the same always for every tube and every batch of tests.

The last two are not included in Fleming's test.

It is claimed for the technique described below that—

1. It does include the three main principles of the Wassermann test as now practised, and is, in fact, a Wassermann test as opposed to a modification.
2. It avoids the use of guinea-pigs.
3. Comparatively small amounts of blood and materials are required, which means economy.
4. The time required is shortened to about 1½ hours.
5. The technique is efficient, and as simple as it can be made, having full regard to efficiency, and has stood the test in practice during the past two years.

The most important of the points in which the technique differs from the original method is the use of fresh normal human serum for the supply of complement, in place of guinea-pig's serum, the amount of the complement present being titrated for each batch of tests and 2 units (minimum haemolytic doses = m.h.d.) added to each tube, the serums tested having been inactivated. It is found in practice that serum obtained regularly from the same person will usually contain the same amount of complement, probably 3 to 6 units in a volume. This amount appears to vary more on account of the greater or less ease with which different samples of sheep's corpuscles will haemolyze, rather than in different samples of serum from the same person tested against one sample of sheep's corpuscles. So far as the writer is aware, human complement is used for the Wassermann test in four "modifications" only, namely, those described by Stern, Hecht, Fleming, and d'Este Emery; but in none of these is the amount estimated or regulated in any way, that present in each unheated serum to be tested being used; no attempt is made to have the same number of units for each serum to deviate. An objection may be urged on the ground that haemolytic amboceptor v. sheep's corpuscles is present in uncertain (and varying) amount in most human serums, and

that this addition may tend to deviate complement and vitiate the results. If this is considered a serious objection, the amboceptor can be easily absorbed by mixing up washed sheep's corpuscles with the serum and allowing it to stand at 0 C. in the ice-chest for one hour, after which the mixture is centrifugalized and the clear serum—now containing complement but no amboceptor—pipetted off. The writer prepared complement by this method for several months of experimental work, till a series of comparative tests appeared to show that this was an unnecessary refinement.

The second point of difference is the use of small volumes, as recommended by Fleming and d'Este Emery, the total bulk used being 120 c.mm. in small test tubes as described by Fleming. It is convenient, but not absolutely necessary, to use measured volumes, so long as all volumes used in one batch of tests are the same. The advantages are economy of materials and simplification of technique.

The third point of difference is the use of a water-bath for incubating the tests in place of the hot-air incubator. This method was recommended by d'Este Emery, and has the great advantage of reducing the time for incubation to one-third, and that for the whole test to about one and a half hours.

The description of the actual technique will be given under four headings: Preparation of apparatus and materials, standardization of materials, the actual test, some possible difficulties.

A. *Preparation of Apparatus and Materials.*

1. Prepare and sterilize about 1 litre of 0.85 per cent. sodium chloride (pure) in distilled water. This will keep fit for use for several weeks if kept sterile, and is to be used for all dilutions.

2. Antigen. Fresh sheep's heart, 5 grams, is weighed out carefully, minced small with a sharp knife, placed in a clean mortar (a large one is best) and pounded and pressed vigorously for several minutes, after which about 1 c.cm. of absolute alcohol is added and the pounding repeated, with the occasional addition of a further 1 c.cm. of alcohol until about 10 c.cm. have been added. About this period the muscle should appear finely divided, and alcohol may then be added up to a total of 45 c.cm. It is all-important to add the alcohol in very small quantities at first, till the muscle is finely divided. The whole is now poured into a sterile bottle and shaken up occasionally during the next hour, and then allowed to stand till morning, when it is filtered through a coarse filter paper (not best Swedish) into a sterile, well-stoppered bottle. This is the antigen or extract, and will keep fit for use for several weeks at room temperature, though some workers recommend making a fresh extract once each week. The formation of much precipitate is possibly an indication to make a fresh sample.

3. Sheep's blood must be secured fresh once each week from the slaughter-house. It is collected into a clean bottle, defibrinated by shaking with bits of glass-rod or beads, and kept in an ice-chest till wanted for use.

4. Rabbit's immune serum v. sheep's corpuscles (haemolytic amboceptor) can be obtained from most large hospital laboratories. The writer obtains his ready titrated from the Lister Institute of Preventive Medicine. When kept sterile, this remains efficient for several weeks.

5. *Serums.*—A syphilitic (positive control) and a normal blood (negative control) should be drawn into Wright's capsules, the serum drawn off into a small capsule, sealed and inactivated for twenty minutes at 56° to 58° C. in a water-bath. Patients' serums are treated in the same way.

6. *Apparatus.*—Any water bath may be used that can be kept at 36° to 38° C. A convenient and cheap form is an ordinary enamelled bowl (8½d.), holding about 4 pints, supported on an iron tripod over a Bunsen flame. Wire or glass tubing is bent to form a carrier for the plasticene tray in which the small test tubes are to be embedded, and a thermometer is fixed against the inside by a lump of plasticene. The level of the water has to be arranged to cover the fluid in the tubes, but not to flow over the tops, and the temperature is regulated from the Bunsen flame. Small test tubes are made from glass tubing of ½ cm. bore by drawing this out in the gas-blower flame at 5 cm. lengths (2 in.), and scaling off. For use a nick is made in the middle with a glass-cutting knife (or file), and the tube broken across; we have thus two small test tubes. A stock of these should be made and kept ready. All mixing work is done with the rubber teat and Wright's opsonic pipettes. A number of these must be made with a rather wide bore capillary tube, and from these two types are to be fashioned. The "diluting pipette," for diluting extracts and suspensions of sheep's corpuscles, is made by marking off 10 equal volumes on the capillary stem by aid of a volume of mercury of 10 c.mm. (or about) and a glass-writing pencil. The "test pipette" is made by graduating 4 equal volumes of 20 c.mm. in the same way; the capillary stem is then bent at almost a right angle in the peep flame. A number of each type should be made at a sitting, and the marks made permanent by burning carefully in a Bunsen flame. The writer uses "automatic pipettes" for the graduations to ensure equal volumes on all pipettes of the same type. This is convenient in case of breakage during a test.

7. *Complement.*—Known normal human blood is drawn overnight from a clean finger into a glass capsule, the body of which is 5 to 6 cm. long and about ½ cm. bore. The serum will be ready for use on the following day, when it should be drawn off into another capsule free of blood corpuscles. In drawing samples of blood, a band is wound twice round just behind the distal joint, and a good sharp prick made with a needle. A slight prick necessitates much pressure, and the serum will then usually appear haemolyzed. A slightly larger quantity of serum will be obtained if the capsule, when sealed, is put into the air-incubator for one to two hours. As mentioned above, the haemolytic amboceptor may be absorbed from the serum before use, if so desired.

B. *Standardization of Materials.*

1. Sheep's corpuscles must be "washed" fresh each day tests are performed; ½ to 1 c.cm. are shaken up with 10 to 15 c.cm. of the 0.85 per cent. saline, centrifugalized, the supernatant fluid pipetted off, and the process repeated four times. After standing for at least ten minutes, the last drops of saline are pipetted off to ensure a standard suspension, since all units in the test depend on this suspension—this is the starting-point in standardization. With a teat and diluting pipette, 94 volumes of saline, 1 volume of haemolytic serum (or amount to give 5 to 10 m.h.d. to each 2 volumes of suspension), and 5 volumes of the washed corpuscles are filled into a 1 c.cm. vaccine bulb. Mix thoroughly, and the "5 per cent. sensitized suspension of sheep's corpuscles" is ready for use.

2. *Complement.*—Set up four small test tubes in a row on a plasticene tray (a lid of a tobacco tin filled in with plasticene). With a teat and test pipette take up 4 volumes of saline and run out 1 volume into each tube. Take up 1 volume of unheated normal human serum, mix into tube 1, carry 1 volume over to tube 2 and mix, finally discarding 1 volume from tube 4; this gives four dilutions of the serum: 1–2, 1–4, 1–8, and 1–16. To each add 3 volumes of saline and 2 volumes of corpuscle suspension and incubate in the water-bath for twenty minutes. The last tube from left to right giving complete haemolysis contains 1 unit of complement—for example, tube 2 gives complete haemolysis, and therefore serum diluted 1–4 contains one unit, and two units will be contained in 1 volume of serum diluted 1–2. The haemolytic serum is titrated in a similar manner, but unsensitized 5 per cent. suspension of corpuscles must be used, and only one unit of complement added to each tube. Total bulk is always to be made up with saline to 4 volumes without corpuscles, and 6 volumes when corpuscles have been added. The result is usually obtained with a dilution of 1 in 1,000 or 1 in 2,000 of the serum.

3. *Antigen* (extract of sheep's heart).—Put eight 1 c.cm. bulbs in a row on a plasticene tray. From left to right fill in 95, 90, 85, 80, 75, 70, 60, and 50 volumes of saline, and make each up to 100 volumes by adding extract in the following manner: Take out from the left hand bulb about 20 volumes into a diluting pipette, leave an air bubble, and take up 5 volumes of extract; then expel into bulb and mix up and down rapidly. The emulsion should be as little opalescent as it can be made. In the stronger dilutions mix in the extract 5 or 10 volumes at a time. The method of making these dilutions is very important. We now have dilutions of extract of 5, 10, 15, 20, 25, 30, 40, and 50 per cent.

Now place nine small test tubes in a row on another plasticene tray. With a teat and test pipette fill in the left tube with 3 volumes of saline and 1 volume of appropriately diluted normal serum containing two units of complement. The remaining eight tubes are filled in with 2 volumes of the dilutions of extract, in order from left to right, 1 volume of saline, and 1 volume of complement. All ingredients must be filled into tube 2, then tube 3, and so on. Incubate in water-bath for twenty minutes, add 2 volumes of 5 per cent. sensitized corpuscle suspension, mix, and incubate a further twenty minutes.

The left-hand tube is a control, and should show complete haemolysis. The rest are examined from left to right until the tube is found giving complete inhibition of haemolysis—that is, a precipitate of corpuscles and a colourless supernatant fluid. One-third of the strength of extract in this tube is the strength to be used for the tests—for example, if 25 per cent. extract completely inhibits haemolysis, 8 per cent. is the strength to use in the tests. This 8 per cent. dilution is made fresh for each batch of tests from the stock undiluted extract.

C. *The Actual Test.*

The materials required having been prepared and standardized, the following procedure is convenient:

1. Prepare the 5 per cent. sensitized suspension of sheep's corpuscles.
2. Titrate complement and incubate.
3. Dilute extract to required strength for use.
4. Examine result of complement titration and dilute so that each volume contains 2 units of complement.

Place in a plasticene tray three rows of two small test-tubes for controls, and one row for each patient's blood to be tested. Put an extra tube to each row to dilute serums in, and as each serum is tested dilute it 2 volumes to 3 volumes of saline (2–5 dilution). Between filling in each row the pipette must be rinsed with distilled water and dried in a cool Bunsen flame and allowed to cool. The tubes are filled in as shown in Table I.

TABLE I.

	Left Tube.	*Right Tube.*
1st pair: No serum.	4 vols. saline.	2 vols. saline 2 vols. extract
2nd pair: Normal serum; negative control.	2 vols. saline 1 vol. heated serum (2–5 dilution) 1 vol. complement (2 units).	2 vols. extract 1 vol. heated serum (2–5 dilution) 1 vol. complement (2 units).
3rd pair: Syphilitic serum; positive control.	2 vols. saline 1 vol. heated syphilitic serum (2–5) 1 vol. complement (2 units).	2 vols. extract 1 vol. heated syphilitic serum (2–5) 1 vol. complement (2 units).
4th pair: First patient's serum.	Ditto, using first patient's serum heated and diluted (2–5).	Ditto, using first patient's serum heated and diluted (2–5).

Incubate in the water-bath for twenty minutes, add to each tube two volumes of the 5 per cent. sensitized suspension of sheep's corpuscles, mixing well first the right and then the left tube of each pair (to avoid carrying over complement), and just rinsing the test pipette with saline between each pair of tubes, but not drying it in the flame. Incubate a further twenty minutes, and read off the results as soon as the supernatant fluid can be seen in the tubes with no haemolysis. The result should be as in Table II.

TABLE II.

	Left Tube.	*Right Tube.*
1st pair ...	No haemolysis	No haemolysis.
2nd pair ...	Complete haemolysis	Complete haemolysis.
3rd pair ...	Complete haemolysis	No haemolysis.
4th pair (patient)	Complete haemolysis	Haemolysis complete="negative." Haemolysis nil="positive."

The method may be made quantitative by adding four extra tubes to each "patient's" pair and "titrating" one volume of the serum (2–5) through these four extra tubes as for titration of complement, and adding extract and complement as for the other right hand tubes.

In explanation of the number of volumes taken, it may be added that the calculations have been made so that the total bulk of six volumes, with corpuscles, corresponds to a total of 1½ c.cm. in the larger techniques, each volume being the equivalent of ¼ c.cm. The dilution of serums to be tested and the quantities are the equivalent of 0.1 c.cm. used in the ordinary techniques, and in the quantitative method the amounts of serum in the tubes containing extract are equivalent, from left to right, of 0.1, 0.05, 0.02, 0.01, and 0.006 c.cm. of the heated serum.

D. *Some Occasional Difficulties.*

The most common cause of difficulty is to be found in the sheep's corpuscles. Occasionally a sample will either not haemolyze at all, or only in very slight degree. Some few samples may haemolyze too readily, especially if not kept in the ice-chest, or if used when too old. The only remedy, if two extra washings make no difference, is to obtain a fresh sample. Serums when septic may lead to complete inhibition of haemolysis in both tubes. Frequently the serums will react satisfactorily if centrifugalized and then reheated for an hour at 56 to 58° C. If this has no effect, a fresh sample must be obtained. An extract inefficiently pounded, or carelessly diluted for use, is another source of trouble.

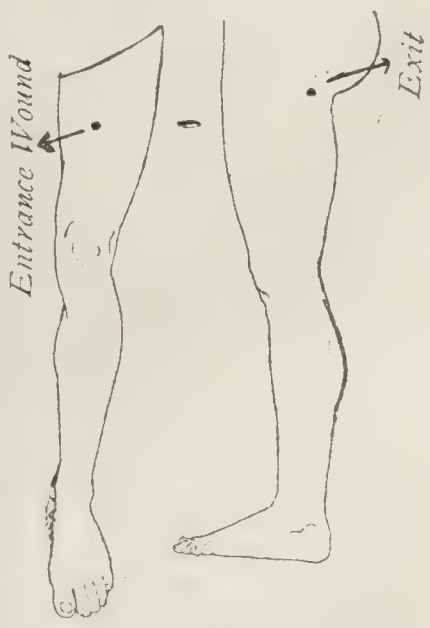
It will, however, seldom be necessary to repeat the tests owing to a "bad result" if the directions given above are carefully noted and followed, and if each step is carefully performed before going on to the next. The "no serum," "negative," and "positive" controls will show immediately if anything is wrong; if these controls are in order, the result shown in the "patient's" tubes may be trusted implicitly.

The Wassermann is an extremely important test, and the results given far-reaching. No stage of the working should ever be left to an unskilled worker, or undertaken otherwise than seriously.

ARTERIO-VENOUS ANEURYSM OF FEMORAL ARTERY SUCCESSFULLY TREATED BY OPERATION.

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THE following case of arterio-venous aneurysm of the left femoral artery, due to bullet wound, came under my care at the Queen Alexandra Military Hospital, Grosvenor Road, London, and I report it as there are very few cases on record of successful operation for arterio-venous aneurysm in this particular region. Sir William Osler urged me to publish the case as statistics are required to aid military surgeons in the choice of operations for this lesion.



Private G. (cavalry), aged 25, received a bullet wound through the left thigh at Zellebeke on November 15th, 1914. He was sent to the Duchess of Westminster's Hospital in France for fourteen days, and then to the South Devon and Cornwall Hospital, Plymouth, for another fourteen days. He went home for twenty-eight days, and was then attached to another cavalry regiment. He was put to work in the cook-house. He felt all right and had no pain in the thigh until April 15th, 1915, when he was put on mounted parade for six hours. The action of riding brought on pain, and an arterio-venous aneurysm formed at once. The bullet evidently injured the femoral artery and vein at about the level of 10 in. above the knee-cap.

He was admitted to the Queen Alexandra Military Hospital on April 16th. When examined on April 18th there was a swelling on the inner aspect of the thigh, and a "purring" sensation felt over the swelling, and for a long way up and down the thigh. Varicosity of veins was developing in lower leg daily, and he complained of slight aching; he was kept in bed. With low diet and rest the "purring" sensation and swelling were on April 21st very much less.

On April 23rd there was the slightest purring sensation over the femoral artery in front in an area about 2 in. square. It was then hoped that with low diet and absolute rest the aneurysm would consolidate.

On April 27th the purring sensation was felt over a slightly larger area.

Sir William Osler saw the case with me on this day, and made the following note:

"Swelling and visible pulsation in Scarpa's space and along the line of Hunter's canal and in the region of bullet wound. Veins of thigh not varicose; a few on the calf behind are increased in size. Marked visible pulsation at and above Poupart's ligament, but not more than on other side. Pulsation and other characteristic 'purr' over swelling and along femoral artery, but not in the popliteal. Pulsation felt in popliteal feebly; not felt in dorsalis pedis, but in posterior tibial. The characteristic murmur is heard from the common iliac to popliteal artery. On standing up the left foot gets much more congested and the veins of leg more prominent. Esmarch's bandage was applied and the femoral artery compressed at the groin. When the bandage was removed there was not much change in the appearance of the foot; the whole leg and foot remained dusky at the end of three minutes. The right leg bandaged with Esmarch's bandage, the right femoral artery was compressed at the groin. The bandage was removed after three minutes. This leg behaved like the other, showing that the collateral circulation was pretty good in the left leg. He has phlebo-sclerosis in both veins of both calves."

Operation.

I operated at 11 a.m. on May 12th. An Esmarch bandage was put on from foot to groin and a tight rubber band round the hip and groin and the bandage removed. Both bandage and band had been sterilized previously.

An incision was made in the line of the artery, beginning at the apex of Scarpa's triangle and extending down 5 in. along the site of Hunter's canal. I pushed the sartorius muscle to one side, and then met with two large veins, running parallel; these were held out of my way, and then I got down to Hunter's canal, separated the fascia and nerves and another vein, and came across the femoral artery, which was not enlarged in any way. The femoral vein lay to the outer side of the femoral artery, and was nearly the size of the vena cava. I found the aneurysmal connexion between vein and artery to be ¼ in. in length. There was no sac, as the aneurysm was so recent, and the enlargement was entirely on the venous side of the connexion.

I tied the artery 2 in. above and 2 in. below the lesion, firmly, with stout silk. I lifted the tied off portion up out of its bed and found that there was a small artery arising from it, and passing to a muscle. This I divided between catgut ligatures and removed half an inch of it.

I then tried to put Crile's forceps on each side of the big vein, but found the blades too short to occlude the whole width of the vein.*

My intention had been to cut off the venous circulation and sew up the opening from the arterial aspect, but I did not think it wise to stop the venous flow by other means, and did not want to interfere with the bed of the big vein; therefore I decided, somewhat reluctantly, to do no more, especially as my colleagues assisting me advised no further manipulation of the dilated vein, as the danger of thrombosis loomed large. All purring ceased before I closed the wound.

On May 20th the stitches were removed; the patient felt quite well. The beating of the dorsalis pedis and posterior tibial arteries could be felt faintly.

On May 28th the patient was doing well. A venous hum was audible up as far as the external iliac vein, and could be heard slightly 1 in. below the seat of the lesion, but not nearer the knee; this "venous hum" is due to the large vein and the dilated iliac vein, and was similar to the "hum" heard over a jugular vein. There was no sign of aneurysmal bruit or "purring thrill." The aneurysm is cured.

On June 3rd the patient was directed to lie in bed quietly for three weeks more, and was told he could then return home.

Cases of this kind should be operated on early to prevent the far-reaching effects of venous dilatation.

My thanks are due to Sir William Osler, Lieutenant-Colonel Pilcher, Lieutenants Northcote, Hort, and Randle, R.A.M.C., and Civil Surgeon E. H. Scott (anaesthetist); and also to the sisters in Queen Alexandra ward for their aid.

* Down Brothers are making an improved arteriorrhaphy forceps, half an inch longer in the blade, for me.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RECOGNITION OF EPIDEMIC CEREBRO-SPINAL FEVER.

IT might be of help to Dr. G. P. C. Claridge, and of some interest to others, if I relate the histories of three cases coming under my notice.

There had been a few cases of "spotted fever" in my district, which awakened my interest in the condition, though I had not had a case myself. As I had held the idea that cerebro-spinal fever occurred without spinal or meningeal symptoms, I was on the look-out for likely cases, and in the three referred to I found them.

CASE I.—Miss M. M., aged 7, became ill on a Monday night, with severe cold in the head, pains in joints of arms and legs, and frontal headache. The temperature was 103°, the pulse 90. There were no neck signs, no Kernig's sign, and no *tache cérébrale*. The patient looked really ill—far more so than one would expect to find in an ordinary "influenzal cold." I took swabs from the posterior nares and found Gram-negative cocci which refused to grow on agar but which grew on human blood agar. In every respect they resembled the meningococcus. The patient was treated with antiseptic nasal spray, formalin lozenges, and aceto-salicylic acid, and recovered completely in a week. None other of the family of six contracted it.

CASE II.—Mrs. B., aged 26, became ill on a Friday with frontal headache, pains all over, and severe coryza. She had some nausea, with slight vomiting. The temperature was 104°, and the pulse 110. There were no neck signs, no Kernig's sign, no *tache cérébrale*. Swabs from the posterior nares showed the same micro-organisms as in Case I. The treatment was the same. This case was much slower in recovery, but ultimately got quite well.

CASE III.—Master B., aged 3, son of Case II, presented the same symptoms, but not so severe, and in four days was quite well; from this case the same micro-organism was obtained.

From work that I have recently done on cerebro-spinal cases under the care of Dr. H. S. Murphy, Medical Officer, Lisburn Union Hospital, I am convinced that these three cases were examples of the catarrhal stage in cerebro-spinal fever.

I got these three cases before Dr. Lundie and his co-workers published their first paper, so I was very glad to read their paper, for it confirmed my imperfect surmises.

Lisburn, J. L. RENTOUL, M.B.

P.S.—Since writing I have attended another case which showed meningococci in the sputum. The patient, a girl aged 5 years, was brought to me by her mother. The history was: "Three weeks ago the child had a very severe cold in the head; the headache was intense." Since then the child had a severe cough, with much sputum. On examining the sputum the organism found was the meningococcus.

A CASE OF ABSCESS OF THE OMENTUM STRANGULATED IN A HERNIAL SAC.

S. L., aged 16, an Indian native, was admitted to the Zanzibar Government Hospital suffering from a swelling in the left inguinal region and left side of the scrotum. The swelling was not a large one; it gave the impression that the region had become tightly filled up without great increase in size. There was acute local pain and tenderness, also some diffuse abdominal pain. Percussion gave a dull note, and there was no impulse on coughing. Temperature was 101.2° F. and pulse 96. He gave the history that the swelling had suddenly appeared for the first time three days before, when he was lifting a heavy weight. There was some pain at first, but it was not

severe, and he went on working: but the pain became gradually worse. The bowels did not move during these three days until he took a purgative prescribed by his own doctor. Strange to say, there was no vomiting, though Indians, in contradistinction to native Swahilis, usually vomit on the least provocation.

From the absence of vomiting and complete obstruction, torsion of the spermatic cord or acute orchitis with effusion and inflammation of the cord seemed more likely than strangulated hernia.

At operation I found an inguinal hernial sac tightly packed with congested omentum, and the sac was so much constricted at the neck that its contents were strangulated. At the bottom of the sac was a hard mass somewhat smaller than a Tangerine orange. The contents of the sac were removed and the radical cure for hernia performed.

On cutting into the hard mass I found it was really a thick-walled abscess containing pus, that was almost caseous. The wall of the abscess, however, showed no giant-cell systems, and the pus contained cocci staining by Gram's method. This abscess must have formed in the scrotum, for it was much too large to have passed though the small neck of the sac. The boy suffered no ill effects from the removal of this mass of omentum. He had a little chloroform sickness, but there was no further vomiting. Recovery was uninterrupted, and a month after the operation he was at work and in perfect health.

N. HAY BOLTON, M.D.,
D.T.M. and H., F.R.C.S.Edin.
Zanzibar.

PREGNANCY WITH MYXOEDEMATOUS SYMPTOMS.

IN the JOURNAL of August 22nd, 1908, I reported the case of a woman with the classical features of myxoedema, in whom the symptoms rapidly disappeared after double ovariotomy for large cystadenomata. The following case, recently under my care in the Perth Hospital, illustrates the influence of a pregnancy in producing myxoedematous symptoms.

Mrs. C., a large bulky-looking woman, aged 26 years, was admitted eight months pregnant with her first child, suffering from retention of urine, which had come on rather suddenly, with slight vomiting and some pain in the back. The urine was loaded with albumin; the fetal head was lying further forward than usual, and markedly pressing on the bladder. The position of the head was apparently connected with an injury in childhood to the lumbar spine, which had necessitated the recumbent posture for three years. On examination of the spine, the middle of the lumbar region was found to bulge backwards, or, perhaps more correctly, the lower part of this region was displaced forwards, as if there had been an old dislocation. In spite of the pronounced albuminuria, there were no eye symptoms, but the legs were very oedematous. All over the body the skin was markedly thickened, firm, and inelastic, not pitting on pressure, this condition being especially noted over the back and posterior part of the chest, although it was clearly evident on the face, which conveyed the idea that it was swollen. The patient was strikingly dull and apathetic, spending most of her time in sleep, from which she could readily be roused momentarily. Her intelligence was obviously very blunted, so that it was impossible to get an explicit statement as to her history or present condition. She lay like a log in bed, and was quite unable to help herself, any movement, even of the legs, having to be done by the nurses. After a few days the skin over the projection of the lumbar spine began to get reddened, so that a water-bed became necessary.

On September 2nd, 1914, Caesarean section was performed. The skin of the child was seen to be macerated and peeling, and in spite of all efforts the infant succumbed. The patient's ovaries were found to be apparently healthy. It was noted in making the abdominal incision that the subcutaneous fat was profoundly altered, being very tough, decidedly pale, fibrous, and tightly bound down to the rectus aponeurosis. In the first couple of days after delivery the patient was light-headed, and appeared unable to realize her surroundings completely. Thence onwards her mental condition underwent a striking and rapid improvement. The oedema of the legs soon disappeared, and the general thickening of the skin quickly passed off. By the end of a week the dull, rather stupid, expression had given place to that of an alert, intelligent woman, with a relatively thin face, while the skin all over the body was fast resuming its normal elasticity.

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Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

AT a meeting on June 9th, under the presidency of Mr. PRIESTLEY SMITH, Mr. A. C. HUDSON showed a case of *Sympathetic ophthalmitis treated by salvarsan and neosalvarsan*. It seemed a genuine cure. Mr. J. S. HOSFORD exhibited two cases of the *Albuminuric retinitis of pregnancy*, and Dr. ATTLEE showed *Coloboma of the iris* in mother and child. Mr. CHARLES WRAY showed a case of *Bony growth in the frontal sinus*. In cases of retrobulbar neuritis suspected to be of sphenoidal origin, he advocated making the patient spend some time with the face downwards, with a view of facilitating drainage from the sphenoidal and posterior ethmoidal cells. Mr. HOLMES SPICER discussed the case. Mr. J. HERBERT FISHER read a paper on *Retinitis of pregnancy*. Obstetricians now no longer explained the albuminuria of pregnancy as the result of obscure reflex effects of the gravid uterus upon the kidneys, or of mechanical pressure on the ureters. They attributed it, with eclampsia and pathological vomiting of pregnancy, to toxaemic products in the circulation. In fatal cases of eclampsia haemorrhages of brain and necrotic changes in the liver were often found, and albuminuria was an effect of the disease on the kidney, not the cause. In the retinitis of pregnancy the condition of retina was different from that in albuminuric retinitis, as also was its sequel. Syncytio toxins—products of the disintegration of the syncytium cells—had been found in these cases; and these cells immediately connected the fetal with the maternal structures. The author gave particulars of a series of typical cases of the condition which had been under his care. In one fatal case, Mr. A. C. Hudson made a pathological examination on the day after death, and found the coats of the eye *in situ*. There was some oedema of the nerve head, and in the nasal quadrant of the retina were two large haemorrhages. The chief pathological changes were in the large choroidal arteries, many of which showed gross endarteritis, causing, in some instances, obliteration of the vessel lumen. Some of the choroidal arteries were normal. Similar pathological changes were found in sections of posterior ciliary arteries surrounding the optic nerve behind the eyeball. The retina and optic nerve head showed evidence of oedema, in the former almost limited to the internuclear layer. Rods and cones were almost entirely absent, but this might be attributable to *post-mortem* changes. In the large retinal veins there was pronounced thickening of the adventitial coat. The rule had been for good recovery of vision to ensue, with the disappearance of all acute manifestations in the retina, thus differing absolutely from cases of ordinary renal retinitis. In cases in which defects of vision were permanent, this seemed to have been because changes had been produced in the walls of the arteries, or an atrophic condition of the nerve. A recurrence of the retinitis was not necessarily seen when pregnancies subsequently occurred, even though the albumin did not quite disappear in all. One patient died, after an interval of six years, from cardiac failure; another, after eight and a half years, of cerebral haemorrhage into the left corpus striatum. In this case the kidneys were found to be of the typical red granular type. It seemed clear from his cases that albuminuria of pregnancy was not sufficient alone to set up the typical retinitis of pregnancy. In the ensuing discussion, Mr. J. S. HOSFORD reported having carefully observed 16 cases during the last fifteen years; only three of them were now alive. All but two ultimately developed a star-shaped spot on the macula, a sign which he regarded as of fatal omen. Many patients seemed to recover from the initial attack, but later had a relapse. In a series of

132 cases seen in Dr. Fenwick's wards, 81 were in females, 51 in males; the onset among single men and single women seemed to be about equal. Much of the renal trouble seen fairly late in life might have started, in females, in pregnancy. Only 3 of the 132 cases had myopic eyes. Since the Wassermann reaction was introduced, he had had all the cases he saw so tested, but none were syphilitic. Mr. W. C. ROCKLIFFE related a case in which retinitis occurred in the first pregnancy, but the defect of sight seemed to disappear after premature labour was induced. A subsequent pregnancy brought on a repetition, but though labour was again ended prematurely, sight became progressively worse, and ended in blindness. The patient died four years later, from heart failure. Mr. J. B. LAWFORD alluded to the far-reaching effect of the toxaemia. In some of the author's cases, although there was no recrudescence of retinal change during subsequent pregnancies, yet toxic effects showed themselves at a later date, and eventuated fatally. It was a common belief that one of the safeguards in this condition was the avoidance of further pregnancies. In one case which he had under care over twenty years ago retinitis came on in the first pregnancy, with great defect of sight. This disappeared after delivery, and, acting on the advice of her doctor and himself, the patient had no further pregnancies. Her sight remained good for a number of years, but ultimately advanced changes came on in the retinal vessels, and she succumbed to chronic nephritis. Another, and older, patient developed the condition in her third pregnancy, and recovered. The advice to bear no more children was disregarded, and in her next pregnancy there was a great aggravation of her toxaemic condition, and she died of nephritis. He asked whether obstetricians were aware of the reason for the persistence of the toxic effects of the first attack, even though some subsequent pregnancies did not seem to be accompanied by the symptoms. There seemed to be need for a revision of the view as to the comparative innocuousness of the retinitis of pregnancy. Mr. LESLIE PATON tentatively suggested that such conditions as the irido-cyclitis seen in women at the period of the climacteric would possibly be brought into the same category. The seriousness of the disease seemed to be directly proportional to the extent to which the vessels were injured at the time of the attack. One case, though presenting "silver-wire" arteries, still remained well eight years after the attack. Mr. FISHER, in reply, suggested combined investigation by obstetricians and ophthalmologists concerning the diseases attributable to the toxaemia present in pregnancy.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting on May 14th, Dr. F. CONWAY DWYER, President, in the chair, Mr. D. KENNEDY showed a patient suffering from a condition which he called *Myeloma*, although he was not at all sure of the diagnosis. A section of the bone had been taken away by Mr. Tobin, and on examination nothing was discovered corresponding with the cells of myeloma. The trouble commenced in the elbow some eleven years ago, and atrophic changes developed in the hands after the condition in the wrist. The hand was very much deformed, although there was no disturbance of sensation. Mr. D. Kennedy also showed a case of *Arthroplasty of the elbow*. The patient some nine or ten months ago injured her elbow by a fall. Since then there was complete ankylosis. *X*-ray examination showed that the humerus was not normal, but was somewhat battered. It was decided to do an arthroplasty, and at the operation a projection was found on the inner side of the articular end of the humerus. This was removed from the ulnar aspect of the humerus, and the end of the humerus was put level. A flap was then taken partly from the later aspect of the arm, and almost entirely consisting of fat, and turned over the humerus, leaving the ulna and radius as they were. The PRESIDENT and Mr. H. DE L. CRAWFORD made remarks, and Mr. KENNEDY replied. Mr. CRAWFORD showed *Skiagrams of four cases of congenital syphilis of the hands and feet*. Details of the cases were given, and the author said the condition appeared to be more common than was expected. He had therefore decided in future not to label any of these cases as tuberculous until they had been well examined. Mr. Crawford also showed *Skiagrams of old traumatic dislocation of the hip*. The patient was a girl aged 9, who at the age of 5 had a fall; after a few days' pain she started walking again. She was noticed soon afterwards to be lame, and there was one and a half inches shortening. There was no sign of disease until the shortening occurred. *X* rays showed two acetabula. The ramus of the pubes on the one side was about half the length of the other side. The diagnosis of traumatic dislocation was made for want of a better designation for the condition. Mr. Crawford then read a paper on the *Bridge method of skin grafting*, illustrated by lantern slides. After describing the technique he emphasized the following points: (1) That asepsis must be perfect. (2) That the size of the graft must be as small as possible, and that it was better to operate twice than use a very big graft. (3) That the graft and limb must be very carefully immobilized during the first week. After remarks by the PRESIDENT and Mr. D. KENNEDY, Mr. M'CONNELL said he had operated by this method in one case, a very extensive formation of scar tissue on the thumb. He cut through the scar tissue so as to allow the thumb to be abducted freely, which left the raw area about one inch in width. The thumb was then buried in the lower end of the thigh. The patient had very good abduction in the thumb afterwards. It struck him that skin grafting on the hand was absolutely different from other parts of the body, as in other parts a good blood supply was to be had, whereas the supply in the hands was bad. In all cases of grafting about the hands and feet he looked upon the Bridge method as the only one. One of the worst cases he had seen was a bad scar over the left heel. This was treated by putting the sole of the foot on the other leg and lifting up a large flap from the right calf and stitching it to the heel. He had seen the case in three weeks after it was done, and it was completely healed. He attributed the success to the good blood supply. Mr. CRAWFORD replied.

SECTION OF MEDICINE.

AT a meeting on May 21st, Sir JOHN W. MOORE in the chair, Dr. C. M. O'BRIEN showed a patient suffering from *Leprosy of the tuberculated form*. The patient was a retired soldier who had offered himself for service, but was refused on account of a rash on his skin. He had served in the Leinster Regiment in Malta, Bermuda, Halifax, Jamaica, and South Africa. He left the army in 1906 apparently perfectly well. In 1913 he was in hospital for five months with boils on the face and neck. The disease was first diagnosed in August, 1914. The face as a whole was unusually broad, the chin prominent; the skin on the forehead lumpy and shiny; nose flattened; lips thick; hair, other than on scalp, falling out; hands swollen and cushion-like on back, ash-grey in colour; thenar and hypothenar muscles flat and flabby; inguinal glands shotty; reflexes normal; no anaesthesia. Mucous membranes free. No reaction with alt-tuberculin injected subcutaneously nor by von Pirquet's method. Positive Wassermann. Sections from a nodule, prepared by Dr. T. T. O'Farrell, were exhibited showing the bacilli in numbers; a few in cells, the majority extra-cellular. Remarks were made by the CHAIRMAN, Dr. DRURY, Professor METTAM, Dr. CROFTON, and Dr. F. C. PURSER; and Dr. C. M. O'BRIEN replied. Dr. ROBERT J. ROWLETTE read a paper on the use of *Vaccines in the treatment of respiratory diseases*. The main difficulty in vaccine treatment was one of diagnosis, and this difficulty was especially great in the case of respiratory diseases. He preferred, in case of doubt, using vaccines of different organisms in succession to using them simultaneously, and where this was not practicable he preferred the combined use of two vaccines to the use of a mixed vaccine. He read notes of 14 cases of respiratory diseases treated by vaccines—chronic naso-pharyngeal catarrh 4, recurrent acute naso-pharyngeal catarrh 4, recurrent acute general catarrh with bronchial attacks 3, chronic bronchitis 2, pulmonary abscess 1. The organisms used in treatment were: *Micrococcus catarrhalis* 5, *pneumococcus staphylococcus* 1, *streptococcus* 3, *streptococcus* and *staphylococcus* 2, *Staphylococcus aureus* 1. Of the 14 cases treated the result was very satisfactory in 10; in 1 there was a temporary improvement, and in 3 no result could be traced. The

paper was discussed by Drs. T. T. O'FARRELL, CROFTON, BOXWELL, NESBITT, and the CHAIRMAN; and Dr. ROWLETTE replied.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on June 4th, Colonel W. H. HENDLEY, I.M.S., in the chair, Dr. F. S. PALMER read a paper on *The functional palsies and their recognition*. He said that the recognition of the functional examples was of paramount importance to the clinician. No distinction could be drawn between the words "hysterical" and "functional" as applied to paralysis. Organic disease and functional disorders might coexist, as sometimes seen in cases of cerebral tumour. Many grave diseases of the nervous system developed on functional lines and for a time masked the underlying cause, especially the irregular forms of disseminated sclerosis; in their earlier stages they were sometimes indistinguishable. The diagnosis of the functional palsies was made by the exclusion of organic signs, evidence supplied by the examination of reflexes, and the recognition of hysterical personality. Ordinarily, recovery was the rule, except in long-standing cases with fibrotic changes in the joints and tendons. Usually marked anaesthesia in some form was present. Although it was often profound, and frequently changed its position, it never corresponded to the anatomical distribution of the paralysis, which varied from slight motor weakness to absolute loss of power. Besides several local palsies the types usually encountered were monoplegia, hemiplegia, and paraplegia; diplegia and quadriplegia were so rarely seen that they did not require attention. Much importance was attached to the study of the reflexes, especially the plantar response, gait, pupillary and electrical reactions, together with the use of the ophthalmoscope. Of the local palsies, hysterical aphonia due to paralysis of the adductors; in the eye concentric contraction of the visual fields, and in the ocular region pseudoptosis from spasm of the orbicular muscle were the most common. Some of the functional palsies were comparatively easy to recognize, but others were problems of great difficulty. Mr. BISHOP HARMAN, Drs. ALASTAIR MACGREGOR, OGIER WARD, Mr. O. L. ADDISON, and others took part in the discussion; and Dr. PALMER replied.

Reviews.

SANITATION IN WAR.

THERE may be thirty different ways of writing a handbook of applied science, as there are of writing tribal lays, but not every one of them is right. A good elementary handbook can only be written by an expert, but a wrong way for him to set about it is to surround himself with big books of reference. Almost certainly he will lose the balance of the parts; some will become too much elaborated, and either the others will suffer or, as so often happens, the book will grow too big for a handbook while failing to reach the dignity of a treatise. One of the right ways—and we are disposed to think the only right way—is for the expert, after arranging the order of his chapters, to sit down and write them *currente calamo*. In that way the free play of his mind, working on the riches of his technical knowledge, will bring up to the surface the essential points with a fullness and distinctness in proportion to their importance in practical application. Afterwards he must no doubt verify facts and figures. In some such way we judge Major P. S. LELEAN wrote his very excellent handbook of *Sanitation in War*.[1] In his preface he excuses imperfections on the score of pressure of work, and expresses thanks to colleagues who have helped him to avoid errors. The gratitude may be well deserved, but the excuses are for the reason indicated unnecessary.

A course of lectures delivered by Major Lelean in the University of London was reported in our columns early this year, and this volume is founded on these and other courses delivered by him at the Royal Army Medical College. The lectures and the book are designed to assist newly joined medical officers, as were the lectures upon which they are founded. The privilege of attending these lectures was, we know, highly prized, and it is well that Major Lelean has been induced to place the material in print at the service of all. We gather that the book appears in response to the wishes of Sir Alfred Keogh, who has written a short introduction. In it he says that the present campaign was entered upon in the confident hope that the knowledge gained during the dozen years since our last great war would lead to the successes of peace time in the prevention of disease finding their counterpart in a marked reduction of the high rates of sickness which had hitherto been regarded as inevitable in the field. To the attainment of that end there is, he says, one essential condition—the intelligent co-operation of the whole personnel of the field force, the knowledge of sanitation possessed by medical officers being that upon which this essential condition primarily depends. He fortifies his doctrine—that the co-operation of all is required—by an extract from one of Nelson's dispatches to the Admiralty, in which he said, "You will agree with me that it is easier for us to keep men healthy than for a physician to cure them." The general scope of Major Lelean's book will be indicated by the titles of his chapters, which are: Physical fitness for war; antityphoid inoculation; the march; sickness in the army; the rôle of insects in war; medical organization and administration in the field; field conservancy; water and water supplies. The book is a good deal more than a list of directions what to do and what to avoid; this is well illustrated in the chapter on antityphoid inoculation, which not only contains clear directions for the actual inoculation, but explains the whole theory of the practice, an explanation which includes a singularly clear account of the theory of immunity. The chapter on medical organization and administration in the field is a model of clarity and brevity, and the author has even contrived to introduce a short account of civil sanitary administration in France and Germany. So also the chapter on water supplies contains a short account of the geological formations of North-Eastern France and Belgium, and notes on existing supplies in those regions.

The book is adequately illustrated by diagrams in the text, and has an index. The publishers would do well in another edition to substitute for the title of the book on the top of each page an indication of the subject therein treated. This would greatly facilitate reference, for we believe that the medical officer who carries this book will find it constantly useful; he will wish to learn his way about it without reference to the index, and catch-lines at the top of the page would be a great help to him in attaining this facility; considering the rather high price of the book they might well be provided.

[1] *Sanitation in War*. By Major P. S. Lelean, F.R.C.S., D.P.H., R.A.M.C. With an introduction by Sir Alfred Keogh, K.C.B., M.D., F.R.C.P. London: J. and A. Churchill. 1915. (Fcap. 8vo, pp. 277; 31 figures. 5s. net.)

NATURE AND NURTURE IN MENTAL DEVELOPMENT.

DR. MOTT has amplified three Chadwick Trust Lectures, delivered by him last year, into a small book[2] in which he deals in a clear and readable yet strictly scientific style with the physiological basis of mind and character. He shows what light is thrown on the problems of education by researches on the structure of the brain, and gives a lucid exposition of the causes of mental deficiency. "The feeble-minded (he says) is born poor in the anatomical substratum of mind; the demented was born rich, but has become poor on account of disease. The race poisons, alcohol and syphilis, are the two great preventable causes of inborn and congenital feeble-mindedness in children and of loss of mind in adults." He holds that "the most dangerous form of feeble-mindedness is now the higher grade imbecile who is fertile, and able, under the easier conditions of survival brought about by social reform, to infect good stock by multiplying his inferior breed." The remedy for this is prevention by early segregation of mentally deficient children.

In a chapter on the raw material of character in relation to heredity, Dr. Mott shows that the convolutional pattern of the brain is dependent upon the inheritance from progenitors of similarities in the fissures and folds,

[2] *Nature and Nurture in Mental Development*. By F. W. Mott, M.D., F.R.S., F.R.C.P. London: J. Murray. 1914. (Cr. 8vo, pp. 161; 6 plates, 17 figures. 3s. 6d. net.)

and, just as in every face may be found the features of ancestors, so in the brain of every one of us the character of ancestors may be reproduced. Many striking examples of this may be found in English history, and there is more than one celebrated family of which it has been said without much exaggeration that no woman has sprung from it who was chaste and no man who was not a scoundrel. In other families, on the other hand, one sees successions of men who have done good service to the State or who have won distinction in various spheres of life. This is partly, of course, the result of environment, but heredity is the chief factor in the transmission of the characters that make good men and useful citizens.

It is, as Galton pointed out, a prevalent but mistaken belief that men of genius are often puny in body and dyspeptic or constitutionally weakly. The truth is the other way. Although in many men of genius there have been neuropathic features, the old maxim *Mens sana in corpore sano* generally holds good, as might be expected from the intimate correlation which exists between the mind and the body. Although genius may sometimes be associated with ill health owing to bad conditions of living, to the early struggles against poverty, to dissipation and other causes, this does not warrant the conclusion that genius is a manifestation of disease or that a diseased inheritance is a factor in its production. It is a curious fact that many men of great intellect have left no descendants. But an explanation of this may possibly be found in the intense concentration of the higher faculties of the brain on work which leads to the partial or complete abolition of the power of propagation. For this reason Balzac, in his *Physiologie du Mariage*, classes all brain workers among those predestined to conjugal misfortune. Again, many men of the highest range of intellect, such as Isaac Newton, have never married.

On the influence of nutrition and education in development Dr. Mott has much to say that is interesting and sound. He goes fully into conditions likely to affect the health of the mother during gestation, strongly condemning the opinion that a woman is doing her best for her unborn child by doing nothing. Daily exercise in the open air and occupation for mind and body are essential. Good food, fresh air, and clean, well-ventilated homes are also necessary. In the matter of education, he recognizes that home influence is a most important factor in efficiency; "the individual efforts of good parents, especially of good mothers, cannot be replaced by the collective efforts of society in schools and institutions." Speaking of the co-education of the two sexes in adult life, he says that it has not proved a great success. With regard to the teaching of "sex hygiene," he thinks it cannot fail to have a good effect if the instruction is commenced at a time "when the dawn of the passions and sentiments of sex is arousing in the mind of the boy or girl a new outlook on life." He thinks the problems of sex could best be presented to boys and girls just before leaving school.

Dr. Mott, in his little book, has covered a great deal of ground. We have dealt only with some of the principal subjects which he handles, and have left untouched many points, notably the neuropathic inheritance in relation to crime and insanity. Of this he treats in an instructive way, illustrating his teaching by references to historical instances. But his views are well known to our readers, as we have published and commented on several papers by him in which the subject is thoroughly discussed. We commend the book to all interested in what Carlyle calls the "condition of the people question," in education and in the future of our race.

There is a useful appendix on the medical inspection of school children by Dr. Mott's daughter, Miss Agnes Mott, who is lady sanitary inspector and school nurse to the city of Chester.

TROPICAL DISEASES AND SANITATION.

A USEFUL little work on tropical diseases[3] has been written by Dr. E. R. STITT, Medical Director of the United States Navy. The original idea of the author, as he explains in the preface to the book, was to have prepared a work dealing with the laboratory and clinical side of tropical diseases, but he had to abandon this idea, and instead published (in 1908) a laboratory manual. More recently the clinical side has again appealed to him, and the present book, *The Diagnostics and Treatment of Tropical Diseases*, is the result. There are now so many books on tropical medicine that any fresh addition to the ranks will require to possess considerable merits to take a place in the front rank, but this little work of Stitt's will, we think, attain this position. Considering the space at the author's disposal it is wonderfully full. Most of the subjects are well and accurately treated, and are, in addition, well illustrated. Of course, in a small book such as this it was necessary to make a selection. This has been carefully and skilfully done, and the book affords a very good introduction to the subject.

Practical Tropical Sanitation,[4] by W. ALEX. MUIRHEAD, is a manual intended for sanitary inspectors. Its standard is above that of elementary textbooks of tropical hygiene, yet below the standard manuals on tropical medicine for medical officers. Such a work the author rightly believes is needed, as textbooks in tropical medicine are written in language too technical for persons without a medical training, and, further, often omit practical subjects connected with the duties of sanitary inspectors. The endeavour of the writer, who has had a large practical experience of sanitation in the army and tropics generally, has been to make the work readable, reliable, and practical. In this he has largely succeeded. The work will be found useful by others, as well as those specially occupied in sanitary inspection. The contents are arranged in twelve chapters, with an appendix. The part on tropical diseases will be found specially interesting by some. On the whole, the account given of these is quite good. As regards blackwater fever, however, it would have been well to have stated that the daily prophylactic use of quinine is the best preventive against this disease. Since the malarial rate has been reduced by this measure, cases of blackwater fever have become much rarer, and this fact should be made widely known. It is also not quite accurate to say that the most commonly known form of filarial infection is elephantiasis. This is apt to give a wrong impression altogether. The statement that the young forms of the filaria block up the lymphatic glands is also erroneous. Further, it is not necessary to write that the cycle of development is "said" to be completed in the thoracic muscles of the mosquito; it is a well-proved fact. Perhaps the part on mosquitos might have been more amplified, especially so as anti-malarial and anti-yellow fever work form such a large part of tropical sanitation. The purely sanitary part on disinfection, air and ventilation, water and water supplies, collection, removal and disposal of excreta and refuse, seems to be accurate and well up to date. The part on food with the inspection of carcasses should help those who have to deal with this branch. The book is a good one, is well written, and certainly it can be recommended to those for whom it is intended.

A very interesting paper on the *Entamoebae of Man in the Panama Canal Zone*,[5] by WILLIAM M. JAMES, has recently been issued. In this study, which appeared originally in the *Annals of Tropical Medicine and Parasitology*, the subject is discussed in great detail. Of the four parts into which the essay is divided the first contains a summary of the more important literature on the morphology and development of *Entamoeba tetragena*; the second treats of the morphology of the entamoebae found in the Canal zone; and the third of their classification. This part deals with the entamoebae associated with mild or latent dysentery, with the entamoebae whose end stage in the human host is a four-nucleated cyst, with the relation of dysenteries to the types of entamoebae encountered, and the correlation of the types of entamoebae, and the so-called chromidia formation in the entamoebae. In the

[3] *The Diagnostics and Treatment of Tropical Diseases.* By E. R. Stitt, A.B., Ph.G., M.D. London: H. K. Lewis. 1915. (Post 8vo, pp. 432; 86 figures. 8s. net.)

[4] *Practical Tropical Sanitation: A Manual for Sanitary Inspectors and Others Interested in the Prevention of Disease in Tropical and Subtropical Countries.* By W. A. Muirhead. London: J. Murray. 1914. (Med. 8vo, pp. 303; 114 figures. 10s. 6d. net.)

[5] *A Study of the Entamoebae of Man in the Panama Canal Zone.* By W. M. James, M.D. Virginia. Reprinted from the *Annals of Tropical Medicine and Parasitology*, edited by Professor J. W. W. Stephens, Professor R. Newstead, Professor W. Yorke and Sir Ronald Ross. Vol. viii, No. 2, July, 1914. (Sup. roy. 8vo, pp. 136-320; illustrated.)

fourth part the technique of various methods used in fixing and staining the entamoebae is discussed. Finally there is a bibliography, and a very interesting series of plates. This contribution is a valuable addition to the literature of amoebiasis, and all interested in the subject should certainly read Dr. James's paper.

NOTES ON BOOKS.

IN writing a popular book on the romance of *Engineering*,[6] an author is embarrassed by the immense choice of subjects, and Mr. GORDON KNOX has done wisely to limit himself to what may be called constructional engineering. He has chapters on canal cutting, on irrigation and water works, on bridge building, railway tunnels, mining, ships and salvage, lighthouses, docks, harbours and breakwaters, power including in particular the utilization of water power still in an early stage of its development, telegraphy, telephony, and roads. The book was written before the outbreak of war, but the author has added a short chapter in which he gives some indication of the dominant part the engineer has played in it. In describing the making of the Panama canal, Mr. Knox says truly that great as were the constructional difficulties, the chief problem the Americans found demanded solution was that the army of workers should be healthy, contented with their environment, and happy in their work. The complete success with which Surgeon-General Gorgas and his lieutenants safeguarded the health of the army of workmen by the application of scientific principles to the particular conditions has often been told but well bears repetition. But, indeed, all the chapters prove that the governing consideration for any engineer who is directing great constructional works is that he cannot fight against the forces of Nature, but must so direct them that they shall operate to attain the end he has in view. That is to say, the engineer must have an accurate knowledge of many sciences—mathematics, physics, climatology, and preventive medicine—and must understand also human nature, for it is on the spirit of the workers that success in the end largely depends. They must be inspired, like the leaders, with the feeling that "it is dogged that does it," and both must be ready to meet the unexpected, for sooner or later in any big enterprise it always comes. This is the chief lesson of Mr. Knox's interesting book, but incidentally he brings out the fact that the chief differences between the wonders of the world that the ancients left and those made to-day is that the latter have a utilitarian object, and are carried out more speedily. For instance, all that can be said in respect of the magnitude of the Plymouth breakwater is that it absorbed an amount of material "at least equal to that contained in the Great Pyramid of Egypt." The volume is illustrated by a number of photographs and by a coloured frontispiece, and a series of drawings in the text from the pencil of Captain Granville Baker.

Ladies' schools are no longer of the type of Miss Pinkerton's Academy, where maidens "with those virtues which characterize the young English gentlewoman," and damsels with doubtful antecedents like Miss Becky Sharp, were crammed with Lindley Murray's *Grammar* in ill-ventilated schoolrooms, and trotted out in double file twice a day along public thoroughfares. In days when a better system was in process of evolution, a lady insisted that she did not wish her daughter to know anything about her inside, and another mother felt sure that teaching the anatomy of the heart "inculcated gross materialism." *Physiology and Hygiene for Girls' Schools*[7] is based on other views of feminine education, now fortunately accepted by most parents and guardians. Dr. ELIZABETH CHESSER deserves much credit for this treatise, its object being the supply of a knowledge of home sanitation, dietetics, cooking, and personal hygiene, which will be of service to girls in after-life. Hence we may agree that the author has done well in dwelling at some length on ventilation and contrivances for ensuring it. No doubt a Dora Copperfield could not be expected to know or care much about Tobin's tubes, but maidens in secondary schools in these days are of a more Spartan and a more intellectual type. It is instructive to find only fifteen lines about fainting. In a past age, ladies of every rank in life, from Miss Sophia Western to Mrs. Bardell and Mrs. Sanders, did not need to be taught that "sudden emotion" might cause syncope. One disagreeable subject, pediculi, is rightly included in this treatise, now that ladies of tender breeding travel in tubes and motor buses. Among emergencies we find first aid in hanging, *absit omen;* and under accidents Dr. Chesser most properly places "fish-hook in skin," and unlike some earlier writers on domestic surgery, gives full and precise directions: "Cut off the dressing of the hook, and force the metal point onwards until the hook can be removed." The very advisable preliminary step is generally omitted. Under "physical education" the author notes that "running and jumping can be practised in moderation." She was right to join the two forms of exercise. The old-fashioned anxious mother, we know, dreaded high jumps, yet underrated the evils of running matches in playgrounds, and long walks. "It would seem unnecessary," Dr. Chesser remarks, "to warn girls against the use of narcotics, or the abuse (*sic*) of tobacco." Unfortunately, as she explains, such a warning is quite necessary. Lastly, with a view to the future, the hygiene of infancy is added to the hygiene of habitations.

Dr. WOODWARK'S *Medical Nursing*[8] is a manual which can be cordially recommended. It embodies a good deal of information which does not fall strictly within the limits of the subject, but this is justified on the plea that the modern nurse is expected to be an intelligent co-operator with the physician, not a mere rule-of-thumb automaton. Certainly it will be found a valuable work of reference, not only for probationers but for experienced nurses or even for the general practitioner. It is copiously illustrated and contains clear instructions for dealing with cases of poisoning and other emergencies.

The sixteenth edition of *Chavasse's Advice to a Wife*[9] has been revised by Dr. STANLEY DODD. So far as possible it has been kept in the original style of the author, but certain repetitions and redundancies have been eliminated. The account of the methods of resuscitating the newborn has been amplified, but "a good smacking of the buttocks" still holds a place of honour. The subjects of treatment and diet have also been revised and brought up to date, and a section on sexual hygiene has been added. A book of which 420,000 copies have been called for hardly needs further commendation; we think that it thoroughly deserves its good repute.

[6] *Engineering.* By Gordon D. Knox. Romance of Reality Series. London and Edinburgh: T. C. and E. C. Jack. 1915. (Large cr. 8vo, pp. 288. 3s. 6d. net.)

[7] *Physiology and Hygiene for Girls' Schools and Colleges.* By E. Sloan Chesser, M.B. London: G. Bell and Sons, Ltd. 1914. (Cr. 8vo, pp. 239; illustrated. 2s.)

[8] *Medical Nursing.* By A. S. Woodwark, M.D., B.S Lond., M.R.C.P.Lond. London: E. Arnold. 1914. (Cr. 8vo, pp. 335; 67 figures. 4s. 6d. net.)

[9] *Chavasse's Advice to a Wife on the Management of Her Own Health, and on the Treatment of Some of the Complaints Incidental to Pregnancy, Labour, and Suckling.* Revised by S. Dodd, M.A., M.B., B.C., M.R.C.P., etc. Sixteenth edition. London: J. and A. Churchill. 1914. (Cr. 8vo, pp. 348. 1s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

Poisonous Gases.

WE have received a specimen of a trench respirator designed by Lieutenant F. Seaton-Snowdon, N.R. It is a modification of a respirator made by Messrs. Wallach Brothers for use in mines and factories. It consists of two perforated aluminium plates; the inner covers the nose and mouth and can be moulded to the shape of the face; its edge is guarded by indiarubber tubing. A valve for expired air is provided at the top. The outer plate is retained in position by two small thumb-screws. A cotton-wool or linen pad, which can be imbibed with a suitable neutralizing solution, is easily fixed between the two plates. The respirator, which is called the "Combat," is light, weighing less than 1 oz., and, as the aggregate area of the holes in the plate is large, there seems to be no difficulty in breathing through it. It is supplied by Messrs. Wallach, Royal London House, Finsbury Square, E.C., at the price of 3s. 6d., post free, in the United Kingdom, and 4s. abroad.

Messrs. Allen and Hanburys, Ltd., have put up in capsules poison-gas antidotes containing alcohol and ammonia. The action of these substances as antidotes to the poisonous gases used by the Germans was pointed out in the JOURNAL of last week, p. 1016.

THE late Dr. William Thomas Edwards, of Cardiff, left estate valued at £80,955. On the cessation of the trusts on which the residue of his estate is left, the testator bequeathed £7,000 for University College, South Wales, and £5,000 for Glamorganshire Infirmary.

WATERLOO.*

ONE HUNDRED YEARS have passed away since the battle of Waterloo was fought on June 18th, 1815, and Napoleon's power finally crushed by the British army under Wellington, aided by that of Prussia under Bluecher. After the lapse of a century we see the same combatants, differently grouped as allies, again locked in a life and death struggle. The total forces engaged on both sides, the number of casualties, the duration of the contest, are now all upon a scale compared to which the Waterloo campaign sinks into insignificance. During the present war a dozen battles have been fought beside each of which Waterloo seems but a skirmish. The battle of Waterloo was lost and won in one long summer day, or, if we include the preliminary battle of Quatre Bras, in three days. The numbers engaged were about 70,000 on each side, the British and allied casualties about 27,000, the French about the same. These numbers are small compared to the first battle of Ypres, fought through October and November of last year, which lasted some six weeks, and in which the casualties on both sides together are said to have amounted to about half a million. Yet Waterloo settled the destinies of Europe for about half a century. Can the present titanic struggle do more?

The total number of troops engaged at Waterloo were: Under Napoleon, 71,947, not counting the two corps under Marshal Grouchy (some 34,000 men), which took no part in the battle; on the side of the allies, 67,661, made up as follows: British, 24,991; King's German legion, 5,824; Hanoverians, 11,220; Brunswickers, 4,962; Nassauers, 2,880; Netherlanders, 17,784. These figures do not include Bluecher's army, some 75,000 strong, which came up towards evening, and completed the victory. At Quatre Bras the total casualties of the allies—killed, wounded, and missing—amounted to 3,463 (British, 2,275; Hanoverians, 369; Brunswickers, 819); and those of the French 4,300. At Waterloo itself the casualties of the allies were 23,185 (British, 11,678; Prussians, 6,999; Netherlanders, 3,178; Brunswickers, 687; Nassauers, 643). The casualties on the French side were variously estimated as being from 18,000 to 30,000.

The number of British medical officers who took part in the battle was a little over one hundred and fifty, as shown in the following table of regiments of cavalry and battalions of infantry engaged:

	Inspectors of Hospitals.	Deputy Inspectors.	Surgeons.	Assistant Surgeons.	Total.
Life Guards (3 regts.)	—	—	2	3	5
Cavalry (13 regts.)	—	—	12	16	28
Foot Guards (4 batts.)	—	—	4	8	12
Infantry (21 batts.)	—	—	18	41	59
Royal wagon train	—	—	1	—	1
Medical Staff	1	4	11	4	20
Ordnance Medical Department	—	—	4	13	17
Reserve (4 batts.)	—	—	4	8	12
Total	1	4	56	93	154

There were also present, included in the medical staff, one Physician to the Forces and one Apothecary to the Forces, total 156. Besides these, there must have been present with the reserve a certain number of officers of the medical staff and of the Ordnance Medical Department whose names are not given in Dalton's *Roll Call*. In subsequent army lists, several medical officers are shown as having the Waterloo medal whose names are not given by Dalton. Probably they served in the above capacity. The regiments in reserve were not allowed to add Waterloo to the honours on their colours, but their officers and men received the medal. As a rule, each regiment had one surgeon and two assistant surgeons among its officers, but to this rule there were several exceptions. The administrative medical officers, a hundred years ago, were not styled inspector-generals and deputy inspector-generals, but only inspectors and deputy inspectors of hospitals, the word general being added to their titles some years later. The above figures refer to British troops only. The medical officers of the contingents from German States and from the Netherlands are not included.

No medical officer was killed at Quatre Bras or at Waterloo, and only two were wounded. Physician to the Forces George Deneke, M.D., was wounded at Quatre Bras; he was appointed to that rank on June 17th, 1813. Assistant Surgeon John Stewart, of the 92nd Gordon Highlanders, was wounded at Waterloo; he received his commission on November 5th, 1812.

It may be of interest to give some notes on the careers of some of the medical officers who served at Waterloo; those who filled the higher ranks at the time and those who afterwards rose to positions of importance.

Inspector of Hospitals Sir James Robert Grant, M.D., was born in 1771, entered the 11th Foot as Assistant Surgeon in 1793, and served throughout the war up to 1815. He attained the rank of Inspector of Hospitals on July 14th, 1814, with only twenty-one years' service. While serving with the Russian army in France in 1814 he received the Knight's Cross of the Order of St. Anne of Russia. In 1816 he was made a Knight of the Royal Hanoverian Guelphic Order, and thirty-four years later, when medical officers were first made eligible for the Order of the Bath, got the C.B., on August 16th, 1850. He went on half-pay from March 25th, 1819, and died in London on January 10th, 1864.

Deputy Inspector John Gunning served as surgeon with the army in Flanders in 1793-94, and throughout the Peninsular war, as well as at Waterloo, attaining his rank on September 17th, 1812. After the war he settled in Paris, and died there in 1863, in his 90th year. From 1800 to 1823, when he resigned, he was nominally one of the surgeons of St. George's Hospital, though he never actually took up that office. He was appointed thereto in succession to his uncle, also John Gunning, who was assistant surgeon to St. George's from January 21st, 1760, to January 4th, 1765, and full surgeon from that date till he died at Bath on February 14th, 1798; he succeeded John Hunter, on the latter's death in 1793, as Surgeon-General of the army.

Deputy Inspector William Taylor attained that rank on July 25th, 1811.

Deputy Inspector Stephen Woolriche reached that rank on May 26th, 1814. He was still living in 1850, and he also was one of the first medical officers to get the C.B., on August 16th, 1850.

Deputy-Inspector John Robert Hume was born in Renfrewshire in 1781, and educated at Edinburgh and Glasgow Universities. After entering the army he served throughout the Peninsular war, as well as at Waterloo. When peace was made he was placed on half-pay, and entered on practice in London. He took the M.D. of St. Andrews on January 12th, 1816, and the L.R.C.P.Lond. on December 22nd, 1819. On June 13th, 1834, he received the D.C.L. from the University of Oxford, and on July 9th, 1836, was elected F.R.C.P. He was physician to the Duke of Wellington, from 1835 to 1845 he held the post of examining physician to the East India Company, and on September 1st, 1836, was appointed a commissioner in lunacy. He also received the C.B. on August 16th, 1850. He died in London on March 1st, 1857.

Surgeon Robert Daun, of the 2nd Dragoons, Scots Greys, was born at Insch, Aberdeen, on April 16th, 1785, the eldest son of the minister of that parish. He was educated at Elgin school and at King's College, Aberdeen, where he graduated M.A. in 1803, and M.D. on October 21st, 1813. He also took the L.R.C.P.Lond. on June 25th, 1814. Entering the army as assistant surgeon in 1804, he served in India for some years. On his return from the East he exchanged into the Scots Greys, became surgeon on August 4th, 1814, and served with that regiment at Waterloo and in the occupation of Paris. He left the Scots Greys, who do not serve abroad in time of peace, on February 27th, 1817, and did another tour of service in India, returning home in 1825. He became deputy inspector-general on January 20th, 1832, and went on half-pay on May 16th, 1832; he died in Edinburgh on June 14th, 1871.

Assistant Surgeon Thomas Smith, M.D., of the 23rd Foot, Royal Welsh Fusiliers, entered the army as hospital mate on March 27th, 1812, and became assistant surgeon on July 2nd, 1812. He served in the Peninsula at Vittoria, the battle of the Pyrenees, Nivelle, Orthez, and Toulouse, as well as at Waterloo. He became surgeon on July 13th, 1826, deputy inspector-general on January 4th, 1839, and went on half-pay on December 27th, 1846.

Assistant Surgeon Thomas Mostyn, of the 1st Battalion 27th Foot, Inniskillings, entered the army as hospital mate on November 9th, 1810, and became assistant surgeon on December 19th, 1811. He had served in the Peninsula, and held the Peninsular medal with eight clasps, and also at the battle of

* Most of the information in this article is taken from *The Waterloo Roll Call*, by Charles Dalton, F.R.G.S. London: Eyre and Spottiswoode, 1904. This work purports to give the names of all the British officers engaged, each under his own regiment, with some biographical notes, and is almost complete. The figures as to numbers of troops engaged and casualties are taken from Sir H. Maxwell's *Life of Wellington*, 2 vols. London: Sampson Low, Marston, and Co., 1899 (vol. ii, chapters 1 and 2). The note on Sir Robert Macara is compiled partly from MS. records in the India Office, partly from old Army Lists, and partly from information furnished by a kinsman, Dr. J. F. Macara, of Durness.

Plattsburg, in America. He became surgeon on October 6th, 1825, surgeon-major on October 1st, 1858, and went on half-pay from December 7th, 1858. He was appointed honorary surgeon to the King, when that distinction was first instituted, in 1859.

Surgeon James Goodall Elkington, of the 30th Foot, Cambridgeshire, entered the army as assistant surgeon on July 24th, 1808, becoming surgeon on March 11th, 1813. He served in the Peninsular war, and was taken prisoner at Talavera, and afterwards exchanged. He was present at the battle of Fuentes d'Oñoro, the storming of Ciudad Rodrigo and of Badajoz, the battle of Salamanca, and the occupation of Madrid, and was again taken prisoner when in charge of the wounded after the battle of Burgos. He went on half-pay in 1817. In July, 1821, he was appointed surgeon of the 1st Royal Dragoons, and in September, 1828, transferred in the same capacity to the 17th Lancers. On March 5th, 1841, he was appointed surgeon to the Royal Hibernian Military School, Dublin, and died there in 1853.

Assistant-surgeon John F. Clarke, M.D., of the 51st Foot, 2nd Yorkshire West Riding Regiment, entered the army on June 25th, 1812. He received the knighthood of the Hanoverian Guelphic Order in 1833, and was promoted to Deputy Inspector-General on January 29th, 1836. He went on half-pay in 1847, and died in 1854.

Surgeon Arthur Stewart, of the 71st Foot, Highland Light Infantry, attained that rank on September 3rd, 1812. He became Inspector-General on December 16th, 1845, went on half-pay in the same year, and died in 1854.

Surgeon David Brownrigg, of the medical staff, reached that rank on June 18th, 1807. He is said to have been the first military surgeon to amputate with success at the hip-joint. He died in Dublin in November, 1836.

Surgeon Thomas Draper, of the medical staff, had served in Egypt in 1801, and in the Peninsula, where he was surgeon to Sir John Moore. He received the thanks of Government for his services at Waterloo. He died at Instow, Barnstaple, on June 28th, 1850.

Surgeon Andrew Halliday, of the medical staff, was born at Dumfries in 1781, and took the M.D. at Edinburgh in 1806. After travelling in Russia and practising at Halesowen, in Worcestershire, he entered the army, and served in the Peninsula and at Bergen-op-Zoom, as well as at Waterloo. He took the L.R.C.P.Edin. in 1817, and became F.R.C.P. in 1827. He was also a Fellow of the Royal Society, and in 1821 received the knighthood of the Hanoverian Guelphic Order. He was for many years physician to the Duke of Clarence, afterwards William IV. In 1833 he was appointed inspector-general in the West Indies. He retired in 1837, and died at Dumfries on September 7th, 1839. He was the author of many medico-military and historical works, long since forgotten: *Observations on the Present State of the Portuguese Army* (1811), *Memoirs of the Campaign of 1815* (1816), *General History of the House of Guelph* (1821), *Annals of the House of Hanover* (2 vols., 1826), and *The West Indies, the Windward and Leeward Colonies* (1837).

Among the regiments in reserve at Waterloo was the 59th Foot, 2nd Notts, the medical officers of which were Surgeon James Hagan and Assistant Surgeons Peter K. Lambe and Andrew Colin. Less than a year later—on January 30th, 1816—the transport *Seahorse*, with this regiment on board, was lost in Tramore Bay, near Waterford, and Hagan and Lambe were among those who perished in the wreck.

The medical department of the Royal Navy and the Indian Medical Service of course took no part in the battle of Waterloo. There were present, however, in the action, serving in the army, one ex-medical officer of the navy, Surgeon S. B. Bruce, and three assistant surgeons who afterwards entered the I.M.S.—W. Twining, G. N. Cheek, and C. H. Hoffbower.

Surgeon Samuel Barwick Bruce, of the medical staff, attained that rank less than a month before the battle—on May 25th, 1815. He had served in the navy under Nelson in 1805, and was present at the capture of St. Thomas, St. Croix, St. John, Martinique, and Guadeloupe. In the army he had served in the Peninsula in 1813 and at New Orleans in 1814. He went on half-pay in 1816, retired in January, 1833, and died in London on December 24th, 1852.

Assistant Surgeon William Twining was born in Nova Scotia in 1790, educated at Guy's, and, after qualifying at the London College of Surgeons, entered the A.M.D. as hospital mate in 1810, and served in the Peninsular war, when he was on Lord Hill's staff. In 1814 he was promoted to assistant surgeon, and was present in that capacity at Waterloo. In 1821 he went to Ceylon as surgeon to Sir Edward Paget, the Governor, and accompanied him to India. On August 12th, 1824, he received a commission as assistant surgeon in the Bengal Medical Service, but retained his commission in the royal army up to 1830, thus holding commissions in the A.M.D. and in the I.M.S. simultaneously for six years. Throughout his Indian service he held the post of assistant surgeon of the Presidency European General Hospital, Calcutta, and died there on August 25th, 1835. He was the author of several professional works of reputation in their day, though now almost forgotten: *Diseases of Bengal* (1832), and *Epidemic Cholera* (1833).

Assistant Surgeon George Nicholas Cheek was born on November 18th, 1793, and entered the army as hospital mate on July 19th, 1813, with the certificate of the London College of Surgeons. He served in the Peninsular war at the capture of San Sebastian and at Orthez. Entering the Bengal Medical Service on September 13th, 1816, he served in the third Maratta war, and afterwards settled down in civil employ in Bengal, first at Bardwan, and later at Bankura, then known as West Bardwan or the Jungle Mahals, where he went in extensively for land-holding, indigo, and trade in country produce. He gave up promotion to retain his civil appointment, which he did for nearly forty years, dying on June 26th, 1859, while on leave at the Nilgiri hills. Ten years before that time the officer next below him on the list had attained the administrative rank as superintending surgeon, a rank which his own son reached only five years after his death.

Assistant Surgeon C. H. Hoffbower was a Hanoverian, who served at Waterloo in the contingent from that country. He subsequently acted as assistant surgeon in Bengal from October 13th, 1825, to 1827, during which time he served in the first Burmese war. He died in the General Hospital, Calcutta, on August 6th, 1832.

As has been said, no medical officer, serving as such, was killed at Waterloo. A very distinguished officer, however—Sir Robert Macara, K.C.B., who commanded the Black Watch at Quatre Bras, and was killed in that engagement—had served the East India Company, as a medical officer in their marine service, for twenty years. Macara was the only child of the Rev. Duncan Macara, parish minister of Fortingall, in Perthshire, and was born in the early part of 1759. He was educated at St. Andrews University, matriculating there in the session of 1773–74, at the age of 14, but left without taking a degree. On August 17th, 1782, he was gazetted ensign in the 95th Foot. In the following year (1783) that regiment was disbanded and its officers placed on half-pay. An ensign's half-pay is not a living wage. Macara had to find some other means of keeping himself, and turned to medicine. When and how he got his medical education is unknown, probably before he entered the army, as he was 23 when he got his first commission as ensign.

On March 25th, 1785, he sailed from Portsmouth for the East as surgeon of the Indiaman *Rodney*. In those days voyages were slow; the Indiamen lay for long in Eastern ports, and even longer in the Thames, after their return, before sailing on another voyage. It is not surprising, therefore, that six voyages to the East and back filled in the greater part of twenty years. During these six voyages Macara visited Calcutta, Madras, and Canton, all of them more than once. He was surgeon successively of the *Rodney*, 1785–86, the *Thetis*, 1786–88, the *Ceres*, 1790–91, the *Valentine*, 1792–93, the *King George*, 1794–95, and, after five years at home, of the *Marquess Wellesley*, 1801–03.

Meanwhile, on December 16th, 1795, Macara had been promoted to captain in the 94th Foot, still on half-pay, as that regiment was not embodied at the time. On July 9th, 1803, three weeks before he reached England, at the end of his last voyage, he was gazetted captain in the 42nd Foot, the Royal Highlanders, or Black Watch. The *King George* reached the Downs on July 31st, and Macara joined his regiment at once, leaving the sea for good. On November 14th, 1805, he was promoted to major. On January 1st, 1812, he became lieutenant-colonel, and in the beginning of November, 1813, got the command of the regiment, *vice* Colonel Stirling invalided to England.

Much of Macara's service in the 42nd seems to have been spent in hard fighting in the Peninsula. The first battalion of the regiment went to Gibraltar in September, 1805, spent three years there, and on August 14th, 1808, embarked for Portugal. It took part in Sir John Moore's advance into Spain, in the retreat to Corunna, and in the battle there on January 16th, 1809. In February, 1809, it returned to England, and in August-September of the same year served at Walcheren. The second battalion landed at Lisbon on July 4th, 1809, took part in the battle of Busaco on September 27th, 1810, the defence of the lines of Torres Vedras in the winter of 1810–11, the battle of Fuentes d'Oñoro on May 3rd, 1811, and in the siege of Ciudad Rodrigo and storming of that fortress on January 19th, 1812. The first battalion again left home for Portugal in 1812, landing at Lisbon on April 20th. The two battalions were then united, and served at Salamanca on July 23rd, 1812, Burgos, September 19th, 1812, Vittoria, June 21st, 1813, battle of the Pyrenees, July 25th, 1813, capture of San Sebastian, September, 1813, passage of the Bidassoa, October 7th, 1813, capture of Pampeluna, October 31st, 1813, battles of Nivelle, November 10th, 1813,

Nives, December 9th, 1813, Orthez, February 27th, 1814, and Toulouse, April 10th, 1814. In how many of these engagements Macara took part cannot be stated with any certainty. He received a medal for the battle of the Pyrenees, and clasps for Nivelle, Nives, Orthez, and Toulouse, as well as the Peninsula gold cross, having commanded the regiment in the last four of these engagements.

On June 21st, 1814, the Black Watch embarked for Ireland, but remained there less than twelve months. On January 2nd, 1815, the Order of the Bath was reorganized, the former Knights of the Bath (K.B.) became Grand Crosses (G.C.B.), and two new grades—Knight Commander (K.C.B.) and Companion (C.B.)—were instituted. Macara was one of the first to receive the K.C.B.

In March, 1815, Napoleon returned from Elba, and speedily had Paris in his possession. Among the troops sent over to the Netherlands to oppose him was the 42nd, which landed at Ostend in the middle of May, 1815. The first general engagement took place at Quatre Bras on June 16th, 1815, and in it Macara fell. While forming his regiment into square to repel a charge of French cavalry, he was struck by a musket ball and fell from his horse, and while lying on the ground was killed by a thrust from a lance. The command of the regiment passed through four hands within half an hour—Lieutenant-Colonel Macara killed, Lieutenant-Colonel Dick severely wounded, Brevet-Major Davidson mortally wounded, and Brevet-Major Campbell.

Macara was an only child, and never married, so that he left neither descendants nor near relations. A joint monument to him and to Colonel Cameron, of the Gordons, who also fell at Quatre Bras, stands on the hill of Tor-Alvie, north of Kingussie, in Inverness-shire.

THE SEARCH FOR PAINLESS CHILDBIRTH.

THE first substantial advance in the universal search for painless childbirth came with the discovery of surgical anaesthesia. In abnormally difficult childbirth the management is essentially surgical, and pain is alleviated in the surgical operation. For this is needed during a period measured in minutes or hours anaesthesia deep enough to give the operator freedom for his manipulations and the patient freedom from perception of pain.

But the problem of obstetric anaesthesia is different, and in the absence of its solution the cry of the woman for relief has made many cases surgical that should have ended without operative interference. Much dispute has occurred about the painfulness of ordinary labour, and the discussion is not likely soon to close. But it is an observation older than Aristotle that not only woman but the animals suffer in bringing forth their young, and, though the degree of suffering varies, it is certain that the demand for its relief will continue, and that the medical profession cannot refuse to meet the demand. This is the essentially obstetric problem, and it requires for its solution a method that will give relief from suffering during a period measured in hours, or even days, and one that is consistent with the safety of mother and child, and congruent with the economic conditions of ordinary practice. It must not be too expensive, and must not require the continuous presence of a medical attendant.

Chloroform, Ether, and Nitrous Oxide.

Chloroform soon after its introduction was applied by Professor J. Y. Simpson to the solution of the problem, and he records the case of a primipara in whom the administration was continued for thirteen hours. The method has been systematized under the title of obstetric anaesthesia, but it requires the continuous presence of the medical attendant, and when its period passes a couple of hours its Continental sobriquet "*chloroforme à la Reine*," is economically as well as historically justified. It soon became known that chloroform even in light anaesthesia could hardly be used without reducing the activity of the uterus, and later the serious risk of acidaemia has been revealed. That in practice chloroform and ether touch but the outer border of a real obstetric anaesthesia is evident from the continuous search for more suitable drugs that has placed under experiment the whole range of modern sedatives. Very early nitrous oxide was employed, and at the Chicago Gynaecological Society on February 18th last Dr. Clarence Webster again sounded its merits and stated that the expense need not exceed 15 dollars in the majority of cases.

Scopolamine-Morphine.

In 1903 Steinbüchel made a survey of the whole field, and recorded twenty cases in which, founding himself on Schneiderlin's method of surgical anaesthesia, he had used scopolamine[1] and morphine for the relief of pain in labour, and his little monograph opens a most important chapter in the history of the subject. The discussion has become almost as violent as that which followed the introduction of chloroform, and has been complicated by the recent intervention of the non-medical journalist. In Freiburg, under the supervision of Professor Krönig, the use of scopolamine and morphine was systematized by Dr. Gauss, who named the desired cerebral condition *Dämmerschlaf*, and he has now recorded the results in a series of 5,000 cases. Englishing the title as Twilight Sleep, Mrs. Hanna Rion has issued a volume,[2] for which the way had been prepared by articles in a popular magazine of fiction. In this she appeals to women, and asks them to demand the employment of the method by their medical attendants. She gives a painstaking, and on the whole fair, account of the discussion in a popular way, with a fullness of detail likely to impress those to whom the book is addressed. The occurrence of some amusing inaccuracies, such as the statements that Caesarean section was first performed by a Dublin midwife, and that Dudhope Castle was the head quarters of the suffragettes in Dundee, suggests doubt as to her critical capacity for scientific evidence, and the surprising antics of the decimal point when she deals with dosage, show more serious defects than can be explained by the glaring carelessness of the proof reading; but she has a sympathetic nature, and her sense of the terror of childbirth and its effects, both individual and social, make a strong appeal that is sure to be widely heard. Her quite natural inability to understand the medical point of view has given an exaggerated impression of some features which the Freiburg system possesses in common with some other methods which are recognized as quackery. Thus, she illustrates her article with photographs of Krönig and Gauss and their head nurse, and her book with pleasant groups of mothers and their twilight sleep babies, and she describes the higher advantages available for those who can pay more and enter the first class. It is necessary to discount this in coming to a judgement on the real scientific question—whether in this method the medical profession has at its command a means of giving relief in natural labour to every woman who requires it.

The twilight sleep which is desired may be defined as a state of intoxication in which the woman forgets at once any impression that the uterine contraction may produce on her consciousness. It is produced by hyoscine and morphine, and the special characters of these intoxications may be more or less emphasized. Redness of the face, dryness of the mouth and throat, and rambling are frequent. As a rule there is definite sleep in the interval between pains, and this may continue through the pain, though some sign of perception—such as groaning—is frequent. When spoken to, the woman answers, but often awry; and if she is shown an object, when the exhibition is repeated she does not remember that she has seen it before. This is the "memory test" on which so much stress is laid. If the condition be exceeded there may be temporary coma, while, on the other side, memory persists, and occasionally there is marked motor restlessness. The production of the condition is favoured by external quiet, and ear plugs and blue glasses are adjuvant, as well as dark and silent rooms. Thus at Freiburg the proportion of success is 82 per cent. in the first-class ward, and decreases with the added disturbance from visiting physicians and pupils through 66, 59, to 56 per cent. in the fourth class. In 1908 the method was described at the Sheffield meeting of the British Medical Association by Professor Krönig himself, who reported the results in 1,500 cases.[3] At Karlsruhe in 1911 Gauss reported on double this number, and the record is now over 5,000 cases.

[1] Scopolamine hydrobromide is given in the *British Pharmacopoeia* (1914) as a synonym for hyoscine hydrobromide.

[2] *Painless Childbirth in Twilight Sleep.* By H. Rion. London T. Werner Laurie. 1915. (Cr. 8vo, pp. 243; illustrated. 6s. net.)

[3] BRITISH MEDICAL JOURNAL, vol. ii, 1908, p. 805.

In the 3,000 cases reported at Karlsruhe there were 10 maternal deaths, 1 from placenta praevia, 1 from rupture of the vagina in a narrow pelvis, 8 from sepsis. The forceps rate was from 6 to 7 per cent. The rate of dead children was 1.3 per cent., as compared with 3.4 per cent. during the preceding ten years. Respiration was normal in about 80 per cent.; there was oligopnoea in 16 per cent. and asphyxia in the remainder. Oligopnoea is a term introduced by Gauss to describe a condition of slowed respiration, in which each respiration seems the answer to a definite physiological need. It is alarming to those unfamilar with it, but passes off in the course of time. It is distinct from the asphyxia which occurs in any series of deliveries.

Gauss opened his discussion of the scopolamine-morphine method with a defence of the ethical correctness of relieving pain in labour that recalls the polemics of Sir James Simpson. Hocheisen, the leader of the opposition, began his twelve-column report of 100 cases from the Charité with a full description of the effects of this "most frightful poison." In the end he agreed that it gave relief in a large number of women, but regretted that it was so fickle in its action and so dangerous, and he charged it with causing relaxation of uterine contraction, prolongation of labour, delayed placental expulsion, atonic bleeding, subinvolution, and injury to heart and kidney. While scarcely a paragraph in Hocheisen's paper but suggests that it is written on a poison label, Steffen's produces at once the impression of reluctance; it was only by the steady encouragement of Professor Leopold that the observations were continued till the complete 300 cases (out of 1,335 deliveries) could be reported. The atmosphere of the lying-in ward is coloured by the conductors, and Steffen reports with approval the remark of the head midwife that every scopolamine birth, even when it was going all right, seemed to her unnatural and repulsive, and he contrasts the cheery bustle of the ordinary delivery ward with the stealthy depression at scopolamine deliveries. The balance is unconsciously loaded in the contributions to either side of a controversy, and it is necessary to put aside impressions of the individual and try to measure the facts underlying the descriptions. For this the original texts must be weighed and sifted, but the book of Mrs. Rion offers a convenient collection of the whole available literature, and to it medical readers may safely refer, as they will be safeguarded from bias towards her main thesis by their professional training. Comparison shows that she has endeavoured to give an honest account of what she found. Her references, however, are not always exact.

The underlying facts may be appreciated from the answers given to the questions that mainly concern us:

1. Do scopolamine and morphine enable us to give relief to the woman during ordinary labour? The answer is affirmative for the majority of women, negative for some. Hocheisen had in 18 total failure; in 21 some relief except at the moment of delivery; 55 groaned lightly and 6 had no sign of pain; 45 seemed to be in "twilight sleep," at least at times. Gauss, with ideal conditions and exact technique, had 88 per cent. successes in the first class, but each declension from perfection exacted toll of the success rate, which in the Freiburg fourth class was only 56 per cent. In 13 to 15 per cent. there was failure even at Freiburg.

2. The effect on the process of labour and its duration was retardation, according to Hocheisen; but the amount is not measurable from the figures he gives. Gauss found the pains remained vigorous in 90 per cent. of his cases, lessened in a few, and improved in about 7 per cent. Steffen found slowing in 38.3 per cent., cessation of labour in 5 per cent., and acceleration in 0.6 per cent. The facts seem to be that under the use of scopolamine-morphine (all techniques) the contractions have continued in most cases, in some they have ceased, and in some they have become lengthened and more uniform.

3. The spontaneous expulsion of the placenta Hocheisen found to occupy in thirteen cases over an hour, twice being over three hours, and he records in five cases atonic *post-partum* bleeding, for which three were plugged. Steffen found 3.3 per cent. of atonic bleeding. Since in the absolutely spontaneous expulsion management of the third stage by Ahlfeld the normal duration exceeds an hour, 13 per cent. is not a high but a low rate. Gauss reports that manual detachment of the placenta averaged 4 per cent., which is not high as a clinical rate. The charge of causing atonic bleeding is not established against the use of scopalamine and morphine, but cases have occurred where these drugs have been used.

4. Hocheisen's statement that involution is delayed cannot be regarded as substantiated.

5. The characteristic scopolamine effects of flushing and thirst are common, and the thirst may be distressing. Vomiting has occurred, but is not common. Motor restlessness and delirium were found in 10 per cent. by Hocheisen, 13 per cent. by Steffen, 1.4 by Gauss. Rambling is common if the woman does not sleep.

6. As regards the child, an important proportion—about 20 per cent.—show oligopnoea, and some 5 per cent. asphyxia. The oligopnoea causes anxiety, and if all are not gifted with the confidence of opinion shown by Sir J. Halliday Croom, who states that these cases always recover of themselves, it is important to note that the Freiburg infantile mortality was 3.4 per cent. in the ten years preceding the scopolamine-morphine method, and 1.3 in the six years following its adoption.

Thus, in summary, it must be admitted that, with ideal conditions and technique, the use of scopolamine and morphine offers relief and safety to the majority, but that we are still left with the problem of its failures, and of the difficulty where, as in domestic practice and the ordinary delivery ward, the conditions are not ideal.

Morphine.

The latest chapter in the search for painless childbirth has proved eventually most interesting as a lesson in scientific psychology. On July 21st, 1914, Professor Ribemont-Dessaignes read to the Academy of Medicine a report of the employment of a new morphine preparation, to which the name "tocanalgine" had been given. The substance was stated to be formed by the interaction of yeast and hydrochlorate of morphine, and to be much less toxic than morphine. He reported the results in 112 women with 115 children; 4 failed to get relief. In most, analgesia commenced from ten to twenty minutes and lasted from half an hour to twelve hours. The average duration of labour in 61 primiparae was dilatation thirteen hours, expulsion one hour eighteen minutes, and in 28 multiparae dilatation nine hours seven minutes, expulsion forty minutes. In 17 primiparae with narrow pelvis the average duration was twenty-two hours fifteen minutes, and in 7 multiparae seventeen hours. There was only one case of excessive bleeding, and the average time of expulsion of the placenta was thirty-two minutes. Of the 115 children 77 were born lively and 28 lightly apnoeic. One child died in labour. Pinard confirmed the description. It was stated that Professor Pouchet was engaged in pharmacological examination of the remedy, which differed in its effects from morphine by producing marked stimulation of the salivary and intestinal secretion, and, in toxic doses, mucous and bloody diarrhoea. The toxic dose was said to be very high—2 to 3 cg. per kilo in the dog (the fatal dose of morphine in the dog is 6 cg. per kilo). It now appears that, however it is produced, tocanalgine is really a 3.24 per cent. solution of hydrochlorate of morphine, so that the method of analgesia was the injection of the equivalent of $\frac{1}{4}$ grain of morphine, and Dr. Ribemont-Dessaignes now reports that since September he has used only a 3.24 per cent. of hydrochlorate of morphine with a little strychnine and caffeine, injecting 1 cm. (the equivalent of $\frac{1}{2}$ gr.), and repeating if necessary in two or three hours, and he states that the dose of morphine which at 1 per cent. arrests labour, at 3.24 per cent. does not. It is obviously necessary to re-examine the pharmacological action of morphine on the processes of labour, and perhaps to extend our view as to what these really are. When the mass of Professor Ribemont-Dessaignes's observations becomes comparable to those now given from Freiburg we may find, after all, that the way to painless childbirth is by morphine alone.

R. C. B.

DR. WILLIAM JOHN TRENTLER, of Hove, Sussex, late surgeon to the National Society for Aid to the Sick and Wounded in War, and medical officer to the Royal Gardens, Kew, who died recently at the age of 73, left estate valued at £4,983.

British Medical Journal.

SATURDAY, JUNE 19TH, 1915.

THE MOBILIZATION OF THE PROFESSION.

ABOUT six weeks ago, in response to the urgent appeal for additional medical officers for the army made by the Medical Department of the War Office, the Council of the Metropolitan Counties Branch of the British Medical Association appointed a committee to further the matter in the area of Greater London. The Committee has found a very useful sphere of work in helping the Divisions to obtain the information required. It has done this in several ways. Dr. Galloway, the Chairman, and other members of the Committee, have been indefatigable in attending meetings of the Divisions to explain the position, and the Committee has collated the information collected locally by the Divisions, and has made lists of those members of the profession who are able and willing to give either whole or part time service, showing in each case the particular services the individual would be able to render. In this way information on these heads is now available for all the districts within the Branch. At a meeting of the Committee of Chairmen of Standing Committees of the Association held last week Dr. Galloway stated that the information thus collected was so highly appreciated by the Director-General that he had asked that similar information should be obtained with regard to all the Branches and Divisions in the United Kingdom. The Committee of Chairmen accordingly decided to take steps to this end. It was resolved to ask the honorary secretary of each Division in England (omitting London, where the work has already been done) and in Wales, Scotland, and Ireland to supply as regards each practitioner in his area information of a nature similar to that obtained by the Committee in the Metropolitan Counties Branch. When necessary, the central office of the Association will assist those Divisions which have not yet been able to obtain the information by sending direct applications to the practitioners in such areas.

The Committee of Chairmen at this meeting considered also a recommendation from the Insurance Act Committee to the effect that the interests of the army as regards medical officers should be made paramount to everything else in the present emergency, and that the Scottish plan of endeavouring to obtain the requisite number of practitioners for the army by asking each area to provide the numerical proportion of practitioners apparently due from it should be extended to the whole of the United Kingdom. It was felt that the question whether the proportion which should be provided by any particular area should be reduced on the ground that it might possibly cause a dangerous deficiency of doctors for civilian work, should be left to be settled by the local profession, who would best know the requirements of the area. The Committee had before it a memorandum showing the numerical proportion of practitioners in other parts of the United Kingdom which would be required if the Scottish plan were followed, and after the list of practitioners throughout the kingdom who may possibly be available for service of one kind or another has been prepared, it will further consider the matter and advise each Division.

The work is one which the British Medical Association is well qualified to undertake, and which it will be an honour for it to accomplish as an incentive and example to other callings. The whole country to-day understands that the task before it will make an even greater call upon the energies of all classes than was perhaps generally recognized only a few months ago. The medical profession is so far fortunate that it has a clear call; there is no sort of suggestion that its members should try to give amateur help in the making of shells, or some other enterprise for which their previous training has in nowise prepared them, as appears to have happened to stockbrokers and some others. It is asked to give its professional services, which are essential to the efficiency of the army. It is true that a civilian practitioner will have to learn a good deal about army routine and the special means for safeguarding the health of men assembled in camps of training or in battalions, but the new knowledge will be built upon the old, and is only the application to particular circumstances of principles upon which they are accustomed to act.

We have received letters from American surgeons asking whether their services could be utilized, and we have little doubt that many would come forward if an intimation were given that such offers would be entertained. The spirit in which they are made is in accordance with the humanitarian aims of the medical profession, and the disposition shown is highly appreciated in this country. American surgeons could be employed in various capacities under the terms of the Geneva Convention for the benefit of British wounded. It would, however, be much better and simpler from many points of view, including the administrative, that the medical needs of the British armies should be met from the resources of the British Empire. The Dominions have provided a very large number of medical officers. They have not only completely met the needs of their own contingents, but also, as announcements in recent *Gazettes* have shown, supplied many officers for the Royal Army Medical Corps. Not a few of these are fully qualified medical men who have been serving as non-commissioned officers in the Dominion Medical Corps, and we know that it is the desire of the War Office that the services of every medical man in the army should be placed at the disposal of the Royal Army Medical Corps. Medical men who hold combatant commissions are free to volunteer to join the R.A.M.C. Each case is dealt with on its merits, and we believe that a refusal to release such an officer from combatant duties has only in very exceptional circumstances been encountered. Any such officer desiring to transfer to the Royal Army Medical Corps should notify his wishes to his commanding officer.

SCAVENGING.

THE "Return as to Scavenging in Urban Districts, 1914,"[1] prepared by the Public Health Department of the Local Government Board, shows very clearly that a great deal of work remains to be done before the surroundings of dwellings in our towns can be considered at all satisfactory.

[1] To be purchased directly, or through any bookseller, from Messrs. Eyre and Spottiswoode, East Harding Street, London, E.C.; Messrs. Wyman and Sons, Bream's Buildings, London, E.C., and Cardiff; H.M. Stationery Office, Forth Street, Edinburgh; and E. Ponsonby, Grafton Street, Dublin. (Price 9d.)

The report defines scavenging as including the storage and removal of various kinds of dry refuse from houses, factories, and trade premises, as well as from stables, cowsheds, and streets, but not including removal of excrement, or sewage, or (it is implied) liquid trade refuse.

The dangers of accumulating refuse near dwellings, especially that of affording breeding ground for flies, are pointed out, and it is stated that the only satisfactory type of receptacle from the public health point of view is a strong dustbin of impervious material, with a tight-fitting cover, and of such a size as to contain not more than a week's accumulation of refuse.

The return gives particulars as to storage, removal, and disposal of house refuse in each urban district in England and Wales, and some of the figures are very startling. Only 11 per cent. of these districts are furnished with "the only satisfactory type of receptacle," while 54 per cent. have still to be called "ashpit towns." Even with regard to new house property 37 per cent. of the towns make no definite stipulation as to the type of receptacle to be provided, although the Board is ready to sanction a by-law empowering them to do so. It also expresses its readiness to sanction a by-law giving an urban authority power to enforce this with regard to existing property, provided Section 26 of the Public Health Acts Amendment Act, 1890, is in force, and the council itself sees to the weekly removal of refuse.

Only 5 per cent. of the towns, and these mostly the smallest, leave the work of removal of refuse to the occupiers of houses, but in 19 per cent. the work is left wholly to contractors, although this system is very often unsatisfactory, and may be dangerous. In 35 per cent. of the towns it is still the practice in cleansing ashpits to deposit refuse on the surface of yards or streets, and the resulting danger to public health is only too obvious and too well known.

The various methods of handling and disposal of the refuse after removal are described, and special attention is drawn to the nuisance often caused by large towns dumping their refuse within neighbouring districts. It is suggested that the destructor is useful chiefly for populous districts only, and that disposal of the refuse by this means is generally the most costly method; no particulars, however, are given as to the offset which may be got by using the heat thus produced, and the return of forty-six towns with destructors of this type is certainly not complete. The modern destructor is every day being more adapted to this method of use, although, as the report points out, the increase in the use of gas fires has led to a decrease in the amount of heat-giving material in house refuse.

It is stated that tips for refuse should not be tolerated unless remote from dwellings, fenced off, and covered with earth. Tipped material, it is said, disintegrates completely in three years, but this period, it may be suspected, is too short. In this connexion it may be noted that house refuse has been found to be very good material for incorporating with the soil of a sewage farm, especially if a stiff clay.

Some figures are given relating to the removal of trade, street, and stable refuse. It is shown that Section 48 of the Public Health Acts Amendment Act, 1907, will empower an authority to make arrangements for the removal of trade refuse (other than sludge) on payment by the trader. Stable refuse is often a source of nuisance or a dangerous breeding ground for flies in the neighbourhood of dwellings, but only ten places outside London are mentioned where any arrangement is made for its removal by the sanitary authority. Fortunately, from the public health point of view, this source of nuisance is rapidly diminishing, owing to the introduction of power-driven vehicles.

The Board, while obtaining information with regard to scavenging, has made use of the opportunity to gather statistics as to cesspools. The risks of cesspools are briefly mentioned, and to those noted may surely be added the great danger of the soil in the neighbourhood of houses becoming impregnated with foul, decomposing, and disease-carrying liquids. It is astounding to note that a number of towns, even amongst those with populations over 20,000, still depend upon the use of cesspools for more than one-quarter of the houses they contain.

From this summary it will be evident that the return contains much information which will be extremely useful to public health officials. The matters dealt with are amongst those which most particularly need attention at present. We seem only now to be thoroughly realizing that hygienic work must first and foremost concern itself with the surroundings of dwellings, and it is disheartening to find, as this return shows, that errors which have been discovered and acknowledged in connexion with old property and old habits are being tolerated and perpetuated at this late day. The return will serve two important purposes. It forms a handy index to towns where arrangements worthy of imitation can be studied, and it will perhaps give a much-needed stimulus to the backward towns.

Along with the report the Local Government Board circulates a letter to sanitary authorities and medical officers of health reminding them that there are special dangers at the present time when so many districts are congested with troops and refugees, and asking them to take the steps suggested for the improved scavenging of their districts. This warning and request are very timely.

RESIDENTS AT MILITARY HOSPITALS AT HOME.

THE question of the employment of young practitioners of military age as residents in hospitals at home has been made acute by the policy adopted in this respect by the British Red Cross Society and the St. John Ambulance Association, which have organized the King George Hospital for sick and wounded soldiers, recently established in the new Stationery Office just south of the Thames, opposite Somerset House. The Under Secretary of State for War stated on Monday, in reply to a question by Sir Philip Magnus, that the hospital had 25 residents, and that of these 24 were of military age, although he was unable to say how many were in fact eligible for military service. He gave the proportion of residents to beds as 1 to 66, and admitted that this was larger than in other hospitals. Sir Philip Magnus had also asked whether the staff of younger men might not be reduced if they were assisted by men over 40 years of age working part time. In dealing with this point, Mr. Tennant said that an arrangement for part-time service might not be convenient, but he promised to inquire whether any of the junior medical men who were eligible could be released for general service with the army. It is probable, we think, that this will prove to be the case. There can be no question as to the necessity of having a certain number of medical officers permanently resident in the hospital to meet sudden emergencies, among which the risk of secondary haemorrhage has no doubt weighed largely with the authorities of the British Red Cross and St. John Ambulance

Association. All the Territorial hospitals have such residents, but they are officers commissioned in the Territorial R.A.M.C., and therefore at the disposal of the War Office should it be found necessary to call for their services as battalion medical officers or in other capacities with the army. As a matter of fact, we believe that such calls have not infrequently been made, and that most of the junior officers resident in Territorial hospitals are being gradually replaced by older men. This appears to us to be sound policy. We understand that the position with regard to the number of residents engaged at King George's Hospital will be reconsidered by the British Red Cross Society and the St. John Ambulance Association, the two bodies jointly responsible, and we are prepared to hear, in view of the demand for junior commissioned medical officers, which has become so urgent during the last few months, that some means will be found, either by engaging older men as residents or by making larger use of part-time service, to liberate those residents of military age and otherwise eligible for the Royal Army Medical Corps.

MOTOR THEATRES AND ABDOMINAL SURGERY.

THE triumph of the motor ambulance at the front has been so conspicuous and so universally acclaimed that it almost requires an effort of mind to recall that ten months ago the motor ambulance was an experiment in military service. True that for more than a decade we have consistently advocated in our columns the value of motor ambulances, summonable by telephone for accidents and casualties occurring in streets and public places. We supported the institution of such service in London on the lines of the Act of 1909 which Sir William Collins piloted through Parliament. So recently as August 29th, 1914, we said: "In military work the motor ambulances have still to be tested and their relative efficiency compared with horsed ambulances." That test has now been fully made and the superior efficiency of the motor ambulance for almost all classes of field work amply demonstrated. Towards the end of last year we urged that a further development might increase the value and add to the beneficent administration of a service of *ambulances volantes* if a motor theatre ambulance were contrived and an *x*-ray installation carried with it. Mr. G. H. Colt and Sir William Collins in our columns and elsewhere have sketched out plans for such an arrangement, and we understand that Messrs. Atkinson and Philipson, of Newcastle, have already placed such a machine on the market. News has reached us recently from Flanders to the effect that a better supply of such motor ambulance theatres would probably have a markedly beneficial effect on the treatment of abdominal wounds. The mortality in such cases is, we fear, very heavy, and, as will be seen by an abstract, published elsewhere in this issue, of a paper by Professor Krönig, the Germans have had a similar experience. Only prompt and skilled surgical intervention before peritoneal infection has taken place is likely to reduce the proportion of deaths, and in some field hospitals some excellent abdominal surgery has to our knowledge been carried on almost under shell fire. We believe that few more useful appliances could be sent out at the present time than an adequate supply of moving theatres.

DOCTORS AND MILITARY SERVICE.

THE provincial meeting of the Society of Medical Officers of Health was held at Hereford on June 5th, under the presidency of Lieutenant-Colonel Herbert Jones, M.O.H. to the Herefordshire combined rural districts. After the meeting, Lieutenant-Colonel Jones entertained the members and a few guests at luncheon. After the usual toasts, the Dean of Hereford proposed "The Society of Medical Officers of Health." Whilst, he said, they recognized what the medical men had done in the past, they felt that at the present time especially they owed a great deal to the medical officers of health for what they were doing at the front, and also at home. Yet, whilst they recognized how many were doing grand work—something like 300 of that great body—they wanted still more. Lieutenant-Colonel Jones, in responding, said it was a great delight to him to feel that so very large a number of the Fellows of that Society were at the present time doing duty for their King and for their country. It had seemed to him during the nine or ten months he had been associated with the R.A.M.C. that the position of officer in that corps was peculiarly appropriate to a medical officer of health. They were peculiarly well fitted for the work carried out in the ambulance corps. That work included the training of the men in first aid. It included also what he regarded as one of the most important duties of the medical officer in the army—the duty of making the men fit; it was only those who had seen how much more fit a man became at the end of a month, or two months, of proper training, who could realize what that meant. Another great work which they had to do was to train their men, and he was sorry to say officers also, in what was broadly to be called sanitation. If they could save, as they did save, thousands, almost tens of thousands, of men from being broken down by some preventable disease, practically speaking they had recruited exactly that same number of men. He therefore appealed to medical officers of health, if they possibly could, to join the R.A.M.C. The Local Government Board quite rightly said that a medical officer of health must not give up his work if there was no one left to carry it on, but so long as a medical officer of health could find some one, whether a practitioner who was beyond military age or a practitioner in private work in the town, or in some other way could find some one to carry on his work, then he was told the Local Government Board would not raise any objection to the medical officer of health joining the military forces. Speaking with a full sense of responsibility as President of the Society of Medical Officers of Health, he expressed the opinion that the work of the medical inspection of school children, and a great deal of the work connected with tuberculosis must in the present time of stress go by the board. There were a number of school medical officers and tuberculosis officers of military age who might very well give up their work and do the work of the army. The talents of the school medical inspector were not being used to the best purpose if he was merely inspecting school children. He could do far more good if he would take up medical work in the army. Dr. Ridley Bailey, who proposed the toast of "The local health authorities," said that in view of the losses of the war it was incumbent on them to conserve the young life of the country; and Mr. W. G. Bankes, chairman of the Hereford Rural Council, who replied, agreed that it was the duty of all local authorities to co-operate with the medical officers of health in every possible way to secure the preservation of the health of the community.

LARREY AT WATERLOO.

WHEN Napoleon returned from Elba in 1815 he almost at once sent for Larrey and discussed with him the organization of the ambulances for the forthcoming campaign. But Larrey was made aware that he was to be replaced by Percy as Surgeon-in-Chief of the Grande Armée, and determined to leave the service. Napoleon, however, coaxed him into giving up this intention, and on June 10th he accompanied the Emperor to Belgium. At Ligny it became evident that a mistake had been made in putting Percy in the place of Larrey. Usually before a battle Larrey visited all the places near likely to be suitable for the reception of the wounded, and made all necessary preparations. His experience enabled him to estimate with approximate accuracy the probable number

of men who would need attention. Percy, who was exhausted by the fatigues of much campaigning, and who suffered from heart disease besides, was unable to do this. But Larrey himself admits that the best organized ambulance service would have broken down after Waterloo. The surgeons did their best, often under fire and exposed to charges of cavalry. Larrey's chief ambulance was close to the farm of the Belle Alliance, but, as usual, he went about the whole field. While trying to bring off his wounded he received two sabre cuts, one on the head, the other on the shoulder, from a Prussian lancer. He was left for dead on the field, but recovering consciousness tried to make his way to the frontier. When he had reached the banks of the Sambre, and thought himself in safety he was again surrounded by a corps of Prussian cavalry and taken prisoner. The description of the ruthlessness with which the Prussians slaughtered prisoners and wounded alike reads like a letter from the front at the present day. They burned the head quarters ambulance at Caillou, where the French wounded had been left. Larrey, who was held in high esteem by the King of Prussia, and who was well known to many German officers, was stripped of his clothes, robbed of his money, his watch, a ring given to him as a talisman by a dying Mameluke after the battle of the Pyramids, a sabre presented to him at Aboukir by Napoleon, and even his boots. His hands were tied, and thus, half-naked, bleeding from wounds torn open by the rough treatment to which he had been subjected, he was taken to the general commanding the advance guard. In stature he was almost the same as the Emperor, and he wore a grey overcoat over his uniform; these things, together with the sabre on which the name of Buonaparte was engraved, made the Prussians believe that Napoleon himself had fallen into their hands. To the commandant, Larrey, who spoke a little German, explained who he was and how the name of Buonaparte came to be on the sabre. Hesitating, but not convinced, that officer sent him on to the general commanding the division. That officer knew the Emperor, but, irritated by the mistake, would listen to no explanations, and ordered Larrey to be shot. Fortunately, a military surgeon, who went to blindfold him as he was standing before the firing squad, recognized Larrey and insisted that the execution should be put off. After some difficulty Larrey was brought before Bluecher, whose son he had saved when wounded and a prisoner in 1813. The old soldier apologized, ordered that Larrey's clothes and money should be restored to him, invited him to dinner, and promised to let Madame Larrey know that her husband was safe. He was allowed to go to Louvain, where the municipality and the inhabitants gave him a most flattering welcome. The population of Belgium showed the most practical sympathy with the French wounded. They picked up those who were on the field and conveyed them to the hospitals of Brussels and Louvain. Larrey, as soon as his wounds had healed, asked to have charge of the French wounded in the hospitals of Louvain, and went to Brussels to acquaint himself with the situation of those collected in that town. He found that in many of the hospitals the French wounded were mingled with those of other nations, and that the sight of Prussians lying beside them put them into a state of fury. This was due to the cruelties committed by the Germans on the prisoners and the wounded. Every day there were violent scenes in the wards and murderous quarrels took place, a state of things not favourable to cure. Larrey got his fellow countrymen separated from the Prussians and placed together in the military hospital at Brussels. Having operated in a number of difficult cases he went back to Louvain and thence to France, where he arrived on August 15th. He found that Bluecher had kept his promise and informed his wife that he was safe. At the Restoration Larrey was in some danger of being shot. He was on the list of the proscribed, but escaped with the loss of his places and pensions, with the exception of his title of Chief Surgeon of the Guard. This he was allowed to retain in order not to displease the veterans who almost worshipped the man who had done so much for them in the many campaigns he had made with them.

MEDICINE IN CHINA.

THE China Medical Commission appointed by the Rockefeller Foundation, New York, "to study and report on conditions of public health and medicine in China," has issued an account of the results of its investigations during 1914. A summary by Dr. Richard M. Pearce is published in the *Bulletin of the Johns Hopkins Hospital* for June. The commission—which was composed of President Judson of the University of Chicago, Mr. Roger S. Greene (American Consul at Hankow), and Dr. Francis W. Peabody of Boston, with Mr. George B. McKibbin as secretary—visited seventeen medical schools and ninety-seven hospitals in China and Manila. The commissioners state that the death-rate in China is probably higher than in any other country. The most widespread and destructive diseases are tuberculosis, hookworm disease, and syphilis. Leprosy is also common, and small-pox is looked upon as an inevitable incident of human life. There is no legal restriction on medical practice. The native materia medica mainly consists of herbs, but modern "patent" medicines command a large sale. The Chinese doctors know nothing of surgery; this is due to their ignorance of anatomy. Dissections and *post-mortem* examinations were not officially authorized till November 22nd, 1913. There are some Chinese physicians trained in Western medicine, but they practise mostly in the treaty ports or are attached to mission hospitals. The medical schools are classed in four categories: (1) Government and private schools; (2) missionary schools; (3) schools for Chinese women, and (4) non-missionary schools under foreign control. The strictly Chinese schools suffer from great disadvantages caused by disturbances of the political atmosphere during the last four years and the financial difficulties of the Government. Not one of them is properly equipped or adequately staffed, and not one has access to a satisfactory hospital. China has three hospitals for women alone, besides two in which they may be educated with men. But these schools are small and poorly equipped, and there is a difficulty in getting students who have had a proper preliminary training. The non-missionary schools under foreign control are five in number: Japanese in Mukden, German in Tsingtau (of this we suppose we may now say *fuit Ilium*) and Shanghai, French in Canton, and English in Hong Kong. The commission found that a study of hospitals in China "resolves itself almost completely into a consideration of the mission hospital. The more important non-missionary hospitals established by foreigners are for the care of foreigners, and have no very definite influence on China itself. The hospitals under Chinese control, whether Government or private, are with few exceptions ineffective, and they are chiefly of interest as demonstrating how small an impression high-grade Western medicine has as yet made on China." Among the recommendations of the commission are the following: "That the Foundation should undertake medical work in China, and as far as possible should co-operate with existing missionary institutions." "That it is not advisable at this time to establish an independent institution for research, but that research be encouraged in connexion with the medical schools aided by the Foundation." "That the first medical educational work be in Peking in connexion with the Union Medical College: that a new school be established in Shanghai and provisions be made for co-operating with existing schools in and near Shanghai in order to unify medical effort in the lower

Yangtse Valley; and that assistance be given the Canton Christian College, and that the Yale Mission at Changsha be aided in its medical plans." "That two model tuberculosis hospitals be established." The other recommendations refer to the foundation of fellowships and scholarships for Chinese students, the training of nurses, and the establishment of central diagnostic laboratories in Peking and Shanghai. They sketch out a broad scheme of medical education which has for its ultimate object a national system of public health administration. The commissioners insist that, if the scheme is to be successful, it is essential that a large number of natives of China should be thoroughly trained in the methods of Western medicine.

THE DISCOVERY OF CHLOROFORM.

IN the BRITISH MEDICAL JOURNAL of December 14th, 1912 (p. 1681), reference was made to a proposal that the centenary of the birth of David Waldie, who suggested a trial of chloroform as an anaesthetic to Sir James Simpson, should be commemorated by a bronze tablet, to be placed on the house in Linlithgow where he lived for some time. The movement was initiated by Mr. Alexander Spence, member of the Pharmaceutical Society, an ex-sheriff of Linlithgow, now of Leslie, Fife. We learn that the response to this appeal has been gratifying, and that a tablet, designed by Mr. Hope-Pinker of Kensington, has been put up. It has on it a portrait of Waldie, with an inscription in which he is described as a pioneer in anaesthetic research; and it is stated that "to him belongs the distinction of having been the first to recommend and make practicable the use of chloroform in the alleviation of human suffering." Regard for historic truth compels us again to point out that this is an exaggerated claim. Waldie suggested to Simpson, who was then seeking for a substance possessing anaesthetic properties, that chloroform might serve his purpose, and Simpson acknowledges that he got the hint from him. But there Waldie's connexion with "anaesthetic research" seems to end. It was Simpson who, in the face of much opposition from various quarters, including many members of his own profession, gained for chloroform a firm footing in medical practice. Therefore to him rightly belongs the credit of the discovery. In saying this we have no wish to detract from the merits of David Waldie. He was an assistant in the Liverpool Apothecaries' Company when he had the conversation with Simpson which led to such momentous results, and he gave an account of the matter in a paper read at a meeting of the Liverpool Literary and Philosophic Society on November 29th, 1847, three weeks after Simpson had announced the results of his experiments. That account was quoted by the *Chemist and Druggist* of December 21st, 1912, and the substance of it was given in the JOURNAL of January 4th, 1913 (p. 41). Any one interested in the subject will see that the claims made on behalf of Waldie are not borne out by his own statement. Waldie afterwards won distinction in India. He went to Calcutta in 1853, and was an active member of the Asiatic Society of Bengal for twenty-five years. He died at Calcutta in 1889. The society put up a brass tablet to his memory, in which he is described as the "pioneer of chemical industry in India."

THE PHTHISICAL SOLDIER AT THE FRONT.

OUR correspondence columns have recently contained conflicting views as to the wisdom of sending the "cured" ex-sanatorium patient to the front. An instructive contribution to this discussion is to be found in the *Muenchener medizinische Wochenschrift* for March 16th, in which Dr. L. Thieme, Medical Superintendent to the Leipzig Sanatorium in Voigtland, has given an account of his ex-patients who had been accepted for military service. Before the outbreak of the war he found his male patients inclined to regard a stay in the sanatorium as a valid excuse for evading military service. This attitude he did not sympathize with, and he used to point out that if the military doctors passed his ex-patients as fit for service, they should regard this as an encouraging sign, and should undertake military duties as a sort of after-treatment calculated to strengthen and harden the body. He accordingly refused, as a rule, to certify his ex-patients as unfit for service, lest by so doing he should prejudice his military colleagues. After the outbreak of the war he made inquiries about those of his male patients who were of military age. He found that between the years 1906 and 1913, 1,228 patients of this age had been under his care. Through the civil and military authorities he succeeded in tracing 1,177 of these ex-patients. It was found that 199 had died, 621 had been examined and rejected for military service, 28 had been accepted and subsequently rejected on account of ill health, 24 had been called to the colours but not yet passed, and 241 were either at the front or doing garrison duty. This still leaves 64 unaccounted for, who presumably could not be traced. Of these 241 ex-patients, 187 had been in the first stage of the disease, 48 in the second, and 6 in the third. At the time of discharge from the sanatorium 222 had been fit for work, 10 had been partly fit for work, 2 had been unfit for work, and 7 had left the sanatorium before the treatment had been completed. In all these cases the diagnosis of pulmonary tuberculosis had been made either by the demonstration of tubercle bacilli in the sputum or by tuberculin tests supplemented by *x*-ray examinations. Dr. Thieme was convinced that none of these 241 ex-patients could have shown any sign of active disease, as the military doctors were most careful to exclude every case suspected of tuberculosis. He claimed that the participation in active military service of 19.6 per cent. of all his male patients of military age was a striking proof of the value of sanatorium treatment. His complacency, however, strikes us as a little premature; and he would have done well to await the completion of the war before advocating the employment of the ex-sanatorium patient in the arduous tasks of active military service. It is more than probable that many of his 241 ex-patients will break down again under the stress of war; for in every large private sanatorium there are several patients who, having been discharged several years earlier as "cured," have again broken down under some strain or other.

THE LIGHTING OF RIFLE RANGES.

LARGE numbers of middle-aged men are now learning to hold a rifle, in spite of the fact that diminished eye accommodation, owing to advancing age, must interfere with success; indeed, a handbook on musketry states that men over 40 years of age are lucky if they can see both the notched backsight of a rifle and the bull's-eye clearly. At a meeting of the Illuminating Engineering Society on May 18th, with Sir William H. Bennett, K.C.V.O., in the chair, Mr. A. P. Trotter opened a discussion on the lighting of rifle ranges, more particularly from the point of view of the requirements of the older men. One of the questions debated was whether, when artificial light was used to illuminate a rifle range, it should be directed mainly or solely upon the target. A target may certainly be too brightly illuminated, but the disturbing effect appears to be due to glare rather than to the apparent reduction of the diameter of the bull's-eye by irradiation. Arising out of this is the further question whether concentration of light on the target and darkness in other parts of the range, which must tend to put the pupil in a state of partial dilatation, has an effect on acuity of vision with respect to the target, and also with respect to the sights. Provided that the target is not too brightly illuminated, the surrounding darkness is probably of assistance so far as the target is concerned. Young men probably find that the darkness does not interfere much with the sights,

because, in spite of an enlarged pupil, they have the power of accommodation or focussing, but older men have much more difficulty with the sights in a dark range than in a light one. Mr. Trotter's conclusion was that in a rifle range the sources of light should be screened from view, and that the lighting conditions should be similar to those existing out of doors so far as diffusion was concerned.

MILITARY SERVICE AND LIFE ASSURANCE.

SINCE the outbreak of war civilian doctors on joining the R.A.M.C. for service during the war have found it exceedingly difficult to negotiate life assurance. This is due to the fact that life offices have either declined to issue policies to members of His Majesty's forces who might be called upon for service abroad, or have imposed a "war extra" which has been practically prohibitive. This war extra, in offices that have been willing to grant policies, has ranged from nine guineas to twelve or fifteen guineas per cent. over and above the ordinary rates. Whilst it is true this war extra does not become payable until the assured is ordered abroad, and carries twelve months' "cover" from date of payment, it must be borne in mind that once the extra premium has become payable no abatement is possible, even if the assured returns to this country after an absence of a few weeks or months only. The Medical Insurance Agency has been able to make an arrangement with an office of high standing which it is hoped will enable those contemplating joining the R.A.M.C. or doing war service with Red Cross or other similar organizations to be relieved of part of the financial strain. The office in question is prepared to grant policies at ordinary rates so long as the assured remains within the United Kingdom. Should he be ordered abroad, a war extra of £9 9s. per cent. will become payable, but in the event of the assured returning to this country in good health, and being able to satisfy the directors that he had not been within ten miles of the firing zone, a proportion of the extra premium amounting to not less than one-half would be returned. It is believed that the arrangement will be advantageous to officers holding temporary commissions in the R.A.M.C., who may be employed only in base hospitals, and therefore far from the zone of fire. The evidence required to satisfy the directors as to the assured's good health on his return would be (1) a statement by him that he had not met with any serious illness or accident while abroad and that he was still in good health; (2) a certificate of health from another doctor. In some instances it might be sufficient if the assured called at the office of the company in London. It is admitted to be difficult to define "firing zone," but it is intended to mean the actual front lines and ten miles behind them. If a person claimed a rebate he would be required to make a statement as to where he had been, and a declaration that he had not been within the firing zone, but the directors might also require some corroborative evidence. Full particulars can be obtained on application to the Medical Insurance Agency, c/o British Medical Association, 429, Strand, W.C.

THE Conference of Representatives of Local Medical and Panel Committees arranged by the British Medical Association was held in London on June 16th. A report of the proceedings will be published in our next issue.

BY an Order in Council made last week, Part II of the Medical Act of 1886 has been extended to the province of Saskatchewan. The Executive Committee of the General Medical Council will, no doubt at its next meeting, consider the recognition of qualifications granted in the province.

Medical Notes in Parliament.

Total Casualties, Navy and Army.—The Prime Minister has recently given the following information in reply to questions in the House of Commons as to the total casualties in the navy and army from the beginning of the war to May 31st, 1915. The casualties amongst officers and men of the Royal Navy, Royal Marines, and Royal Naval Division, excluding casualties from the loss of the *Bulwark* and other accidental losses, were as follows:

	Officers.	Other Ranks.
Killed	549	7,696
Wounded	181	2,262
Missing	74	2,785
	804	12,743
		13,547

The casualties among the British Expeditionary Forces, including in France and the Mediterranean, the Territorial Force, and the Colonial and Indian Contingents, were as follows:

	Officers.	Other Ranks.
Killed	3,327	47,015
Wounded	6,498	147,482
Missing	1,130	52,617
	10,955	247,114
		258,069

Poisonous Gases.—On June 14th Mr. Tennant, in reply to a series of questions by Sir A. Markham, said that Dr. Haldane was continuing to advise the War Office as to the best means of protecting the troops from the poisonous gases used by the Germans. The type of respirator used at the outset was that approved by the Admiralty, and it was adopted with the approval of the Director-General of the Army Medical Services until a more suitable type could be devised for the special circumstances. He had on previous occasions explained the circumstances in which an appeal was made to the public. Dr. Haldane had already indicated certain protective measures that might be taken by troops, if they happened to be without one of the authorized respirators, and the necessary instructions had been given by the military authorities in France. The means of protection now in use were reported on most favourably by the authorities in France. The War Office had also the assistance of other experts, and he was not aware that any difficulty had been put in the way of Mr. S. E. Winmill, chief chemist of the Doncaster Coal Owners' Scientific Research Committee, from whom no complaint had been received. Mr. Tennant stated, in reply to Sir W. Byles, on June 16th, that measures had been and were being taken for the protection of the troops against asphyxiating gases, but it would not be in the public interest to give full information. The assistance of scientific men had been freely offered, and was being fully utilized. In reply to a further question as to whether any disabling gas not cruel or inhuman in its effects had been adopted by way of reprisal, Mr. Tennant said that he was unable to say whether efficiency would entail cruelty or not.

King George Hospital, London.—Sir Philip Magnus asked the Under Secretary of State for War, on June 14th, how many medical officers were at present employed at the King George Hospital, Stamford Street; how many of these were of military age; what was the proportion of such officers to the number of patients and how that proportion compared with the proportion of medical officers to patients in the general medical hospitals; whether men above the age of 40 were eligible for appointments at the King George Hospital; and whether the staff of younger men might be reduced if they were assisted by medical men over 40 years of age working part-time. Mr. Tennant said that the medical officers of this hospital were appointed by the Red Cross Society. He understood that there were twenty-five resident and that twenty-four were of military age, though he could not say how many of these were in fact eligible for any service. There was one medical officer to 66 beds, which was a somewhat more favourable proportion than in other hospitals. An arrangement of

part-time service would not, he believed, be convenient, but he sympathized with the object Sir Philip Magnus had in view, and inquiries would be made to see whether any of the junior medical officers who were eligible could be released for general medical service with the army.

The Army and the Civil Profession.—On the same day Sir Philip Magnus asked whether there was any shortage of battalion medical officers in the army; if so, what steps were being taken to remedy such shortage; and whether the Army Medical Department was conferring with the official representatives of the medical profession in the country with a view to the better organization of the medical profession for war purposes. Mr. Tennant said that there was not at present any shortage of battalion medical officers, but more were still required in order that the needs of the new army and of the Territorial Force might be fully supplied. Considerable numbers were being engaged every week and the Director-General of the Army Medical Service was receiving every support from the official representatives of the civil medical profession, with whom, not only on this but also on other matters affecting the health and well-being of the troops, he was in constant and cordial relations.

Medical Students in Combatant Corps.—Mr. MacCallum Scott asked, on June 9th, whether the arrangements previously announced, whereby medical students in their final year of study, who had only their final examinations to pass, might be released from combatant corps, if they applied, in order to complete their medical studies and qualify for medical service, had been altered; and, if so, in what respect. Mr. Tennant said that the ruling applied to medical students who were serving in the ranks, and had not been altered. Mr. MacCallum Scott further asked if the other regulation had been altered so that medical students who now held commissions might be allowed to finish their course during the last year. Mr. Tennant replied that the rule was only applicable to those serving in the ranks. In reply to a further question, in which Mr. MacCallum Scott suggested that the answer to a previous question had implied that the rule was applicable to the medical students holding commissions. Mr. Tennant said that it did not apply, and expressed his regret that the terms of his answer gave rise to this belief.

Territorial Force Medical Officers.—Mr. Walter Guinness asked the Under Secretary of State for War, on June 10th, whether any decision had yet been reached as to the proposed improvement in the position of officers of the Royal Army Medical Corps (Territorial Force) as compared with that of officers of the Royal Army Medical Corps of the regular and new armies. Mr. Forster repeated the answer given to Colonel Greig on June 7th, to the effect that he hoped to make a statement on the subject very soon.

Medical Consultants.—On June 10th Mr. Joynson-Hicks asked when the contracts with the six medical men who were receiving £5,000 a year from the Admiralty expired, and whether, having regard to the fact that equally eminent doctors were serving with the army at the front for the ordinary pay of Royal Army Medical Corps officers, he would determine the Admiralty contracts at the earliest possible moment. Dr. Macnamara said that the question was receiving consideration. He hoped a statement might be made shortly.

Captains R.A.M.C. (Promotion).—Colonel Yate asked the Under Secretary of State for War, on June 16th, whether, considering that between July 31st, 1914, and March 31st, 1915, only fourteen captains in the Royal Army Medical Corps were promoted majors, and during the same period some ninety-seven majors were promoted lieutenant-colonels, he would now take steps to have a corresponding number of captains promoted to the rank of major. Mr. Tennant said that the majors were promoted to the rank of lieutenant-colonel to fill appointments for officers of that rank. The promotion of captains would be considered as and when majors were required. There was no fixed establishment of the latter rank, and, under ordinary circumstances, promotion to it was by time qualification. Colonel Yate asked whether a very large number of these captains had for months past been filling posts occupied by majors. Mr. Tennant said that he did not understand that to be the case as regards the Royal Army Medical Corps, but promised to make inquiries.

Fleet Surgeons.—Commander Bellairs asked, on June 10th, whether the naval surgeons in charge of hospital ships, having the rank of fleet surgeon in the Royal Navy, had been given the rank of major in the R.A.M.C.; and whether, having regard to the fact that a fleet surgeon ranked with a lieutenant-colonel, the latter rank could be accorded to them, no question of pay being involved, instead of degrading them one step in rank. Mr. Tennant said that those officers voluntarily offered their services and accepted the rank of major. They had no experience for army requirements beyond that which was to be obtained by the medical charge of hospital ships, and were not, therefore, eligible for service in the rank of lieutenant-colonel.

Army Casualties (Mental Strain). Mr. Rendall asked the Under Secretary of State for War, on June 10th, whether cases, which in civilian life were uncertifiable, were being treated as incipiently insane by being placed, not under general physicians, but under medical officers whose practice as regards experience in nervous disturbance had been limited to their practice in asylums for the insane; if so, whether such uncertifiable patients as had been subjected to lunacy control had no right, while still in the army, which was comparable to the right possessed by civilians of appeal to a magistrate; and what steps he proposed to take to give soldiers rights equal to those possessed by all civilians. Mr. Tennant said that uncertifiable cases of nervous disturbance were being treated in the neurological sections of general hospitals, and, in addition, in two institutions which had been taken over from the Board of Control as military hospitals. In the former they were under the care of selected general physicians and neurologists; in the latter under physicians whose previous experience had been largely that obtained in mental institutions. In all such hospitals the patients had exactly the same rights as a soldier undergoing treatment in a purely military hospital—such as the Herbert Hospital at Woolwich—which existed as such in times of peace. Mr. Tennant stated, in reply to further supplementary questions, that the doctors under whom the soldiers suffering from mental strain were placed had had previous lunacy experience, but they did not necessarily exercise and were not necessarily vested with the same powers as they possessed during peace time over civilians. In these military cases the patient had the same right as a soldier undergoing treatment in a purely military hospital. Strict orders had been given that cases of mental breakdown were not to be treated as incurable until it was absolutely certain that they were incurable; they were not placed in asylums. Mental cases were not certified until it was necessary to discharge them from the service. Mr. Tennant added that he was obtaining information with regard to the clearing houses and military hospitals to which soldiers when disabled by mental strain were sent, as well as the number of borderline cases at present in these institutions, and how many of the cases had been put in charge of medical officers now gazetted officers of the R.A.M.C. who, up to the time when the institutions were commandeered, belonged to the asylum service. Soldiers who had temporarily lost their mental balance while with the armies in the field were at present being retained in the army under treatment at public expense. By mistake some had been put in lunatic asylums. Mr. Tennant informed Mr. Rendall, on June 14th, that the clearing houses to which soldiers of the rank and file disabled by nerve strain were sent on arrival from the front were the Royal Victoria Hospital, Netley, and the 4th London (T.F.) General Hospital, Denmark Hill. These cases were sent to various military hospitals throughout the country, and special neurological sections had been established in connexion with the twenty-three General Hospitals (T.F.) so as to bring the patients under the observation of the eminent neurologists at these centres. It was not possible with any degree of accuracy to give the numbers of borderline cases. The Red Cross Military Hospital, Maghull, and the Springfield War Hospital were taken over as military hospitals through the Board of Control, and the superintendents of those institutions were appointed to the charge of the military hospitals when they were taken over.

For the time they were purely military medical officers. In reply to a further question by Mr. Rendall, Mr. Tennant said that the buildings in which the new military hospital would shortly be opened at Napsbury had been those of the county lunatic asylum and that the lunacy staff of medical officers were to be retained to take charge of nerve shattered soldiers. The cases of nerve shock, to which the word "transient" might be applicable, would be sent to military hospitals. Nothing would be left undone to save the soldiers and their families from the opprobrium associated with having been treated in a lunatic asylum. Mr. Tennant said, in reply to Sir William Byles, that a soldier who was so unfortunate as to be deprived of his balance and was incurable was certified by a board of military authority and not by the body that certified cases of the civil population. If it was discovered that he was incurable he was, of course, sent to an asylum.

Epidemics (Prevention).—Mr. Ginnell asked, on June 10th, whether any international, precautionary, or preventive measures were being taken, or instructions issued, against the danger of plague, cholera, or other rapidly spreading disease arising from the war; and, if not, whether the most competent medical advice on the subject would be obtained and made public at the earliest possible date. The Under Secretary of State for Foreign Affairs (Lord Robert Cecil) said that discussions were in progress between French and English experts as to the measures to be taken for the prevention of epidemics, and the civil population would receive ample warning and advice should any danger arise.

Vaccination and Inoculation.—Among the many subjects in which Mr. Ginnell is showing his interest are those of vaccination and antityphoid inoculation. In reply to a long question on June 10th, Mr. Tennant said that a soldier agreed to vaccination as part of the contract he entered into on enlistment. There was no difference between soldiers enlisted in Ireland and in other parts of the United Kingdom in this respect. He had frequently explained that inoculation against enteric was not compulsory. Vaccine lymph was obtained from vesicles of cow-pox in calves and that the vaccine used in inoculation against enteric fever was made from the organism of enteric fever grown on an artificial medium and then killed by means of heat.

Infant Mortality.—Mr. Walter Long, in replying to Mr. Lough on June 14th, said that he was fully aware of the importance of the increase of infant mortality both in London and throughout the country. As he intimated to a deputation on June 10th, he was anxious to introduce without delay a measure making the Notification of Births Act of general application, and conferring certain powers on local authorities for safeguarding the health of infants and expectant mothers. Mr. Walter Long, in replying to further questions on the subject by Mr. Snowden and Sir George Toulmin, on June 15th, said that the births registered in London during the second quarter of 1915 averaged 79 a week fewer than the corresponding weekly number in the past five years; during the thirteen weeks ending June 5th there had been a weekly excess in the deaths of children under 5 years of age averaging 169. The excess had been mainly due to an exceptional prevalence of measles and whooping-cough with their usual sequelae. The suggestion that if the present rates continued for forty-two weeks all the infants would have succumbed was devoid of foundation, as was also the statement that one child in ten died within forty-eight hours of birth. He repeated that he was anxious to introduce a measure making the Notification of Births Act of general application.

House Refuse.—Mr. Long informed Sir J. D. Rees, on June 14th, that the Local Government Board issued last month to urban authorities a circular regarding the accumulation of refuse in the neighbourhood of dwellings. The issue of another circular to all sanitary authorities, urging special precautions for the prevention of disease during the summer months, was under consideration. In reply to a supplementary question, Mr. Long said that while he was not aware of any great difficulty in compelling local owners to fence land which was in immediate proximity to crowded areas, he thought that it would be rather a large undertaking, but he would consider the matter.

Sight Tests.—Mr. Runciman stated on June 14th, in reply to a question by Mr. Lynch, that a return would be published shortly which would contain statistics with regard to the sight tests in 1914. The wool test would be dispensed with as from January 1st next. He did not think that any alterations in the lantern were called for.

Alcohol in Medicines.—In Committee on the Finance (No. 2) Bill on June 16th the Chancellor of the Exchequer, on the second clause, which provides for the imposition of additional duties on immature spirits but relieves mixtures, compounds, or preparations which on importation are charged with duty in respect of the spirit contained in them or used in their preparation or manufacture, moved to add after "manufacture" the words "if the mixture, compound, or preparation is one which is recognized by the Commissioners of Customs and Excise as being used for medical purposes." He informed Mr. Glyn-Jones that there would be a body of properly qualified medical men to advise the Commissioners of Excise as to the preparations that could rightly be described as medical. The amendment was agreed to.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE NEED FOR SURGICAL INSTRUMENTS IN BELGIUM.

THE information received from the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés to the effect that a further supply of surgical instruments would be useful in Belgium has now been confirmed by the National Relief Commission, and the British Fund is preparing to send through the offices of that commission a large supply of surgical instruments to Brussels. The response to the invitation to supply instruments which has appeared at different times in these columns has been very good, but further heavy demands upon the stock in hand would soon deplete it. The public request for instruments which for a time ceased to appear, owing to the response seeming to meet the needs of the time, is therefore renewed. Mr. Meredith Townsend, Master of the Society of Apothecaries of London, has personally supervised the packing of a further consignment to Belgium, and all the instruments to be sent are of modern type, and have been repaired in every way. Further gifts should be addressed to him at the Apothecaries' Hall, Blackfriars, E.C.

THE WEEK'S SUBSCRIPTIONS.

The week's subscriptions include a further contribution from the North of England Branch Fund, a most energetic body, and a handsome subscription of £168 from New Zealand.

	£	s.	d.
Salisbury Division, B.M.A. (per Dr. L. S. Luckham)—			
Balance of Private Divisional Fund ...	3	4	7
Mr. H. Browne ...	1	1	0
Mr. Challoner Clay ...	1	0	0
Dr. E. Winbolt Lewis..	1	1	0
Mr. L. D. Saunders ...	1	1	0
Dr. E. F. Fison ...	1	0	0
Mr. G. W. Whiteley ...	1	1	0
Mr. J. Armitage ...	0	10	6
Mr. S. Ellis	0	10	6
Mr. J. E. Gordon ...	0	10	6
Mr. W. Gordon ...	0	10	6
Dr. L. S. Luckham ...	0	10	6
Mr. J. Ogdin March ...	0	10	6
Mr. Arthur Longman...	0	10	6
Mr. W. Stratton ...	0	10	6
Mr. C. Stratton ...	0	10	6
Dr. W. W. Ord ...	0	10	6
Mr. G. E. Thornton ...	0	10	6
Dr. F. B. Butler ...	0	10	6
Dr. H. P. Blackmore ...	0	10	0
Barnsley Division B.M.A. (per Dr. R. F. Castle) (3rd donation, total £43 11s. 6d.)	1	1	0
Medical Officers serving in 1st Peshawar Division	12	13	4
Major Rainier I.M.S. ...	2	2	0
Christchurch, N.Z., anonymous from (per Bank of N.Z.)... ...	158	0	0
"A.K.", Chiengmai ...	2	2	0
North of England branch of Fund (per Dr. James Don and Mr. A. S. Percival Hon. Secs.), (fourteenth donation, total £723 14s. 7d.)—			
Dr. W. Galloway ...	2	2	0
Dr. J. W. Leech ...	3	3	0
Dr. Thomas Body ...	1	10	0
Dr. J. P. Elliott ...	1	1	0
Dr. C. R. Sutherland ...	1	1	0
Dr. F. O'Neill... ...	1	1	0
Dr. John Anderson ...	18	17	6
Dr. J. W. Geddes ...	0	10	0
Dr. E. M. Swanwick ...	1	1	0
Dr. Arthur Gardner ...	1	1	0
Dr. R. Brown	0	10	6
Dr. W. Hall	1	1	0
(Less expenses to date, £18 19s. 11d.)			
Dr. J. A. Frend, Rosario, Argentina (per Dr. H. Macnaughton-Jones) ...	5	5	0
Dr. Fingland	1	1	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

THE WAR.

PROTECTION OF HOSPITALS AND MUSEUMS.

THE Home Office issued a circular on March 2nd, 1915, in which it was stated that Article 27 of the Annex to the Hague Convention of 1907 provides that hospitals and places where the sick and wounded are collected, buildings dedicated to public worship, art, science, or charitable purposes, and historic monuments, are to be spared, as far as possible, in bombardments, provided that they are not being used at the time for military purposes. It is necessary that they should be clearly indicated by distinctive and visible signs which have been notified to the enemy beforehand; and the sign which it is proper to use for this purpose in the event of bombardment is not the Red Cross flag, but a large stiff rectangular panel divided diagonally into two painted triangular portions, the upper portion black and the lower portion white.

The only hospitals which are entitled to use the Red Cross emblem are those which are exclusively under military or naval control, or have been granted special authority by the Army Council. The fact that a hospital or other building is used for the accommodation of wounded soldiers or sailors does not in itself justify the use of the Red Cross.

The sketch (Fig. 1) shows the sign given in the Home Office Circular of March 2nd, 1915, as the proper one to be used by authorities of civil hospitals, etc., if they desire to avail themselves of the provisions of the Hague Convention in the event of bombardment. The Home Office notified on April 29th the design obtained by dividing the rectangle the other way (as in Fig. 2) is also within the terms of the Hague Convention, and that signs already constructed in this way need not be dismantled; all the signs erected hereafter should follow the design shown in Fig. 1.



Fig. 1.



Fig. 2.

Some of the metropolitan hospitals, we are informed, received copies of the above circular last month, but there has been, it appears, some misapprehension about the official steps which have been taken or suggested for the protection of certain hospitals and museums, and it has been assumed that the War Office was the department responsible. The application of the annex to the Hague Convention referring to the stiff black and white panel to be used as a protection appears to be a matter within the jurisdiction of the Home Office, and we understand that copies of the circular can be obtained on application to the Permanent Under Secretary, Home Office, London, S.W.

GERMAN EXPERIENCES.

NEED FOR HOSPITALS NEAR THE FRONT.

AT a recent meeting of the Freiburg Medical Society Professor Krönig stated that the results of the treatment of wounds, particularly at the front, were disappointing. The number of deaths from septic infection and tetanus, notably in the case of shell wounds, was far greater than had been anticipated. It was necessary, therefore, to scrutinize afresh the accepted methods of treatment and in some cases to abandon the conservative methods practised at the beginning of the war in favour of more radical measures, such as amputation. Since the development of trench warfare the treatment of wounds had been more than ever unsatisfactory, and this had been traced by many to the lowered vitality of the German soldiers. In Professor Krönig's opinion, this explanation was incorrect; he considered the principal cause of the increased mortality from wounds was the delay in treatment—an inevitable sequel to trench warfare. The fate of the wounded depended far more on early medical treatment, early immobilization of the wounded parts, protection from injury during transport, and early admission to a hospital in the neighbourhood, than on such measures as the disinfection of the wound and of the skin, the use of tincture of iodine, hydrogen peroxide and balsam of Peru, and the application of first dressings. Thanks to a good supply of motor ambulances and of suitable splints, some of these conditions had been fulfilled, and since the Army Medical Service had adopted the practice of treating the wounded in hospitals near the front, instead of sending them further back, recovery from wounds had been more satisfactory. The harm done by transporting the wounded great distances could not be exaggerated. The "open" treatment of wounds, by which dressings were dispensed with, should be more extensively practised than it had been in the past, for it avoided the contamination apt to occur when the dressings were changed, and it also husbanded material, the supply of which might fail if the war were to be much prolonged. In spite of treatment with intradural and subcutaneous injections of large doses of antitetanic serum and of intradural injections of magnesium sulphate, the mortality from tetanus remained alarmingly high. Indeed, in some cases these remedies seemed to do more harm than good. The tetanus of peace time was not to be compared with the rapidly fatal tetanus which followed severe shell wounds.

Conservative treatment of abdominal bullet wounds had been preached by the leading surgeons at the beginning of the war, but it had given such poor results that more active measures should certainly be taken. It was probable that, if the cases terminating fatally from haemorrhage on the battlefield were included, the mortality from bullet wounds of the abdomen, treated on conservative principles, was as high as 95 to 97 per cent. Laparotomy was no doubt out of the question after the first signs of peritonitis had appeared, but it should certainly be undertaken when the wound had been inflicted only twelve to twenty hours earlier. Professor Krönig did not venture to promise much better results from operative treatment, his chief argument in its favour being that it was impossible to get worse results than were being obtained by conservative treatment. Bullet wounds of the lungs also ran a less satisfactory course than was the case earlier in the war. The mortality from these wounds was probably not less than 30 to 35 per cent. Professor Krönig concluded by urging the necessity for putting the treatment of wounds on a more satisfactory basis.

ANIMAL CHARCOAL AS A DRESSING FOR WOUNDS.

In the *Feldärztliche Beilage*, Nr. 18, of the *Muenchener medizinische Wochenschrift*, E. v. Knaff-Seng has advocated the use of animal charcoal as a disinfectant. It had, he said, lately been much used by Professor Wiechowski with excellent results in cholera and dysentery, and laboratory experiments showed that the proteolytic ferment produced by the *Bacillus pyocyaneus* was completely absorbed by animal charcoal. A solution of pyocyanase, 1 c.cm. in 80 grams, at room temperature decomposed in thirty hours a 10 per cent. preparation of thymol-gelatine, but this did not occur when the pyocyanase had been shaken up with charcoal. Again, a bacterial suspension, when shaken up with animal charcoal, rapidly became sterile. On the basis of these experiments, suppurating wounds were treated with animal charcoal at Professor von Eiselsberg's hospital in Vienna. The wounds were first cleaned with hydrogen peroxide, then carefully dried with sterile gauze, and afterwards dusted over with charcoal till they were quite black. Dry dressings were applied and were changed every day, the charcoal on these occasions being removed with the help of hydrogen peroxide. The charcoal came readily away except at those points where it had become anchored to necrotic tissue. This could, however, be removed with forceps after a couple of days. Flat, gaping wounds, in which the infected tissues were freely exposed, were best suited for this treatment, particularly when the wounds were recent. In such cases necrosis ceased in a few days, and the surface of the wound became clean, healthy granulations formed, and in a short time new skin spread over them. Wounds which had suppurated for several weeks did not react so quickly to this treatment, although recovery was hastened. Deep, penetrating wounds were syringed out with a 2 to 3 per cent. suspension of charcoal, which had a most beneficial action. Bedsores also reacted well to treatment with charcoal, which, when applied to the surrounding skin, prevented extension of the disease. An attempt to combine the charcoal with hydrogen peroxide or ozone failed, as the charcoal acted as a catalytic agent. As the charcoal was not absorbed and was chemically inert, no ill effects

were observed. When used in suspension for the irrigation of deep, penetrating wounds, only the most finely-powdered preparations should be employed.

HOSPITAL DIETS.

At a meeting of the directors of the hospitals in Frankfurt, and of the food commissioners, a resolution was passed on March 3rd, defining the measures to be adopted for the conservation of the food supplies required by the hospitals. This resolution, which has been published by Professor Carl von Noorden and Dr. Günzburg (*Berliner klinische Wochenschrift*, March 22nd), contains the following dietetic scheme for patients in hospital:

The maximum of 300 grams of bread a head allowed by the Government must not be exceeded by patients, and for those who are not placed on full diet 200 to 250 grams must be regarded as ample. Children are to be allowed only 180 grams of bread or the corresponding amount of flour. Owing to the shortage of grain, malt coffee must be cut out of the breakfast, and only pure coffee or a mixture of coffee, chicory, and fig coffee is given. For the second breakfast, a soup made of potatoes, oatmeal, or barley, with the addition of vegetables, but not containing rye or wheat flour, should be given. This diet may be varied with milk soup, particularly for patients not on full diet. At this meal powdered cheese (*Siedkäse*), with milk, sugar, and cinnamon, may also be given, but bread is allowed only when it is not given at the midday and evening meal. At the midday meal, the amount of meat must not exceed 100 grams when cooked. When possible, 125 grams of fish should be given once a week. Once a week the meat ration should consist of boiled sausage, and once a week neither meat nor fish should be given, the midday meal on this day consisting of soup made from the white bean or the soya bean, with 50 grams of bacon or dried meat. This meal should further consist of vegetables, potatoes, cheese, and fruit, great care being taken to boil the vegetables, particularly the leguminous foods, thoroughly. At the four o'clock meal, milk, or coffee and milk, or cocoa and milk should be given. At the evening meal, neither meat nor fish (100 grams of meat, 120 grams of fish), nor sausage, nor herring should be given except on two days in the week. This meal should consist of potatoes, salad, and other vegetables, and cheese; on two days a week this should be supplemented by two eggs and bread, with 20 grams of butter or other fat, and potato salad or $\frac{3}{10}$ of a litre of milk. On three days a week the evening meal should consist of rice or other cereals, or potato soup or macaroni, to which cheese or bacon has been added. Fruit may occasionally be allowed at this meal, and bread if the maximum has not already been consumed. When cheese is eaten at the evening meal some bread should be kept to go with it. Beer may be given not oftener than twice a week.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died of Wounds.

SURGEON THOMAS LOUIS GRENET STEWART, R.N., was reported as wounded in the casualty list of June 12th and as having died of his wounds in that of June 14th. He was educated at Glasgow, where he took the degrees of M.B. and Ch.B. in 1911. After serving as junior house-surgeon to the Borough Hospital, Birkenhead, and as assistant resident medical officer to the Brownlow Hill Infirmary, Liverpool, he received a temporary commission as Surgeon in the navy for the war. He is the first naval medical officer to be actually killed in action during the war, as distinguished from those, already a considerable number, who have gone down with their ships.

Wounded.

Surgeon William Bradbury, R.N.
Surgeon (temporary) Rolf Creasy, R.N.

ARMY.

Killed.

Lieutenant-Colonel J. W. Jessop, commanding the 4th Battalion Lincolnshire Regiment, Territorial Force, who died recently in France, was a native of Devonshire, and received his medical education at St. Bartholomew's Hospital. He took the diplomas of M.R.C.S., L.R.C.P. in 1889. Among the public appointments he held were those of surgeon to the Horncastle Dispensary, medical officer to the Post Office, and district and workhouse medical officer of the Horncastle Union. He joined the old volunteers as a surgeon-lieutenant, and became captain of the Horncastle Company. In 1911 he was appointed commanding officer of the 4th Battalion.

Died of Wounds.

Lieutenant David Galloway Watson was the son of Mr. John Watson, B.A., head-master of Broughton Higher Grade School. He received his medical education at Edinburgh University, and graduated M.B., Ch.B. in 1913. Besides having a notable academic record, he took a prominent part in the public life of the university. He was a member of the Students' Representative Council, and a frequent contributor to the *Student*, and on several occasions acted as deputy editor. After graduating, he was appointed to a hospital in Windsor, and on August 10th, 1914, accepted a temporary commission as lieutenant in the R.A.M.C. He had been at the front for several months, and, when wounded, was engaged in bringing in a stretcher party from one of the trenches under shell fire.

Wounded.

Lieutenant-Colonel W. R. Pearson, New Zealand Army Medical Corps.
Major G. H. L. Hammerton, R.A.M.C.(T F.).
Major T. Holt, R.A.M.C.
Captain R. M. Dickson, R.A.M.C.
Captain R. Knowles, I.M.S. (Turkish Arabia).
Captain H. L. Gregory, R.A.M.C.(T.F.).
Lieutenant G. Bailey, R.A.M.C.(T.F.).

Prisoner of War.

Lieutenant J. M. Gillespie, R.A.M.C., 2nd Battalion Northumberland Fusiliers, previously reported missing.

Second Lieutenant J. E. Bruce Miller of the 5th Kings Royal Irish Rifles who died from wounds was, previous to the outbreak of war, a medical student at the Edinburgh University. Although a member of the artillery unit of the Edinburgh University Officers' Training Corps, he accepted an infantry commission for active service.

NOTES.

SERBIA.

DR. SETON-WATSON, who has recently returned from Serbia, in addressing a meeting held by permission of Lady Brassey at 24, Park Lane, W., specially advocated the claims of the London units of the Scottish Women's Hospitals for foreign service, and urged that the good work being done in Serbia deserved every support. The workers sent from various countries to nurse the wounded were confronted by appalling conditions of epidemic disease. The drastic steps taken included suspension of the train service for ten days, in order that every coach might be fumigated, and to-day the epidemic was well in hand. It was no longer in such a virulent form, and there was every reason to believe that, very largely as the result of the work done by the people sent out from this country, there would be no more typhus, and it would be possible to prevent an outbreak of cholera, which had been greatly feared in the Near East.

American Red Cross Commission.

The Secretary of the New York State Branch of the American Red Cross issued, on May 23rd, a statement relative to its work, in which, after referring to the dispatch of the Red Cross Commission under Dr. Strong, he says that it took with it nearly £8,000 worth of supplies. "These supplies included more than 250,000 pounds of sulphur, and large quantities of other disinfectants, hospital equipment, tents, automobile tools, and other things urgently needed in the battle being waged to rid Serbia of disease."

MEDICAL OFFICERS WANTED.

Scottish Women's Hospitals.

The Scottish Women's Hospital for foreign service would be glad to hear of any medical women or graduates in science as *x*-ray operators for work in Serbia or France. To fully qualified workers an honorarium is offered at the rate of £200 per annum, with all expenses paid. No salary is attached to junior posts.

32nd East Anglian Field Ambulance.

Medical officers, prepared to undertake imperial service, are required for this unit. Pay and allowances as in regular army. Applications to the Commanding Officer, Major Caie, 44, Bethel Street, Norwich.

England and Wales.

THE MANCHESTER HOSPITAL FOR BABIES.

AT a public meeting held last week in Manchester, under the presidency of the Lord Mayor, the claims of the Manchester Babies' Hospital were brought before the public. The hospital, which was opened in August last year, is one of three of its kind in England, the others being in London and Bradford. It is situated in Chorlton-on-Medlock, and is intended to provide treatment for babies suffering from disorders of nutrition, including summer diarrhoea, training for girls in the care of infants, and opportunities for research in the disorders of nutrition in infants. There are twelve cots for infants under a year old, all of which have been continuously occupied, and it is very evident that the hospital can but very inadequately supply the requirements of the district. By far the greater proportion of the sixty-six cases that have been admitted since the hospital was opened have been sent from the various schools for mothers, or the Chorlton-on-Medlock Dispensary, though several have also been sent from the out-patients' departments of the general hospitals, and a few have been recommended by private doctors. At the public meeting the Lord Mayor said that in Manchester 2,500 children died every year before they were 12 months old, and the work that had been done at the hospital showed that by proper care it would be possible to save a large percentage of these. Dr. Barbara Tchaykovsky said that out of 800,000 babies born in Great Britain every year about 100,000 died in their first year, and practically one third of these deaths were from disorders of nutrition, which could be to a great extent controlled. She congratulated Manchester on having so early adopted the Notification of Births Act, the intention of which was not only notification but efficient visitation by health visitors, and she urged that the Act should be made compulsory all over the kingdom. Dr. Phoebe Sheavyn said that one very important feature of the work of the hospital was the accumulation of experience as to the best methods of nutrition, and the benefits of this experience would extend far beyond the patients actually treated at the hospital. Miss Burstall, Principal of the Manchester High School for Girls, spoke of the hospital as an excellent training ground for girls in the care of infants. Mr. C. T. Needham, M.P., and Councillor Marr made urgent appeals for further funds for the institution. There was always a long list of babies waiting to be admitted, and it was pointed out that every day of waiting in these cases lessened the chances of saving life. The first year's work will cost about £1,000, towards which Councillor Margaret Ashton has contributed £300. The total donations and subscriptions up to the present amount to £1,326, and unless more money is quickly available the work of the hospital, even on its present small scale, will be seriously hampered.

INFANT CARE IN SALFORD.

At the last meeting of the Salford Town Council a scheme of the Health Committee was under consideration for the establishment of a clinic for dealing more effectively with maternity and child welfare. For a number of years past the Health Committee has spent something like £600 a year in dealing with this question, by the employment of a supervisor of midwives and a staff of health visitors, but as these visitors are unqualified, the Local Government Board, commenting on the limited extent of the work done, has intimated that further Government grants must not be expected unless fully-qualified health visitors are employed and the work is extended. It is therefore proposed that the ten unqualified health visitors should be replaced by six trained nurses, and that a clinic should be established for the advice and treatment of mothers and infants, with a lady medical officer to take charge of the clinic and supervise the nurses. The estimated cost of the scheme is about £1,240 a year, half of which will be provided by the Local Government Board, the net cost to the rates being thus about £620 a year. The Town Council adopted the scheme, and it was stated that it would be worked in conjunction with the Mothers' Guild, which is supported by private charity.

Scotland.

EAR DISEASES AND THE WAR.

AT the annual meeting of the Glasgow Hospital for Diseases of the Ear, Throat, and Nose, held on June 9th, under the presidency of Dr. Gourlay, Dr. Thomas Barr read the medical report, which stated that a considerable number of soldiers and Belgian refugees had been treated at the hospital since the war began, and that recruits had sometimes been rendered acceptable by treatment who would otherwise have been rejected. Professor Monro said that in the military hospital at Stobhill a large number of cases of ear disease were met with—old cases broken out afresh, and new cases that had arisen among the young men who had been at war stations during the winter.

APPOINTMENTS OF EDINBURGH MEDICAL MEN.

On June 9th the available professorial and consulting staff in Edinburgh was further depleted by the departure to Aldershot, *en route* for France, of Professor Alexis Thomson and Dr. Melville Dunlop, who have been appointed surgeon and physician respectively to a hospital of over 1,000 beds, with the rank of Major in the Royal Army Medical Corps.

SCOTTISH BIRTH-RATE FOR 1913.

On June 8th the report of the Registrar-General for Scotland was issued. It showed that the population of the country in the middle of 1912 was estimated at 4,741,077. The natural increase (the excess of births over deaths) between that date and the middle of 1913 was 48,916; but during the same period there was a net loss by emigration of 61,861. The result was to place the estimated population in the middle of 1913 at 4,728,132, a decrease of 12,945. Further, this estimated population is 32,772 less than the population of Scotland as ascertained by the census of April, 1911. The births of 120,516 living children were registered during the year, being 2,274 less than the number for 1912, and 5,230 less than the mean of the numbers registered in the preceding five years, 1908 to 1912. A striking fact was that the registered births of the year 1913 were less than those of all previous years since 1873; a maximum number of 133,525 births was registered in 1903, and compared with this the present year was 13,000 short. Fifty-one per cent. of the children registered were male and 49 per cent. female. The birth-rate for the year was 25.49 per 1,000 of the estimated population. Legitimate children accounted for 92.91 per cent., and the illegitimate for 7.09 per cent.; the number of the latter was less than in all years since 1903, and the illegitimate-rate was less than those of all years since 1908. There were 1,175 more marriages in 1913 than in 1912, and 296 more than the mean of the numbers of the preceding five years (1908–1912); in fact, it was the largest number of marriages registered in Scotland in any year since the introduction of national registration. The marriages thus reached their highest and the births their lowest level in 1913; this is a fact of great significance in its bearing upon the decreased productivity of the Scottish people. The deaths for 1913 numbered 73,069, or 729 more than in the previous year; the death-rate was 15.45 per 1,000 of the estimated population.

Ireland.

IRISH NURSES AND THE WAR.

AT the thirty-first annual meeting of the City of Dublin Nursing Institution Limited, held last week, the Chairman gave a summary of the present position of the nursing profession in relation to the war, stating that the supply of nurses was by no means exhausted, and that in case of emergency, if the material in Ireland alone were mobilized, many hundreds of trained women would be available. At present only nurses of three years' hospital experience were eligible for military service, and the probationers, many of whom were experienced and valuable, were not utilized as nurses by the military authorities; the present system of substituting, in military hospitals, volunteers

with little or no hospital training for professional probationers was, he thought, a mistake. At the same time it should be recognized that very valuable unskilled assistance had been given to the civil and military hospitals in the form of voluntary aid by members of the St. John Ambulance and Red Cross organizations.

IRISH EMIGRATION.

The Registrar-General's monthly return of the number of natives of Ireland who left Irish ports during the month of May, 1915, shows that emigration from Ireland is still on the wane. The total number of emigrants last month was 1,025 (620 males and 405 females), as compared with 3,648 (1,875 males and 1,773 females) in the same month last year, a total decrease of 2,623. During the first five months of the present year the total number of Irish emigrants was 2,938, compared with 11,449 for the same period in 1914, a falling off of 8,511.

STUDENTS' STRIKE AT THE COLLEGE OF SURGEONS.

A curious position of affairs has arisen at the Royal College of Surgeons, Ireland, where the students have gone on strike as a protest against the action of the Council in appointing an outside professor—a gentleman from Trinity College—as examiner in anatomy, instead of the present professor of anatomy in the College. In the anatomy class there are 120 students, and it is stated that all of these, with the exception of two lady students, have joined in the protest and deserted the dissecting-rooms. They state that they will remain away from the College until the authorities accede to their appeal in favour of the professor of anatomy, and that if the appeal is not granted they will refuse to present themselves for examination in July. In the interests both of the College and the students it is to be hoped that it will be found possible to come to an agreement so as to end the strike at once.

Sydney.

INFECTIOUS DISEASES AMONG SCHOOL CHILDREN.

IN the annual report of the medical branch of the Education Department reference is made to the occurrence of infectious diseases among school children. Outbreaks of ophthalmia occurred in some schools, in one case 18 out of 54 children were affected. The history of these outbreaks shows that the cases became more numerous as flies became more prevalent. Of the total number of children in all the schools, 8.1 per cent. were affected by some infectious disease which necessitated compulsory absence from school. The most common of these diseases was whooping-cough, then follow chicken-pox, measles, and diphtheria. In addition to children actually suffering from infectious diseases, 3.3 per cent. were excluded because they were contacts. Dr. Willis, the Chief Medical Officer of the Department, remarks that interference with school attendance by infectious diseases is much greater than it should be. He attributes this state of things largely to the lax way in which some local councils notify cases of statutory infectious diseases, leading to delay by the teachers in dealing with cases. On the other hand, teachers have frequently excluded children unnecessarily. Last year, out of 94,198 children examined by the school medical officers, 33,109, or 35 per cent., had been successfully vaccinated. The proportion of children vaccinated decreases rapidly from the metropolitan area to the back country. Dr. Willis refers in this report to the fact that the treatment of school children by the medical officers of the Education Department has been criticized by the medical profession on the ground that it interferes with private practice. He considers this position untenable, as the children treated by the Department are those found to be physically defective at a school medical inspection, and most of them would not have obtained treatment except as a result of medical inspection, since the defect would not have been known to the parent. If this were not so, school medical inspection would not be necessary. Again, if free treatment were offered in all cases, a proportion would still prefer to go to a private practitioner, and this proportion would be equal to, or even greater than, the number that would have obtained treatment irrespective of medical inspection. Dr. Willis thus considers the question more a national than an individual one.

ALCOHOL IN HOSPITAL.

At the annual meeting of the subscribers to the Royal Prince Alfred Hospital, Sydney, Sir Thomas Anderson Stuart, the Chairman of Directors, referred to the fact that during the past year only £49 2s. 6d. had been spent on alcoholic stimulants for its 7,237 in-patients. This works out at just over 1¾d. per patient. In the year 1884 the expenditure was 7s. 9d. per patient; in 1894, 1s. 4d.; in 1904, 7d. per patient. Sir Thomas reminded his hearers that the conviction had been growing that alcohol was not the valuable medicine it had once been considered to be. There were forty medical men on the hospital staff entitled to prescribe alcohol if they thought it necessary to do so, and it was therefore clear that the small consumption of alcohol was not due to any fads or opinions of certain members of the staff, but must be regarded as the outcome of the practice of medical men generally.

Correspondence.

POISONOUS GASES.

SIR,—I beg to offer the following suggestions in regard to the treatment of "gassed" soldiers.

As I understand, the essential effect of the poisonous gas employed by the enemy is to produce an acute bronchitis, with swelling of the bronchial mucosa and effusion into the tubes and consequent dyspnoea. Manifestly the object of treatment should be (1) to facilitate respiratory interchange in the vesicles, and (2) to diminish the need for such interchange.

1. In order to promote the respiratory interchange, we should seek (*a*) to augment the tidal flow of air by removing the bronchial block and by facilitating the action of the respiratory bellows, and (*b*) to favour the pulmonary circulation.

(*a*) The patient should be placed in a chair with a movable back and allowed to assume a position which permits the respiratory bellows to work at the best advantage. The whole of the body below the neck should be enclosed in a portable vapour bath, and while the vapour is playing upon his skin the patient should inhale air rendered cool by means of a respirator furnished with crushed ice (after the plan suggested by Dr. Francis Hare for the treatment of spasmodic asthma), or we might attempt to produce shrinkage of the swollen bronchial mucosa by spraying the air to be inhaled with adrenalin. The patient should remain in the open air during the whole of the acute stage

(*b*) With marked cyanosis the right heart is bound to be dilated and engorged. In such cases I should anticipate considerable relief from judicious recourse to venesection. Help might be got from cardiac stimulants.

2. There are three ways of diminishing the production of CO_2 and the need for O: By keeping the body warm, by reducing the expenditure of muscular energy, and by limiting the ingestion of food. Accordingly the body should be clothed in some light warm material, allowing free movements of the thorax; the trunk and the head should be supported from without (not by the patient's muscular efforts). Lastly, and most important of all, food should be withheld entirely. On no account should the smallest particle be given while dyspnoea is acute, for every particle which is absorbed increases the air hunger. On the other hand, there is no reason why the patient should not drink as much water as he likes.—I am, etc.,

London, W., June 13th. HARRY CAMPBELL.

SIR,—As other correspondents are writing about poisonous gases, with suggestions of varying practical moment, I send you a further instalment in the form of a letter, dated June 12th, to Mr. Henry Brunner from his eldest son, chemist and electrician at the Northwich works. This only reached me this morning, and I have selected part of it dealing with personal experiences which may be termed "clinical," while I have omitted chemical

matter too abstruse for me, and probably for most of your readers.

> As regards alcohol for chlorine, I think that in the early stages of the Hoepfner process I was "gassed" as often and as thoroughly as anybody in this country has ever been, though never quite to the point of insensibility, which I expect would mean a speedy death, and I tried all the supposed remedies except aniline, which is, I think, dangerous to use.
>
> The only remedies I found efficacious were the inhalation of ammonia, of course dilute, and alcohol, preferably in the form of eau de Cologne, which is infinitely more soothing to the lungs than absolute alcohol. The difficulty of using an inhalant is that the first effect of the gas, if at all strong, is to cause spasm of the glottis and make the breathing so "shallow" that inhalation of an effective kind is almost impossible.
>
> To give you my own experience, the first effect—"shallow" breathing, violent coughing, etc.—is followed by a short feverish period, sweating, etc., succeeded by a period of collapse, during which alcohol administered internally has a very good effect. Inhalation of alcohol vapour, etc., during the attack I consider merely palliative, and unlikely to give any real remedial effect in serious cases.

After presuming that the Germans are definitely using chlorine and bromine, as reported by Dr. Haldane on the spot, he goes on to say:

> They may be using sulphurous acid as well, so that instead of alcohol I should be inclined to recommend the inhalation of weak ammonia vapour as a remedy against all the gases, though I am afraid a very ineffective one, with alcohol, especially eau de Cologne, as a more or less effective palliative.

—I am, etc.,

Liverpool, June 14th. RUSHTON PARKER.

TERRITORIAL FORCE MEDICAL OFFICERS.

SIR,—I am glad to see in the JOURNAL of June 12th (p. 1019) that Colonel Greig has taken up the grievances and asked the Under Secretary of State for War on June 7th whether any steps were being taken to remedy the hardships of medical officers of the Territorial Force mobilized at the beginning of the war with regard to promotion and the question of a gratuity. I should like to point out one or two very important facts. Medical officers who joined before the war had to begin at the lowest rank—namely, lieutenant—and received a gratuity of £20 for uniform, whilst those who joined after the war were granted a gratuity of £60 and promoted wholesale to the ranks of captain, major, or lieutenant-colonel, as the case might be, without any military training whatever, and yet some of these men are at the present time senior to men who have spent nearly a quarter of a century doing military work and given up their holiday every year to make themselves efficient to carry out the necessary military training of the R.A.M.C.(T.). Why not make up the difference by allowing those men who were mobilized a grant of £40 to put each class of medical officer on the same level? The gratuity for uniform before the war was small because it was only worn a short time during the year; but now that the war may be prolonged for some time and consequently much more uniform may be necessary, I certainly think the permanent should receive the same amount as the temporary medical officers.

Another very important matter which seems to have been overlooked is the promotion of those majors to lieutenant-colonels who are attached to battalions or in charge of dépôts, and who have qualified themselves by passing the necessary examination, and have had twenty years' service. I know of several men qualified in this way who are doing both good and hard work, and yet they are told that any further promotion is impossible, owing to being a regimental medical officer, or medical officer in charge of dépôts. It is absolutely necessary to have these medical officers, as the war has unfortunately demonstrated, and I venture to say that there is not any more responsible work in the whole of the R.A.M.C. than is expected from either of these two medical officers.

I cannot think the War Office could knowingly mete out such injustice, if the facts were properly placed before them, as to grant commissions of lieutenant-colonel to novices without any military training or qualifications and make these men senior to those who have qualified and are told that they cannot get further promotion.—I am, etc.,

M.D.

SIR,—As the wife of a Territorial R.A.M.C., I can fully corroborate Mr. A. Bennett's statements[1] on the case of the Territorial medical officer, as our case is identical with the one he quotes. My husband was a volunteer eleven years ago, and is at present a captain, drawing 15s. 6d. a day. During those years he did his camp training each year, which was the only holiday he took. This meant that we could never go away together. When war broke out and he joined his regiment his good practice suffered severely. But for the kindness and generosity of several of the local overworked doctors, who did their best to retain the gradually diminishing practice by handing me over the entire fees, I do not know what I should have done. What seems so unfair is that a man of my husband's age (44) and experience should be drawing less than the junior men who have only recently joined the R.A.M.C. The struggle for the wife of a man so situated seems to be completely overlooked, with all means sunk in the now forfeited good practice, and who has to meet rent, taxes, education, and increase of living.—I am, etc.,

June 6th. LONDON, E.C.

THE SUPPLY OF MEDICAL MEN.

SIR,—The correspondent who asks for a "lead" in your issue of June 12th forgets that it is almost impossible to lead the medical profession. Every man thinks that he knows better than any one else; his besetting sins are jealousy and lack of knowledge of his limitations.

However, there is quite a good committee which is trying to give a "lead"—the War Emergency Committee of the Metropolitan Counties Branch. This body is compiling a register of every medical man within the area of the Branch, with his age and the military service for which he is fitted. Possibly some such body may be recognized in time as a suitable intermediary between the War Department, which knows nothing of the difficulties of civilian practice, and the medical practitioners, who are ignorant of the organization of the R.A.M.C.

May I state my view of the situation?

1. This country is suffering from a very grave crisis, and only the most strenuous efforts will preserve us.
2. The Government will not adopt, until the last moment, the only course which is fair to everybody—conscription.
3. Individual medical men are not in the position to be able to judge for themselves whether the seriousness of the case demands from them the highest sacrifices possible. Therefore we see hesitation displayed in coming forward in sufficient numbers to satisfy the military authorities.
4. Yet if the demands of the authorities are not met, we shall find presently that foreigners will be imported to take what ought to be our places at the front.

To avoid the importation of foreigners, whilst saving the medical man in this country from making too hasty, and possibly, unnecessary, sacrifice of the interests of his family and of his patients, I suggest the method of voluntary conscription.

This method means that every medical man of suitable age should place himself unreservedly at the call of the military authorities, whenever it may seem to those authorities that the situation justifies the sacrifices which will have to be made. *It is a proposal altogether apart from the register now being compiled by the British Medical Association.* The names of those willing to submit themselves in this way would be collected and forwarded to the Director-General; thus the willingness of the profession to serve would be demonstrated, while the onus of telling men when to serve would be thrown upon the proper shoulders—namely, on those responsible for carrying on of the war. And let no man urge that the civilian community cannot get on without him. Even if there is no other practitioner within five miles, it is for the Government to decide how the situation shall be met.

While the responsibility will be placed in the right quarter, and the medical practitioner will be doing his

[1] BRITISH MEDICAL JOURNAL, June 5th, p. 978.

duty, the War Emergency Committee, knowing the difficulties and sacrifices involved, should continue to press upon the authorities the necessity for trying to evolve order out of the present chaos in such matters as pay, rank, conditions of service, and so on.

Now, Sir, I have given the "lead" asked for by "M.D." How many men are there willing to face the voluntary conscription test of their right to British citizenship?—I am, etc.,

London, W., June 16th. CHAS. BUTTAR.

SIR,—"Temporary Lieutenant," in his diatribe (p. 1028) against "Young G.P.," *et hoc genus omne*, in which I beg to include myself, makes two propositions, neither of which will bear investigation. First, that sacrifices are made by men of other vocations equal to, or greater than, those made by our profession. Comparisons are particularly odious in such a matter as this, but I think he will see his error if he reflects that private medical practice depends on a peculiarly personal relationship between the practitioner and his patients, and therefore the stability of the practice is greatly imperilled, if not actually destroyed, by the absence of the practitioner.

His second proposition is that the loyalty of his brother practitioners and patients is a safeguard against such loss of practice. A medical journal which is read by the laity is not a convenient medium for discussing this point, but I will merely reply to "Temporary Lieutenant's" idea that absence makes the heart grow fonder, with an equally true and in this case more applicable adage—"Out of sight, out of mind." In his blaze of righteous indignation, "Temporary Lieutenant" has entirely overlooked the argument of "Young G.P." and myself, that a young man with a wife and family dependent on him, without private means, and with all his capital sunk in a practice which is only just beginning to pay expenses, is surely not a man who can be expected to enlist with a light heart.

Does he clearly grasp the fact that there is a great difference between sacrificing oneself only and condemning a wife and family to possible destitution?

When he advocates so nobly the "giving up of everything" on the part of his married brethren without private means, does he altogether realize that the man's part of the sacrifice is not after all the only, or even the larger, part to be borne? Does he even take in completely what the words "without private means" imply and involve? He may, it is true, dine comfortably at a well-loaded mess-table every day, but does he realize that his wife and family, if indeed without private means, may not after a time, possess either a table at which to sit, or the necessary food to place upon it?

Would not "Temporary Lieutenant" really do better were he to abstain from gibes at the difficulties of other men with whom he may not be in sympathy and use instead his undoubted literary gifts for the purpose of enrolling first the large proportion of unmarried men still available, then the married men with an independent income, and leave his less fortunate and already overburdened brethren to form the last reserve?

In conclusion, if he really believes for one moment that any man would not willingly offer his services if free to do so, then his thoughts are a libel on the profession to which he ought to be proud to belong.—I am, etc.,

HUBERT E. JOHNSON, M.B., Ch.B.Edin.

Callington, Cornwall, June 15th.

THE HEALING POWERS OF SUNLIGHT.

SIR,—Mr. Lynn Thomas's letter in the JOURNAL of June 12th, p. 1026, affords an explanation of a puzzling case with which I have recently had to deal.

The patient was a boy of 2, who had never previously ailed. The symptoms were persistent pyrexia (100° to 102.4° F.), together with lassitude and a tendency to unusual drowsiness. There was anorexia and thirst, but neither headache nor vomiting, and the child said he did not feel poorly. The bowels were regular, the urine febrile in type. On the third day a number of rose-coloured spots appeared, not unlike typhoid spots. They were confined to the back and abdomen, and faded in forty-eight hours. The boy was accustomed to wear a shady hat to protect the head and neck, but on account of the warm weather he had that week been allowed to run about bare-legged. The symptoms lasted five days, and subsided completely during a temporary break in the weather, nor have they recurred with the return of the heat.

In the light of Mr. Lynn Thomas's letter it would appear that the case was one of mild sunstroke resulting from exposure to direct sunlight, for an unlimited period, of a part of the body surface previously protected.

The same explanation would hold for those attacks of malaise and feverishness so common in young children during the first week of a seaside holiday.

I should be interested to hear if a rash occurred in any of Mr. Thomas's cases.—I am, etc.,

G. H. HICKLING, M.D., D.P.H., B.Sc.

Marple Bridge, June 15th.

ACUTE GONORRHOEA TREATED BY ELECTROLYSIS.

SIR,—I have read Dr. Russ's article (June 12th, p. 999) on this subject with very great interest. During the early months of the war I had temporary charge of venereal patients in one of our military hospitals, where I used practically the same method of procedure as Dr. Russ.

I was fully convinced of the excellency of the results. Unfortunately I lost sight of the patients before I was quite sure of the permanency of the cure. The only point in which I differ from Dr. Russ—and I believe a most important one—is the pole used at the seat of trouble (the urethra). In using an iodine salt, I always used the negative pole at the urethra (I think I am correct in saying that Dr. Russ uses the positive one), thus driving the iodine ions into the cells of the urethral mucous membrane. If the positive pole is used it would drive the sodium into the tissues, and thus a longer time be necessary for the final successful results of the treatment.

Occasionally I used a weak solution of zinc sulphate, with the positive pole at the urethra—zinc being carried into the tissues—with excellent results.

I only used the treatment in very troublesome and chronic cases, and these were immediately improved—I am, etc.,

D. FYFE,
Captain R.A.M.C.

Glasgow, June 12th.

THE MORTALITY OF APPENDICITIS.

SIR,—After reading Mr. Grey Turner's valuable paper on this subject in your issue of June 12th, it occurred to me that some statistics I recently published[1] in connexion with 1,000 cases of appendicitis at the London Hospital might be of interest. Their special value lies, I think, in the fact that the patients were operated upon by a number of different surgeons including the three surgical registrars, and that therefore they form a more accurate guide to the probable mortality of this condition than if they were the results obtained by an individual surgeon. Another important feature is that the cases all occurred within a period of about thirteen months. My statistics were based upon 1,000 consecutive cases of appendicitis which were operated upon in the London Hospital during 1912 and the first six weeks of 1913.

The total mortality in all cases, including those operated upon during the quiescent period, was 3.2 per cent.

Taking the acute cases first, 693 were operated upon during the attack, 30 died, giving a mortality in cases of operation for acute appendicitis of 4.3 per cent. In 80 cases there was diffuse general peritonitis, 16 died, a mortality of 20 per cent.; in 211 cases there was an abscess, 7 died, a mortality of 3.3 per cent.; and of the remaining 407 cases, 7 died, a mortality of 1.7 per cent. Among these 407 cases there were 123 in which there was peritonitis limited to the lower abdomen, 6 died, a mortality of 4.8 per cent.

There were 2 deaths among the 302 cases operated upon between the attacks, a mortality of 0.7 per cent., but in both cases there was actinomycosis of the appendix, and the patients died from extension of the disease, not immediately after the operation.

The diminution in the mortality compared with that which obtained some ten years earlier is very remarkable. In 1905 I collected 1,000 cases[2] which were operated upon in the London Hospital between January, 1900, and August, 1904. The mortality in all cases was 17.2 per

[1] *Lancet*, January 31st, 1914.
[2] *Trans. Roy. Med. and Chirurg. Soc.*, 1905, vol. lxxxviii, p. 545.

cent., and no less than 26.4 per cent. in the 637 cases operated upon during the attack; this high percentage was partly accounted for by 166 cases of general peritonitis, which had the appalling mortality of 76.5 per cent.

The improved results are largely due to early operation. This is shown by the fact that out of 637 cases operated upon during the attack in the earlier series there were 166 cases of general peritonitis and 431 cases of abscess, whereas in the later series there were only 80 cases of general peritonitis and 211 cases of abscess in a total of 698 acute cases.

Further evidence may be found in the mortality of operations on the different days of the attack; 1.2 per cent. died out of those operated upon within the first twenty-four hours of the attack; 3.9 per cent. of those who were operated upon on the second day; and 8.7 per cent. of those operated upon on the third day; in other words, the mortality in cases operated upon on the second and third days of the attack is three times and seven times as great respectively as the mortality in cases operated upon during the first day of the attack.

But, apart from early operation, the adoption of Fowler's position and the administration of large quantities of saline have proved invaluable, and have saved many lives. In support of this one can point to the mortality of general peritonitis, which has fallen from 76 to 20 per cent.—I am, etc.,

London, W., June 14th. HUGH LETT.

THE PANCREATIC TREATMENT OF RELAPSE MALARIA.

SIR,—Three months ago (JOURNAL, March 6th) you were so kind as to publish a letter from my pen dealing with the above, especially regarding the attitude of the War Office to relapse cases of malaria in Indian soldiers and in British soldiers from India now at the front. In my letter it was pointed out that the work of Major Lamballe, R.A.M.C., on the worst cases of relapse malaria in Burma had demonstrated that the antiquated regulation treatment by means of quinine had been replaced by a thoroughly scientific treatment, which enabled the soldier to return to duty after a very brief course of injections of trypsin and amylopsin. Major Lamballe had no unsuccessful cases, and the fifteen cases treated by him were recorded in the *Journal of the Royal Army Medical Corps* for December, 1913, as well as in the *Medical Record* for November 23rd, 1913.

After the publication of my letter I wrote two further ones to the Under Secretary of State for War, but did not experience the courtesy of even an acknowledgement of either letter. Soon afterwards I met here a civilian Indian medical man who had been engaged in one of the hospitals where Indian soldiers were under treatment. Such relapse malaria cases, so he informed me, were being treated by injections of quinine. In answer to my inquiry as to what happened to the soldier after cessation of this treatment, he replied that he was sent home to India. The treatment I have been urging upon the War Office, hitherto in vain, does not cost anything like so much as the quinine treatment, and it has the enormous advantage that after a few days in hospital the soldier can go back to the firing line perfectly fit for duty. But, of course, one must not forget that my first letter received an official reply on "Form 1," to the effect that the matter mentioned would "receive attention." This may possibly happen when the terms of peace come on for discussion. Strange to say, while it has been quite impossible to move the War Office at home, I have received letters asking for full information regarding this treatment of malaria, with requests that the needful preparations be sent out, from the medical officer of a large tea estate in Assam, from a physician in Southern Rhodesia, who states that for twenty years he has been treating malaria in himself and others there with quinine, but all in vain, from the Malay States, and from the West Indies, not to add from an occasional doctor at home.

I have yet to learn of a single case of failure of this treatment. Unlike the quinine treatment, which so many people regard as infallible, notwithstanding its failures, one does not need profess faith in the ferment treatment, and then after failure resort to arsenic, methylene-blue, or some other quack remedy of German origin. Moreover, I am not seeking any reward from the War Office, and, patriotically, am only asking them to show a little common sense.—I am, etc.,

Edinburgh, June 6th. J. BEARD.

THE TREATMENT OF DIABETES MELLITUS.

SIR,—Dr. William Bramwell raises several important questions in his letter (p. 1029) under the above heading.

1. With regard to the form in which carbohydrates are best administered to diabetics, experience shows that it is not possible to lay down hard and fast rules based upon the percentage composition of different starchy foods, for in practice it is found that some patients tolerate potato better that an equivalent amount of oatmeal, while with others the reverse is true. Occasionally legumes or rice may prove to be more suitable than either potato or oatmeal; as a rule, wheat starch is least well borne. Space forbids a detailed consideration of the reasons for these differences, but I may point out that (*a*) diabetes is not "a disease"; (*b*) the presence of "sugar" in the urine does not necessarily mean that the case is one of pure dextrosuria; (*c*) the manner and extent to which starchy foods are prepared and cooked materially influence their effect; (*d*) it is probable that, contrary to accepted text-book teaching, other carbohydrates than sugar can be absorbed from the alimentary tract, and that some of these are metabolized more completely than sugar by diabetics.

2. It is not such a simple matter to compare the carbohydrate content of vegetables as Dr. Bramwell's letter suggests, for it may have a wide range in the same kind of vegetable according to circumstances. Thus, taking the two he quotes, the carbohydrate content of carrots ranges from 5.9 per cent. to 11.5 per cent., with an average of about 9 per cent.; and turnips range from 2.3 per cent. to 18 per cent., with an average of about 6 per cent. These figures are for the raw vegetables, but when they are boiled and prepared for table in the ordinary way, the carbohydrate averages about 3.4 per cent. for carrots and 0.65 per cent. for turnips, so that the method of cooking as well as the natural variations must be taken into account in calculating their carbohydrate values for a dietary.

3. I am glad to see attention drawn to the "acidity" and "alkalinity" of various foodstuffs, as that is a question which is usually neglected in drawing up a diet scheme for diabetics. It is a mistake, however, I think to attempt to consider individual acids and bases; what is required is the relative excess of acid-forming and base-forming elements. Calculated in this way, the potential alkalinity of tomatoes is 5.6 per cent., of carrots 10.8 per cent., of turnips 2.7 per cent., and of potatoes 7.0 per cent., while the potential acidity of oatmeal is 12.0 per cent., of rice 9.3 per cent., of white bread 7.1 per cent., and of beefsteak 10.8 per cent. With the help of such figures it is possible to arrange a diet so that the "acidity" of one food is counteracted by the "alkalinity" of another, and, when necessary, a surplus of bases can be provided to neutralize an excess of acids formed in the tissues as the result of perverted metabolic processes. It is probable that the effect of some of the carbohydrate "cures," etc., for diabetes is partly dependent upon the relative excess of base-forming or acid-forming elements they contain.

Finally, it is interesting to note that casein, the protein which has been utilized for some years as the chief constituent of many well-known "diabetic" breads and biscuits, and has recently been advocated by Dr. R. T. Williamson as the basis of a special diet for the treatment of diabetes, has now been proved by experiments on phloridzinized dogs to yield a lower proportion of sugar in the diabetic organism than any other protein that was tried. Theoretically, it should also yield a smaller percentage of acetone bodies, etc., than most other protein foods.—I am, etc.,

London, W., June 12th. P. J. CAMMIDGE.

THE EARLY ADMINISTRATION OF VACCINES IN PNEUMONIA."

SIR,—Dr. Wynn's post-graduate lecture on this subject[1] creates the impression that the treatment he discusses is considered rather a novelty amongst practitioners in

[1] BRITISH MEDICAL JOURNAL, March 13th, 1915.

England. This, if it is so, would account for the high mortality-rate of this disease which the English vital statistics present from year to year.

In this small country town in New South Wales I have been carrying out the practice described by Dr. Wynn for the last five years. My experience coincides with his—namely, that the vaccines take effect in direct proportion to the stage at which they are administered, in the same way as does antitoxin in diphtheria. Only this week I was called to a woman, aged 72 years, on the fourth day of a complete right pneumonia. I gave a 50-million dose, which brought the temperature down and started resolution, but she collapsed and died suddenly of heart failure, as I had expected and prognosed.

Dr. Wynn's remarks on dosage must leave an uncertain impression on the minds of those who have not used the vaccines, as the strength of the various brands varies so much. It is therefore wiser for the practitioner to use one brand exclusively, for by so doing he becomes able to judge by experience the proper dose for any individual case, and the amount it will be necessary to give. I have always used the B.W. vaccines, and find that 50 million is, as a rule, sufficient for the first dose. In one very severe recurrent pneumonia, where I had previously employed vaccines with success, I began with 100-million dose, with a further 50 million three days after, as the temperature began to rise again.

An interesting question arises, "Where does all the sputum go to?" The cases seem to clear up at once without the spittoonsful of the nauseous stuff the victims of this disease used to have to get up in the days when I had it. The lung clears up, the râles disappear, and the patient convalesces with extreme rapidity. This ought to interest the pathologist. The death-rate of 20 per cent. recorded in this paper among the British troops in camp is a reproach to the medical staff in attendance, as they must get the cases fairly early, and is strong evidence that vaccine medication in this disease is behind the times in England. My experience of vaccine therapy in acute zymotics such as influenza, pertussis, pneumonia, and the like, may be summed up in the words of Admiral Lord Fisher: "Strike early, and strike hard." Large doses, given early, are necessary to get satisfactory results. If you cannot observe these conditions of administration, do not blame the remedy for not doing what you want it to do.—I am, etc.,

A. G. CRIBB,
April 21st. G.M.O., Millthorpe, New South Wales.

WASTE AND OVER-EATING.

SIR,—The most tangible objections hitherto brought forward in your columns against margarine as a substitute for butter are as follows:

1. Dr. Oliver says that vegetable fats tend to combine with the calcium in our foods, forming calcium soaps, and that thus the body is deprived of organic lime. Dr. Hutchison replies that this is of no account, there being always an excess of calcium in the diet.

2. Dr. Cameron says that margarine does not contain phosphorized fats. Dr. Hutchison replies that the amount of phosphorus in the ash of butter is not worth talking about.

3. You yourself, in your leading article of May 15th on margarine, state that owing to the treatment undergone by the vegetable fats and milk there are practically no *vitamines* in margarine, and that to this extent margarine is inferior to butter. You add, however, that as many other items in the diet can furnish vitamines, this difference is probably not important.

Dr. Oliver says that colour is imparted to margarine, sometimes artificially, and sometimes more naturally through the medium of such oils as pea-nut, soy bean or mustard oil. You yourself, however, stated in the above-mentioned article that to most real butter also which comes on the market some proportion of colouring matter has been added. For my own part, in spite of appetizing considerations, I would put a ban on the artificial colouring of real butter.

Dr. Oliver is justified in pointing out that in the case of margarine (or oleomargarine as he puts it), unlike butter, no definite standard of purity has been set up. As margarine has come to stay, and as real butter simply cannot be bought under present economic conditions (especially as aggravated by the war) by multitudes of our people, I would welcome a commission to thresh out the question of the food value and purity, etc., of margarine, and, if possible, to fix a standard. This is a matter that affects the dietary of our prisons, workhouses, and other institutions as well as of the working classes.

You state in your article that a bill has been introduced into Parliament for exempting "nut butter" from inclusion under the term "margarine," on the grounds that at the time of the passing of the Margarine Act (1887), margarine referred to quite a different product. I do not think, however, it would be right to allow one kind of butter substitute to be called a butter while other kinds had to adhere to the old name of margarine.

If the term "margarine" is thought to have unpleasant associations, then let some other term such as "arti-butter" (short for artificial butter) be invented to include all kinds and brands of butter substitutes or imitations; for example, "X arti-butter," "Y arti-butter," "Nut arti-butter," etc.—I am, etc.,

Criccieth, June 5th. E. LLOYD OWEN, M.D., D.P.H.

BLOODLETTING IN PNEUMONIA.

SIR,—Dr. Balm's communication in the JOURNAL of June 5th, p. 970, telling how he treats some cases of pneumonia, deserves to be noticed. It was the late Professor John Hughes Bennett who first advocated the expectant treatment of pneumonia, and his book on the subject was translated into many languages. I acted as his resident in the clinical wards of the Edinburgh Royal Infirmary, and, by his directions, I occasionally bled patients. Bennett would have bled the cases Dr. Balm describes, and if the idea is original on his part, he deserves credit. Talking about his letter with a medical friend, he told me that he had a patient whose nose bled profusely; he failed to stop it, and the late Dr. Joseph Bell was consulted; he told my friend that his father would, in such a case, have opened a vein, and that was what Dr. Joseph Bell did. He did not take more than two tablespoonfuls of blood, and there was no more bleeding from the nose. Our grandfathers used to be bled every spring, and I have heard Professor Bennett tell of the row of patients waiting to be bled. Languid and lazy before being bled, they felt as if their youth were renewed by the bleeding. I heard Sir T. Clifford Allbutt tell of having had a patient suffering from a pulse of very high tension, who was kept right for a year by one venesection; in these days of so-called sudden death from heart failure or apoplexy, which I look upon as an opprobrium to the physician, it would be well to resort to an annual bleeding again, unless the profession can be converted to the views set forth in my book, which proves that food is the chief cause of disease, and restricts the quantity, as well as changes the quality, of the patient's food. In what has been called "idiopathic anasarca" we have a neurosis, due to what the ancient physicians called plethora, which was just too much blood, and which venesection removed. Such anasarca is almost universal after middle life, and I have found it in some quite young, proving that even the youngest may be injured by the food they eat. Such facts ought to encourage the study of dietetics, which the General Medical Council would do well to make a compulsory subject of examination for every licence to practise medicine.—I am, etc.,

Hawick, June 7th. JOHN HADDON, M.D.

EMERGENCY BILL FOR MENTAL TREATMENT.

SIR,—I saw a letter from Dr. S. E. White in your issue dated June 5th, in which this sentence appears: "Section 13 of the Scottish Lunacy Act, 1886, does not go so far as Earl Russell's Bill and the late Mental Treatment Bill *in permitting one doctor to commit for six months to an institution for the insane* any person whom he alleges to be of unsound mind." I can scarcely think that Dr. White has read the bill which I introduced at the instance of the Medico-Legal Society, since it contains no power in the remotest degree resembling that which she alleges, and does not enable either a doctor or a magistrate, or anyone else, to commit any person anywhere. Both the bill itself and the memorandum attached to it make it perfectly clear that the treatment contemplated is voluntary in every respect.—I am, etc.,

London, E.C., June 9th. RUSSELL.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on June 10th, when Sir Frederic Eve, Vice-President, was in the chair.

The War.

The Secretary reported that the President had left England to carry out duties assigned to him by the Admiralty, and would probably be absent for about three weeks. The Council sanctioned the absence of Mr. C. A. Ballance, who in a letter stated that he was going to Malta by request of the War Office.

Issue of Diplomas.

Diplomas of Fellowship were granted to eight candidates found qualified at the recent examination: Shridhar Bheekajee Gadgil, R. E. Collins, L. C. Rivett, Lalit Mohan Banerji, A. O. Gray, J. R. White, C. J. Marshall, B. T. Edye.

Diplomas of Membership were conferred upon G. M. Jackson and C. W. Fort.

Diplomas of the Licence in Dental Surgery were issued to twenty-three candidates found qualified for the Licence.

Closure of the Museum.

The Council adopted the resolution of the Museum Committee, that the museum be closed until further notice.

Election of Examiners.

The present examiners for the Fellowship and Membership, and for the Diplomas of Public Health and Tropical Medicine, were re-elected.

Council Election.

A meeting of the Fellows will be held at the College on Thursday, July 1st next, for the election of five Fellows into the Council of the College in the vacancies occasioned by the retirement in rotation of Sir Rickman J. Godlee, Mr. C. W. Mansell Moullin, Mr. Charters J. Symonds, and Mr. Charles Ryall (of whom Sir Rickman Godlee and Mr. Moullin have not offered themselves for re-election), and by the death of Mr. C. B. Lockwood.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE annual election of the president, vice-president, secretary, and council was held last week, and the following were elected for the ensuing year:

President.—Mr. F. Conway Dwyer.

Vice-President.—Mr. William Taylor.

Secretary.—Sir Charles A. Cameron.

Council.—Mr. William Stoker, Sir Charles A. Cameron, Sir Lambert H. Ormsby, Mr. R. Dancer Purefoy, Mr. H. Gregg Sherlock, Sir Charles B. Ball, Mr. John B. Story, Sir Thomas Myles, Sir Arthur Chance, Mr. Shepherd M'C. Boyd, Sir Robert H. Woods, Mr. R. Lane Joynt, Mr. R. Bolton McCausland, Mr. Thomas E. Gordon, Mr. Edward H. Taylor, Mr. Alexander J. M'A. Blayney, Mr. R. Charles B. Maunsell, Mr. Trevor N. Smith, and Mr. William I. Wheeler.

Obituary.

GORDON CLUNES McKAY MATHISON,

M.D., B.S.MELB., D.SC.LOND.

THE death of Captain Mathison was briefly announced in the JOURNAL of June 5th. He was appointed to the Australian Military Forces as captain on August 12th, 1914, and to the 2nd Field Ambulance, Australian Imperial Expeditionary Force, on the 20th of the same month. He was reported severely wounded in the operations near Krithea in Gallipoli between May 8th and 12th, and died at the Ras-el-Tin Hospital, Alexandria, on May 20th.

We have received the following tribute to his scientific work, which shows how great a loss medical science has suffered by Captain Mathison's death:

Mathison came to University College in 1907 with the reputation of being the best student that Melbourne University had turned out from its medical faculty. During his tenure of the Sharpey Scholarship he not only maintained this reputation but added to it. A man of untiring energy, keenly interested in all kinds of knowledge, he not only proved himself an efficient teacher, but succeeded in turning out a mass of original work of the highest importance. But it was chiefly by his personality that Mathison left his impression on the college. His width of interest applied not only to ideas, but also to men. He threw himself into the work and play of the students with as much zest as he applied himself to the problems of his researches. He naturally, therefore, took a prominent part in the organization of the medical branch of the O.T.C. Indeed, his readiness to help in all college movements began to occupy so much of his time that it was in his own interest that he was persuaded to apply for a Beit Fellowship and to resign the Sharpey Scholarship in 1910, and the wisdom of the change was shown by the rapid succession of masterly papers, dealing chiefly with the different aspects of the physiology of respiration, that came from his hands.

It was a great loss to the laboratory and to the college when Mathison left the country to take up a post in clinical pathology that had been created for him in his old university. His unfailing good spirits, his readiness to help in any difficulty, and his wideawake knowledge of almost everything that was going on in the college and the medical world, or that had been published in the scientific journals, rendered him a welcome member of the laboratory. We all felt, when we heard that Mathison had gone to the Dardanelles, that he was running a severe risk, for we knew that there would be no likelihood of his staying behind the firing line when there was anything to be done or help to be given in the front trenches or in the van of the assault. Wherever he was he had to be in the game. His death is a personal loss to hundreds of people who knew him and called him a friend. For the School of Medicine in Melbourne, for the science of medicine throughout the world, the loss is irreparable.

The following are the chief papers published by him while in this country:

The phosphorus of urine (*Journ. of Physiol.*, 38, 1909, Proc. of Physiol. Soc., p. 20).

The estimation of phosphorus in urine (*Biochem. Journ.*, 4, p. 233, 1909).

The output of organic phosphorus in urine (*Biochem. Journ.*, 4, p. 274, 1909).

The action of asphyxia on the spinal animal (*Journ. of Physiol.*, 41, p. 416, 1910).

The effects of asphyxia upon medullary centres. The vasomotor centre (*Journ. of Physiol.*, 42, p. 283, 1911).

The effects of potassium salts upon the circulation and their action on plain muscle (*Journ. of Physiol.*, 42, p. 471, 1911).

The cause of the heart-block occurring during asphyxia (*Heart*, 2, p. 54, 1910).

The influence of acids upon the reduction of arterial blood (*Journ. of Physiol.*, 43, p. 347, 1911).

Auriculo-ventricular heart-block as a result of asphyxia (with Thomas Lewis) (*Heart*, 2, p. 47, 1910).

The sensory fibres of the phrenic nerve (*Review of Neurology and Psychiatry*, December, 1912).

The most important of these are those dealing with the effects of asphyxia. In his first paper on the effects of asphyxia in the spinal animal Mathison analysed the part played by oxygen deficiency, and carbonic acid excess respectively. In the papers on the effects of asphyxia on the spinal animal and upon the medullary centres, Mathison succeeded in clearing up the part played in the phenomena of asphyxia by these two factors. He showed that either of them or the introduction of weak organic acids into the blood stream, caused a general excitation both of the medullary and spinal centres, and that the threshold of sensibility of the medullary centres was about five times as low as that for the spinal centres. His results made it almost certain that a common factor, namely, the increased hydrogen ion content of the blood, underlay the action of these different factors upon the nerve centres. Observations on the condition of the heart during these experiments led him to investigate, partly alone, partly with T. Lewis, the causation of the slowing of the heart which may occur during asphyxia. He showed that, apart from vagus excitation, the deficiency of oxygen caused heart-block to occur in consequence of its depressant action upon the auriculo-ventricular connexions. The effects of asphyxia on the circulation led him naturally to the consideration of the conditions of tissue oxidation when there is increased need or diminished supply of oxygen. With the help of Barcroft he therefore investigated the effect of the conditions which occur in asphyxia, namely, increased tension of carbonic acid and increased hydrogen ion concentration of the blood, on the rate at which oxyhaemoglobin gives off its oxygen. He showed that the concentrations of carbon dioxide or lactic acid, such as occur in the tissues during deficient oxygenation, may double the rate at which the arterial blood gives up its oxygen at low oxygen tensions, so that the presence of these acid substances may be an important factor in tissue respiration.

Mathison also investigated the influence of another constituent of the blood which has long been known to have

considerable influence upon the circulation — namely, potassium salts. He showed that the primary fall of blood pressure due to the injection of these salts into the circulation is brought about, as has long been thought, by their action on the heart, which undergoes dilatation, slowing, or complete arrest in diastole, sometimes preceded by partial or complete heart-block. On the blood vessels, however, as well as on the vasomotor centres of medulla and cord, potassium salts have an excitatory effect, so that the intra-arterial injection of a few c.cm. of potassium chloride solution may cause a rise of blood pressure from 100 to 250 mm. Hg, a rise which is obtained even after section or complete destruction of the spinal cord.

One other paper is worthy of mention, although its results were chiefly negative. Sherrington has brought to light the part played in the regulation of the muscular movements by afferent impulses from the muscles themselves. The question arose whether the respiratory movements were in the same way guided by afferent impressions from the diaphragm ascending the phrenic nerves. Mathison found that although many reflex effects could be obtained by stimulation of the central end of the phrenics, showing the existence of afferent fibres in these nerves, these effects differed in no way from those obtained by exciting any other afferent nerve. In no case was any expiratory reflex evoked, so that he came to the conclusion that sensory impulses passing up the phrenic nerve play little or no part in the normal regulation of respiratory movements. In this regulation the afferent impulses passing up the vagus from the lung play the same part as muscle sense impressions do in the regulation of ordinary muscular movements.

Throughout the whole of his work in England Mathison was preparing himself for his future work as a physician, with the intention of applying the technique and knowledge so gained in the investigation of disease in man.

Few if any men in English-speaking countries with opportunities of clinical investigation have come to the task so well equipped by disposition, knowledge, and technical training as Mathison. His death has occurred at the very outset of his career. His work in physiology served only to show the quality of that which we were expecting to get from him in the province of medicine.

E. H. S.

EDWARD WILLIAM SCOTT CARMICHAEL, M.B., F.R.C.S.EDIN.,

ASSISTANT SURGEON, EDINBURGH ROYAL INFIRMARY.

THE death on June 12th of Mr. Edward William Scott Carmichael at his house in Edinburgh has removed a surgeon who was rapidly rising into the first rank of operators in his native city, if, indeed, he had not already reached that high position. He himself had to undergo a serious operation about a year ago, and although it was known among his professional brethren that a fatal issue was to be anticipated, yet Mr. Scott Carmichael's courage and devotion to his work were such that he continued actively to deal with his surgical practice, and with his accustomed success, until little more than a few weeks ago.

He was born in Edinburgh in October, 1873, being the eldest son of Dr. James Carmichael, the well-known specialist in children's diseases in that city; he received his education at the Edinburgh Academy, and later at the university, where in 1895 he graduated M.B., C.M. At the Academy, and later at the University, he gained a reputation both in the classroom and on the field for thorough work and high ideals. The esteem with which he was regarded by his contemporaries was indicated by his election soon after graduation as senior president of the Royal Medical Society, and it is interesting to note that both his father and grandfather had previously occupied the presidential chair of the society.

Before settling down in Edinburgh as an operating surgeon, Mr. Carmichael studied for some time in London, and spent two years in Paris, Berlin, Berne, Greifswald, and in the United States of America. His work, done under Professor Martin in the Universitäts Frauenklinik at Greifswald, showed an early trend towards gynaecological surgery, and this side of Mr. Carmichael's activities was suitably recognized by the Fellows of the Edinburgh Obstetrical Society when they elected him to the secretaryship of that body; but he was also well known as an operator on children and as a general surgeon. He prepared himself for the surgical side of professional work by serving for some time as senior demonstrator of anatomy in the New School of Medicine, Edinburgh, and for some years he was assistant surgeon in the Royal Hospital for Sick Children, and surgical registrar in the Royal Infirmary, Edinburgh. He obtained the Fellowship of the Royal College of Surgeons of Edinburgh in 1899, and at the time of his death he held the posts of lecturer in clinical surgery in the University of Edinburgh, of assistant surgeon to the Royal Infirmary, of senior assistant surgeon to the Hospital for Diseases of Women, and of gynaecologist to the Royal Public Dispensary, Edinburgh. He also acted as examiner in anatomy for the Royal College of Surgeons. He had formerly been assistant medical officer to the City Hospital and to the Deaconess Hospital, Edinburgh. Mr. Scott Carmichael likewise held the rank of Captain, R.A.M.C.(T.F.), in the 2nd Scottish General Hospital.

Notwithstanding all the calls thus made upon his time, as well as the demands which private practice brought, Mr. Carmichael was a frequent contributor to the medical journals. A considerable number of gynaecological articles, all of more than ordinary interest, appeared in the *Transactions of the Edinburgh Obstetrical Society;* he read, in collaboration with Dr. F. H. A. Marshall, a paper on the "Correlation of Uterine and Ovarian Functions" before the Royal Society of London; he contributed, again in association with Dr. Marshall, a paper on "Compensatory Hypertrophy of the Ovary" to the *Journal of Physiology;* and he wrote also on the pathology of gall stones, on hernia in children, on pelvic exudations, on the conservative surgery of ovaries and uterus, on Bier's hyperaemic treatment in the inflammatory affections of the female generative organs, on intracranial haemorrhages, on tumours complicating pregnancy, on acute dilatation of the stomach as a post-operative complication in abdominal cases. One of the last pieces of work which he carried through was the article on the "Acute Abdomen in Children" for the new edition of the *Encyclopaedia Medica*.

Mr. Scott Carmichael was an enthusiastic archer, and a member of the King's Bodyguard for Scotland. He was a golfer also, and in every capacity will be much missed in Edinburgh, where he was highly esteemed and was a great favourite both with his professional brethren and his patients. He leaves a widow and three young children.

DR. AUGUSTE CHAILLOU, *médecin-major de territoriale*, head of the antirabic vaccination service at the Institut Pasteur, has been killed in action by a shell. His name had already been mentioned in the Army Order of the day.

DR. JAMES ELSMIE FOWLER, of Aberdeen, who died on June 12th, at the age of 76, was educated at the Grammar School and the University of Aberdeen, where he graduated M.A. in 1861 and M.D., C.M., in 1865. In that year he settled at Woodside, where he practised for forty-five years. He was a family doctor of the best kind, being the friend as well as the professional adviser of his patients. He took a keen interest in the public life of Woodside, and became its chief magistrate, in succession to Mr. John Crombie, after it had been created a police burgh. During his career he witnessed many changes in the condition of the northern suburb of Aberdeen. In 1865 it had only begun to recover from the depression caused by the failure of cotton mills which employed a large number of hands. Dr. Fowler was wont to recall how at that time all the sewage ran in open channels on the surface of the streets; the community was scarcely ever free of typhoid fever; epidemics also of small-pox were frequent. But before long there came a revival of prosperity in various ways. Dr. Fowler was active in promoting all local improvements, and did much for the sanitary betterment of Woodside. He leaves a widow, a son, and two daughters.

DEPUTY SURGEON-GENERAL HENRY JOSEPH ROSE, Army Medical Department (retired), one of the rapidly dwindling band of Crimean veterans, died, after a short illness, at a nursing home in London, on June 2nd, aged 82. He took

the diploma of L.R.C.S.I. in 1855, and entered the army as assistant surgeon on March 6th, 1855, becoming surgeon in 1867, surgeon-major in 1873, brigade surgeon in 1879, and retiring with a step of honorary rank on October 1st, 1881. He served in the 2nd Queen's and in the West Yorkshire Regiments, and had a long list of war service: Crimea, siege and capture of Sebastopol, medal with clasp, and Turkish medal; second China war, 1860, capture of the Taku forts, actions of August 12th and 14th, September 18th and 21st, advance on and capture of Peking, medal with two clasps; and second Afghan war, 1878–80, storm and capture of Ali Musjid, medal with clasp.

Medical News.

AMONG the Fellows of the Royal Sanitary Institute recently elected are Dr. Julian Arce, Director of the Department of Public Health of the Peruvian Republic, Mr. David Davies, M.P., and Professor Frank Fairchild Wesbrook of the University of British Columbia.

DR. H. MEREDITH RICHARDS, the Vice-Chairman of the Welsh National Health Insurance Commissioners, will open a discussion on Thrift in our Food Supplies at 5 p.m. on Friday, June 25th, at a special meeting of the Society of Medical Officers of Health, to be held at the society's rooms, No. 1, Upper Montague Street, Russell Square. It is hoped that all who are interested in this important question will attend the meeting.

AT the recent examination for sanitary inspectors under the Public Health (London) Act, 1891, held by the Sanitary Inspectors' Examination Board, of the 25 successful candidates (15 females and 10 males), 10 were trained at the National Health Society, 5 at the Royal Sanitary Institute, 4 at the Hackney Institute, 2 each at the Battersea Polytechnic and the Municipal Technical School, Birmingham, 1 at University College, Liverpool, and 1 was in office.

PROFESSOR METCHNIKOFF'S seventieth birthday was lately celebrated very quietly at the Institute Pasteur. Many members of the Russian colony of Paris were present. MM. Darboux and Roux, speaking respectively as representatives of the Institute of France and the Pasteur Institute, reviewed the work done by the Russian scientist. By way of reply, Professor Metchnikoff delivered an interesting address on the prolongation of life.

AT a meeting of the managers of the Royal Infirmary, Edinburgh, on June 7th, a letter was read from Miss Trotter, enclosing a cheque for £2,600, being the first payment in respect of the Royal Infirmary Badge Day Fund. It is hoped that the total amount will be something over £3,000. Votes of thanks to the organizers and to the 2,500 workers on the day were adopted, as also to the officials of the Bank of Scotland, who received and counted the money in the boxes.

UP to June 1st about £1,200 had been subscribed for the monument to be erected in memory of Dr. Emile Reymond, surgeon, senator, and one of the boldest pioneers of aviation in France. It may be remembered that Dr. Reymond was mortally wounded in making a reconnaissance in the early part of the war, but succeeded in getting back to the French lines and making his report before he died. The monument, which is from the chisel of the distinguished sculptor A. Bartholomé, is to be erected at Montbrison, the municipality of which has voted £200 towards the cost. Dr. Navarro, professor in the medical faculty of Montevideo, has sent £20 to the fund.

AT a meeting of the Executive Council of Queensland University the Hon. J. W. Blair (Minister for Education), Dr. Aeneas John M'Donnell, M.D., and Mr. George Woolnough, M.A., were appointed members of the Senate of the University of Queensland in the places of Sir William MacGregor and Dr. Eugen Hirschfeld (resigned), and the late Hon. A. H. Barlow. Dr. Aeneas M'Donnell, who comes of an old Scottish family, is a well-known doctor of Toowoomba and a graduate of Sydney University. Dr. M'Donnell takes a keen interest in educational matters, and besides being a representative of the medical profession, he should add strength to the Senate by his energies in other directions. It may be recalled that Sir William MacGregor, the late Governor now retired, is also a distinguished member of the profession.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Mediscera, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

A. D. asks where he can obtain (1) literature upon systems of breathing exercises intended to remedy adenoids and mouth breathing; (2) cheap woven slippers for scholars to change at school while their wet boots are being dried.

F. S. asks for information as to results of specific treatment—for example, didymin (testicular substance)—of premature sexual impotence, or reference to literature dealing with same.

LETTERS, NOTES, ETC.

ANONYMOUS COMMUNICATIONS.

WE find it necessary again to remind correspondents that no notice can be taken of communications unless verified by the writer's name, not necessarily for publication. Such communications are not preserved.

TREATMENT OF CEREBRO-SPINAL MENINGITIS.

LIEUTENANT E. N. RUSSELL, R.A.M.C. (Aylesbury), writes: As there seems to be a considerable amount of cerebro-spinal meningitis in this country at the present time I think I should let it be known that a colleague of mine got excellent results from the use of soamin hypodermically during the serious epidemic in British East Africa. He took the disease himself and was treated with soamin. He made a good recovery.

NERVOUS AND MENTAL SHOCK IN THE BASE HOSPITALS IN FRANCE.

DR. J. REID (London) writes: I trust that Dr. Turner's paper (JOURNAL, May 15th) will not give an impression that the mental effects are special to the war. In 1885 I attended four young men as the result of a "buggy" accident. A schoolmaster had a head injury of a trivial character; another showed no effects; of two brothers one had trivial, the other no external effects. When seen, the last—the younger brother, about 20—was restless, said "Get away," would answer nothing rationally, and was very impatient when I tried to examine him (chest, etc.). In less than ten days he was quite rational and intelligent, with no signs whatever of the accident. The treatment was on the lines suggested by Dr. Turner. The father of the two young men, a farmer, had had an accident in his youth and suffered from occasional headaches, which he attributed to neglect of treatment at the time. It is difficult to account for this mental case. I think the retina was "gorged." I cannot imagine that it is all functional, but rather that vascular disturbance plays a part.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

The Croonian Lectures

ON

TRYPANOSOMES CAUSING DISEASE IN MAN AND DOMESTIC ANIMALS IN CENTRAL AFRICA.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON,

BY SIR DAVID BRUCE, C.B., F.R.C.P., F.R.S.,

SURGEON-GENERAL, A.M.S.; LATE DIRECTOR OF THE ROYAL SOCIETY'S COMMISSION ON SLEEPING SICKNESS.

LECTURE I.—CLASSIFICATION OF TRYPANOSOMES: TSETSE FLY.

I INTEND to confine myself in these lectures to a consideration of the trypanosomes causing disease in man and domestic animals in Central and Southern Africa, since it is only in Zululand, Uganda, and Nyasaland that I have had the opportunity of studying these parasites in the field and under natural conditions. The conditions, however, which obtain on the East and West Coasts of Africa between 20 deg. N. and 30 deg. S. latitude are much the same as those which are found in the central parts, and it is probable that the same trypanosome species are found throughout. So that in describing the species found in our own colonies, it may be assumed that all the important pathological species found in Central Africa are being dealt with, although in other places they may be known by other names.

The central region—the tropical or equatorial—corresponds with the distribution of the tsetse flies, and the trypanosomes causing disease in this region are carried from sick to healthy animals by various species of this genus of flies. In the north of Africa, outside the range of the tsetse flies, two trypanosome diseases are found, one of the horse (*dourine*) and another of camels (*surra*), the former conveyed from sick to healthy horses by contagion, the latter almost certainly by large biting flies, the so-called horse flies, or *Tabanidae*.

GEOGRAPHICAL DISTRIBUTON.

The wide distribution of these haematozoa is shown in the accompanying map of the world.

It will be seen that these blood parasites are found in most parts of the world—from South America through Africa, Southern Europe and Persia to India, Burma, China, and the Philippines.

In Africa there is a broad equatorial band, representing the trypanosome diseases carried by tsetse flies. It shows the distribution of *Trypanosoma gambiense*, the cause of the ordinary or Congo sleeping sickness, and of *Trypanosoma brucei*, the cause of nagana in animals and the Rhodesian and Nyasaland form of sleeping sickness or trypanosome disease in man.

Further north out of the tsetse fly region we have *Trypanosoma equiperdum*, the cause of dourine, which is widely distributed in Europe.

The area of *Trypanosoma evansi* or surra spreads out of Africa along the camel caravan routes into India and China.

It is unnecessary for me to give an account of the early history of these parasites—it can be found in most text-books; suffice it to say that the first trypanosomes were discovered some seventy years ago in the blood of fish and frogs. These were of interest to zoologists, but having no obvious bearing on the causation of disease did not attract the attention of medical men. Thirty years afterwards, in 1877, Surgeon Timothy Lewis, of the Army Medical Department, discovered in Bombay the trypanosome of the common rat, which was afterwards named after him—*Trypanosoma lewisi*. Three years later, in 1880, Dr. Evans, chief of the veterinary staff in Madras, discovered what were supposed for a long time to be similar flagellates in the blood of horses suffering from surra. It is from these two discoveries that we must date the beginning of the study of trypanosome diseases.

CLASSIFICATION OF THE AFRICAN TRYPANOSOMES.

In classifying the African trypanosomes I have striven for simplicity, as it seems better for practical purposes to divide them into a few well defined groups and species rather than to try, with our present incomplete knowledge, to subdivide them more minutely.

The three characters mainly relied upon in this classification of trypanosomes are, in the first place, their morphology; secondly, their pathogenic action on animals; and, thirdly, their mode of development in the tsetse flies.

At one time it was hoped that cultivation on artificial media might be used as an aid to classification, but up to the present this hope has not been fulfilled. Other methods, such as cross-inoculation experiments and serum diagnosis, I do not consider of much use in making a simple, workable, practical classification such as will be found of use for diagnosis in the field. If we admit them into our methods, the multiplication of species must proceed to an unmanageable degree.

I. *Morphology.*

The morphology is of great importance in classification. The trypanosomes are first examined in a fresh living condition, to ascertain their general appearance and kind of movement. There is a good deal of difference in the range of movement in different species. Whereas many vibrate about one spot and show little power of wider movement, others are capable of hurling themselves from one point to another with great power and rapidity.

But, of course, it is after the trypanosomes have been fixed and stained that their characteristics can be made out best. For example, the length and breadth of a fixed and stained trypanosome may be very useful in identifying it, and, in addition to the length and breadth, a description of the contents of the cell, the nucleus, micronucleus, undulating membrane, and flagellum, may all help in the differentiation of species.

II. *Susceptibility of Animals.*

The second means at our disposal for the classification or differentiation of trypanosomes—namely, their pathogenic effect on various experimental animals—must be used with caution.

For example, it is well known that their passage through a series of animals of the same species usually exalts their virulence towards that animal. For instance, the nagana parasite after passage through white rats for many generations kills the rats in as short a time as two days; whereas the naturally wild strain of nagana only kills the same animals on an average in twenty or thirty days.

On the other hand, another species of trypanosome in its natural wild state kills monkeys in a few days. But if it is first passed through a goat, and the attempt is made to infect a monkey with the goat's blood, the experiment always fails. Passage through the goat has lowered the virulence of the parasite towards the monkey.

But if a trypanosome is caught in its wild state and straightway put through a series of experimental animals, the result is, in my opinion, of some use in differentiating species. For example, *Trypanosoma brucei* will be found to be much more virulent and kill off more quickly the various laboratory animals than *Trypanosoma gambiense*.

Some trypanosomes are deadly to horses and cattle and harmless to other animals, such as dogs, monkeys, and rabbits, while others show a marked preference for some particular species of animal, such as the domestic pig.

III. *The Development in the Invertebrate Host.*

The third character of use in classification is the mode of development in the tsetse fly or invertebrate host.

As already mentioned, all the pathogenic trypanosomes of man and his domestic animals found in Africa, with the exception of the two northern species, pass through a specific cycle of development in the tsetse flies. The mode of development in the tsetse flies is different for different species of trypanosomes, and this may be made use of in classification, and, in truth, is one of the best means at our disposal. It is not known whether the North African species are capable of developing in tsetse flies. It is possible that, on account of disuse, they have lost the faculty, if they ever had it. It would certainly be an interesting experiment to try to pass them through the "fly."


GEOGRAPHICAL DISTRIBUTION
OF
TRYPANOSOME DISEASES.
Trypanosome diseases transmitted by tsetse flies
Congo Sleeping Sickness
Nagana
Mal de Caderas
Surra
Dourine
GREENLAND
Iceland
EUROPE
AFRICA
INDIA
JAPAN ISLANDS
PHILIPPINES
NEW GUINEA
AUSTRALIA
SOUTH AMERICA

CLASSIFICATION INTO THREE GROUPS.

The chief Central African pathogenic trypanosomes may be divided into three groups:

Group A.—*Trypanosoma brucei* group.
1. *Trypanosoma brucei.*
2. *Trypanosoma gambiense.*
3. *Trypanosoma evansi.*
4. *Trypanosoma equiperdum.*

Group B.—*Trypanosoma pecorum* group.
1. *Trypanosoma pecorum.*
2. *Trypanosoma simiae.*

Group C.—*Trypanosoma vivax* group.
1. *Trypanosoma vivax.*
2. *Trypanosoma caprae.*
3. *Trypanosoma uniforme.*

These names probably represent most of the principal pathogenic trypanosomes discovered up to the present time in Central Africa. For the sake of completeness I have placed the northern species, *Trypanosoma evansi* and *Trypanosoma equiperdum*, in the first group, as they seem by morphology and their action on animals to belong there. Each group is distinguishable or separable by well-defined characters.



Fig. 1.—*Trypanosoma brucei*; Zululand, 1913.

GROUP A. *The Trypanosoma Brucei Group.*

The species forming this group are all more or less polymorphic, varying in size and shape from short and stumpy forms without free flagella, to long and slender forms with free flagella (Fig. 1). The cytoplasm contains numerous dark staining granules. The micronucleus or kinetonucleus is small, and is situated, as a rule, some distance from the posterior extremity. The undulating membrane is well developed and thrown into bold folds. *Trypanosoma gambiense* is another member of the same group (Fig. 2).



Fig. 3.—*Trypanosoma pecorum.*

The members of this group may be said generally to affect many different species of animals, as, for example, man, horses, cattle, dogs, and most of the smaller experimental animals.

The two Central African members of the group, *Trypanosoma brucei* and *Trypanosoma gambiense*, develop in the tsetse flies in the same way. At first the development takes place in the intestine, afterwards the parasites pass into the salivary glands, by way probably of the proboscis, and there complete their development into infective forms. This is the only group in which the salivary glands are invaded.

This group can be separated from the other groups by shape alone.

GROUP B.—*The Trypanosoma Pecorum Group.*

The trypanosomes are small and monomorphic (Fig. 3). The cytoplasm is non-granular. The micronucleus is prominent, subterminal, and often seems to project beyond the margin. The undulating membrane is fairly well developed.

Trypanosoma simiae is another example of this group (Fig. 4).

In Group B the cycle of development in the tsetse fly begins in the intestinal tract; afterwards the flagellates pass forward into the proboscis of the fly, and finally reach the salivary duct or hypopharynx, where they complete their development and become infective. The difference between Group A and Group B is that in the latter the salivary glands are never invaded. There are only two species at present included in this group—*Trypanosoma pecorum* and *Trypanosoma simiae.* The former gives rise to the most important trypanosome disease of cattle in Africa, while the latter is remarkable for the rapidity with which it kills the domestic pig.

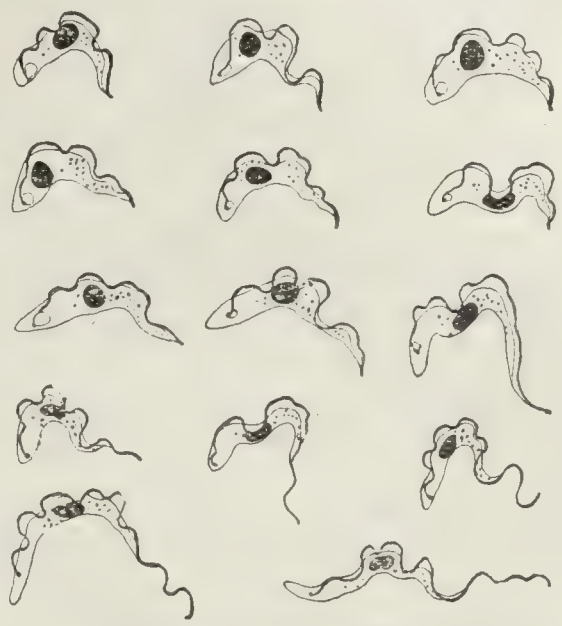


Fig. 2.—*Trypanosoma gambiense*, Dutton.

GROUP C.—*The Trypanosoma Vivax Group.*

The species making up this group are monomorphic, and remarkable for the extreme rapidity of their movements. The posterior extremity is enlarged. The cytoplasm is clear and hyaline. The micronucleus is large and terminal, and the undulating membrane is little developed and simple. This species only affects horses, cattle, goats, and sheep. Monkeys, dogs, rabbits, guinea-pigs, and rats are refractory.

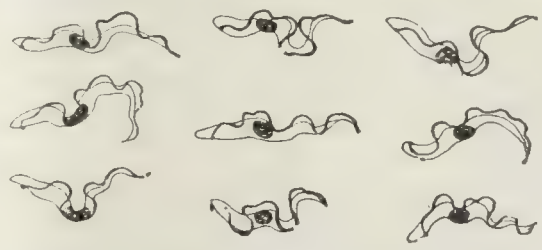


Fig. 4.—*Trypanasoma simiae.*

The cycle of development in Group C differs from that in Groups A and B in that it takes place at first only in the labial cavity of the proboscis, and later in the salivary duct or hypopharynx. No part of the cycle takes place in the intestinal tract or in the salivary glands. In addition to *T. vivax* (Fig. 5) this group contains *Trypanosoma caprae* (Fig. 6) and *Trypanosoma uniforme* (Fig. 7).



Fig. 5.—*Trypanosoma vivax*, Ziemann.



Fig. 6.—*Trypanosoma caprae*, Kleine.

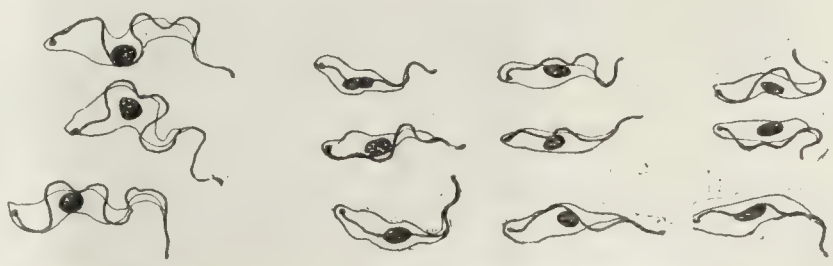


Fig. 7.—*Trypanosoma uniforme.*

These three groups are well marked, and it is fairly easy by microscopic examination alone to name what group a trypanosome belongs to when seen in the blood of the vertebrate host or even in the tsetse fly.

DESCRIPTION OF THE TSETSE FLIES.

Having now noticed the various types of pathogenic

trypanosomes found in Central Africa, I will describe briefly the most important of the tsetse flies of the same region. In tropical Africa these flies play as important a part in the causation of these diseases as the parasites themselves, and therefore, before proceeding to describe



Fig. 8.—*Glossina morsitans.* (× 2.)

any of the individual species of trypanosomes, it will be well to have a general idea of the tsetse flies and their habits.

General Characters.

Glossina morsitans is a dull coloured, ordinary looking fly (Fig. 8), about half an inch in length. The strong proboscis stands out horizontally in front (Fig. 9). The wings are long and closed over each other, like the blades of a pair of scissors, when the fly is at rest. The dorsal aspect of the abdomen is marked by five more or less distinct transverse bands.

It is important to understand the structure of the proboscis, as this plays an important part in the development of Groups B and C. In Fig. 9 a side view and a transverse section of the mouth parts are given. In the side view the mouth parts—the labrum, the labium, and the hypopharynx or terminal duct of the salivary glands—are separated. This is done by slipping the point of a fine needle between them at the base and running it towards the tip. This separates the labrum from the labium, and as a rule the hypopharynx springs up from the hollow of the labium and appears between the two parts as an extremely delicate transparent tube.

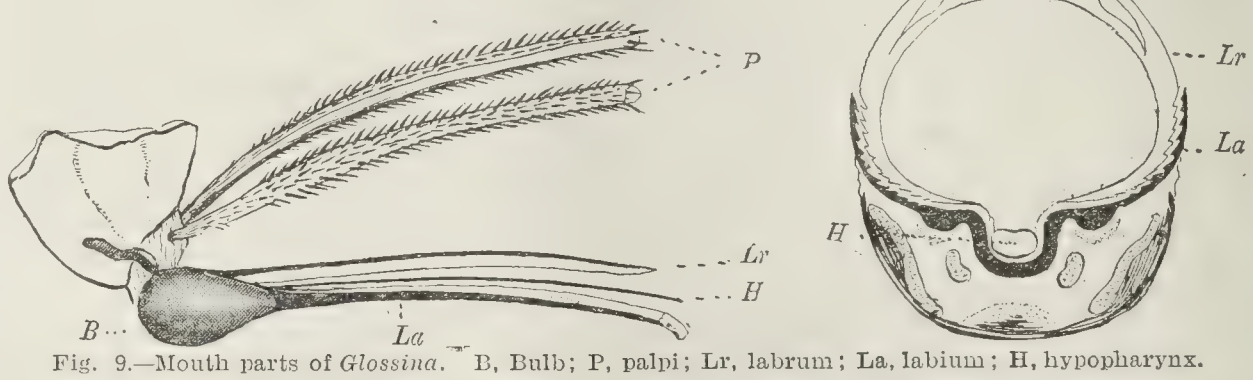


Fig. 9.—Mouth parts of *Glossina*. B, Bulb; P, palpi; Lr, labrum; La, labium; H, hypopharynx.

In the transverse section the parts are seen in position, the labrum and labium joined together form a tube through which the blood is drawn in the act of sucking, and known as the labial cavity; and the delicate terminal duct of the salivary glands or hypopharynx lying in the hollow of the labium, and opening near the tip of the proboscis. The salivary glands are long convoluted organs lying chiefly in the abdominal segment of the fly.

When I arrived in Zululand in 1894 there was only one species of tsetse fly—*Glossina morsitans*. At the present time some fourteen or more different species have been named.

These are divided into four groups by Austen—the *Glossina palpalis* group, the *Glossina morsitans* group, the *Glossina fusca* group, and the *Glossina brevipalpis* group. For our purpose it will be sufficient to describe the principal species from the first two groups, *Glossina morsitans*, the carrier of *Trypanosoma brucei*, and *Glossina palpalis*, the carrier of *Trypanosoma gambiense*. But I may mention here that probably all the tsetse flies are capable of acting as carriers of all the pathogenic trypanosomes—at least, in laboratory experiments. What makes one species of fly the especial carrier of a particular trypanosome is probably bound up in the natural history, the habits, and distribution of the fly.



Natural size.

I. *Glossina morsitans.*

Glossina morsitans is the most widely distributed of the tsetse flies; its range extends from Senegambia, 16 degrees north latitude, in the north-west, to Southern Kordofan, 12 degrees north, and Southern Abyssinia in the north-east, and thence southward to Bechuanaland, the North-eastern Transvaal, and Zululand.

Habitat.

Glossina morsitans is the species made familiar by the writings of travellers like Livingstone and hunters like Gordon Cumming. Until a few years ago it was the only species of tsetse fly of which the habits had been studied, and when the word "tsetse" was used it was this species which was referred to.



Fig. 10.—Habitat of *Glossina morsitans.*

Its habitat is the dry thorny scrub which covers extensive areas of tropical Africa. It is not found along the banks of lakes or rivers, and, in fact, seems to have a distaste for water. It requires shade, however, and is never found on open plains where it would be exposed to the heat of the tropical sun. In the "fly country" there are thickets, undergrowth, and trees which supply the requisite shade (Fig. 10).

Habits.

These flies begin to bite soon after sunrise if the day is fine, but usually disappear during the hottest hours, coming out again towards evening when it becomes cooler. About sunset they are often particularly active.

Moving objects, such as a motor cycle, seem to attract them greatly, and the cyclist is often surrounded by a cloud of them attacking him like an angry swarm of bees. In these circumstances there is often a great disparity in the numbers of the sexes, the males predominating. This is probably due to the males attaching themselves to a moving object in order to mate with the females, which are attracted by the same movement, and come out of their cover to feed. Tsetse flies are very sensitive to weather conditions. If it rains or blows they usually remain hidden. They diminish in numbers during the dry season, and are most numerous towards the end of the rains.

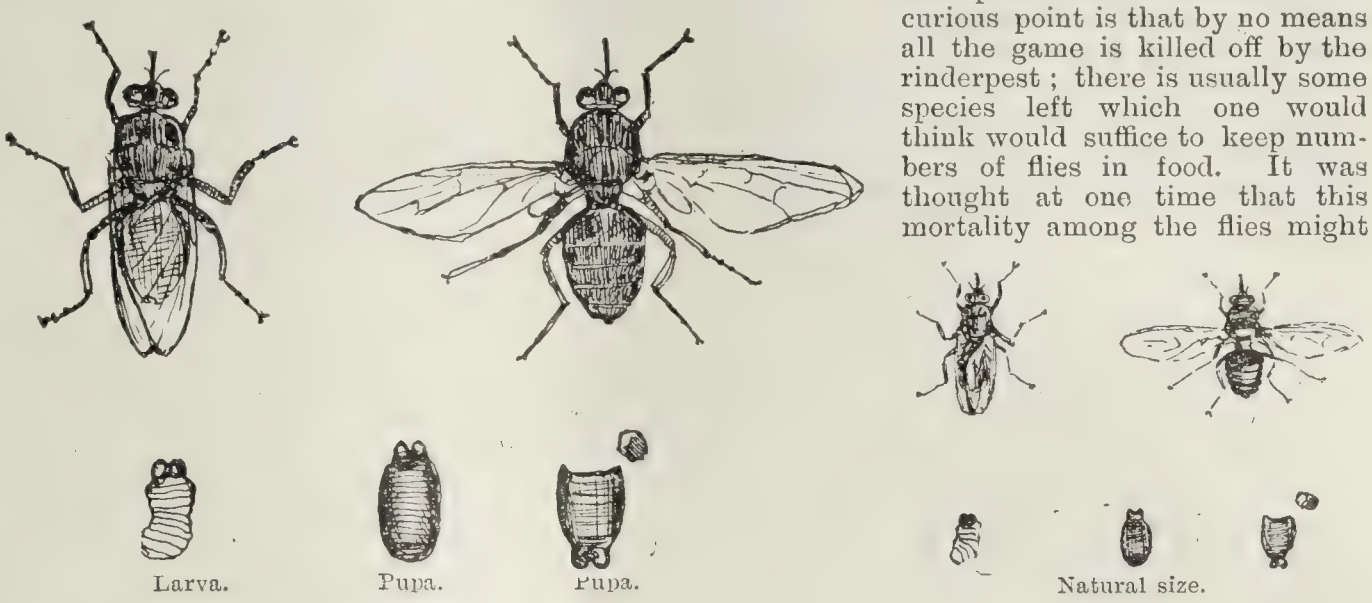


Fig. 11.—*Glossina palpalis.* (× 2.)

Food.

As to the food of *Glossina morsitans*, in one experiment 500 flies were caught in the sleeping sickness area, Nyasaland, and examined as to the contents of their intestine. It was found that 288 (or 57.6 per cent.) contained mammalian blood in a recognizable state. Measurements of these were made and the small type of blood cell was found to predominate, such as occur in the hartebeeste, waterbuck, and other antelope. In only 3 cases were nucleated red blood corpuscles found. From this experiment it appears that, at least in that district, the principal food of *Glossina morsitans* is the blood of antelope. Tsetse flies never suck the juices of fruits or vegetables, as is usual in the case of other biting flies such as mosquitos.

The question is sometimes asked as to how often tsetse flies feed under natural conditions. From experiments with flies in the laboratory it was found that blood is recognizable in stained specimens for two and even three days after a feed, but not beyond the third day. This means, roughly, that half the 500 flies examined had fed within at most three days of their capture; it results that flies feed under natural conditions once in five or six days.

It is rather an interesting point as to whether these flies could maintain an existence on the smaller mammals and birds if the big game disappeared. They are quite ready to feed on the smaller animals, but most of these, such as monkeys, shrews, the mongoose, and rats, are usually too quick, and snap up the fly before it has had time to feed. Another curious fact seems to be that when rinderpest sweeps through a country, the tsetse flies disappear with the game, and only return when the game has again multiplied to a fair extent. The curious point is that by no means all the game is killed off by the rinderpest; there is usually some species left which one would think would suffice to keep numbers of flies in food. It was thought at one time that this mortality among the flies might be due to some poisonous quality in rinderpest blood, but when flies were fed on rinderpest animals nothing untoward happened.



Fig. 12.—Habitat of *Glossina palpalis.*

Act of Feeding.

As a rule the fly feeds very rapidly, fully distending itself in half to one minute after it has punctured the skin.

Reproduction.

Lastly, we come to the most important function of the tsetse flies—that of reproduction. The genus *Glossina* is distinguished from most of the other diptera in being pupiparous.

The female produces a single whitish or yellowish coloured larva about once in ten days. This is retained in the oviduct until it is fully grown. As soon as the larva is born it creeps at once into the soil, or into a crack in the earth, or among leaves and débris, and within a few hours has changed into a hard black puparium. The length of time the pupa remains quiescent depends mainly on the temperature. At a temperature of 85° F. the fly will emerge in twenty-three days, at 70° F. in thirty-five days, and at 65° F. in about sixty days.

These larvae are deposited all over the "fly" country, but there are certain positions and conditions which are favoured. The female usually chooses a spot with plenty of shade. A favourite site for her to take up her abode is on the under surface of a tree which has fallen, and which remains at places some inches above the ground. Another condition is that the breeding place is near a native or game path. This may be to enable the mother to procure

her food easily, or it may be some instinct in favour of the offspring which enables the newly-emerged fly to obtain a feed within twenty-four hours of birth.

II. *Glossina palpalis.*

This is also a widely distributed species. It ranges on the west coast from the Senegal River—16 deg. N. latitude—to Angola. It extends eastwards into the Bahr el Ghazal. The eastern boundary of the species follows the valley of the Nile, the eastern shores of Lake Victoria and Lake Tanganyika. From the south end of the latter lake the boundary follows the frontier between the Congo Free State and Rhodesia in a south-westerly direction to Angola.

Habitat.

This species (Fig. 11) differs from *Glossina morsitans* in being a lover of water. It frequents the edge of lakes and rivers, where there is clear water and plenty of shade; this shade consists of thick jungle with high trees and dense undergrowth, which grows to within a few feet or yards of the water's edge (Fig. 12). This tsetse fly is never found on open beaches backed by grass plains, even although there may be some low scrub near the water. It is not found in reed beds or papyrus swamps, and as most of the Uganda river valleys are choked with reeds, it follows that the tsetse fly does not ascend these rivers; in short, it is never found away from water, except in cases where it has followed man or animals for a mile or so for the purpose of feeding. In this way it is brought much more into contact with man than *Glossina morsitans*, which is a dweller in desert places, the haunt of wild animals.

Glossina palpalis is a frequenter of watering places on lakes or rivers, or water holes in the bush, where the natives come for water, and where as a rule, on account of the density of the human population, there is little game.

Habits.

Glossina palpalis has the same habit of biting by daylight as *Glossina morsitans*. It is not seen until the sun is up. On a fine morning the flies may be active as early as seven or half-past seven. On dark shady spots on the lake shore they did not become troublesome until about ten o'clock, when the sun was well up. In cloudy or windy weather few flies are abroad. They have a rapid flight, and suddenly and silently flop on to the skin, causing so little sensation that the sharp stab of the proboscis is often the first thing felt. Sometimes they insert the proboscis so painlessly that the attention is not drawn to the spot. As a rule little or no irritation follows the bite, no itching or swelling or reddening of the skin. But if there have been many bites about the same place there is often a good deal of swelling, induration, redness, and irritation, which lasts for several days, and, as is natural, some individuals are much more affected than others.

Feeding.

As in *Glossina morsitans*, the time taken by the fly in filling itself with blood is short. Stuhlmann weighed the flies before and after feeding and found that they took in—the males one and a half times their own weight in blood, the females sometimes as much as two and a half times.

Food.

Under ordinary circumstances, in populous districts it may be assumed that man supplies most of its food, and it is considered by some that this fly thrives better on human blood than on any other. In captivity, however, it feeds readily on any warm-blooded animal, especially on birds, and, if hungry, may even be induced to feed on cold-blooded animals, such as the lizard or frog.

But, in the absence of man, it may be remarked that as this species is a dweller on the banks of rivers and lakes, it comes much more in contact with large birds—cormorants and other water-fowl—and reptiles—crocodiles and monitors—than *Glossina morsitans*.

In Uganda before the natives were removed from the lake shore and islands they doubtless formed the chief supply of blood for the fly. On the other hand, after the natives had been removed inland or in places where there was no native population, the fly had to adapt its diet to the available supply. One experiment made by us in Uganda in such a place showed that only 17 per cent. of the flies had fed on mammalian blood, and 83 per cent. on avian or reptilian, and as far as could be made out twice as many of the flies had fed on reptiles as on birds. In such places the large lizard or monitor seems to be a favourite dish with this species.

Reproduction.

I need not go fully into the reproduction of *Glossina palpalis*, as the process is the same as in *Glossina morsitans*. One point may be mentioned, however, and that is that *Glossina palpalis* in Uganda has a marked predilection for certain breeding grounds; these are sandy beaches along the lake shore backed by a belt of vegetation.

The breeding grounds on Damba Island, for example, where some thousands of pupae were collected every month for the laboratory, is formed of coarse sand and pebbles. It is four or five feet above the level of the lake, and the bush comes to within a few yards of the water's edge. The pupae are found as a rule an inch or two below the surface of the sand at or near the edge of the belt of vegetation. For a long time we failed to find any wild pupae, although days were spent in turning over soil and decaying vegetable matter in those places where the fly most abounds. At last their breeding haunts were discovered by Captain Fraser, R.A.M.C., to be in patches of sand at the edge of the lake. After this secret was discovered there was no lack. Our natives found them in large numbers. One day they brought up as many as 7,000, and as I had promised a cent for each pupa brought up to the laboratory I had to pay out nearly five pounds for them.

These wild pupae proved to be much healthier than those obtained from flies in captivity. The flies bred from pupae born in the laboratory rarely showed any marked vitality. On the other hand, the flies hatched out from the wild pupae found on the lake shore were fairly strong and vigorous, and lived in captivity for a couple of months or more. In conducting experiments with flies it is very necessary to work with laboratory-bred ones, as the wild flies may be naturally infected with several species of trypanosomes. Numerous experiments went to show that there is no hereditary transmission of trypanosomes in tsetse flies, and there is no reason to believe that flies become infected by contact with infected flies or from fouled cages. Any trypanosomes found in laboratory-bred flies may therefore be considered to be derived from the infected animal they were fed upon.

It will be seen, then, that the two principal groups of tsetse flies—the *morsitans* group and the *palpalis* group—differ from each other in well-marked characters, the former living in wild, unpopulated districts, and trusting to the wild game for their food; the latter along rivers and lakes which are usually thickly populated, and trusting to man for a food supply, or, in his absence, living on the large reptiles, birds, and antelope which frequent these places.

Length of Life of Tsetse Flies.

The duration of life of tsetse flies is an important question, but one difficult to answer. The importance comes in when we have to consider how long a place may remain dangerous from the presence of infected flies.

I remember at a meeting of the Royal Society, when the question came up, that the late Lord Avebury said he did not see any reason why a tsetse fly should not live for years. He had himself known an ant which lived in captivity for some fifteen years.

Carpenter tried to solve the question by marking large numbers in a given spot, and finding out how long the marked flies could be recaptured. One male was caught 199 days after it had been marked. Kleine states that he kept a fly in captivity for 227 days. If we put the life of the fly, then, at anything up to a year we may not be far out.

IT is intended shortly to add to the Oxford Medical Publications a serious of Oxford War Primers of medicine and surgery, and it is hoped that the earliest will appear within the next few weeks. They will be written mainly by members of the medical profession holding commissions in the naval and military services. Probably among the first will be volumes by Mr. Robert Jones of Liverpool, Major, R.A.M.C.(T.), and Mr. D'Arcy Power, Lieutenant-Colonel, R.A.M.C.(T.), who will edit the series.

WHAT MANKIND MAY HAVE LOST THROUGH EVOLUTIONARY DEVELOPMENT:

A MORAL ENTHYMEME.

BY W. A. HOLLIS, M.A., M.D., F.R.C.P.,
VICE-PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.

THE highly cultured product of twentieth century civilization—the moral philosopher—is accustomed to preen himself upon his glorious descent from what was a few million years ago a mere lump of primaeval protoplasm. He as a rule overlooks the compensatory advantages the leisured and lowly strollers along the broad road of evolution still enjoy. In the following paper I shall briefly recapitulate certain losses of fleshy attributes which mankind have presumably incurred, and the retention of which, at the present juncture, would in many cases have been unquestionably advantageous.

Rejuvenescence of Hydra.

Our flesh under favourable conditions possesses extensive powers of repair after wounds. These powers are, however, more or less restricted to approximating by fibrous or scar tissue the edges of gaps left by injury. Fibrous tissue is, as we know, the framework upon which our organs are suspended. It is a comparatively simple network of cells and fibres, and in its yoking functions it in many respects resembles the mesoglial tissue of the freshwater polyp—the hydra. Here the resemblance ceases. The little zoïd, whose ancestry extends (*pace* Debrett) presumably to palaeozoic times, has had to fend for itself throughout those many millennia; and from its own viewpoint it has not done badly. Evolution seems to have passed it by. The tubular body could not have been figured more simply than it is at present. Yet naturalists find this living jelly-bag to be endowed with extraordinary powers. It can be cut into a number of pieces, and provided both ectoderm and endoderm are represented, each piece will give rise to a complete hydra. Such vitality must on occasions be very serviceable.

If by mischance it loses the tentacular ring—the analogue of a head in some animals—it neither dies nor becomes hysterical, as certain excitable people do when they lose that seat of intelligence. No, it simply sits tight and grows another.

Regrowth of Lost Limbs by Amphibia.

The most enthusiastic supporters of the Darwinian theory of man's descent must admit that our relationship to the present-day coelenterate although possible is by no means proved. When, however, we attempt to trace our ancestry some few millions of years subsequently, we are much assisted in the investigation by noting the developmental stages of the human embryo, and by comparing these structural changes with anatomical peculiarities found in other members of the animal world. During the fourth week the human embryo possesses branchial clefts and arches, the latter surrounding oesophageal pouches, all strongly suggestive of aquatic life. Many of these relics of a far distant heritage are even now met with in both panel and non-panel patients. They are then distinctly abnormal, and, as pathological entities, more often than not come under the surgeons' knives. It was not always so, and we may doubtless assume that there was an era when these clefts and arches were necessary to the well-being of amphibian man, when he perchance led the life of the salamander and newt, "dreaming the happy hours away" at the bottom of some darksome pool. To compensate for this sloppy existence amphibia have wisely brought down certain fleshy attributes, doubtless from their mesozoic ancestors—attributes of which we may envy them the possession. One of the most important of these is the power of renewing a lost limb. Other members of the animal world also have this privilege, notably crustaceans. In these days of strife and stress, when fire and water play havoc with men's lives and limbs, limb regeneration and subaqueous respiration would be of inestimable value.

Renewal of Skin.

Ecdysis, or the ability to get rid of the outer skin at intervals, is a physiological operation regularly exercised by many animals. Among vertebrates it appears to have fallen into disuse. A few, however, still retain the power, and among them the amphibia. Ecdysis is closely associated in crustacea, and probably in other creatures, with the privilege of regrowing a lost limb. The limb bud rapidly expands when the crustacean moults, and it soon attains the size of the full and complete limb. Apparently re-equipment with a new skin meant in certain cases something more than the assumption of a bran-new toggery. Besides the removal of blemishes, of abrasions, corns, and so forth, the moulting accelerated the regrowth of a lost limb. Civilized man who persistently removes an uncertain amount of scarf skin with his morning tub may be said to change his skin at intervals. Still, this piecemeal removal is unsatisfactory in many respects, and but poorly compensates humanity for the loss it sustained when its ancestors perchance ceased to cast off their old skins in order to drape their bodies in new ones.

A Third Eye.

Deep down in our brains, hidden amidst the fibres of the thalamencephalon, is a small body even now occasionally named the "pineal gland." It is regarded by naturalists with good reasons to be a sort of residual scrap-heap of what was once a functionally perfect median eye. Although the hot-headed phylogenic forbears of man long ago buried the remnants of the eye beneath the convolutions of a swollen brain, reptiles still have a "pineal eye" near the surface of the brain. Possibly the mesozoic ichthyosaurus, in whose fossilized skull a large cup-shaped opening (parietal foramen) is frequently to be traced, may have been a three-eyed monster, with a well-developed eye "right on the top of his forehead." I can imagine situations when such a median outlook would be valuable to a scout engaged in watching aërial raiders. The widespread prevalence of the pineal body among vertebrates leads one to think that at one time in the world's history a third eye may also have been widely distributed.

Angels and Supplementary "Ribs."

We are all familiar with the shape of the conventional angel of our artists and sculptors—the graceful human figure (usually female), with a pair of feathered wings fixed apparently to the shoulder-blades. Although we must, unfortunately, ban this type of human flyer as anatomically impossible, yet it by no means follows that none of man's daring phylogenic forbears ever strove to fly. Indeed, there is anatomical evidence to the contrary. The solution of the problem, whether the human body without serious alteration to its present integrity, could yet be structurally adapted to flight, will probably be found, if at all, in the animal kingdom. There is a certain volplaning lizard, misnamed "the flying dragon" (*Draco volans*), which has retained the art of gliding through the air, "yea, even unto the present day!" It does so by means of a broad membrane stretched over greatly prolonged hind-ribs upon either side of the body. Such an addition to the human figure, especially when the collapsed membranes were closely compressed against the flanks, would not be conspicuous, and might be occasionally very useful to aviators. It would, however, be necessary to rearrange our ideas of angelic shape. Indeed, the wingèd woman would then nearly resemble the property make-up of Mephistopheles in Gounod's *Faust*. Even now children are sometimes born with supplementary ribs.

The Moral.

In the life-history of the lower animals there are doubtless many other features which it would have advantaged man to copy. The above meagre selection must, however, suffice for the present. It now remains only to point a moral.

The Grand Transformation Scene.

Towards the end of the tertiary period a momentous change seems to have occurred in man's phylogeny. A race of shy frugivorous (?) quadrumana developed into slim omnivorous bipeds endowed with many human attributes. So far as the Eastern (Indo-European) branch of mankind is affected, this mutational change presumably coincided with catastrophic happenings upon the Austro-Malayan continent. Volcanic outbursts and land subsidence doubtless destroyed by fire and water many a tropic forest and inland swamp ere the great tongue of

land was eventually split up into the separate units of the Eastern Archipelago. Such mundane activity would naturally lead to the destruction of many indigenous animals and to the migration of others—among them the representatives of primitive man.

When, How, and Why This was Probably Effected.

One of the most momentous facts which geology strives to teach us is the enormous progress that has been made in complexity of the mammalian brain since the early tertiary period. Our slim prehuman ancestry with their comparatively big brains and puny limbs, when first they were called upon to change their mode of life and to conform their bodily figure and shape to new environment, were sorely handicapped in running the race that was set before them, and narrowly escaped dying out like other misfits of a somewhat like ancestral type (for example, *Sivapithecus indicus*, etc.). Fortunately for them, some of their more canny brethren had gained some knowledge of firesticks and of their value as weapons of defence (and later of offence) in combats with mammoths, cave-bears, or sabre-toothed tigers. The erect posture, the true worth of active upper limbs, and (perhaps *sub rosa*) the value of cautious night attacks on a powerful beast that could not see their puniness in the dark, yet whose flesh was tender and juicy when cooked, all assisted in teaching these early pioneers in the ways of humanity that most valuable asset of experience "how not to do things"! Their brains, driven through the mills of wild endeavour, gradually became more and more the dominating power to guide and overrule any attempts at independent peripheral muscular action when it is stimulated from without. As a result their prosencephalon, which eventually developed into what we now call the "hemispheres"—although they are certainly not half-spheres or anything near them in shape—began to lengthen along its long (antero-posterior) axis. So much so, that man soon literally "went ahead" of all the other mammals in this respect. In the dog, and in many (if not in most) other mammals the prosencephalon still sits astride of the older centres, leaving the rhinencephalon in front, and the "worm"—as they name the balancing centre of the cerebellum—behind uncovered by the hemispheric gyri. As the prehumans gained in "intelligence" they developed their prosencephalon more and more, until a day came when they buried first (possibly) the rhinencephalon beneath the weighty frontal convolutions of their microcephalic long-headed brains, and afterwards the "worm." They thus became the first representatives of humanity (as we now see it in the world).

This gradual change probably occurred just before the first glacial epoch. By this time eoanthropi (or Neanderthal men, or whatever name we may give to these first representatives of the human race), had not only passed over Asia, but had invaded Europe. The use of fire diminished the necessity their forbears experienced in obtaining their nocturnal knowledge of external nature by means of the sense of smell; their acquaintance with slings and darts, not of outrageous fortune, but rather of everyday life, required the intimate association of the judgement of the sight in co-ordinating the delicate movements of fingers and hands; hence probably came the stimulus to the development of neurones at first in the frontal region, subsequently elsewhere, as recent observers have apparently proved. When our long-headed ancestors had overrun the lush pastures of central Asia, had by their cunning subjugated many domestic animals, and had terrorized the remainder, the retention of that peculiar type of skull became yearly less urgent. In many places conditions favoured the survival of a race of pastoral nomads, with broader heads and less prognathous features than the others. The widening of the calvaria over the lateral regions, corresponding to the association areas of the occipito-parieto temporal gyri, implied a corresponding development of brain tissues beneath them. Although the potential cerebral energy represented by these outgrowths of grey matter may have remained practically latent in some instances for generations, still their retention most likely modified the temperament of the possessor by making him a more peaceful, unemotional, not to say "stolid," person than he otherwise would have been without them. We now know that certain lateral gyri are intimately associated with the co-ordination of delicate movements of the fingers, hands, and arms, such as are evoked by the eyesight in painting, or by the auditory nerves in playing music, and so on. The tending of flocks and herds does not on first thought seem a strenuous occupation; yet in those distant days it must have required a constant vigilance and, frequently, the active interference of the watcher with hands and arms to save his trust from marauders—at times, doubtless, the long-headed variants of his own species! Such occasional work for the neurones checked any tendency there may have been for these fresh outgrowths of cerebral convolutions to degenerate through disuse.

The Conception of "Kultur";

And so we find in early pliocene times two races scattered throughout the continents of the old world, and yet living side by side. It is easy to guess the result, especially as, according to my investigations, the priesthood was not invented until long after eolithic times; the result was miscegenation. Ever since the world has been fitted to support life, Dame Nature has apparently been trying experiments in moulding organisms to fit their environment by adaptive evolution. Judging from the bygone records of geology, we may admit that for a period some of them have been fairly successful; others have been undoubtedly failures through variously seemingly unforeseen causes. In many cases the creature unfitted for his surroundings, whether he be a solitary example or one of a race of misfits, after a period simply dies out, and his extinction is practically an unnoticed incident in life's turmoil. When, however, the Dame began to tinker with a man's brains, the feathers soon began to fly (metaphorically) and there was the Devil to pay (actually). The trouble began with miscegenation. So long as the microcephalic long-heads kept to themselves, their nocturnal habits, their sly and treacherous nature, were easily guarded against by their more intelligent round-headed cousins. When, however, it came to the marriage of little innocent cave-girls by the stalwart shepherds, and their offspring came into the world endowed with many of the racial characteristics of both parents, crucial difficulties at once began to arise, difficulties which have remained even unto the present day.

And its Birth.

We must pass adown the silent corridors of time a few millennia ere we can judge the effect of this commingling of brains upon the current history of mankind. At what period the Accadians, probably a Turanian offset, took possession of the fertile district along the Euphrates valley is unknown. They were probably an industrious race of agriculturalists, and judging from what we know of the Mongols and other nomad Asian races, were presumably more or less a round-headed race. About B.C. 8000, the intermixture of brain-pans was probably much less widespread than it now is, and pure-bred round heads were more common. However that may have been, it is certain that soon after that date a great empire was founded and cities were built in the district. Now, knowing what we do of miscegenation in modern life, it would be even betting that the empire founders were another race of humanity, who conquered the original inhabitants; and, furthermore, that the former race had probably more than its share of "original sin"—whatever that may mean—implanted by its nameless parents in its blood. Such was probably the case. The Semites (who, by the way, spoke a language beautified by gutturals) were a noble and imperious race proud of their lineage. They were also highly religious, and spent their time seemingly in fighting other races and in propitiating their own gods. By such means they consolidated the great Babylonian empire, probably the first of its kind that the world ever saw, but by no means the last. According to Mendelian theory, smallness in stature is recessive and bulkiness a dominant character. So far as skulls are concerned this theory holds good. The modern pigmy tribes are, I believe, in a majority of cases microcephalic long-heads. On the other hand, the bigger dominant races may, according to Mendelian laws, subdivide themselves into various classes according as they partake more or less of the latent (recessive) characters of the dwarf. The Semites who patronized the arts—so long as the sycophantic artist lauded his patron—lived in clover, taking, at the same time, care that that fodder should be cultivated by the

original possessors of the soil. In fact, they had all the qualities of a domineering, not to say dominant, race, and the features of their kings and lords, as handed down to us by their stony effigies, show many of the characters of the mesocephalic long-head. This, then, was the race who first evolved from the recesses of their brains how to lead an easy life by militarism and "kultur."

THE EARLY TREATMENT OF PROJECTILE WOUNDS BY EXCISION OF THE DAMAGED TISSUES.

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After eight months of experience of the early treatment of projectile wounds I have had ample opportunity of critically observing the values of the various antiseptics in their various strengths and also the many details of treatment of recent wounds. I desire, therefore, to place on record a method of treatment which has given most gratifying results, and which, if practised thoroughly, will materially lessen the time a wounded man is absent from the firing line.

In a modern projectile wound we have to deal with a varying amount of devitalized tissue and a varying amount of ingrained infected material, both of which are always present. The devitalized tissue varies in different wounds from a microscopical amount, through all quantities, to the gross obvious slough. The ingrained infected material is inseparably fixed to this devitalized tissue, and nothing short of the complete removal of the tissue can possibly get rid of the infected matter. Cleansing measures are placed at a great disadvantage, for only those organisms which are spread loosely broadcast on the surfaces can be removed or inhibited in growth by antiseptics. The more important natural protective powers of the healthy body in which these wounds occur are also placed at a great disadvantage, for no vigorous opposition can be offered by devitalized tissue, and the healthy tissue is separated from the loosely scattered infected material on the surface of the wound by the layer of devitalized tissue bounding the wound, and this tissue also acts as a perfect culture medium.

The Method.

This consists in the extirpation of the devitalized tissues. An anaesthetic is given where indicated:

Local anaesthesia by novocain and adrenalin 2½ per cent.
Short anaesthesia by open ethyl chloride method.
Long anaesthesia by ether or chloroform.

The wound of the skin is boldly cut out with a sharp scalpel. It should be so completely removed that a clean healthy incised wound replaces the contused and infected wound made by the projectile. There should be nothing of the old wound remaining.

The wound of the superficial and deep fascia should be treated in the same way.

The wound of the muscle is dealt with in the same fashion. It presents, however, more difficulties because of the retraction of severed fibres, and because of the distance of the depths of the wound from the surface of the body. This latter difficulty can be happily overcome in many cases by making larger incisions.

Removal of loose and fixed bits of obvious foreign and dead matter is, of course, essential. Ample exposure and drainage of the wound is necessary, and those wounds which are too extensive after the above treatment to retain a drainage tube do better than those in which a tube is necessary on account of their depth and narrowness. By this procedure the wound is put in the best possible conditions for the bactericidal actions of the tissues and the outpoured lymph. It is important to remark that it is not wise to impair the resisting and offensive powers of the artificially obtained healthy tissue surfaces by the use of strong or injurious antiseptics.

Results.

This method, when combined with the surgical essentials of perfect rest, cleanliness, and frequent suitable dressings, has resulted in the healing of projectile wounds, without any appearance of pus in wounds of the skin and of the superficial fascia. In many wounds of muscle and bone, also, this gratifying result has been attained. In the treatment of some wounds of bone and muscle anatomical problems have prevented these principles of treatment from being thoroughly carried out, so that the results have not been as good. There have been no cases of generalized blood infection, nor of any spreading infection in the neighbourhood of the wound.

NON-TUBERCULOUS HIP DISEASE SUCCESSFULLY TREATED BY DOUBLE SPLINT AND OVER-ABDUCTION.

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The case which was subjected to the treatment below described was sent to Liverpool by Dr. Sugden of Ramsey, Isle of Man. The illustrations are admirably drawn from photographs.

A girl, aged 6, was admitted into the Liverpool Royal Infirmary on June 8th, 1903. The left hip was disabled, swollen, and tender, but gave no pain as long as she lay quiet in bed. The condition started with pain nine months previously, and she had been lame for six months. The pelvis was strongly arched and tilted to the left, and the limb abducted and rotated outwards. There was a conspicuous feature on manipulation—an extraordinary looseness of the hip-joint whereby the left thigh could be adducted so as to lie at right angles across the right. She was measured for a double Thomas's hip-splint as modified by Robert Jones, with extra abduction on the affected side and the ends prolonged, as shown in Fig. 1. This was applied, under chloroform, on June 18th,

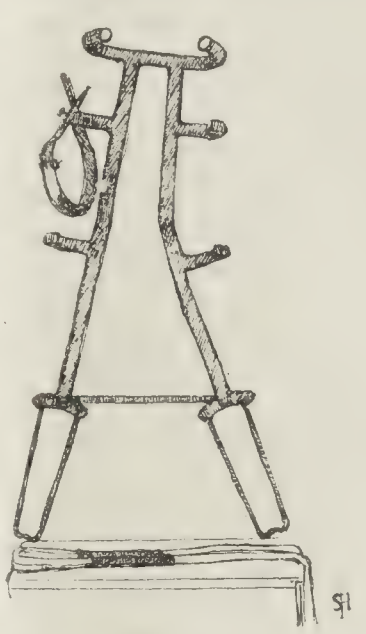


Fig. 1.

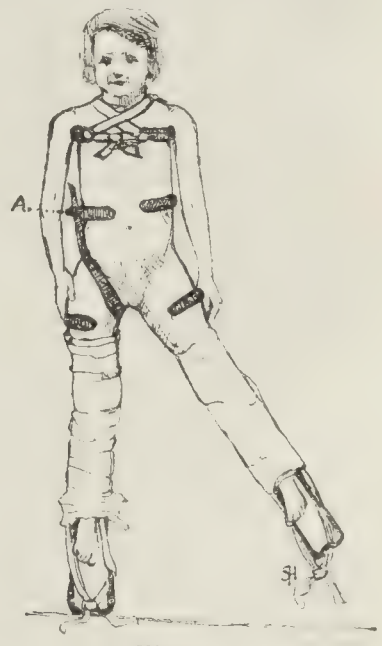


Fig. 2.

Fig. 1.—Double hip splint, with extra abduction on left side. Leather perineal band for sound side attached to stud on loin crescent. (See also Fig. 2.)

Fig. 2.—Child erect in splint. Front view, showing bandage slinging it to neck. A, Stud to which strap is fixed.

1903, both lower limbs being thickly surrounded with rolls of cotton wadding and bandaged to the splint. To prevent shifting, each leg was previously prepared with two strips of bandage stuck on with doubled adhesive plaster fixed under a roller bandage, and tied to the ends of the splint beyond the feet. For counter-extension a perineal band covered with basil leather was looped on the sound side, and its ends—leather straps pierced with holes—were buttoned on a couple of metal studs attached to the splint, as shown in Figs. 1 and 2. Between the patient's back and the bars of the splint was a flat pad covered with basil leather. Fig. 3 shows also the portability of the patient in her splint, without fear of displacement or interruption of the fixed and comfortable mechanical treatment. She could, whenever tired of lying on her back, be turned over so as to lie on her face. The invariable tendency to "adduction deformity" on recovery from severe hip disease is thus counteracted by "over abduction" at first, the result being eventual return to the straight position.

Some pain was naturally inflicted by the forced adoption of this attitude, but quickly subsided under the fixed rigidity of the splint. Still the evening temperature, though sometimes returning to normal, generally oscillated in the first few weeks between 100° and 102° F. The front of the joint became puffy, and after seven weeks fluid elasticity could be felt. On

August 7th an aspirator was used, and six drachms of sanious serum with flakes drawn off. This was repeated on August 11th, when two drachms of creamy pus were drawn off. Bacteriological examination revealed staphylococci only. No

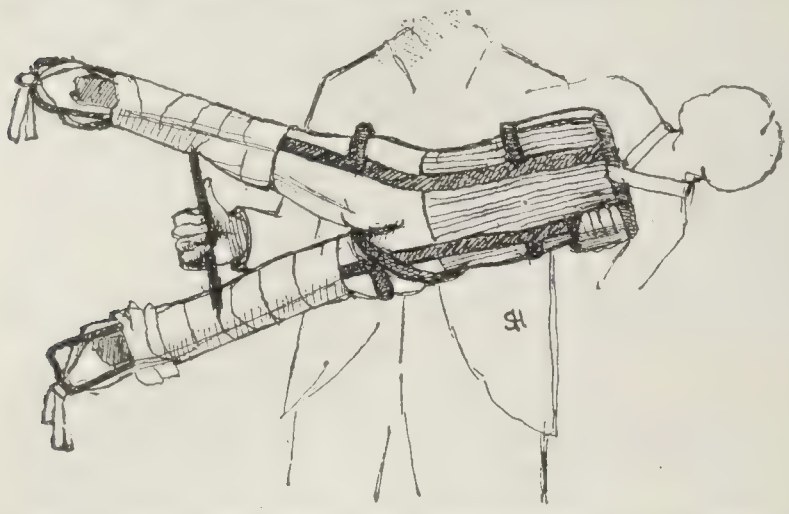


Fig. 3.—Back view, showing also portability of child in splint, and flat leather-covered pad behind whole of trunk, and sling over shoulders.

further interference of this kind was required, and the swelling at the joint went down; but the temperature still varied from 101° to 102°. Possibly the child was over-fed. She was sent on September 14th, still fixed in the double splint, to the Children's Convalescent Home in West Kirby, Cheshire, where photographs of her were taken for me by a friend on September 27th, 1903. While at the convalescent home she occasionally had a temperature of 103° F., with abdominal pain; so on December 29th she was brought back to the Liverpool Royal Infirmary. Her diet was cut down; a few simple enemas were given, and afterwards cod-liver oil and maltine prescribed. No further trouble occurred. The double splint was kept on from June 18th, 1903, to April 19th, 1904, when a single Thomas's splint for the left hip was applied. She remained in hospital till August 6th, and then went home to the Isle of Man. Four days later she became very ill, brought up half a teacupful of blood, and remained in a critical state for nine days, but rapidly improved after being wheeled out daily in the open air. Later a thick sole and heel were fixed to the right boot, as she could not use the elevated iron patten provided for her. She was now able to stump about on the sound leg with the aid of crutches, the other leg hanging safely in the splint. She left off both splint and crutches in June, 1905. Her father wrote in February, 1914, giving some of the above details, and saying that she was then in good health, walking well in ordinary boots, but with a slight limp, though without pain or inconvenience at the hip. In June, 1914, he sent a photograph taken at the time, showing her as a comely young woman.

Remarks.—This patient on admission had no appearance of the delicacy suggestive of a tuberculous tendency, but when the pus drawn from the hip was found to contain only staphylococci, and the abscess resolved, after two aspirations, it seemed certain that no tubercle was there, and that the disease had originated in a small osteomyelitis of the head of the femur. The extraordinary looseness was a condition that I had only observed in one other case, and described in a lecture "On Acute Osteomyelitis as a Cause of Hip-joint Disease," given at the Medical Graduates' College and Polyclinic in London on February 26th, 1902, and reported in the *Clinical Journal* of June 16th the same year. At the Belfast meeting of the Association, 1909, I had in mind the case here illustrated, when I remarked as follows:[1] "In more recent years, while looking back upon some of these most successful cases, it gradually dawned upon me that such abscesses, which could often be recognized as beginning in bone disease, especially of the epiphyses, might probably not be tuberculous at all; and that spontaneous 'recovery' not only of joint cases but also of Pott's disease of the spine, where health and strength remained but deformity also persisted, lent probability to the supposition. The question could only be settled by bacteriological examination of pus, when present, if freshly withdrawn under antiseptic precautions. Then the discovery of staphylococci as the sole organisms left no option but to conclude that periostitis, ostitis, or osteomyelitis of a non-tuberculous kind, lay at the root of the malady. I can only advise the systematic continuance of such investigation wherever practicable, as a means of some day ascertaining the relative proportions of these pathological varieties. Instead, therefore, of assuming a tuberculous origin for so many joint cases not otherwise obviously explained, but not submitted to a tuberculin test, it is probably correct to assume that a good proportion are not tuberculous at all, and on that account alone may be more hopefully treated."

REFERENCE.

[1] Debate on Treatment of Tuberculous Disease of Joints, BRITISH MEDICAL JOURNAL, vol. ii, 1909, p. 955.

A CASE OF CONCEALED ACCIDENTAL HAEMORRHAGE; SPONTANEOUS DELIVERY: RECOVERY.

BY

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CASES of concealed accidental haemorrhage being somewhat rare, and a case terminating spontaneously in favour of the mother being still more rare, a few notes on the following case may prove of some interest:

Mrs. P., aged 36, 2-para, first child 4 years old; now eight months pregnant; rather spare in build, somewhat delicate, and had suffered from a bad attack of diphtheria in the third month. On May 2nd, 1914, the patient had been engaged in spring cleaning, and during the forenoon was suddenly seized, while washing the floor, with a severe pain in the abdomen, which made her feel giddy and sick. She lay down in bed and took some brandy. The acute pain gradually passed away, but left a feeling of tenderness over the abdomen. When the pain came on she felt very strong fetal movements, which she said made the pain worse, and the sickness more intense; but these movements soon stopped, and were never felt again. During the afternoon she returned to her housework, and felt little inconvenience until about 10 p.m., when the severe pain returned, accompanied by sickness and vomiting. I was sent for, and found the patient apparently suffering from severe colicky pains, very sick, pulse 90, rather small but quite steady and regular, and temperature 99°. There was no marked abdominal tenderness. The abdominal wall was fairly lax, the uterus about the size normal in an eight months pregnancy, and the fetal parts quite distinguishable, back to front, and head in position of L.O.A. There were no movements, and the heart sounds were inaudible. There were no signs of labour, and the cervix was unexpanded. As the patient had indulged in a hearty supper of chipped potatoes and fried fish, and, not being told of the attack in the earlier part of the day, I imagined that the pains were due to acute indigestion with colic. I prescribed 3 grains of calomel, followed later by a dose of Henry's solution, and ordered hot fomentations over the abdomen. The medicine acted well, and the fomentations gave her sufficient relief to enable her to get some snatches of sleep. Next morning (May 3rd), the pain returned, and when seen about 9 a.m. I found the patient's appearance quite altered. She had an anxious expression, cold extremities, great tenderness over the abdomen, which she could hardly bear to be touched, and some rigidity over the abdominal wall; she also complained of faintness and pain on passing water. Pulse 110, temperature 97°. Nothing could be made out per vaginam, and there was no sign of labour, all the pain being situated low down in front on the right side. There was no special tenderness over McBurney's point. Hot fomentations were again applied over the abdomen, and a hot rectal injection of two pints of saline solution given, which afforded some relief for an hour or two. About 2 p.m., however, the pain became very severe, the abdomen extremely tender and rigid, and the uterus much enlarged and prominent, particularly in the neighbourhood of the ensiform cartilage. The patient complained of intense thirst, was very restless, looked pallid and anxious, and showed all the signs of internal haemorrhage. Pulse 130, very small at the wrist, but still quite regular; temperature not quite 97°, and respirations 40. There was still no sign of labour, no show of any kind, cervix quite normal, but examination very painful. Concealed accidental haemorrhage was diagnosed. A binder was put tightly round the abdomen, but had to be taken off as the patient could not bear it. Pituitary extract was given hypodermically, and ice applied to the abdomen. In consultation with my assistant the question of emptying the uterus per *accouchement forcé* was considered. Rupturing the membranes was thought too risky, and Caesarean section with hysterectomy was, for very potent reasons, out of the question; but as the patient was a weakly woman to begin with, and was now suffering intensely from the loss of blood internally, I feared interference might prove fatal. At the same time it appeared to me to be as critical to leave things as they were, so I decided upon rapid dilatation (Bossi), and, if necessary, multiple incision of the cervix (Duhrssen) and emptying the uterus. The patient was left at 4.30 p.m., with the understanding that the operation was to take place at 6 o'clock. I was sent for in haste about 5.30, and on arrival I was shown a stillborn fetus—a basinful of dark blood and three large black blood clots about the size of a normal placenta. The woman lay on the floor, and a fairly smart haemorrhage was going on. A short time after I had left in the afternoon the patient had an intense desire to stool, got up, and passed a little flatus. She was no sooner in bed than the desire returned. She got up again, and the woman in attendance states that she seemed to give one big strain, when the

baby was born in the chamber vessel. The placenta was expressed with some difficulty fifteen minutes afterwards, but came away quite intact. I had a good deal of trouble in stopping the haemorrhage after the placenta came away, for I could easily get hold of the uterus and make it contract, but it seemed to have very little retracting power, and filled with blood as soon as it was left. A hot continuous intrauterine douche was administered, ergot and strychnine given hypodermically, and the uterus held firmly for nearly one and a half hours before it was safe to leave it. From then onwards, however, there was no further haemorrhage of any note. Two pints of saline solution were given intravenously and pills of ergotin, quinine, and strychnine prescribed. The case ran a nearly normal course except for a slight rise of temperature to 100° during the first two days, probably reactionary and due to the extremely anaemic condition of the patient. The pulse, which immediately after the confinement was hardly perceptible at the wrist, was at 10 o'clock that night 110 and fairly full and strong.

The stillborn fetus, a female of the eighth month in development, weighed 5¾ lb., and appeared quite normal and healthy. It had probably died the day before delivery, after the convulsive movements the mother had mentioned. The placenta was quite normal in every respect, but from the dark blood clots still adherent to it it appeared to have been separated from its uterine attachment over half of its surface; otherwise it presented no unusual features.

The points of interest in this case appear to me to be: First, the spontaneous emptying of the uterus without any previous signs of labour—an event which probably saved the patient's life. The loss of blood had in all likelihood so far reduced the general blood pressure, that what was left of the contracting power of the uterus was able to prevent further dilatation and to stop the haemorrhage, which had probably become feeble *in utero*, this action no doubt being stimulated by the pituitary extract. Why the labour should end so precipitately I can offer no opinion, unless it was again due to the action of the pituitary extract. The second feature of interest was the fact that I was able to get the uterus to contract and finally to retract so as to stop the haemorrhage. It is usually considered that in cases of concealed accidental haemorrhage the uterine muscle is so diseased as to have lost the power of contracting and retracting. The practically uninterrupted recovery of a patient who was so near to death must be rare. As to the predisposing cause of the haemorrhage, was the uterine muscle attenuated as a result of the attack of diphtheria, or was the nervous mechanism poisoned and stimulus interrupted by that malady? And, if so, why was the uterus able to contract sufficiently to expel the fetus and to remain contracted later? I may add that the urine was quite normal in quantity, acid reaction, specific gravity 1020, and at no time contained any abnormal constituents.

TECHNIQUE OF ANALGESIA IN INTRANASAL SURGERY.

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RECENT discoveries have so modified the indications for general anaesthesia in intranasal surgery that, granted ordinary self-control by the patient and delicate handling by the surgeon, the discomforts and dangers of efficient analgesia are considered less than those of general anaesthesia. The only intranasal operation really unsuitable for local analgesia is the frontal sinus obliteration.

I have found the technique about to be described highly satisfactory in operations upon the turbinal bones and nasal septum; indeed, a patient who has slept through the greater part of the operation may be able, with a little assistance, to walk back to bed. The employment of chloroform (without admixture with ether), injections of cocaine and adrenalin, alone or in combination, and post-operative packing with adrenalin are absolutely unjustifiable in operations on the nose, and will sooner or later lead to catastrophe. Moreover, with or without the use of a general anaesthetic, the injections of cocaine and adrenalin lead to marked excitability, difficulty of breathing in the recumbent posture, and excruciating headache (through adrenalin vasomotor stimulation), with the need of constant administration of hot coffee and aromatic spirits of ammonia. The confidence of the patient is lost and the operation is rendered more difficult.

One hour before the commencement of the operation a hypodermic injection of ¼ grain of morphine with $\frac{1}{100}$ grain of atropine sulphate should be given and the nasal passages packed with gauze soaked in equal parts of 10 per cent. cocaine and adrenalin. This should be done with reflected light, so that narrow strips can in most cases be passed behind a marked deviation. The patient should be allowed to remain as quiet as possible for thirty minutes, when he is transferred to the operating table and the gauze strips are removed, a small portion of cotton-wool being inserted far back in each nostril to soak up any overflow from the following infiltration of urea-hydrochloride-quinine solution. In the case of an operation upon the nasal septum three points for injection will suffice on each side; these points are at the angles of a triangle with the base corresponding to the junction of mucosa and skin just behind the anterior nares and the apex over the vomer, its exact position being dependent upon the area infiltrated by the two injections in front. If the inferior turbinals are to be removed two injections will suffice on each side, one just behind the anterior extremity and the other at the junction of the middle and posterior thirds. The syringe employed should be all metal and the needle of the finest aperture procurable with bevelled tip without point. Dental needles are most convenient. The solution employed should be 1 per cent. quinine-urea-hydrochloride, and the amount injected should not be stinted. The nose is again packed with gauze wrung out of the cocaine-adrenalin solution, and in about twenty-five minutes the operation is commenced.

The haemostasis is perfect, and the analgesia is so thorough as to be truly anaesthesia, even the tactile sensibility being in most cases destroyed. There is but little emotional distress, and I have known patients, on being told to close the eyes and sleep, who have done so, and snored away during the entire operation, the only disability being that the head has had to be steadied by an assistant. The analgesia persists as a rule for about eight to twelve hours. I have not met any instance in which it has lasted several days, as claimed by other observers. There is no after-sickness, and the patient is free to go about his business in about twenty-four hours. In consequence of the exudation caused by the quinine-urea solution, there is some after-swelling, but this seems to minimize the possibilities of post-operative oozing.

It is quite possible to drain and explore the antrum of Highmore by this method, as is the routine practice of many American surgeons, but time is required before the advantages of efficient analgesia are fully appreciated in this country. It is safe to predict that the future will see further rapid progress as new chemical discoveries of non-toxic anaesthetics are announced.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF CEREBRO-SPINAL MENINGITIS.

C. W., aged 23, a driver A.S.C., was removed on April 9th to the Red Cross Hospital, Trent Vale, and from there, on April 10th, to the Bucknall Isolation Hospital. At the onset there was nausea, with violent headache and retraction of the head, and the temperature rose to 103° F. When admitted into the isolation hospital he was quite unconscious, with the head greatly retracted and the back curved; there was slight squint, increased reflexes, Kernig's sign, on the left buttock a patch of spots, and on the lips a well-marked patch of herpes. The pupils were inactive and contracted, *tache cérébrale* very marked; the urine was passed freely, and contained no albumin. During the second day incontinence of urine and faeces set in, and continued during the illness. Lumbar puncture was performed on April 10th with Barker's needle. Lumbar fluid was sent to the Health Laboratory, Manchester, for examination, and was said to contain *Meningococcus intracellularis*. The jaws were so clenched that it was impossible to obtain a swab from the throat. Soamin was given intramuscularly in 6-gram doses daily, until 100 grams had been given. Lumbar puncture was made every four days (six times altogether); 30 to 60 c.cm. of fluid was removed each time, and 15 c.cm. of antimeningococcus given after the withdrawal of fluid on each occasion until 75 c.cm. had been given. The puncture was made each time that

there was a rise of temperature. On April 30th the temperature fell to normal, pulse 112, respiration 28, and the patient became more conscious, and took food well. On May 4th he was able to move his head about freely, and to raise himself from the pillow and to answer questions well; he gave a history of himself and his family; he began to take solid food on May 8th. The improvement was maintained also on May 9th and 10th, and he appeared to be going on fairly well.

On May 11th temperature fell to 96.8° F.; the pulse was 116 and very feeble. Violent sickness set in at 11.55 a.m.; he could not take any liquid food, and became restless and quite unconscious. There had been no action of the bowels for twenty-four hours, and the urine was scanty.

On May 12th the pupils were contracted, the head retracted, and he was breathing heavily; the pulse was 60 and feeble. Lumbar puncture was made, but without relief. Ether and digitalis were given hypodermically; the patient sank and died at 11 p.m. No *post-mortem* examination was allowed.

Stoke-on-Trent. C. H. PHILLIPS, M.D.

TREATMENT OF WOUNDS.

I PUBLISH this note in order to give the medical profession at home and abroad an opportunity of employing the following treatment for septic wounds:

Mix equal quantities of pure ichthyol and glycerine, spread it on boric lint by means of a camel-hair brush, and apply it to the wound. The wound should be dressed daily. If there is also suppuration from a sinus, as in the case of a bullet wound, it should be syringed out with pure spiritus vini rectificatus; in this case dressing with gauze is preferable to boric lint.

This treatment produces a healthy granulating surface in a few days, and does not cause any irritation of the wound. The daily dressing has a great advantage over fomentations, which necessitate frequent changing and disturb the patient, besides prolonging suppuration. The less moisture about a wound the better. I have almost discarded that barbarity—the drainage tube. The results obtained by this treatment are most brilliant.

C. W. DUGGAN, Major R.A.M.C.

Military Hospital, The Barracks, Lincoln.

COMPLETE INVERSION OF THE UTERUS WITH PROLAPSE: RECOVERY.

THE following case is similar in many respects to that recorded by Dr. Oag:

On the morning of August 22nd, 1914, I was called to see Mrs. W., aged 23, primipara. During the previous night she had felt some slight colicky pains, and in the morning thought she was only commencing labour; but when I examined her the head was on the perineum. As the pains were deficient I applied forceps, and the child was born easily at 11.30 a.m. The uterus contracted well, and about ten minutes after the birth of the child (a healthy female) the placenta was coming out of the vagina; in removing it with the usual care, I found it bringing along with it, right outside the vulva, the completely inverted uterus. There was practically no haemorrhage; as the placenta was not markedly adherent, I detached it, and tried to reduce the inversion under chloroform, but after about twenty minutes' manipulation the patient became pulseless and so profoundly collapsed that I deemed it advisable to desist. The cord was of the usual length, and in every way normal. My efforts—and those of the district nurse, who was also in attendance, and whose help and inestimable services cannot be overestimated—were afterwards directed to combating shock, which was extreme, by means of pituitary extract, hypodermics of strychnine and digitalis, saline under the breasts, and other usual means. In the afternoon the patient rallied, and she was removed to the Maternity Hospital, Edinburgh; but owing to difficulty of securing suitable transport, it was nearing 7 p.m. when she reached the institution in a motor ambulance. Her condition remaining satisfactory, she was given an anaesthetic on admission, and the inversion carefully reduced by Dr. Eddington, not, however, without much difficulty; shock was extreme. After a tedious and perilous convalescence the patient recovered, and is now in perfect health.

The case, like that of Dr. Oag's, is of great interest owing to the following facts:

1. The extreme rarity of complete inversion—1 in 200,000 confinements.

2. The mortality, said to be as high as 66 per cent. This mortality, high though it be, is probably an underestimate.

3. The absence of any apparent cause. Cord usual length; no abnormality; no torsion made on cord. Placenta not adherent.

Since writing these few notes I have read Dr. Carruthers's illuminating remarks on the same subject with very great interest and pleasure.

Kirkliston. PETER STEWART, M.D.

CARCINOMA OF CERVIX: TWIN DELIVERY WITHOUT LACERATION.

MADAME T., aged 37, a multipara with three children, the youngest aged 7, was admitted into a temporary hospital for women at Châlons-sur-Marne on December 24th, 1914. A French army doctor had seen the case, and as the pains were very distressing he had given morphine hypodermically before sending the case into hospital. There was a history of loss of matter and discharge, often blood-stained, for at least four months. The patient was very sallow, and said she had not been at all well during pregnancy. The uterus corresponded in size to that of full-term pregnancy; there were intermittent contractions, and there was so much tenderness that the fetal parts were difficult to locate. There was a considerable quantity of very foul blood-stained discharge coming away from the vagina.

The os was about the size of a five-shilling piece, but the edges were very hard and irregular and bled easily, and examination with a speculum showed all the naked-eye appearances of an early carcinoma of the cervix. Next day, as very little progress was being made, Dr. Evrain kindly saw the case with me in consultation. He also had no doubt about the diagnosis, but thought that spontaneous delivery was possible, and that a Champetier de Ribes's bag might help, as the membranes had ruptured before the patient came into the hospital. The bag, unfortunately, soon began to leak, so was of little service. Labour was very tedious, and the patient was so exhausted that when the os was three-quarters dilated I decided to perforate the fetal head, as no one had been able to hear the fetal heart.

Delivery was effected slowly with ordinary long curved forceps and a female baby of rather small size was delivered, but it then became quite evident that it was really a case of twins; as the second child was presenting by the vertex delivery was effected with forceps of a very puny living female child weighing 5½ lb. The placenta with two cords attached came away without any trouble, and pituitary extract was given hypodermically. No lacerations could be felt in the cervix, the os contracting down well.

The puerperium was normal apart from the discharge caused by the growth and the uterus involuted well. The baby never cried strongly and died within three days.

On January 9th examination of the cervix showed that there was slight extension on to the posterior vaginal wall but no severe lacerations. The patient was seen at her home towards the end of January and also about the end of February; the growth was extending rapidly posteriorly, and there was so much pain that narcotics had to be given frequently.

The case is, I think, interesting from two points of view: First, the comparative rarity of carcinoma of the cervix complicating pregnancy, and, secondly, the fortunate fact of there being twin pregnancy, the heads being comparatively small made delivery without any laceration possible.

C. DYSON HOLDSWORTH, M.D., B.S.Lond.,
M.R.C.S., L.R.C.P.Lond.,
Assistant Surgeon to the Clayton Hospital and Wakefield General Dispensary.

TUBERCULOSIS IN CHILDREN.

THE following passage, which you quote from the annual report of the Chief Medical Officer of the Board of Education,[1] is full of meaning: "In early childhood lymphatic tissue, bones, and joints are more frequently invaded than the lungs, and although infection of the lungs appears to become increasingly common as the child grows older, it

[1] BRITISH MEDICAL JOURNAL, p. 555.

comparatively seldom presents a similar picture to the well known pulmonary tuberculosis of adult life.' Although I examine a large number of school children yearly, I have never yet met with a case presenting "a similar picture to the well known pulmonary tuberculosis of adult life." During routine examination I see very many cases presenting signs of infection of the bronchial glands, and one is tempted to put all these in the same category with infected glands in other parts of the body. The clinical signs presented by a child suffering from tuberculous glands of the neck are identical with the symptoms present in a case of infected bronchial glands, except that in the latter we get pressure within the thorax giving distinctive signs. I venture to make the proposition that primary pulmonary tuberculosis in the child of school age is very rare, and the cases we see simulating pulmonary tuberculosis are in reality infections of the bronchial glands, and that the lung lesions in these cases are secondary to and part of a general glandular infection, probably caused by the tubercle bacillus of bovine origin.

Beverley. T. READMAN.

Reviews.

THE NEW ANATOMY.

ANY one who is watching the progress of anatomy in Britain must have noted a very definite change—almost a revolution—in the outlook of our younger anatomists. No better evidence as to the nature and degree of the change that is coming could be found than in the *Clinical Anatomy of the Gastro-intestinal Tract*[1] by Professor WINGATE TODD, just issued by the Manchester University Press.

It is true that Professor Todd occupies the chair of anatomy in one of the universities of the United States, but every page of his book proclaims him to be a British anatomist of the younger school. It is not difficult to define the nature of the changes which are taking place in our dissecting-rooms. The older school studied and described the *dead* human body; the aim of the newer school is to study and teach the anatomy of the *living* body. Many will remember the black, dried, inflated, hardened stomachs and the blown-out parchment caeca with membranous gaping ileo-caecal lips on which we were asked to base our knowledge for a career in the practical application of surgery and medicine. Then came a "formalin" period in anatomy, in which the conception of anatomical forms underwent a change, but in the opening years of the formalin period the anatomist's point of view remained centred on the various forms seen after death. The discovery of Roentgen rays was the factor which ultimately killed the dead, unimaginative study of the human body. In his description of the viscera of the abdomen Professor Todd has used his knowledge of the living viscera as revealed by the use of *x* rays. The student and practitioner will feel as they read the pages of Professor Todd's book that the anatomist has at last got a glimpse of the world of clinical endeavour that lies beyond the doors of the dissecting-room.

Another change that has come across the anatomical mind is to be noted. The teachers of a former day were inclined to regard the study of anatomy, not as the basis of medicine, but as an end in itself. There were so many tempting paths which led into the unlimited realms of comparative anatomy and embryology, and along these paths teachers often guided their willing students without any thought as to the ultimate aim a medical student had in view. It must not be thought that the younger anatomist does not make excursions into such collateral subjects; one finds that Professor Todd often does, but for the same reason as John Hunter—namely, to find living facts that help the medical student and the medical practitioner to understand the mechanism of the living human body. Comparative anatomy can throw a flood of light on obscure structures like the appendix vermiformis.

Perhaps the most remarkable change in the outlook of the anatomist is the change in his attitude towards his colleagues—the physiologist and pathologist. Professor Todd has used the discoveries of the physiological and pathological laboratories to the full in explaining the anatomical problems of the alimentary tract; he also shows a wide and accurate acquaintance with medical and surgical literature—a knowledge which is absolutely essential for one who is to help in the education of new generations of medical students. We can recommend Professor Todd's book to medical students as the best clinical manual on the anatomy of the alimentary tract and as an exemplar of how anatomy should be studied and taught.

[1] *The Clinical Anatomy of the Gastro-intestinal Tract.* By T. Wingate Todd, M.B., Ch.B., F.R.C.S.Eng. Manchester: The University Press. London, New York, etc.: Longmans, Green, and Co. 1915. (Cr. 8vo, pp. 276; 32 figures. 6s. net.)

EXPERIMENTS ON ANIMALS.

DR. W. W. KEEN is well known to his profession in this country as one of the very foremost of the great American surgeons. He has enjoyed, over here, that sort of distinction, that welcome, which were given to Lowell. And his book, *Animal Experimentation and Medical Progress*,[2] has distinction and high authority. None of us could desire a better summary of the evidence, to put into the hands of anybody who still doubts that experiments on animals are of absolute necessity for the advancement of the work of our profession.

The book is a collection of many papers and addresses by Dr. Keen, dating from 1885 to 1913. Thus, it is not only a system of evidence—it is also an account of antivivisection in the United States. On this point we have only to say that antivivisection in the United States seems to be even worse than it is here—more false, more unscrupulous, more wild in its charges of cruelty. It could not have a more gentle, polite, and patient opponent than Dr. Keen; indeed, we may wonder that he takes to heart so anxiously the extravagant statements of a few American antivivisectionists. But that is not our affair; the opposition in our own country is well-nigh silent now, in these grave times; and let us hope that it will not for many years after the war regain any hold on public attention. We can now well leave it to itself.

The historical part of Dr. Keen's book—the tracing of the great discoveries, the explanation of the ways and purposes of research, and the study of the rise and influences of bacteriology—are admirable. He writes very quietly, with a most delightful style, and he writes with that insight which comes of life-long experience in great practice.

To complete the value of this very valuable book, there is an introduction by one of the most illustrious of living Americans—Dr. Eliot. None of us in this country who read what Dr. Eliot wrote of the ethical or spiritual purposes of the present war, will doubt his authority to teach ethics; and in this introduction he says of the ethics of experiments on animals all that needs to be said, and with an authority and dignity that must carry conviction to all unprejudiced minds.

We very heartily commend this book not only to all medical men who would like to have the evidence at hand for their own use, but to all non-medical readers. It would be hard to find a more useful book on the subject.

MEDICAL WOMEN AND THEIR WORK.

ONE result of the war will probably be a considerable extension of the field of practice now open to medical women. In his presidential address to the General Medical Council on June 1st, Sir Donald MacAlister said that the services of medical women had been freely offered and accepted for many of the places now vacant at home. In a book, to which Mr. Stephen Paget has contributed an introduction, Miss A. H. BENNETT[3] gives a brief and readable account of the struggles by which a few determined women battered down the portals of the profession which were closed to them till less than half a century ago, and opened up a new career for their sex. Repulsed at Edinburgh, they were more successful in London, where the School of Medicine for Women was founded in 1874. But the battle was not yet won. The Medical Qualifications Act of 1876 threw open the medical profession to women, but the qualifying bodies only gradually abandoned their obstructive attitude. Although Mrs. Garrett

[2] *Animal Experimentation and Medical Progress.* By W. W. Keen, M.D., LL.D. With an introduction by C. W. Eliot, LL.D. Boston and New York: Houghton Mifflin Co. 1914. (Post 8vo, pp. 332.)

[3] *English Medical Women: Glimpses of Their Work in Peace and War.* By A. H. Bennett. With a preface by Stephen Paget, F.R.C.S. London: Sir I. Pitman and Sons, Ltd. 1915. (Cr. 8vo, pp. 167; 3 illustrations. 3s. 6d.)

Anderson managed to slip through the gate of the Society of Apothecaries, it is to the Irish College of Physicians that belongs the credit of having first allowed women *entrare in nostro docto corpore*. There was still a difficulty about clinical instruction, but this was surmounted after some trouble by the Royal Free Hospital opening its doors to them. The women had then a fully-equipped medical school of their own, and since that time their progress has been almost uninterrupted. At the present day the only universities which still exclude women from medical degrees are those of Oxford and Cambridge. The school is still growing, and at a meeting held on June 1st, presided over by the Duchess of Marlborough, Honorary Treasurer of the Extension Fund, it was announced that sixty new students will enter in October. The pressure on the space in the laboratories is already very great, upwards of 220 working in them at the present time. The extension will cost £25,000, of which £12,000 has been received. The number of women on the *Medical Register* has increased from 8 forty years ago to 1,000 at the present time. Of these over 600 are former students of the London School of Medicine for Women.

Miss Bennett's sketch of the field of medical work covered by women will probably come as a surprise to many. She describes visits paid by her to the New Hospital for Women in the Euston Road; to the Women's Hospital for Children in the Harrow Road; and to the South London Hospital for Women. A chapter is given to the Clapham Maternity Hospital, and another to the Lady Chichester Hospital for Women and Children at Brighton. There are other women's hospitals at Edinburgh, Hull, Birmingham, Leeds, Liverpool, Newcastle, Nottingham, Wolverhampton, York, and Glasgow. Some of these hospitals are officered entirely by women, while all have women on their staff; since the war, others, notably those intended for the treatment of children, have taken women residents. Besides those who belong to the medical mission societies in India, China, and Borneo, medical women are at work in Australia, New Zealand, and Central Africa. Good work has been done by women doctors in military hospitals run by them in Paris and in Antwerp. They have done excellent work in Serbia. Miss Bennett predicts that other hospitals staffed by women will be equipped as the war goes on. We agree with her, however, that, although the manner in which they have equipped medical and surgical units for war service is highly creditable to them, their natural vocation lies among their own sex. "Military hospitals are not a normal development of their work, but have come into existence in an extraordinary period of the world's history and to meet an extraordinary need." All the more honour to them for the devotion which has led them to step out of the sphere of professional activity which may be called especially their own, and at the call of humanity to take upon themselves the rough work of the surgery of war.

ST. GEORGE'S HOSPITAL.

PART I of Mr. GEORGE C. PEACHEY'S *History of St. George's Hospital* was noticed in the BRITISH MEDICAL JOURNAL of July 16th, 1910; Part II in our issue of July 27th, 1912, and Parts III and IV in that of June 13th, 1914. In Parts V and VI,[4] published in one fasciculus, the story of the first twenty years of the hospital is continued. Biographical sketches of the early members of the staff are given. Among them was Simon Burton, one of the physicians who attended Alexander Pope in his last illness. In 1733 "rules for the well ordering chirurgical matters" in the hospital were drawn up. The first of these was "that the surgeons be particularly careful to be tender and compassionate to the patients." Another was "that there be two surgeons in ordinary, one of which at least shall attend and dress the patients every day between the hours of seven and nine in the morning during the eight summer months and between nine and eleven in the winter; and that the principal surgeons be desired to attend upon any extraordinary occasion." The surgeons in ordinary were to give the principal surgeons notice of any capital operation at least six hours beforehand, and should desire their presence and assistance on all extraordinary occasions.

One of the first principal surgeons appointed was William Cheselden. From a minute dated April 1st, 1737, it would appear that he had from the foundation of the hospital cut the patients for the stone, for it records that he wished that "another surgeon should be chosen for that operation." It was resolved "that the thanks of the Court be given to Mr. Cheselden for his great care and trouble in and about the operation aforesaid; and that a special Court be held to supply his place as operator for the stone." The reason of Cheselden's resignation is doubtful, though Mr. Peachey thinks it may have been due to his appointment to Chelsea Hospital. But there seems to have been growing dissatisfaction with the management of the hospital, and new rules were made, from which it may be inferred that the members of the surgical staff were unpunctual in their attendance. In 1745 David Middleton, who had been recommended by Cheselden to succed him as lithotomist, gave notice to the governing body that he would have to be abroad in attendance on His Majesty's Forces, and it was resolved "that the operation of cutting for the stone be left to such of the surgeons of this hospital as think proper to perform the same." Cheselden's colleagues as principal surgeons were Ambrose Dickins and Claudius Amyand. Dickins was serjeant-surgeon to Queen Anne, George I, and George II. It was his duty to examine all those touched by Queen Anne for the "evil," and he professed to believe in the reality of some of the cures. He said he had in his possession a number of letters from persons "of character and distinction" attesting the recovery of friends and relations after they had been subjected to the royal touch. We wonder if he examined Dr. Johnson; the great lexicographer was among those touched by Queen Anne, but he was not cured. We need not, however, be surprised at Dickins's statement, for did not Richard Wiseman testify to the innumerable cures he had seen wrought by the chaste hands of Charles II? Amyand, who was serjeant-surgeon to George I, was one of the earliest advocates of inoculation for small-pox; it was mainly owing to his influence that the procedure—after it had been tried without ill result on some condemned criminals—obtained the sanction of the royal family.

Mr. Peachey is to be congratulated on the manner in which he has discharged a task unattractive to any but an enthusiast. His work is a monument of painstaking research.

[4] *The History of St. George's Hospital.* By George C. Peachey. Parts V and VI. London: Bemrose and Sons, Ltd. 1914. (Super-roy. 8vo, pp. 88. 5s. net.)

NOTES ON BOOKS.

MISS FÉLICIE NORTON has prepared *The Midwife's Companion*[5] for the use of student midwives and midwives, and it has been made as concise as possible so that it may aid students preparing for the Central Midwives Board examination, and serve also as a handy reference book for qualified midwives. It is printed in good, clear, and big type, and is not loaded with more matter than the student can take in with a fair probability of remembering it. The author is careful to teach after the principles of the Board, and does wisely in making very prominent the conditions in which medical help must be sought, and in including the instructions issued by the Board on inflammation of the eyes in newborn children. A couple of pages are devoted to the question of recognition of the earliest symptoms of uterine cancer. The greater part of the handbook is taken up by the usual necessary notes on labour, childbed, and the management of the infant. The text appears to have been carefully revised. "Hydramnios" at page 25 ought to have been "hydramnion," yet Hyrtl has shown that "hydramnios" is also correct. We cannot blame the authoress for writing "the pubis" as most anatomists seem to forget that the nominative singular is "pubes"; "os pubis" is, of course, correct, the second word being a genitive. If midwives must use scientific terms, it is only fair that they should be taught rightly. We have ourselves seen the most honest failures in the spelling of "sacro-iliac synchondrosis" in papers submitted to the Central Midwives Board. Errors of this kind, however, in no sense diminish the value of the manual, and the authoress's pupils need not trouble about them.

[5] *The Midwife's Companion.* By F. Norton. London: J. and A. Churchill. 1914. (Cr. 8vo, pp. 100. 1s. net.)

The *City of London Year Book and Civic Directory for 1915*[6] includes much official matter of interest to the profession concerning city hospitals—St. Bartholomew's, St. Thomas's, and Bethlem—and the city dispensaries. The Livery Companies' Guide is of distinct importance for those of us who seek accurate knowledge about the Society of Apothecaries and the Barbers' Company. The long list of charities bestowed on the latter from 1470 to 1858 is remarkable. John Atkinson in the middle of the last century not only left money to be expended on bibles for the poor but also bequeathed £20 a year towards a dinner for the Livery. He was clearly a broad-minded gentleman. The other worshipful companies are honoured by all good citizens, even though certain crafts, such as the Bowyers, Fletchers, and Horners are out of date. We fancy that many worthy burgesses are not quite sure what Cordwainer and Loriner originally signified. Cordoba was once a great leather centre, and bits and bridles were widely manufactured in Lorraine.

A writer who conceals his identity under the pseudonym "Jadroo" is responsible for an essay on *Life: Its Origin and Energy Mechanism*,[7] in which practically all vital phenomena, abiogenesis included, are attributed to electricity. Thus each cell is conceived as a minute battery energized by a current due to the greater concentration of salts in the nucleus as compared with the cytoplasm, and hence to a difference of potential. The cerebro-spinal system is regarded as an accumulator, charged through the afferent nerves with the surplus energy generated in the system at large. The efferent nerves are supposed to convey this stored energy to the muscles, thus enabling them to contract. Unfortunately for Jadroo's theory, we know that the nerve impulse travels at an enormously slower rate than electricity; moreover, it is one of the best ascertained facts in physiology that muscular contractions are energized by chemical changes of a combustive nature in the non-nitrogenous element of the constituent molecules. There is an obvious analogy between the structure of the nervous system and certain forms of electrical apparatus which lends a certain plausibility to such speculations; but there are few more fertile sources of error in science than the abuse of analogy. That electricity plays an important part in vital processes is highly probable. We fear that this little book does not go far towards its elucidation.

MEDICAL AND SURGICAL APPLIANCES.

An Aid in the Treatment of Gleet.

MR. JAMES MACMUNN (London, E.C.) writes: Implication of glands and follicles is the principal cause of most persistent gleets, rendering cure difficult. Surface lesions are easily dealt with. Before cure ducts and follicles must be emptied, so that medicaments may be forced into them. To destroy them by cautery is difficult, and seldom needed. Massage by the finger and Kollmann's dilators are the only accepted means; both are ineffectual, and the latter often reprehensible, even in expert hands. Many years ago I published a method by suction by a large slotted instrument. Of late I use a useful addition. Fortunately, the ducts in the anterior urethra are mostly in the penile portion, and open forwards. Pass a flat "sound," about $\frac{1}{8}$ in. thick, as wide as possible, down to the bulb; a little device enables it to be rotated in the vertical meatus; over this use a small rubber roller on both aspects of the organ firmly from behind forwards. This is the best means of emptying ducts and follicles, and dealing with floor infiltrations. The sound may be dispensed with, the organ being supported by a small piece of wood with a shallow groove in which the dorsum or under surface rests whilst the roller is used. If the latter is to be used, the patient separates the testicles so as to leave room for the roller whilst the bulbar and scrotal parts are treated. If the roller be used from before back anaesthetic solutions or ointments easily pass the compressor muscle. An india-rubber door-stop into the nail hole of which a spindle is passed and mounted on a frame makes a capital roller. To deal with the posterior urethra massage is indispensable, but not enough. After massage, pass a large bulb to and fro to empty the mouths of the ducts. Coitus empties ducts and follicles, and a discharge improved for a day or two after it points to follicular gleet. After the above, forcible irrigation has a chance. For the posterior urethra it is well to use as large an instrument as will pass, with many perforations. This allows of fluids getting into ducts and follicles better than Kollmann's dilating flushing instrument allows. If to the injector a lithotrity evacuator filled with solution be attached, the latter can be forced into and sucked out of ducts. Instead of the fingers to hold back the testicles, I now use side pieces of thin metal attached to the central wooden piece; these separate and protect them.

[6] *The City of London Year Book and Civic Directory for 1915.* London W. H. and J. Collingridge. 1915. (Sup. roy. 8vo, pp. 379. 5s. net.)

[7] *Life: Its Origin and Energy Mechanism.* By Jadroo. London: H. Kimpton. Glasgow: A. Stenhouse. 1914. (Roy. 8vo, pp. 32. 1s. net.)

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

WE have received the following further communication from the Secretary of the National Medical Research Committee:

On April 7th, 1915, a communication was made on behalf of the Medical Research Committee to the BRITISH MEDICAL JOURNAL (see p. 649) with regard to the nature of the control which the Medical Research Committee, at the request of the Board of Trade, has been exercising during the present emergency over the French and British preparations of salvarsan which are issued for sale in this country.

It was then announced that the Committee were satisfied that the products tested biologically under their direction were not inferior, in safety or in efficacy, to the original German preparations. It may be remarked here in addition that satisfactory results of clinical trials, as well as the results of the laboratory tests for toxicity, were in the hands of the Committee before the issue of these products was authorized.

The preparations in question have now for some months been available for use by the medical profession in this country, and it appears desirable to the Committee that they should seek an opportunity of collecting from those who have had and are now having actual experience of these British and French salvarsan products as complete a record as possible of the results of their practical application.

It is well known that many of the incidental results which may follow the administration of salvarsan can at present be only imperfectly explained. A certain proportion of unfavourable results, including some fatal results, is known to have followed the use of the original German products. While some of these have been explained as being due to imperfect precautions with regard to the purity of the water used in the injection, others have been attributable only to a supposed idiosyncrasy of the patient.

In order to appraise the significance of a favourable or of an unfavourable clinical experience found in the use of a particular batch of any given preparation, it is obviously of great importance to have as complete a record as possible of the other cases which may have been treated with the batch in question. Records of this kind, when referred to the scientific workers engaged on behalf of the Medical Research Committee in the biological testing of products, would allow a study of the closeness of the correlation which may exist between the clinical results on the one hand and their laboratory results on the other. Such a comparison between the two kinds of experience would allow a determination of the question whether it is desirable to add to, or to modify in any way, the system of controls which has hitherto been applied, and which has followed the lines laid down by the experience of Ehrlich and his co-workers.

The Committee venture to urge that members of the medical profession would be performing a service of national importance, in the present emergency, by keeping accurate records of cases in which the new preparations are used, and by placing such records at the disposal of the Committee for their private information and guidance. Particular stress must be laid upon the desirability of recording, in every case, the name of the preparation used and the serial number applied by the manufacturer to the particular batch employed, together with full details as to dosage, the precautions taken to ensure purity of the water used, and finally the results of the administration, both as regards therapeutic efficacy and the presence or absence of special incidental symptoms.

It is requested that records of this kind may be addressed to the Secretary of the Medical Research Committee, St. Stephen's House, Westminster.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee twenty-eight cases received grants amounting to £294, and two applicants were elected to vacant annuities of £20 each. The following is a summary of the cases relieved:

Daughter, aged 47, of M.R.C.S.Eng. who practised at Clifton, Bristol. Applicant completely incapacitated owing to complications following operation for hernia. At present in a convalescent home. Lost use of both legs. Prior to illness earned a living by acting as children's nurse. Voted £10 in two instalments.

Daughter, aged 63, of L.R.C.S.Glasg. who practised at Liverpool. For a number of years acted as matron at a private mental home, but has not been able to save. A younger matron is now required, and applicant must try to obtain other work, and finds it difficult at her age. Voted £12 in twelve instalments, and referred to the Guild.

Widow, aged 34, of L.S.A.Lond. who died in January of this year, and had acted as locumtenent in various places. Left the applicant totally unprovided for, with three children aged 12 to 17 years. Hopes to obtain some employment. Voted £10 in two instalments.

Widow, aged 73, of L.S.A.Lond. who practised at Bermondsey and died in 1887. Until the outbreak of war was able to make a living by taking in boarders at her house on the South Coast. All the August and autumn bookings last year were cancelled; she has had to close up the house temporarily. Lives in own house, which is heavily mortgaged. Voted £15.

M.R.C.S.Eng., aged 58, who had practised in the Midlands, and now suffering from total paralysis of the right side, and unable to speak or write. Only income a pension of £30 per annum, and a little from the sale of his practice. His wife has to devote all her attention to him; and the three children are unable to help financially. Voted £2, and referred to the Guild for report.

Widow, aged 70, of M.D.St.And., who practised in Pall Mall, S.W., but was incapacitated for some years before death in May of this year, and was a pensioner of the Fund, and received assistance from another charity. Applicant left entirely unprovided for. Voted £2, and referred to the Guild for report.

Daughter, aged 66, of M.R.C.S.Eng., who practised in London. Has earned a living as a teacher of languages, but cannot obtain pupils at present. Lives with two sisters who try to earn a living by keeping a boarding-house. but not successfully. One of the sisters also receiving a grant from the Fund. Voted £12 in twelve instalments, and referred to the Guild for report.

Widow, aged 54, of M.R.C.S.Eng., who died in 1897, and practised at Stockton-on-Tees. Left totally unprovided for, with two young children to educate and keep. Has earned a little by needlework, and has acted as caretaker. Eyesight now very bad. Daughter now earning a little, and son has joined the army. Previous help eleven times, £97. Voted £9 in twelve instalments.

M.R.C.S.Eng., aged 48, who practised at Aysgarth, and as surgeon to a steamship company, which took him abroad, where he contracted sunstroke with very bad effects, and is now totally incapable of doing anything. Lives with an aunt who has barely sufficient for her own needs. Previous help £10. Voted £10 in two instalments.

Widow, aged 52, of L.R.C.P. and S.Edin. who practised at New Quay. Health very indifferent, and has recently had an accident which has incapacitated her from doing any work. Has two sons sailors, but they are only able to help very slightly. Relieved twelve times, £125. Voted £12 in twelve instalments.

Widow, aged 69, of M.R.C.S.Eng. and L.S.A.Lond. who died in 1887, and practised at Heathfield, Sussex. Used to earn a bare living by taking in boarders, but is now suffering from rheumatoid arthritis, and has had to give up her home; she is now in a home for gentlewomen, but requires money for food. Previous help seven times, £75. Voted £12 in twelve instalments.

Widow, aged 57, of M.R.C.S.Eng. who practised at Enfield, and died in 1905. Applicant has indifferent health, and daughter is suffering from spinal diseases. Only income a little help from friends. Relieved four times, £40. Voted £5.

M.D.Aberd., aged 62, who practised at Walsall. Suffering from rheumatoid arthritis since 1881. Has four children, ages 4 to 16 years. Has three small pensions from other charities. Previous help seven times, £63. Voted £12 in twelve instalments.

Daughter, aged 60, of L.F.P.S.Glasg. who practised at Mauchline. Health very bad, and unable to undertake any definite work. Only certain income a pension from another charity of £12 per annum. Relieved eight times, £80. Voted £12 in twelve instalments.

Widow, aged 50, of L.R.C.P. and S.Edin. who practised in Jamaica. At husband's death in 1891 was left with three daughters and totally unprovided for. Health has been very bad, and applicant has just been elected an out-patient pensioner of a home for incurables. Lives with married daughter, who cannot afford to keep her. Relieved seven times, £84. Voted £12 in twelve instalments.

Widow, aged 63, of M.D.Glasg. who died in 1908, and practised at Glasgow. Applicant has tried to make a living by taking in boarders, but latterly has not been successful, and sister who helped in the house is now bedridden with paralysis. Relieved once, £12. Voted £12 in twelve instalments.

Widow, aged 49, of L.S.A.Lond. who practised at Leicester, and died in 1910. Applicant was left with four children, whose ages are now 11 to 21. The two eldest daughters are clerks, and pay over their wages to their mother, but this is not sufficient to keep the house. The applicant tries to supplement her income by doing a little needlework. Relieved three times, £34. Voted £12 in twelve instalments.

Daughter, aged 76, of M.R.C.S.Eng. who practised at Hackney. Owing to great age, the applicant is unable to undertake any work. Three brothers who used to help her have recently died. Only income £33 per annum. Relieved three times, £36. Voted £15 in twelve instalments.

Widow, aged 66, of L.S.A.Lond. who practised at Ipswich. Since the death of her husband in 1901 has endeavoured to make a living by letting apartments, but not very successfully. Children only able to help very little. Relieved thirteen times, £140. Voted £12 in twelve instalments.

Daughter, aged 51, of M.R.C.S.Eng. who practised at Box, Wilts. Applicant is a permanent invalid and unable to work. Lives with sister who earns a little and has a grant from the Fund. Relieved three times, £36. Voted £12 in twelve instalments.

Daughter, aged 47, of M.R.C.S.Eng. who practised in India. Has endeavoured to earn a living by taking in boarders, but cannot make ends meet. Has just removed into the country and pays less rent, and hopes in the future to manage without troubling the Fund. Relieved four times, £42. Voted £12 in twelve instalments.

Widow, aged 44, of L.R.C.P. and S.Edin. who practised in South Wales, and died in 1903. Left unprovided for at husband's death with two daughters, the eldest of whom is studying as a teacher of domestic economy, and hopes to earn a little soon. Applicant earns a little as a maternity nurse. Relieved nine times, £65. Voted £5.

Widow, aged 35, of M.R.C.S.Eng. who practised at Bow, E., and died in 1912. Applicant has one child, and being a nurse by profession endeavours to make a living by taking in mental cases in her house in the suburbs, but finds it difficult to make ends meet. Wants assistance towards the education of her son. The case was referred to the Guild, and a certain sum allocated subject to the report being satisfactory.

Widow, aged 60, of M.D.Glasg. who practised at Birkenhead and other places. Left unprovided for at husband's death. Three daughters, ages 31–33 years. The two eldest earning a little, but the youngest is a confirmed invalid. Applicant suffering from neuritis. Relieved six times, £96. Voted £6 in twelve instalments.

Daughters, aged 48 and 56, of M.D.Aberd. who practised in Yorkshire. Both are unable to work owing to illness. Only income £20 each per annum. Relieved twice, £20. Voted an immediate grant of £1 and referred to the Guild for report.

Daughter, aged 60, of M.D.Edin. who practised in London. Health very indifferent, and only income about £4 per annum from needlework. Lives with a sister who is an invalid. Relieved seven times, £49. Voted £12 in twelve instalments.

Widow, aged 59, of L.R.C.P. and S.Edin. who practised in Balham, and died in 1913. Lives in own house and takes in boarders when she can get them, but cannot get sufficient to make it pay. Relieved twice, £14. Voted £12 in twelve instalments.

Daughter, aged 67, of M.R.C.S.Eng. who practised in Lancashire. In consequence of ill health and age unable to work. Only income £30 per annum from another charity and has just been elected to an unfurnished home. Wants help for furnishing. The Liverpool branch of the Guild are assisting. Relieved four times, £60. Voted £10 at the direction of the Guild at Liverpool.

The claims of the Fund are steadily increasing, largely in consequence of the war, and though the ordinary subscriptions remain at much the same level, there is a constantly increasing adverse balance. At the last meeting the Committee was faced with an overdrawn account of £92, which was increased by the £294 then spent in grants to a total deficit of £386. To meet this the Committee has had to draw upon its limited reserves, and unless support be rapidly forthcoming its work will have to be curtailed.

Subscriptions may be sent to the Honorary Treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

The Royal Medical Benevolent Fund Guild appeals for gifts of secondhand clothing, boots, and shoes in good condition, also household linen. The gifts should be sent to the Secretary, Royal Medical Benevolent Fund Guild, 43, Bolsover Street, W.

THE total number of students in the Universities of Belgium in the academic year 1913–14 was 8,300. Of these 4,254 were registered in the two free universities, Louvain and Brussels, and 4,046 in the two State universities, Liége and Ghent. In the University of Liége there were 952 Russian students; in that of Ghent, 107; in that of Brussels, 52. The foreign students at Louvain were Catholics, most of them being South Americans.

British Medical Journal.

SATURDAY, JUNE 26TH, 1915.

EARLY OPERATION IN MILITARY SURGERY.

WHILE all surgeons admit that it may be desirable to operate early in certain wounds of certain regions, especially the abdomen and head, experience shows that the number of cases of wounds even in these regions in which early operation can be useful is strictly limited, and that in these after-treatment by absolute rest and good nursing are essential if the surgeon's skill is to lead to the recovery of the patient. It is this last consideration which has chiefly stood in the way of the schemes for mobile operating theatres, upon which much ingenuity has been spent, and which we confess seemed to us to offer a means of meeting a difficulty which had been felt during the autumn and winter warfare in France. The matter was very fully considered by the heads of the Army Medical Service and the consulting surgeons with the British army, and the decision was against the motor operating theatre, for reasons which seem to us sufficient, and, in fact, in existing circumstances, conclusive. It was decided that the only way to ensure that any operation considered desirable at an early date should be performed under suitable conditions for the actual operation, and with proper provision for after-treatment and nursing, was to develop the Casualty Clearing Stations immediately behind the firing line and to equip them with modern operating theatres.

This has been done, and between Ypres and Bethune, at a distance of some five to seven miles from the trenches, there is now established a line of nine operating theatres, which form parts of the Casualty Clearing Stations. They have now been at work long enough to prove that it is quite possible for operation, under favourable conditions, to be within reach of a seriously wounded man within one or two hours of his being wounded. Whether he is, in fact, brought in to the Casualty Clearing Station within that time must depend upon the military situation, and there are, unfortunately, many instances in which it is impossible for the stretcher-bearers so quickly to rescue men who are lying out.

The arrangements for treating the wounded between the First Aid Post through the Field Ambulance and the Casualty Clearing Station to the base have been developed during the last five or six months, in accordance with the experience gained. The stretcher-bearers carry the wounded to the nearest First Aid Post; the distance from the trenches to the First Aid Post varies, but may be said to be on the average about half a mile. From the First Aid Post the wounded man is conveyed by horse ambulance to the Field Ambulance; here again the distance varies, but two miles may be taken as the average. The horse ambulance is used for these short journeys because it is found that it is often difficult or impossible to get a motor ambulance actually up to the First Aid Post, and also because any damage done to the motive power of a motor ambulance may be more irremediable at the time than when a horse ambulance is concerned. From the Field Ambulance the wounded man is taken in a motor ambulance to the Casualty Clearing Station, a distance usually of four or five miles. Operations are not as a rule performed in the Field Ambulances, chiefly because it is not desirable to retain patients any longer under fire than is necessary, but also because the conditions of these units do not permit of such completely equipped theatres as are available a little further in the rear. Bad compound comminuted fractures are usually treated under an anaesthetic at the Casualty Clearing Station, and it is not recommended that wounds of the skull and brain should be operated on in the Field Ambulances. It is advised that they should be sent as quickly as possible to the Casualty Clearing Stations, where an operation can be done with aseptic precautions in those cases which are too serious to be sent on at once to a Base Hospital. It is recommended that wounds of the chest also should be taken at once to the Casualty Clearing Station, and that they should be kept there, as a rule, for about a week, as recurrent bleeding is easily caused by movement. Rest is equally important in the treatment of wounds of the abdomen. A considerable number of abdominal operations have actually been performed in suitable cases within a very few hours of the injury, but it is the deliberate opinion of both British and French surgeons that only a small minority of abdominal injuries should be treated by operation; the great majority of them do better without it.

The Casualty Clearing Stations with their operating theatres are all as near to the front as it is possible to put any operating theatre; indeed, on several occasions the clearing stations have been shelled, and they are all only just beyond shell fire. No operating van or motor could usefully be taken nearer; it would therefore not be more accessible than are the existing theatres. It must further be remembered that where operations for serious emergencies are required it is also most important, as has been said, that the patient should be kept absolutely quiet afterwards; in fact, without careful nursing and medical attention such operations cannot safely be performed at all. It is evident that good conditions for after-treatment cannot be found inside a travelling operating theatre, and if the patient has to be taken in a motor ambulance for some miles to a Casualty Clearing Station after an operation it is quite certain that his chances of recovery would in fact have been much better if he had been taken there first of all. It is clearly necessary that wherever the operation is done the patient must there subsequently be treated and nursed for some time. Since the commencement of the war women nurses have been added to the staffs of Casualty Clearing Stations.

Even at times when there is but little fighting the operating theatres of the Casualty Clearing Stations are kept busy as a result of the perpetual sniping and shell fire; we are informed that at a single such station 600 operations of all kinds have been performed during the past six months. At the same Station, which, as will be gathered, is really a fully equipped emergency hospital, 288 cases of perforating wounds of the abdomen have been treated; of these, 71 were dying or died within a few hours of admission from shock and haemorrhage; of the remaining patients, 167 went to the base a week or more afterwards, or nearly 75 per cent. Some of these were operated upon, but the great majority recovered without operative treatment.

Such a result—and we have no reason to suppose that the experience of this place was in any way

peculiar—fully justifies the decision taken at the end of last year to develop the Casualty Clearing Stations to serve also as emergency hospitals, in which a patient can not only be operated on, but nursed for so long as may be necessary to ensure that he has recovered sufficiently to make it safe for him to be sent on his journey to the Base Hospital. The wards and operating theatres of these Casualty Stations have been established in the most suitable buildings available, in a few cases in local hospitals, but usually in ecclesiastical or educational establishments. Thanks to the practical skill and ingenuity of the R.A.M.C. and the ample supply of equipment from home, such a building, a few days after it has been taken over, is made to provide all the essentials which the most fastidious aseptic surgeon can require, and that is saying a good deal.

"WAR BABIES."

CONSIDERING the unprecedented nature of the circumstances of the nation and the natural emotions caused thereby, it appears that the people generally have been wonderfully unperturbed and that their psychology has undergone little change. At the same time it must be remembered that it was impossible for the nation as a whole to escape entirely unscathed from the effects of anxiety and excitement. Two effects of this excitement have pressed themselves on public attention in connexion with the subject of this article.

Within two or three months of the beginning of the war an uncomfortable feeling gained ground that the large number of young men living in camps or billeted among the people had attracted most undesirable attention not only from professional prostitutes but also from a large number of young and giddy girls to whom the phenomena of military life were novel and exciting. These girls and women hung persistently about the camps and were the cause of much annoyance both to the men themselves and to the military police. Public attention was naturally drawn to this state of things, and partly owing to a very natural and proper anxiety for the welfare of the army, but also partly owing to a certain amount of disturbance of the public nerves, stories began to circulate among all classes of the community, and by Christmas England in general was prepared to believe that, not hundreds, but thousands, of illegitimate children would prove to be the result of these indiscretions. Many tales were told in most circumstantial detail to a horrified but credulous public. For instance, it was alleged that at a certain town having a population of 18,000 souls in all no fewer than 2,000 girls were expecting "war babies." Another story was that in a certain maternity hospital fifteen new wards were to be provided, and that fifty beds were to be reserved for the patients of one doctor only. New instances of the terrible increase of illegitimacy due to the war were published daily, and public opinion was soon found to be divided into two streams. One part of the nation hesitated to believe such rumours, and was both shocked and grieved at the possibility that the war, which should have led the nation to increased self-control and to a higher morality, had apparently greatly increased irregular unions and illegitimacy. This section of the community, while prepared to do whatever might prove to be necessary to meet the state of affairs, viewed the supposed action of the soldiers and young women with grave disapproval and sorrow. Another section of the nation, misled by excitement and by what one cannot but call a false sentimentality, professed to regard the unfortunate girls as heroines. They spoke of the coming babies as the "children of the heroes of the Marne," and justified the parents, more especially the mothers, saying that they had but little to give to their country, and they had given all. The confusion and excitement grew so much, that finally the Archbishops of Canterbury and York, together with a few other representative persons, agreed that a committee, with Mrs. Creighton as its chairman, should be formed to investigate the alleged facts.

Mrs. Creighton's Committee reported on June 9th. The general conclusion at which it arrived was that the reports that had been circulated as to the large number of "war babies" were without foundation, and reflected in an undesirable manner on the characters of the soldiers and the girls. The Committee did not deny that there had been grave cause for anxiety on account of the prevalence of a low moral standard as well as on account of intemperance, which was often the result of thoughtless treating, nor did it deny that there had been much giddiness and foolish excitability among young girls which often led to undesirable conduct. The Committee stated that everything it had learned pointed to the need of providing opportunities for wholesome recreation for the girls and also for the soldiers and sailors, but expressed the opinion that there was no reason to pass any harsh judgements upon them or to distrust them in the future

Among the recommendations of the Committee are the following:—That young and inexperienced girls expecting their first child should not be herded together with women who are habitually immoral; that the young mother and her child should not be separated from each other; and that the existing agencies to help such young mothers ought to receive a greatly increased public support, in order that they should be able to deal more adequately with the evil. The Committee approved of the work of the Women Patrol and of the League of Honour, and were of opinion that the girls needed wise friends who would care for them in their hour of trouble, help them to a higher moral standard, and seek to turn their patriotic emotions into innocent and profitable channels.

We must agree that the results of the investigations of Mrs. Creighton's Committee show that there is very little increased illegitimacy owing to the war, and that all the excitement, the disapproval on the one hand and the sentimental commendation on the other, have little foundation in fact. The episode, however, is not altogether to be regretted, for by it public attention has been drawn to the very important subject of illegitimacy in general. Illegitimate births are not to be considered only as lapses from morality, but also as contributing to our unduly large infantile mortality. The percentage of stillbirths in the case of legitimate children is 0.99 per cent., while that for illegitimate children in general is 8.1 per cent. The further fact that a large percentage of illegitimate children are the offspring of domestic servants at once raises the question whether the conditions of life under which these young women live are economically sound and whether they reflect credit on the arrangements made by employers for their safety and welfare.

Even if illegitimacy has not been largely increased by the unusual circumstances of the nation and by the tide of emotional excitement that has affected young people of both sexes, we are bound to consider what can be done to help them to a better care

of their bodies and to a higher sense of duty and discipline.

The remedy appears to be twofold. First, an honest attempt should be made to teach young people how to take care of their bodies and to help them to realize something of the dignity and honour conferred on them by the right and fitting exercise of their sexual faculties; they ought also to be warned of the perils that attend irregular unions, and of the lifelong nature of the penalty that they may incur. Secondly, an effort should be made to provide wholesome and pleasant recreation for all young people. A more widely extended use might be made of the Boy Scout and Girl Guide movements, of clubs and of guilds. Among other agencies for amusement and instruction we may reckon the employment of picture palaces and cinemas. At present their influence leaves much to be desired, but it is impossible to deny that there is an immense power for good or evil in the performances at theatres, music halls, and cinemas, and it ought not to be beyond the limit of possibility to make these popular amusements subserve the cultivation of a national taste for the good, the beautiful, and the elevating. After a long day's work young men and women really need recreation, and the responsibility lies on their elders and leaders to provide for them such reasonable and healthy pleasures as shall not only lessen their present sense of fatigue but also help them morally, and so gradually reduce immorality, illegitimacy, and their accompanying evils.

BRITISH AND FRENCH SALVARSAN PRODUCTS.

A FURTHER communication from the National Medical Research Committee with regard to the salvarsan products manufactured in England and France is published at page 1087. The publication of the earlier communication was followed by the appearance of some criticisms of the methods of control adopted. The Committee now repeats the statement that it is satisfied that the biological tests applied under its direction proved that the products were not inferior, in safety or in efficacy, to the original German preparations, and adds that when its earlier statement was published it had before it reports of clinical trials which showed that the results were satisfactory in practice. It is, of course, very well known that a certain proportion of unfavourable results, including some deaths, followed the use of the original German products. The cause of these unfortunate occurrences has not been fully explained; the chief explanations suggested were either that the precautions with regard to the purity of the water used for the injection were imperfect, or that the patient presented some idiosyncrasy. Every member of the British profession will, we feel sure, be ready to respond to the appeal that records of all cases in which untoward results are observed should be supplied to the Committee. Obviously, it will only be possible to decide how far the bad results have been due to some defect in preparation, either in the laboratory or immediately before use, if the results of all cases treated with a particular batch are known. The information the Committee desires, in order that its scientific workers engaged in the biological testing of products should be able to study the closeness of the relations which may exist between the clinical and the laboratory results, is indicated in the communication on p. 1087. The Committee does not, we think, go too far when it says that members of the medical profession will be performing a service of national importance by complying with the request now made.

PROMOTION OF CAPTAINS, R.A.M.C.

THE answer which Mr. Tennant made to the question put by Colonel Yate on June 10th as to the small number of promotions of captains of the regular R.A.M.C. to be majors since the beginning of the war may have been technically correct, but, in reply to a supplemental question, the Under Secretary of State for War admitted that he was not fully informed, and promised to make further inquiries. The result of these will, we believe, show him first of all that his statement that the promotion of captains would be considered as and when majors were required fails to give an accurate impression of the actual facts, and, secondly—though this will perhaps appear to the public a minor point—that captains have suffered in respect of promotion when compared with other ranks in the corps. In the most senior rank—that of lieutenant-colonel—74 officers, or 58 per cent., have been promoted out of the corps into the Army Medical Staff since the war began; in the second rank, that of major, 190 officers, or 56 per cent., have been promoted lieutenant-colonel; in the lowest rank, that of lieutenant, 127 officers, or 100 per cent., have been promoted captain; and in the third, that of captain, only 50, or much less than 14 per cent., have received a step in rank. The foregoing figures relate to both special and ordinary promotions, and the differences of treatment are seen to be still more marked when the men whose promotion has been due simply to the efflux of time are excluded from the count. When this is done it is found that less than 4 per cent. of captains have received special promotion, while the corresponding percentages in the other ranks range from over 52 to as high as 100. These figures are sufficiently striking in themselves, but to appreciate their full significance they must be correlated with certain other facts. A large proportion of the promoted lieutenants gained admission to the service not very long before the actual declaration of war, while at least 100 of the captains who have not been promoted are men of over ten years' service. To say that they are capable of fulfilling the duties of the rank above them is not a mere assumption. A large proportion of these unpromoted captains have proved their fitness to fulfil the duties of men of the rank of major by passing their promotion examinations, and this proportion would have been larger still had not examinations for promotion been stopped on the outbreak of the war. Further, the fitness of many of them for such duties is proved conclusively by the fact that they are already actually performing them with success. There are, therefore, a whole series of anomalies, every one of which is unfavourable to those who at the beginning of the war had already reached the rank of captain. Dozens of special promotions among the lieutenant-colonels, dozens among majors, dozens among the men who have served so short a time that they are not yet entitled to sit for promotion examinations, yet hardly any special promotions at all among men who, though deemed fit to perform the work of majors, found themselves graded after March with permanent officers so junior as not to have standing to their credit as many months of service as they themselves had years. This statement is not an exaggeration, for there are at the present time many captains holding posts which, according to the published regulations, must be filled by field officers. As it would seem that Mr. Tennant was not aware of these facts when he answered Colonel Yate, it may be inferred that his answer cannot have been founded on information in the possession of the Medical Department of the War Office; probably we shall not be far wrong if we assume that the anomalies themselves are largely due to some of the recommendations of the Directors-General having been blocked by the Treasury. If so, it is time for this opposition to be pushed aside, for the difference in the treatment accorded to these medical officers has already proved very unfair to individuals. The officers affected are naturally and properly

very reticent on the subject; but though it is necessary to probe somewhat deeply to discover the extreme soreness that it has created, this feeling undoubtedly exists. On all accounts, therefore—as a matter of policy as well as from a sense of justice—a large number of special promotions from the rank of captain to that of major in the regular R.A.M.C. ought shortly to be made.

RESIDENTS AT MILITARY HOSPITALS AT HOME

LAST week we published the reply of the Under Secretary of State for War to a question put to him in the House of Commons by Sir Philip Magnus with regard to the number of resident medical and surgical officers at the King George Hospital for sick and wounded soldiers, and stated that we understood that the position with regard to the number of residents would be reconsidered by the British Red Cross Society and the St. John Ambulance Association, the two bodies jointly responsible for the hospital. It will be remembered that Mr. Tennant promised to make inquiries to ascertain whether any of the junior medical officers who were eligible could be released for general medical service with the army. We have not heard the result of these inquiries, nor of the deliberations of the two societies, but from information which has been placed at our disposal we learn that six of the resident medical officers are not eligible for service in the R.A.M.C., being physically unfit, and that two of those definitely offered their services and were refused. Four others who offered their services to the R.A.M.C., now acting as resident officers, are ineligible on the ground of nationality, and one, though English by birth, has no British qualification. One other resident officer is of foreign birth, and has for this reason not offered his services. Three others made offers of their services to the R.A.M.C., but have not pursued their intention for various reasons, in one case because the desire to be attached to a particular unit was not complied with, in a second because the reply was long delayed, and in a third because no reply was received. Four who have been in civil practice, two in Canada and two in this country, were only able to offer their services to the R.A.M.C. for a period less than the minimum of one year required by the regulations. Two of the resident officers who were also previously engaged in general practice are over 40. Three others find it impossible to join the R.A.M.C. owing to domestic reasons. These particulars account for twenty-four of the twenty-five residents, and we understand that the twenty-fifth has not yet joined the hospital.

A FRENCH NURSE'S EXPERIENCES IN A GERMAN AMBULANCE.

IN *Paris Médical* of June 5th Dr. Albert Mouchet, who is in charge of a temporary hospital at Orleans, publishes an account by Mdlle. Marguerite Schwab, a nurse who was taken prisoner by the Germans in September, of her experiences at Cambrai, where she was set to work among the sick and wounded. At the beginning of October the number of cases of typhoid fever among the Germans increased so much that two special hospitals—one with 200, the other with 150 beds—were organized. The staff, she says, was numerous, experienced, and devoted to their work; but, while acknowledging the efficiency of the German organization, Mdlle. Schwab hints that its very perfection is attended with certain drawbacks. The division of labour is carried to such a degree that confusion of responsibility often results; as an example, she mentions that one day, when the evacuation of a number of wounded was to take place, she was sent successively to twelve different officers, each of whom said it was the business of some one else. Towards the end of her enforced stay at Cambrai, which lasted four months, she got the impression that most of the orderlies and other infirmary attendants had been sent to the fighting line and were replaced by men still weakened by wounds. The Red Cross nurses were for the most part deaconesses or sisters of charity, and she bears testimony to the kindness with which they treated the French wounded and acknowledges their courtesy towards herself. Nevertheless, she adds, they had a bad name among the inhabitants of Cambrai; this was due to other women wearing the Red Cross uniform, who from time to time visited the town and plundered on a large scale, besides being liberal of their favours to the officers. The doctors ministered to the wounded without regard to nationality, except in the case of the British, the Indians, and the French coloured troops—Moroccans and Senegalese—who were sometimes "rather neglected." The nourishment of the wounded was insufficient, and their bedclothes were not disinfected for two months; to this Mdlle. Schwab attributes the prevalence of gangrene and septicaemia. The clothes of the English and French were burnt lest they should be the means of conveying the germs of tetanus. But this, we are told, was a pretext for stealing not only uniforms, but everything in the nature of what Mr. Wemmich calls "portable property" the unfortunate men had in their possession. Mdlle. Schwab was liberated in January as the result of an appeal to Prince Rupprecht of Bavaria, but she had to return to France through Germany and Switzerland. She was quarantined for a week at Aix-les-Chapelle about the time of the New Year, when the city usually wears an aspect of festivity. This year, however, everything was sad and dismal. The town was placarded with large posters announcing victories, but beside them were others threatening with three months' imprisonment bakers who in these times of distress should dare to bake the usual Twelfth Night cakes. Mdlle. Schwab tasted the KK. bread, which she describes as being tasteless and not nutritious. The bread was then a new thing, and patriotic housewives bought it eagerly; one would like to have their opinion of it now.

OPERATIONS, TENNIS, AND LECTURES.

STRANGE indeed are the changes wrought by war. Time was when junior staff appointments were much sought after and the newly qualified were content to take posts at hospitals for £50 a year on almost any conditions an autocratic board of governors chose to offer. From a document addressed to the secretary of a provincial hospital which has fluttered into our office we gather that it is now the candidate who proposes conditions, and that he intends to chastise the autocrats with scorpions instead of whips. We do not know the name of the enterprising youth, but his first condition displays something of the blood-thirstiness of the Bengal tiger. In a small provincial hospital he is to be provided with at least one big operation daily, with all the minor operations as a sort of *hors d'oeuvres*. He is not keen on anaesthetics, and will only give them on alternate days; but, as an after-thought, if there are four operations on, he agrees magnanimously during two operations to give the anaesthetics and "during the rest of the two" to assist. He desires that an *x*-ray room and materials for developing shall be provided, and for his efforts in this direction he proposes to charge patients 1 guinea; but in a further outburst of generosity he agrees to return half the fee to the hospital. He would undertake charge of surgical out-patients on the condition that "if any of the patients would ask me for a certificate, I will charge whatever I think proper"; moreover, "the same condition I will follow in the in-patients." Then it appears that this prospective house-surgeon is taking a D.P.H. course, which requires his absence from duty for two days each week. The hospital authorities are to provide his food and railway expenses to London on these occasions, and to expect him back by the last train. In order that his health may be preserved, he requires at least one and a half hours for tennis every day. After

this it is not surprising to learn that the writer is a vegetarian, and his food must be prepared "according to my choice." Having summed up his requirements under ten headings, he ends up in the following delightful manner: "These are some of my conditions; the others I will let you know afterwards, after making inquiries from different universities, and any other conditions which I will think of before my accepting the appointment." Decidedly our applicant cannot be of "unmixed British birth," unless, indeed, the document is the work of some wag who has indulged in an untimely jest.

THE ROLL OF HONOUR.

SINCE the beginning of the war we have published lists of medical officers of the Royal Navy, of the Army, including the contingent of the Dominions, and of the Indian Medical Service, which we believe to be accurate and complete. We have endeavoured also to record all the casualties to medical men serving as combatant officers, but we cannot have the same confidence that these records are equally complete, and we would ask the relatives of such officers to be good enough to communicate the facts to us. But many young men serving as combatants in various capacities who are the sons of medical men have also lost their lives, and we believe that our readers would desire that all such occurrences should be recorded in our pages. If this is to be done with anything approaching completeness, we must depend almost altogether upon the assistance which their parents or friends may be willing to give us. We hope that this assistance will be given, and that information will be forwarded which will enable us to notice briefly any such sad occurrences.

Medical Notes in Parliament.

Health of British Expeditionary Force.—Mr. Tennant, in replying to Mr. King on June 21st, said that as far as the important preventable diseases were concerned the health of the Expeditionary Force compared not only favourably with the health conditions of any previous campaign, but that nothing approaching it had ever been known in the past.

Poisonous Gases.—Mr. Tennant informed Mr. Greenwood, on June 17th, that all possible steps had been taken to provide the troops in the Gallipoli Peninsula with respirators and all other appliances to enable them successfully to resist attempts to poison them by means of noxious gases.

Cremation in War.—Mr. Tennant, in replying on June 16th to Mr. Fletcher, who inquired if the practicability and desirability of cremating the dead on the field of battle during the hot weather had been considered, stated that the question of the disposal of the dead was entirely a matter for the discretion of the military authorities in the zone of operations.

British Prisoners in Germany.—On June 21st Lord Robert Cecil informed Mr. Samuel Roberts that a further report on the conditions of internment of prisoners at Ruhleben had been received through the good offices of the United States Ambassador at Berlin, and would be published immediately. The report was of a favourable character, and showed considerable improvement in the conditions of internment of British prisoners. This improvement was due to the untiring efforts of the Ambassador of the United States in Berlin and his staff, to whom the country and the Government were deeply indebted. Mr. King asked the Under Secretary of State for War on June 22nd whether he had information that there had been arranged, through the good offices of the Swedish Government, an exchange of disabled Russian and German prisoners; and whether there was a prospect that a similar arrangement might be made by which disabled British and German prisoners might be exchanged. In reply to the first part of the question, Lord Robert Cecil recalled the reply given by the Under Secretary of State for War on April 15th, that, through the medium of the Swedish Government, it had been arranged that Russian and German incapacitated prisoners of war, Russians and Germans under the age of 17 and above 45, consuls, and retired officers were to be exchanged. With regard to the second part of the question, an exchange both of sanitary personnel and of incapacitated prisoners of war had just been finally arranged with the German Government through the United States Embassies at Berlin and in London, and would be carried out early next week.

Indian Medical Service.—Sir Philip Magnus asked the Secretary of State for India, on June 23rd, if he could state what was the exact amount of pay to officers in the Indian Medical Service who were now employed with the field ambulances of the Expeditionary Force in France, and by how much their pay had been increased since it was stated that the rate of pay in future would be somewhat in excess of unemployed pay; and whether any of the other grievances of which the Indian medical officers at that time complained had been redressed. Mr. Chamberlain in a written reply stated that a lieutenant in the Indian Medical Service of two years' service employed with the Expeditionary Force in France who held no specific appointment received under the orders recently issued grade pay of Rs. 350 a month and staff pay of Rs. 100 a month, or Rs. 450 a month in all, as against unemployed pay of Rs. 420 a month. A lieutenant of less than two years' service likewise received Rs. 450 a month if at the time he left India he drew staff pay; otherwise he received unemployed pay. A captain of less than five years' standing, who held no specific appointment in France, received grade pay of Rs. 400 a month and staff pay of Rs. 100 a month, or Rs. 500 a month in all, as against unemployed pay of Rs. 475 a month. These rates were exclusive of exchange compensation allowance. With regard to the second part of the question, the grievances represented in Sir Philip Magnus's two questions of April 27th (BRITISH MEDICAL JOURNAL, May 1st, p. 777) were remedied by the decision of the War Office described in answer to those questions.

Junior Medical Students.—Sir Philip Magnus, on June 21st, asked the Under Secretary of State for War if, having regard to the fact that many of the younger university medical students of military age had been reproached for not having joined the forces of the Crown, he would state whether it was considered preferable that such students in their first or second year should accept some military position, or should continue their medical studies with a view to qualification. Mr. Tennant said: I am not aware of the reproaches to which the hon. member refers. It is clear that, if students in their first or second years join the combatant ranks in very large numbers, there will probably be for some years after the war a serious scarcity of doctors. Any expression, therefore, of official opinion which might seem to place on them the obligation of taking up immediate military duty would hardly be in the interests either of the army or of the community as a whole.

Naval Surgeons and Agents.—Commander Bellairs asked the First Lord of the Admiralty, on June 17th, whether the Board would increase the remuneration given to the members of the medical profession who were appointed as naval surgeons and agents in different districts, having regard to the alterations of conditions which the war had caused since the terms were framed. Dr. Macnamara said that no reason was seen for increasing the emoluments of the posts, which could always be satisfactorily filled upon the present terms, which (with a few exceptions), being based on the payment of fees for services rendered, were elastic enough to ensure that additional services during the war were recognized by additional remuneration.

Antityphoid Inoculation.—Mr. Tennant, in replying on June 17th to a series of questions by Mr. Chancellor regarding antityphoid inoculation, said that an officer would be acting without authority if he stated that inoculation against enteric fever was compulsory. The circular issued by the Research Defence Society had the War Office sanction and authority and no reason was seen for withdrawing such authority. The cases of death to which attention had been drawn had been inquired into, and he was not aware of any case except one where death had been due to other than natural causes.

Transfers from the R.A.M.C.—Mr. Evelyn Cecil asked whether officers or men of the Royal Army Medical Corps Territorial Force who had signed Army Form E. 624A were liable to be transferred to combatant units, and, if so, whether it was the intention of the War Office to transfer officers and men originally enlisted in the Royal Army Medical Corps to the artillery or infantry without their further express consent. Mr. Tennant replied: Yes, sir; but the signing of the form is not compulsory, and, if it is signed, the consent of the officer or man will have been obtained. That is the purpose of the form. In reply to Mr. Jowett, Mr. Tennant said on June 22nd that transfers had been made from the Royal Army Medical Corps to infantry regiments under the authority of the Army Amendment Act (No. 2), 1915, and added in reply to Mr. Raffan that the scruples of the members of the Society of Friends would be taken into consideration.

Discharge of Recruits for Physical Disability.—Mr. Tennant stated on June 21st, in reply to Mr. Partington, that information with regard to the number of recruits discharged within two months of enlisting owing to physical disability was not available, and he did not think it was desirable to have it specially taken out, as this would throw considerable labour on the record offices. The importance of the point raised was fully recognized by the military authorities, and the matter received their constant attention.

Protection of Public Buildings.—Sir Edwin Cornwall asked, on June 21st, whether any arrangements, and, if so, of what nature, had been made between the British and German Governments for the protection of specified buildings. Mr. Tennant said that Article 27 of the Annex to the Hague Convention laid down that in sieges and bombardments all necessary steps must be taken to spare, as far as possible, buildings dedicated to public worship, art, science, or charitable purposes, historic monuments, hospitals, and places where the sick and wounded were collected, provided they were not being used at the time for military purposes, and stated that it was the duty of the besieged to indicate such buildings or places by distinctive and visible signs, which should be notified to the enemy beforehand. In accordance with this Article, His Majesty's Government notified their intention to use for this purpose a sign consisting of a large, stiff, rectangular panel divided diagonally into two painted triangular portions, the upper portion black and the lower portion white. No other arrangements had been made between the British and German Governments for the protection of such buildings. How far the enemy were likely to observe the provisions of this or any other convention he must leave to the judgement of the hon. member.

Milk and Dairies Acts.—A bill postponing the operation of the Milk and Dairies Acts (England and Scotland) to a date not later than one year after the termination of the present war was read a second time on June 22nd. The Parliamentary Secretary of the Local Government Board, in introducing the bill, said that the Acts were designed to improve the supply of pure, unadulterated, and uncontaminated milk. Under them more stringent regulations would have to be applied to the milk industry, and a more systematic and detailed inspection set on foot. More inspectors would therefore be necessary, and at the present moment it was extremely difficult to add to the number of veterinary surgeons employed as inspectors for civil work. Other additions to the staff of local authorities would also have to be made, and local authorities could not easily enlarge their staffs at the present time. Moreover, the medical officer of health, who would have to exercise general direction and supervision, was very much engaged in performing special duties cast upon him by the war emergency. Several speakers, including Mr. Rendall and Mr. Denniss expressed regret that the proposal should have been made, believing that at a time when so many valuable lives were being lost it was all the more essential to improve the milk supply in order to protect infant life. Sir J. Spear, on the other hand, pointed out that there was a great falling off in the supply of milk owing to the heavy cost of food and the scarcity of milkers; these difficulties combined to cause a good many people to give up keeping some of their cows. He supported the proposal to postpone the Acts because he believed that if they were applied injudiciously at the present moment such a decrease in the milk supply would be brought about as would be a real and grave menace to infants. He concluded by referring to the bill before the House to consolidate all measures dealing with the milk supply, and drew from Mr. Hayes Fisher the statement that there was no intention to postpone that bill, which it was hoped would be got through very shortly.

OUR BELGIAN COLLEAGUES AT HOME AND ABROAD.

THE MACHINERY FOR DISTRIBUTION OF FUNDS IN BELGIUM.

A DETAILED report of the meeting of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés on May 6th has been received. It continues the story of the distribution of funds by the Belgian society. At this session a financial statement was made showing that by the end of April Fr. 65,000 had been received and a little over Fr. 45,000 had been spent; great discretion has obviously been exercised in making the grants. The kind of case relieved has been fully illustrated in recent issues.

Cases were mentioned which had already been found deserving of continued monthly relief, in accordance with the principle adopted at the previous session, and the brief notes upon the selected object of special help showed some truly tragic situations. All the grants of money proposed by the eleemosynary subcommittee were unanimously adopted by the Committee.

The British Committee has received through Professor Jacobs a statement of the financial position of the Belgian society up to June 10th, which shows that there are funds still in hand, but necessarily the disbursements are rapidly increasing. The Aide et Protection aux Médecins et Pharmaciens Sinistrés had received by the end of the first week in June 77,000 francs, and had disbursed 60,000 francs, while the extraordinarily modest expenses of administration amounted to less than 500 francs.

Since this date a substantial sum of money has been sent by the British Committee to the Belgian Committee, so that Dr. V. Péchère (President), and his admirable colleagues, Mr. A. Delacre, Dr. Laruelle (Secretaries), and Dr. H. Coppez (Treasurer) will be able to continue with good heart to meet the increased calls upon their resources.

THE WEEK'S SUBSCRIPTIONS.

The week's subscriptions include the handsome contribution of £500 from the New South Wales Branch of the British Medical Association, making with previous donations a total of £728 received from this generous source.

Thirtieth List.

	£	s.	d.
Dumfries and Galloway Division, B.M.A. (per Dr. J. D. Robson, Hon. Sec.):			
Dr. Robertson ...	0	10	0
Birmingham Local Committee (per Dr. Saundby, Hon. Sec.):			
Dr. A. E. Richardson ..	5	5	0
Aberdeen Division, B.M.A.: Drs. Pirie, A. H. Lister, J. F. Christie, Croll, M.K. Booth, F.K. Smith, Alex. Low, John A. Milne, Col. Mitchell, Drs. Gordon, Levack, Giddie Stephen, Davidson, Smith, Slessor, J. P. Mitchell	28	0	0
Dr. H. Bryan Densham...	5	5	0
Dr. A. G. Peter	2	2	0
Dr. Mary O'Brien ...	1	1	0
Dr. D. G. H. Carpenter ...	1	0	0
New South Wales Branch B.M.A.	500	0	0
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.) (fifteenth donation, total £728 19s. 7d.):			
Dr J. J. Carruthers ...	1	1	0
Dr. D. S. Park ...	1	1	0
Dr. F. Hunton ...	1	1	0
Dr. W. J. Carmichael...	2	2	0
Mr. A. Williams ...	1	1	0
Mr. A. Mortimer ...	0	10	6
M. P. S.	0	3	0

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Voeux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments contributed by the following donors since the publication of the last list:

Dr. Gordon Brown, Chigwell.
Barnsley Division of the British Medical Association, second donation, per Dr. R. F. Castle.

THE WAR.

EARLY TREATMENT OF WOUNDED.

THE following memorandum, containing notes on the principles which should guide the treatment of wounded in the early stage from the fighting line to the clearing stations, and govern the time at which the wounded man is transferred to a base hospital, was issued from General Head Quarters in France by Surgeon-General Sir A. T. Sloggett, D.G.M.S., on March 27th. It was addressed to Directors of Medical Services, Deputy Directors of Medical Services, Assistant Directors of Medical Services, and medical units. We have introduced the cross headings.

Septicity of Wounds.

1. All wounds should be regarded as infected or septic. Sutures should consequently not be used as a rule; and, if they are used, the wounds should never be completely closed, and very free drainage should be secured by the use of large rubber tubes. Gauze drains are not suitable. "Aseptic" surgery is out of place in septic wounds.

Choice of Antiseptics.

2. No one antiseptic can at present be said to be superior to all others. Iodine is very commonly employed, but should not be used stronger than the 2 per cent. solution in spirit. Weaker solutions of 2 drachms of tincture to the pint of water are suitable for the irrigation of wounds. Carbolic acid 1-20 to 1-40, lysol 1 drachm to the pint, and peroxide of hydrogen have all proved useful, and the peroxide appears to be specially indicated in sloughing or gangrenous wounds.

Treatment of Collapse.

3. Men who have been left lying out for a day or two, and especially those with compound fractures of the leg or thigh, are often so severely collapsed that it is advisable to use subcutaneous injections of saline solution and to administer food and stimulants before attempting to dress the wounds.

Risks Connected with Bandages.

4. Special care is required to see that bandages are not applied too tightly, or do not become too tight subsequently. Many limbs swell greatly for a long time after being wounded. No limb with broken bones should be bandaged without first applying a splint.

Inadvisability of Operating in Field Ambulances.

5. Operations should not, as a rule, be performed in the field ambulances, partly because it is not desirable to retain patients in them longer than is necessary, but also because their equipment and conditions do not permit of such complete asepsis as is necessary if wounds are not to be further contaminated. Emergency operations must, of course, be left to the discretion of the officer in charge.

Beds and Nursing at Casualty Clearing Stations.

6. Arrangements are now usually made to enable a certain number of patients to be retained in the casualty clearing stations, and nurses have therefore been added to the personnel. If an operation has been performed the patient should usually be retained for at least twenty-four hours.

Treatment of Compound Fractures.

7. Bad compound fractures with comminution of bone and laceration of the soft tissues should, as a rule, be cleaned up in the clearing stations under an anaesthetic, whenever time permits. Loose fragments should be removed, but all partly attached pieces should be left. Sutures should not be used, and free drainage should always be secured after the wound has been thoroughly cleaned. Besides the splints in the "fracture boxes," additional splints, especially for the lower extremity, can be obtained at all the advanced dépôts of medical stores.

Treatment of Head Injuries.

8. Wounds of the skull and brain do not, as a rule, require operation in the field ambulances, and should be sent as quickly as possible to the casualty clearing stations. When large numbers of patients are being treated the slighter fractures can safely be sent (without undue delay) to the base. If operations for removal of bone and trephining are performed at the clearing stations, it is desirable to secure the most complete asepsis, otherwise the operation is better not done, and treatment should be limited to shaving and cleaning the scalp. If operations are done, the following points should be observed:

(*a*) The whole scalp should be shaved and prepared.
(*b*) The wound itself should be excised, or if too extensive for this, its edges should be cut away.
(*c*) A large flap, with the wound in its centre and not less than three or four inches in diameter, should be turned down.
(*d*) The dura mater should not be opened if previously uninjured.
(*e*) After suturing the flap, free drainage should be secured, either through the excised bullet wound, or else at the edges of the flap by a tube.

Treatment of Chest Wounds.

9. In wounds of the chest it is best to take the patient—if sufficiently well—to the clearing station as quickly as possible, and it is desirable that he should in all cases be kept there for about a week at least. Recurrent bleeding is easily caused by movement. The pleura should never be tapped.

Treatment of Abdominal Wounds.

10. As regards rest, the same applies to wounds of the abdomen. As regards operation on these, no fixed rule can be laid down, as much depends on the experience in surgery of the individual operator. It should be remembered that wounds of the intestines which can be sutured are rare, and that resection of the intestine must be anticipated in wounds involving the small intestine area, if an operation is undertaken at all. Many patients with wounds in the upper part of the abdomen and the flanks recover without operation, but not so many when the small intestine area is involved.

Treatment of Injuries of the Spine.

11. Cases of injury of the spine should be sent to the base as soon as they are able to be moved, because of the difficulties of nursing.

Treatment of Wounds of the Bladder.

12. Most cases of wounds of the bladder require suprapubic cystotomy and drainage, and then the wounds need not be sutured.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

ABDOMINAL WOUNDS.

SINCE there are signs which suggest that an acute discussion may shortly arise of the respective merits of operative and "expectant" treatment of wounds of the abdomen, it may be useful to point out that there are at least two conditions which must be met if any such discussion is to be useful. In the first place, it is useless in records of successes following "expectant" treatment to include cases in which there has been no clear evidence of injury of the peritoneum, and in the second, in quoting statistics as to the extent of the mortality due to abdominal wounds in warfare, it is useless, when the point at issue relates to the possibility of lessening such mortality by any form of treatment whatever, to include cases in which death has resulted either at once or within a few hours of reception of the wound. It is also relatively useless to compare cases in which the abdominal cavity has been roughly and widely torn open by a large fragment of shell with those in which the only superficial evidence of injury is a small wound such as is commonly caused by the entry into any part of the body of a bullet or a minute fragment of shell casing. In fact, seeing that (*a*) even the strongest believers in expectant or conservative treatment do not abstain from surgical interference in cases of visceral extrusion; that (*b*) it is generally agreed that

injuries of the solid viscera tend to be less fatal than those of the small intestine; and (*c*) that it is admitted that in all cases in which the bladder has been injured an attempt must be made either to stop the leakage of urine or to provide for its exit; it might be well in the first instance, at any rate, to limit discussion to the treatment of wounds of the intestines uncomplicated by injury of solid viscera, of great arteries, or of the bladder.

Should an active discussion of the topic arise it will not be a novelty. Several great wars have taken place since the time when opening up the peritoneal cavity became one of the commonest of all serious surgical procedures in civil life, and in the course of each of them a cry has been raised for early laparotomy as a remedy for gunshot wounds. On each occasion, however, the outcome would seem to have been a return on the part of the majority to a belief that if expectant treatment can do little, laparotomy can, save in a small minority of cases, do still less.

A German surgeon of large experience in abdominal surgery, Professor Krönig, who occupies the Chair of Gynaecology at Freiburg, has recently urged, as was noted in the JOURNAL last week, that as nothing could be worse than the results of conservative treatment, surgical interference should be substituted for it. Krönig, of course, was speaking of the results obtained on the German side of the war, and I am glad to be able to express a belief that on the British side no like statement could reasonably be made; at all events, it is certain that there are hospitals where conservative treatment has given results which might possibly be bettered, but might certainly be very much worse.

It is legitimate, perhaps, to quote in this connexion the records of one particular institution with whose work I am specially well acquainted. A recent examination of them showed that among all cases in which there had been clear evidence of injury of the peritoneum, and which had been submitted to expectant treatment, the mortality was 41 per cent.; while it was less than half that number, or only 20 per cent., when the cases that had died within the first twenty-four hours after admission, and therefore, presumably from shock, or profuse haemorrhage, or fulminant peritonitis, were excluded from the calculation. The hospital is one which receives its cases within an hour or two of their being picked up on the battlefield, or brought out of the trenches, and the outstanding feature of the routine treatment is absolute rest, and the withholding of all solid food or liquid food for several days.

The surgeons at this hospital are all youngish men, whose natural tendency is in favour of surgical intervention and whose operative skill is decidedly high, but they would seem to have learnt from experience to regard it as their duty in abdominal cases to restrict the use of the knife as much as possible. They use it in cases such as those in which the bladder has been injured, or a button of omentum or of intestine is extruding, or in which the cause of impending death is clearly slow haemorrhage from an easily reached abdominal vessel, but hold, I understand, that even in these cases interference should not be too free. The abdominal gunshot wounds on which the views of these surgeons are founded number some hundreds of cases, and that of other surgeons who have been similarly placed seem to be much of the same kind.

In short, the opinion at present prevailing would seem to be to the effect that though the performance of a formal laparotomy including thorough exploration of the intestinal cavity may afford opportunity for making intestinal resections and anastomoses, the mortality due to gunshot wounds of the abdomen would increase rather than diminish if expectant treatment were generally abandoned. There is a vast difference between performing a laparotomy on a patient who has been carefully prepared in advance and on one who is already suffering from a more or less severe degree of shock.

HOSPITALS AND THE EVACUATION OF THE WOUNDED.

In a previous note it was indicated that the hospitals in the Boulogne area, whatever they might be called, presented in their actual working many resemblances to casualty clearing stations; and that to some extent the same statement would be true of all British military hospitals in France.

Since all general and stationary hospitals over here are as well equipped and as fully staffed with nurses and medical officers as are most civil hospitals in Great Britain, the statement, though not technically precise, gave a hint of the general lines on which these hospitals have to do their work. Their motto would be "move on," and this fact is one of the stumbling-blocks in the path of the surgeons, until recently engaged in civil practice, who now constitute at least the major part of the staffs of all these hospitals who are actually engaged in treatment.

The system is foreign to their ideas, but with the regular soldier-doctor it is otherwise. An element of "move on" has always figured more or less in his scheme of professional life and in the personal environment both of himself and of his patients. I have heard, for instance, an old soldier describe a field ambulance as a three-day hospital, a clearing station as an eight-day hospital, a stationary hospital as a thirty-day hospital, and a general hospital as a sixty-day hospital. It cannot be said that this is an accurate description, and there are, of course, no regulations which justify it; still for all that, it represents not altogether inaccurately the general idea underlying the conventional work of these different classes of hospital, and explains to some extent the philosophy of the regular when he sees his most interesting cases whisked away from him at a moment's notice.

Still, even to him, though the movement is not new, the pace is quite novel. Its rapidity is rendered possible by the ease with which patients can be transferred to England, thence to be distributed all over the United Kingdom. The position of matters in France makes it desirable to utilize this facility to the greatest possible degree. There is a limit to the extent to which really efficient hospitals—whether for British or French or Belgian troops—can be extemporized, but in view of the very great number of men engaged and of the large proportions which experience has shown that the casualties may in certain circumstances reach in the course of a few hours, it can hardly be said that there is any corresponding limit to the number of cases for which provision must be made.

All the more true will this statement be seen to be when it is remembered that in the event of any very brilliant success the allied forces might have thrown upon their hands a number of German wounded fully equal to their own. Finally, it must be recognized that when any given number of beds has been organized the number of them available for new patients must, in the best of circumstances, tend to diminish; for in every convoy of sick and wounded there is a percentage of cases which it will not be wise to transfer with rapidity; they may have to be kept for many weeks.

These are the main considerations which have led to all the British military hospitals in France, and pre-eminently those in the Boulogne area, being utilized much as if they were nominally casualty clearing stations, and which originally led to the establishment of the existing working rule in regard to the disposition of patients. So far as circumstances permit, those only are intentionally kept in France who fall within two categories—first, men likely to be fit to return to the firing line or to other active duty within three weeks; and secondly, men whose condition, whether consequent on the character of their wound, or disease or otherwise, makes their immediate warding imperative. All others are sent to England.

A further consequence is that the first job of a medical officer in charge of beds, when he comes on duty in the morning, is to classify afresh the patients occupying the beds allotted to him. He divides them into four categories—those fit for evacuation to England; those fit for evacuation to a more distant base in France, such as Rouen; those ready for discharge to a convalescent dépôt, and those who must be kept where they are. All medical officers having performed this duty, the commanding officer of the hospital is in a position to deal with the recommendations made, and to notify the A.D.M.S. and embarkation medical officer as to his immediate transport needs. It is, in fact, the commanding officer's duty to do this twice a day. Elsewhere than at Boulogne the evacuation movement may be less active, but similar general rules obtain.

AIR RAIDS AND ASPHYXIATING GASES.

ADVICE TO THE PUBLIC.

THE Commissioner of Police for the metropolis on June 17th issued the following statement and advice to the public concerning possible air raids on London. The Home Secretary informed the House of Commons on June 21st that the statement had been approved by the Admiralty.

In all probability if an air raid is made it will take place at a time when most people are in bed. The only intimation the public are likely to get will be the reports of the anti-aircraft guns or the noise of falling bombs.

The public are advised not to go into the street where they might be struck by falling missiles; moreover, the streets being required for the passage of fire engines, etc., should not be obstructed by pedestrians.

In many houses there are no facilities for procuring water on the upper floors. It is suggested, therefore, that a supply of water and sand might be kept there so that any fire breaking out on a small scale can at once be dealt with. Every one should know the position of the fire alarm post nearest to his house.

All windows and doors on the lower floors should be closed to prevent the admission of noxious gases. An indication that poison gas is being used will be that a peculiar and irritating smell may be noticed following on the dropping of the bomb.

Many inquiries have been made as to the best respirator. To this question there is no really satisfactory answer, as, until the specific poison used is known, an antidote cannot be indicated. There are many forms of respirator on the market for which special advantages are claimed, but the Commissioner is advised by competent experts that in all probability a pad of cotton waste contained in gauze to tie round the head and saturated with a strong solution of washing soda would be effective as a filtering medium for noxious gases, and could be improvised at home at trifling cost. It should be damped when required for use, and must be large enough to protect the nose as well as the mouth, the gauze being so adjusted as to protect the eyes.

Gas should not be turned off at the meter at night, as this practice involves a risk of subsequent fire and of explosion from burners left on when the meter was shut off. This risk outweighs any advantage that might accrue from the gas being shut off at the time of a night raid by aircraft.

Persons purchasing portable chemical fire extinguishers should require a written guarantee that they comply with the specifications of the Board of Trade, Office of Works, Metropolitan Police, or some approved fire prevention committee.

No bomb of any description should be handled unless it has shown itself to be of incendiary type. In this case it may be possible to remove it without undue risk. In all other cases a bomb should be left alone and the police informed.

As will be seen, the Commissioner of Police puts his finger upon the difficulty which has been felt in discussing this matter and giving advice to the public. Until the specific poison used in air bombs is known, an antidote cannot be indicated with confidence. Washing soda (sodium carbonate) is an efficient absorbent for most gases of an acidic character, such as chlorine, bromine, and oxides of nitrogen, but it would be useless with some poisonous gases. Sodium carbonate (washing soda) is, as every one knows, very soluble in water, but by a strong solution we should understand about 10 to 20 per cent., or roughly from three to four tablespoonfuls to a pint of water. We still think that the addition of a proportion of sodium thiosulphate, so largely sold as hyposulphite for use in photography, would be an advantage. The formula which the Académie de Médecine in Paris has recommended is sodium thiosulphate (hyposulphite) 1,000 grams, sodium carbonate 200, glycerine 150, water 800. If the antidote is to be kept in solution, the addition of glycerine is a distinct advantage, but we believe that about double the proportion of sodium carbonate (washing soda) would be an improvement. So far, however, as any facts made public go it would appear that bombs dropped from airships have been incendiary and not asphyxiating.

ASPHYXIATING GASES.

Dr. R. Dujarric de la Rivière of the Institut Pasteur, and Professor J. Leclercq of Lille, made recently a communication to the Académie de Médecine in Paris on the results of their observations in the cases of 112 soldiers admitted into hospital at Calais from Langhemarck within a few hours of being exposed to the poisonous irritant gases (bromine or chlorine) used by the Germans. The points of greatest novelty to British readers in their communication are contained in the results of a *post-mortem* examination made in the case of a man who died of pneumonia. The general signs of poisoning by irritant gases were present, including congestion of all the respiratory passages, abnormal vascularity of the alimentary canal, and massive degeneration of the liver, spleen, and kidneys; in addition there was massive pneumonia of the right lung, with scattered patches of gangrene at the base. The symptoms presented by the majority of the patients were due to inflammation of the respiratory passages down to the finest bronchial ramifications, but in some cases there was in addition bronchopneumonia and pulmonary gangrene. In two patients all the symptoms of haemolytic jaundice were present, and in a third haemoglobinuria persisted for several days. In others there was persistent albuminuria, and in most there was excess of bile pigments in the urine. The sputum at first contained desquamated cells and some polynuclear cells. This stage was followed by evidences of general congestion and, in some cases, necrosis of the lung. The sputum in a certain number of cases contained anaërobes, especially *Bacillus perfringens*, and in the cases in which pulmonary gangrene occurred the microbic flora was very rich in anaërobes (*B. perfringens*, *B. serpens*, *B. ramosus*).

SIR JOHN FRENCH'S DISPATCH.

THE following are among the names mentioned in Sir John French's dispatch, dated May 31st, for gallant and distinguished service in the field:

General Head Quarters Staff, etc.

Atkins, Temporary Colonel J., M.B., F.R.C.S.
Beveridge, Lieutenant-Colonel W. W. O., D.S.O., M.B., R.A.M.C.
Birrell, Lieutenant-Colonel E. T. F., C.M.G., M.B., R.A.M.C.
Brakenridge, Lieutenant-Colonel F. J., R.A.M.C.
Burtchaell, Colonel C. H., C.M.G., M.B.
Carr, Colonel H., M.D.
Chopping, Lieutenant-Colonel A., R.A.M.C.
Cummins, Lieutenant-Colonel S. L., M.D., R.A.M.C.
Davidson, Major P., D.S.O., M.B., R.A.M.C.
Dwyer, Captain P., M.B., R.A.M.C.
Easton, Major P. G., R.A.M.C.
Ensor, Lieutenant-Colonel H., D.S.O., M.B., R.A.M.C.
Evans, Lieutenant-Colonel P., M.B., R.A.M.C.
Fawcus, Lieutenant-Colonel H. B., M.B., R.A.M.C.
Fell, Lieutenant-Colonel M. H. G., R.A.M.C.
Ferguson, Colonel N. C., C.M.G., M.B., A.M.S.
Forrest, Lieutenant-Colonel J. V., M.B., R.A.M.C.
Geddes, Colonel R. J., D.S.O., M.B.
Irvine, Major F. S., M.B., R.A.M.C.
Macpherson, Surgeon-General W. G., C.B., C.M.G., M.B., K.H.P.
Morgan, Lieutenant-Colonel C. K., M.B., R.A.M.C.
Penny, Lieutenant-Colonel F. S., M.B., R.A.M.C.
Porter, Surgeon-General R., M.B.
Ritchie, Captain M. B. H., M.B., R.A.M.C.
Swan, Colonel W. T., M.B.
Treherne, Surgeon-General F. H., C.M.G., F.R.C.S.Edin.
Webb, Lieutenant-Colonel A. L. A., R.A.M.C.

Royal Horse Guards.

Pares, Surgeon-Major B.

Medical Service and Royal Army Medical Corps.

Bowlby, Temporary Colonel Sir A. A., K.C.M.G., F.R.C.S.
Burghard, Temporary Colonel F. F., M.D., F.R.C.S.
Dawson, Temporary Colonel Sir B. E., K.C.V.O., M.D.
Gray, Temporary Colonel H. M. W., M.B., F.R.C.S.Edin.
Herringham, Temporary Colonel Sir W. P., Knt., M.D.
Lister, Temporary Colonel W. T., M.B., F.R.C.S.
Meek, Colonel J., M.D.
Makins, Temporary Colonel Sir G. H., K.C.M.G., C.B., F.R.C.S.
Moynihan, Temporary Colonel Sir B. G. A., Knt., M.B., F.R.C.S.
Wright, Temporary Colonel Sir A. E., Knt., M.D., F.R.C.S.I., F.R.S.
Young, Colonel C. A.
Ainsworth, Major R. B.
Archibald, Quartermaster and Honorary Captain W. N.
Barnard, Quartermaster and Honorary Lieutenant A. P.
Bartlett, Major B. S.
Bell, Captain W. J. E., M.B.
Birch, Quartermaster and Honorary Lieutenant E.
Bond, Captain A. H.
Bostock, Major J. S., M.B.
Boyce, Captain W. W.
Boyle, Lieutenant-Colonel M., M.B.
Brown, Major R. T., M.D.
Browne, Captain C. G.

Buckley, Quartermaster and Honorary Captain E. J.
Burney, Captain W. H. S.
Burnham, Major H. H., attached 2nd Canadian Artillery Brigade.
Cagney, Temporary Lieutenant P., M.B.
Cairns, Lieutenant J. W., M.D. (T.F.).
Cannon, Lieutenant J. W., M.B., Special Reserve.
Carr, Quartermaster and Honorary Lieutenant J. (T. F.).
Carter, Captain H. St. M., M.D.
Chesney, Lieutenant W. McM., M.B., Special Reserve.
Clarke, Lieutenant T. W., M.B., Special Reserve.
Conway, Quartermaster and Honorary Lieutenant T. D.
Coplans, Captain M., M.D. (T.F.).
Cowey, Major R. V.
Craig, Lieutenant D. D., M.B.
Crawford, Lieutenant-Colonel G. S., M.D.
Crean, Captain T. J., V.C., Reserve of Officers.
Cree, Temporary Lieutenant R. E., M.B.
Dalrymple, Temporary Captain J.
Darling, Captain W., M.B., F.R.C.S.Edin.
Dawson, Captain G. F., M.B.
Devonald, Lieutenant A. E. L. (T.F.)
Du Cros, Temporary Honorary Captain G. H.
Dugdale, Quartermaster and Honorary Lieutenant H. (T.F.).
Duka, Temporary Captain A. T., D.S.O.
Escott, Quartermaster and Honorary Lieutenant E. W. J.
Fielding, Major T. E., M.B.
Foster, Captain J. R.
Franklin, Major R. J.
Gale, Captain R., M.B.
Galloway, Temporary Lieutenant R. W., M.B.
Gilchrist, Lieutenant A. J., Special Reserve.
Glynn, Temporary Lieutenant A. S., M.B.
Goddard, Major C. E., M.D. (T.F.).
Green, Quartermaster and Honorary Major J.
Green, Quartermaster and Honorary Lieutenant R. H.
Grenfell, Quartermaster and Honorary Lieutenant T.
Harding, Major D. L., F.R.C.S.I.
Harris, Quartermaster and Honorary Lieutenant G. W. (T.F.).
Hart, Temporary Lieutenant C. H., M.B.
Haycraft, Temporary Lieutenant J. B., M.B.
Herrick, Lieutenant-Colonel H.
Hewson, Captain F. M., F.R.C.S.I.
Hill, Temporary Lieutenant F. T.
Hincks, Lieutenant A. C. (T.F.).
Houston, Captain J. W., M.B.
Howell, Captain F. D. G.
Howell, Captain H. L.
Ingram, Temporary Lieutenant T. L.
Irvine, Captain A. E. S.
James, Temporary Lieutenant P. W., M.D.
Janion, Temporary Lieutenant H. G.
Jones, Captain J. B., M.B.
Just, Temporary Lieutenant T. H., M.B.
Kavanagh, Captain E. J., M.B.
Kelly, Lieutenant-Colonel J. F. M., M.B.
Lane, Captain J. W., M.D.
Langstaff, Lieutenant-Colonel J. W.
Le Bas, Temporary Lieutenant D.
L'Estrange, Major E. F. Q.
Lightstone, Lieutenant H. (T.F.).
Lindsay, Lieutenant A. B., M.B.
Lister, Temporary Lieutenant W. H.
Lloyd-Jones, Captain P. A., M.B.
Lovell, Lieutenant A. G. H., M.B., F.R.C.S.
Lunney, Quartermaster and Honorary Captain A.
McCarthy, Captain W. H. L., M.D., Special Reserve.
McCurry, Lieutenant W. T., Special Reserve (killed).
Macglashan, Captain K. B., M.D., F.R.C.S.Edin., Special Reserve.
Mackie, Lieutenant D., M.B., Special Reserve.
McLaughlin, Captain J. N., M.D., Special Reserve.
Maclean, Temporary Lieutenant I. C., M.D.
McLean, Lieutenant W. F., M.B., Special Reserve.
McSheehy, Captain O. W., M.B.
Martin, Major J. F., M.B.
Martyn, Captain S., M.B. (T.F.).
Miller, Lieutenant W. A., M.B., Special Reserve.
Moore, Temporary Lieutenant E. H., D.S.O., M.B.
Morris, Lieutenant E. M. (T.F.).
Morrison, Quartermaster and Honorary Captain A., Reserve of Officers.
O'Brien, Captain C. W.
Offord, Quartermaster and Honorary Major E. P.
Packard, Quartermaster and Honorary Lieutenant J. T.
Page, Captain C. M., M.B., F.R.C.S., Special Reserve.
Pallant, Major S. L.
Pemberton, Lieutenant H. S., M.B., Special Reserve.
Poe, Lieutenant-Colonel J., M.B.
Preston, Lieutenant R. A., M.B.
Priestly, Lieutenant J. G., M.B.
Richards, Major F. G. (killed).
Richards, Temporary Captain O., M.D.
Robinson, Captain T. T. H., M.B.
Rogers, Major H., M.B.
Rogers Tilstone, Lieutenant-Colonel J. M.(T.F.).
Sargent, Temporary Honorary Lieutenant-Colonel P., M.B., F.R.C.S.
Seelley, Temporary Lieutenant E., M.B.
Shaw, Captain J. J. McI., M.B.
Short, Quartermaster and Honorary Major J. B.
Slayter, Lieutenant-Colonel E. W., M.B.
Smith, Temporary Lieutenant A. C. S.
Smith, Temporary Lieutenant P.
Somervell, Lieutenant L. C.
Spackman, Quartermaster and Honorary Major H.
Stirling, Captain A. D., M.B.
Stubbs, Captain J. W. C., M.B.
Symons, Lieutenant-Colonel F. A., D.S.O., M.B.
Thorne, Temporary Lieutenant F. J., M.B.
Thurston, Lieutenant-Colonel H. S.
Trist, Captain J. R. R., Special Reserve.
Turnbull, Temporary Lieutenant D. C., M.B. (died of wounds).
Turner, Captain C. H.
Vellacott, Captain H. F., F.R.C.S., Special Reserve.
Ward, Quartermaster and Honorary Lieutenant H. A.
Wear, Lieutenant-Colonel A. E. L., M.D.
Webb, Lieutenant-Colonel A. L. A.
Wedd, Lieutenant B. H., M.D.
Wells, Captain A. G.
West, Major J. W., M.B.
Whitehead, Captain N. T., M.B.
Wilkinson, Temporary Lieutenant R. F.
Wilson, Temporary Lieutenant C. McM., M.D.
Winter, Captain H. G.
Woolfenden, Temporary Lieutenant H. F., M.D., F.R.C.S.
Wood, Captain J. L.
Woodhouse, Temporary Lieutenant P. R., M.B.
Worthington, Major Sir E. S., Kt., M.V.O.
Worthington, Captain F., M.B.
Wylie, Lieutenant T. W., M.B., Special Reserve.

The list of officers of the Royal Army Medical Corps Territorial Force, of the Australian and Canadian Army Medical Corps, and of the Indian Medical Service, as well as the names of non-commissioned officers and men in the R.A.M.C. and in the other services, will be published in a subsequent issue.

HONOURS.

THE *London Gazette* issued on June 23rd announces that the King has been pleased to approve of a number of rewards for services in connexion with operations in the field. Among these are the following; other announcements will be reported in our next issue:

To be Commanders of the Order of the Bath.
Colonel S. Westcott, C.M.G., A.M.S.
Colonel R. J. Geddes, D.S.O., M.B., A.M.S.
Colonel J. Meek, M.D., A.M.S.
Colonel W. T. Swan, M.B., A.M.S.
Colonel H. Carr, M.D., A.M.S.
Colonel S. G. Moores, A.M.S.
Lieutenant-Colonel W. W. O. Beveridge, D.S.O., M.B., R.A.M.C.
Lieutenant-Colonel (temporary Colonel) Sir W. P. Herringham, M.D., A.M.S. (T.F.)
Temporary Colonel Sir A. E. Wright, M.D., F.R.C.S.I., F.R.S., A.M.S.
Temporary Colonel F. F. Burghard, M.D., F.R.C.S., A.M.S. (T.F.)
Lieutenant-Colonel and temporary Colonel G. L. Foster, Canadian A.M.C.

To be Companions of the Order of St. Michael and St. George.
Lieutenant-Colonel A. E. L. Wear, M.D., R.A.M.C.(T.F.).
Lieutenant-Colonel C. H. Bowle-Evans, M.B., I.M.S.
Lieutenant-Colonel F. Wall, I.M.S.
Lieutenant-Colonel G. S. Crawford, M.D., R.A.M.C.
Lieutenant-Colonel H. S. Thurston, R.A.M.C.
Lieutenant-Colonel S. L. Cummins, M.D., R.A.M.C.
Lieutenant-Colonel P. Evans, M.B., R.A.M.C.
Lieutenant-Colonel H. B. Fawcus, M.B., R.A.M.C.
Lieutenant-Colonel T. H. J. C. Goodwin, D.S.O., R.A.M.C.
Lieutenant-Colonel J. C. B. Statham, R.A.M.C.
Lieutenant-Colonel A. L. A. Webb, R.A.M.C.
Lieutenant-Colonel F. S. L. Ford, Canadian A.M.C.
Major J. F. Martin, M.B., R.A.M.C.
Major Sir E. S. Worthington, M.V.O., R.A.M.C.

VICTORIA CROSS.

The Victoria Cross has been conferred on Captain Francis Alexander Caron Scrimger, Canadian Army Medical Service, Medical Officer, 14th Battalion Royal Montreal Regiment. The official record of the conduct which earned him the distinction is as follows:

On the afternoon of April 25th, 1915, in the neighbourhood of Ypres, when in charge of an advanced dressing station in some farm buildings, which were being heavily shelled by the enemy, he directed under heavy fire the removal of the wounded, and he himself carried a severely wounded officer out of a stable in search of a place of greater safety. When he was unable alone to carry this officer further, he remained with him under fire till help could be obtained. During the very heavy fighting, between April 22nd and 25th, Captain Scrimger displayed continuously day and night the greatest devotion to his duty among the wounded at the front.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed.

DR. ANTHONY C. CLIFFORD, who was killed at Ypres on June 1st, received his education at Marlborough and Emmanuel College, Cambridge, and entered Guy's Hospital in 1910. He took the diplomas of M.R.C.S. and L.R.C.P. in 1913 and the degrees of M.B., B.C.Camb., in the following year. He received a commission as second lieutenant in the Reserve of Officers on May 18th, 1912; on August 6th, 1914, he joined the 3rd Reserve Regiment of Cavalry, and when killed was fighting as a combatant officer in charge of a machine gun section with the 3rd Dragoon Guards.

Died of Wounds.

Major James Craik Taylor, R.A.M.C. (T.F.), 4th Battalion Royal Scots Fusiliers, is reported as having died of wounds at the Dardanelles in the casualty list published on June 22nd. He was educated at Anderson's College, Glasgow, and at Glasgow University, where he took the M.B. and C.M. in 1896. He served in the South African war in 1900–01, in the Orange Free State and Orange River Colony, was present in the actions at Houtnek and Wittebergen, and received the Queen's medal with two clasps. He then went into practice at Newlands, Glasgow, having also served for some time as physician to the Stewarton Hospital. He was the author of *Diet Charts for the Use of Physicians*. He entered the medical department of the auxiliary forces in 1902, and held the rank of captain from February 17th, 1906, major from November 6th, 1914. He also had the rank of honorary lieutenant in the army from December 21st, 1901.

Wounded.

Major O. R. Ennion, R.A.M.C.(T.F.). (Dardanelles.)
Captain C. C. FitzGerald, R.A.M.C.(T.F.). (Dardanelles.)
Captain H. Henry, R.A.M.C.(T.F.).
Lieutenant H. L. Gauntlett, R.A.M.C.(T.F.). (France.)
Lieutenant (temporary) W. J. Maloney, R.A.M.C. (Dardanelles.)

SONS OF THE PROFESSION.

Lieutenant Edward F. Thorburn, who was killed in the Dardanelles on June 10th, was the youngest and only surviving son of Lieutenant-Colonel William Thorburn, M.D., F.R.C.S., of Manchester, who is on the staff of the 2nd Western General Military Hospital. Lieutenant Thorburn, who was 21 years of age, was educated at Marlborough College, and was a member of the Officers' Training Corps. He obtained a commission in the second line of the 6th Manchesters, and went to Southport for training, where he specialized in signalling duties. Early in the year he accompanied the drafts sent to Egypt, and had charge of a number of signallers who were to join the Signal Company of the Field Engineers of the East Lancashire Division.

Second Lieutenant Alan James I. Donald of the 6th Battalion Manchester Regiment, who has been killed in action in the Dardanelles, was the eldest son of Dr. and Mrs. Archibald Donald of Manchester, and was 21 years of age. After receiving his education at Winchester he proceeded to New College, Oxford, where he was a member of the Officers' Training Corps. The day after the declaration of war he applied for a commission, and went with his battalion to Egypt in September.

Second Lieutenant G. M. Hume, of the Northumbrian Division, Royal Engineers, who was killed in France on June 12th, was the third son of Dr. G. H. Hume, consulting surgeon to the Newcastle-upon-Tyne Infirmary. Lieutenant Hume, who was only 19 years of age, was educated at Uppingham School; on the outbreak of war joined the Royal Engineers, and soon received a commission.

Cecil C. A. Ratcliff-Gaylard, of the Head Quarters Staff, 2nd Battalion, 1st Infantry Brigade, Australian Expeditionary Force, who was killed in action in the Dardanelles, was the elder son of Dr. and Mrs. Ratcliff-Gaylard of Birkenhead. He was 25 years of age.

Lieutenant James Montague Smith, the eldest son of the late Dr. James Smith of Brunton Place, Edinburgh, and a senior student of medicine in the University of Edinburgh, was killed in action in the Dardanelles on May 5th; he was in the 5th Royal Scots.

NOTES.

MEDICAL CONSULTANTS: NAVY AND ARMY.

Royal Navy.

DR. MACNAMARA, Parliamentary and Financial Secretary to the Admiralty, stated in the House of Commons on June 23rd, in response to Sir John Lonsdale, that the engagements with the six medical men receiving £5,000 a year each as consultants at the Royal Naval hospitals had been terminated from June 19th, and that the Admiralty were about to enter into a new arrangement.

Army: Mediterranean.

The principle of appointing consultants with the British forces in the field established at the beginning of the war, and subsequently considerably expanded in connexion with the British forces in France as stated in the BRITISH MEDICAL JOURNAL of May 8th, p. 823, has now been extended to the British forces in the Mediterranean. Like those who are serving in France, these officers receive the rank, pay, and allowances of colonel in the Army Medical Service.

Dr. Purves Stewart, physician to the Westminster Hospital, the West-End Hospital for Nervous Diseases, and the Royal Orthopaedic Hospital, has been appointed consulting physician (Malta), and the following consulting surgeons: Mr. C. A. Ballance, M.V.O., M.S.Lond., F.R.C.S., surgeon to St. Thomas's Hospital (Malta); Mr. V. Warren Low, surgeon to St. Mary's Hospital; Mr. A. W. Mayo Robson, C.V.O., F.R.C.S., consulting surgeon to the Leeds General Infirmary (Egypt); Mr. Charters J. Symonds, M.S.Lond., F.R.C.S., consulting surgeon to Guy's Hospital; and Mr. A. H. Tubby, M.S.Lond., F.R.C.S., surgeon and orthopaedic surgeon to Westminster Hospital.

THE BEST PLACES FOR NEW GENERAL HOSPITALS.

A meeting of the medical profession in Southampton has been held to consider a statement which appeared in the local press to the effect that the 2/5th Southern General Hospital (Territorial) was shortly to be established at Portsmouth. The 1/5th Southern Hospital is already at Gosport, and the personnel of the staff of the second would be drawn from those members of the medical profession in Southampton who, in 1908, offered their services for work of this nature. The meeting adopted a resolution deprecating the proposal on the ground of the serious diminution of the number of medical men available for the treatment of the civil population of Southampton and of the inmates of the Red Cross and St. John hospitals which would be involved by the calling away from the borough of the medical personnel for a general hospital at Portsmouth, and suggesting that it was desirable that this second hospital should be established at Southampton, where, in the intervals of their military duties, the medical officers could attend to the medical requirements of the inhabitants, and where suitable premises in appropriate surroundings could be obtained. The plans formed originally for staffing the Territorial general hospitals have, we believe, worked extremely well, except in a limited number of cases, where the members of the staff have not all been drawn from the town in which the hospital has been established. When it has been deemed necessary to call away practitioners from their own town to another, great dislocation of civil medical work has occurred, which we believe has sometimes at least been unnecessary, and has been detrimental to the civil population without affording any corresponding advantage to the wounded. The circumstances of Southampton place the objections to such dislocation in a very strong light, because probably the large majority of wounded who go to Portsmouth, and indeed to many other places, are landed at Southampton directly. As it is understood that the personnel of the new hospital is to be drawn almost entirely from Southampton, it would seem that the wiser course—unless there are very strong reasons to the contrary, which are not apparent on the surface—would be to establish the 2/5th Southern General Hospital in Southampton. The accommodation which could there be provided for a hospital would, we are assured, be superior to that which remains available in Portsmouth. The advantage to the civil population of retaining in the town the services of the practitioners and specialists who hold commissions is too obvious to need emphasis.

SERBIA.

According to the *Times* correspondent in the Balkan Peninsula, the typhus epidemic in Serbia is rapidly subsiding. The cases registered in the kingdom—which on April 14th numbered 8,213 and on May 14th, 4,529—had fallen to 1,652 on June 14th. Statistics compiled by Dr. James Berry, the head of an English hospital mission at Vrnjachka Banya, from official sources show that 93 Serbian doctors have died out of a total of 387 at

the beginning of the war. Of these no fewer than 82 have fallen victims to typhus fever, only one surgeon having been killed in battle.

MEDICAL OFFICERS WANTED.

Hampshire Carabiniers.

A medical officer is wanted for a yeomanry cavalry regiment. Must take imperial service obligation. Applications to Captain Edwards, M.O. Hampshire Carabiniers, Bowood Park, Calne, Wilts.

3/2nd South Midland Mounted Brigade Field Ambulance.

A medical officer is required to fill the post of transport officer to this unit. A knowledge of horses and transport work is desirable, but not essential. Apply to Officer Commanding, 3/2nd South Midland Mounted Brigade Field Ambulance, Great Missenden, Bucks.

2/1st Northumbrian Field Ambulance.

Medical officers, prepared to undertake imperial service, are required for this unit. Pay and allowances as in regular army. Applications to the Commanding Officer, Major Turton, Hollinside Camp, Wickham, Durham.

2nd and 3rd Line Welsh Border Mounted Brigade Field Ambulance.

There are vacancies for five medical officers, prepared to serve abroad, in the above units. Pay and allowances as in the regular army, together with outfit and camp kit grants. Full particulars can be obtained on application to Major D. C. Leyland Orton, Officer Commanding 2nd Line Welsh Border Mounted Brigade Field Ambulance, Lambton Park Camp, co. Durham.

2/2nd East Anglian Field Ambulance.

There are three vacancies in this unit on account of officers being sent abroad. Applications to the Officer Commanding, 17, Park Parade, Cambridge.

Ireland.

ILLEGAL CONDITIONS FOR POOR LAW APPOINTMENTS.

THE Irish Committee of the British Medical Association called the attention of the Irish Local Government Board to an advertisement in the press for a dispensary doctor in the Castlebar Union containing an illegal condition, to the effect that all candidates would be called upon by the guardians to be bound by a graded scale of fees for non-ticket cases. The Local Government Board has informed the Irish Committee of the British Medical Association that it has forwarded the following letter to the Castlebar guardians pointing out the illegality of the conditions of the advertisement for a dispensary medical officer:

Sir,—I am directed by the Local Government Board for Ireland to forward, to be laid before the Board of Guardians of Castlebar Union, the accompanying copy of a communication which they have received from the Irish Committee of the British Medical Association calling attention to the terms of the advertisement issued by the guardians inviting applications for appointment to the office of medical officer of the Balla Dispensary District; and I am to state that the proposed condition of appointment that the medical officer should attend private patients at fees prescribed by the guardians would not be binding upon the gentleman appointed medical officer.

The guardians might, however, invite the medical officer on his taking up the post, to submit, in pursuance of Article 7 of the Dispensary Rules, a scale of small charges for persons whose circumstances would not admit of their paying his usual fee.

I am, Sir,
Your obedient servant,
(Signed) A. R. BULAS,
Secretary.

The Clerk,
Castlebar Union.

IRISH MEDICAL ASSOCIATION.

The annual meeting of the Irish Medical Association was held on June 16th in the Royal College of Surgeons, Dublin. Dr. Frederick W. Kidd, President, occupied the chair.

The annual report of the Council stated that the number of members of the association on December 31st, 1913, was 654; during 1914 the deaths of 13 members were notified; 37 resignations were recorded; and 68 members were struck off the association register owing to their subscriptions being two or more years in arrear. The total reduction in membership was thus 118. On the other hand, 131 new members were elected, so that the number on December 31st, 1914, was 667. The Insurance Act, as administered in Ireland, the report stated, was still engaging the attention of the Council and the profession generally; the hope of an early settlement expressed in last year's report had not been realized. The question of certification was referred to a Finance Committee of the Cabinet, but, owing to the outbreak of war, the Government was unable to deal with it. The Irish Insurance Commissioners were trying to set up a system of part-time certifiers throughout the non-panel areas, and, although they had succeeded in inducing a few medical men to accept these positions, no system of certification could be successful until the medical attendant of the insured person was recognized as the proper person to certify; it was a gross injustice to a sick insured person that he had often to travel many miles to visit the certifier or adviser. A resolution was carried to reconstitute the Reorganization Committee, and to call a special general meeting at a convenient date in the autumn to consider the question of reorganization. The following resolutions were adopted:

That the Poor Law Subcommittee of the Irish Medical Committee be asked to consider and collect evidence and report to the Irish medical profession on Poor Law reform.

That this association protests against the appointment of medical advisers or part-time certifiers under the National Insurance Act, and is of opinion that any medical man accepting and retaining such appointments should not be met professionally by consultants or other medical practitioners.

SANATORIUM ACCOMMODATION IN DUBLIN.

At the last meeting of the Insurance Committee for the city of Dublin it was unanimously resolved again to request the Tuberculosis Committee of Management of the Dublin Corporation to take immediate steps to provide increased accommodation at Crooksling Sanatorium, there being at present on the Insurance Committee waiting list over fifty cases, with no prospect of treatment for some considerable time. The Insurance Committee urge that arrangements should be made for the provision of even temporary accommodation for those patients for whom there is a hope of complete recovery.

RED CROSS HOSPITAL AT BRAY.

The Red Cross Society has taken over the International Hotel, Bray, for conversion into an auxiliary hospital. As the building contains 120 rooms it is believed that it will accommodate about 300 soldiers. Bray is a seaside resort about twelve miles from Dublin, and this affords an ideal place for a hospital for wounded and convalescent soldiers. A large staff of nursing attendants has been engaged, and it is understood that the local doctors will undertake the treatment of the cases with the assistance of surgical consultants from Dublin.

APPROVED SOCIETIES AND MEDICAL CERTIFIERS.

The annual general meeting of the Irish Land and Labour Approved Benefit Society was held on June 5th at the offices of the society in Limerick. Mr. Thomas Lundon, M.P., President of the Society, presided, and there was a large attendance of delegates from the counties of Clare, Limerick, Tipperary, Waterford, and Queen's County. The following resolution was passed unanimously:

That owing to the unsatisfactory manner in which the majority of the medical certifiers are discharging their duties, we hereby request the Insurance Commission to at once come to terms with the dispensary doctors for their patients, each in his own particular district, as we are of opinion that until the dispensary doctors are settled with, sick benefits cannot be satisfactorily or judicially distributed.

Scotland.

DR. GEORGE S. MIDDLETON OF GLASGOW.

THE public announcement that the University of Glasgow had decided to confer the honorary degree of LL.D. on Dr. George S. Middleton was received by the medical profession of Glasgow with the liveliest satisfaction. Dr. Middleton is a well-beloved teacher of clinical medicine, a graduate in arts of Aberdeen and in medicine of Glasgow. His professional life has been bound up with the Royal Infirmary and Sick Children's Hospital of Glasgow, and his commanding position in the profession generally was recognized by his nomination to the Presidency of the Association of Hospital Physicians. To

signalize the honour conferred upon Dr. Middleton his former colleagues of the visiting staff of the Royal Infirmary agreed to present him with the robes appropriate to the degree. The presentation was made on June 18th in the board room of the infirmary. Dr. James A. Adams, senior surgeon to the infirmary, presided, and amongst those present were the visiting staff; the superintendent, Dr. J. M. Thom; the matron, Miss Melrose; and Sister Maggie Maguire, who was a nurse in the infirmary forty years ago when Dr. Middleton was house-surgeon, and is still on active duty. In presenting the robes Dr. Adams spoke of the cordial relations which had always prevailed between Dr. Middleton and his colleagues on the staff of the Infirmary; they recognized in him a man of great tenacity of purpose, pursuing his own course without thought for its effect on his own professional progress. Dr. Middleton, in reply, said that nothing touched him more than the desire of the visiting staff of the infirmary to recognize, by presenting him with the robes of the LL.D. degree, the honour conferred upon him by the University. It seemed to him that the honour was not conferred upon him so much as through him upon the medical profession in general and upon the Royal Infirmary in a more intimate relationship. He was particularly desirous of welcoming the presence of his old friend Sister Maguire, associated with him in the nursing work of the infirmary for so many years. Dr. Middleton was dressed in khaki as Lieutenant-Colonel (T.F.) attached to the 4th Scottish General Hospital, and an added grace was given to the ceremony by Sister Maguire who assisted him to don the scarlet and purple robes of the degree.

THE MAKDOUGALL-BRISBANE PRIZE.

The Makdougall-Brisbane prize of the Royal Society of Edinburgh for the biennial period 1912–13–1913–14 has been awarded to Professor C. R. Marshall for his studies "On the Pharmacological Action of Tetra-alkyl-ammonium Compounds." The prize will be presented at the ordinary meeting of July 5th.

England and Wales.

TREATMENT OF TUBERCULOSIS IN LANCASHIRE.

REPEATED complaints have recently been made in the area of the Lancashire Insurance Committee that insured persons suffering from tuberculosis have often not received the full advantages to which they are entitled under the Insurance Act, owing to delay in the reporting of cases of tuberculosis in the early stages. This was said to have arisen from a want of knowledge of procedure and mode of obtaining sanatorium benefit, though it was recognized that many insured persons suffering from tuberculosis had not cared to apply for the benefit until they were beyond the early or intermediate stages. The Chief Tuberculosis Officer has now, at the request of the Lancashire Insurance Committee, addressed a letter to the panel practitioners enclosing a memorandum which fully explains the Lancashire County Council scheme for dealing with the disease. It is stated that the scheme has not yet reached its full development, as it is at present handicapped by the war, but the County Council is to provide institutional and dispensary treatment for all persons, insured and non-insured, adults or children, suffering from tuberculosis. The administrative county is divided into six dispensary areas with dispensaries, medical officers, and nurses for each area. A map of the area is enclosed, with a list of the names, addresses, and telephone numbers of the senior dispensary officers and the times of their attendances at the dispensaries. The full staff comprises fourteen tuberculosis officers and twenty-four nurses, but as 60 per cent. are at present engaged on military duty it is impossible to promise that every notified case shall at present be visited at once. Copies of the forms of application for sanatorium benefit are enclosed, and when these are sent in arrangements will be made for early examination of the patient by a dispensary tuberculosis officer at the dispensaries, the patients' homes, or the surgeries of the medical attendant. On the report of the tuberculosis officer, the District Insurance Committees are empowered to grant at once domiciliary or dispensary treatment, but if the case is one for institutional treatment, the District Committee has first to refer it to the County Insurance Committee. It is specially pointed out that the services of the tuberculosis officers are at the disposal of all practitioners, free of charge, for consultations on doubtful cases, and free examination of sputum will be made wherever the tuberculosis officer considers such necessary.

Where domiciliary treatment is given, prescriptions are to be marked with the letters "S.B.," so that accounts may be charged to the Sanatorium Benefit Fund, and not to the Drug Fund. The Insurance Committee is also prepared to grant a sum, not exceeding 5s. a week, for special nourishment, provided that the tuberculosis officer considers that such will "in all reasonable probability restore the working capacity of the patient." The use of shelters is also granted for suitable cases on the recommendation of the tuberculosis officer. A copy of the regulations of the Local Government Board for the domiciliary treatment of tuberculosis is given, but it is stated that as the records required to be kept by panel practitioners have been found to be too complicated, their use has not been enforced, and a modified set of records is under consideration. In the meantime practitioners are asked to assist the tuberculosis officers as required by sending reports on the progress of their patients on a simplified form supplied for the purpose.

As regards dispensary treatment, persons under the care of a practitioner are not allowed to attend the dispensaries without the knowledge and approval of the practitioner; nor is ordinary symptomatic treatment undertaken at the dispensaries if the patient is at the time receiving satisfactory treatment from a practitioner, the dispensaries dealing rather with special forms of treatment in co-operation with the private or panel practitioner and the local sanitary authority.

For institutional treatment the county council has arranged for the use of from 250 to 300 beds in sanatoriums, the whole of these beds at present being retained for insured persons. As many beds as possible are reserved for early cases, but there is also a certain amount of accommodation for the isolation of advanced cases. In addition, arrangements have been made with certain general hospitals in Manchester and Liverpool to admit non-pulmonary cases of tuberculosis requiring operative treatment, the railway fare of patients to and from institutions being paid by the Committee. At the conclusion of institutional treatment, a copy of the discharge report from the medical officer of the institution will be sent to the medical attendants, and the patient is recommended to report himself at the dispensary, or is seen by the tuberculosis officer in consultation with the medical attendant, so that arrangements may be made for any further treatment or supervision which may be necessary. The full explanation of the scheme will be undoubtedly of the greatest value to the practitioners of the county who have hitherto hardly known the many facilities at their disposal.

Correspondence.

POISONOUS GASES.

SIR,—I am much interested in the plucky attempt made by Lieutenants Hendry and Horsburgh to relieve by blood letting one of their cases of bronchitis caused by poison gases (BRITISH MEDICAL JOURNAL, June 5th, p. 964). It is unfortunate that they seem to have tried this powerful remedy in only one case, and that not a very suitable one for a test case. The patient seems to have been practically moribund, and the amount of blood removed was not sufficient to do any real good. A strong healthy man suddenly attacked with acute bronchitis would stand, nay require, a considerable bloodletting to relieve the heart and lungs.

Were I operating, I would be guided by the effects produced on my patient, and would let the blood flow till the congestion and breathlessness were relieved.

I am convinced that general bloodletting is the remedy for these cases of traumatic bronchitis, and that it should be given a further and fuller trial.—I am, etc.,

A. G. MILLER, M.D., F.R.C.S.E.,
Consulting Surgeon, Edinburgh Royal Infirmary.

Edinburgh, June 14th.

THE SUPPLY OF MEDICAL MEN.

SIR,—It would help one in appraising the true value of the letter of "Temporary Lieutenant," in your issue of June 12th, if we knew a little more of his age and circumstances, of which he tells us nothing. Surely "circumstances alter cases," and it would be absurd to apply the same judgement to all.

For instance, if like many, probably the great majority, of medical men who have taken temporary commissions, he is young, unmarried, and fairly recently qualified, he can perhaps afford to regard his future with equanimity, as even if he has left a practice he can start afresh after the war without any serious drag. If, however, like the "Young G.P." whom he attacks in such scathing and intolerant terms, he had given hostages to fortune in the shape of a wife and family and a recently acquired practice which had absorbed all his capital, his patriotic fervour might perhaps take a more sober though not less genuine turn. It is very easy to criticize others who may be equally patriotic, but unable, from their position, to make it so apparent.

As a temporary lieutenant, I take it that your correspondent is one of those who waited till the war came before he offered his services. Let me remind him that there are thousands of men who answered the call in time of peace before there was much glory in serving, by joining the Territorial R.A.M.C. These men bore the burden and heat of the day and performed the drudgery of the business, thus trying to serve their country best by occupying their scanty leisure in attending drills, camps, and courses of instruction, passing examinations and training the men. Many of them are older, and of longer service and higher rank, than the temporary lieutenants, and they had to leave their practices at a moment's notice, with no time to make any arrangements. Yet they are mostly receiving far less pay than "Temporary Lieutenant." In spite of this, however, they are only too willing to help their country, but what they do feel badly is the want of adequate provision for those left behind in case of death.

To take my own case, I have a small partnership in the country and a wife and two young children to support. Neither I nor my wife have any private income, and a practice is, of course, unsaleable till after the war, buyers being non-existent.

If I am killed, my wife gets the princely pension of £100 a year, with £18 for each child, and a certain gratuity down. If I die from disease due to exposure, etc., or to injury not received in action, the pensions are only £75 and £15 respectively, and no gratuity at all. This, too, at a time when living has been and still is becoming dearer. Owing to this, I have not felt able to volunteer for service abroad, and I know of course there must be many more similarly situated.

Cannot the profession combine to compel the Government to make better provision for the families of the fallen? At present our duty to the country and to our own flesh and blood pull in opposite directions, for it is hard to expect a man in such a case to run extra risks of leaving his dear ones dependent on charity; and one knows how easily, when the war and the shouting are past, the soldier and his claims are forgotten.

Let "Temporary Lieutenant," therefore, be a little more charitable in his judgements, and try not to imagine that all patriotism is centred in those who come in at the eleventh hour, but give their due also to those who have served in peace, and to the rest who perhaps find it impossible to do more than the inglorious but useful task of working harder at home.—I am, etc.,

June 15th. CAPTAIN, R.A.M.C.(T.).

SIR,—My letter was not written in a gibing spirit, as Dr. Johnson suggests. My purpose was to point out that medical men are not making greater sacrifices in taking a commission than are men in other walks of life. I also maintain that £470 a year, £60 bonus, and option of retiring at the end of twelve months are far and away more liberal terms than those given to a field officer of similar rank, though his risk of death is much greater. I do not ask Dr. Johnson or any young married man with wife and children dependent on him to take a commission. What I did ask was that until Dr. Johnson, "G. P." and others (a few) were personally pressed to take a commission, they should not publish the terms on which only they will agree to serve their country, as the general public might make the mistake of thinking that this was the spirit which animated the whole profession.—I am, etc.,

June 21st. TEMPORARY LIEUTENANT.

HELP FOR GENERAL PRACTITIONERS JOINING THE R.A.M.C.

An Opportunity for Consultants.

SIR,—There are many men like myself who have joined H.M. Forces and have a practice upon which their bread-and-butter really depends. The pay from the army is not sufficient to cover their expenses, and when they join they do so at a considerable financial loss.

Locumtenents are, of course, unobtainable except at impossible figures, and it has occurred to me that there must be many men in consulting practice who would be only too pleased to give up part of their day to look after the work of a colleague who is called away on active service. They would, indeed, feel they were doing their bit by helping an army brother to get away.

I happen to know a well-known consultant who is running entirely a panel practice for a colleague in the North of London who has been called away, and I cannot help saying that he is a really splendid fellow for doing it.

I may myself have to go any day. Now, if there was any chance of my getting some one, such as I have spoken of, to take on my work for me in my absence and safeguard the wherewithal for my wife and family, I should be relieved of a terrible anxiety, and I suggest that there are many fellows in my position who need that helping good Samaritan in the hour of this national crisis.—I am, etc.,

CHAS. SAMPSON,
London, S.E., June 18th. Lieutenant, R.A.M.C.(T.)

TEMPORARY LIEUTENANTS IN THE R.A.M.C.

SIR,—Medical men who have volunteered for one year's service with the R.A.M.C. have shortly to decide whether they will renew their service.

Of those who have served at the front I have heard that there have been very few (if any) who have received promotion, many having become subordinate to permanent R.A.M.C. medical officers their juniors in age and experience. This, if it be correct, is not encouraging to the temporary lieutenants, and would appear to be a short-sighted policy on the part of the Government, since promotion of these officers lasts only for the duration of their service, and would entail no lasting charge on the revenue, as in the case of the permanent officers.

Unless the temporary lieutenants, who are often serving in subordinate positions and at great personal loss, receive some encouragement, it is to be feared that many will not renew their services, and that the shortage (if shortage there is) of medical officers will thereby be considerably increased.—I am, etc.,

June 21st. MEDICUS.

ACUTE GONORRHOEA TREATED BY ELECTROLYSIS.

SIR,—In reply to Dr. Fyfe's letter, I should like to correct an impression he seems to hold. Ionic medication has been concerned with driving certain chemical ions—for example, zinc, copper, and iodine—into various human tissues. I have never used such a system and can offer no opinions as to its value, especially as a means to overcome suppuration. My system of electrical treatment of suppuration is based on three experimentally ascertained facts: First, that all bacteria move to the positive electrode in simple salt solutions (for example, sodium chloride) at which they aggregate. Secondly, that all bacteria are soon killed by the passage of currents through the fluids in which they are suspended. Thirdly, that vaso-congestion follows electrolysis of human tissues which are immersed in such fluids. Dr. Fyfe is driving iodine into the urethral mucosa, and theory shows that the gonococci would go the same way. On the other hand, I am drawing gonococci from the mucosa to the anode (stylet), and there they enter a fluid zone of weak iodine. The electrolysis stimulates the mucous glands and

empties the glands and ducts of gonococci which constitute the plugs of muco-pus I described as filling the catheter perforations.

Having varied the circuiting and tried current reversals during the last three years of work at gonorrhoea, I believe the system I described to be the best. Still, I endeavour to keep an open mind until more is known of bacterial movements and vitality in relationship to the inflamed membranes or tissues which so many of us are trying to heal.—I am, etc.,

London, W., June 21st. CHARLES RUSS.

THE DISCOVERY OF CHLOROFORM.

SIR,—Permit me to add a few facts in support of your views on the claims made on behalf of Waldie to be considered the discoverer of chloroform. In 1886 I put forward the claim of Samuel Guthrie of Sacketts Harbour, then an important naval base, where he resided, and as a surgeon in the Army of Independence acted as consulting chemist to the munitions department. Guthrie was a regular contributed to *Silliman's Magazine*, then the principal scientific monthly in the United States of America, and in volumes xxi and xxii he published his articles on a new method of preparing solution of chloric ether. This paper appeared ten years prior to C. W. Long's discovery of the anaesthetic properties of ether and long before J. Y. Simpson sought a substitute for the ill-smelling ethyl oxide. Guthrie's other papers consisted of "Chemical fulminating preparations," "Vapourization of mercury," "Sugar from potato starch," and "On oil of turpentine."

He is credited with not alone discovering chloroform, but also with being the first to use it medicinally.—I am, etc.,

Dublin, June 21st. GEORGE FOY.

DESTRUCTION OF LICE AND OTHER BODY VERMIN.

SIR,—I have read Dr. J. Parlane Kinloch's admirable article in the JOURNAL of June 19th with very great interest. I am commandant of the 7th Northumberland Voluntary Aid Hospital, where patients are taken in from the local "billets," often in a verminous condition, and I write to beg that Dr. Kinloch would be so good as to make a suggestion as to how best to deal with the condition in the most economical way. It would be sufficient for my purposes if I could "disinfect" the kit of only one man at a time, and it would appear that the provision of a dry-cleaning bath and extractor would be unnecessarily expensive; yet I wish to use petrol rather than any other agent, as it is easily obtainable here, and its use would not require that the clothes (uniform particularly) should be dry-cleaned afterwards, as is the case, I understand, after using the phenol derivatives; indeed, to use the latter would necessitate some appliance to raise the temperature to 65° C., which we do not possess.—I am, etc.,

Monkseaton, Northumberland, June 22nd. H. E. DAVISON.

Obituary.

SURGEON-GENERAL ARTHUR JAMES PAYNE, of the Bengal Medical Service (retired), died on May 21st, aged 88. He was born on October 21st, 1826, the son of Quartermaster Payne, of the Grenadier Guards; educated at King's College, London, took the diploma of M.R.C.S. in 1847, and the degree of M.D.Lond. in 1848. He was also B.A. of London University. He was nominated an assistant surgeon in the I.M.S. on December 20th, 1848, became surgeon on February 1st, 1863, surgeon-major on December 20th, 1868, and deputy surgeon-general on September 13th, 1879, retiring with a step of honorary rank on February 1st, 1885. After serving in the artillery for a short time after his arrival in India, in 1849, he entered civil employ in the North-West Provinces, and was civil surgeon of Fatehgarh and Gorakhpur in 1850–52. In 1852 he reverted to military duty, and on December 27th, 1855, was appointed garrison surgeon of Fort William, and spent the whole of the rest of his thirty years' service in Calcutta. On October 31st, 1856, he entered civil employ in Bengal, as second assistant surgeon of the Presidency European General Hospital, and in 1863 was appointed superintendent of the Calcutta lunatic asylums, holding that post till his promotion to the administrative grade in 1879. In 1880 he became administrative medical officer of the province of Bengal, with the local rank of surgeon-general. Though he was serving in India during the Mutiny, the *Army List* assigns him no war service. At the time of his death he was third in seniority of the retired officers of the Bengal Medical Service, after Surgeon-Majors H. B. Hinton and W. F. Mactier.

LIEUTENANT-COLONEL MONTAGUE STOKES EYRE, Madras Medical Service (retired), died at Bath on May 29th. He was educated at Edinburgh University, where he took the M.B. and C.M. in 1876, and entered the I.M.S. as surgeon on September 30th, 1876, becoming surgeon-major on September 30th, 1888, and surgeon-lieutenant-colonel on September 30th, 1896. He retired on April 7th, 1907. Though most of his thirty years' service was spent in military employ, the *Army List* assigns him no war service. He was the second son of the late Edmund Walter Eyre, Inspector-General of Hospitals, Madras.

LIEUTENANT-COLONEL GEORGE TURNER TREWMAN, R.A.M.C. (retired), died suddenly on June 13th, aged 59. He was born on September 12th, 1855, the eldest son of the late Rev. Arthur Peile Trewman, vicar of Ilminster, Somersetshire, educated at Westminster Hospital, and took the diplomas of L.S.A. in 1876, and of M.R.C.S. in 1878, and the degree of M.B.Durh. in 1879. He entered the army as surgeon on July 30th, 1881, became surgeon-major on July 30th, 1893, lieutenant-colonel on July 30th, 1901, and went on half-pay on March 17th, 1904. He retired on August 3rd of the same year, but had been re-employed during the war. He served at Suakin in the Soudan campaign of 1885, and received the medal with a clasp, and the Khedive's bronze star.

MAJOR ARTHUR TREGELLES PRIDHAM, Indian Medical Service, died suddenly on June 6th. He was the second son of the late Arthur E. Pridham of Plymouth, and was born on August 4th, 1877. He was educated at St. Bartholomew's Hospital, and took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1899, and graduated M.B.Lond. in 1900, in which year he obtained the Brackenbury medical scholarship. After acting as house-physician at St. Bartholomew's and at the Queen's Hospital for Children, Hackney Road, he entered the I.M.S. as lieutenant on September 1st, 1902, becoming captain on September 1st, 1905, and major on September 1st, 1914. He was appointed medical officer of the 8th Gurkha Rifles in 1907, and in 1912 went into civil employ in Burmah as Superintendent of the Rangoon Central Gaol, but had been on sick leave since October 6th, 1913. He served in the Abor campaign on the North-East frontier of India in 1911–12, and received the medal with a clasp.

The Services.

TERRITORIAL FORCE.

EXCHANGES OF MEDICAL OFFICERS.

CAPTAIN J. M. POSTLETHWAITE, 1st East Lancashire Field Ambulance (T.F.), whose request for an exchange was published in the JOURNAL of May 1st, asks us to state that, as he is now at the front on active service, an exchange is no longer desired, and in any case would be difficult.

Universities and Colleges.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examination indicated:

M.D.—J. S. B. Stopford (awarded gold medal), G. C. Mort.

IN the three weeks ending June 19th, 19 cases of plague with 17 deaths were reported at Hong Kong. In Mauritius there was one fatal case of the disease on June 14th

Medical News.

WE regret to learn that Mr. Howard Marsh, Master of Downing College, Cambridge, and formerly surgeon to St. Bartholomew's Hospital, died on June 24th.

DR. WILLIAM MURRAY DOBIE of Chester left estate of the gross value of £6,006, with net personalty £3,851.

MR. A. H. TUBBY has been elected an Honorary Member with Medal of the First Class of the Società Fisico-Chimica Italiana.

THE Civil List pensions for 1914–15 include a pension of £150 to Dr. Charlton Bastian, F.R.S., in consideration of his services to science.

THE names of the following gentlemen have been added to the Commission of the Peace for Perthshire: David G. Donaldson, M.D., Dunning, and John Irvine, M.D., Muthill.

MAJOR LEONARD DARWIN, President of the Eugenics Education Society, will open a discussion on alcoholism and eugenics at the meeting of the Society for the Study of Inebriety, to be held in the rooms of the Medical Society of London, 11, Chandos Street, W., on Tuesday, July 13th, at 4 p.m.

BRITISH nurses who may be desirous of offering their services to Italy are recommended to communicate with Miss Snell, Matron of the Scuola Convitto Regina Elena, Policlinico, Rome, who would be glad to give advice as to the way in which such help can be put into the best channels.

THE annual general meeting of the Poor Law Medical Officers' Association of England and Wales will be held on Tuesday, July 6th, in the Council Chamber of the British Medical Association, 429, Strand, London, W.C., at 4 p.m. All Poor Law medical officers are cordially invited. Tea will be provided.

THE annual general meeting of the Research Defence Society will be held at the house of the Royal Society of Medicine, 1, Wimpole Street, Cavendish Square, W., on Wednesday, June 30th, at 5 o'clock. In the absence of the President, Lord Lamington, on military service, Major-General the Hon. Sir Reginald Talbot, K.C.B., will take the chair. The report will be presented by Lord Knutsford, Chairman of Committee. Other speakers will be Sir William Osler, and Surgeon-General Sir Alfred Keogh, K.C.B. After the meeting Dr. Andrew Balfour, C.M.G., will give a demonstration, with the cinematograph, on the protective treatment against typhoid fever and cholera.

IN a paper read before the Royal Meteorological Society on June 16th by Mr. C. Harding, some support was given to the belief that artillery fire may have some effect on the rainfall. From the beginning of the war until the middle of October the weather conditions in the western area of operations were bright and dry with occasional short spells of rain, but from the middle of October to the end of February rainy and rough weather continued with little cessation. In the British Isles the rainfall for the nine months ending April, 1915, was below the average in the north and west, but greatly in excess of the normal in the south and south-east. The rainfall was also in excess at all western Continental stations. Mr. Harding, while not suggesting that the rainy conditions were generated by gun firing, thinks it quite possible that at times, when the conditions were favourable to rain, the rains may have been augmented or accelerated by the concussion initiated over the battle grounds.

THE Central Midwives Board met on June 17th. A letter from the Midwives Institute was read relative to the decision of the High Court in Stock *v.* Central Midwives Board. The Board's reply is: "That the decision of the High Court in the case of Stock *v.* Central Midwives Board, although reversing the decision of the Central Midwives Board to remove the name of the midwife from the Roll, confirms the Board in its position as the authority which determines what is and what is not misconduct in a midwife, and decides that misconduct is not to be limited to misconduct in a professional sense; the Board has held that conduct which, before enrolment would render it impossible to certify that a candidate was "of good moral character" renders her, after enrolment, liable to be removed from the Roll for 'misconduct,' and there is no likelihood that the Board will depart from this position." Recognition as lecturers was granted to Drs. Arthur Crook, G. F. Odhams and Herbert Edward Taylor, M.D., and approval to undertake the practical training of pupils to two certified midwives.

Letters, Notes, and Answers.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES.

MEDICAL ATTENDANCE AT PRIVATE SCHOOLS.

A SCHOOL DOCTOR writes: May I ask the readers of your JOURNAL, especially those who have schools under their charge, if it is customary to give a 10 per cent. discount on their accounts against schools? Such an application has been made to me. To quote from the letter: "The head master is not anxious to press this, but as it appears to be the custom in other schools he thought you would be willing to grant the 10 per cent. which appears to be the usual amount allowed."

ANSWERS.

BREATHING EXERCISES.

DR. G. E. SHUTTLEWORTH (London) writes, in reply to "A. D.," that a serviceable sheet, entitled *Breathing Exercises*, by Duncan Matheson Mackay, M.D., is published by Messrs. Bale, Sons and Danielsson, Great Titchfield Street, W., price 1d.

PARTNERSHIP AGREEMENTS.

A.M.S.—(1) We have never known of an agreement in a medical partnership in which the share of one of the partners on his demise lapsed for the benefit of the surviving partners. If such a windfall were to take place, on general principles it would be divided among the survivors in proportion to their respective shares in the partnership. (2) If, in a partnership of three, B. and C. paid out A., and then sold A.'s share to another, the purchase money would be divisible among B. and C. in the same proportion as the amounts respectively found by B. and C. in paying out A. As the firm would pay out A., these amounts would be usually in proportion to the respective shares of B. and C. in the partnership.

LETTERS, NOTES, ETC.

BODY VERMIN.

DR. W. LYLE (Newtownstewart) writes: I have found that boiling the under garments for half an hour, then drying, and afterwards steeping in a 1 in 1,000 solution of corrosive sublimate, and allowing them to dry, will destroy body lice and free patients from a recurrence under ordinary conditions for several months. This has been my treatment in private practice for several years in cases of old patients suffering from these distressing pests, and I have found it invariably successful.

VITAMINES AND PASTEURIZED VERSUS CLEAN RAW MILK.

DR. JAMES OLIVER (London) writes: Your very excellent leaderette in the JOURNAL of May 29th, p. 938, on "Vitamines," raises the important question of the relative values to life of pasteurized and clean raw milk, when fed more especially during infant life, seeing that pasteurization lowers if it does not actually annul the value of milk vitamine. We are all so familiar with milk that we fancy we know a very great deal about its health-giving qualities and can pasteurize it with impunity, and yet it is only during the last few years that we have become aware that it contains a substance known as vitamine, and that there is in milk a considerable amount of volatile sulphur. Now, unfortunately, by the process of pasteurization these two very valuable substances are practically expunged from milk and other very essential mineral substances are so chemically altered that they no longer fulfil their due physiological functions in our bodies when pasteurized milk is fed. It is thus and in a host of other ways that the resisting powers of our bodies are being lowered, and we are being rendered more susceptible to various different diseases. Paradoxical though it may seem, the more we struggle to live the more we tend to die.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

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AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. Subcutaneous Emphysema in Children.

J. COMBY (*Arch. de méd. des enfants*, Paris, 1914, xvii, 81) remarks that subcutaneous emphysema in children is commonly the result of an acute inflammation of the respiratory passages, and is characterized by the appearance at the base of the neck of a pathognomonic "snow-like crepitation" when palpated. He describes briefly a number of the cases recorded in the literature: tracheotomy, intubation, the passage of instruments into the œsophagus, trauma of the neck, paracentesis thoracis, pneumothorax, may all give rise to the condition. He has seen 10 cases himself, at least 4 of them due to tuberculosis of the lungs or glands at the roots of the lungs; the paroxysms of whooping-cough, the bronchitis or bronchopneumonia of measles, are particularly likely to produce subcutaneous emphysema by the violence of the cough, but the condition may occur in simple bronchitis or pneumonia. *Post mortem* the mediastinum is found swollen and spongy; the emphysema, beginning in the neck and face, may spread over the whole trunk, and even down the arms and legs. It is curious that the emphysema is quite painless in itself; it is naturally associated with dyspnœa and cyanosis when extensive. Its appearance is an unfavourable prognostic sign; although itself comparatively harmless, it generally indicates that the disease underlying it is grave. It proved fatal in 4 of Comby's 10 cases, and in 17 of Roger's 21 cases. Naturally the prognosis depends largely on the cause; the outlook is not so serious when the subcutaneous emphysema is due to simple bronchitis or pneumonia. The condition lasts from three to ten or twelve days in cases that recover. The diagnosis is probably often not made in the milder cases, the swelling of the tissues round the neck passing unnoticed or being mistaken for ordinary œdema; Comby points out that the latter mistake should not be made, because while œdema pits under the pressure of the fingers, subcutaneous œdema does not do so. Treatment consists simply in trying to minimize dyspnœa and cough. Comby adds details of his own 10 cases. In the 4 instances in which death occurred he lays stress on the fact that the unhappy result was due in each case not to the subcutaneous emphysema but to the underlying disease — bronchopneumonia, enterocolitis, and tuberculosis of the mediastinal glands, measles with bronchopneumonia and miliary tuberculosis of the lungs, bronchopneumonia and probably tuberculosis as well.

2. Influence of Internal Secretions on the Teeth and Hair.

A. JOSEFSON (*Hygiea*, vol. lxxvi, No. 4, 1914) considers that anomalies of the teeth and hair may be the first sign of faulty internal secretion of one or more glands. As such faults are now amenable to treatment, the signs which first reveal them are important. In support of his hypothesis the author records several cases, illustrated by many photographs, which have recently been under his treatment. One patient was a lad, born in 1899, who was first examined when 11 years old. He had suffered from rickets, and was 18 months old when the first tooth, a lower incisor, appeared. At the age of 11 he had only one permanent tooth, an upper incisor, all the other teeth belonging to the first dentition. The hair was colourless, silky, scanty, and thin; it was distributed over the scalp in tufts, pointing in every direction. He was 140 cm. long, of a fragile build, thin, and with poorly developed muscles. The lower limbs were knock-kneed and very long in proportion to the rest of the body. The scrotum and penis were unusually small, and the testicles were smaller than beans. Wassermann's reaction was negative. The size of the thyroid gland seemed normal. Thyroid tablets were prescribed, but their continuous administration was prevented owing to the emaciation they induced when pushed. This treatment was soon followed by the appearance of one permanent tooth after another; and early in 1912 the upper jaw contained one lateral incisor, one premolar, and two molars on both sides, as well as one canine on the left side. The lower jaw contained one lateral incisor, one premolar, and one molar on both sides, as well as a second molar on the left side. Thus there were altogether sixteen permanent teeth. The hair was longer and thicker than before, and had become pigmented. The penis and testicles were of a normal size. The thyroid tablets were given at irregular intervals till August, 1913, when nineteen permanent teeth had appeared, and the patient's height was 165.9 cm. Two other children, belonging to the same family, presented many similar features, and also responded satisfactorily to treatment with thyroid tablets. They suffered from umbilical hernia, which is often associated with a faulty internal secretion. After giving details of several other cases, the author reviews the experimental and clinical observations recently made on the relation of the internal secretions to the development of the teeth and hair. These observations indicate that over-activity of such glands as the testicles may hasten the development of the teeth and hair, while inactivity of the same glands may delay the development of the teeth and hair. The thyroid, the pituitary body, the thymus, the reproductive organs, and the suprarenal bodies all play a part in the development of the teeth and hair, and it is therefore difficult in any given case of faulty development of these structures to ascertain which of these glands is to blame. Tentative treatment with extracts of these glands may decide this point.

3. Adiposis Dolorosa.

BIFFIS (*Rif. Med.*, June 13th, 1914) reports two cases of adiposis dolorosa. In one of them a cure took place. The patient showed clear signs of the disease (nodes on the sides of the neck, shoulders, spinal column, and thighs—all exactly symmetrical and painful on pressure and movement or sometimes spontaneously). In addition, alcoholic neuritis was present. After a long stay in the hospital and prolonged treatment, the patient was dismissed, the neuritis being cured and the pains in the lipomata much less and limited to the smallest of them. The consistency of the tumours and their volume were also less. The patient attended off and on as an out-patient, and at the end of a year he returned without any pain and without trace of any lipomatosis, but with well-marked signs of phthisis, from which he died in about two months. The association between the neuritis and the adiposis was shown in the fact that as the former improved so did the latter, although the pain disappeared some time before the lipomata. The author does not think that the advent of tubercle was the cause of the disappearance of the fatty masses. The autopsy showed no special changes in the hypophysis, thyroid, suprarenals, or testes.

4. German Measles.

HESS (*Archives of Internal Medicine*, June 15th, 1914) studied an epidemic of German measles attacking some fifty children in an infant asylum, including in his investigations a bacteriological study of the blood in four instances, inoculations of blood into four monkeys, and an examination of the blood during incubation. Although the bacteriological examinations of the blood were made in severe cases, and also at the very onset of the disease, cultures and inoculations were negative. In attempting to produce the disease in the four monkeys by inoculating them with blood obtained from four different cases, the course of the temperature was closely observed, and in only one instance was there a rise following a considerable period of incubation (twenty days), and in none was there any rash. Too great significance should not be placed upon the rise of temperature in this one case, since the temperature of monkeys is somewhat unstable, the method being only of value when the rise is sudden and the period of incubation carefully controlled. In all the cases from which blood was taken for this inoculation the rash had existed less than twenty-four hours, and the temperature was high when the blood was withdrawn. The investigations upon the cellular elements of the blood were made during the incubation period, blood smears being taken daily from the healthy children in the ward as soon as a case of rubella developed, these smears being laid aside for examination in the event of some of these children eventually developing the disease, thus enabling consecutive blood examinations to be carried out before and up to the appearance of the rash. Seven cases contracting the disease showed a definite increase in the lymphocytes preceding the appearance of the rash, and this premonitory lymphocytosis might be of value in institutions in heralding the fact that infection has taken place, and

In facilitating the segregation of infected from non-infected children, thereby possibly limiting the spread of an epidemic. The presence of a lymphocytosis at the time of the appearance of the rash may serve to differentiate rubella from scarlet fever in doubtful cases, the latter showing an increase of polynuclear cells in its early stage.

SURGERY.

5. Functional Kidney Tests before Prostatectomy.

B. A. THOMAS (*Journ. Amer. Med. Assoc.*, November 28th, 1914) says that satisfactory as the results of prostatectomy have become there is a definite and extensive effort on the part of surgeons to still further reduce the mortality of the operation. As a result of the cardio-renal involvement invariably present to a greater or less degree, he has come to attach much importance to the blood pressure determination and has made it a routine part in the preparatory study of all cases. Another equally important factor governing the operability of the case is the myocardium, associated or not with the cardio-vascular sclerosis. Minor valvular lesions may not be considered as contraindications. The facts that are to be considered may be grouped under three heads: First, the preoperative study and preparation of patients; second, improvement in technique; and third, the best post-operative treatment. The first and last are vastly more important in his opinion than the operation itself. In the preliminary investigation rectal palpation comes first. The second act consists in determination of the amount of the residual urine, which is of prognostic importance as a non-contractile bladder is a bad condition for prostatectomy on account of the *vis a tergo* pressure on the kidney when the bladder contractility is lost. The study of the renal function is of pre-eminent importance, since kidney impairment resulting in azotaemia and uraemia kills more patients after operation than any other organic defect and is the cause of most of the post-operative pathologic conditions. He makes a rigid and extensive investigation of the blood and urine and the kidney function in all cases before prostatectomy. He prefers the indigo-carmin test for kidney function above all others, and has recently been deeply interested in working out what he has called its "index of elimination," which he believes furnishes a truer guide to the renal function than any other method he has used. This index is determined by dividing the quantity of indigo-carmin eliminated during the first hour by the quantity excreted during the third hour after injection. He gives a chart illustrating this index, which for a series of normal individuals averaged 5.1. This, says Thomas, graphically indicates the fact that when the amount eliminated during the third hour equals or exceeds that excreted during the first hour, prostatectomy is possibly contraindicated unless the total amount eliminated in three hours exceeds 20 per cent. An operation may be considered even if the index is very low. The importance of thoroughly emptying the bladder by catheter at the end of each hour cannot be too strongly emphasized, to avoid error. As regards the operation itself, the route with the minimum mortality should be selected and every surgeon should familiarize himself with the minute technique of the perineal route before casting his lot unalterably with the suprapubic operation. The pathological condition should govern and each case should decide for itself. The cystoscope is a most important aid in determining this, and Thomas gives his preference to the perineal route. Although the renal function is a paramount consideration in determining operability, other organic conditions must not be slighted. A prostatectomy mortality of 3.3 per cent. is attributed by him largely to cystoscopic aid and the index of elimination of indigo-carmin in determining the operability of a case.

6. Isolated Traumatic Rupture of the Mesentery.

DISCUSSING the frequency with which this accident occurs, SAALMANN (*Deut. med. Woch.*, May 28th, 1914) points out that, though only 28 cases have been published since 1845, the condition is more common than these figures indicate. Indeed, the mesentery may be ruptured, and recovery may be effected after a few days' rest in bed, without any operation having disclosed the cause of the symptoms. These often include lumbago-like pain following a blow on the abdomen, signs of fluid in the peritoneal cavity being observed a few days later. Hitherto only nine cases have been recorded in which the patient recovered after suture of the tear or resection of the intestine. The accident may be due to a direct blow on the abdomen, pressing its contents against the vertebral column; or it may depend on a dragging blow, tending to pull the intestine from its site of attachment. Usually the tear is at right angles to the intestine, and does not, therefore, involve any large vessel or cause gangrene of the intestine by interfering with its circulation. Tears parallel with the intestine are, for these two reasons, almost invariably fatal; but the following case, recorded by the author, is an exception: A milkman, aged 65, was crushed against a wall by part of a mangle, weighing 8 cwt., which sprang out of place, hitting the lower half of the left abdomen. The patient vomited, and as there was retention of flatus and faeces, he was admitted next day to hospital. A catheter specimen of urine was normal. There were reducible inguinal herniae on both sides, and the abdomen was rigid and somewhat distended. The skin was discoloured over a large area just above Poupart's ligament on the left side. The abdominal rigidity prevented fluctuation. A laparotomy revealed about a litre and a half of blood in the peritoneal cavity. There was a Y-shaped tear in the mesentery about 1 metre above the ileo-caecal valve. A triangular piece of mesentery was almost torn out, being attached only to the intestine. The tear was parallel with the intestine for 2½ cm., and at right angles for 3 cm. Extending from this tear towards the root of the mesentery was a haematoma, measuring 3 by 10 cm. Although the intestine supplied by the torn piece of mesentery was much injected with blood, its condition was not alarming. As, on the other hand, the patient was in a state of collapse, resection of the intestine seemed unwarrantable. The operation was, accordingly, completed hastily, the triangular flap of mesentery being replaced, and its raw surfaces completely covered with peritoneum. A rapid and uneventful recovery followed, and more than six months later there were no signs of stenosis, haemorrhage, or other ill effects.

7. Stasis of Ileum.

CASE (*Arch. Roentgen Ray*, July, 1914) points out that, in addition to other factors in the production of stasis of the ileum, incompetency of the ileo-colic valve offers a further and more tangible explanation of the condition, and that it is probably the essential causative factor in the majority of cases of stasis in the terminal ileum. The most convincing argument of the important part ileo-colic valve incompetency plays in the production of stasis of the ileum is found in the fact that, whereas in operated cases under observation stasis of the ileum existed before operation, post-operative examination showed that in every instance the emptying time of the terminal ileum was markedly diminished. The records of the author's cases as roentgenologist to the Battle Creek Sanitarium, Michigan, show this incompetency of the ileo-colic valve in about one out of every six gastro-intestinal cases. His experience of these cases of intestinal stasis, both before and after operation, leads him to oppose the tendency towards operative interference for its relief. Surgical interference should not be seriously considered in the treatment of stasis of the ileum until the most thorough-going trial has been made of dietetic and mechanical measures.

8. Carcinoma of the Appendix.

MACCARTY AND MCGRATH (*Annals of Surgery*, May, 1914) have cut routine gross serial sections of 8,039 appendices removed in the Mayo clinic; forty of these were found to be carcinomatous. Only five of these were large enough to raise suspicion during operation, and none had been suspected on clinical grounds. In a few cases enlarged mesenteric glands were noticed during the laparotomy. The majority of the cases were operated upon for chronic recurrent appendicitis. The average age was 30; the youngest was a female, aged 5 years. In no case was the growth visible upon the external surface; it was almost always at or near the tip of the appendix, and occurred in a portion the lumen of which had been obliterated. Short notes of the cases and two photomicrographs illustrate the article.

OBSTETRICS.

9. Toxaemias of Pregnancy.

A. J. RONGY discusses the treatment of toxaemias of pregnancy (*Journ. Amer. Med. Assoc.*, July 11th, 1904). Formerly these conditions were attributed to changes in the kidney, liver, brain, etc., but at present they are coming to be considered secondary to the effects produced by foreign substances in the blood of pregnant women.

Abderhalden's observations are referred to, and Wolff-Eisner has shown that foreign protein substances thrown into the circulation of the pregnant woman under certain conditions bring about a state of eclampsia. Normally these are neutralized by antibodies, but if the woman is unable to furnish these, or the production of the foreign body is excessive, the equilibrium of the maternal metabolism is disturbed, and we have a toxaemia. Clinically we recognize two varieties of this: (*a*) Those occurring in the early months of pregnancy, characterized by nausea, morning sickness, and, in severe cases, by the pernicious vomiting of pregnancy; and (*b*) those occurring in the last three months of pregnancy, characterized by headache, dimness of vision, slight epigastric pain, rise in blood pressure, and albumin in urine. This last variety, unless promptly attended to, terminates in eclampsia. Prophylaxis is the keynote to the successful treatment of these toxaemias. No one can tell when the symptoms appear, how soon they may become severe and be uncontrollable, and when the patient does not promptly respond to treatment, Rongy holds that the pregnancy should be terminated. Experience has taught us that these toxaemias do not recur, and we do not now consider a former eclampsia as contra-indicating future pregnancies. In the course of his experiments with fetal serum to bring on labour, Rongy's attention was first directed to the possibility that the toxaemias are due to some foreign proteins orginating in the product of conception, and his success with the serum treatment of the later toxaemias led him also to employ it in pernicious vomiting. We are justified, he says, in presuming that all women who pass through pregnancy and labour normally must necessarily produce certain elements neutralizing the toxic substances. Hence the injection of serum from a normal, healthy, pregnant woman will not only add these but also stimulate the circulation into their increased formation. This treatment should be begun early, before the maternal system is saturated with the poisons, and if it fails to cause improvement in from thirty-six to forty-eight hours it should be discontinued. His experience with the use of placenta serum consists of that gained in four cases of pernicious vomiting and three of threatened eclampsia, which are reported. In eclampsia the fatality depends on the degree of toxicity and not on the number of convulsions. The signs indicating the degree of toxicity are the quantity of urine excreted, absence of lucid intervals between convulsions, and high pulse-rate. The presence of one or more of these symptoms is of grave import, but if the urine excretion is not greatly diminished, the pulse-rate less than 120, and the mind clear between attacks, the prognosis is correspondingly more favourable. The experience in these classes of cases in the Jewish Maternity and Lebanon Hospitals is briefly given, both the operative and medical. The point specially made by him is that the toxaemias of pregnancy cannot be treated by any uniform method, and, while he believes that the uterus should be emptied in all cases of eclampsia, each case must be individualized. There is a definite pre-eclamptic stage and premonitory symptoms of pernicious vomiting. With this generally recognized the morbidity and mortality would be greatly reduced.

GYNAECOLOGY.

10. Posterior Vaginal Hernia.

BREUILLET (*Archives générales de chirurgie*, May 25th, 1914) has studied this comparatively rare lesion, which gives rise to a swelling protruding at first into the vagina and later from the vulva. The mass is covered by the posterior vaginal wall, and formed by the descent of a portion of intestine into an abnormal peritoneal sac developing in the space between the vagina and rectum. Such herniae may be either sessile or pedunculated in form; dissection shows that they are covered simply by the peritoneal sac, a layer of cellular tissue, and the wall of the vagina. The most important factor in the etiology is abnormal depth of the pouch of Douglas, as shown by Zuckerkandl. Strain and accident also aid in their formation. The symptoms are pains of varying intensity in the lower abdomen, together with a sensation of weight and of prolapse of the pelvic organs. The tumour is soft and resonant on percussion; the intestinal loops may be felt to slip from under the finger under pressure, and light compression produces a characteristic gurgle. Combined rectal and vaginal examination proves that the tumour is not connected with the rectum. Such a hernia is subject to all the usual complications, and in addition may form an obstacle to delivery during confinement. The treatment is operative, and follows the lines of operations for hernia in general. It consists in the reflection of a flap of the vaginal mucous membrane; dissection, isolation, and opening of the sac; reduction of the contents, and ligature of the sac; the tissues are sutured together as high as possible, and the external wound closed.

11. Acute Torsion of a Mesenteric Chyle Cyst.

ENGELMANN (*Monatsschr. f. Geb. u. Gyn.*, May, 1914) recently reported at a meeting of the Niederrheinsch-Westfälische Gynaecological Society the case of a young girl admitted into the surgical wards of a hospital at Dortmund with symptoms of acute obstruction. Axial rotation of an ovarian cyst was diagnosed, and the patient was sent into the gynaecological wards. The physical signs undoubtedly indicated that which the surgeons had diagnosed. Abdominal section was performed. A milky fluid was found free in the peritoneal cavity. The tumour was a cyst occupying the root of the mesentery and separating its layers to a wide extent; it had undergone axial rotation, causing volvulus of the adjacent segment of small intestine. Recovery was uncomplicated. The cyst content was a milky fluid containing butter-fat and lecithin combined with globulin.

THERAPEUTICS.

12. Heliotherapy in Surgical Tuberculosis.

ANDRÉ TRÈVES (*Bull. de la Soc. de Pédiatrie de Paris*, May, 1914) has visited Rollier's hospital at Leysin and some of the sanatoriums in the Riviera; he is able to compare the conditions in these places with those obtaining in Paris. At Leysin, as in the Alps generally, the weather in summer is variable and sunshine is inconstant; in the winter the days are usually sunny, and the air is then so warm that children are able to go naked. On the Riviera practically all the summer days are sunny, and there is sunshine on most of the winter days also; although showers are frequent, periods of rainy weather do not occur, and even when the sky is overcast the strong though diffused light is said to be rich in ultra-violet rays. Rollier at Leysin uses covered galleries for sun-bathing—a most convenient procedure, which entails a minimum of effort on the part of the invalids. In the Midi sun-baths are taken as a rule on lawns, on the sands, or even in boats; movable screens are used to protect the children against winds. Sea-bathing is used as an adjuvant to the cure, and at the Asile Dollfus is enjoyed by the children throughout the winter. Owing to Rollier's teaching practically all surgeons are agreed that the best results are obtained by exposing the entire body to the sun's rays. Rollier allows a daily exposure of six or eight hours, and Pascal at Cannes follows his example. d'Oelsnitz and Jaubert believe that three or four hours daily in the sun is sufficient. All are agreed that the individual patient requires special study and that the personal factor is a large one. At Leysin a careful routine treatment precedes the insolation of patients; this is necessary in the sharp, bracing air of the mountains, to which debilitated patients in particular are slow in becoming acclimatized. Acclimatization is more rapid on the Riviera, and patients may begin sun-bathing almost immediately after arrival. The limbs are first exposed for a few minutes several times a day for increasing intervals; the area uncovered is increased and the time of exposure lengthened, until shortly complete insolation of the body is achieved. Heliotherapy does not do away with orthopaedic treatment; splints and appliances, however, should be light, and should cover up the parts as little as possible. Conservative measures are adopted in all the sun-bathing sanatoriums. Rollier confines operative treatment to the aspiration of abscesses only; he refuses even to remove sequestra by operation; d'Oelsnitz is less extreme in his views, and in his hands the operative removal of sequestra certainly appears to shorten the period of healing of sinuses. There is general agreement as to the benefit to the general health accruing from insolation. Increase in weight, strength, and appetite are observed, and pain is generally alleviated (though the latter is doubted by Andrieu). Photographs showing the amount of pigmentation of the skin are liable to be deceptive; as a control a small portion of skin should be covered with some substance impermeable to the sun's rays, so as to give a contrast tint. Heliotherapy does not shorten the time required for the cure of a tuberculous lesion; exactly the same precautions should be taken, and the same period of immobility prescribed as for patients receiving other treatment. The local effect of insolation is produced on superficial lesions only. Joints near the surface, and

especially when complicated by sinus formation, benefit to the greatest extent. Varying effects have been observed in tuberculous adenitis. Large indolent glands are influenced but slowly and to an uncertain degree; the most remarkable cures occur in the case of soft, rapidly-caseating glands, associated by ulceration and sinuses. In several instances fresh tuberculous lesions have appeared in a patient at a sun-bathing sanatorium while the cure of the original focus was progressing. Deep abscesses go through their ordinary evolution, and may require repeated aspiration. While exposure to the sun, therefore, does not prevent the development of abscesses, it appears to retard or prevent recurrence. The cures effected by heliotherapy differ in no respect from those obtained by other means. Exactly the same results can be obtained, and are obtained, by other measures; Pott's disease, for instance, when properly treated, should be cured without a permanent spinal curve resulting, whether sun-bathing has been used or not. We must not expect heliotherapy to do anything miraculous. It marks a new advance in treatment; and its great advantage is that the treatment may be used in our own climates. Modifications of detail will be necessary, but the principle may be made use of. Such insolation treatment is now being done in the neighbourhood of Paris, and there is every reason for advocating its extension and popularization.

13. The Radio-active Poultice.

MAX HEINER (*Revue pratique de Radiumthérapie*, No. 1, May, 1914) lays stress on the value of treatment with the uraniferous residues obtained in the course of extracting radium from pitchblende. These residues are used as a radio-active poultice, and contain radium and actinium in the form of carbonates and sulphates. The radio-activity of 1 kilogram of this powderish residue is equal to that of about half a milligram of metallic radium. This powder is distributed in sacs or flat tampons, to the amount of 1 to 3 grams per square centimetre of surface, and the total area may be anything up to 200 square centimetres. The employment of these poultices involves no danger of skin irritation, as the activity is feeble, and the rays emitted are medium and hard beta rays and gamma rays. The activity is not negligible, however, and it may be brought into evidence by the photographic method. The poultices are useful in the case of patients suffering from chronic affections of the rheumatic order, and from some chronic skin conditions which have not yet yielded entirely to more vigorous radium treatment. The poultices may remain on the patient during the night, and thus he may be able to follow his profession without interruption. The poultice is applied for eight or twelve hours daily over a period of two, three, or four weeks; a respite then follows for one or two weeks, succeeded by a reapplication of the poultice for two weeks, and afterwards the treatment is interrupted for one or two months. In cases of eczema, acne rosacea, and psoriasis, the poultice should be applied for the same number of hours daily over a period of six weeks, followed by an interval of one month, after which the application of the poultice may be made for ten days, and then interrupted for twenty days.

14. Organo-therapy in Childhood.

MURRAY B. GORDON discusses the therapeutic uses of thyroid extract, parathyroid, thymus, adrenal, and pituitary in childhood (*American Medicine*, April, 1914). Great care is necessary in prescribing thyroid for children; each case must be carefully studied, for idiosyncrasy is a large factor. Thyroid may have bad effects on heart, alimentary tract, or mental state; it should never be given to the children of diabetic parents or to children who show diabetic tendencies. When given by mouth, it is best given after a preliminary course of ten doses of calomel ($\frac{1}{10}$ grain), followed by a cathartic, at first in $\frac{1}{2}$-grain doses twice or thrice daily, then gradually increased, but never in a larger dose than 5 grains per diem. A good plan is to give it for ten days, then stop it for ten days, and so on. Its action is enhanced by arsenic, calcium, or iodine; but as a rule these are best given during the period of temporary thyroid suspension. Thyroid extract is of benefit in mental and physical backwardness, too ready fatiguability, slight swelling of eyes, lips, and cheeks, and skin pigmentation; also in eczema, ichthyosis, sclerodermia, psoriasis, and coldness of skin; in enuresis when ordinary remedies fail; here it should be tried for a week, and, if not then successful, be given alternately with calomel ($\frac{1}{10}$ grain ter die) for a month; if it still fail it should then be given up. Thyroid is useful in chorea, rheumatoid arthritis, rickets and delayed bone development, and infantile convulsions due to rickets; also in asthma, either without or with adrenalin and pituitary gland; and it has often done good in epilepsy, especially in recent cases. Commercial parathyroid extracts are often inactive, for they are sometimes really merely made from bits of thyroid, thymus, or even fat. Berkeley and Beebe advise for hypodermic use a nucleo-protein prepared from saline extracts of the parathyroid glands by precipitation with dilute acetic acid; the dose is 15 minims of the 1 in 1,000 solution several times daily. Great care is needed to avoid puncture of a vein owing to the risk of thrombosis. Parathyroid extracts are useful in infantile convulsions, epilepsy, and chorea; their results in infantile tetany are variable. Thymus dry extract is valuable in rickets. Adrenalin chloride, 1 in 1,000 solution, needs caution in those children who show any diabetic tendency, and it is in all children important not to give too large a dose. It controls haemorrhages, is useful in asthenic diphtheria, and in low blood pressure of pneumonia and acute infectious diseases. It has given some good results when injected in doses of 2 to 5 minims into the pleural cavity in pleurisy, and in 5 minim doses similarly in cases of pleural effusion. In scarlatinal nephritis 10 to 20 minims by mouth has seemed beneficial in many cases. Adrenalin often benefits asthma, either given alone or with thyroid or pituitary gland. Pituitary extract has been little used yet in pediatrics. Gordon thinks "it should be of great benefit" in dwarfism, rickets, and retarded bone growth, and in obesity of childhood; but he admits that the results have been variable. Some writers rate it higher than adrenalin for the raising of blood pressure in diphtheria, pneumonia, typhoid, and other acute infections.

PATHOLOGY.

15. Spirochaeta pallida.

H. F. HARTWELL (*Journ. Amer. Med. Assoc.*, July 11th, 1914) has studied the blood of twenty-four patients with untreated syphilis by injecting it into the testicle of the rabbit and excising the organ eight months after injection. The cut surfaces of the nodules yielded a clear sticky fluid, in which were found the spirochaetes. The protocols of the positive cases are given. In the whole series of cases there were 7 primary cases, the blood from three of the patients giving positive results. The other 17 were in the secondary stage, and gave seven positive inoculations. "This method of investigation," he says, "offers a ready means for the demonstration of *Spirochaeta pallida* in the peripheral blood, and furnishes convincing proof that syphilis is a chronic septicaemia. It further shows that the blood stream is invaded at an early period, before the skin manifestations are evident. By this means, without encountering the difficulties attending the isolation of the spirochaete from contaminated surface lesions, we can obtain a strain of *Spirochaeta pallida* whose identity cannot be called in question."

16. Wassermann's Reaction and Scarlet Fever.

THE occasional occurrence of a positive Wassermann reaction in non-syphilitic patients with trypanosomiasis, yaws, leprosy, tuberculosis, diabetes, malaria, and other diseases is well known. Much and Eichelberg found it in 10 out of 25 children from three to seventy-two days after the onset of scarlet fever; many other observers have recorded their findings in these cases, and with very various results. Thus Fuá and Koch failed to find a single positive reaction in 63 serums from scarlatina patients. B. JAKOBOVICS (*Jahrb. f. Kinderheilk.*, 1914, 3 F., xxix, 215) has examined 178 specimens of serum from 55 patients and obtained positive reactions with 37 serums derived from 18 patients. In 16 of the 18 patients a positive reaction first appeared when the acute symptoms had ceased—twenty to twenty-three days after the onset of the disease. The loss of the positive reaction was observed in 16 instances; it took place between the thirty-fifth and forty-eighth days after the onset. Of the 18 patients yielding the positive reaction only 3 were mild cases of scarlet fever, 15 had more or less extensive necrosis of the pharynx. Jakobovics made nine examinations of the serum of three children with post-scarlatinal nephritis, but Wassermann's reaction was not obtained in any of these. He holds that the temporary occurrence of a positive reaction in many scarlatinal patients during their convalescence does not in any way detract from the diagnostic value of the reaction in syphilis; nor does it permit any definite conclusions to be drawn as to the etiology of scarlet fever.

AN EPITOME OF CURRENT MEDICAL LITERATURE

MEDICINE.

17. Abderhalden Test in Mental Disease.

CHARLES E. SIMON (*Journ. Amer. Med. Assoc.*, May 30th, 1914) discusses the claims of Fauser as to the results of the Abderhalden test in certain types of insanity, with special reference to dementia praecox. In surveying the literature which followed Fauser's publication, he says one cannot help being impressed, on the one hand, by the wonderful uniformity of the results reported by Fauser and the wide divergence from those of certain other authors, like Hauptmann and Bumke. He thinks there is good ground to suspect that Fauser was too enthusiastic in his views, and on the other hand that his opponents may have lacked complete control of the technique. Fauser himself states that he obtained a reaction with sex gland repeatedly in cases in which it was unexpected, and that the diagnosis between maniacal depressive insanity and dementia praecox could not always be made with certainty. Simon relates his own experience with the use of the test in 106 cases, and summarizing the results, says that a sex gland reaction may be obtained in nearly all cases of dementia praecox at some stage or another, but that this action is not specific, as Fauser asserts. He finds that the reaction may also be obtained in other forms of insanity and he does not attempt to explain them. He is therefore driven to conclude that Fauser's rule has exceptions or that the positive findings in maniacal depressive insanity or paresis are due to errors of diagnosis or technique. The fact, however, remains that in dementia praecox the positive reaction is the rule, while in the purely functional psychoses it is the exception. Simon believes that while we cannot, as yet, draw positive conclusions regarding the significance of the reaction in dementia praecox, certain possibilities suggest themselves. One of these is that of a perverted function of the cells concerned in the production of the internal secretion of the sex glands in dementia. "Considering the problem from the clinical side, the all-important question, of course, suggests itself whether or not the reaction has any relation to the pathogenesis of dementia praecox. Theoretically, this is, of course, perfectly possible. Granted that anti-sex-gland ferments do occur in the circulation in dementia praecox, and that their presence were the outcome of the appearance in the circulation of an abnormal secretion or of abnormal cells, then we may also assume that digestion of these cells or cell products will take place, and that all conditions would thus be given for a chronic protein intoxication which might very well expend itself on the central nervous system. Should this be true, then we might also expect that the administration of sex gland to such patients would cause an aggravation of the patient's condition, while partial or entire castration, possibly combined with the transplantation of normal organs, might similarly be expected to have a beneficial influence. Evidently the problem is now open to investigation from many sides, and it does not seem unreasonable to expect that definite advances will be achieved in the near future."

18. Idiosyncrasy to Cow's Milk in Early Infancy.

THE term "idiosyncrasy," as applied to intolerance to cow's milk in infancy, should, according to D. Hertz (*Ugeskrift for Laeger*, May 21st, 1914), be confined to those cases in which severe symptoms follow the ingestion of even minute quantities of cow's milk. Alarming symptoms may, according to Finkelstein, follow the administration of 10 drops of equal quantities of cow's milk and oatmeal water. The common, but slight, disturbances which follow a transition from human to cow's milk in infancy, do not come under the heading of idiosyncrasy, typical cases of which are exceedingly rare. Indeed, only about 20 cases have been recorded since Finkelstein and Schlossmann first drew attention to the condition ten years ago. Practically all these cases were observed in German hospitals. The author records the case of a female child, weighing 3,550 grams at birth. After being breast-fed for fourteen days, she was fed on equal quantities of cow's milk and barley water, as the mother had contracted mastitis. Five weeks later she suddenly developed acute gastro-enteritis, with vomiting, and the passage of watery motions containing milk coagula. Cow's milk was given in various strengths, but the child steadily lost weight, and the motions remained watery and lumpy. When the weight had fallen to 2,600 grams, the diet was changed to one of human milk, 50 grams being given seven times a day. The child recovered rapidly on this diet, which was continued for twenty-five days. Then an attempt was made to introduce a feed of equal parts of cow's milk and barley water between each feed of human milk. The mixture was not relished, and provoked vomiting. On the second day of this régime, the child was apathetic, cold, and colourless. The fontanelles were depressed, and the motions were again watery. An exclusive diet of human milk was, therefore, again resorted to, and within twenty-four hours the child was much better. Three weeks later another attempt was made to give a mixture, containing one part of cow's milk and two parts of barley water. This was taken unwillingly, and next day the temperature ranged from 36.9° to 39.1° C., the patient meanwhile being pale and languid and the fontanelles depressed. The motions were watery and slimy, and in two days the weight had diminished by 200 grams. An exclusive diet of human milk had, therefore, to be adopted again at once. A few days later the administration of 50 grams of sterile cow's milk was followed within an hour by severe vomiting. The temperature was only 35.2° C., the pulse was not palpable, the respiration was very superficial, the fontanelles were depressed, and the patient was colourless, cold, and collapsed. She rallied after an injection of camphor, and was again put on human milk, the loss of weight for one day being on this occasion 70 grams. Cow's milk given per rectum was well tolerated, and most of it was retained. By the cautious and gradual administration of patent foods, beginning with Kufeke's milk-free food and continuing with Nestlé's food, which contains milk, and later by giving buttermilk and cream, the author ultimately succeeded in overcoming the idiosyncrasy to cow's milk. But during this process there were many relapses, with violent vomiting, exhaustion, and collapse. Discussing the hypotheses advanced to account for these phenomena, the author apparently is satisfied with none, though he suggests that the theory of anaphylaxis may partly explain them. The idiosyncrasy, which usually occurs at the age of 2 to 3 months, seldom lasts more than a few months, and is rarely fatal. But one patient has been known to die of it in a few days, and another still suffered from it at the age of 15 years.

19. Asphyxia from Rupture of Gland into Trachea.

G. CARONIA (*La Pediatria*, Naples, 1914, xxii) describes an unusual complication of tuberculous caseation of the tracheo-bronchial lymphatic glands. The patient, a boy of 7, had had cough and slight fever for three days, and was suddenly seized with dyspnoea and cyanosis and brought to the hospital. He was cyanosed, with dyspnoea, prolonged inspiration, and inspiratory recession of the epigastric and jugular fossae. Intubation was performed, and gave relief. Two hours later, in a violent bout of coughing, the tube was expelled and suffocation once more seemed imminent. Intubation was attempted but failed, and the cyanosis became extreme; the recession of the jugular fossae disappeared. A foreign body low down in the trachea was diagnosed and a low tracheotomy was performed; no foreign body could be found, artificial respiration was performed, and death rapidly followed. At the obduction the left lung was found to be generally adherent to the pleura, the right lung less so. The lowest part of the trachea and the two main bronchi were found to be completely filled with a yellow pultaceous substance; 1 cm. above the origin of the right bronchus was an irregular rounded hole, measuring ½ by 1 cm. in the wall of the trachea. This aperture led into a cavity with ragged, caseous walls, formed inside the tracheo-bronchial glands that lie near the thymus. The cavity was the size of a nut; the neighbouring glands also were considerably enlarged and caseous. The upper part of the trachea and the larynx were normal, and no tuberculosis of the lungs was found. The meninges and cerebellum were engorged with blood; the blood itself was found to be fluid. The lymphatic tissues generally showed hypertrophy. Caronia remarks that had the tracheotomy been performed before the intubation it is possible that the child's life might have been saved. The symptoms and the history obtained from the mother were taken at first to point to some

obstruction of the larynx, and so intubation was performed. Analogous cases are quoted from the literature, to which many references are given.

SURGERY.

20. Treatment of Prostatic Hypertrophy by Electrocautery.

LUYS (*La Clinique*, June 12th, 1914) recalls that enlargement of the prostate may cause difficult micturition in two ways—either the posterior lobe enlarges, causing a prostatic "bar" or ball-valve; or by the enlargement of the lateral lobes the upper part of the posterior urethra is rendered narrow, long, deep, and frequently tortuous. Section by cautery of the projecting enlarged posterior lobe was practised before the introduction of prostatectomy. Lately Young, of Baltimore, has advocated his "punch" operation, by means of which the posterior lobe may be partially removed through a straight cystoscope. The author believes that there is a field for these endoscopic operations, although the majority of enlarged prostates are susceptible of removal by the suprapubic route. He points out, however, that up to the present time endoscopic operations have been directed exclusively against the prostatic bar. Young's punch operation in particular is not applicable to cases of retention due to enlargement of the lateral lobes. Also the operation by "punch" provokes severe haemorrhage, controllable with difficulty. When the lateral lobes are enlarged, the portion of the urethra between the neck of the bladder and the posterior end of the veru montanum is affected; by the encroachment upon it of the lateral lobes, often unequally enlarged, it becomes functionally defective as a conducting channel. In two such cases Luys has destroyed the walls of this portion of the urethra by a galvano-cautery, introduced through his straight cystoscope. The cystoscopic tube is introduced, and the local conditions studied; the posterior urethra is then anaesthetized by the topical application of stovaine; a general anaesthetic is unnecessary. The cauterization is then effected, and is slightly painful; the pain is reduced to a minimum, and the visual conditions much improved by the strong current of air which circulates through a cystoscope of this type. There is very little haemorrhage, and the operation is not followed by retention of urine. Should bleeding occur at the time of operation, it is best treated by the application of a diathermic current, which at once causes arrest of the haemorrhage. The operation is best done in two or more sittings, allowing a week or so to intervene between each. The article contains several reproductions of cystoscopic photographs, showing the formation of an open tunnel replacing the narrow vertical slit to which the posterior urethra was reduced before the operation. In the two cases reported by the author the functional result was perfect. Disadvantages of this method of treatment are that it is tedious and requires expert manipulation; the advantages claimed are that it is safe and does not necessitate rest in bed. It should be the method of choice in selected cases.

21. Protection of Granulations.

V. A. DODD (*Journ. Amer. Med. Assoc.*, April 18th, 1914) says the usual method of occlusive dressings of granulating wounds by antiseptic ointments and moist antiseptic gauze is irrational and unsurgical. The surface of a granulating wound is usually covered with an albuminus material consisting of serum, fibrin, red cells, and leucocytes. Closely adherent to the surface cells is a thin layer of fibrin enmeshing an enormous number of white cells. This exudate is not an offensive purulent fluid, but has a protective and defensive function for the underlying embryonic tissue. Under favourable conditions it is easily infected, with disaster to the repair processes since a purulent process causes necrosis and retards healing. The ordinary dressings are liable to cause adhesions and traumatize the delicate repair processes in their removal, and an antiseptic to be sufficiently potent would also kill the delicate tissue cells. To obviate this, Dodd has sought to develop a dressing and technique that would meet the following requirements: "(1) It must not allow granulations to become attached in its substance. (2) It must permit drainage through it. (3) It must not conflict with any other form of dressing desired by the surgeon. (4) It must be capable of sterilization. (5) It must be adaptable to the conformation of the part. (6) It should be readily procurable. (7) It should be cheap." The dressing he has devised consists of ordinary white mosquito net which has been infiltrated with a mixture of paraffin and petrolatum, of each 2 parts, and stearin 1 part. This allows the granulations to grow through its mesh, but not intimately into its threads, and removal is not attended with the usual accidents. Drainage through its interstices is free into the upper dressing, and it does not conflict with other elements required by the case. Dodd's technique is as follows: The mosquito net is cut into pieces of suitable size for convenient handling. The paraffin, petrolatum, and stearin in proper proportion are placed in a porcelain or metal bowl and heated to the boiling point. In this heated liquid a double thickness of the net is immersed for three minutes. It is then removed, the excess of the mixture allowed to drain off and the surfaces separated to clear the meshes. The pieces are then folded and wrapped in oiled paper. Several of the packages are wrapped together in a towel or dressing cap and sterilized in an autoclave. The oiled paper prevents the absorption by the dressing cap or towel of the mixture liquefied during sterilization. It is obvious that after immersion the steps of draining and separation must be accomplished rapidly, before the cooling is sufficient to congeal the mixture in the meshes so that they appear as tiny window panes. The dressing may be rendered antiseptic by the addition of phenol to the heated mixture to make it 0.5 per cent. strength. The net can be cut into such shapes and sizes as desired and is cheap and easily procurable. It has been in use by Dodd for more than a year and is specially asked for by patients who have had it used on them, as it gives them more relief, he says, than any other single step in the treatment.

22. Congenital Dislocation of the Hip.

GALEAZZI (*Archiv. di Ortoped.*, An. 31, f. 1) publishes a lengthy article on the treatment of congenital dislocation of the hip, chiefly dealing with the Lorenz method—a method which the author points out was really due to Paci, just as Hoffa's open method was first originated by Poggi. Moreover, some of the details which differentiate the Lorenz method from that of Paci have been abandoned in later years. The author classifies the dislocations into (1) subspinous, (2) supracotyloid, (3) posterior and iliac, (4) subluxation, and (5) precotyloid. As to the age at which operation is justified, in bilateral cases little can be hoped for after 7 years, but in unilateral cases success has been obtained even up to 12 to 13 years. Still, the younger the patient the better, and the tendency of late years is to operate quite early. Great care should be taken to avoid "brutality" in operating, especially in avoiding gross distension of the capsule. A reduction "click" is absent in about a third of the cases. The pelvis should be very firmly fixed during the manœuvres of the operation. After reduction, it is essential to fix both the knee and the lumbar spine. As to the length of time required for fixation in the first position, it should never be more than three months, and may be as little as fifteen days, depending on the age of the patient—the younger she is the longer the fixation period. For the second position the author recommends diagonal abduction, diagonal flexion, and internal rotation. In every case it is advisable to renew the apparatus in eight or nine weeks, and take stock of the position. In ordinary cases the total immobilization should last from five to six months. As to whether both sides should be done at once in bilateral cases depends a good deal on the case and on the surgeon; some recommend the double operation, others object—there is no general rule. Of the 40 cases operated upon by the author only 3 were unsuccessful, and that was owing to the extreme looseness of the capsule. The author discusses the difficulties and dangers of the operation and some of the complications (fracture, paralysis, etc.). His standard of what constitutes a cure is high, and practically requires the limb to be normal (the head concentrically in position, the great trochanter in the normal line, and antetorsion within normal limits, no pain or weakness, no oscillation of the trunk, perfect mobility, normal profile of the hip, no shortening, and no lordosis). On these lines of ideal cure, statistics give cure in 77.26 per cent. of unilateral and in 51.97 per cent. of bilateral cases. A few pages are given up to the open method of treatment and to palliative measures, and there is a bibliography of 179 references.

OBSTETRICS.

23. Puerperal Sepsis.

J. C. HIRST (*Journ. Amer. Med. Assoc.*, June 13th, 1914) remarks that it is evident that not every case of fever in the puerperal period is of septic origin. It should also be remembered that there are two varieties of sepsis—

sapraemia, due to saprophytic infection, and septicaemia, due to actual bacterial invasion, usually streptococcic, and frequently invading directly the blood current. It is the latter that Hirst specially discusses, as the former yields promptly to disinfection. Septicaemia is far the more dangerous and less easy to diagnose. The general symptoms are chills, rapidly rising temperature and pulse, and physical depression out of proportion to the other symptoms. The local symptoms are foul discharge, which is sometimes absent, reddened and oedematous labia, false membrane formation, and a subinvoluted and tender uterus. The pelvic exudate is usually late when it occurs. Leucocyte counts are usually higher than in any other form of fever in the puerperium, and cultures properly taken with the strictest aseptic technique are often of great value. The prophylactic measures—strict asepsis observed by both physician and nurse—are given in detail. The first curative step is local disinfection of the genital canal, erroneously spoken of as curetting, the method of which is described minutely. It should not be done with the patient in bed, but on a table (an ordinary kitchen table will suffice), and an anaesthetic is not necessary. Careful cleansing of the parts followed by a 1 in 4,000 mercuric chloride douche precedes and follows the cleansing of the uterine cavity. If the temperature does not fall or should rise again, intrauterine douching alone is advised, and the best solution is 2 drachms of tincture of iodine, 8 oz. of 95 per cent. alcohol, and sterile water enough to make 2 quarts. Once daily is sufficient, and the two-way catheter should have ample provision for return flow. There is only one contraindication to this treatment—that is, phlebitis—but it is not always possible to tell when this exists and which is the lesser risk. If a sharp rise in temperature follows the disinfection, further local treatment should not be countenanced. A routine use of vaginal uterine douches, purely as a preventive of infection and with an absence of symptoms specially calling for them, is not recommended. An easily digested, largely liquid diet should be given in large quantities, and Hirst advises alcoholic stimulation as far as tolerated. Other stimulants are often needed for the heart, but a pulse under 110 does not ordinarily require stimulation. Artificial leucocytosis is theoretically beneficial, but Hirst is not enthusiastic as regards the benefit of a fixation abscess. Enteroclysis is also mentioned as sometimes worth a trial. Serum treatment is mentioned as sometimes giving beneficial results when used early and in sufficient doses. The serum must be fresh; it will not stand long transportation, and it is also expensive. Sometimes a daily transfusion of normal human blood serum from a healthy donor seems to have given benefit, and is worth trying when antistreptococcic serum fails. The use of bacterins has been less satisfactory, and colloidal silver, Hirst thinks, is of doubtful utility, though as an unction it is harmless. As regards surgical treatment, he says every physician should be ready to give it if needed. Continual septic symptoms *plus* an abdominal mass, palpable above the symphysis or Poupart's ligament, call for abdominal section. This abdominal mass almost always means a cornual abscess pointing toward the peritoneum, and he emphasizes the advisability of operation in these cases. Without operation the patients are doomed; but with it and with proper drainage (which is the main factor in success) 90 per cent. of them can be saved. Phlegmasia alba dolens is mentioned as a complication, and its treatment noticed. Its greatest danger is pulmonary embolism, which is increased by early activity or massage, and this should never be used.

GYNAECOLOGY.

24. Primary Cancer of Both Breast and Uterus.

K. CZERWENKA (*Wien. med. Woch.*, May 2nd, 1914) points out that only 7 cases of multiple primary cancer of the breast and uterus in the same person have hitherto been recorded More common are the cases of cancer of the breast followed by metastatic secondary cancer of the uterus; and Töröck and Wittelsdörfer have even found this occur in 17 out of 220 cases of cancer of the breast. It is often difficult to decide whether, in cases of multiple cancer, the tumours are truly primary or one is derived from the other. Multiple tumours may be considered to be primary when (1) their histological structure is different, (2) when the lymphatic glands in their neighbourhood are not involved, (3) and when metastatic foci in the peritoneum are not demonstrable. The two first of these conditions are fulfilled in the following case, which is the only one of its kind observed by the author among over 30,000 gynaecological cases: On January 18th, 1912, a married woman, aged 40, complained of a small nodule in the right breast. She was well built and nourished, and her colour was good. In the inner and upper quadrant of the right breast a hard swelling, of the size of a hazel nut, could be felt at a depth of about 1 cm. from the skin, which was normal. The uterus was large, firm, and in a position of anteflexio-versio. A small fibroma, scarcely as large as a nut, could be felt in the left wall of the uterus, which showed no erosion. On March 15th, 1912, the breast was amputated, and the axillary glands and pectoralis major muscle were removed. The microscopic examination showed medullary cancer of the breast, but no secondary deposits in the lymphatic glands. On October 29th, 1913, the patient again consulted the author, this time for metrorrhagia. She still looked well, and the site of the former operation showed no signs of relapse. The cervical, infra- and supra-clavicular glands were normal. There was no swelling in the axilla, but the arm was slightly oedematous. The uterus was enlarged and a trifle softer than before. Its appendages were normal, and the tissues surrounding it were soft. A sound was passed into the uterus to a depth of 10 cm., increasing the haemorrhage. The suspicion of cancer of the body of the uterus was confirmed by the microscopical examination of material scraped from its cavity. The uterus was therefore completely removed through the vagina on November 8th, 1913. The microscope showed a cylinder-cell cancer of the mucosa. The ovaries and tubes, the peritoneum in their neighbourhood, and the surrounding structures were found perfectly healthy at the operation. The author leaves unanswered the question whether these two primary tumours were caused by a common factor. Both the symptoms and the microscopic examination of the cancer of the uterus pointed to its having existed less than a month before it was removed. There was, therefore, an interval of at least eighteen months between the removal of the first tumour and the appearance of the second.

THERAPEUTICS.

25. Antitoxin in Tetanus.

E. E. IRONS (*Journ. Amer. Med. Assoc.*, June 27th, 1914) has analysed 225 cases of tetanus treated with antitetanic serum after the development of the disease. From these statistics it appears that the mortality of cases thus treated is about 20 per cent. lower than the average mortality when serum treatment is not employed. The mortality in those treated by efficient methods and adequate dose is considerably lower than when only small doses are used subcutaneously. It should be generally recognized that tetanus antitoxin when used properly and sufficiently early may save life. Of course, not every case can be saved, but there is every reason to believe that the present great mortality can be materially lowered. "It is important," he says, "that the full effect of the antitoxin be obtained immediately, and this may be accomplished by giving, as outlined by Park, 3,000 units intraspinally, and from 10,000 to 20,000 units intravenously at the earliest possible moment after symptoms of tetanus appear. The blood remains strongly antitoxic for several days. On the following day the intraspinal injection of 3,000 units may be repeated. On the fourth or fifth day 10,000 units should be given subcutaneously to maintain the antitoxin content of the blood." The use of antitoxin does not replace other non-specific methods of treatment. Surgical treatment at the site of infection should be employed as once; the use of sedatives to control convulsions, a quiet darkened room, adequate fluid nourishment, and attention to elimination are also to be employed. The danger of an overdose of sedatives should not be overlooked, and their use should be carefully supervised by the physician.

26. Diathermy in Neuritis and Poliomyelitis.

BORDIER (*Arch. d'électr. méd.*, June 25th, 1914) has found that the high-frequency method of heating the deep tissues, the method known as diathermy, is efficacious in counteracting the lowering of temperature which accompanies peripheral neuritis, sciatica in particular, and also poliomyelitis (infantile paralysis, progressive muscular atrophy). He has treated by diathermy three patients who had sciatic neuritis with the classic and constant signs of muscular atrophy, pain, and lowering of temperature. The sensation of cold was such that the patient had to wrap up the affected member with woollen stuffs, etc. In every case a persisting warmth was introduced after

three or four applications of diathermy. A dry sponge electrode of 200 sq. cm. surface is applied to the lumbar region, and the other electrode, consisting of the ordinary roller employed in labile electrizations, is soaked in cold water, and brought in contact with the algid regions, a sufficiently strong pressure upon the skin being maintained. The intensity may reach 500 to 800 ma. Care must be taken during the whole of the electrization to keep a continual contact with the skin, otherwise scarring may result. The sitting lasts from ten to fifteen minutes, and three or four sittings suffice to get rid of the sensation of cold, and the patient puts off his supplementary vestments. Nothing then remains save to act upon the atrophy of the muscular masses by rhythmic galvano-faradization. This atrophy, as well as the pain symptom, is cured much more rapidly when the algidity has disappeared. The same results have been noted in brachial neuritis. In infantile paralysis the lowering of temperature is very pronounced, and, in the author's opinion, all methods of heating from an external source are illusory; with diathermy, on the contrary, the heat takes rise in the tissues themselves. Another affection greatly ameliorated by diathermy is progressive muscular atrophy. He reports a case in a patient of 31 years, the small muscles of whose hands had wasted little by little, followed by wastage of the arm and shoulder. The hands and forearm were "as cold as ice." The patient was submitted to diathermy, the same technique being employed as in the neuritis cases. The roller electrode was promenaded for twenty minutes on the hands, arms, and shoulders, a large sponge electrode being applied on the dorsal region. After fifteen sittings the treatment was stopped, the heat being retained in the tissues. To complete the treatment a series of *x*-ray irradiations was made on the spinal cord. The circumferences at the beginning of treatment, and rather more than one year afterwards, were respectively:

	Right.	Left.	Right.	Left.
Deltoid	26 cm.	24.5 cm.	34.5 cm.	28.5 cm.
Biceps (middle) ...	23 cm.	22 cm.	30 cm.	25.5 cm.

The writing of the patient has become more legible. The hands remain warm; the small muscles have not recovered, but the patient grows less and less awkward in his movements. He has gained 2 st. in weight.

27. Quinine and Hectine in Malaria.

CRESPIN (*Prov. méd.*, June 27th, 1914) discusses the specific action of quinine on malaria, and while not wishing to underestimate its efficacy, points out how often rebellious cases of this infection yield to altered hygienic conditions, or even change of air, alone. He states that few authors agree as to the ideal method of administering quinine, and that the dangers attending its continuous administration over a certain period have not been sufficiently emphasized. Experimentally and clinically, even in therapeutic doses, quinine has been shown to cause undesirable changes, especially in the white blood cells. But this fact appears to be regarded as of little or no significance as compared with its specific advantages. The author does not altogether agree with this view, and does not approve of the distribution of the drug as being quite inoffensive in action, even in countries in which malaria is rife, without any medical control whatever. He suggests that in cases of cirrhosis or nephritis—conditions frequently met with in persons who have suffered from malaria—quinine may be responsible on account of the digestive troubles it so often sets up. Quinine given in large doses sterilizes the whole organism and paralyzes the amoeboid movements of the leucocytes; while if given in small doses it destroys the parasites which resist the drug when given in massive doses, and tends to augment the activity of the leucocytes. In this connexion the author states his belief in the reconstituent action of the preparation known as hectine, and thinks there are indications for the reciprocal action of this drug and quinine in malaria. Hectine given for two or three days consecutively increases the number of the white cells as well as their activity, while the number of the red cells as well as the percentage of haemoglobin is also increased. He does not believe that hectine is febrifugal in action. In chronic malaria the combination of hectine and arsenic is of great value.

28. Nicolle and Blaizot's Gonococcal Vaccine.

CASSOUTE AND ROCHE (*Ann. de méd. et chir. infantiles*, June 1st, 1914) report favourably on the use of this vaccine in cases of ophthalmia neonatorum. The details of one case are fully reported; they relate to an infant of fourteen days with a frankly purulent ophthalmia of moderate intensity, present since the fourth day after birth; gonococci were present in large numbers. Two injections of the vaccine were given with a forty-eight hours' interval, half a cubic centimetre being injected into the buttock on each occasion. There was no general reaction. The secretion of pus rapidly dried up, and ceased entirely twenty-four hours after the second injection. It should be mentioned that, in addition to the vaccine injections, instillations of 10 per cent. protargol solution were made thrice daily, and a weak permanganate lotion freely employed. The authors' observations are in agreement with those of Cuénod and Penel, who report on 26 cases, and of Offret, who describes favourable results in 36 cases. Morax, however, has tried the treatment, and considers that it does not modify the course of gonorrhoeal conjunctivitis. The authors suggest that this unfavourable opinion may be due to the use of a vaccine of modified composition. They recommend that the vaccine should be used as an adjuvant to local treatment, none of the ordinary routine of which should be neglected because a vaccine is being given in addition.

PATHOLOGY.

29. The Infectiousness of Whooping-cough.

E. FEER (*Med. Klin.*, May 17th, 1914) combats the present tendency to regard whooping-cough simply as a neurosis. He advances numerous arguments to prove that the disease is infectious, and due to a specific micro-organism, but he admits that nervous excitability plays an important part. Indeed, it is probable that the greater morbidity and mortality of the disease among girls than boys is traceable to the former's relative lack of nervous stability. It is not known whether the disease is infectious during the incubation stage. During the catarrhal stage it is evidently very infectious, but from the paroxysmal stage onwards there is a growing mass of evidence against the disease being infectious. The author has collected the opinions expressed in leading textbooks as to the infectiousness of whooping-cough in its various stages, and his analysis shows an extraordinary lack of unanimity. It is therefore necessary carefully to sift the evidence, and to confine attention to cases in which the sources and course of infection can be exactly controlled. In all the hospital epidemics recently observed by the author, infection was traced to children who had not passed from the catarrhal to the paroxysmal stage. Only one exception to this rule was observed, in the case of a child admitted to hospital with a diagnosis of bronchitis. The child was discharged an hour later on account of a typical paroxysmal attack. Yet the infection spread to other inmates in the hospital. The author quotes the observations published in 1901 by Weill and Pehu, who, during the period 1891–1901, never could trace infection to patients in the paroxysmal stage. Yet 15 whooping-cough patients in this stage were in contact with 93 other children, who could not be regarded as immune, but who yet failed to contract the disease. Weill, therefore, considers patients can safely be regarded as not infectious from the eighth day of the paroxysmal stage. The view that the catarrhal stage is infectious, but not the paroxysmal stage, is supported by the familiar observation that the disease is very infectious at home, whereas, when the patient is transferred from home to hospital in the paroxysmal stage, further spread of the infection is very exceptional. It follows that there is little risk in sending to school a child who whoops. But other children in the same family, who present catarrhal phenomena, should be kept at home. The author believes that infection occurs almost invariably by direct contact. He has known lodgings to be taken a day after they were vacated by the subjects of whooping-cough, yet has not observed infection from this source. It is also a common experience for doctors to attend cases of whooping-cough without infecting their own children, who cannot have been immune, because they have subsequently contracted the disease as soon as they went to school. It is probable that the source of infection is often an atypical, abortive form of the disease; and adults may often thus be responsible for an outbreak of the disease. The "carrier" who shows no symptoms at all is also probably an important factor. On this account, and because the subjects of typical whooping-cough have usually ceased to be infectious by the time the disease is recognized, prophylactic measures are apt to be as effective as "locking the stable door after the horse has been stolen."

AN EPITOME OF CURRENT MEDICAL LITERATURE

MEDICINE.

30. Valvular Heart Disease and Tuberculosis.

BURNS (*Amer. Journ. of Med. Sciences*, June, 1914) studied the histories relating to general and occupational habits of such cases of pulmonary tuberculosis as exhibited signs of valvular heart disease, since it often appeared suggestive that the cardiac disease had so far handicapped the patient's resistance as to permit implantation and progress of tuberculous disease. This supposition that valvular heart disease may predispose an individual to pulmonary tuberculosis is directly contrary to the generally accepted view. Of 1,300 consecutive case records of patients receiving sanatorium treatment (75 per cent. being in the third stage), definite valvular heart disease was present in 228 (17.53 per cent.—21.15 per cent. among females, and 14.3 per cent. among males). A thorough examination of all the 183 pulmonary patients residing at one time in the sanatorium revealed 27 cases (14.75 per cent.) of valvular heart disease, 15.3 per cent. of the males and 16.47 per cent. of the females being so afflicted. Comparing the histories of these lives with those of uncomplicated cases of tuberculosis, it was found that, while these latter had pursued similarly hard occupations, and were as subject to deprivation or dissipation, the cardiac patients were more certainly impressed with the conditions undermining their health. Things of little moment to the uncomplicated tuberculosis cases became of great importance to those whose work was undertaken at the cost of cardiac fatigue and irritability. A patient with a normal heart but with bilateral lung disease thought almost nothing of his former ability to work from sunrise to sunset in a damp, ill-ventilated shop, while a patient with antecedent heart disease often attributed his lung trouble to overwork and lack of nourishment, accentuation of obstacles and domestic responsibilities being apparently felt by the latter case, who would perhaps have escaped phthisis had his heart been sound. Over-exertion in daily occupations, over-indulgence in vices, and lowered nutrition are factors conducing to a lowered resistance in patients with valvular heart disease, and hence inviting tuberculous infection, and individuals with cardiac valvular mischief should know and appreciate its significance, in order that they may choose suitable occupations, and thus reduce the number contracting pulmonary tuberculosis. Treatment should aim both at arresting the tuberculous process and also at restoring full cardiac compensation; and beyond the use of digitalis and strychnine, and depletive purgation for haemorrhage, medicines are scarcely indicated. Diet and intelligently-prescribed exercises suitable for each individual case are all-important, the patient being treated with every consideration consistent with the maintenance of discipline in daily routine.

31. Transitory Hemiplegia following Typhoid Fever.

COMMENTING on the rarity with which typhoid fever causes lesions of the central nervous system as compared with lesions of the peripheral nerves, G. WULF (*Muench. med. Woch.*, June 23rd, 1914) records the case of a postman, aged 44, who, on December 11th, 1913, developed pain in the right side, a cough and high fever, after having felt chilly for a few days. After frequent rigors he seemed to be recovering, and the temperature was normal, when, on the 24th of the same month, he developed severe, colic-like pain which lasted for two days, being confined to the region of the left kidney and accompanied by fever. Three days later, as he was attempting to stand up, he suddenly collapsed, and remained unconscious for two hours. Next morning he was somnolent, the left arm and leg were weak, the mouth was drawn to one side, and the left naso-labial fold was effaced. As there were also pain and a swelling in the right lower abdomen, an appendix abscess, with a secondary abscess in the brain, was diagnosed. The face and mucous membranes were much cyanosed, the nostrils were dilated on respiration, Kernig's sign was positive, and the tendon reflexes were more active on the left than on the right side, while the cutaneous reflexes were more active on the right than on the left side; Babinski's sign was positive on the left side; the somewhat coated tongue diverged to the left when protruded; the left corner of the mouth was somewhat depressed, and the muscles of the left cheek were flabby. When the limbs were raised simultaneously those of the left side showed marked atactic movements. The spleen was not palpable, but *crepitatio redux* was audible over the right lower lobe of the lung. There was a considerable quantity of albumin in the urine, the pulse was 88, the temperature was 39.4° C., and the leucocytes numbered 5,800. Lumbar puncture showed nothing abnormal apart from increased pressure. Widal's reaction was positive in a dilution of 1 to 640, but typhoid bacilli could not be found in the faeces, urine, blood, or cerebro-spinal fluid. The further course of the illness was typical of a moderately severe attack of typhoid fever. Three weeks after admission to hospital the patient became afebrile, and the paresis disappeared slowly but completely. During the first week of the disease Widal's reaction was positive in a dilution of 1 to 40,000, and during convalescence it was again positive in a dilution of 1 to 640. Discussing the pathology of the hemiplegia the author mentions several explanations, none of which he considers perfectly satisfactory. Most probably the condition was due to a haemorrhage or embolic softening. Thrombosis, abscess formation, and encephalitis are less plausible explanations.

32. Preroseolar Syphilitic Meningitis.

ON a basis of 9 patients in the preroseolar stage of syphilis, in 6 of whom he found evidence of a positive Wassermann reaction in the cerebro-spinal fluid, RAVAUT (*Ann. de derm. et syph.*, vol. v, No. 5, May, 1914) assumes that a co-chancral infection of the meninges is present in about two-thirds of even the early cases of the disease. The meningitis may be clinically evident in the presence of slight headache, but is often latent and only brought out by the injection of salvarsan, which appears occasionally to exaggerate toxic manifestations in the cerebro-spinal system before effecting their cure or amelioration. It is agreed by all competent authorities that the wholesale administration in large doses of salvarsan to cases of early syphilitic meningitis is exceedingly dangerous, and Ravaut, in common with many others, is in the habit of prefacing a salvarsan course in these cases with intramuscular injections of mercurial salts for at least five days antecedent to the salvarsan injection. It is admitted on all sides that syphilitic manifestations in the cerebro-spinal system are exceedingly refractive to treatment, and Ravaut has met with a consistently positive Wassermann reaction in the lumbar fluid after fourteen consecutive months of energetic antispecific treatment. An ultimate cure is however the rule in scientifically managed cases, though relapses are to be expected from time to time.

33. Blood Pressure in Pneumonia.

NEWBURGH AND MINOT (*Archives of Internal Med.*, July 15th, 1914) studied the blood pressure in 15 cases of lobar pneumonia at the Massachusetts General Hospital, the observations being made in the middle of the morning and the middle of the afternoon on each patient from entrance until death, or well into convalescence. All cases of doubtful diagnosis, or with chronic cardio-vascular disease, were excluded, and both the systolic and diastolic pulse pressures were measured. Five of the 15 cases were fatal, and in these the systolic pressure was continuously above that of the patients who recovered, and while the diastolic pressure of the recoveries showed a slight but progressive fall, the systolic pressure remained nearly level, resulting in an increasing pulse pressure as the crisis was approached. The fatal cases showed a slight tendency in the opposite direction, the average of the pulse pressures on the day of death being 6 mm. less than the average of the pulse pressures of the recoveries on the critical day. It was noted that, whilst the smallest pulse pressures—20 mm.—occurred in 2 fatal cases, the largest pulse pressure of the series was found also in a fatal case, and charts of temperature, pulse, and respiration in 2 fatal cases showed that death may occur with a small or a large pulse pressure, with a rising or a falling systolic pressure, with a systolic pressure above or below the pulse. A further study of 30 cases of pneumonia treated at the Johns Hopkins Hospital (14 deaths and 16 recoveries) pointed to the same conclusion that the systolic pressure in fatal cases tends to be higher than it is in the recoveries. These observations do not support Gibson's

rule that "a pressure appreciably below the normal in pneumonia is invariably of evil omen, and that when the arterial pressure expressed in mm. Hg does not fall below the pulse-rate, expressed in beats per minute, the fact may be taken as of excellent augury, while the converse is equally true." In both the fatal cases and the recoveries in the Johns Hopkins Hospital series the rule held in only a minority of the cases, and was definitely wrong 40 per cent. of the time. The blood pressure curve does not suggest that there is a failure of the vasomotor centre in pneumonia, and low systolic pressures are not invariably of evil omen, the systolic pressure in fatal cases tending to be higher than it is in the recoveries. Blood pressure measurements in pneumonia cannot be used as a basis for treatment, and prognostic inferences cannot be based upon Gibson's rule, since in the series examined they were wrong more often than they were right. The rate of the pulse and not the level of the pressure is the chief factor in deciding whether the pressure will fall above or below the pulse, the rate of the pulse being exactly twice as important as the height of the systolic pressure in this connexion.

SURGERY.

34. Serious Accidents from Artificial Pneumothorax.

At a discussion of the Jydsk Medical Society, Schäffer (*Ugeskrift for Laeger*, July 2nd, 1914) gave an account of the progress made at Vejlefjord Sanatorium, Denmark, in the technique of the induction of a pneumothorax. To diminish the amount of nitrogen, available for embolism, between the needle, the manometer and the cylinder containing gas, glass and rubber tubing of very small bore have been adopted. Professor Saugman has modified his needle, the new model being only 3 cm. long and, therefore, only just long enough to reach the pleural space in fat subjects. The object of shortening the needle is to enable the operator to gauge more accurately the depth at which he is working, and to minimize the risk of wounding the lung. In the case of emaciated subjects, it is easier with this needle to judge at a glance the depth to which the needle has penetrated, than it was with the long needle of the former model. By cutting the stilette flush with the opening of the needle, the risk of injuring the lung by the stilette, as it used to clear the needle, is further diminished. To prevent atmospheric air escaping into the chest through the needle as its tap is opened to admit the stilette, the needle has been fitted with a contrivance, enabling the operator to introduce the stilette without introducing air, the principle being that adopted in Potain's needle. These modifications have reduced the number of alarming incidents, such as loss of consciousness, convulsions, temporary paralyses, and death. Till October, 1910, there had been one sudden death and fourteen alarming incidents in a material representing 98 cases and about 2,200 injections. Between this date and September, 1912, there were one sudden death and two alarming incidents in a material represented by 64 new cases and about 1,200 injections. Between September, 1912, and April, 1914, there was no sudden death, and not even a single alarming incident, although there were 51 new cases and about 2,000 injections. This striking diminution in the occurrence of alarming incidents coincided with the improvements in technique, but Dr. Schäffer does not yet consider the operation perfectly free from danger. He considers injury to the lung the most important danger, as a wound in a vessel of the lung may admit inspired air, and thus cause gaseous embolism, without the introduction of gas through the needle. He has seen a case of extensive mediastinal emphysema following a puncture of the chest. No manometric oscillations appeared, and no gas was admitted through the needle. The emphysema must, therefore, have been caused by the escape of inspired air into the mediastinum. In the same manner it is probable that inspired air may enter a blood vessel. He considers most of the alarming incidents referred to as due to embolism, but he does not deny the occasional influence of shock. He doubts the value of the replacement of a pointed needle by a blunt instrument, for alarming incidents are confined to cases in which the pleurae are adherent; and, when this is the case, a blunt instrument is likely to cause severe laceration of the lung as well as of the pleurae.

35. Drainage of Common Bile Duct.

G. W. Crile (*Journ. Amer. Med. Assoc.*, May 2nd, 1914) says that drainage of the common bile duct offers three dangers: Much bile is lost, cicatricial contraction may be produced and leakage of bile may infect the peritoneal cavity. The continuous loss of bile by drainage in a good-risk patient may have no serious consequence, but in elderly patients and poor-risk patients from any cause, the steady loss of bile salts and fluid, which should be reabsorbed, may prove fatal. The presence of a drain tube in a bile duct may be followed by serious consequence from stricture, and the leaking of bile infecting the peritoneal cavity may be fatal. If drainage after common-duct operation could be dispensed with and the free drainage into the intestine permitted, the difference of mortality in operations for stone in the duct and those for stone in the gall bladder would be lessened. Crile thinks that the routine drainage of the common duct is employed because of needlessly rough treatment in the extraction; its deep position, frequently hidden under adhesions, handicaps the operator, so that his work is done less accurately and carefully. To overcome such needless local injury, Crile has evolved a sharp dissection technique, which is illustrated by a case as follows: "Under nitrous oxide-oxygen anaesthesia I made a wide exposure of the biliary field by a modified Wilms incision. This gave ample room for making a sharp-knife division of the firm adhesions between the viscera, as a result of which I gained a clear exposure of the dilated, stone-impacted common duct. Under the direct guidance of the eye and with a sharp knife, a rather long longitudinal incision was made over the stones in the enlarged pathologic common duct. The incision exposed the stones so completely that when they were gently turned out not even a drop of blood came from the mucous membrane. This ample incision in the duct gave an opportunity for not only a complete but also an absolutely innocuous exploration of the remainder of the duct. Six large stones were removed, some of which were embedded firmly. At the end of these procedures we had before us a common duct whose only injury was the sharp longitudinal division of its wall." The duct was sutured with as much care and accuracy as one would use in the intestines, with a curved round needle and a double row of fine chromic gut sutures. A piece of iodoform gauze was sewed to an adhesion below and external to the suture line, but nowhere in contact with it. The entire wound healed by first intention. A number of similar operations have had like results.

36. Madelung's Deformity.

Melchior states (*Ergeb. der Chir. und Orthopäd.*, Bd. vi) that in Madelung's deformity the hand is displaced towards the palm, the forearm being apparently well developed. The condition is more common in women; in half the cases both wrists are affected. It usually commences to develop about the age of puberty, and its progress is not, as a rule, attended by any pain or discomfort. The primary deformity occurs in the radius, the distal third of which is curved towards the palm, the convexity of the curve being directed backwards and outwards. In extreme cases the curvature may involve the whole shaft of the radius. The first row of carpal bones is carried forwards towards the palmar surface, accompanying the lower end of the radius. The joints between the proximal and distal rows of the carpus are abnormal, owing to a compensatory dorsal rotation of the bones of the distal row. Rickets appears to play a definite rôle in the etiology; the deformity is also observed to occur in families. Certain abnormalities in the region of the wrist have to be distinguished from Madelung's deformity. Such are: Hypertrophy of the head of the ulna; subluxation of the ulna, the other bones being normal; and ulnar subluxation due to fixity of the radio-carpal joint, or following traumatic deformity of the lower third of the radius. Five signs are given as diagnostic of Madelung's deformity: (1) Parallel palmar displacement of the hand, produced by a corresponding bend in the radius; (2) dorsal subluxation of the head of the ulna; (3) inclination of the carpal articular surface of the radius towards the ulnar aspect of the limb; (4) irregularity of the lower epiphysial line of the radius, frequently indicated by the presence of an exostosis in the neighbourhood; and (5) the wedge-shaped appearance of the carpus. Little can be done as regards treatment. Fixation by plaster, etc., has been tried in the early stages; operation is not advisable. The deformity usually progresses slowly for about a year or eighteen months, and then becomes stationary. The result is unsightly, but does not lead to any serious incapacity. In conclusion, the author refers to a condition similar to Madelung's deformity, an "inverse" type, in which the radius is bent in the opposite direction—that is, with an anterior convexity. This inverse deformity is rare, only three cases having as yet been recorded.

OBSTETRICS.

37. Scopolamine-Narcophine Anaesthesia in Labour.

P. W. SIEGEL (*Deut. med. Woch.*, May 21st, 1914) has modified the scheme, introduced by Gauss, of rendering the pain of labour scarcely perceptible by repeated injections of small quantities of scopolamine and morphine. The disadvantages of these drugs include uncertainty of the action of the scopolamine and troublesome apnoea, due to the action of the morphine on the respiratory centre of the infant. "Scopolamine-haltbar," introduced by Straub and sold by Hoffmann-La Roche, has a more uniform and reliable action than the original scopolamine. Narcophine, introduced by Straub and sold by Boehringer and Sons, has not such a powerful action on the respiratory centre as morphine. Working with these two substitutes the author has elaborated a system of injections suitable for any healthy woman in labour. The subcutaneous injections are started as soon as the pains have become regular and the external os has begun to dilate. At first 0.00045 gram of scopolamine and 0.03 gram of narcophine are given. Three-quarters of an hour later the same dose of scopolamine is repeated, but not the narcophine. Three-quarters of an hour later 0.00015 gram of scopolamine and 0.015 gram of narcophine are given. From now onwards 0.00015 gram of scopolamine is given at intervals of an hour and a half till labour is ended, every third injection of scopolamine being supplemented by 0.015 gram of narcophine. As the head is passing the vaginal outlet it is advisable to administer 10 c.cm. of ethyl chloride on a mask. After having adopted this treatment in 220 consecutive cases, the author is convinced of its harmlessness to mother and child. Labour is, indeed, somewhat delayed, a comparison with 750 consecutive cases of labour completed without narcotics showing that this delay is, on an average, one hour twenty-two minutes in the first stage of labour and thirty-three minutes in the second stage. As the patients lose count of time, and think labour has lasted only three to four hours, when it has actually lasted twenty-five to thirty hours, this delay is immaterial. The treatment requires no extensive preparation, but the patient must be kept as quiet as possible and in a darkened room, for though half asleep, she is extraordinarily susceptible to light. The author never found it necessary to stop the injections, even when labour lasted as long as thirty-nine hours. As much as 0.165 gram of narcophine and 0.0048 gram of scopolamine were given in a single case without ill effects, for the injections were distributed over such a considerable time. The average total of narcophine was 0.06 gram and of scopolamine 0.0015 gram, distributed over six injections. The only contraindication to the injections is primary uterine inertia; and even this rule has exceptions. The frequency of tears of the perineum in primiparae was reduced to 7.5 per cent., as compared with 13.5 per cent. observed at the author's hospital in 800 consecutive cases of labour spontaneously completed by primiparae without narcotics. The scopolamine occasionally caused excitation, but this was severe only in six cases. In five cases vomiting followed the injections. *Post-partum* haemorrhage and atony, as a sequel to the injections, were never observed. They had no harmful influence on the puerperium, and the secretion of milk was unaffected. The infant mortality up to the first three days of extrauterine life was only 3 per cent. The author concludes that his scheme of injections is the best method hitherto devised for the relief of pain in labour.

38. Vagitus Uterinus.

BRODHEAD (*Amer. Journ. Obstet.*, June, 1914) recently reported before the New York Academy of Medicine an instance where fetal cries were heard before birth. The mother was in her second labour, the first stage lasted ten hours, and the membranes were ruptured artificially. As the second stage was prolonged the forceps was applied. The head was below the brim, the fetal pulse was 140 to 150 and the patient's 128. The resident medical officer in charge of the case stated that the right hand was introduced to the left ear, and he was about to pass up the left blade when he heard a distinct loud cry from the fetus. This cry was also heard by the anaesthetist, by a woman in the same room, and by another woman in the next room. The cry continued at intervals from that time until the head was extracted thirteen minutes later. Traction was continuous, and the child, which weighed 10 lb. 10 oz., was in good condition. McLane referred to another case, and declared that he had seen many cases where the child cried in the vagina, but did not think that they were worth reporting. Telfair, who published another case of vagitus uterinus last autumn, admitted that the numerous disbelievers among obstetricians maintained that it was impossible for men to speak of what they heard. Some cases were explained by a vibrating fold of mucous membrane.

GYNAECOLOGY.

39. True and False Vaginismus.

AUDRY (*Prov. méd.*, May 3rd, 1914) does not regard the word "vaginismus" as satisfactory, and prefers the expression "vulvo-vaginal dyspareunia." This comprises conditions of painful vulvitis from whatever cause, and essential or true vaginismus. "Dyspareunic vulvitis" covers the majority of cases with which we have to deal. These cases differ from vaginismus proper by the existence of vulvitis, by their pathogeny, and by the fact that they are amenable to treatment. The author does not admit that in the majority of these cases in the adult female gonorrhoea is the cause. A great many are indolent in type, the pain being only invoked by coitus. Most of them date from the commencement of sexual life, but usually pass off shortly after marriage, although the condition may persist for some months. Coexisting spasm, too, passes off when the vulva has lost its inflammatory hyperaesthesia. The reflex in these cases is purely local, thus differing from true vaginismus, and the prognosis is good. In the case of vulvar neuralgia it is often not easy to ascertain the point of origin. This is to be distinguished from the condition just described by the absence of vulvitis and the extreme insignificance of any existing anomaly of the mucous membrane, and from true vaginismus by the continuity of the painful phenomena which are independent of coitus. On the slightest touch the vulvar mucosa is found to be hyperaesthetic; micturition is painful, and the least pressure causes distress. In such cases the resistance to coitus is purely defensive, and is in relation to the local pain, and not against the sexual act as such. In these cases, if the mucosa is anaesthetized, coitus becomes possible. In true vaginismus, on the other hand, there is no vulvitis, and no local hyperaesthesia. The condition manifests itself at the least attempt at coitus, and the reflex is not local but of central nervous origin. It is a pure neurosis, and the prognosis is bad. The treatment is difficult, and psychotherapy plays an important part, the important principle being to turn the attention elsewhere. All treatment, local and surgical, is contraindicated. It is often present in women of elevated moral tone. Re-education of the will is necessary, and maternity is undoubtedly the most efficacious means of diverting the nervous reflex if this can be achieved.

THERAPEUTICS.

40. The Treatment of Paralyses of the Arm.

O. VULPIUS (*Deut. med. Woch.*, May 21st, 1914) insists that though it is more difficult to treat paralyses of the arm than of the leg, yet only a partial restoration of the functions of the arm is of far greater value than in the case of the leg. When the deltoid muscle is paralysed, stretching of the ligaments of the joint and the atmospheric pressure lead to partial dislocation and pitting of the shoulder just under the acromion process. Even the most untiring mechano-therapy may effect little for a paralysed deltoid, and after it has been practised for about a year without recovery, ankylosis at the shoulder-joint should be induced. The success of this operation depends on the muscles of the shoulder girdle, particularly the trapezius, being strong. The operation is simple, and consists of removing the articular cartilages and suturing the humerus to the scapula, so that the muscles moving the scapula also move the humerus. When the biceps is partially or completely paralysed, ankylosis at the elbow is not so suitable an undertaking as the splitting of the triceps. It is partially detached from its original point of insertion, and the detached portion is inserted into the tendon of the biceps. When the forearm is incapable of active rotatory movements owing to paralysis of the supinators, the hand almost invariably falls into a position of pronation, in which the usefulness of the arm is much impaired. Of the various operations devised for this condition, the author prefers fixation of the forearm in a position between supination and pronation. He cuts a wedge of bone and periosteum out of the tibia, and fixes it between the radius and ulna, well within their epiphysial lines. Paralysis at the wrist is almost invariably

accompanied by some paralysis of the fingers, and the best operative treatment is usually tendon-grafting. The operations for paralyses of the fingers, though varying according to the distribution of the paralysis, are all subject to the principle of supplementing paralysed muscles with healthy muscles, whose action resembles as closely as possible that of the paralysed muscles. These operations require great skill and experience to avoid taut or slack unions of muscles with other than their own tendons. Provided the muscles of the shoulder girdle are still intact, the outlook for the patient has become much brighter than it was; and ankylosis at the shoulder, hinge splints and tendon grafting at the elbow, and tendon-grafting at the wrist, may often convert a flabby appendage into a useful limb.

41. Serum Treatment of Psoriasis.

HOWARD FOX (*Journ. Amer. Med. Assoc.*, December 19th, 1914) gives his experience of autogenous serum treatment in psoriasis. The patients numbered twenty-eight—seventeen females and eleven males—ranging in age from 11 to 54 years. All the different forms of the disease and all grades of severity were included. In all except one case at least three injections of serum were given at an average interval of three to five days, and this was immediately followed by the local use of a 10 per cent. chrysarobin ointment, the action of which was increased in some by covering the skin with a rubber cloth. The results of the treatment in general were very satisfactory, and in some cases brilliant, and the patients benefited were enthusiastic in regard to it. Vigorous chrysarobin treatment had previously failed in some of the cases. No ill effects from the treatment were observed. The technique was simple. Fox says his plan consisted in each sitting in drawing 50 c.cm. of blood from the cubital vein, by means of a MacRae needle, into a sterile cylindrical glass bottle. The bottle and its contents were then properly balanced and placed in an electric centrifuge having a speed of eighteen hundred or more revolutions a minute. When the serum was thoroughly separated from the corpuscles and fibrin, it was drawn off into a glass syringe and injected, without delay, either intravenously or intramuscularly. The amount of serum generally obtained from the 50 c.cm. of blood varied between 15 and 25 c.cm., the latter being the maximum. In every case the serum was injected in an active state. As a rule, the entire procedure of drawing the blood and injecting the serum was completed in half an hour or less. He does not attempt to definitely explain the action of human serum, but gives the following as his conclusions: (1) Autogenous serum, when used alone, does not appear to be of value in the treatment of psoriasis. (2) It is of decided value in many cases when used in conjunction with chrysarobin. Obstinate cases of psoriasis that have long resisted vigorous treatment with chrysarobin ointment will often yield to this remedy when injections of autogenous serum are given. (3) Intravenous injections of autogenous serum, if properly given, are entirely devoid of danger.

42. The Treatment of Sciatica.

NANNINI (*Rif. Med.*, July 25th, 1914) reports 7 cases of old-standing inveterate sciatica which were cured in ten days by free stretching of the nerve in an open wound. The treatment is not new, but success such as the author reports is not as common as one would suppose from these few cases. The author first briefly reviews the many and various treatments for sciatica and then reports his 7 cases. The ages varied from 19 to 45, and the cause was for the most part unknown. These "idiopathic" cases are the ones most suitable for surgical treatment. After exposing the nerve, the author advises free stretching of both peripheral and central end, the stretching being continuous and not in jerks. All his cases did well.

PATHOLOGY.

43. The Function of the Pineal Body.

C. FOÀ (*Arch. Ital. de Biol.*, June 30th, 1914, p. 79) has repeated his experimental extirpation of the pineal body of very young cockerels, and has added similar experiments on very young rats. He confirms his previous finding that complete pinealectomy in young cockerels is followed by a growth of the testes and comb, greater than that of controls of the same age, without any effect on general body development: no results of any kind were obtained in young pullets. In addition, he now finds that pinealectomy in very young female rats gives no appreciable effects; but in young males it provokes a more rapid somatic development than occurs in normal controls of the same age; this reaches its maximum degree at about twenty-six to thirty days after operation, and then gradually diminishes till it equals that of the controls. At this period of maximum growth there is also a much greater development of the testes in the operated male rats, which, however, disappears when the body weight of the animals equals that of the controls. The testes of pinealectomized cockerels, and also those of rats at the period of maximum difference of size, as compared with controls, show histologically a uniformly more advanced development of all their tissues. The tubules show a larger diameter and a wider lumen, and contain a larger mass of spermatozoa; the tubules are removed from one another farther than normal, consequently the interstitial tissue is more greatly developed than normal, but the relative proportion between the amount of the tubular and the interstitial tissue is unchanged. As these two testicular tissues are equally over-developed it is not possible to say to which of them we must attribute the greater development of the secondary sexual characters in the pinealectomized cockerels and the increased somatic development of the male rats. Pinealectomy in young male rats does not lead to an absolute hypertrophy of the testes but to their precocious development. Forty-eight days after operation the rat cannot be in any way distinguished from a control. Foà failed to find any skeletal changes after pinealectomy, and no histological changes were found in any of the organs of internal secretion; of these special mention is made of the pituitary, adrenals, thymus, and thyroid. He concludes that his experimental studies tend to confirm the teaching that the pineal body exercises an inhibitory action on sexual development. It is known that an involution of the pineal body coincides with the commencement of puberty.

44. Pathology of Blood Vessels of Diseased Appendix.

FROM the surgical clinic and the pathological institute of Würzburg VON REDWITZ (v. Bruns's *Beitr. zur klin. Chir.*, Bd. 87, Hft. 2) issues the result of an investigation into the condition of the blood vessels in appendicitis. From this point of view he has examined 132 specimens from cases of appendicitis of all degrees of severity. Short case histories and the histological findings are given. A list of references to the literature of the subject is appended. In common with other workers he agrees that in acute gangrenous appendicitis the blood vessels of the appendix are gravely involved. The histological lesions observed include perivascular abscess, periarteritis, panarteritis, periphlebitis, and phlebitis with thrombosis. An appendix which has been severely inflamed but has recovered may show sclerosis and organized venous thrombi and proliferative endarteritis in a more or less advanced stage. The arterial changes are found distributed throughout the appendicular artery and its branches. In chronic appendicitis, endarteritis and cicatricial changes in the vessel walls can be demonstrated. The author considers that these vascular lesions are a cause of intermittent appendicular colic in some cases of chronic appendicitis. Comparing the case histories and the condition of the appendicular vessels in some instances, he finds ground for stating that there appears to be a great probability that these periodical attacks of appendicular colicky pain may arise from the diseased condition of the walls of the arterioles of the appendix.

45. Eberth's Bacillus in the Mouth in Typhoid.

IN view of the discrepancy between various observers in regard to the above question, MONDOLFO (*Rif. Med.*, April 18th, 1914) gives the result of an examination of the mouths of 23 cases of typhoid fever. Out of the 23 so examined, 21 gave a positive result. Sometimes the bacilli were found as early as the sixth day, and persisted long into convalescence. In one case where the Widal reaction was negative, the bacilli were found in the mouth, so that if these results are confirmed in a larger number of cases they are likely to prove of value clinically in the difficult diagnosis of early typhoid. In about half the cases bacteriological examination of the blood was negative although bacilli were found in the mouth. In explanation of the presence of the Eberth bacillus in the mouth, the author suggests it may be due to bacteriaemia, to salivary excretion (bacilli were found in Steno's duct), or to autoinfection.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

46. Nasal Obstruction and Pulmonary Tuberculosis.

THE observations of W. C. Rivers on the relation of nasal obstruction to pulmonary tuberculosis are confirmed by G. WOTZILKA (*Med. Klin.*, May 31st, 1914), who has examined the noses of 100 consumptives, and, as a control, the noses of 100 persons not suffering from any disease of the lungs. Disease of the nose was found in 45 per cent. of the first group, in only 13 per cent. of the second. The first group included 67 men and 33 women. Fourteen men and four women suffered from deviation of the septum nasi, with or without hyperplasia of the mucous membrane. Five men and three women suffered from hyperplasia of the mucosa, with enlargement of the posterior turbinates. Five men and one woman suffered from hyperplasia of the pharyngeal tonsil, seven men and five women suffered from atrophic rhinitis, and one woman suffered from ozaena. Thus, 46 per cent. of the men, and 42 per cent. of the women suffering from pulmonary tuberculosis, showed some abnormality of the nose. In 32 of the 45 cases, the condition of the nose hindered nasal respiration. Though atrophic rhinitis does not, as such, hinder nasal respiration, it is often the sequel to a state of chronic hyperplasia in which nasal obstruction has been considerable. By widening the passage of the nose, and reducing the moisture of the nasal mucosa, atrophic rhinitis prevents the normal filtration and moistening of the inspired air. In fact, the conditions under which the patient breathes are little better than those of the mouth-breather. The author insists that, in the prevention of pulmonary tuberculosis, the systematic examination and treatment of abnormalities of the nose deserve far greater attention than they have hitherto received. Special attention should be devoted in this respect to persons living in touch with consumptives. The nose of every consumptive should be carefully examined, and, particularly in early cases, every effort should be made to remove obstacles to nasal respiration. In advanced cases of pulmonary tuberculosis, extensive operations on the nose offer little prospect of improvement, and are contraindicated.

47. Backache.

R. W. LOVETT (*Journ. Amer. Med. Assoc.*, May 23rd, 1914) discusses the subject of chronic backache, including under this head the various aches and lamenesses which are popularly attributed to kidney or uterine disease, and which have been described in medical literature under the heads: neurasthenic spine, hysterical irritable or railroad spine, chronic lumbago, uterine backache, static backache, relaxation of the sacro-iliac joint, sacro-iliac strain, rheumatism of the spine, chronic back-strain, etc. Spinal tuberculosis, organic nervous disease, and the effects of spinal fracture are excluded from this consideration. The most important symptoms are: insistent or intermittent dragging in the lower part of the back, sometimes one-sided and sometimes bilateral, generally aggravated by standing or walking, and often shooting down into the buttock and backs of the thighs. Lameness in bending may be present, and tenderness is usually found over the lumbar legion and region of the sacro-iliac joints. The patients usually like to have the small of the back supported by a cushion. Coccygodynia is not unusual. The affection may come on gradually or suddenly; it is more common in women than in men, and in certain types of figure such as the kangaroo and gorilla types of Dickens and Foster, the overfeminine type of Reynolds and cases with slight lateral curvature. The resistance of the patients is usually less than the average, and the disorder is notoriously chronic. The symptoms may be slight, or severe enough to make the patient a chronic invalid. Lovett gives the fundamental anatomical facts that bear on the condition and enumerates three etiological classes: (1) Those from disease or displacement of the pelvic organs; (2) those due to traumatism; (3) those from arthritis of the spine. There are many mixed cases, however, and there is still an unclassified group for which two theories have been offered and which he proceeds to discuss: (1) The theory of static origin which has been advocated by himself and Reynolds; (2) those due to sacro-iliac strain or relaxation. The former of these he practically accepts; the sacro-iliac theory is rejected by him. As regards the effects of strain, he considers it a more general attitudinal one than one affecting the sacro-iliac joints. The theory of sacro-iliac relaxation advocated by Meisenbach is not considered as supported by the facts. It is satisfactory to some because it needs no etiologic study and only routine treatment. The diagnosis of static backache means that the surgeon must look into the cause of it and try to remove it before treatment. Pelvic backaches have some characteristics distinguishing them from those of static origin, and this favours the view that they are most often caused by the forward bent position, causing increased efforts on the part of the posterior muscles. Mixed cases are frequent. Cases illustrating these forms of pelvic or mixed pelvic and static origin and of those due to traumatism are given. A puzzling class of cases lies between those associated with trauma and those clearly arthritic, but in many cases the latter diagnosis is not supported by the results of treatment. In many cases due to defective balance and flat-foot, inequality of the limbs, etc., are reported. Backache due to relaxed and slumped attitude is perhaps the most common type of static backache. In an analysis of 83 cases—29 males and 54 females—there were 41 of static backache, the majority due to defects of anterior posterior balance; there were 6 pelvic cases, 20 traumatic, and 15 arthritic. There was 1 case attributed to acute lumbago. In cases from traumatism we may assume a sprain of the spinal joints or pelvis. If they are non-traumatic defective balance may be sought for. In all cases of women the possible pelvic cause must be borne in mind. The case must be classed as probably arthritic when it is chronic and there is marked stiffness and pain on motion. Referred pains in the legs and disturbances of sensation are suggestive. Some cases can hardly be classed, however, and a hysteric or neurasthenic spine is no diagnosis at all. The prognosis depends largely on the possibility of removing the cause. In balance cases proper treatment should succeed unless the patient is neurasthenic. Pelvic cases should go to the gynaecologist, and the outlook for traumatic cases is favourable, except in elderly persons or those undertaking litigation. In arthritics the treatment consists in fixation of the spine, and he prefers a canvas lacing in the back with light steel straps to plaster-of-Paris casts. Defects of balance should be carefully studied, and Lovett describes a suitable therapeutic corset which can be made by any good corset maker.

48. Erythema Infectiosum.

A. HEISLER (*Muench. med. Woch.*, July 28th, 1914) has lately investigated an epidemic in which 25 cases of erythema infectiosum were observed. In its most common form this disease presents no prodromal features, and is unaccompanied by severe general disturbances. The first sign is a maculo-papular erythema on both cheeks. The papules tend to become confluent, and the face acquires a characteristically puffy appearance. The erythema is of a livid tinge, and the swollen area feels somewhat infiltrated. After about a day the rash spreads to the extensor aspect of the upper arm to the neck and shoulder-blades. In these areas the papules are much more sharply defined and smaller, and there is much less tendency to confluence. There is no marked annular formation as in the case of erythema annulare, gyratum, marginatum, and figuratum. On the second or third day the buttocks and outer aspects of the thighs become involved. In many cases the rash is so transient that it has disappeared from the face before it has reached the lower limbs. It may also disappear temporarily to reappear as marked as ever. When it is rubbed it disappears for several minutes, the skin becoming pale, and being surrounded by a raised zone in which the rash is brighter than ever. In none of his cases could the author associate this rash with any intercurrent disease. The epidemic began in a school at the middle of term. The ages of the patients varied from half a year to 16 years, and in many cases the incubation period was one of seven days. The course of the epidemic clearly showed its infectious nature. The second patient belonged to the same class as the first patient, the third patient shared a dormitory with the second patient, and the spread of the epidemic to a girls' school was traced to contact at confirmation classes. Children in the neighbourhood of the schools developed the disease three weeks later, and the patients were limited to families members of which attended the schools.

The disease was most severe in the earlier cases; in the later cases the rash often lasted only one day. In many cases there was sudden swelling of the glands behind the angle of the jaw, below the ears, and in the neck at the back of the head. The glands were often as large as almonds, were painful, and fairly hard. This swelling, which preceded the rash by a day or two, disappeared completely in a few days. Almost all the patients were febrile, but the temperature seldom rose above 37.8°. The tonsils were much reddened, and there was a dark red, coarsely papular rash on the hard palate, suggestive at first sight of scarlet fever. In several cases submucous effusions of blood were observed. Though desquamation often occurred on the face it was never observed on the body. In a few cases the rash was followed by pigmentation. The urine was perfectly normal except for indican, which was found in every other case. There was, however, no relation between the severity of the rash and the indicanuria. In one case there was slight but prolonged paresis of the vocal cords.

SURGERY.

49. Local Anaesthesia in Prostatectomy.

LEGUEU (*Journ. des praticiens*, June 13th, 1914) points out that the question of anaesthesia in urinary surgery is one of great importance, and that in prostatectomy, more than any other operation, it is desirable to avoid general anaesthesia. The possibility of latent nephritis and hepatic insufficiency render accidents from the use of chloroform very probable. The former of these can be eliminated in a certain number of cases, but the hepatic contraindication is not so easily recognized. According to the author, the action of chloroform on the kidneys is, in the light of clinical experience, not serious, but it has a profound action on the liver cells, and this happening in a case of hepatic insufficiency may result in subacute intoxication and death. In these cases the renal default is secondary, the kidneys failing to eliminate poisons of hepatic origin which have passed into the circulation. Autopsy has shown signs of azotaemia in these cases and an altered condition of the liver, but the kidneys as a rule are intact. The method of spinal anaesthesia has many attractions owing to its simplicity and apparent effectiveness, but it has been shown to be dangerous with cocaine and insufficient with stovaine. It is often necessary also to give chloroform in the course of the operation. According to the author, radio-anaesthesia should be abandoned in every form. The best method is regional anaesthesia of the nervous trunks as they emerge from the vertebral canal. The prostate receives its innervation from the third and fourth sacral nerves, and anaesthesia may be carried out according to the method of Braun, the solution used being a combination of suprarenal extract and novocain. Local anaesthesia of the prostate has also been attempted by the perineum—injecting, while guided by the finger, cocaine in front of the rectum. The method does not commend itself to the author, as insufficient anaesthesia has sometimes resulted. He has sometimes done the operation under local anaesthesia by opening the bladder and following the method of Réclus, proceeding step by step. After the bladder has been opened a series of punctures are made by needles of varying length and curvature, so anaesthetizing the prerectal zone. Generally about sixteen punctures are required, representing 60 to 80 cg. of novocain. This technique has given good results, and the operation lasts about half an hour. Some limited sloughing of the skin and deeper tissues has sometimes occurred, but has not in any way interfered with the successful results obtained.

50. Induced Pneumothorax.

E. VON ADELUNG (*Journ. Amer. Med. Assoc.*, June 20th, 1914) reviews the history of artificial pneumothorax, and describes the apparatus and technique. He gives his own experience. The benefits of the operation are not always apparent at first, and symptoms may become temporarily aggravated, but after a few weeks the good results appear, as physiological rest has been obtained. Pain from the operation is sometimes unavoidable on account of the tension of lesions and the displacement of organs, but it is rarely of long duration, and it is best minimized by gradual increase of pressure. Subcutaneous emphysema results from too much positive pressure. The spring pad hernia truss is often useful in alleviating it. Bleeding from the opposite lung is rare. Puncture of the lung is to be avoided though it commonly causes little or no trouble. The most important accidents are pleural reflex and gas embolism, but only few deaths have been recorded. The distinction between the two is not clear, and some consider them to be identical. Clinically, pleural reflex and gas embolism yield the same syndrome—fainting, pallor, convulsions, perhaps temporary or permanent paralysis, and occasionally death. The Bauer incision seems to be to some extent a safeguard, and Saugman and some others aspirate before turning on the gas to see whether or not the needle is in a blood vessel. Von Adelung says: "My conviction is that air embolism and real pleural reflex, such as results experimentally from the injection of irritating fluids into the sac, are both to be avoided by using warm, moist nitrogen, careful local anaesthesia of the pleura, and proper observation of the manometer. Not until the latter records free oscillations with persistent negative mean pressure can one feel sure that gas may be introduced safely unless one is using the open method." There is much difference as regards cases appropriate for induced pneumothorax. Haemoptysis is controlled by the method, and high temperature is not a contraindication. Natural pleural effusion acts the same way, but a small one may be aided by adding gas, thus inducing more complete lung rest. All writers agree that laryngeal tuberculosis is not a bar to the treatment. Pleuritic adhesions, if extensive, are a serious mechanical hindrance to the method. If slight they may be broken down by gas pressure if carefully applied, and perhaps sufficient free pleura may permit its use. If the patient is already dyspnoeic, unless it be due to a toxin, pneumothorax is irrational. Miliary tuberculosis is regarded as a contraindication, and so are serious cardiac disorders and marked splanchnoptosis. The main discussion is on how early artificial pneumothorax should be performed. Most writers advise it only in moderately advanced unilateral cases, but von Adelung thinks that careful study of the individual case should be advised. He follows Murphy in advising it in cases in which there is no absolute contraindication, and says that when it does not cure it often alleviates. His experience is limited to 42 cases, all but 1 bilateral and well advanced. All but 1 were ambulant, the patients coming to the office for treatments. Of the 42 cases it is, he says, noteworthy that pleuritic adhesions prohibited pneumothorax in only 5. The total number of punctures done was over 614 and no gas embolism occurred, but pleuritic effusion supervened in 6 cases, 1 being purulent. Twenty-two patients gained weight and 11 lost weight, this observation being unrecorded in 4 cases. In 37 cases in which a pneumothorax, even though small, was possible, 28 patients were improved in varying degrees, 1 case was arrested (perhaps cured), and 10 remained unimproved.

51. Radiography of Gall Stones.

RUBASCHOW (*Zentralbl. f. Chirurgie*, May 16th, 1914) summarizes the main points in the diagnosis of gall stones by x rays. From the radiographer's point of view there are two forms of gall stones; some are of uniform density, and cast an oval or round shadow; others have a clear centre, and appear as rings on an x-ray plate. The density of either type is much less than that of renal calculi. The size of the shadow cast by stones in the living patient may vary from a pinhead upwards. A single stone is rare; when it occurs it is usually in one of the ducts. A group of shadows resembling a bunch of grapes is characteristic of biliary calculi, and the stones are then certainly in the gall bladder. The shadow on the plate lies between the eleventh and twelfth ribs, and is further from the vertebral column than the shadow of a kidney stone. As a rule the shadow falls outside that cast by the liver. A differential diagnosis must be made from (1) renal calculi. Renal stones cast a denser shadow, often have a characteristic form, and generally lie nearer the vertebral column. Béclère's method may be used; it consists in taking two photographs, one dorso-ventral and the other ventro-dorsal; in the first, gall stones are smaller and sharper in outline; renal shadows stand out more distinctly in the latter. (2) Intestinal contents should be eliminated by adequate purging. (3) Chalk deposits in the costal cartilages are distinguished by their sharp outlines, elongated form, and usually by their symmetrical arrangement. (4) Calcified lymph glands occasionally have a clearer centre, and may cast a ring shadow; they are nearer the mid-line, and never show a bunch-of-grapes formation.

52. Transplantation of Vein in Place of the Common Bile Duct.

GIACINTO AND LUIGI (*Giorn. d. R. Accad. de Med. Torin*, An. 77, s. 4, v. 20), after a brief abstract of previous experiments in the substitution of the common bile duct,

relate the case of a dog whose common bile duct was partially excised and the gap made good by a part of the external jugular vein. About 5 cm. of the vein were excised and stitched in between the two ends of the bile duct. No drainage was used, but the wound was completely closed. The dog was alive a month later and quite well. The faeces were well coloured; there was no jaundice, and no bile in the urine.

OBSTETRICS.

53. Albuminuria in Pregnancy.

E. J. ILL (*Journ. Amer. Med. Assoc.*, July 11th, 1914) records his experiences with albuminuria in pregnancy. While laboratory methods of diagnosis are all-important, he holds that the clinical picture and bedside symptoms must be the guide for action. Albuminuric patients early in their pregnancy rarely give much trouble. They readily respond to hot packs and purgations, especially when the albuminuria is slight, symptoms mild, percentage of urea normal or nearly so, the skin active and blood pressure not excessive. The explosive cases are much to be feared. He has made for himself a classification of the cases, separating those in the primipara from the others according to their severity and treatment. In the primipara we must consider three cardinal conditions: The character of the albuminuria; the presence or absence of uraemic symptoms, and the stage of the pregnancy. A primipara presenting a slight or moderate albuminuria, with few or no kidney elements and no uraemic symptoms before the time of viability of the child, should be under close observation, a salt-free and restricted diet and an occasional calomel purge. The primipara before the viability of the child, without much albuminuria and many kidney elements, with reduced quantity of urea and urine, presents a more serious problem even if there are no uraemic symptoms, as the latter may occur at any time. Ill considers such a case before the seventh month a serious one, and gives calomel purges with a more restricted diet of milk and green vegetables, rest in bed, and close and constant observation for fear of a lapse into a worse condition. After the child is viable and there are many uraemic symptoms and increased albuminuria the condition is dangerous, and if we cannot check the symptoms labour should be induced. In these cases, venesection should not be lost sight of. If the symptoms have been gradually increasing in severity after the viability of the child, we should still make efforts to put off the evil hour by appropriate treatment; but if the uraemic and albuminuria symptoms have come on suddenly and with great severity, early delivery by induced labour should be the choice. When convulsions have supervened, or there is oedema of the retina and headache, the classic Caesarean section has been his choice. He has not seen much of the vaginal Caesarean section in these cases, and believes it is losing ground with the profession. Thus far he has spoken of the cases that have been under careful and constant observation. When he is first called to a case of convulsions during the last three months of gestation and without symptoms of labour, and there are lucid intermissions between the convulsions, he makes efforts to carry the patient along without operation. When, however, there are no lucid intervals, and deep and lasting coma exists in spite of blood-letting, he resorts to Caesarean abdominal section as giving the best results for mother and child. Other methods are liable to cause more or less serious permanent injury to the mother and kill the child. In the more fortunate cases, when the patient with convulsions is in labour with a freely dilatable cervix, chloral hydrate, morphine, venesection or veratrum viride, followed by the forceps, give mother and child a chance. When such a primipara is in convulsions without any dilatation of the cervix, and is not in labour, Ill has, since 1900, done Caesarean section, and thus reduced his fatal cases one-half. Expectant treatment has been abandoned. The greatest danger has been with primiparae. Multiparae rarely present such violent and dangerous symptoms, though eight of his fulminating cases were multiparae. He gives figures of other authorities, and believes that his experience compares well with these. He says when we look back to the days of forcible dilatation and delivery, and remember all the invalid mothers, he is glad to record the freedom from pelvic injuries in his later patients, and he gives briefly some figures obtained from Dr. Bunting, of Elizabeth, N.J., of cases treated at the Rotunda Hospital, which represent an excellent result from the expectant plan of treatment there used. Morphine repeated as convulsions return, lavage of the stomach and colon, castor oil and croton oil, absolute quietness, and starvation are the main features. There were 17.2 per cent. of deaths of the mothers, and 37.9 per cent. of deaths of the child; 79.3 per cent. of the cases were delivered naturally, about 7 per cent. were forceps cases, and a similar number had induced labour. Other statistics quoted or referred to are those for 1912, from Helsingfors, Voigt of Berlin, the Geneva clinic, Bellingham Smith and Dührssen. Ill's results compare well with these, and he says he will continue his present methods until convinced some other treatment is better.

GYNAECOLOGY.

54. Radium and Mesothorium in Uterine Cancer.

SCHMITZ (*Surg., Gynaec., and Obstet.*, January, 1915) summarizes his researches as follows: (1) The action of radium and mesothorium is probably the same. (2) The smallest amount used in treatment should be 50 mg. radium element. (3) The α and soft β-rays must be excluded by a metal filter. (4) The secondary rays must be absorbed by a soft rubber capsule enclosing the metal filter. (5) The amount of milligram-hours varies from 3,000 to 6,000 or more. (6) The action of the rays must be supported by the x-rays. (7) Chemo-therapy must be combined with radio-therapy. (8) Radio-therapy is indicated in (*a*) operable cancers of the uterus, vagina, and vulva; (*b*) operable cases where surgical treatment is refused or is otherwise impossible; (*c*) patients operated upon as a prophylaxis against recurrence. (9) Contra-indications are (*a*) advance of the "cancer disease," multiple metastases, and local extension, and (*b*) leucopenia of 3,000 or less and pronounced cachexia.

THERAPEUTICS.

55. Typhoid Immunization.

L. I. HARRIS (*Journ. Amer. Med. Assoc.*, January 2nd, 1915) gives the experience of the New York health department in the use of typhoid vaccination. The vaccine used conforms to that used in the U.S. army, except in that phenol has been substituted for trikresol as a preservative, on account of its causing less pain on injection. The cases in which it might have been deemed not a success fall into four classes: First, those in which the death has been attributed to typhoid inoculation. Only one case of this kind is given. *Post mortem* the death was found to be due to haemorrhage and malignant endocarditis, which ran an atypical and deceptive course. Several cases of reactions, vaguely described by the patient as severe, but lasting only a few days, are reported. There were no serious complications. Four of these patients afterwards had symptoms of typhoid, showing that the immunization was partial and insufficient. They were all in one family, and there was one death from intestinal haemorrhage. There was a failure to obtain immunity in several cases, but the number of these was no greater than might be expected, considering the number of recurrences of actual typhoid that are met with. The general conclusions deduced from the work are that the statistics of the experience of the New York Board of Health leave no doubt as to the preventive powers of antityphoid vaccination, excepting in a few cases, and in those subsequently affected the morbidity and mortality is greatly reduced. Severe reactions are rare. To avoid these certain precautions should be taken. Never vaccinate other than healthy persons; avoid puncturing veins or intramuscular injections. Use a clean syringe and sterilize the area with tincture of iodine. Exposure to the sun, especially in children, is to be avoided after treatment, and the vaccination should not be administered during menses or pregnancy, or the patient be allowed to do hard work or indulge in alcohol. Avoid reinjection in indurated areas. No permanent injury has been observed after severe reactions. When the incubation period is begun the time for immunization has passed. The treatment is preventive of typhoid fever, but is not an antityphoid toxin. Long exposure to typhoid bacilli, as in the case of a nurse, may nullify the immunizing power of the vaccine. Chronic ailment and debility from any cause, as well as efforts, predispose to the severe reactions, and injections after intimate and long exposure hasten the onset. The immunization is effective against an attack of the disease itself for at least two years, and it may be longer.

56. Lactic Acid in Chronic Suppuration of the Middle Ear.

A. EITELBERG (*Wien. med. Woch.*, May 30th, 1914) finds that the application of lactic acid in cases of chronic suppuration of the middle ear gives extraordinarily rapid results, even in old-standing cases which have been refractory to various forms of treatment. The case which first induced him to give lactic acid an extensive trial was that of a young girl suffering from chronic suppuration of the middle ear with polyposis. She was very nervous, and suffered from pains in the limbs and headaches. A broad-based polypus was attached to the attic, and could not be seized with a snare. Cauterization with chromic acid was contraindicated by her nervous state. Lactic acid was therefore applied instead, and after a few applications the polypus had disappeared. A similar case responded in an equally satisfactory way. That lactic acid arrests suppuration, as well as destroying polypi, is illustrated by the case of a man, aged 68, who had suffered from otorrhoea on the right side since childhood. He also suffered from polypous granulations, which were treated with chromic acid, the discharge from the ear being treated intermittently with various solutions such as creolin, silver nitrate, etc. In 1913 a relapse of the suppuration was accompanied by frequent haemorrhages from the right ear. After the usual methods had been tried for some time, lactic acid was prescribed, and both the haemorrhage and the suppuration were much diminished after the first application. After two applications a necrotic polypus was syringed out of the ear. Three weeks later there was no longer any discharge, and after ten days more the exposed mucosa tympani showed a fresh growth of epidermis. During the following observation period no relapse was observed. The author gives details of other cases showing equally dramatic results. He also reports two unsuccessful cases, which show that lactic acid is not a "cure-all." It is not at present possible invariably to distinguish between conditions suitable and unsuitable for this treatment. Polypous granulations rapidly disappear under it. While chronic suppuration may, as a rule, be regarded as an indication, acute disease is, in most cases, but little benefited. The technique consists of syringing the ear with lukewarm lotions containing creolin, boracic acid, or sodium chloride. The ear being dried, a solution, containing equal parts of lactic acid and distilled water, is applied lukewarm on a pad of cotton-wool fitted to a suitably curved sound. The diseased area is lightly touched with this pad, the patient meanwhile inclining his head to the opposite side for about three minutes. Superfluous fluid is now wiped away on a dry pad of cotton-wool, and boracic acid powder is blown into the ear, which is plugged with cotton-wool. This operation is repeated three times a week. Preliminary syringing is superfluous when the discharge has dried up, but the epidermis is still red in places.

57. Indirect Transfusion of Blood.

MOSS (*Amer. Journ. of Med. Sci.*, May, 1914) describes a simple method for the indirect transfusion of blood which he has used in about 75 cases. Its advantages over the direct method are that it is easier to perform and the amount of blood transfused is under absolute control and can be measured exactly. Only in exceptional cases—as in very small children, where it is necessary to expose a vessel—is any scar left, and the vessels are not obliterated. The fact that defibrinated instead of whole blood is used does not appear to be detrimental, as the body can apparently withstand the injection of large amounts of fibrin ferment without harm, and in no instance has there been intravascular clotting after the introduction of defibrinated blood. Following the transfusion of 500 c.cm. the blood count gained between 1 and 2 million cells, and no instance of blood destruction was observed where homologous blood was used, the donor and donee belonging to the same group, as determined by the iso-agglutination method. Except in those patients whose blood is deficient in fibrinogen, such indirect transfusion of defibrinated blood accomplishes as much for the patient as the more difficult direct transfusion of whole blood. The method consists of two parts: (1) Obtaining blood from the donor by means of an aspirating apparatus, and its defibrination by shaking in flasks with glass beads; and (2) the intravenous introduction of the defibrinated blood into the patient. Five Erlenmeyer flasks, each of 300 c.cm. capacity, 2 oz. of glass beads, one infusion bottle, two infusion needles, 12½ ft. of rubber tubing, 18 in. of glass tubing, one thumbscrew, one rubber stopper with two holes, and four plain rubber stoppers constitute the apparatus required. For the aspirating outfit two pieces of glass tubing, 4 in. long, are bent at the middle at right angles, one end of each being passed through the holes in the rubber stopper, while to the free end of one an infusion needle, about 1½ in. long and of fairly large calibre, is attached by means of a short rubber connexion, the free end of the other being fitted with 6 in. of rubber tubing, with glass tubing for a mouthpiece. Half an ounce of glass beads is placed in each of four of the Erlenmeyer flasks, which are stoppered with cotton-wool. For the introduction of the defibrinated blood a small infusion needle is attached to the infusion bottle by 12 ft. of rubber tubing interrupted by two glass cannulae, the thumbscrew being placed on the tubing near the needle. The four flasks containing the beads are sterilized by dry heat, and the remainder of the apparatus by boiling. The rubber stopper carrying the needle is fitted into the empty Erlenmeyer flask, and a little malted paraffin, which has been heated to 200° C., is aspirated through the needle into the flask, air being continuously aspirated until the paraffin solidifies on the inner walls of the needle and tubing. The stopper is then fitted into one of the flasks containing beads, and under aseptic precautions the needle is introduced into a vein, and about 200 c.cm. of blood aspirated. Without disturbing the needle another flask is substituted, the first one being closed with a sterile rubber stopper and shaken vigorously by an assistant for ten minutes to defibrinate the blood, a second and third flask being treated in the same way, 600 c.cm. yielding 500 c.cm. of defibrinated blood. Sterile normal salt solution is then run through the infusion bottle, tubing, and needle, and the thumbscrew closed when only a few c.cm. remain in the bottle, over the mouth of which four layers of sterile gauze are placed in the form of a funnel-shaped depression, through which the defibrinated blood is poured from the Erlenmeyer flasks. The needle having been inserted into a vein and the bottle elevated, the salt solution in the tubing and the defibrinated blood is allowed to run into the patient's arm, the tubing having been coiled in a vessel of water at 38° C., in order that the blood may enter the patient at body temperature.

PATHOLOGY.

58. A Simple Reaction in Cerebro-spinal Fluid.

P. BOVERI (*Muench. med. Woch.*, June 2nd, 1914) finds the following reaction useful in the distinction between normal and pathological cerebro-spinal fluid. To a small test tube, containing 1 c.cm. of cerebro-spinal fluid, 1 c.cm. of a 0.01 per cent. solution of potassium permanganate is added in such a way that it slowly trickles down the side of the tube, which is held slanting. When the tube is now held upright, a more or less bright yellow colour is observed at the junction of the two fluids, provided the cerebro-spinal fluid is pathological. If it is normal, there is no coloration. This reaction, to which the author applies the term "zonal," is not so definite as the following reaction, which he terms "global." This is obtained by shaking the two fluids in the test tube so as to mix them. If the cerebro-spinal fluid is normal, the rosy, violet colour of the mixed fluids lasts for a considerable time. But if the fluid is pathological, this colour changes to one of bright yellow in a few seconds to a few minutes. This reaction is strong when it occurs within two minutes, it is of medium strength when it occurs in three to four minutes, and it is weak when it requires five to six minutes. When this time is exceeded, the reaction may be regarded as negative, for after a certain lapse of time even normal cerebro-spinal fluid turns the solution of potassium permanganate yellow. The author has tested this reaction in about forty cases of disease of the nervous system, and he has compared it with other tests—physical, chemical, and microscopic—of the cerebro-spinal fluid. He concludes that the reaction is definite evidence of pathological changes in the cerebro-spinal fluid, and that the reaction is more delicate than those hitherto in use, including Nonne's and Noguchi's. Whenever these two reactions were positive the author's also was positive. These reactions were occasionally negative when the author's was positive. It does not vary with lymphocytosis, and it was often weak when leucocytosis was marked. The reaction was strongest in cases of inflammation of the cord. The author cannot explain the nature of this reaction. Its coincidence with the reactions of Nonne and Noguchi suggests that it depends on pathological changes in the cellular activities of albuminous substances, and possibly on the decomposition of endogenous albumin. The investigations of Zuntz, Engeland, Bodzynski, and Panck support this view. On the other hand, the reaction may be due to certain pigments derived from haemoglobin reaching the cerebro-spinal fluid by small meningeal haemorrhages.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

59. Leishmaniosis in Children at Palermo.

S. CANNATA (*La Pediatria*, Naples, 1914, xxii, 27) says that Leishman's parasite can be found in the circulating blood of children suffering from Leishmaniosis if a sufficiently large number of slides are stained and carefully examined. The parasites were to be found in the large mononuclear and the polymorphonuclear cells in 15 out of 16 cases he examined; in the sixteenth the examination was incomplete, and no parasites were detected. Cannata doubts whether the parasite is ever extracellular in these cases: in some instances its structure is well preserved, in others it is deformed. It was not found possible to obtain cultures of the parasite from the blood, although in some of the patients considerable numbers of parasites were to be seen in the stained specimens, microphotographs of which are reproduced. R. JEMMA (*ibid.*, p. 81) gives an account of the 110 cases of Leishmaniosis in children and infants he has seen in the Palermo clinic during the last four years. In all the diagnosis was confirmed by splenic puncture. It appears that there are endemic centres round Palermo where Leishmaniosis flourishes; these seem to have no connexion with the existence of spontaneous Leishmaniosis in dogs, and, indeed, only one infected animal was found among over a thousand dogs in the Palermitan municipal kennels. Still, Jemma thinks that cases may occur in which some blood-sucking parasite transmits Leishmaniosis from dogs to human beings, or vice versa. The parents were poor in 95 out of the 110 cases; in all, the domestic hygiene was defective. Eleven cases came to obduction, and the *post-mortem* changes found were very variable, as has often been noted. In some, nothing more than signs of grave anaemia was found, with parasites in the lymphatic glands and liver, often with fatty change in the liver and kidneys, or tubular nephritis; microscopically the parasites are to be seen in the endothelium of the blood vessels of the haemopoietic system and in the epithelium of the loops of Henle in the kidneys. In the cases with chronic course nothing characteristic may be seen until the tissues are examined microscopically; and it appears that the parasites in the tissues may disappear rapidly in the last stages of the disease. In a third group of cases the lymph glands may be much enlarged, the digestive and respiratory mucous membranes acutely hyperaemic, the tonsils necrotic. Clinically, the cases fall into three groups: (1) Acute cases, lasting five or six weeks (no such case occurred in Jemma's clinic); (2) subacute cases, lasting three to twelve months, the common form; (3) chronic cases, lasting from one to three years, not common. He divides the course of each case into four periods: (1) Incubation, of unknown length; (2) initial period, rarely coming under medical observation, with irregular fever and occasional intestinal upsets; (3) anaemic period, with irregular fever, enlargement of the spleen and liver, purpura, epistaxis; (4) cachectic period, with extreme anaemia and splenic enlargement, and complications such as noma, nephritis, bronchopneumonia, enteritis, osteo-periostitis. The fever is of very various types, strikingly irregular, highest towards the end. No close connexion between the size of the spleen and the severity or duration of the disease can be traced. The blood shows leucopenia often, but not constantly; the number of the blood platelets is always reduced. As for diagnosis, splenic puncture is still the quickest, simplest, and best method to employ; it is not at present possible to make sure of cultivating the parasite from the circulating blood; puncture of the lymphatic glands has not been tried. Diagnosis by agglutination tests, precipitin reactions, cuti reactions, and complement deviation is not yet practicable; these methods all fail more often than they succeed in cases of Leishmaniosis. The prognosis is not by any means hopeless: 58 of the 110 patients have died, 41 are living or have been lost sight of, 11 have been cured. As for treatment, a great many remedies have been tried—none is sovereign. Arsenic, iron, salvarsan, *x* rays, vaccination, all commonly fail. Out of the 11 cases that recovered, 3 had been given arsenic, 2 had received large doses of salvarsan, 1 had been vaccinated, 2 had had no remedies at all. Jemma advises symptomatic treatment, careful over-feeding, heliotherapy, baths, cacodylate of iron. Vaccination with dead cultures of the parasite proved a failure, 1 out of 13 cases being cured, and that a chronic case probably undergoing a natural cure. It is possible, however, that vaccination with the nucleo-proteins extracted from the cultures will give better results; the method is still on its trial. Jemma believes that Leishmaniosis is spreading and becoming worse in the neighbourhood of Palermo.

60. Apoplexy.

W. B. CADWALADER (*Journ. Amer. Med. Assoc.*, May 2nd, 1914) makes a comparison of the onset and character of the apoplectic attacks caused by cerebral haemorrhage and those by vascular occlusion. From his study he concludes that spontaneous intracerebral haemorrhages are liable to be large, and very small ones rare. Of seventy-two specimens examined, only four measured less than 4 cm. in their broadest diameter. Large haemorrhages are always fatal; it is also certain that small ones may be so, and it also seems probable that haemorrhages are always fatal, whether small or large. When repeated attacks of apoplexy with hemiplegia occur in the same patient at different times, the fatal attack may be due either to softening or haemorrhage, but the previous non-fatal one is always caused by vascular obstruction and softening. Small and moderate sized lesions in the brain generally described as cysts are apt to be considered the result of vascular occlusion; but they may be produced by haemorrhage which has become healed. The true origin sometimes seems uncertain, but here he classes them with softenings. The duration of life with small haemorrhages is longer than with large ones, but the latter do not always cause sudden death. The type of apoplexy produced by haemorrhage and that from vascular obstruction are neither of a distinctive kind. The symptoms may be exactly alike but the lesion quite different. A sudden onset with rapidly developing and persistent coma usually indicates haemorrhage, and a slow onset with premonitory symptoms without profound coma may be due to haemorrhage or to softening; but the less the disturbance of consciousness, the more likelihood is there of its being produced by softening and not by haemorrhage. Premonitory symptoms are not characteristic of the lesion; they usually occur with the milder types. Slowly increasing loss of consciousness ending in profound coma is generally due to haemorrhage. Haemorrhage occurring without disturbing consciousness is rare, if it ever occurs, but it is certain that many softenings occur without producing apoplectic attacks. The less severe the disturbance of consciousness, the more likelihood is there of its being caused by softening and not by haemorrhage. Most non-fatal cases of hemiplegia are caused by vascular occlusion and subsequent softening. The mere fact that life is preserved indicates the absence of haemorrhage. The type of apoplexy properly depends more on the size of the haemorrhage than its situation; but with softening the quickness with which the vessels are occluded may affect the rapidity of onset as well as the extent of the lesion.

61. Clinical Thermometry.

SCHOULL (*Journ. des praticiens*, May 30th, 1914) points out the need for some uniform method of taking the body temperature. He suggests that the thermometer placed in the rectum may be quite fallacious as an index, as it may register an elevation of temperature due purely to local irritation, such as haemorrhoids, diarrhoea, or constipation. He quotes cases to prove the existence of this irregularity. The buccal temperature is untrue also, because of the current of air passing through the mouth and pharynx, while the vaginal temperature also, especially in young girls, is subject to many fluctuations, more particularly on the approach of the menstrual period. The axillary temperature varies in the same subject according to the degree of humidity of the axilla and the pressure put upon the thermometer by the arm. The author points out, however, that the temperature taken in the armpit is of distinct value in diagnosis in acute diseases of the chest, especially in tuberculosis, as when taken on both sides it generally indicates a greater elevation on the side of the affected lung. It may thus constitute an actual aid in diagnosis. At the same time the axillary temperature does not indicate the exact relation of the general temperature. The best method, in the opinion of the author, and the most constant in results, is to place the thermometer in the inguino-scrotal

or inguino-vulvar fold, and this should be used to control the temperature taken in any other way. The normal temperature taken in the axilla ought not to exceed 36.4° C. in the morning and 36.9° C. in the evening, the corresponding temperature in the inguinal fold being two-tenths higher in each case. A temperature oscillating between 37° C. and 37.5° C. is, in the author's opinion, premonitory of the onset of tuberculosis within a period varying from three to eight years. Further, in convalescence following one of the prolonged fevers—such as enteric fever—if the temperature remains at 37° C., there is risk of relapse. The author concludes by emphasizing the need of a uniform method of clinical thermometry and the control of any other method by taking the temperature in the inguino-scrotal fold.

SURGERY.

62. Fracture of the Patella.

DREYER (*Zentralbl. für Chir.*, May 30th, 1914) describes what appears to be a characteristic symptom in some cases of patellar fracture; he also describes and recommends his method of treatment. A man aged 53 was admitted to hospital; ten days previously he had fallen, striking his left knee-cap on a sharp ledge. A fracture of the patella, with separation of the fragments, was diagnosed clinically and confirmed by *x* rays. The patient was quite unable to extend the leg on the thigh. An ordinary weight-extension bandage was applied to the front of the thigh; the strapping stopped short above the level of the fracture. The observation was then made that while the weight was applied the patient was able to extend his knee and raise the leg up; if the weight were taken off power of extension was lost. Obviously the lateral patellar ligaments remained intact, a fact which had not been apparent at the previous examination. The case was treated on conservative lines by weight extension. In four weeks the patient could walk about with a bandaged knee; in eight weeks he could go up and down stairs without assistance, and had full power of extension and voluntary flexion to 40 degrees. On palpation the patella appeared firmly united; a radiogram showed an interval of 2 mm. between the fragments, as compared with 1 cm. on admission. The author discusses the explanation of the fact that the patient had power of extension when the weight-extension apparatus was applied, but none when the pull was taken off. He points out that in the case of a recently fractured patella an attempt to extend the knee produces separation of the fragments. The resulting pain is so severe that the patient hesitates to employ the power of extending the leg which still remains to him in virtue of the lateral patellar ligaments, etc., and as a consequence, in practice extension is not possible. Such is the usual explanation. But in this case the fracture was ten days old and was not painful. The author suggests that when the patient, with the pull of the weight-extension off, attempts to raise his leg, the muscle sense is thrown out of gear by the resulting separation of the fragments, and, owing to deficient neuro-muscular control, power of extension is lost; when the fragments are held together, or approximately so, by the pull of the extension bandage, the slight interference with muscle sense is not sufficient to cause loss of function, and the patient can raise the leg. The sign may be useful in helping to differentiate between the various degrees of severity of patellar fracture, and will assist in distinguishing cases in which operation is imperative from those which may be treated by conservative measures. The author urges the use of an extension bandage, applied to the thigh, in the after-treatment of operated cases; it should be applied before the patient recovers from the anaesthetic. Not only is it equal to plaster or splints for keeping the knee at rest and guarding against tearing of the sutures, but is superior in that early passive and active movement of the joint may be safely indulged in.

63. Moszkowicz's Sign.

G. G. CUMSTON (*Annals of Surgery*, May, 1914) discusses the method of employment of Moszkowicz's sign, and the interpretation of the data which it affords. The use of the sign is to indicate at what level it is safe to amputate a limb the extremity of which has become gangrenous. The principle consists in emptying the limb of blood, applying a tourniquet to the root of the limb, and noting the extent of the blood flow when the bandage is removed. The return blood flow is made evident by cutaneous blushing; and as the corresponding limb on the sound side is used as a control, the sign has been called "the method of comparative hyperaemia." The method requires to be accurately performed, and considerable experience is necessary before the phenomena can be read authoritatively. The two limbs should be devascularized by elevation, by centripetal massage, or by bandaging with an elastic bandage from the distal extremities to the axillae or groins. A haemostatic tourniquet is then placed round each limb near its root, and requires to be maintained in position for at least five or six minutes. The process is painful for the patient, who may require an anodyne. The two bands are removed simultaneously, and the limbs placed horizontal on the couch in a good light. There are three phenomena which vary in the hyperaemic wave in a limb the seat of arterial occlusion, namely, the rapidity of the wave, the intensity of its colour, and its stopping point. The amount of variation from the normal must be judged by comparing the diseased and the healthy limbs; each case is to be judged by itself. The most decisive indication is furnished when the hyperaemic waves in the two limbs progress with equal rapidity, the only difference being that while on the healthy side the wave travels down to the extremity, it stops suddenly at a point in the diseased limb. Moszkowicz considers that this point corresponds exactly with the level of occlusion in the artery; the author believes that it varies according to the site of the arterial obliteration and the extent of the collateral circulation. The diagnostic value of comparative hyperaemia is limited to cases of gangrene due to vascular occlusion; in these cases the lower limit of the hyperaemic wave represents the point below which the tissues are no longer nourished. Amputation should be performed quite a little above this lower limit. Embolism and the crushing of a brittle arterial wall by the tourniquet are dangers to be borne in mind when employing the method.

64. Tertiary Syphilis Predominantly Splenic.

JEANSELME AND SCHULMANN report a case of enormous enlargement of the spleen for which a surgeon had advised splenectomy (*Soc. Méd. des Hôp. de Paris*, May 29th, 1914). A careful clinical examination showed that the patient had multiple exostoses accompanied by bone pains worst at night; the Wassermann reaction was strongly positive. After the first intravenous injection of 0.10 cg. of neosalvarsan the pains in the bones disappeared; the spleen, which before the injection had a maximum diameter of 21 cm., measured only 11 cm. after the injection; the liver also became lessened in size. The writers advise that a thorough examination ought to be made before operation is resorted to in these cases, so that if any sign of syphilis be present the appropriate therapeutic measures should be taken. At the end of the reading of the paper three speakers quoted similar facts, which show the need for a careful search for evidences of syphilis in the subjects of splenomegaly.

65. Ectopic Kidney and Ileo-caecal Obstruction.

MOURE (*Bull. et mém. de la Soc. Anat. de Paris*, May, 1914) publishes the report of a necropsy on a woman, aged 40, who died of spinal caries with fistulae, associated with angular curvature. Moure is careful to note that there was no sign of any other disease before death, and that the abnormality of one kidney detected after death had never been diagnosed during life. The caecum lay almost entirely in the pelvis, whilst the ascending colon ran a normal course but lay entirely behind the peritoneum. The ileum ran vertically down into the pelvic cavity to the level of the left lateral mass of the sacrum, and then ran sharply upwards into the caecum for a distance of 3 in. from the bend, the ascending portion being fixed posteriorly. The ileum and caecum at their junction were pushed forward by the right kidney, which lay in front of the fifth sacral and first lumbar vertebrae. The displacement of the kidney was primary, as it was supplied by an artery springing from the right common iliac, and by a second which rose from the normal seat of origin of the middle sacral, which was absent, and ran into the hilum. The feature of clinical interest in this abnormality was the extreme kinking of the ileum, which Moure represents by a drawing. Alglave, he observes, has already drawn attention to ileo caecal kinking in cases of secondary displacement of the kidney. In Moure's subject that organ had developed in the lumbo-sacral region, its fellow on the left side being normally situated, and supplied by the left renal artery; the kinking was marked as in Alglave's cases, yet the anomaly had been absolutely latent, as seems usually the case. Moure suspects that there was a double deviation in development, and that the one satisfactorily made

allowance for the other. The ascending colon and the last part of the ileum were held steady by their peritoneal relations.

OBSTETRICS.

66. The Insusceptibility of the Pregnant Uterus to Trauma.

IN support of the observation that the pregnant uterus may be undisturbed by severe injuries involving even the uterus itself, A. HAYMANN (*Med. Klin.*, May 10th, 1914) records nine cases. One patient was a married woman, aged 35, who had been under treatment for myoma of the uterus for six years. The tumours were as large as a child's head and as small as a hazel nut, and were both intramural and subserous. The uterus extended a hand's breadth above the umbilicus, and the dimensions of the abdomen were those of a woman in the eighth month of pregnancy. Yet there was little discomfort, and the symptoms were limited to slight dyspnoea and pressure on the bladder and large intestine felt before menstruation. But when she became pregnant these symptoms increased steadily, and, a laparotomy being refused, it seemed that the induction of abortion must be inevitable. This was, however, deferred from time to time, and finally the patient was spontaneously delivered at term of a healthy child. The severe post-partum haemorrhage which followed was arrested by secale and massage. The tumours were included in the process of puerperal involution of the uterus, which, a few months later, appeared to have shrunk to normal dimensions. Another patient was a married woman who was childless after eleven years of married life. Wishing to become pregnant, she consulted a physician in the middle of April, her last menstruation having occurred at the beginning of the month. The physician found the cervical canal obstructed by a valve-like fold of the mucosa at the level of the internal os. He accordingly slit the cervix, excised the fold of mucosa, and then sutured the cervix, plugging it with tampons. The patient was kept in hospital for eight days, and was instructed to defer cohabitation till the next menstruation had been completed But it never occurred, and on January 17th of the following year she was confined of a fully-developed child. She must therefore have been pregnant at the time of the operation. The author's other cases include one in which a dermoid cyst of the right ovary was removed between the second and third month of pregnancy, another in which a polypus was twisted off the anterior wall of the cervix between the fourth and fifth month of pregnancy, and another in which a laparotomy was performed for extrauterine pregnancy, a second fertilized ovum within the uterus being undisturbed by the operation. In some cases the trauma threatened an abortion, slight haemorrhage from the uterus lasting a few days. But in every case the stability of the uterus was maintained, and pregnancy was not cut short.

67. Bacteriology of Eclampsia.

G. F. DICK AND G. R. DICK (*Journ. Amer. Med. Assoc.*, January 9th, 1915) report the results of urinary examination in a woman who died of eclampsia. The urine was obtained by catheter under aseptic precautions, and aërobic cultures on blood ascites-agar gave no growth, but anaërobic cultures on the same medium and dextrose-agar cultures showed many slow growing colonies visible on the third day. They consisted of Gram-negative bacilli about the size of influenza bacillus, and gave no apparent result from inoculation of a small dog. In one of the agar shake cultures there developed a single colony of Gram-positive short chained streptococci which did not grow in transfer. While little can be said as regards the significance of the findings, it seems to the authors to indicate that the infectious theory of eclampsia is still worthy of consideration.

GYNAECOLOGY.

68. Pituglandol in the Menorrhagia of Puberty.

DEUTSCH (*Zentralbl. f. Gynäk.*, April 11th, 1914) declares that in the Rothschild Hospital, Vienna, there is ample opportunity for the treatment of uterine haemorrhages. Hypophysis extracts have proved of the greatest service both in obstetric practice and in the gynaecological wards. Gradually, however, and after several years' experience, it has been found that pituglandol is of especial value in one type of bleeding hard to check, and harder still to prevent from returning, and gradually exhausting the patient. Styptics, hydrastis, and ergot often fail altogether in this form of haemorrhage—namely, the menorrhagia of puberty and adolescence. Four complete clinical reports are published by Deutsch. Fifteen to twenty injections of 1 c.cm. of pituglandol were administered at intervals of from one to three days, and as a rule the dose proved sufficient, but whenever it failed it was resumed after a pause of from a week to a month. The general condition of the patient and the muscular tone underwent marked improvement, whilst no toxic symptoms were observed even in a few instances where the sum of the doses amounted to 45 c.cm.

THERAPEUTICS.

69. Chronic Palsy of Limbs due to Prolonged Colchicine Ingestion.

A. SOUQUES recorded a case of paralysis of all four limbs and the trunk due to prolonged use of small doses of colchicine (*Bull. de l'Acad. de Méd.*, June 2nd, 1914). In November, 1913, a vigorous man of 50, who had for ten years had an annual attack of acute articular gout, believing that an attack was impending, took on his own responsibility, and without any medical supervision, certain antigouty specialities. From November 17th to December 6th he took altogether 34 mg. of colchicine, and six to eight teaspoonfuls of Lavelle's liqueur. In spite of the onset of diarrhoea and abdominal pains he continued his autotherapy. On December 6th he had sudden local syncope of the fingers of his right hand, quickly followed by paralysis; the head was not affected, but the palsy gradually spread to all the other limbs and the trunk, and became total and complete at the end of twelve days. At its onset there was anaesthesia in the feet and severe deep pains in the muscles. The palsy persisted thus complete for nearly a month, and then lessened progressively and rather quickly. During this period there were no psychical, cardiac, or recto-vesical symptoms, no albuminuria, and no fever. (Transitory abolition of reflexes and respiratory disturbances were said to have occurred, but Souques cannot vouch for this, as he did not see the patient just then.) At any rate, three months after the onset of palsy, the reflexes, respiration, and heart were normal; the palsy then amounted merely to a notable muscular weakness, with slight tenderness on pressure of the muscles of thighs especially, and slight amyotrophy. And yet even now, six months after the onset, the motor and sensory troubles are not entirely cured. A polyneuritis is suggested by the characters of the palsy; no toxic or infective cause could be found, and the circumstances in which it came on clearly point to its causation by the colchicine. Colchicine is slowly eliminated and easily becomes cumulative, and Souques says that although in man the fatal dose is 3 cg., yet death has followed on 3 mg. The state of the kidneys, often affected in gout, is of great importance in this connexion. Colchicine is known to act both on the sensory nerve terminations and the spinal cord centres. Albers is cited as holding that colchicine has two chief properties—namely, (1) that of causing diminution of sensibility going on to abolition, and (2) complete motor palsy, the heart remaining intact. Colchicine, which spares the motor nerve terminations and the muscles, acts, then, on the sensory nerve terminations and the spinal centres; the involvement of the latter is shown, in cases of acute colchicum poisoning, by an extreme motor feebleness. Souques points out the striking analogy between these nervous symptoms of the classic acute colchicine poisoning and those of the subacute intoxication present in his case. He urges the great importance of strict medical supervision when colchicine is taken and its suspension if any diarrhoea appears, and he claims that we must recognize that there is a form of subacute poisoning due to the prolonged use of small doses of colchicine which is capable of producing a durable paralysis of the limbs.

70. Vibrations in Ear Disease.

THE use of sonorous vibrations properly regulated has a stimulating effect on the metabolism of all living cells, says L. M. HUBBY (*Journ. Amer. Med. Assoc.*, December 19th, 1914). He gives the results of his experience with this method in ear disease. Sonorous vibrations exercise the membrana tympani, the ossicles and muscles, the hair cells of Corti's organ, and membrana tectoria and the entire cochlear nerve system. If not overdone so as to cause fatigue the efficiency and nutrition of these structures is improved, and through the sympathetic the Eustachian mucosa is also affected. He uses the Zünd-Burguet electrophone, with which siren-like scales may be produced

in three timbres corresponding to three registers of the human voice—low, medium, and high. The intensity of the vibrations to each ear can be regulated, and the treatment is followed by a short mechanical massage to overcome any slight numbness that may have been produced. The regulation of the intensity of the sounds is very important, and must be studied and graded in each case to bring about the maximum improvement. In chronic cases he examines the ears at the start, and after fifteen and thirty treatments. In acute and subacute conditions single tests may be necessary before and after each treatment. These require treatment once a day, while the chronic usually need two a day, and the patient should be in good physical condition, as a constant weariness may make the treatment negative. This is one of the difficulties of the two treatments a day course. The course of treatment usually comprises fifty séances, two treatments a day. A second course of from twenty to thirty treatments is needed six months or a year later in most cases. He has experimented with watch or acoumeter tests before and after treatment in six cases, and found an average increase of audition distance of from 10 to 20 per cent., which lasted a little over a day. Tests were also made of the immediate effect on hearing distance. The treatment also favourably affected cases of chronic purulent otitis, and congested stenotic conditions of the Eustachian tube were always relieved after a longer or shorter course of treatment. A summary of the treatment by sonorous vibrations is given both in the text and in tabulated form.

71. Hexamethylenamin.

IN the *Archives of Internal Medicine* (June 15th, 1914) two articles upon hexamethylenamin appear, in the first of which Dr. HINMAN records his investigations upon its value as an internal antiseptic in other fluids of the body than urine, while the second contains the results of studies by Drs. MCGUIGAN and V. HESS as to whether formaldehyde is liberated in the body in sufficient quantity to have an antiseptic action. Hexamethylenamin is dependent on the liberation of formaldehyde for its antiseptic properties, and this process is dependent upon acidity and concentration, so that it cannot be converted into formaldehyde in any of the normally alkaline or neutral fluids of the body, and is therefore of no prophylactic value in such fluids. Infection in the body does not change the reaction of the body fluids into which hexamethylenamin is secreted sufficiently to cause its conversion into formaldehyde in antiseptic amounts, and even to localized accumulations of pus of marked acidity it does not gain access in amounts to be of value, while in the case of other infection in communication with the circulation, the small quantity of formaldehyde formed is rapidly taken up and metabolized, or excreted by the kidneys. Although after some injections of normally alkaline fluids of the body a change to acidity under certain conditions may occur sufficient to produce slight liberation of formaldehyde, it was not possible to show that this amount would be sufficient to produce antisepsis, since to be of value as an antiseptic it must be present in the proportion of at least 1 to 30,000, higher dilutions having no inhibitory influence upon bacterial development. Hexamethylenamin is of use therapeutically as an internal antiseptic only in urinary conditions, provided that it is excreted into an acid urine, infections of the urinary tract being the only apparent indication for its internal administration.

72. The Treatment of Post-diphtheritic Polyneuritis.

DISCUSSING the treatment of post-diphtheritic polyneuritis, G. L. DREYFUS and J. SCHURER (*Med. Klin.*, June 7th, 1914) point out that it has hitherto been mainly expectant or symptomatic. This attitude appears to have been adopted on the supposition that the toxin of diphtheria has become irrevocably linked to the nervous system, and that antidiphtheritic serum cannot, therefore, be beneficial. Though this reasoning is borne out by experiments on animals, it does not cover the whole ground, for it assumes that all the toxin has been linked to the nervous system, and that fresh toxin is not being slowly absorbed. It is probable that, in some cases at any rate, the absorption of toxin is prolonged over a considerable period, and that neuritis may be due to this process. In support of this hypothesis the authors record the case of a medical man, aged 26, who developed pharyngeal diphtheria towards the end of June, 1913. There was high fever, and the diagnosis was confirmed by a bacteriological examination. Intramuscular injections of 4,000 and 3,000 units were given on successive days. In a few days the inflammation and fever disappeared, but the urine, which at the onset of the disease contained albumin, was found to contain hyaline and granular casts for the first time on the eighth day. After a month of dieting the albumin and casts disappeared. From the tenth day of the disease symptoms of polyneuritis, affecting both legs and arms, became by degrees worse. Towards the end of September the right serratus anticus major and the latissimus dorsi, as well as both rhomboids, showed slight paresis, but scarcely any atrophy. The brachial plexus, the radial, median, and ulnar nerves, were tender on both sides, particularly the right. Both patellar reflexes were very weak, and there was loss of sensation in the right thumb, over the area supplied by the median nerve. The pharynx and tonsils were still red, and the latter, though not enlarged, were much fissured, and still yielded virulent diphtheria bacilli. As the neuritis had progressed for three months by exacerbations, in spite of symptomatic treatment, it was thought that they might be due to absorption of toxins from the tonsils. Tonsillectomy was, therefore, performed, prophylactic injections of serum being given before the operation to prevent diphtheritic infection of the wound. To avoid anaphylactic shock, Besredka's procedure was adopted, 300 units, injected subcutaneously, being supplemented, twenty-three hours later, by an intramuscular injection of 2,000 units. The tonsils, which were removed an hour later, contained crypts full of inspissated pus. The operation was immediately followed by an exacerbation of the polyneuritis; but in a few days the symptoms subsided, and a fortnight after the operation all the pain had vanished. The weakness and tiredness of the muscles, and the tenderness of the nerves disappeared slowly but steadily, and the patient was able to resume work six weeks later. During the following four months all the seven examinations of the throat for diphtheria bacilli were negative.

PATHOLOGY.

73. A Communication between the Aorta and Trachea through a Tuberculous Abscess.

A. GIRARDET (*Deut. med. Woch.*, July 9th, 1914) records the case of a workman, aged 39, who had been treated for tuberculosis of the lungs and larynx for a year. As his sputum was slightly stained with blood he was admitted to hospital, where he died next day of a violent haemoptysis, which was fatal in five minutes. Owing to the brevity of the interval between admission to hospital and death, there was no exhaustive report on the condition of the chest. At the necropsy, the pharynx, trachea, and large bronchi were found filled with frothy blood. Between two rings of the trachea, close to its bifurcation and a little to the left of the middle line, an opening, a little larger than a pin's head, was found. A probe could be passed to a considerable depth, and its withdrawal was followed by a stream of blood. An examination of the pulmonary artery, when opened, showed a tumour, of the size of a hen's egg, which could be felt through the wall of this artery, just above its origin, and under the root of the aorta. When the aorta was opened, a hole with jagged edges, measuring about 2 cm. in diameter, was found about 3 cm. above the valve. A probe could be passed through this opening and the tumour into the trachea by the hole at its bifurcation. The structure of the tumour was cystic, and its walls were surrounded by caseous, haemorrhagic tissues in contact with the pericardium. Both fluid and clotted blood occupied the cavity of the tumour, which was probably formed by tuberculosis of the tracheo-bronchial glands. In this connexion the most important of these glands is the large lower group, which lies over the bifurcation of the pulmonary artery, in contact with the pericardium, the ascending aorta, and the bifurcation of the trachea. Though it is most probable that these glands were enlarged, and by a process of softening formed a channel connecting the aorta with the trachea, it is conceivable that this channel may have originated in a tuberculous abscess in connexion with the pericardium. The microscopic structure of the tumour favoured the former hypothesis. The liver, kidneys, spleen, and lungs contained miliary tubercles, and the larynx and lungs also showed signs of arrested disease. Discussing the pathology of this case, the author suggests that the contents of the tumour were discharged into the general circulation by the erosion in the wall of the aorta, and that this flushing of the blood with tubercle bacilli was responsible for the miliary tubercles found in the various organs. The slight haemoptysis, which preceded the fatal rush of blood, was presumably due to oozing of blood at the point where the wall of the trachea at last gave way. The author can find records of only ten analogous cases.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

74. Measles.

HERRMAN (*Archives of Pediatrics*, December, 1914), for many years a medical inspector in the Department of Health of the City of New York, summarizes his experience of the incubation, infectivity, immunity, and early manifestations of measles. The period of incubation can be determined very accurately as the time elapsing between the time of infection and the appearance of the first definite symptom, which is always a rise in temperature, and this can be more accurately determined than the exact time of the first appearance of the catarrh, eruption, or Koplik's spots. Of fifty patients in whom it was possible to determine the incubation period with certainty, it was never less than seven or more than fourteen days. The time which elapses from the initial rise of temperature to the appearance of the eruption varies from one to five days, and is usually two or three days, and the time from the appearance of Koplik's spots to the eruption is from one to five days, usually one to two days. Infectivity is apparently greatest from twenty-four hours before to twenty-four hours after the appearance of the exanthem, the disease being only contagious for three or four days—namely, from the beginning of the catarrhal symptoms to the fall in temperature, which latter usually corresponds with the time of the completion of the eruption. The secretions of the nose and mouth in sneezing and coughing are the carriers of the infection, and not the scales of the skin, so that five days' isolation at most is sufficient. Infants under 5 months are practically immune, and a small percentage of individuals, probably not more than 2 or 3 per cent., are really immune, while second attacks are extremely rare if we insist on the presence of Koplik's spots in both attacks, since fever, catarrh, and a morbilliform eruption are insufficient to establish a diagnosis. Of the early manifestations, a rise in temperature is the first definite symptom, with usually an intermission of twenty-four hours after the initial rise, and if the patient is first seen during this period of remission Koplik's spots, if visible, may apparently be the first symptom, though the initial rise of temperature is always the earliest manifestation. A daily examination of the blood during the incubation period shows a leucocytosis about six days before the appearance of the eruption, and later, during the invasion, a leucopenia, diminished percentage of eosinophiles and a relative and absolute diminution in the number of lymphocytes. A large percentage of cases show an enlargement of the lymph nodes including the epitrochlears. The oral manifestations appear earlier than those of the skin owing to the difference in blood supply and structure of the tissues, Koplik's spots appearing most distinctly opposite the molar teeth, where there is slight hyperaemia due to pressure. Haemorrhagic spots on the buccal mucous membrane may be an early sign, and a redness and swelling of a small lymphoid mass on the posterior portion of the soft palate. The caruncle at the inner canthus of the eye becomes red, swollen, and injected at the beginning of the catarrhal stage, and Koplik's spots may be frequently seen on the reddened surface.

75. Tracheo-bronchial Adenopathy.

SPÉDER AND DUBOURG (*Arch. d'électr. méd.*, May 25th, 1914) state that for the radiological diagnosis of latent tracheo-bronchial adenopathy in children, radiographs must be made in addition to screen examinations. While it is only the screen examination which will show the movement of the various parts of the thorax, ribs, diaphragm, heart, etc., the screen is insufficient when it comes to a question of discovering the relatively small pathological modifications of the normal thoracic shadows. In a great number of cases, while the screen gives a negative result, an extra-rapid radiograph will show the existence of numbers of these modifications. Only extra-rapid radiography (one-tenth of a second), or, what is better, instantaneous radiography (one-hundredth of a second), permits of the obtaining of useful images. It may in these cases be an advantage—although in ordinary radiography a fatal disadvantage—to have the child agitated and sobbing, so that the radiograph may be made in the period of forced inspiration. The examination of the front of the thorax should be made with this rapid or instantaneous exposure, sufficiently hard rays being used, with a posterior incidence. In all cases where clinical signs of tracheo-bronchial adenopathy exist, the radiographic signs also are found to be positive, and the radiographic examination has confirmed the diagnosis in cases where the clinical signs have been small and the interpretation doubtful. The radiographic signs are more precise than the physical as to the extent, the localization, and the development of the adenopathy. The adenopathy is very frequently bilateral. The oblique examination has not been very fruitful, and the authors regard its use as being more restricted than is generally admitted. Although inferior to the radiograph from the standpoint of absolute precision, the physical signs are able to replace it to a certain extent if no suitable radiological installation is at hand. The radiological signs, however, in the majority of cases, are no more indicative of the nature of the adenopathy than are the physical. The tuberculous etiology is to be recognized by the results of the tuberculin reaction, the antecedent history, and the clinical evolution. The examination of the general state is the best guide under the circumstances, and upon this also should be based the prognosis.

76. Malaria.

G. E. HENSON (*Journ. Amer. Med. Assoc.*, May 2nd, 1914) says that the prophylaxis of malaria has been sadly neglected in certain regions and that literature teems with articles on the eradication of the mosquito, while comparatively little has been said about man giving malaria to the mosquito. If the extinction of malaria by destruction of mosquitos in the Southern States of the American Union depends on the development and drainage of the land, it is necessarily a matter of years, and he asks, Why should not an attempt be made to solve the problem also by other means? Henson goes at length into the transmission of malaria by the mosquito, and he thinks the success of a campaign against human malaria is certain if properly carried out. It depends entirely, he says, on the education of the medical profession and the laity in certain fundamental principles concerning the detection of gamete carriers, the formation of gametes in the human circulation, their transfer from one host to another, and the evolution of the parasite in man and mosquito; and, lastly, the significance of an early diagnosis and the rational treatment of all the malarial infections. He is not so optimistic as to assert that the detection of all gamete carriers can be done in a single season, but there is little doubt that in the majority of cases the malaria is a local infection, which has been shown by the success in some places where this method has been tried. With the facts established that the sexual forms originate in the asexual cycle, do not appear until the asexual has been active for some days, and that proper treatment instituted early not only cures the disease but also prevents the formation of gametes, the responsibility of the physician in making early diagnosis and giving prompt treatment is evident. Henson also emphasizes the fact that in practically every instance quinine properly administered will cure the disease, and that it might fail in rare cases is no argument against its great value. Apparent cases of relapse during quinine treatment have been found by Ross and Thompson to be largely due to other causes than malaria, and there are exceptional instances of a specially resistant form of the parasite; but when quinine seems to fail, it is best to question the diagnosis first rather than promptly to discredit the drug.

SURGERY.

77. Extraction of Bullets and Fragments of Shell by Giant Electro-Magnet.

IN a communication to the Académie des Sciences of Paris, reported in *Arch. d'électr. méd.*, January 10th, 1915, ROLLET announces that at the Desgenettes military hospital he has been employing for the removal of projectiles, more particularly from the limbs, a giant electromagnet, originally intended only for ophthalmological work. The French copper bullets and the French and German lead shrapnel bullets are not magnetic, but fragments of exploded shell are extremely magnetic, and the

same is true of German bullets enveloped in ferro-nickel. These last two varieties of projectile are readily extracted by the magnet. The electro-magnet employed is a specially powerful one, capable of supporting a weight of at least 1,150 kg. (more than 1 ton), and taking a current of 25 ampères at 110 volts. It attracts immediately the German bullet, weighing 10 grams, at a distance of 11 cm., and fragments of shell at a greater distance. Experimenting first with the cadaver, and placing under the skin in the cellular tissue a German bullet or a splinter of shell, it was found that the skin was raised on the approach of the magnet, and the foreign body was brought to the surface with the greatest facility through a small incision. If the bullet was placed in the muscular masses, the skin was raised less markedly than before, and, although the extraction from the fibres was successfully completed, it was slow and somewhat difficult. The electro-magnet was then applied to the living, and from the first gave positive results so far as indicating the presence of and localizing the foreign body were concerned. If the situation of the projectile was subcutaneous, the skin was raised like a cone on the approach of the magnet, and if intramuscular, like a nipple. There was some pain, but not such as to require general or local anaesthesia in many cases. The author admits that extraction from the living tissues is more difficult than from the cadaver, owing to the presence of blood and to the muscular contraction, but it has, nevertheless, proved possible to extract, by small cutaneous or aponeurotic incisions, both bullets and pieces of shell. For operating in the magnetic field, the surgeon should use retractors of German silver and haemostatic forceps of nickel steel (25 per cent. alloy).

78. Foreign Bodies in the Air Passages of Infants.

DURING the last two years GUISEZ (*Bull. de la Soc. de Pédiatrie de Paris*, 1914, 150) has had the opportunity to remove foreign bodies from the upper air passages of five infants and young children. In the first case, a child aged 20 months inhaled a coffee-bean into the right bronchus; bronchitis and suffocative attacks followed. Tracheotomy was performed five days later, and the foreign body was removed through a 6 mm. tracheotomy tube at the first attempt. In the second case the patient, aged 2, had inhaled a coffee-bean; a little cough and some difficulty in swallowing resulted, but the inconvenience was slight. In this, as in the previous case, there was respiratory recession of the substernal region. Guisez made an examination by superior tracheoscopy, and saw the bean in the trachea. A suffocative attack came on, and tracheotomy became necessary; a 7 mm. tube was introduced, but showed nothing. The tube was then inverted, and the bean was found in the subglottic part of the trachea (retrograde tracheoscopy) and removed successfully. In the third case a child aged 5 had inhaled the reed of a toy trumpet into its right bronchus, where it could be seen by the use of *x* rays; it produced a soft musical note with each cough. The reed was easily removed after superior bronchoscopy, through the bronchoscopic tube, and the child was none the worse. The fourth case was very similar. A young child inhaled through a toy trumpet instead of blowing through it, and by so doing inhaled its reed. Next day, after vomiting and purgation had proved ineffective, and the *x* rays had shown the reed fixed in the third intercostal space on the right hand side of the vertebral column, Guisez removed the foreign body under chloroform through a bronchoscopy tube. It was fixed in the last ramification of the right bronchus, which was slightly inflamed. The child recovered perfectly. In this case, as in the last, each cough was accompanied by a whistling sound from the trumpet-reed. In the fifth case the patient, an infant of 3½ months, inhaled a small safety-pin open. The skiagram showed it at the level of the sixth and seventh cervical vertebrae. The child appeared to suffer no discomfort but dysphagia, bringing back its milk immediately after drinking it. Direct tracheoscopy showed that the pin was engaged in the vocal cords; the point was embedded in the laryngeal wall; the top of the pin only was in the pharynx. The pin, 3 cm. in length, was removed without difficulty. Guisez goes on to describe six instances of foreign bodies impacted in the oesophagus of children; in three of them coughing and dyspnoea were prominent features; in all there was dysphagia. One infant aged 7 months had attempted to swallow a bell from its rattle; bronchitis followed, tracheotomy became necessary, and when oesophagoscopy could be performed the foreign body was seen in the food pipe, just above the level of the cricoid, flattening out the trachea. Death from septic bronchopneumonia soon followed. In this case the symptoms certainly suggested that the foreign body was in the larynx; the *x* rays gave no help. Guisez comments on the difficulty in deciding in infants whether a foreign body is in the larynx or the oesophagus. In addition to the three cases mentioned above he quotes three others in which coins or a safety-pin in the oesophagus produced crises of dyspnoea, cough, persistent suffocative attacks, as if the body had been in the air passages. He lays great stress on the importance of obtaining as full and accurate a history of the initial accident as possible in all these cases; and believes that foreign bodies in the air passages of infants dying of intercurrent pulmonary affections often escape diagnosis. He quotes the case of a child that inhaled a lobster's claw under its nurse's eyes; the history was plain, but the child was treated for tuberculosis or bronchiectasis, with attacks of fever and purulent expectoration, for eighteen months, when it coughed up the claw and rapidly recovered. In another instance a child had bronchopneumonia for four months, recovering when it suddenly coughed up a shell. He states that three main symptoms should point to the inhalation of a foreign body into the air passages: (1) An initial attack of suffocation; (2) violent bouts of coughing; (3) a succession of daily suffocative attacks.

79. Fracture of the Anterior Superior Spine of the Ilium.

L. RUPPERT (*Wien. klin. Woch.*, May 21st, 1914) considers fracture of the anterior superior spine of the ilium due to strain as one of the rarest accidents known, although fracture in this position due to a direct blow is relatively common. To the two cases hitherto recorded of fracture in this position due to muscular overaction he adds the following case. A lad, aged 18, was running a race on a sloping field, when he suddenly felt severe pain in the right hip as he attempted to carry forward his right leg, which was extended far backwards. He was arrested by the pain, and forced to lie down after having attempted to walk a few steps. He could not get up again for the pain, which was excited by every movement of the right leg. He was admitted to hospital, supposed to be suffering from dislocation of the hip or fracture of the neck of the femur. As he lay in bed he could hold his right leg free in the air in spite of severe pain, which, beginning about Poupart's ligament, radiated to the gluteal region. There was no shortening of the limb as compared with its fellow, and the great trochanter was not above Nélaton's line. He could stand on his right leg alone, and in this position could freely move his left leg without pain. Extension of the right leg was also painless, but flexion at the hip was exceedingly painful, and even became impossible, when the right leg was extended at the knee. While outward rotation of the right leg was unrestricted, inward rotation was limited and very painful. Inward rotation of the left leg made the sartorius and tensor fasciae latae muscles stand out prominently; but the same muscles on the right side did not stand out on inward rotation of the limb. While the pelvis was being examined a sharply defined ridge was observed in the position of the anterior superior spine of the ilium on the right side. About one centimetre below this was a hard lump, of the size of a small nut, just under the skin. Crepitation and severe pain were evoked when this lump was pushed upwards and inwards. The mobility and crepitation disappeared in a few days owing to the infiltration of the neighbouring structures, and had not these signs been observed soon after the accident the diagnosis would have been obscure. It was confirmed by a skiagram which showed that the lesion was not simply due to partial detachment of the epiphysis of the crista iliaca. Within a week the movements about the hip were again almost normal, though the patient could not at first flex his leg at the hip to any great extent. Bandages and splints were therefore superfluous, and the patient was merely kept in bed for a few days, with the leg flexed at the hip and extended at the knee.

80. Pott's Disease.

EVERSON (*Amer. Journ. of Orthopaedic Surgery*, October, 1914) records his results in a series of 26 cases of Pott's disease operated upon more than six months ago by Albee's bone-grafting method; 21 of these are apparently well, and 5 are distinctly improved and may possibly completely recover, while there has been no mortality. In the majority the operation was performed as a last resort, after long and patient treatment by conservative orthopaedic measures had been tried. As regards the technique of the operation, rapidity, without undue haste, is essential, a motor saw being necessary both for the saving of time and for the accurate cutting of the splint. The splitting of the spinous processes must be carefully

done, a narrow chisel being better than the broad ones generally used. In children no attempt should be made to split the shafts of the spinous processes, as they are too thin, the most that can be done being to split the tips and strip off the periosteum along one side of the shafts, the muscles and periosteum on the opposite side of the spinous processes being left, since the bone graft needs all the blood supply it can get. Heavy braided silk sutures, boiled in bichloride and in paraffin, were used for sewing in the splint, and they should be strongly placed in the deep tissues, or in the tips of the processes themselves, if it is desired to correct the deformity, which in most cases it is possible to do to a considerable extent. The splint must extend well above and below the diseased vertebrae, and where it is possible this should include at least three vertebrae above and three below the limits of the disease, it being far better to immobilize several vertebrae too many than one too few. The method has a distinct place in the treatment of spinal tuberculosis, and it can almost be classed as the acme of conservative treatment.

OBSTETRICS.

81. Position of the Fetus.

THE head presentations are the rule in delivery at full term, and about 97 per cent. present the occiput. Many theories have been advanced to explain this fact, and the more accepted theory has been that it is due to the greater weight of the fetal head. Many objections have been raised to this explanation by high authorities, such as Duncan, Scanzoni, Simpson, and Schatz. These are reviewed by C. G. BARNUM (*Journ. Amer. Med. Assoc.*, February 6th, 1915), who reports his own experiments made with fetuses at different stages of development, in a salt solution of such specific gravity that the fetus is freely suspended in it. His observations almost exactly duplicate those reported by Duncan, and, comparing them with those of Simpson, Schatz, and Williams, showed that the head of the fetus has a higher specific gravity than the body, and the centre of gravity in the uterus is nearer to the cephalic end. He does not deduce from this, however, that breech presentation ought to be the rule, and he gives his conclusions, after studying the subject in its various lights and comparing the conditions with those in the lower animals, as follows: "I think it has been shown that the action of gravity contributes to the production of the cephalic presentation, and that the interpretation of Schatz's experiments was an error, because of the manner in which the support was applied in those experiments. In support of the proposition that the action of gravity participates in the determination of the cephalic presentation, three main considerations have been brought forward: (1) The amount and distribution of the effective part of the weight of the fetus lying in the amniotic fluid; (2) the admitted contribution of the action of gravity to the production of the left occipito-anterior position, which is one of the most characteristic features of the cephalic presentation; (3) the very great probability that the action of gravity contributes to the production of the normal cephalic presentation and the normal position of the fetus in animals."

82. Acute Hypertrophy of Breast in Pregnancy.

HUGUIER AND LORRAIN (*Ann. de gynéc. et d'obstét.*, May, 1914) observed this condition in a woman aged 30. The catamenial history was normal. She married at 25, and then the breasts were rather over-developed. She became pregnant, and at once the mammae grew with extreme rapidity. At the end of the fourth month abortion was induced, as they had grown to an enormous size and were very hard. The areolae, intensely pigmented, measured each over four and a half inches in diameter. After the abortion the breasts diminished considerably; the periods returned in six weeks and the mammae increased a little in size at each period. For six weeks milk could be passed from the nipples. At length the breasts grew large again, and there were several firm nodules in each, the integuments being adherent and violaceous over one swelling. There was no pain and no enlarged glands could be discovered. The breasts hung down to the level of the crests of the ilia when the patient stood up, and when she lay down they slid off to each side of the thorax, and required support with pillows. The health was impaired. The breasts were amputated separately, at an interval of twelve days. The right weighed 4¾ lb., the left 3 lb. 3 oz. The hypertrophied tissue showed the characters of fibro-adenoma, with the two elements irregularly distributed. The firmer portions were truly glandular with numerous minute cysts, but they passed insensibly into the surrounding tissue and there was no evidence of malignant change. Five months after the operation the patient was in excellent health, and there was no sign of any new growth.

GYNAECOLOGY.

83. Hydronephrosis Three Weeks after Removal of Pyosalpinx: Nephrectomy.

GREEN ARMYTAGE (*Journ. Obstet. and Gyn. Brit. Emp.*, September, 1914) removed a pyosalpinx from an Anglo-Indian, aged 26. It had existed for two years, and once emptied its purulent contents out of the vagina, gradually refilling. It was of the size of a croquet ball, and was shelled out entire from the left broad ligament without rupture. There were dense pelvic adhesions. The capsule of broad ligament was closed over with catgut. On the twentieth day the patient, previously doing very well, began to feel pain in the left loin, and the urine was very scanty; next day a distinct tumour was detected; it greatly increased in size, and an operation was performed on the sixth day after its appearance, all tests indicating that it was a dilated kidney. The organ looked like a thin-walled cyst, and burst while the operator was searching for the seat of obstruction in the ureter. The peritoneal cavity, flooded with urine, was cleaned, and the abdominal incision being closed, the kidney was drawn out through a wound made in the loin. All the wounds united by first intention, and the patient was in good health ten months later. The renal pelvis was found dilated to a high degree, with the glandular part of the kidney moderately thinned and flattened out. Armytage considers that the left ureter in this case must have been kinked by the fibrosis and dragging of inflammatory tissue in its neighbourhood. There had been no symptoms of dilated kidney before the pyosalpinx was removed, and at that operation no ligatures were passed near the ureter.

THERAPEUTICS.

84. Benzol in the Treatment of Leukaemia.

ACCORDING to A. JOSEFSON (*Svenska Läkaresällskapets Forhandlingar*, vol. ii, 1914), the treatment of leukaemia with benzol originated in the observation that in benzol poisoning the number of leucocytes in the blood is much reduced. Selling observed two such cases in which the number of leucocytes to the cubic centimetre fell to 480 and 140 respectively shortly before death. This indication that benzol is a powerful leucotoxin was confirmed by him experimentally on animals, injections of benzol destroying the leucocytes without affecting the red cells appreciably. His examination of the spleen, appendix, and bone marrow of these animals showed that benzol has a powerful selective action on myeloid tissue, its action on lymphoid tissue also being considerable. It was also noted that, whereas benzol acts most powerfully on the polymorphonuclear leucocytes, the Roentgen rays principally act on lymphoid tissue; and thus the choice of one or other of these remedies may be determined by a blood count. In 1912 Koranyi published a case of myeloid leukaemia successfully treated with benzol. His example was rapidly followed in many quarters, where brilliant results were claimed for this treatment. It has, however, also met with considerable opposition because of severe toxic effects and lack of improvement in the disease. It has even induced fatal ulcerative colitis. The author is in favour of this treatment, and records the case of a woman, aged 42, who was admitted to hospital in the autumn of 1913. During the previous summer her legs had become painful, and she had subsequently also complained of pains in the arms and back. She rapidly became thin and pale, and lost her appetite. In October she noticed a rapidly growing tumour in the left abdomen, her hair became grey and loose, and her temperature rose to 39.9°. Wassermann's reaction was negative. In the middle of November the spleen extended four finger-breadths to the right of the umbilicus, and was only two fingerbreadths above the symphysis. A blood count showed 60 per cent. polymorphonuclears, 13 per cent. myeloblasts, 16.5 per cent. myelocytes, 5.5 per cent. basophils, 3 per cent. "a-phils," and 0.05 per cent. small lymphocytes, and a few normoblasts. The red cells numbered 3,500,000, and the leucocytes 600,000. On November 16th 0.5 gram of benzol was given three times a day. Between this date and December 27th

the dose of benzol varied from 0.5 to 1 gram, given three or four times a day, the total amount of the drug given being 96.5 grams. On December 27th the spleen was no longer palpable, and the drug was withheld. Early in January the leucocytes numbered 5,100; there were no longer any normoblasts or myeloid leucocytes, the patient's weight had risen from 56.6 to 61 kg., and the temperature had been normal after the benzol had been given for a fortnight. An analysis of the benzol showed the presence of tiofen (C_4H_4S), an impurity which may possibly have contributed to the beneficial action of the benzol.

85. Serum Therapy in Epidemic Cerebro-spinal Meningitis.

RUTELLI (*La Pediatria*, January, 1915) has treated 18 cases of cerebro-spinal meningitis by means of intraspinal injections of antimeningococcic serum. Sixteen cases were adequately treated with the serum, and ten of these were cured and one very much improved. The two other cases were not properly treated, so they are excluded; this gives a percentage of cured of 68.7. It has been stated that the earlier in the disease that the serum is administered the better the result, but the author's experience does not bear this out, and, indeed, in one case where the serum was given only seventy-two hours after onset, the patient died, whilst in some cases where the disease had existed for three months, cure was obtained. Generous doses of the serum were used—for example, in suckling infants 10–20 c.cm. were injected and in older children as much as 30 c.cm. It is advisable that serum should always be given by the same method and not alternately intraspinal and subcutaneous. The largest total quantity of serum given was 270 c.cm. in nine injections. Neither the particular brand of serum nor its age seems to have much influence on the result.

86. Vaccines in Sciatica.

F. C. ZAPFFE (*Journ. Amer. Med. Assoc.*, January 16th, 1915) reports a case of sciatica in a patient, occurring some weeks after an attack of gonorrhoea. The examination of the urine showed staphylococci and a diphtheroid bacillus. A mixed autogenous vaccine was made from a culture of these organisms, and was injected in effective doses of 500,000 to 5,000,000 bacteria. Seven injections were given in all, and the patient recovered. Zapffe says the vaccine treatment of sciatica has not received the attention it deserves. Little is said of it in textbooks, and only gonococcic vaccine is mentioned. Reaction and time of administration and duration of treatment must receive careful and individual attention, and cannot be given by rule as seen. The source of infection must be determined, and when found, the vaccine is easily obtained. Cases not amenable to vaccine therapy will yield negative results, therefore every other possible source of the sciatica should be thoroughly investigated before vaccine therapy is tried.

PATHOLOGY.

87. Intestinal Obstruction.

HARTWELL, HOGUET, AND BEEKMAN (*Archiv. of Int. Med.*, May 15th, 1914) conducted an experimental study of intestinal obstruction and examined the three theories generally advanced to explain the fatal outcome—namely, disorder of the nervous mechanism controlling the cardiac and vasomotor systems, bacterial infection, and intoxication from poisonous substances in the intestine orally to the obstruction. The theory of a nervous disorder is untenable, as there is no evidence to show that the nervous system is primarily at fault, while that of a bacterial infection is erroneous, since experiments showed that fatal obstruction occurs without any invasion of the peritoneum, blood, liver, or spleen by bacteria. No matter what the rôle of micro-organisms may be within the bowel, or how active they may become in causing complications by penetration of the bowel into the general system, this is not a necessary factor, either in causing the symptoms of the disease or in determining a fatal issue, so that a bacteriaemia cannot be regarded as the responsible factor in the death following intestinal obstruction. The intoxication theory is supported by experimental evidence, the essential factor being not the poisons *per se*, but the production of lesions which favour their abnormal absorption, and in the absence of such lesions the animals die only from dehydration, or starvation if dehydration is prevented. In searching for the source of the poison three possibilities were considered—foodstuffs or their derivatives, secretory substances or their derivatives, and true bacterial toxins. Experiments to determine the effect of foodstuffs or their derivatives above the point of obstruction showed that animals with a high obstruction, produced by sectioning the intestine and closing the ends by inversion, might live for from five to seven days, and that the length of life was not dependent upon the presence of food residue in the tract above the obstruction. Since, however, in these instances there seemed to be a direct relation between the severity of the damage sustained by the intestine at operation and the severity of the symptoms and early death of the animals, complete obstruction was produced in eleven animals by means of a special clamp, without opening the intestine or damaging the blood supply, thereby avoiding the complication of any operative damage to the intestinal wall. Four of these animals were given sterile water by the mouth only, and this was promptly vomited, the remainder receiving from 150 to 300 c.cm. sterile normal saline solution subcutaneously per day, and those so treated lived longest, ten days being the maximum. The average post-operative life in this series, in which obstruction was produced by clamping, was 139 hours, as against 67 hours in the series in which the obstruction was produced by sectioning the intestine and inverting the ends, but it was only in the clamped series that saline injections were used, and it was noted that throughout the experiment the clamped animals were much nearer the normal than those which were sectioned. In the clamped animals the intestinal mucosa proximal to the obstruction was markedly congested, marked round-celled infiltration and exfoliation of the lining cells and even haemorrhages being present, with acute hyperplasia of the lymph follicles and oedema of the submucosa, while distally to the clamp there was but little departure from the normal. The kidneys, liver, spleen, and pancreas showed congestion. With such a condition of lessened resistance of the intestinal walls the intestinal bacteria could attack the mucosa, and the changes in the other organs would follow the entrance into the blood of poisonous materials produced by bacterial activity. Studies in metabolism after constriction of the lower part of the duodenum for three and a half days showed a severe grade of tissue disintegration with a water loss averaging 5 per cent. of the body weight daily, and accordingly the daily output was measured in three dogs with the clamp applied to the lower duodenum, and a quantity of normal saline, about 100 c.cm. in excess of this loss, was injected subcutaneously, with the result that they were kept alive in good condition for three weeks, and by varying the amount injected their condition could be accurately controlled. In producing the symptoms and causing death in high intestinal obstruction in dogs, the two important factors are: (1) Loss of water from the tissues, caused by the excessive drainage into the intestinal lumen in response to the irritation set up by the retained secretions and followed by vomiting—a factor which is under therapeutic control, since this loss can be replaced, and so rendered harmless by the subcutaneous injection of normal saline solution; and (2) the entrance into the circulation of poisonous materials, which occurs only when the mucosa of the bowel is damaged. Such damage results largely from the trauma inflicted by the overdistension of the bowel acting on the circulation, and possibly also from the chemical action of the digestive ferments stagnated above the obstruction. Following upon such damage a bacterial invasion into the bowel wall occurs with a death of tissue cells, and in this process the poisonous substances are elaborated. This factor is not appreciably influenced by the subcutaneous administration of saline solution. The practical bearings of these studies point to the replacing of the water extracted from the tissues by means of a continuous hypodermoclysis beneath the skin in the pectoral region by the use of long needles of the ordinary hypodermic calibre, the fluid being absorbed as rapidly as it enters until the normal water content of the tissues is re-established. Since, however, this does not influence the symptoms resulting from a damaged intestinal wall the obstruction must be surgically relieved as soon as possible. Whenever there has resulted any considerable damage to the bowel wall above the obstruction, endangering the occurrence of serious symptoms from absorption, it may be wiser to empty the bowel through an enterostomy than through the normal path, and such drainage through an enterostomy should be allowed to continue for a time where there has been damage to the bowel wall, as shown by blood-stained contents, in order that there may be no further accumulation of poisons, but if the contents of the bowel are simply fluid faeces the returning peristalsis after the relief of the obstruction will carry the contents downwards into normal bowel where the mucosa possesses a defence against such absorption.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

88. Leprous Bronchopneumonia.

A. SERRA (*Lo Sperimentale*, Florence, 1914, lxviii, 661) remarks that while many of the experts in leprosy have always denied that the disease can affect the lung, others have put on record cases of nodular pneumonia or pneumonic sclerosis due to the *Bacillus leprae*, and not, as is commonly held to be the case, to the *B. tuberculosis* causing a secondary infection in a leprous patient. Serra quotes a number of such instances from the literature and gives full details of a case of his own. His patient, a married woman dying in 1912, aged 42, had had florid leprosy for twenty-three years. This had been treated on and off for nineteen years. At first it was of the nodular type; towards the end the cutaneous nodules disappeared and the symptoms were those of nervous leprosy. In 1910 she had an attack of influenza, which left behind it a troublesome dry cough; at this time the three tuberculin reactions of Calmette, von Pirquet, and Koch (up to 1 mg.) were tried and all proved negative, while the physical signs in the chest were those of general bronchitis, with some dullness and friction sounds towards the left base. This dullness increased at the end of the patient's life, and the heart was drawn over about half an inch to the left; numerous sputum examinations were made, all with negative result. The patient died in uraemic coma. At the autopsy the chief abnormalities found were pleural effusion with nodular pleurisy, nodular bronchopneumonia, granular and amyloid kidney, fatty and amyloid liver, leprous ulceration of the larynx, and, speaking generally, anaesthetic mutilating leprosy. Serra goes at great length into the description of the pulmonary lesions. The nodules on the pleura consisted of small white masses like lentils—dry, rounded, apparently affecting the pleura only. Microscopically, they consisted of small round cells, elongated cells, epithelial cells, and plasma cells mixed in varying quantities, with giant cells also and leprosy cells containing the characteristic vacuoles and bacilli in large numbers. The older pleural nodules showed signs of sclerosis or even partial caseation. Serra remarks that the structure of all these nodules was that of a granuloma; in many places they had run together, forming a diffuse granulomatous infiltration of the pleura, particularly in areas where the underlying pulmonary tissue showed collapse. As for the lungs, the left showed a considerable amount of atelectasis, caused by the pleural effusion, while the right was emphysematous. Both on section exhibited a large number of small scattered nodules a little larger than hemp seeds, grey or red in colour, with rounded or gyrate edges; they were dry, a little raised, and showed no indication of caseous change. Under the microscope it was found that these little nodules began as small-celled infiltrations round the vessels, rarely round the bronchioles. These granulomas invaded the interalveolar and interlobular septa, occluding the lymphatic channels, and consisted of much the same cells as the nodules on the pleura. The affected alveoli exhibited in addition an acute inflammatory process, containing a fibrinous exudate with red cells, polymorphonuclear leucocytes, and desquamated epithelial cells; the adjoining infundibula and bronchioles might be plugged with such mixed granulomatous and inflammatory contents. No coagulation-necrosis was found in any of these small areas of broncho- or bronchiolo-alveolitis, as Serra names the process, nor were any giant cells to be seen. In the later stages of their development these nodules became sclerosed, with obliteration of the affected bronchi and alveoli by the fibrous tissue that came to replace the various cells originally forming them. Leprosy bacilli were found in these nodules; a few were seen also in the slightly enlarged and chronically inflamed lymphatic glands at the roots of the lungs. Serra made a great many inoculation experiments on animals, and found no evidence of tubercle bacilli in the various infected organs of this leprous patient; his endeavours to cultivate tubercle bacilli from them were equally negative. He failed equally to cultivate leprosy bacilli from the organs; this, he says, cannot be taken as evidence that the disease was not leprosy, for the difficulty of growing the bacilli from florid leprotic lesions is well known. He notes that he has tested 15 leprous patients (7 with anaesthetic, 5 with mixed, 3 with nodular leprosy) with tuberculin, and obtained a positive reaction in only one of them; and this patient, seen again three years later, had developed severe pulmonary tuberculosis. He thinks that the nodular bronchopneumonia described above originated by way of the lymphatic system, from the pleural cavity; he is careful not to deny that the lungs may be infected by the blood stream in special circumstances, though in his patient the blood proved sterile. He adds that although the *Bacillus leprae* was never found in the sputum of his patient (though often looked for), it would be unsafe to argue that leprosy can never be spread by the expectoration of lepers.

89. Cutaneous Tuberculin Test in Children.

FISHBERG (*Arch. of Ped.*, January, 1915) studied the cutaneous tuberculin test in children of non-tuberculous parentage, the test being applied to 588 children under 15 years of age in whose homes there was no known active tuberculous person, with a view to ascertain whether it is only the child raised in a tuberculous milieu that runs the risk of infection, while those under similar conditions, but of non-tuberculous parentage, escape infection. The children in 177 families were thus investigated, all being dependants and in receipt of relief and living in 536 rooms, averaging three rooms per household. The von Pirquet test with pure old tuberculin was used and gave a positive reaction in 310 of the 588 children (52.72 per cent.), and probably the proportion of positive reactions would have been higher had the test been applied a second time to those who did not react. During the first six months of life the proportion of reactors is insignificant, being only 1 among 22 infants; but during the following six months the proportion rises to 14.71 per cent. of positive reactions, at two years to 33.33 per cent., at five years to 47 per cent., at ten years to 69.77 per cent., and at fourteen years to 75 per cent. Comparing these percentages with those of children of tuberculous parentage, the difference is not great, the number infected before the sixth year of life of those living with tuberculous parents being 65 per cent. as against 50 per cent. among the children of non-tuberculous parentage, while from 7 to 14 years of age the proportion is about equal. The cutaneous tuberculin test is quite reliable in showing whether a person has been infected with tubercle bacilli or not, but it is of little value in the diagnosis of tuberculosis in its various manifestations, and it would appear that in large cities, and even in small rural communities, most of the children have been infected with tubercle bacilli before reaching adolescence, though they may not necessarily have suffered as a result of such infection.

90. Morbidity and Mortality among the Fat.

E. E. FABER (*Ugeskrift for Laeger*, June 4th, 1914) has analysed the material at the Silkeborg Hydro in Denmark, with a view to learning whether fatness is a cause of disease or merely a symptom. He concludes that it is often the primary cause of ill health, and that a reduction in weight effected by dietetic measures often banishes every symptom. He considers that overfeeding is often at the bottom of diseases hitherto attributed to a uric acid diathesis. In a table showing the incidence of disease among 283 fat persons and 364 persons not strikingly fat, he points out that chronic rheumatism occurred in 34.3 per cent. of the first group, and only in 9.9 per cent. of the second group. Myocarditis, again, was more frequent in the first than in the second group, occurring in 7.8 per cent. in the former and in 4.4 per cent. in the latter. Chronic alcoholism, chronic bronchitis, nephrolithiasis, varicose veins, and arthritis urica were all far more frequent among the fat persons. Functional neuroses were found in 38.5 per cent. of the fat group, and in 47.8 per cent. of the other group. It was observed that diabetes, arthritis deformans, nephritis, and cholelithiasis were equally frequent in the two groups, whereas gastro-intestinal disease, valvular disease of the heart, chronic polyarthritis, and neuralgia were more common in the group of relatively thin persons. Commenting on the frequency with which various neuroses are combined with fatness, the author criticizes the custom, prevalent among medical men, of stuffing neurasthenics even when they are already fat. He has often found that a cautious reduction of a neurasthenic's weight had a markedly beneficial action. He has also often cured rheumatic pains by the same procedure, and he gives

details of two cases of chronic rheumatism in women to illustrate this point. Tiredness is a symptom common to most fat persons. It is provoked by light work, and is further aggravated by the stuffing which the patient prescribes for himself to combat the tiredness. It is often the first symptom to disappear when the diet is reduced. Other symptoms directly traceable to excessive fatness include dyspnoea on slight exertion, chronic bronchitis, varicose veins of the legs, haemorrhoids, and albuminuria. The latter may be completely banished by a restricted diet. The author quotes Moses, who in 1906 published his investigations on the influence of fatness on the mortality of persons insured in a German company. This company refused excessively fat "lives," and an investigation of 407 deaths among fat persons showed that they die two and a quarter years sooner than the average expectation of life would indicate. Of the 407 fat persons, only 4 were over 70 years. This is equivalent to 0.98 per cent. as compared with 8.24 per cent. among normal persons. The author repeats Ebstein's classification of fat persons into three groups—the enviable, the comic, and the tragic.

SURGERY.

91. Gall Bladder Infections.

J. H. Gibbon (*Journ. Amer. Med. Assoc.*, June 13th, 1914) advocates operative treatment in every case in which one feels warranted to make a diagnosis of gall stones or gall bladder infection, provided there is no definite contra-indication. Gall stones cannot be dissolved and carried off by medical treatment, and the passage of a few stones does not mean that all have passed. When the stones are confined to the gall bladder and its drainage not disturbed, an operation is a simple matter, but when they have passed into the common duct or are ulcerating through into the intestine; when the cystic duct has been blocked or the small liver passages affected and jaundice appears; or when the patient has developed a chronic or acute pancreatitis, or irritation has produced a cancer of the gall bladder, all of which may be the result of watchful waiting or delay, it is another matter entirely. We should understand that to wait for serious symptoms is as unjustifiable as to wait for metastases in cancer. When the signs of gall bladder disease are not unmistakable, many cases can be diagnosed by obtaining a careful history and by examination of the abdomen when the patient is suffering the greatest discomfort. The earliest and most persistent symptom is what the patient calls indigestion, manifested by a fullness or distension of the upper abdomen, coming on especially at night and without any definite relation to the taking of food. Gas eructations are common, and, if discomfort increases to pain, vomiting may occur. The prompt relief which it gives is of very great diagnostic value. If the symptoms are not characteristic of gastric or duodenal ulcer, the gall bladder is often the cause of trouble. "An infected gall bladder is nearly always tender, and if tenderness is present in connexion with the type of indigestion referred to, then, in the absence of symptoms suggestive of some other lesion, one is justified in holding the gall bladder under suspicion and watching the patient carefully. If the gastric symptoms are persistent and if the tenderness is marked, a diagnosis of gall stones is warranted and operation indicated. If, in addition, the patient has sharp attacks of upper abdominal pain, referred or not to the back or right shoulder blade, and accompanied and relieved by vomiting, one can feel more certain of the diagnosis. A transient jaundice following such an attack completes the picture." Jaundice, however, is not essential to a correct diagnosis, as it occurs only in a minority of patients operated on, and Gibbon believes that we can rely on the less typical symptoms given above, if other causes are carefully eliminated. In Gibbon's series of 26 cases there were 3 cases of acute cholecystitis and 2 of chronic cholecystitis without stones, but he believes that they would have developed stones had they gone without operation. A review of his cases is given. There were five deaths—one from abscess of the spleen together with one of the liver, and the others, all old cases and very ill patients, who were jaundiced at the time of operation, with the exception of a malignant case. In cases with no complications there is no more risk than in any clean laparotomy. Gibbon does not believe in the likelihood of gall stones re-forming after operation if all the stones are removed and the passage is properly drained for about two weeks. He can recall but two cases of re-formation of stones in gall bladder surgery in all his experience.

92. Pruritus Ani from Latent Haemorrhoids.

J. J. Matignon (*Gazette hebdom. des sci. medicales de Bordeaux*, May 31st, 1914, p. 257) draws attention to a troublesome form of pruritus ani, which depends on the existence of what he calls "latent haemorrhoids." As a rule patients have not mentioned their pruritus, but it has been owing to evidences of scratching seen by Matignon that he has been led to question them on the matter. He thinks the condition is related to temporary modification of the circulation in the haemorrhoidal veins, and also to a change in their walls—namely, a friability, to judge by the readiness with which small haemorrhages occur from time to time. The pruritus is worse when the patient is warm in bed. As a rule, examination of the anus shows merely a little lichenization and evidences of scratching; nothing is felt per rectum, but sometimes a rectoscopic examination reveals a rather marked hyperaemia of the sphincteric region. These patients are not always constipated, but as a rule they are nervous and emotional. The majority have intestinal spasms, either painful or painless. The stools are very often laminated and are passed twisted. But even after a normal evacuation there is a sensation of incomplete rectal emptying, and there is complaint of a little ano-perineal weight with false calls to evacuation. Finally, from time to time—perhaps three or four times a year—without obvious cause, unless it be sometimes an increase of pruritus and anal weight for a few days, they have a haemorrhage of from a thimbleful to half a liqueur-glassful, either after an easy stool or a little effort. This bleeding is repeated after each stool for three to five days, and then disappears; during these days the itching and sense of weight lessen or even disappear. Under the influence of the warmth of bed the haemorrhoidal veins are distended, and there is passive congestion of the whole anal region; the writer suggests that the distension of the integuments at the anal margin is possibly the cause of the pruritus. He finds that vaso-constrictor remedies are the best treatment for pruritus ani, namely, adrenalin suppositories, and especially very hot water applications; they are far superior to tarry preparations. His plan of using hot water is this: After each stool, and especially before going to bed, the patient rolls over the anal region for two or three minutes a soft sponge steeped in almost boiling water, beginning with quick slight effleurages, so as to accustom the skin to the heat. Very soon an extremely high temperature can be borne. The sponge is again steeped in the hot water, and the patient experiences a marked sense of well being. Matignon has used this method for many years, and finds that in from six weeks to two months the patients lose their pruritus and scratching habits, but they keep up the use of the hot water sponging.

93. Unusual Symptoms of Haemorrhage from the Internal Carotid.

H. Marx and E. Pfleger (*Berl. klin. Woch.*, June 29th, 1914) record a case in which the right internal carotid was completely divided by splintered glass without the lesion being recognized before death. The patient was a woman, aged 34, whose motor car, as it turned a corner, ran into a tree. The windows were smashed, and she and her companion were severely cut on the face and neck by splinters of glass. She became unconscious, and the wounds in her face and neck being sutured and the haemorrhage arrested, she was admitted to hospital in a dazed condition. She scarcely took notice of her surroundings when spoken to; the pupils were much dilated, and the pulse was scarcely palpable. She moved her right arm and leg freely, while the limbs of the left side were perfectly limp. Her respiration was snoring, and there was involuntary action of the bowels and bladder. On the following day the pulse was more rapid but stronger; the patellar reflexes were present, and Babinski's sign was positive. The right arm and leg continued to twitch automatically, and slight movements of the left arm and leg could be evoked by pinching them. When her head was turned to the right the respiration was stopped, the pulse ceased to be palpable, and her face became cyanosed. It was thought that these symptoms were due to an extradural haematoma following haemorrhage from the right middle meningeal artery. On this assumption the skull was opened on the right side, but no haemorrhage was discovered. The patient died an hour and a half after the operation and twenty-four hours after the accident. At the necropsy a deep wound over the left forehead was found to extend to the bone. Just under, and parallel with, the jaw on the right side of the neck was an 8 cm. long wound of the skin. This wound, and two smaller wounds just above it, had been sutured soon after the accident. The removal of the sutures from

the large wound revealed a space filled with clotted blood. When this was removed, two thick splinters of glass were found, and the internal carotid was seen to be completely divided, its central end being plugged by a firm clot, which extended for a distance of ¾ cm. The necropsy further showed signs of profound anaemia. Evidently all the symptoms were due to severe anaemia of the right side of the brain. The necropsy showed no anatomical changes indicating faulty nutrition of the brain, but death must be attributed to lack of blood supply to the right side of the brain and to the general anaemia. The author expresses astonishment at the accident not proving immediately fatal, for the artery was completely divided, and there was free communication from it to the surface of the body by the large wound in the skin. The arrest of the haemorrhage was no doubt hastened by the retained splinters of glass, the suturing of the skin, and the fall of blood pressure due to the anaemia.

OBSTETRICS.

94. The Etiology of Eclampsia.

HULL AND ROHDENBURG (*Amer. Journ. Obstet.*, December, 1914) have published results of experiments to throw light on this question. They believe that eclampsia is due to an excess in the maternal circulation of the products of digestion of fetal protein. The autolysis of tissue would, they think, produce substances resembling those resulting from ferment action in the blood, since both hydrolyze complex proteins to the simpler amino-acids. Autolysates from rabbit's liver, kidney, fetus, and placenta were injected intravenously or subcutaneously in varying doses over varying periods of time in a fairly large series of animals, including males, and females not gravid, as well as pregnant subjects. Some of the animals died, some were killed with ether, while others were exsanguinated, the blood serum being tested for protective ferments. The experimenters were led to conclude that in eclampsia an overload of fetal elements is thrown into the circulation and, whether in the circulation or not, is autolyzed with an excess of leucin. The excess of leucin injures the hepatic vessels with consequent thrombosis, cloudy swelling, local necrosis and more or less complete autolysis of the liver cells. The renal changes are probably due in part to other products of autolysis, and perhaps also to protein fractions incompletely broken down by the liver. The renal lesions, it appears, are the cause of the haemorrhages and convulsions; these lesions are very marked and therefore albuminuria is an important sign. The experiments also suggest that a negative protective ferment in a known pregnant female and a determination of the leucin content of the blood will prove to be diagnostic procedures of value.

GYNAECOLOGY.

95. Electrical Treatment of Metritis.

DIMIER (*Arch. d'électr. méd.*, No. 386) states that chronic blennorrhagic metritis may advantageously benefit by electrical treatment, whether by galvano-cautery or interstitial electrolysis. The galvano-cautery, using electrodes (carbon, platinum, nickel) which are unattackable by the acids developed at the positive pole, brings about a modification of the mucosa, and has a bactericidal action. Interstitial electrolysis, on the other hand, depends upon the use of soluble electrodes, which are attacked by acids, and these products of metallic decomposition, being directed towards the negative pole, penetrate into the depth of the tissues far below the epithelial surface. This treatment manifests its effects by a light caustic action, modifying and non-destructive, and a very powerful antiseptic action. Some of the author's colleagues have obtained excellent results in gonococcal metritis by the electrolysis of silver. The electrolysis of silver does not consist merely in the temporary introduction of salts of silver, which lave the uterine cavity; the metallic ions developed are transported by the current towards the negative pole to traverse the layers of uterine tissue. The silver is deposited in the tissues, persists there for a certain time, and constitutes interstitial centres of antisepsis. The penetrating action of the silver electrolysis is joined to the production of a chlorine compound of the metal—an oxychloride of silver—and its diffusion in the peripolar zone is, perhaps, the reason for the good results which are given by the method. In any case it is undoubted that chronic gonococcal metritis, treated by electrolysis with oxidizable electrodes of silver, is one of the conditions in which the effects of the continuous current are most rapid and marked. In interstitial electrolysis the silver electrode is introduced in the uterus, the vaginal walls being insulated by caoutchouc or ebonite, which is easily sterilizable. The intensity employed is 25 to 30 milliampères, and the sitting lasts from 5 to 10 minutes.

THERAPEUTICS.

93. Hypodermic Injections of Oxygen in Tetanus.

L. LÉGER (*Compt. rend. Soc. de Biologie*, 1915, lxxvii), having found too often that all the usual modern methods of treating tetanus, including the serum, failed to save life, tried hypodermic injections of oxygen gas in three cases, two of which were very severe, and even seemingly hopeless. In each case the alarming symptoms disappeared, and recovery followed. In the absence of any special oxygenator, such as those of Bayeux or of Martinet and Heckel—which he strongly advises should always be used whenever possible—he used simply a hypodermic needle attached by a rubber tube to an oxygen balloon, taking great care to avoid gaseous embolism. He points out that, on theoretical grounds, this mode of therapy seems to be definitely indicated, because the tetanus bacillus is anaërobic; asphyxial symptoms so often play a large part in the terminal stage of tetanus. We know from the clinical and experimental work of F. Ramond, Béraud, and others that the hypodermic injections of oxygen have a beneficial action on respiration, circulation, and cell nutrition; and, finally, they are remarkably well borne, even by extremely debilitated patients. Details of the cases treated are given.

97. Static Electricity in Nervous Disorders.

FRAIKIN (*Arch. d'électr. méd.*, June 10th, 1914) states that static electricity is indicated in general nervous depression or excitation, insomnia, headache, and superficial neuralgias. It is customary to affirm that the static modality is sedative. This is not quite accurate; the action is essentially regulative, being tonic in cases of depression and sedative in cases of excitation. The author cites one case, that of a neurasthenic who was excited and suffered from insomnia, in which static baths, having a duration of ten minutes, brought calmness and sleep. One day, in error, the bath was administered for thirty-five minutes, and induced a strong crisis of excitation and a return of insomnia, which lasted for some days afterwards. The author uses an influence machine of six plates (70 cm. in diameter), the speed in rotation of which may be increased or diminished by means of the rheostat of the motor. If very pronounced effects are desired, although these are rarely useful, it is only necessary to prolong the duration of the sittings. The author recommends that for nervous excitability a daily static bath should be given for five or ten days, commencing with a duration of five minutes and increasing by one minute each day up to ten minutes, or in some cases fifteen minutes. One series of sittings should never exceed thirty in number, and a new series may be started, if necessary, after ten or fifteen days' rest. The static effluve may also be used; this acts on the pain element, and is useful in headache. The sensation produced, however, should never be that of pricking, but only of a pleasant cool breeze. When the neuralgic pain is tenacious and the patient not too excitable, recourse may be had to static sparks of small dimensions (but never on the head), with the metallic brush promenaded rapidly over the dress in the neighbourhood of the painful regions. The author has also used with great advantage a precordial effluvation (breeze), with the electrode in wood, for calming cardiac pain, which frequently coincides with functional, not organic, trouble in the nervous.

93. Treatment of Burns.

HAAS (*Amer. Journ. of Surg.*, February, 1915) advocates the treatment of burns in children by exposure of the burnt areas to the air, and an experience of the method during the last two years has shown it to be infinitely superior in his experience to any other. Some of the cases have had a wet dressing for twenty-four hours at the outset, and many had carron oil applied before being brought to hospital, but it is not necessary to apply any initial dressing, although such an application does not interfere with subsequent treatment, and may have the advantage of cleansing the wound. The patients are placed on a clean sheet, and the injured areas are left uncovered, the rest of the body being well covered and kept warm. In hot weather flies must be kept from the wound by covering the

whole bed with mosquito netting. Opium in some form is usually needed for the first twenty-four or forty-eight hours, but rarely for a longer period. The bowels must be kept moving freely, and as soon as the patient is hungry a full diet may be given. After a short time the wound assumes a very characteristic appearance, first degree areas looking normal excepting for redness, and second and third degree areas crusting over with underlying purulent discharge, which causes the crusts to be raised and take on the appearance of rupia. When the discharge is not great, the crust remains until it falls off, leaving a healthy reddened surface without scar. When the discharge is greater the crust becomes loose with a granulating surface beneath, and the crusts should be left as long as possible, unless it becomes necessary to remove them and clean the exposed granulating surface by gently swabbing with boracic lotion. After removal, the crusts re-form at once, but each time become smaller, as healing from the edges proceeds very rapidly. By this method the granulations are constantly bathed by the purulent fluid, and do not bleed as when a dressing is applied. The objectionable features of this method are the odour and appearance and the tendency for the patient to pick off the crusts, but dusting with boracic acid powder helps to keep the wound sweet without interfering with healing. The contrast between this method of treatment and that by the application of dressings is striking, the child having no distress, lying quietly, being of good colour, and taking food well. Nephritis is of less frequent occurrence, and when present disappears sooner, the degree of scarring is diminished, and the time necessary for healing shorter. Light and air are the important elements in the treatment, the healing process being slower in one case which, because of the necessity for keeping the ward cool, was covered with a blanket which did not come in contact with the burnt area. The treatment has the advantage of being inexpensive and easily carried out at the patient's home.

99. Antistreptococcus Serum in Arthritis.

H. K. Nicoll (*Journ. Amer. Med. Assoc.*, December 19th, 1914) reports his experience with a polyvalent antistreptococcus serum in the treatment of twenty patients suffering from chronic arthritis in the Presbyterian Hospital, Chicago. The cases were all polyarticular, and the evidence favoured their streptococcal origin. At first the serum was used unheated, but afterwards it was heated to 50° C. for ten hours, and afterwards concentrated by a modified Banzhaf method to lessen the mass of each injection. A maximum dose of the concentrated serum was not more than 12 c.cm. It was usually administered subcutaneously in the interscapular region, every effort being made to avoid a vein. In every case vaccines were used in conjunction with the serum, and, if possible, were autogenous from the apparent site of infection. They were prepared in the usual manner, and given in doses of from 50 to 200 million at six to eight day intervals. The immediate results of the serum injections were a sharp rise in the specific streptococcic opsonins and the clinical symptoms of serum sickness. At no time was any special relief of the patient's pain and disability observed. The chief discomforts caused were from the urticaria, which was very severe at times. Five of the patients manifested rather marked symptoms of anaphylactic shock, in four cases so severe as apparently to endanger life. One patient suffered most severely, and during the first attack the respirations and pulse were entirely absent for a short period. The symptoms came on in all cases from one-half to three minutes after the injection, and varied greatly in degree in the different patients. Following the attacks the patients complained of general malaise and weakness, and often a severe headache. The opsonins were greatly lowered after the attack. Nicoll concludes that: (1) The administration of horse serum in repeated doses may be followed in 25 per cent. of the cases by dangerous degrees of anaphylaxis, even in patients who give no history of previous use of horse serum or of asthmatic symptoms. (2) Heating and ageing the serum does not completely remove its toxicity. (3) Clinical observation and the estimation of immune bodies do not show any added advantage from the use of an antiserum in chronic arthritis, even when a concentrated serum with much greater potency than the usual commercial serums was employed. In two cases acute staphylococcus infections arose during and in spite of its administration. (4) Attempts to increase the value of such a serum by concentration have not been successful, so far as its employment in chronic arthritis cases is concerned. Whether or not such concentrated serum might have advantages in acute streptococcus infection has not been determined. (5) In view of these facts the use of antistreptococcus serum in the treatment of chronic arthritis is, under present conditions, neither advisable nor justifiable.

100. Tuberculous Mastitis following Injections of Turtle Tubercle Bacilli.

C. W. Bischoff and K. L. Schmitz (*Med. Klin.*, July 5th, 1914) record the case of a woman, aged 36, suffering from pulmonary tuberculosis complicated by severe pain in the back and chest. She complained of tiredness, loss of appetite and wasting. The temperature was generally subfebrile, and the Roentgen rays showed enlargement of the bronchial glands, and small shadows in both lungs. There was slight dullness on percussion over the apices, and there were a few moist sounds. In the autumn of 1913 she steadily became worse, and haemoptysis occurred almost every day. On December 19th an intragluteal injection of 0.25 c.cm. of Friedmann's vaccine (No. 1, green) was given. A fortnight later the site of injection became red, swollen and painful, and on January 11th there were signs of softening in the middle of the swelling. On January 14th, therefore, an intravenous injection of 0.3 c.cm. of the vaccine (No. 2, blue) was given. The breaking down of the tissues at the site of the first injection was not, however, prevented by the intravenous injection; but eight days later the inflammation had diminished somewhat. Neither injection provoked any marked focal reaction, but the first was followed by improvement of the appetite, diminution of the haemoptysis, and a gradual fall of the temperature. The second injection was followed by a febrile reaction and a violent headache, and the whole subfebrile temperature returned. In the middle of February, when the patient was playing with her two children, both breasts became severely bruised. Soon afterwards a hard, nodular tumour, of the size of a small apple, and with ill-defined outlines, could be felt in the right breast, being adherent to the skin at one point. There was no redness of the skin, and fluctuation was not demonstrable. An exploratory incision yielded pus. Subsequently, a second tumour, of the size of two walnuts, developed in the left breast, and also yielded pus on incision. This contained numerous grey granules, of the size of a pin's head, which were found under the microscope to consist of acid-fast rods. Bier's treatment was prescribed to no effect, and further incisions became necessary. Even four months after the onset of the mastitis the condition had not healed, and the prognosis is doubtful. Frequent examinations of the pus failed to reveal any other organisms than acid-fast rods, presenting the characteristics of Friedmann's turtle tubercle bacillus. It is evident that bruising of the breasts caused several small interglandular effusions of blood, which must have proved excellent culture media for the bacilli, injected into the body, and still circulating in the blood or lymphatic vessels more than 100 days after their first introduction. The authors conclude that the harmlessness of Friedmann's vaccine is disproved by this case, and that even when the vaccine is not contaminated by other organisms it is still dangerous.

PATHOLOGY.

101. The Source of Infection in Acute Anterior Poliomyelitis.

E. Böcher (*Ugeskrift for Laeger*, December 3rd, 1914) has observed the following cases indicative of the case with which infection is conveyed from one case of anterior poliomyelitis to another. On September 1st, 1910, he was consulted by a mother whose child, she said, had caught a slight cold. The temperature was 38.5°, there were a few rhonchi audible over the lungs behind, and the child was drowsy. Otherwise there seemed little amiss, so an expectorant mixture was prescribed with a little antipyrin, and the child was sent home. Next day the temperature was lower, and in a couple of days it was again normal. The child had regained its usual spirits, the rhonchi had disappeared, but the muscles of the right peroneal region were now found to be paralysed. On the night of September 2nd or 3rd, that is, a day or two after the child first became ill, some relatives came to the home, bringing with them a six months old child, who was placed for an hour in the sick child's bed. Eight days later the author was summoned to the second child, whose temperature was 40°. Severe acute anterior poliomyelitis developed, and almost complete paralysis of most of the muscles of the body ensued. There were no other cases of the disease in the town at this time, so the relation of the second to the first case can scarcely be questioned.

AN EPITOME OF CURRENT MEDICAL LITERATURE

MEDICINE.

102. Intracranial Murmurs.

ACCORDING to H. KÖSTER (*Svenska Laekaresällskapets Handlingar*, vol. xl, No. 3, 1914) intracranial murmurs are much more common than is usually supposed. In 1911 he happened to auscultate the head of a patient suffering from gastric ulcer and severe anaemia, and, though there was no evidence of intracranial disease, a definite blowing murmur was audible. This led to the systematic investigation by the author of this phenomenon, and since 1911 he has examined among adults 66 cases of intracranial murmurs. Of these, only 6 were associated with intracranial lesions, such as tumours and disease of the blood vessels, not including aneurysms. In 54 cases the murmurs were traceable to profound anaemia caused by haemorrhage, pernicious anaemia or new growths; and in 6 cases the intracranial murmurs were accompanied neither by intracranial disease nor anaemia. In many cases careful and prolonged auscultation is necessary for the detection of the murmur, which is apt to come and go, and may therefore be missed unless the skull is frequently examined. This erratic behaviour is particularly noticeable when the degree of the anaemia fluctuates, and a loud murmur heard when the anaemia is profound may be scarcely audible when the condition of the blood is improved. In other words, the murmur is a useful index to the patient's health. As the murmur may be limited to a small area the skull must be systematically auscultated, special attention being paid to the regions of the ear and temple, where the murmurs are most frequently heard. The patient meanwhile must hold his breath, to prevent the conduction of respiratory sounds to the head. The head should be firmly held, and the stethoscope steadily pressed against the patient's hair to prevent adventitious murmurs. The author draws the following conclusions: Intracranial murmurs are relatively rare in intracranial disease, and when present are of no general or local diagnostic value, as there is no demonstrable relation between the murmur and the intracranial lesion. In anaemia the murmurs are extraordinarily common, and are usually to be heard when the red cells are below 2½ million, and the haemoglobin has fallen to 40 per cent. or lower. This fall of the haemoglobin is a more important factor in the production of the murmur than the fall in the number of red cells. Most probably the murmur is generated in the carotid arteries, but in a few cases, associated with neither severe anaemia nor intracranial lesions, the murmur may be conducted from the cervical blood vessels. An intracranial murmur does not suggest intracranial disease except in the absence of anaemia.

103. Pyloric Obstruction in Infants.

W. A. DOWNES (*Journ. Amer. Med. Assoc.*, June 27th, 1914) records his experience of 22 cases of pyloric obstruction in infants which have come under his care; 17 were males and 5 females; 18 were breast-fed entirely, 2 partly breast-fed, and 2 bottle-fed. In 14 cases the patient was the first baby, in 4 the second, in 2 the third, and in 2 the fourth. The symptoms appeared in from three days to seven weeks after birth, and in every case vomiting was the first symptom. Constipation was marked in every case; except in 4 or 5 cases the babies were emaciated, and in all there were the characteristic peristaltic waves of the stomach, and the pyloric tumour was present. Beginning with the eighth case aspiration was a routine measure, and in each stomach from ½ oz. to 4 oz. retention three hours after feeding was regularly found. The operation showed the pyloric tumour without other lesions or malformations. With regard to the operation, Downes says: "Ether should be the anaesthetic used. The abdominal incision should be from ½ in. to ¾ in. to the left of the median line. The reasons for this are twofold. In the first place, there is so little subcutaneous tissue in these babies that there is difficulty in obtaining union in the median wound, whereas the incision through the rectus muscle heals much more readily. Many post-operative deaths have followed evisceration resulting from non-union in these cases. The second reason for placing the incision to the left of the median line is the avoidance of the round ligament of the liver. At necropsy in one of our fatal cases a large haemorrhage was found just where the needle used in closing the abdominal cavity had punctured this ligament." A partial pyloroplasty performed in some of these cases consisted in making an incision 1 in. long through the peritoneum and circular muscle fibre down to the mucosa. The edges of the wound gaped widely and the mucosa protruded. No effort was made to cover or close the incision, which immediately relieved the obstruction. Gastro-enterostomy should be the operation of choice, however, where the condition of the child is even fair, and the partial pyloroplasty be reserved for cases where haste is the first need. It involves a risk to the mucosa and its future is uncertain. The after-care is extremely important, and much depends on the judicious use of stimulants, and the proper use of fluids by hypodermoclysis and the Murphy drip, though these are not necessary when the patient is operated on when in good condition. Downes sums up the results of his experience in the following conclusions: "1. Hypertrophic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscle fibres at the pylorus. The presence of this thickened muscle fibre reduces the lumen of the pylorus, and therefore the stomach, in order to empty itself, contracts more forcibly than normal. This abnormal contraction soon causes the mucous membrane to become thickened and oedematous, and to assume a more or less spiral arrangement as it passes through the narrowed pyloric channel of from ½ in. to ¾ in. The result is a valvular action, which gradually produces complete closure of the pylorus. The question as to whether or not the pylorus will admit a probe or catheter at operation or necropsy is of little consequence when weighed against the clinical evidence of complete obstruction. 2. There can be no doubt that there is sufficient time between the onset of symptoms and the appearance of the signs of complete obstruction for careful observation and the carrying out of any medical measures likely to prove of benefit, provided, of course, that the early symptoms have been properly interpreted. The fear, however, that the condition may have existed longer than has been suspected, and that the vitality of the baby is not so good as appearances would lead us to believe, makes me feel that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should depression or early evidence of shock be present immediate operation is demanded. 3. The babies coming to operation in good condition suffer little or no shock; their convalescence is straightforward, and they are at once restored to normal health."

104. Congenital Tuberculosis.

CONTINUING a piece of work published in 1908, M. PÉHU and J. CHALIER (*Arch. de méd. des enfants*, Paris, 1914, xvii) have brought up to date their analysis of all the recorded cases of congenital tuberculosis. They give a brief account of the conditions that must be satisfied before any case of infantile tuberculosis can be accepted as congenital. Both the mother and the child must have been submitted to obduction; it must have been proved that in each the lesions were due to infection with Koch's bacillus; the infant must have been kept away from the mother after birth, in order that no opportunity for post-natal infection by the mother should have been afforded. Obviously, it is not necessary that delivery should have taken place before the death of the mother. As a rule, there are well marked tuberculous lesions to be seen in the organs of the infected fetus or infant; but several cases have been recorded in which macroscopic lesions were not found, although the fetal blood contained virulent tubercle bacilli, no doubt in consequence of the occurrence of a terminal miliary tuberculosis in the mother. It is probable that tuberculosis of the placenta does not occur till the fourth month of pregnancy. Schmorl has insisted on the difficulty that may be met with in finding the microscopical evidence of the placental infection—as many as 20,000 microscopic sections may have to be examined before the tuberculous lesion is found. In any case it appears that tuberculosis of the placenta is quite common in tuberculous mothers; Lehmann states that it occurs in 45 per cent. of them. The authors conclude that at the present time only 51 unexceptionable cases of congenital tuberculosis have been published; all have occurred in mothers who have exhibited a grave exacerbation of their tuberculosis during the last months

or days of pregnancy, and it is plausible to assume that they all have had an acute generalized tuberculosis. The authors come to the conclusion that these cases afford no evidence for the alleged hereditary transmission of tuberculosis, but are the result of a transplacental heredocontagion. The father, therefore, plays no part in congenital tuberculosis.

SURGERY.

103. Treatment of Penetrating Wounds of the Abdomen.

L. SENCERT (*Bull. et mém. de la Soc. de Chir. de Paris*, January 12th, 1915) bases his conclusions as to the treatment in a field ambulance station of penetrating wounds of the abdomen on 66 cases which have come under his observation since the beginning of the war. Of these 66 cases 8 died almost immediately after they were brought in. Of the remaining 58, 45 died and 13 recovered, the rate of mortality being, therefore, 77.5 per cent. among cases which reached the field ambulance and did not die almost immediately after admission. All the wounded, who for the most part were brought in during the night following the day in which they were wounded, were in a condition of severe shock, but the severity of the shock did not always correspond with the severity of the lesion. This shock was exceedingly severe in 3 out of the 13 cases which recovered. From the point of view of treatment, Sencert divides the cases into two groups: (1) A group in which the abdominal wound or wounds are of large extent, and haemorrhage, evisceration and obvious intestinal lesions are present; (2) a group in which the wound or wounds are small, and are almost or altogether closed when first seen. Theoretically, at least in civil surgery, every abdominal wound demands active intervention. Even under war conditions there is no doubt that intervention is indicated, because it gives the patient his only chance of life. In any case belonging to this first group, the author first takes measures to deal with shock, and then proceeds to operation. A room can be prepared by clearing it of furniture, airing and warming it and limewashing the walls. For the patient tincture of iodide of half strength is used for cleansing the site of operation, and instruments are boiled in sodium carbonate solution. It is perfectly possible to ensure that the conditions with regard to external cleanliness can be made more satisfactory than those under which urgency operations often have to be performed in the country in times of peace. The prognosis, however, is necessarily bad, and of the 9 cases described by the author, in which immediate active intervention was undertaken, none recovered. In the second group of cases, where the wounds are small and are already almost or quite closed, immediate laparotomy is, in Sencert's opinion, absolutely contraindicated. The reasons against immediate intervention are: (1) The state of shock of the patient; (2) the impossibility on the part of the doctor to give the time necessary for laparotomies, without neglect of the many other patients whose condition demands immediate treatment; (3) the possibility that the patient may recover without operation. The line of treatment adopted by the author is, therefore, to combat shock, to immobilize the patient in the position most favourable for recovery, and to undertake active measures if diffuse peritonitis should ensue and drainage be needed, or if a localized peritonitis should develop. In case of diffuse peritonitis he carries out drainage through three small incisions—one in the hypogastric region and one in each iliac fossa. This treatment was carried out in 4 cases described in the article, the symptoms of peritonitis having been present in three of them when they were brought in; death ensued in all 4 cases. In 3 cases a localized peritonitis developed, and was then treated by operation. Two of the patients had completely recovered, and the third was on the way to recovery on the tenth day after admission, on the departure of the ambulance. In the remaining 10 cases of recovery no operative treatment was undertaken.

105. The Surgery of Tabetic Gastric Crises.

IN considering the question of operative intervention in the gastric crises of tabes, SAUVÉ (*Progrès médical*, May 2nd, 1914) discusses the questions: (1) In what cases is operation indicated? and (2) which operation? There are two distinct types of tabetic gastric crises—namely, the commoner type of very severe pain and vomiting, together with superficial tenderness in the cutaneous areas of the fourth to the tenth intercostal nerves, and occasionally with herpes zoster in those areas, or some of them; the less common type is the vagus type, in which there is incessant vomiting and nausea, with little or even no pain; in these cases there are often present pharyngeal or laryngeal crises. Gastric crises are commonly early signs of tabes, and it often happens that, after continuing for a period of from many months to some years, they lessen in frequency and severity, and disappear spontaneously; occasionally they disappear even very soon after their first appearance. Although the records of the literature show that tabetic gastric crises do exceptionally prove fatal by excessive prolonged vomiting, which may go on for three weeks, or by haematemesis, or by cardiac failure during an unusually severe or prolonged attack, yet the majority of cases tend to show in the course of time a regression of the symptoms and, ultimately, their disappearance, so that their treatment is essentially medical. The case is, however, quite different in those crises which persist for years, abolish all activity of life, and lead to an extreme degree of cachexia, and often to morphinism. In still other cases the indications for operation are even more precise—namely, when there are almost continuous vomiting attacks, which interfere with all alimentation and are dangerous to life; in these cases operation must be performed without delay. Sauvé discusses the operation of Exner for those rare cases which are of vagus origin—namely, bilateral vagotomy at the level of the gastric cardia; but the results have been of but little benefit, and this operation is of no use if any pain accompanies the vomiting attacks. The operations for relief of the pain are of three main kinds: (1) Extra-spinal, (2) intra-spinal but extra-dural, (3) intra-spinal and intra-dural. Of the first category Franke's operation of avulsion of the root ganglion by means of traction on the fifth to the eleventh intercostal nerves on each side has the disadvantage that it does not really attack the ganglion; and, although it has often given good results, it is liable to be followed by recurrence of the attacks; and, even when its early effects have seemed most promising, it has sometimes happened that recurrence has followed later. Of the intra-dural operations, that of resection of the fifth to the eleventh thoracic dorsal roots attacks the afferent limb of the reflex arcs concerned in the production of the painful attacks, but its mortality is still considerable. Of the extra-dural, that of Guleke divides the dorsal root outside the dural sac, and that proposed by Tinel and Sauvé ligatures it at that spot; but in the performance of the former operation haemorrhage is often considerable. Sauvé sums up the question of operation for tabetic gastric crises thus: First perform Franke's operation; even when recurrence follows it there is usually a period of some months' freedom from attacks. In such an event the patient's general health may sometimes be vastly improved by feeding, etc., during this favourable period. If a recurrence of attacks should follow Franke's operation with a bad state of health due to their severity, then one may attempt operation on the dorsal roots of the affected thoracic nerves, such as intra-spinal ligature or the gangliectomy of Sicard and Desmarest. But Sauvé thinks that with an improvement of our present technique and extreme care in the performance of Franke's operation we ought to be able to obtain, not indeed a certainty of cure, but a greater degree of success.

107. Locking of Knee due to Exostoses of Tibia.

IN the following two cases, recorded by N. P. ERNST (*Ugeskrift for Laeger*, January 21st, 1915), exostoses of the tibia caused occasional interference with the tendons on the inner side of the knee, and, by locking the joint in this manner, gave rise to symptoms commonly associated with a foreign body in the knee-joint. The first patient was a nurse, whose troubles began at the age of 14. When, on one occasion, her right knee was in a position of extreme flexion, she was unable to extend it again. This locking lasted several hours, and ceased as suddenly as it had begun. Between the age of 17 and 19 three or four similar attacks recurred. They began when the knee was extremely flexed and when the patient attempted to rotate the foot outwards. On one occasion a whole night was spent in attempts to unlock the joint, and on other occasions manipulation, lasting several hours, was necessary before the leg could be extended. These incidents were accompanied and followed by pain on the inner side of the knee, but not by effusion into the joint. At the age of 19 the patient was examined by a surgeon, who found a spur on the inner side of the right tibia, just behind the insertion of pes anserinus. The spur was hooked, its sharp point being directed downwards. In other respects the right knee was perfectly normal, there were no signs of an effusion or foreign body, and the movements of the joint were free. A small spur was also found at a corresponding point on the left tibia.

As it was thought that the hooked spur on the right tibia was responsible for the locking of the joint by interfering with the tendons of the pes anserinus, an operation was performed under general anaesthesia. An incision over the spur revealed a groove on its posterior inferior surface, in which lay a tendon, probably that of the semitendinosus. Another tendon, probably that of the gracilis, passed over the spur, and it was clear that when the leg was fully flexed at the knee this tendon could slip down into the hook of the spur. This was therefore chiselled off, and further locking of the knee-joint was thus prevented. While this patient had never suffered from rickets, the second patient, a married woman, aged 26, had suffered from rickets as a child, and had not walked till she was 5 years old. At the age of 12 she developed exostoses on both tibiae, those on the left tibia causing discomfort on walking. The left knee-joint occasionally became painful and locked in the position of flexion when she was walking. The *x* rays showed a hooked spur on the inner side of the left tibia. An operation showed one of the tendons of the pes anserinus caught in this hook. The hook was chiselled off, and no further locking of the joint occurred.

OBSTETRICS.

108. Blood Pressure in Pregnancy.

F. S. NEWELL (*Journ. Amer. Med. Assoc.*, January 30th, 1915) reports observations on the blood pressure during pregnancy in 450 cases referred to the Prenatal Committee of the Woman's Municipal League of Boston. As soon as the patient was referred she was visited by a nurse, who gave her advice suited to her circumstances in regard to hygiene, diet, etc., and took the blood pressure and a sample of urine for the albumin test. Visits were repeated at ten-day intervals, or oftener in doubtful cases, until labour. All abnormalities were reported to the proper persons who could give adequate attention. The average blood pressure during pregnancy is commonly stated as 118, and a range between 100 to 130 was considered as normal; 421 patients showed a normal pressure throughout. The remaining 29 showed at times a higher than normal pressure. Four mothers died out of the 450—one from pneumonia, one from haemorrhage of placenta praevia, one of heart disease, and one of septic infection. The blood and urinary examinations showed abnormal conditions in all four. There were nine stillbirths. Four were due to difficult operative delivery, two to placenta praevia, and one each to premature detachment of the placenta, congenital syphilis, and fetal monstrosity. In each case the blood pressure and urine were normal. There were four premature births, and three of the babies died, one at seven and two at eight months. In two of these cases the mother showed an abnormally high blood pressure, one of them showing a definite toxaemia. The conclusions reached are that the study of the records of these cases shows definitely that a considerable number of patients have a temporary rise in blood pressure during pregnancy without the development of other symptoms, as is found in patients under other conditions. The significance of this rise in blood pressure can only be ascertained by a frequent study of the blood pressure in a large number of cases. In other cases the rise in blood pressure was followed by the appearance of albumin, a combination of which has been shown to be a definite indication of the development of toxaemia. In only one case, however, did convulsions develop, the other cases yielding to treatment. Thirty-nine cases showed slight traces of albumin in the urine, but no changes in the blood pressure. As the urine was not obtained by catheter, the source of the albumin is unknown, but in the majority of the cases it was probably due to contamination of the urine by leucorrhoeal discharge. To judge from these cases, the presence of a slight amount of albumin, if not accompanied by a rise in blood pressure, is negligible. Eleven patients showed albumin with a high blood pressure, all of these being presumably more or less toxaemic. Five patients showed a blood pressure of 140 or over throughout the period during which they were under observation. Only one of these patients developed albumin at any time during the pregnancy, and all passed through labour normally, which would tend to prove that persistent high blood pressure, in the absence of other signs, is not necessarily a dangerous symptom, although it should always arouse suspicion and call for increased watchfulness, whereas, as was shown in other cases in this series, a rise in blood pressure from a low point is not infrequently followed by the appearance of albumin and the development of symptoms of toxaemia, and is more significant than a high pressure throughout.

GYNAECOLOGY.

109. Radium Treatment of Malignant Tumours of Uterus.

HOWARD KELLY (*Surgery, Gynaecology, and Obstetrics*, March, 1915), reports 36 cases of fibroid tumours of the uterus treated by radium from March, 1913, to October, 1914. No cases are included where there were serious complications, such as inflammatory changes, obstructive symptoms, or ovarian tumours. The cervix was dilated, and amounts of radium varying from 30 to 724 mg. introduced into the uterine cavity, whilst in some of the larger tumours massive treatment was given through the abdominal walls. Kelly avoided treating the ovaries unless the patient was near or past the menopause; gamma-ray therapy was applied, the radium being screened by platinum or platinum and glass, further enclosed in a rubber tube. In massive abdominal treatment, so as to give distance, the radium was further enveloped in cotton and gauze. Kelly concludes that massive radium treatment of uncomplicated fibroid tumours is the best plan, as it stops the excessive flow. In young women it sometimes regulates the flow without stopping it. Radium reduces the tumours in almost every instance, relieves pressure symptoms, and even causes large tumours to disappear. Not being malignant, a fibroid is best treated by that method which will give entire relief to the symptoms, provided that it will at the same time avoid the various risks of an operation, whilst, when radium has been tried and failed, an operation can be undertaken without any added risk. Kelly, admitting that radical extirpation of cancer of the cervix is "often made more difficult" when the patient has been recently under radium, declares that, on the other hand, there is no reason to expect any difficulties when a fibroid is removed under homologous conditions. In Kelly's opinion it will be possible, with increased experience and improved technique, to relieve every patient of haemorrhage, and in most instances to do away with the tumour, without serious discomfort, risk, or confinement to bed for more than one or two days. Patients too anaemic and weak for an intrauterine application of radium can be treated exclusively through the abdomen.

THERAPEUTICS.

110. Tuberculin Preparations by the Mouth.

COHEN (*Amer. Journ. of Med. Sciences*, January, 1915) endeavours to show how and when in general private practice some of the tuberculin preparations may beneficially be used as adjuvants to hygienic and medicinal methods in the treatment of pulmonary tuberculosis. Since it has been shown that the temperature curve is a reliable guide to the positive and negative phases, and that the administration of tuberculin by the mouth is followed by as definite and effective reactions as when given hypodermically, further modifications in technique have rendered this procedure simpler and more widely available. Tubercle bacilli residue (T.R.) was ground up with milk sugar in such proportion that 1 gram of the powder contained $\frac{1}{10000}$ mg. of the active substance, so that a dose of 0.5 gram would contain $\frac{1}{20000}$ mg. of T.R., and a dose of 0.1 gram would contain $\frac{1}{100000}$ mg. This was given in diluted beef juice, whey, albumin water, or diluted skimmed milk, saline solution being used as the diluent, about half to one ounce of fluid being given altogether. This can now be obtained in tablets of two strengths, manufactured by Messrs. H. K. Mulford Co., of Philadelphia—namely: (*a*) $\frac{1}{100000}$ mg., and (*b*) $\frac{1}{1000}$ mg., from which varying doses can be obtained as required—for example, for a dose of $\frac{1}{1000000}$ mg. a tablet (*a*) should be dissolved in ten teaspoonfuls of water, one teaspoonful being added to the beef juice, and for any number of millionths up to nine that number of teaspoonfuls is used, the balance being thrown away. As to dosage, the best plan is to commence with one $\frac{1}{1000000}$ mg, gradually increasing the dose by $\frac{1}{1000000}$ mg. or less so as to avoid entirely any objective or subjective reaction, until a dose of $\frac{1}{100000}$ mg. is reached. Should any reaction follow any particular dose, the next dose is diminished to the quantity previously tolerated, and this is repeated twice before again attempting any increase. Administrations may take place twice weekly unless there are indications for longer intervals, and in cases affording no therapeutic result the intervals may be shortened in order to determine the degree of immunity. The treatment should be continued, with intermissions determined by results, for many months, being resumed from time to time if necessary over a period of many years. Tuberculin

cannot be recommended for general use except in comparatively early cases, and in the first stages of its use the patient should be kept strictly at rest, though later it may be only necessary to keep the patient in bed for a day or two following the administration. By this method tuberculin is not advocated as a specific, nor as the sole means of cure, but simply as an additional stimulus to the natural defensive and recuperative processes, and as an adjuvant to other measures.

111. Boiling Water Injections for Hyperthyroidism.

MILES PORTER (*Surgery, Gynaecology and Obstetrics*, January, 1915) discusses the *rationale* of this method, the pathology of goitre, and the effects of injections of boiling water into the thyroid of dogs. It is better, especially in cases of large goitre, to inject two or three areas at one sitting than to operate at intervals, making one injection at a time. Porter agrees with Babcock that injection of boiling water is far more efficacious than ligation, and both these writers found that patients who had undergone the injection treatment with a view to future thyroidectomy felt so much better that they declined the radical operation. Babcock, on the other hand, reports a case where a patient brought into the operating theatre for ligation or lobectomy became excited, the pulse running up to 170. One lobe was therefore simply injected with boiling water, but the tachycardia and excitement continued, and death occurred within four days. The treatment is preferable to all so-called medical methods in cases of small thyroid enlargements with moderate symptoms of hyperthyroidism, and is good where lobectomy has been undertaken, the enlargement of the remaining part of the thyroid and the special symptoms continuing. Patients with large goitres and extreme hyperthyroidism should be treated with the injections until they become safe surgical risks, and then have the gland removed. Boiling water injections are not recommended in non-toxic goitre. In such instances, as in patients with large goitres and toxic symptoms who are good surgical risks, thyroidectomy should be the chosen method of treatment. In substernal over-active goitres, the removal of which would be hazardous, boiling water injections under guidance of the eye should be tried.

112. Ethylhydrocuprein in Pneumococcal Infections of the Eye.

M. GOLDSCHMIDT (*Muench. med. Woch.*, July 7th, 1914) has treated about 100 cases of ulcus serpens and other pneumococcal infections of the eye with ethylhydrocuprein (optochin) at the Eye Hospital of the University of Leipzig. He finds the drug acts rapidly and effectively, provided certain precautions are taken. The first and most important of these is the bacteriological examination of an ulcer of the eye. A 3 per cent. solution of cocaine is applied to the eye; a smear is then taken from the ulcer at its most progressive margin, and is stained by Gram's method. Only when pneumococci are demonstrable should optochin be given. Its application in ulcerative conditions of the eye due to other organisms than the pneumococcus may cause irreparable damage. Pneumococci having been found, the treatment is pushed vigorously, for experimental investigations have shown that a half-hearted administration of the drug gives the pneumococci time to acquire a certain immunity, and the ulceration, therefore, proves refractory to the treatment. The solution of optochin must be as strong as possible, without risking injury to the eye. The author uses a 1 per cent. ointment made of yellow vaseline, and containing a little atropine. This ointment must not be more than four days old, as its effectiveness rapidly diminishes. It is applied five to six times a day at regular intervals, and its distribution is effected by light corneal massage after it has been placed in the conjunctival sac. An adhesive plaster is applied, so as to retain the ointment in the conjunctival sac as long as possible. Before the first application of the ointment the eye is anaesthetized with a 3 per cent. solution of cocaine. This is not required for subsequent applications of the ointment, which is itself an anaesthetic. The chemosis, which often follows the use of this ointment, is slight and of no importance. The treatment should not be started unless five to six applications can be made on the same day; otherwise, the pneumococci will have time to acquire immunity to the drug. In other words, the first application must never be made in the evening; and even in severe cases the author never begins the treatment on the day of admission to hospital. During this day he confines himself to the application of a 5 per cent. noviform-atropine ointment, the first application of the optochin being made early next day. The treatment with this drug is now continued till the ulcer has become perfectly clean, and for this one to three days are usually necessary. After-treatment consists of the application to the conjunctival sac twice a day of a 5 per cent. noviform ointment, combined with atropine, no bandage now being necessary. Under this treatment the purulent secretion from the ulcer diminishes rapidly, the pain ceases, and the margins of the ulcer quickly lose their progressive character. Their previously raised, yellow wall becomes flat and grey, and the base of the ulcer loses its dull appearance. In twelve to thirty-six hours the ulcer has become clean; and not in a single case has the author seen progress of the disease or reinfection under this treatment. When, however, pneumococcal ulcers are complicated by more or less deep infiltration of the cornea, the optochin is much less effective, for it cannot act so directly on the infected tissues. Its application must therefore be prolonged until the surface of the cornea shows slight dullness and dryness, combined with a slightly blue colour. These conditions disappear completely under treatment with noviform ointment. In other pneumococcal infections of the eye, such as dacryocystophlegmon and pneumococcal conjunctivitis, the optochin ointment may be successfully given without atropine. Three applications within twenty-four hours are usually sufficient. The author further recommends optochin as a prophylactic before operations on the eyes of pneumococcal "carriers." The treatment may be ambulatory, provided the patients are intelligent and conscientious. So effective and specific is optochin in pneumococcal infections of the eye that when an ulcer does not heal it is probably caused by some other germ or a mixed infection. Only in two cases did the author find strains of pneumococci immune to the drug from the beginning of the treatment. The drug is cheap, easily applied, and causes no scarring or other damage to the tissues.

PATHOLOGY.

113. Anaesthesia and Acidity of Blood.

CRILE (*Annals of Surgery*, January, 1915) records the results of H-ion concentration tests of the blood after the application of many kinds of stimuli, thereby proving that acidity is the result of the activation of the body by an adequate stimulus. The H-ion concentration of the blood was determined in ether anaesthesia, nitrous oxide anaesthesia, and after the administration of alcohol and of morphine, both ether and nitrous oxide producing a marked immediate increase in the H-ion concentration, an increased acidity in the blood being present during the anaesthesia. After coming out from the anaesthetic the acidity was neutralized by the animal in about thirty minutes. The experiments showed that the increased acidity actually develops during the anaesthesia itself sometimes to a fatal degree, and the starvation preceding and following an operation is of prime importance, since the acid-neutralizing power of the liver is impaired and possibly lost. Although the administration of alcohol caused acidity it was less marked than that produced by anaesthetics, while the H-ion concentration was unaltered by morphine even in large doses. When the induction of anaesthesia was preceded by the administration of morphine a smaller amount of the anaesthetic was required to produce complete anaesthesia, and the H-ion concentration test showed that the acidity was correspondingly less than in anaesthetized animals which had not received the preliminary dose of morphine. Morphine appears to control the mechanism which governs the neutralization or alkalization of the blood, and if it is given after acidity has been produced by the anaesthetic it prolongs the period of neutralization, and, in large doses, prevents the animal from overcoming the acidosis. These H-ion concentration or acidity tests of the blood afford a valuable guide to the treatment of patients with threatened or mild acidosis, and, since the degree of acidosis is proportional to the length and depth of the anaesthesia, the lightest possible anaesthesia in such patients should be maintained, or an inhalation anaesthetic may be even absolutely contraindicated in starved patients of low vitality with marked acidosis. The ideal treatment for patients handicapped by exhaustion, and in whom acidosis is present or threatened, consists in the preoperative administration of sodium bicarbonate and glucose and of bromides per rectum, twilight anaesthesia, and complete anoci-association by local anaesthesia and gentle manipulations so that the minimum amount of anaesthetic is needed. In bad risks the period of anaesthesia should be as short as possible, with avoidance of worry, fear, and injury, which also tend to produce acidity.

AN EPITOME OF CURRENT MEDICAL LITERATURE

MEDICINE.

114. Epidemic Annular Erythema.

L. FÖNSS (*Ugeskrift for Laeger*, January 28th, 1915) describes a small epidemic of annular erythema among patients whose ages ranged from 3 to 17 years. The first case was that of a girl, aged 9, who developed a rash which spread from the face to the trunk and limbs, being most prominent on the extensor aspect of the arms. On the face the rash was diffuse and most noticeable on the cheeks. On the arms it formed definite rings, several of which were confluent. These rings began as bright red spots, which spread outwards, the margins remaining hyperaemic, while the centre of each ring rapidly became anaemic. There was occasional slight itching, but no desquamation or infiltration. The mouth, throat, glands, and joints were unaffected, and there were no catarrhal phenomena. The urine in one case contained much albumin, many red cells, some granular casts and epithelial cells, and numerous crystals of uric acid. Altogether there were seven cases; all the patients came from the same district, three of them were sisters, and all had been in contact with each other before the rash broke out. In one case it was confined to the face. The temperature was either normal or slightly raised. No diet or drug had been given which would account for the rash. The incubation period ranged from four to six days. Most of the patients had had measles, and several had also had rubeola and varicella. The author is convinced that this epidemic had nothing to do with the ordinary contagious diseases of childhood, and he sees many resemblances between it and the erythema infectiosum (megalerythema epidemicum) recently described by Feer. The incubation period of this disease is seven to fourteen days, there are no prodromal symptoms, and the rash appears on the face as a bright red and often much raised swelling. The rash spreads outwards, while the centre of each area becomes pale and depressed. It is most prominent on the arms, and is represented on the trunk only by a marble-like colora ion. It lasts a week, and often more, and it is seldom accompanied by fever or other signs of general disturbance. It is often associated with glandular swelling in the neck. But though the rash, as observed in the author's cases, did not conform in every respect with that described by Feer as characteristic of erythema infectiosum, there are so many points of resemblance, in spite of differences in the incubation period, that the author is inclined to regard the two conditions as allied, if not identical.

115. Family Periodic Paralysis.

DILLER AND ROSENBLOOM (*Archives of Internal Medicine*, December 15th, 1914) record a typical case of family periodic paralysis, a rare condition, of which a few reports only have as yet appeared in the literature. A healthy-looking man, aged 21, of good habits and family history, and a hard manual worker, had for the past seven years been subject to periodic attacks of paralysis of irregular occurrence, lasting from half an hour to three or four days. Some kind of attack occurs two or three times a week, with three or four severer and prolonged ones in a year, and they always come on at night. His maternal great grandmother and grandfather suffered from periodic paralysis, the latter dying of it, while a middle-aged male maternal second cousin has suffered from the disease in less degree for several years. The patient wakens in the morning to find himself paralysed in some part of the body, all parts below the head, including the neck, being affected in the severe attacks. The facial, lingual, orbital, and throat muscles have never been affected, and recovery, even from a severe attack, may be complete in an hour. In lesser attacks, when he wakens with some part of his body paralysed, he may go about his work and gradually recover in an hour or two. The severe attacks are associated with hearty meals the previous night. There have never been any sensory symptoms or pain, no fever or delirium, nor any mental upset. In a severe attack there was almost complete paralysis of the left arm, less marked in the right arm, and only slight movements in the legs, it being possible to flex the feet, but not to extend them. The neck muscles were very weak, so that the head could not be raised from the bed; the muscles of respiration and the diaphragm were weak, and the knee-jerks much reduced. The movements of the head and face, tongue, eyes, articulation, and swallowing were all normal, and there was no muscular atrophy, the mind being clear, pulse 75, and blood pressure somewhat reduced. The following night the patient was unable to turn himself in bed and seemed weaker, pulse 50, but two hours later he appeared to have fully regained his normal strength in every way. This case is similar to other recorded instances in that heredity is plain; the attacks are typical, always occurring at night during sleep and generally after a hearty meal, and varying in duration from a few hours to three days; mental and sensory symptoms were absent and the health between the attacks perfect. The disease is probably due to some congenital defect of metabolism, but the only change shown by a metabolism study of seven days' duration on the Folin diet was a marked decrease in the amount of creatinin and creatinin nitrogen excreted in the urine, and a marked increase in the amount of undetermined nitrogen of the urine.

116. Fatal Resorcin Poisoning.

THAT resorcin may cause toxic symptoms, culminating in death, when applied to a large area of the skin, is shown by the following case, recorded by C. BOECK (*Norsk Magazin for Laegevidenskaben*, February, 1915). A lad, aged 16, suffered from extensive lupus, which had begun at the age of 3, and had spread over the whole of the left leg, the lower half of the left upper arm, almost the whole of the left forearm, and part of the anterior aspect of the right thigh. The foot was treated with 30 per cent. resorcin in gelanthum, but this was kept on only for a day, as it caused pain. On October 27th, and again on November 12th, a gelanthum paste, containing 27 per cent. resorcin, was applied to the arm. Both applications were followed by some distress and restlessness, which lasted a few hours. Accordingly, on November 20th, at 10.30 a.m., a weaker paste, containing only 25 per cent. resorcin, was applied to the left leg, where the epithelium was intact, in spite of the many lupous foci. The paste consisted of 15 parts each of resorcin and talc, and 30 parts of gelanthum. At 10.45 the patient suffered from pain and restlessness, and by midday he was unconscious, cyanosed and motionless, except for convulsive twitchings of the right arm. The pulse was 120 and the temperature 100°. A little later violent clonic contractions were observed in all the limbs, and the tongue was protruded, swollen, and fixed between the clenched jaws. In spite of venesection, an injection of camphor, and an enema of chloral no improvement was effected, and the patient died at 8.15 p.m. At first it was thought that the resorcin was not responsible for the patient's death, but a necropsy showed a condition already associated with poisoning by resorcin. There was great oedema of the brain, and its lymphatics were so distended that they presented a porous appearance on section. There was, unfortunately, no urine available for examination. The author has found a record of only one other case in which the external use of resorcin proved fatal. The patient was only 11 days old, and suffered from pemphigus neonatorum. In two other cases the external use of resorcin in adults provoked violent symptoms which disappeared rapidly. One patient suffered from lupus vulgaris, and one from seborrhoeic eczema. In both cases the resorcin was rubbed into a large area at a time. The author concludes that the extensive use of resorcin over a large area at a time is dangerous, particularly when, as in his case, the patient is exceptionally susceptible to the drug. Since his recent experience he has learnt to regard resorcin as a more dangerous drug than pyrogallol.

SURGERY.

117. Rupture of Lungs caused by Bursting of a Shell without External Wound.

IT has often been related during the present war that combatants have been found dead on the field of battle in the exact position and attitude of the instant before that in which death surprised them, and apparently without having received any external wound. Some have supposed that in such cases death has resulted from nervous shock, others that it has resulted from sudden

and intense absorption of toxic gases produced at the time of bursting of the shell. The majority of observers, however, in the absence of any complete examination, continue to believe that the actual cause of death has been some wound not easily discoverable without thorough examination. L. SENCERT (*Bull. et mém. de la Soc. de Chir. de Paris*, January 19th, 1915) reports a case in which a thorough examination was made during life and an autopsy was subsequently performed, and in which rupture of both lungs was found to have occurred as the result of the explosion of a shell of large calibre at close quarters, without any external wound except a small one on the external surface of the third phalanx of the right little finger—a wound which could clearly be disregarded even as a contributory cause of death. The patient was brought in to the ambulance at night, and related that a shell of large calibre had burst at less than a metre's distance from him, and that he had fallen and lost consciousness. At this time (less than ten hours after the injury) he showed signs of considerable shock. No wound other than that on the little finger could be found. There was slight dullness on percussion at the bases of both lungs, and on auscultation the breath sounds over the same region were weak and distant. On palpation there was slight resistance over the whole abdominal wall. During the examination the patient vomited some blood. The patient was put to bed, and symptoms of collapse were treated. Later, he again vomited blood, the pulse became smaller and smaller, dyspnoea became more intense, and death ensued the same night. An autopsy was made on the following morning. Except for the small wound on the finger there was no trace of external wound or contusion. The stomach was found to be full of blood, the mucous membrane was of an ecchymotic colour throughout, with small submucous haematomata and several small lacerations in the neighbourhood of the pylorus. There was no lesion of the muscular wall nor of the serous membrane. The thorax was next examined. There was blood in each pleural cavity. After removal of the blood there was found at the level of the middle lobe of the right lung a large split measuring about 15 cm. in length. The visceral pleura was torn, and through the gap a fragment of lung the size of an orange and black in colour emerged. Examination of the corresponding part of the thoracic wall showed that no rib was broken, and there was no sign of intercostal or subcutaneous contusion. On the left side a corresponding break in the pleura, with hernia of the lung, was found at the middle part of the upper lobe; on the left side, also, the thoracic wall was absolutely intact. Death was therefore due not to nervous shock nor to intoxication with poisonous gases, but to rupture of both lungs complicated by rupture of the gastric mucous membrane. It seems reasonable to suppose that this mechanical lesion was referable to some mechanical cause, and the author's view is that the cause was the sudden entry into the respiratory and intestinal tracts of a certain quantity of air under an enormous pressure. It is possible that there exists at all points within a certain undetermined distance from the place at which a large shell bursts an atmospheric pressure capable of bringing about mechanical lesions of the respiratory tract and of the upper parts of the digestive tract.

118. Foreign Body Removed from Liver after Twenty-three Years.

SEYMOUR BARLING (*Arch. Roentgen Ray*, June, 1914) describes the removal from the liver of a woman, aged 28, of a piece of glass which had remained dormant in that vascular organ for more than twenty years. The patient complained of intermittent pain shooting down the right side of the abdomen into the groin. A radiograph of kidney and ureter revealed no abnormal shadow, and the condition was diagnosed as due to chronic inflammation of the appendix, which was removed. The patient presented herself two years later with the pain unrelieved, but now apparently higher up, near the right costal margin. It was elicited that twenty-three years previously she stumbled and fell while carrying a bottle of beer and cut herself just over the lower margin of the chest. Another radiograph, taken higher up than on the former occasion, revealed an opaque body lying just external to the upper end of the right kidney. After opening the abdomen and breaking down the adhesions which filled the interval between the under surface of the diaphragm and the right lobe of the liver, a large cyst, with whitish fibrous walls, was found, partly in the subdiaphragmatic space and partly in the substance of the liver. When this was punctured a dark fluid issued, and deep in the cyst were the fibrous remains of old blood clot, embedded in which was a triangular piece of thick green bottle glass $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. After the removal of this foreign body the cyst was packed with gauze, a drainage tube stitched into the wound, and the patient made an excellent recovery.

119. Radical Cure of Large Umbilical Hernia.

CULLEN (*Surgery, Gynaecology, and Obstetrics*, March, 1915) operated on a woman, aged 35, with a huge, pendulous abdomen, from which protruded an umbilical hernia 4 inches in diameter. When she stood up the abdomen hung down to the knees, causing such severe dragging sensations that she could hardly walk. She had borne five children, and the youngest was 8 months old. At the time of her marriage she weighed 225 lb.; at the time of the operation her weight was 464 lb. As the abdominal wall was so redundant, a large transverse elliptical area was excised around the hernia. It measured 36 in. from side to side and 19 in. from above downwards. The adipose tissue of this enormous flap was dissected off the fascia of the abdominal wall all round as far as the neck of the hernia. Then, with the operator's finger in the abdomen as a guide, the neck of the sac was cut at its approach to the abdominal wall. The omentum was so closely blended with the walls of the sac that it was cut off, and not dissected away. The hernial opening was closed by the Mayo method, the fascia of the lower margin being slid up under that of the upper margin. Kangaroo tendon was used for the mattress sutures, and after the first row had been placed and tied the edges of the upper flap were fastened down with a second row of mattress sutures. The abdominal wound was now approximated by interrupted silver wire and silkworm gut sutures. Accurate skin approximation was obtained by continuous black silk thread. A protective drain was introduced into each end of the incision. When the stitches were removed the abdominal incision had contracted to 27 in. in transverse measurement. Eight months after the operation the patient was in excellent health.

120. Cancer of Intestine Simulating Appendicitis.

L. VERDELET, in recording a case of intestinal cancer which simulated an appendicitis (*Journ. de méd. de Bordeaux*, May 17th, 1914), remarks that the diagnosis of an intestinal cancer may sometimes be difficult on account of the presence of secondary phenomena which mask the underlying pathological lesion. The patient was a man of 61, who, in February, 1913, was attacked with seizures of abdominal pain necessitating a stay in hospital. At the end of about twelve days he left completely recovered; but about May 1st he had a return of similar attacks of pain, without any vomiting or definite intestinal disturbances. Examination then revealed a rather large, definitely fluctuating swelling in the right iliac region, and his temperature was slightly raised. He was fairly vigorous, but had lost some flesh during the last few months; he had no vomiting, melaena, or other organic signs or symptoms, and his urine was normal. The diagnosis was appendicular abscess, possibly bacillary in origin. On May 28th he was operated on under chloroform, and a large abscess was found in the iliac fossa; its walls were indurated on all sides, and numerous adhesions were present, but nothing was found which pointed definitely to the presence of a neoplasm; the abscess was thoroughly drained, and for some time there was a notable amelioration in the patient's state, with cessation of pains and fever. But at the end of a month cicatrization went on badly, and the wound was covered with feeble granulations. Histological examination revealed an epithelioma of the intestine. The patient died of cachexia on August 1st, but no necropsy could be obtained. References are given to similar cases in the literature, and the writer quotes Tuffier's remarks that in cases of peri-intestinal suppurations of doubtful origin, even when there are no manifest symptoms of intestinal disturbance, we should bear in mind the possibility of the presence of a latent neoplasm of the intestinal mucosa.

121. Function of the Great Omentum in Stabs and Gunshot Wounds of the Abdomen.

F. CAMAGGIO (*Giorn. internaz. d. Sci. Med.*, Naples, 1915, xxxvii, 8) discusses the results of surgical and medical treatment in a large number of cases of abdominal injury treated 1901–14 at Naples. There were 1,225 cases of knife wounds, 268 of revolver wounds, and 15 of abdominal contusion. The greater part of his paper is given up to the consideration of the function of the great omentum in these cases, and to its glorification. Following Ranvier, he described it as a magnified lymphatic gland, disposed as an apron in front of the abdominal viscera, with a marked tendency to move itself towards any part of the abdominal wall that may be perforated and injured, and

to form the outermost layer of any hernia that may be produced. Experiments in the pathological laboratory have shown that it possesses powers of agglutination, phagocytosis, and blood formation, while it also has bactericidal and antitoxic powers, and a plastic quality that enables it to block holes in the abdominal wall. He argues that the surgeon should never cut away portions of the great omentum as redundant, quoting with approval the antique surgical motto "memento omentis." He further states that gauze or other plugs are but rarely to be used in laparotomies, largely for the reason that they place a mechanical obstacle in the way of the omentum and its movements; in general, abdominal drainage should be left to the omentum, and not provided for by the use of plugging. In exceptional cases, of course, artificial drainage or plugging is required in these patients with penetrating wounds of the abdomen—to stop haemorrhage from the liver, for example, or when the abdominal contents are gravely infected. His general experience is that knife wounds of the abdomen left to themselves (the patients refusing laparotomy) usually recover, with a low mortality (9 died out of 460); in a further series of 258 patients, where laparotomy was withheld for surgical reasons, only 11 died of their penetrating abdominal wounds. In 199 of the 460 patients, and 126 of the 258, Camaggio remarks that penetration of the abdominal wall was proved to have taken place. The figures are very different, however, in the case of revolver wounds of the abdomen; laparotomy was performed in 177 out of 268 cases, and 107 of the 177 died (60.5 per cent.), while operation was refused or withheld in 91 instances, of which 57 (62.6 per cent.) died. Camaggio notes that those of his colleagues who most frequently used plugging after their laparotomies had the highest mortality here. Of the 15 patients with abdominal contusions, 8 were treated by laparotomy, and 7 of the 8 died. He emphasizes the importance of operating at once and with as few hours of delay as possible in the case of gunshot wounds of the abdomen; the pulse is a more valuable guide to the patient's condition than his temperature; injections of morphine he believes to be entirely harmful, for they tend to immobilize the great omentum.

OBSTETRICS.

122. Prenatal Care.

THE results of a study of 705 fetal deaths occurring in 10,000 consecutive admissions to the obstetrical department of Johns Hopkins Hospital are published and discussed by J. WHITRIDGE WILLIAMS (*Journ. Amer. Med. Assoc.*, January 9th, 1915). All deaths occurring in children between the seventh month of pregnancy and the full term are included. They are classified as premature or mature according as their weight varied between 1,500 and 2,500 grams, or exceeded the latter figure. The figures somewhat understate the total mortality, as they do not include many children dying later from the causes enumerated. They differ also from other statistics, as 46 per cent. of the mothers were coloured, thus affording an opportunity to compare the incidence of certain causes of death in the two races. They are further of special value, since all of the after-births were carefully studied microscopically. But even with this, a positive diagnosis of the cause of death could not always be made. The results of the studies are given in tabulated form. The most striking features of the investigations are the following: (*a*) Syphilis is far and away the most common etiological factor concerned in the production of death, presenting an incidence of 26.4 per cent. (*b*) Toxaemia, including eclampsia, nephritis, and occasional rare conditions, which is usually regarded as the condition *par excellence* that can be influenced by prenatal care, is the cause of only 6.5 per cent. of the deaths, and consequently is accountable for only one-fourth as many as syphilis. (*c*) Notwithstanding most painstaking investigation, the cause of death could not be satisfactorily explained in 127 cases, or 18 per cent. (*d*) The death-rate is nearly twice as high in the blacks as in the whites—9.4 and 5.1 per cent. respectively—and equals or exceeds that of the whites in all but three categories—namely, toxaemia, deformities, and placenta praevia. The causes here given are discussed separately. As regards syphilis the tables do not tell the whole story. One hundred and sixty-four babies born alive were victims of hereditary syphilis, and the diagnosis in all cases was made only when it was proved by necropsy, or examination of the placenta or positive Wassermann in the fetal blood. It is probable that some cases escaped detection, and it is also probable that many of the cases under "cause unknown" were also syphilitic. Fifty-three of the fetuses in this group were macerated, as is the case in 80 per cent. of syphilitic stillbirths. Under "dystocia" are grouped only the deaths occurring after mechanically difficult labour. Unlike syphilis, this cause was more frequent among the whites than among the blacks, which Williams attributes to the smaller and softer heads of the coloured fetuses. Only a minority of the deaths were really preventable; some had been transferred to the hospital by physicians or midwives after they failed to effect delivery, and most of them should be attributed to ignorance; some others were due to errors of judgement, largely unavoidable. Seventy-nine deaths are grouped under the head of "various causes," in which haemorrhagic diseases and bronchopneumonia come first. Prematurity was the cause of 50 deaths, toxaemia of 46, deformities 26, inanition 23, placenta praevia 22, premature separation of the placenta 13, and suffocation and debility 3 each. Williams believes that too narrow a view is taken as to prenatal care. It is ordinarily thought of as a preventive of toxaemia, or as a side issue in the propaganda for breast feeding. He would have it managed from a dispensary connected with the obstetric department of a well-equipped hospital, which can command the co-operation of trained obstetricians, social service workers, prenatal and obstetric nurses, and in close affiliation with a children's clinic with its corps of organized workers, or at least with a well-conducted milk association. Patients should be encouraged to come to the dispensary as early as possible in pregnancy and receive a thorough physical examination, with special attention to syphilis and tuberculosis, and the condition of the kidneys. If everything is normal they can be tentatively registered as out-patients; otherwise, they should go to the hospital. The homes should be inspected and the patients kept track of, and they should return a month before expected delivery for another examination, which should decide whether it should be at the home or the hospital. What further should be done in view of future pregnancies and the general health should also be considered.

GYNAECOLOGY.

123. Iodine in Supravaginal Hysterectomy.

STONE, of Washington (*Surgery, Gynaecology, and Obstetrics*, February, 1915), finds that since the introduction of iodine as an antiseptic he has attained almost perfect results in operations on uterine myomata. The antiseptic is introduced into the uterine canal. Three years' experience has shown him how to secure perfect asepsis of the field of operation. All the morbidity after hysterectomy, when the cervix is left behind, is a result of infection about the stump or under the flap of peritoneum near the stump. When such infection occurs, deep-seated pelvic cellulitis is apt to follow, and sudden, even fatal, complications, such as are due to thrombosis and embolism, may occur. Haematoma not rarely forms, especially in the space whence an intraligamentary tumour has been enucleated. When one ovary is saved it may become greatly swollen through interference with its circulation. Both these complications, Stone admits, may involve a slight rise of temperature, even when iodine is employed as an antiseptic; but with that precaution, the haematoma will not suppurate, and the ovarian swelling will subside. Yet the ovary often feels as though cystic when palpated months after the operation. On the other hand, a big haematoma developed in one instance, with very slight rise of temperature. Abnormal distension, due to imperfect preparation of the alimentary canal, sent the temperature up in two cases, a laxative bringing it down quite promptly. Stone lays stress on one prolonged convalescence, where, from the nature of the tumour, the cervical canal could not be reached and sterilized before operation. Suppuration followed, and pus was discharged from the uterus, the unfavourable symptoms at once subsiding.

THERAPEUTICS.

124. Intravenous and Intraspinal Treatments in Cerebro-spinal Syphilis.

DRAPER (*Arch. Intern. Med.*, January 15th, 1915) records his investigations on the effect of intravenous and intraspinal treatments on cerebro-spinal syphilis in 25 cases arranged so that pain predominates at one end of the series and psychic disturbance at the other. All were treated intensively for active syphilis by combined intra-

venous and intraspinal injections (except in one instance), mercury and potassium iodide being also used, but the chief interest centred on the action of salvarsan, neo-salvarsan, and salvarsanated serum. Salvarsan was mostly used, and only changed for neo-salvarsan when an anaphylactic action occurred, the patients being treated intravenously at weekly intervals with 0.3 gram to 0.6 gram salvarsan, or neo-salvarsan in full doses, and intraspinally most of the cases received 30 c.cm. of 50 per cent., or from 20 to 25 c.cm. of full strength, serum separated centrifugally from blood withdrawn forty minutes after the intravenous dose of salvarsan. Marked clinical improvement occurred in all groups of cases, the pain being usually relieved and the ataxia helped in the spinal types, while the bulbar types and those with pronounced psychic disturbances showed marked improvement in symptoms as well as in the spinal fluid. It was found that the more definite psychic disturbances may clear up completely, but the spinal fluids cannot in every case be brought to normal, the cell count being almost always reduced, but the Wassermann test rarely disappearing below 0.3 c.cm. In some instances, especially those treated with serum salvarsanized *in vitro*, transient numbness in the feet occurred; in others a slight failing in general robustness, possibly an arsenic effect, and in several instances severe pains followed the intraspinal injection. In two cases a sudden increase in ataxia followed a period of definite improvement. The improvement in symptoms, however, in almost all cases is so striking that, notwithstanding the above undesirable features in some cases, the method should be thoroughly tried by numerous observers with careful attention to detail of technique in order to avoid such undesirable results. It appears to be unsafe to give more than two, or at most three, consecutive injections of serum to which salvarsan has been added directly, and in no case should more than 0.0005 gram be added, though any number of intraspinal injections may be given with impunity when serum salvarsanized *in vivo* is used. So long as the spinal fluid or blood gives a positive Wassermann test the case must be regarded as potentially capable of relapse, and consequently, no matter how well the patient may feel or seem to be, treatment must be unremittingly continued until the test is persistently negative.

125. X-Ray Filters.

SOME experimental tests with *x*-ray filters have been made by J. H. SEQUEIRA (*Arch. Roentgen Ray*, January, 1915), and have their importance in view of the now extensive use of *x* rays in massive doses. In all cases he has used Sabouraud's pastilles and protective filters of aluminium. One of the practical conclusions to be drawn from his observations is that the chemical change produced in the Sabouraud pastille, and doubtless in other chemical methods of estimating *x*-ray dosage, is unable to furnish adequate evidence of the physiological effects of the rays. In the second place, the anode of an *x*-ray tube gives off a spectrum of radiation combining different physiological actions, and he establishes the fact that by interposing aluminium screens of different thicknesses (from 0.25 mm. to 5 mm.), it is possible to filter off the rays which cause the erythema reaction and the more destructive effects of certain of the radiations. If a 1.5 B pastille dose be given without a screen, the standard distance of 15 cm. between skin and anode being maintained, the skin will receive a dose equivalent to $\frac{3}{5}$ B, as shown by the pastille upon the skin, and such a dose will certainly be followed by an erythema. On the other hand, with a 10 B pastille dose filtered through 4 mm. of aluminium, the effect upon the pastille will be $\frac{4}{5}$ B, or more than double the amount registered with the 1.5 B dose *minus* the screen, yet the larger dose will never cause an erythema. At the most there occurs slight pigmentation, and the doses may be repeated at short intervals without the appearance of anything more violent. The author finds also that the position of the screen, whether on the skin itself or at any distance between the skin and the anode of the tube, is immaterial, and that skin has no appreciable screening effect.

126. Injections of Paraffin in Ozaena.

DURING the last three and a half years N. R. BLEGVAD (*Ugeskrift for Laeger*, January 28th, 1915) has treated 25 women, 3 men, and 2 children with paraffin injected into the septum nasi and conchae inferiores. He cured 13, and effected definite improvement in 11 cases. In several other cases he lost sight of the patients, and was consequently unable to verify the results. By encroaching on the nasal passages the paraffin helps to raise the intranasal pressure when the patient blows his nose, and thus facilitates the expulsion of secretion which, if left *in situ*, forms dry, decomposing, offensive crusts. The paraffin also has a more directly beneficial action on the mucous membrane of the nose; for it has effected a complete cure, even when the abnormal size of the nasal cavity has not been diminished by the injections. At first great difficulty was experienced in preventing the escape of the paraffin through the ducts of glands in the conchae or through small cracks in the thin, atrophic mucous membrane of the septum. Later, this difficulty was overcome by preliminary injections of water, which, by rendering the mucous membrane turgid, facilitate the retention of the paraffin. The author practises the following technique: The nose is cleaned by saline douches and the removal of crusts. Cocaine adrenalin is painted on the mucous membrane, and then a 0.25 per cent. solution of novocain-adrenalin is injected under the periosteum and perichondrium of the conchae and septum. Several injections are necessary for the concha inferior, as its mucous membrane is in many places firmly adherent to the underlying bone. The septum, however, need be anaesthetized only at one point; several injections would favour the leakage of paraffin. About 4 or 5 c.cm. of water are now injected, not into the mucous membrane itself, but under the periosteum and perichondrium, so as to elevate the mucous membrane as much as possible. Paraffin, with a melting point of 51° C., is now injected in the solid state, only one side of the nose being treated at a sitting. No paraffin should be injected into the floor of the nose, where it is ineffective and causes oedema and violent pain. Elsewhere the injections are not painful as a rule, although they are invariably followed by much swelling of the mucous membrane, and more or less total obstruction of the nose for a week or two. By the use of paraffin of a high melting point, injected in the solid state, the danger of phlebitis and embolism of the central artery of the retina is avoided. The injections are of little use when extensive erosions of the mucous membrane render retention of the paraffin difficult, and the prospects of success are therefore greatest when the injections are given at an early stage of the disease.

127. Marmorek's Serum in Preliminary Tuberculosis.

MONGOUR (*Journ. des praticiens*, February 6th, 1915) gives some statistics of the results of the treatment of 100 cases of pulmonary tuberculosis with this preparation. He divides the cases treated into (*a*) acute and (*b*) chronic. The chronic cases treated were chiefly of the fibroid type and characterized by lesions of one or both apices—open or closed. They had little tendency to extension, and for the most part had a subnormal temperature, while the body nutrition was maintained and the working efficiency satisfactory. These cases did not appear to be influenced to any appreciable extent by the use of the serum. Chronic suppurating osteitis, old tuberculous glands, and fistulae were additionally treated, but showed no sensible modification. In the acute cases, where cavitation existed no favourable results followed, but in cases of the second degree considerable amelioration of signs and symptoms followed. The fever was most influenced, the tachycardia moderated, the weight increased, the expectoration became more fluid, and bacilli disappeared from the sputum. The author states that he cannot, without considerable reserve, call any of the cases cured, but has not noted any such results with any other therapeutic measures in cases of the first degree.

PATHOLOGY.

128. A Test for Syphilis.

TROSSARELLO (*Gazz. degli Osped.*, No. 44, 1914) has made use of the fact that the treponema exists in almost pure culture and of a high degree of virulence in the testes of the infected rabbit to prepare a glycerine extract of this organ for use as a test for syphilis when given hypodermically. He injects this extract under the skin in doses of 0.06 gram. When the reaction is negative a papule surrounded by a red halo and with slight infiltration appears, but only lasts four or five days at the utmost. If the reaction is positive the papule halo and infiltration area are each more marked and persist for four or five weeks. In tertiary syphilis the new test gives better results than the Wassermann. In latent syphilis the results were about equal, whilst in secondary syphilis the Wassermann gave the better results.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

129. An Outbreak of Diphtheria.

IN his annual report to the Director of Medicine, T. ANSTEENSEN (*Tidsskrift for den Norske Laegeforening*, February 15th, 1915), medical officer of health to a country district in Norway, has dealt with a recent epidemic of diphtheria, which raged for about two years. Until the beginning of 1912 there had only been a few sporadic cases of diphtheria, imported from outside the author's district. For many years he had flattered himself with the conviction that he had prevented extensive outbreaks by giving prophylactic injections of antitoxin to persons exposed to infection; but when the serious epidemic began early in 1912, he not only found prophylactic injections futile, but he even suspected they might be responsible for some "carriers." He found that antitoxin did not prevent infection, but merely rendered the course of the disease less severe. Indeed, the disease was sometimes so slight in persons thus treated that there was scarcely a symptom. But the slighter the symptoms the greater were the difficulties of the sanitary authorities, for an unrecognized case of diphtheria spread infection for months just as effectively as a severe case. The author accordingly learnt to reserve prophylactic injections for persons for whom diphtheria might be expected to be unusually dangerous, and for persons who, supposing they developed diphtheria, were unable to receive a therapeutic dose of antitoxin within twenty-four hours of the first symptom of diphtheria. The danger of anaphylaxis is also an objection to the prophylactic use of antitoxin, for, should severe diphtheria subsequently develop, a therapeutic injection of antitoxin might cause serious anaphylactic shock. The author learnt to regard every convalescent with suspicion unless three examinations of the throat at one sitting, followed by three examinations at another, with an interval of at least four days between each examination, were all negative. He records cases showing how a less rigorous standard in the estimation of a convalescent's infectiousness may lead to relaxation of isolation and spread of the infection. He also points out that inflammation of the throat, combined with a positive bacteriological examination, does not necessarily imply that the patient is suffering from diphtheria. He may merely be a "carrier" who has developed an ordinary sore throat. On the other hand, a negative bacteriological examination should not, *per se*, convince the physician that he has only to do with an ordinary sore throat.

130. War and Tuberculosis.

L. LANDOUZY (*Rev. d'hygiène et de police sanitaire*, March 20th, 1915) says it might have been thought that the propagation of tuberculosis would be greatly favoured by the fact that tuberculous men often live and fight side by side with healthy men in the trenches for days on end, the sputum and exhalations of the tuberculous being thus constantly under the noses of the non-tuberculous. Moreover, during the earlier weeks of the war flies swarmed in the trenches, and no doubt added their part as distributors of germs. But it has been found that tuberculosis spreads far less in the trenches than it does in barracks. Probably the open-air life of the troops is largely responsible for this result. As precautionary measures, Landouzy recommends that recruits found to be tuberculous should be rejected, and that cases first recognized at the front should not be sent home or billeted in villages, to come into contact with non-tuberculous persons, but should be sent for treatment to special hospitals and sanatoriums.

131. The Internal Secretions in Dysentery.

DURING a recent epidemic of dysentery, H. PEISER (*Deut. med. Woch.*, January 14th, 1915) frequently observed phenomena indicating over-activity of the thyroid and suprarenal glands, and inactivity of the pancreas and parathyroid glands. These phenomena, which occurred at the height of the dysentery, or during convalescence, included exophthalmos and other signs of thyroidism. About 10 per cent. of all the patients suffering from dysentery showed signs of disturbances of the internal secretions; and, as far as could be ascertained, these signs had not existed before the outbreak of the dysentery. Other phenomena frequently observed were enlargement and tenderness of the thyroid glands, failure of the upper eyelids to follow the downward movements of the eyes, tremor of the eyelids, slight weakness of the internal recti muscles, infrequent closing of the eyes, tremor of the fingers and tongue, dermographia, profuse perspiration, and an erratic temperature and pulse even after the dysentery had culminated. The pulse was either very slow or very fast, and a rise of temperature during convalescence was frequently accompanied by swelling of the joints, which the author considers was inflammatory and not due to disturbances of the internal secretions. Pancreatic insufficiency was demonstrated in more than 50 per cent. of the patients by the instillation of a drop of adrenalin into the eye, causing dilatation of the pupil. The excretion of urine showed great fluctuations, and in some cases it ranged from only 350 to 800 c.cm. in the twenty-four hours. During convalescence, however, as much as 7 litres would be excreted in the twenty-four hours. The author's explanation for this erratic action of the kidneys is that the renal vagus was stimulated in the early stages of the disease, whereas, during convalescence, the excretion of urine was hastened by over-activity of the sympathetic nerve system. Many patients suffered from alimentary glycosuria. The author is uncertain whether the symptoms referable to the vagus and sympathetic systems were due to the direct action of the germs of dysentery, or to the indirect action of the disordered internal secretions. He found belladonna very useful in counteracting the effects of over-activity of the vagus; and when the patients suffered from spasmodic contractions of the intestine during convalescence, belladonna gave instant relief. It was also very efficacious in the relief of salivation, hypersecretion of the gastric mucous membrane, restlessness and diarrhoea, even when opium and its derivatives had proved useless.

132. Paroxysmal Oedema.

PALMER (*Arch. of Intern. Med.*, Feb. 15th, 1915) records 2 cases presenting periodic attacks of generalized oedema without evidence of kidney disease. The first, a lady, aged 33, habitually constipated, complained of attacks of prostration associated with nausea, passing off after rest, and alternating with attacks of generalized oedema, sometimes resulting in a gain of 15 lb. in weight, and rapidly disappearing as soon as free catharsis is established. Inability of the kidney to excrete chlorides being suspected, a diet low in salt was prescribed, and since then she has been free from attacks except once, when additional salt was given to test the kidney for its excretion. The second, a man, aged 40, complained of cough, dyspnoea, and swelling of the face, body, and legs, the face being markedly oedematous, the puffiness about the eyes nearly closing them. With rest in bed on a salt-low diet there was rapid improvement, with remarkable diuresis, loss of weight, reduction of oedema, and clearing up of all subjective symptoms. There was no evidence of kidney disease in either case, as determined by the usual urinary examination. The chief points of interest in the first case were a past history of a kidney of pregnancy four years previously, recurring attacks of generalized oedema usually associated with constipation, relief on a salt-low diet and free action of the bowels, and a marked decrease in the chloride excretion in the urine after the addition of the small amount of 6 grams of salt to the intake, showing a definite renal incompetency to secrete chlorides. Although the kidney was able to deal with 2 or 3 grams daily, any increased demand for chloride excretion temporarily reduced this function, and it would appear from this case also that the bowel is an important factor in the excretion of salt. In the second case the points of interest were the extensive generalized oedema without any discoverable renal disease, mild circulatory symptoms with distinct cardiac enlargement and arterio-sclerosis, and a rapid disappearance of the oedema on rest and diet. The circulatory system in this case was probably an important factor in causing the attacks, while the response of the body to additional salt by only a moderate increase of salt in the urine, although there was a nearly normal increase in the percentage, and an associated diarrhoea, suggest some renal impermeability to salt. In certain types of oedema mild grades of acidosis may exist which might play some part in the persistence of the condition, and these cases show that the impermeability to salt on the

part of the kidney is an important factor in explaining some cases of oedema of obscure origin, while in the treatment of such cases the fact that the bowel is a vehicle for the excretion of salt must be borne in mind.

SURGERY.

133. Treatment of Gunshot Fractures of Skull.

G. CHAVANNE (*Bull. et mém. de la Soc. de Chir. de Paris*, March 3rd, 1915) gives details of 59 operations for fracture of the skull caused by gunshot. In 26 cases death occurred. In all cases operation was performed as early as possible, but hardly ever on the day on which the wound was inflicted. In one case of extensive fractures the edges were trimmed with the gouge forceps, but when the wound was too small for that instrument to be used, a trephine or Collin's perforator was employed to prepare the way for it. After removing fragments of bone the wound was dressed with dilute tincture of iodine on a gauze compress. Chloroform was given unless the patient was in a state of complete coma. In seven cases of injury of the sinuses there were four deaths; such lesions, therefore, seem to justify an unfavourable prognosis. The accessory cavities of the nasal fossae were involved in six cases. In two of them the frontal sinus, as well as the ethmoid cavities, were laid open, in two the frontal sinus only. In all six cases recovery took place, although in two there was such extensive injury to the eye that immediate enucleation was necessary. Paralytic complications were observed in eight cases, and it is probable that they occurred in others which did not recover from a state of coma. Of the three fatal cases out of the eight two had hemiplegia, and one paralysis of the right arm and aphasia which lasted until death. In the five cases of recovery, two lost the hemiplegia completely, two nearly so, while in one the hemiplegia persisted after the healing of the wound. In no case was any long duration of sphincter trouble observed. In two cases convulsions occurred before and immediately after the operation, but they did not recur. No doubt the cured cases will suffer from after-consequences later, but the results of the 59 operations is certainly satisfactory considering the extent and severity of the wounds.

134. Radium and X Rays as Complements to Surgery in Lymphosarcoma.

TWO cases of lymphosarcoma of the neck in which incomplete surgical ablation was followed by radium and *x*-ray treatment are described by BÉGOUIN (*Arch. d'électr. méd.*, June 25th, 1914). The observations are of too recent a date to permit a definite judgement as to the ultimate value of the treatment, but the result was so different from the usual sequel to an incomplete operation as to justify reporting. The first case was that of a woman, aged 45 years, with a tumour slightly below the mid-carotid region, taking the size and form of an elongated orange. A surgical intervention was made by means of a long incision on the border of the sterno-mastoid, and the tumour proved to be a ragged encephaloid mass, which bled freely. It had infiltrated the sterno-mastoid muscle, and penetrated the environing interstices in such a manner that, the principal mass being removed, there remained on all sides an inextirpable neoplastic remainder. The operation, therefore, was necessarily incomplete, the skin was sutured, and a drain was left in place in the lower part of the wound. In this drain, four days after operation, a tube containing 18 cg. of pure radium bromide, with a silver filter 0.3 mm. in thickness, was left in place for twenty-eight hours, and a further application similar in character was made for eight hours to a different part of the cavity a few days later. Afterwards, the cicatrization of the wound being complete, the patient was submitted to intensive *x*-ray treatment, strong doses (8-9 H.) of very hard and heavily filtered rays being given. These irradiations were repeated at various ports of entry at intervals of a few days, at first directly on the site of the tumour, and then indirectly to traverse the neck. The histological examination of the tumour had proved it to be a lymphosarcoma, and, judging by other cases, if recourse had been made to surgery only, the removal being incomplete, a relapse would have been immediate. Eight months have passed since the intervention, and the operated region remains supple, with no tumefaction or trace of relapse, and the general health is perfect. The author brings forward a similar case in a woman aged 60 years. The mass of the tumour was again removed in order to facilitate the action of the radium. The tumour had the same encephaloid aspect as in the preceding case, and was pronounced a lymphosarcoma. Radium was applied, producing neither reaction nor suppuration, and was followed by intensive radiotherapy. Treatment in this case was undertaken only three months before the publication of the report; up to that time, however, there was no sign of relapse, nor any trace of generalization.

135. Secondary Ulcers of Stomach and Duodenum.

SORESI (*Annals of Surgery*, March, 1915) studied the effects of silk and linen sutures for the intestinal mucosa in gastro-enterostomy on the complete cicatrization and the production of secondary ulcers. Posterior gastro-enterostomy was performed on forty-seven dogs, using silk and linen thread for the through-and-through and the sero-serous sutures, and in all but one the thread was found hanging in the stomach at the autopsies when the dogs were killed from one to ten months later, thus showing that unabsorbable material is not eliminated after a period of ten months in animals whose peristalsis is very strong. In 6 per cent. ulceration of the mucosa of the stomach and jejunum was found without apparently having given rise to any discomfort during life. However carefully the operation is performed, the thread will remain indefinitely in place, hanging from one or more points in the stomach or intestinal cavity; and the fact that many patients complain of symptoms for some time after operation may be explained by the presence of small ulcerations of the mucosa around the anastomotic opening, which do not heal until the unabsorbable material has been eliminated. While silk or linen may be safely used for the sero-serous suture, catgut, either plain, chromic, or iodized, should always be used for the through-and-through suture, as this will last longer than three days, and therefore long enough to ensure haemostasis. Further experiments upon the effects of unabsorbable material in the through-and-through suture of intestinal anastomosis showed that in fourteen cases of side-to-side intestinal anastomosis the thread had been eliminated in two, while in three of the remainder it had become the nucleus for the formation of calculi, which in one instance had attained a size of more than half the lumen of the intestine, the dog having been operated upon nine months previously, and being apparently otherwise healthy. Since some patients suffer discomfort after operations for intestinal anastomosis in which unabsorbable material has been used it seems probable from these experiments that such later symptoms might be due to the formation of calculi, the nucleus of which has been the thread hanging loose in the intestinal cavity. As in gastro-jejunal anastomoses, only catgut should be used for the through-and-through suture, fine silk being reserved for the sero-serous suture.

136. Treatment of Infective Gangrene.

H. BOUSQUET (*Bull. et mém. de la Soc. de Chir. de Paris*, February 16th, 1915) gives the result of his observations during the war as to the treatment of tetanus and of infective gangrene. During the first part of the war cases of tetanus were specially frequent. The symptoms appeared after a fairly long interval, and it could not be shown that wounds in any special region were specially liable to be followed by the development of tetanus. Certain slight cases recovered, but in other cases none of the various methods of treatment employed had any effect. It was therefore decided that every wounded man should receive an injection of 0.2 c.cm. of antitetanic serum immediately upon his entrance into hospital—that is, within less than twenty-four hours after the infliction of the wound. From the time when this course was adopted no new case of tetanus developed. The author attaches great importance to the administration of the large dose of the serum. With regard to infective gangrene, he employs a procedure in the treatment of infected wounds which he has made use of in his own clinic for several years, and which has always given the best results. The wound is widely opened and the edges are covered with twists of wet gauze. Spirit is then poured into the wound. It is a very beneficial thing to set the spirit alight inside the wound. It should be relighted if the flame goes out, and the process repeated until the wound is covered with a blackish pulp. Contrary to what one might expect, this burning is not extremely painful. The author has employed the method several times with patients not under an anaesthetic, without their complaints being very vigorous. An ordinary dressing, wet or dry as may seem to be indicated, is finally applied. On the following day or the day after, when the dressing is changed, a black mass is found and easily removed by directing a stream of water on the part. There is a slight inflammatory reaction for several days, and then everything settles down. The author has employed this method several times since the war began, for manifestly infected wounds, and has invariably had good results.

OBSTETRICS.

137. Post-Puerperal Renal Abscess.

IN the following case, recorded by G. NYSTRÖM (*Hygiea*, Bd. 76, H. 19), the diagnosis of post-puerperal renal abscess was not made till after death, owing to the obscurity of the symptoms. The patient was an unmarried woman, aged 40, who had been unwell since her confinement three months earlier. During the puerperium she had developed jaundice, which lasted about six weeks. The urine had contained blood, and micturition had been painful during the first two weeks of the puerperium, and these symptoms had recurred intermittently since then. She complained of increasing pain in the right lower abdomen and attacks of shivering. Three months after her confinement she was admitted to hospital with the symptoms of septicaemia. The temperature was 40.2° C. and the pulse 112. Although there were signs of diffuse peritonitis, the right side was more tender and rigid than the left. When the abdomen was relaxed by a general anaesthetic, the lower border of the liver could be felt at the level of the umbilicus, and even lower when traced towards the right. Cholecystitis was accordingly suspected, and an incision was made over the lower part of the liver. When this was exposed and turned up, much thick greyish-green pus came welling up from under the right lobe of the liver and from the right iliac fossa. The gall bladder, bile ducts, stomach, and upper part of the duodenum were healthy, but the peritoneum covering the lower portion of the duodenum was red and thick. A small opening, no larger than a pin's head, was found in the peritoneum lining the posterior abdominal wall at the level of the descending limb of the duodenum. Thick pus oozed out of this opening, which communicated with an abscess cavity the size of a hen's egg. This cavity was lined by spongy, friable tissue, suggestive of the lining of a pyonephrosis. Drains and tampons were inserted, and the wound was closed. The patient died three days later, and the necropsy showed purulent peritonitis of the whole abdomen. The abscess cavity was bounded on one side by the somewhat prolapsed right kidney. In the kidney itself was an abscess as large as a nut, communicating with the extrarenal abscess by a small passage. The base of the intrarenal abscess was under the capsule of the kidney, and it tapered as it was traced towards the small opening leading to the exterior of the kidney. This shape of the abscess was suggestive of an infarct, and the absence of inflammatory changes in the renal pelvis further indicates that the kidney was infected by the blood stream, the source of infection probably being the reproductive organs soon after labour. The kidney also contained many small abscesses, no larger than a pin's head, scattered round the main intrarenal abscess.

GYNAECOLOGY.

138. Diathermy in Malignant Growths of Female Genitals.

CUMBERBATCH (*Arch. Roentgen Ray*, March, 1915) states that diathermy has been applied at St. Bartholomew's Hospital to eight cases of carcinoma of the cervix uteri, one case of carcinoma of the vagina, and one case of carcinoma of the urethra, all of which were surgically inoperable. The growth had spread into the pelvic cellular tissue, so that parts of it could not be reached from the vagina by the electrode, and in the regions where it had spread into the wall of the rectum or bladder the cautery could not be applied for fear of injury to these organs. The most that could be expected was the destruction of the primary focus, and its subsequent replacement by granulation tissue and epithelium. The author gives details of the application of the cautery to the cervix and vagina. The patient (usually) received a general anaesthetic, and the cervix was brought into view by a Fergusson's or duck-bill speculum, dried as far as possible by sponging, and then painted with tincture of iodine. The indifferent electrode was placed on the abdomen. The active electrode, which terminated in a five-pronged fork end-piece, was embedded in the growth, and the current was applied until coagulation took place. It was then inserted in other parts until the whole of the accessible portion was coagulated *in situ*. Where the growth was fungating it was found that the extraction of the embedded end-piece of the active electrode would bring away portions of the growth. If the coagulation had not extended through the growth down to normal tissue bleeding occurred, because the detachment of the coagulated portion left a raw surface of uncoagulated new growth. Quick bleeding obscured the operation and slowed the coagulation. This is the difficulty experienced in diathermic coagulation of exuberant vascular growths, and was overcome in one case by first sweeping off the growth level with the skin, which procedure, however, opens the vessels carrying blood to the growth, and so takes away one of the advantages that diathermy offers in the treatment of new growths. The best result of diathermic cautery in inoperable growth of cervix and vagina was obtained in a case—apparently belonging to this series—in which the patient left the hospital nine days after the application of diathermy to the parts of the growth accessible from the vagina; and at that time, although the slough had not entirely separated, the whole of the vaginal mass previously felt had entirely gone, and the vaginal wall was covered with smooth tissue. The patient came at intervals over a period of months to the out-patient department, and no haemorrhage or discharge was seen, and no ulceration.

THERAPEUTICS.

139. Anaesthesia of the Head and Neck by Inhalation of Oleum Sinapis.

EARLY in 1914, at a meeting of the Austrian Otological Society, A. E. Schwarz read a paper on the action of oleum sinapis when inhaled by the subjects of inflammatory conditions of the nose, mouth, throat, and ears. L. FLODQUIST (*Svenska Laekaresällskapets Förhandlingar*, vol. xii) has tested and confirmed Schwarz's observation that the inhalation induces anaesthesia of the trigeminal nerve. Evidently this anaesthesia is due to some particular constituent of oleum sinapis which is peculiar to it, for inhalation of various other pungent drugs, such as ammonia, does not induce anaesthesia. The drug is held to the nose, while the patient closes his eyes to avoid conjunctivitis. He compresses one nostril while he inhales the drug with the other. He naturally inhales with the nostril on the same side as that in which anaesthesia is required. When the inflammation is bilateral, the patient inhales alternately with each nostril until a violent attack of coughing is provoked. Schwarz treated 20 cases of toothache, and found the pain vanish for several hours as soon as the oil was inhaled. It is immaterial whether the toothache is due to pulpitis or periostitis, and in no case does the drug seem to have failed in banishing the toothache. On the ear alone he made 44 observations, which showed that the inhalation is strikingly effective in the various forms of earache. In 19 cases he performed paracentesis of the tympanum, previously rendered anaesthetic by the inhalation. The author has found the anaesthesia thus induced so complete that children have not stirred while the tympanum was being perforated. Pure otalgia, tinnitus, and pain following operation on the mastoid process are all banished by the inhalation, which is not, however, effective on the tinnitus of otosclerosis. Tonsillectomy is rendered painless by the inhalation, which also prevents the occurrence of post-operative pain and dysphagia for one to eight hours. Again, in angina phlegmonosa an incision can be made and pus evacuated without pain, and headache due to empyema of the accessory sinuses and the pain and dysphagia of cancer of the tonsil can be temporarily banished by the inhalation. Schwarz found it gave no relief in a case of trigeminal neuralgia, possibly because the reflex may have been broken by disease in the ganglion cells or in some other section of the trigeminal nerve. The author has found the inhalation strikingly successful in an intractable case of paraesthesia linguae, and Schwarz found it gave great relief in tuberculosis of the larynx associated with dysphagia.

140. [illegible] Bitter Tonics.

A. J. CARLSON (*Journ. Amer. Med. Assoc.*, January 2nd, 1915) discusses the action of the bitter tonics on the secretion of the gastric juice. He and his helpers had previously shown that these bitter tonics had no appreciable influence on the hunger mechanism in the ordinary therapeutic doses by the mouth. Taken thus they all inhibit gastric tonus and hunger contractions in direct proportion to the intensity and duration of stimulation of the nerve endings in the mouth. If introduced directly into the stomach in somewhat larger quantity they all cause inhibition of the gastric tonus and hunger mechanism by stimulation of nerve endings in the mucosa. In short, the bitter tonic causes inhibition or depression of hunger. In the experiment here reported, the question whether these tonics are

capable of influencing the gastric secretions and thus favouring digestion is discussed. The literature of the subject is somewhat conflicting, but it has since been pretty well established that the bitter tonics have no action on pepsin hydrochloric acid digestion itself, except possibly by slightly retarding it. The view that they augment the secretion of gastric juice indirectly by increasing the excitability of the taste papillae of the mouth and possibly the nerves of appetite sense in the stomach is emphasized by Pavlov, and seems to be confirmed by the experiments of Borissow in the way of sham feeding of dogs with gastric fistula and oesophagotomy. The subject experimented on by Carlson had the oesophagus completely constricted at the level of the upper end of the sternum and could swallow nothing from the mouth, and also had a permanent gastric fistula. The condition served admirably for studying the influence of the bitter tonics on the gastric secretion, and in the series of tests these were put in the mouth and swallowed into the oesophageal pouch ten minutes before the meal. They usually had to be spit out before taking food, on account of the saliva they induced. In all three of such series of tests, the gastric juice was collected while the subject was chewing his food in the usual way, preparatory to putting it into the stomach with a syringe, and thus the appetite gastric secretion only was dealt with. The stomach was invariably emptied of juice before eating and record kept of the quantity, acidity, and pepsin strength of the juice in the empty stomach, as it was thought that this might serve to indicate the physiological conditions of the gastric glands, irrespective of the condition of the appetite. The experiments were carried on through the months of April to November, 1914, and the tests of the tonics interspersed with controls without the tonics all the way, to eliminate possible errors. The tests were made a mere incident in the subject's daily routine and no special dietary standard was fixed. The patient selected his noonday meal at a near-by restaurant, taking what he thought was most appetizing. Therapeutic doses of gentian, quassia, calumba, humulus, and condurango and elixir of quinine, strychnine, and iron were given. The patient was not told the aim of the experiments, for the purpose of excluding possible psychic factors, which Carlson thinks were entirely eliminated. The patient's health was good, and the question arises whether the sensory nerves for the appetite sense in the mouth and stomach are not normally in the state of maximum excitability, thus barring any further increase by bitter tonics, but the lower secretion at the evening meal seems to meet the objection. The condition is one in which less palatable food should have been rendered more palatable by contrast with the bitter tonic or actual increasing of excitability with the gustatory nerve, and the results indicate no improvement by contrast. Carlson does not think that the belief in the good results of bitter tonics is justified. The proper hygienic living usually prescribed simultaneously with their administration is too much ignored: and possibly a psychic value on account of the general belief in their efficacy is, according to Cushny, their main, if not their only, utility. In therapeutic doses they may be harmless, except in so far as their use contributes to the drug habit.

141. Treatment of Enteric Fever.

PISSAVY (*Journ. de méd. et de chir. pratiques*, February 10th, 1915) reports on the treatment of enteric fever among troops in the field by the continuous application of ice to the abdomen, a method due to de Massary, who cured 128 out of 140 cases by this means. Pissavy's treatment consisted in the application of bladders full of ice to the abdomen, giving plenty of beverages, and administering 1½ grams of urotropine in the twenty-four hours, and also ethereal camphorated oil and adrenalin as required. Of 189 cases between November 10th, 1914, and January 31st, 1915, 36 were treated in this way, with 3 deaths, while 153 were treated by the classical methods, with 26 deaths. Thus the ice method is decidedly superior to the packs and cold lotions. It must, however, be begun the moment the patient is admitted; it is of little use when the disease has made serious progress.

142. Visceral Gymnastics in Ptosis.

CARNOT (*Journ. des praticiens*, January 16th, 1915) emphasizes the importance of the part played by ptosis in the pathology of the digestive apparatus. The modification in the position of the abdominal viscera induced by gravity is more marked in individuals lacking in general and local tonicity. The position of the viscera, too, is modified considerably by the position of the body. Radiography has been of great value in ascertaining these facts. The stomach is normally fixed by a system of ligaments and at either extremity by the oesophagus and duodenum, the latter being the most fixed of all the viscera. The small intestine likewise tends to drop by its own weight, but this is not so important in the case of the small intestine, as mobility is one of its functions. The large intestine is less mobile than the small intestine, and any displacement in this case is less massive than in the case of the latter. The most fixed points of the large intestine are the colic angles, the left being rather higher than the right. When the right colic angle descends, if the left remains in place, the transverse colon is stretched between the two points like a garland, in the concavity of which the stomach rests as in a hammock. The laxity of the ligamentous attachments both at the iliac and sigmoid flexures, is also a contributory cause of ptosis, but these deviations are not so important. According to the author, the left lateral position is the best during gastric digestion, but defective from the point of view of evacuation of the stomach. It also increases the left colic angle and tends to retain matter in the colon, while the right lateral position assists its onward progress. In the right lateral position the pylorus is open and permits of the evacuation of the gastric contents. With these facts in view, static or orthopaedic gymnastics may be employed. The author recommends, with Glénard, the practice of assuming the position of the Mohammedan at prayer for ten minutes each day before retiring to rest as being of considerable benefit in these cases.

PATHOLOGY.

143. Cancer.

THE etiology of cancer in the light of recent cancer research is studied by H. R. GAYLORD (*Journ. Amer. Med. Assoc.*, March 20th, 1915). He says that perhaps the more important problems in cancer research centre in the so-called parasitic theory. Through the discoveries of filterable viruses, it may be assumed that this hypothesis is at last justified. The chief question is whether this theory is universally applicable. Investigators now generally recognize predispositions to cancer and agencies bringing about the cancerous conditions. They are of varied nature, and, so far as may be determined, may be summed up as chronic irritation. In exceptional cases even a single trauma may supply it, but in the high percentage of cases the local predisposing features may be definitely determined. There are also more constitutional factors, and experiments on mice and other animals have shown a definite constitutional susceptibility that, in the belief of many, is transmissible. It is not possible, however, that there is a single cancer parasite. There are probably many, each specific for one type of tissue, and a number of these have been determined experimentally in the lower animals. A malignant neoplasm may not always present all the characteristics included in the definitions. The power to form metastases may be lacking, and it may appear in the course of transplanting the neoplasms. The existence of an immunity to transplanted cancer has been established in mice by Gaylord and others, and the inoculation of tumours of an alien species into an animal has shown that the entire immune mechanism is not yet established in the early stages of development. One of the most effective normal tissues available in setting up resistance to implanted cancer is the spleen, which suggests it as the principal force of antibody formation. Attempts have been made to influence human cancer with cancer cells by vaccination, and this has been to some extent demonstrated. Cancer cells introduced into the blood in the early stages of the disease do not always produce metastases, and Goldman's view that the blood exerts an immunity is supported. The complement deviation and Abderhalden reactions show that the blood contains antibodies and antiferments, but these reactions are non-specific. Ether and chloroform anaesthesia seem to favour the growth of cancer, and every surgeon, Gaylord says, is having experience of finding cancer cases made worse by surgical interference. Something similar has been noted in the treatment of tumours by radiation. Finally, Gaylord mentions the inclusions in cancer, and says that specific inclusions are more or less characteristic of a considerable growth of infectious diseases caused by filterable viruses. There are thirty odd known filterable viruses, including three specific ones causing neoplasms, discovered by Rous. This widens the scope of cancer research, and it is possible that we may learn the true significance of inclusions in these diseases and in cancer, which is a question left for future investigation.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

144. Typhus Fever in War Time.

A. F. PLIQUE (*Journ. de méd. et de chir.*, January 10th, 1915) deals with the diagnosis, prophylaxis, and treatment of typhus fever. The mistake of diagnosing the first cases of typhus as somewhat abnormal cases of typhoid is almost inevitable in war time, except when the doctor has had special experience of typhus. Four principal signs, taken in conjunction rather than separately, should suggest typhus and enable a diagnosis to be made as early as possible. These signs are: (1) Abruptness of onset, (2) presence of a petechial rash, (3) absence of intestinal symptoms, (4) presence of cutaneous hyperaesthesia, as a rule very acute in typhus. But the patient is often not seen until the second or third day; he has almost always been worn out with fatigue and privations, and the abruptness of onset can no longer be traced; it is often, indeed, only when some member of the hospital staff suddenly sickens that the abruptness of onset is noticed and the diagnosis becomes evident. Again the petechial rash often appears late, often only on the seventh day, and the patients are almost always infected with pediculi, which give rise to a series of subsidiary eruptions. The absence of intestinal symptoms, when it exists, is very valuable, but in war time many soldiers attacked by typhus may already be suffering from enteritis, and, in addition, the state of stupor may lead to involuntary evacuations. A suspicion of typhus is, of course, greatly strengthened if the patient has been inoculated against typhoid in the preceding year. The principles of prophylaxis are clear, but their successful application is always difficult in war time, and may be impossible. The immunity of the troops up to the present is to be ascribed to the periods of rest, with the accompanying opportunities for cleansing, which follow each few days in the trenches, and above all to the presence of an adequate food supply. The conditions among the civil populations, especially in invaded territories, are much less favourable. The main point with regard to prophylactic treatment is the destruction of *Pediculi corporis, capitis* and *pubis*, with the minimum amount of handling of the clothes by the nurses and attendants. When two baths are available a good method is for the patient completely to undress in one empty bath and to leave everything he has worn to be treated in this bath by running in boiling soapy water. The patient is then quickly sponged with a solution of water 950 grams, neutral glycerine 50 grams, crystallized phenic acid 10 grams, special care being given to the back, neck, shoulders, arms, axillae, and chest. This is followed by a bath in warm soapy water taken in the second bath. If *Pediculi capitis* are present the head is shaved while the patient is still in the bath, and then rubbed with warm vinegar or camphorated alcohol. For *Pediculi pubis* wet mercurial compresses are applied as soon as the patient is in bed, and later, when the pediculi have been killed, the pubic hair is shaved. A careful watch against lice is kept for the few following days. The other methods of prophylaxis are analogous to those employed in other eruptive fevers, those useful in typhoid being useful in typhus. Chantemesse specially insists on the disinfection of the sputum and saliva. Treatment is purely symptomatic, special emphasis being laid on aëration. In very grave forms of the disease a last resource is furnished by Fochier's method of the production of an artificial abscess by injection, under the skin of the outer surface of the thigh, of 1 or 2 c.cm. of essence of terebenthine. In the Constantine epidemic in 1909 Mursty saw the mortality sink from 33 per cent. to 4 per cent. as a result of this treatment. After the evacuation of the abscess it is of the utmost importance, in this as in any of the cutaneous lesions, to carry out the most careful antiseptic treatment.

145. Paroxysmal Tachycardia.

NILES (*Amer. Journ. of Med. Sciences*, April, 1915) records a case of paroxysmal tachycardia, with observations upon treatment, occurring in a man, aged 37, and continuously under observation the last six years. Cardiac valvular disease was first noticed when the patient was 18 years old, following "strain" in rowing. There was no history of rheumatic or other infection likely to involve the heart, and he had always been very moderate in the use of alcohol and tobacco. First paroxysm followed "shooting the chutes" in 1905, with many repetitions during the next six years, the attacks varying in duration from a few minutes to twenty-eight hours, and averaging from four to six hours. The longest free interval was nine weeks, but sometimes there would be three or four recurrences in a day. Over-exertion or any toxaemia always caused an attack, but beyond these no specific cause could be discovered. A mild coryza was often accompanied by paroxysms, and intestinal stasis precipitated them, often preceded by urticaria. The attacks commenced with a sensation of fullness in the chest and throbbing of the heart, without dyspnoea except in the longer attacks, and after about an hour the patient would complain of "feeling sick all over"—pain in the head, back and limbs, and constant nausea, with frequent vomiting of considerable mucus. The attacks were always accompanied by some degree of icterus, and they ceased abruptly with a "bump" of the heart, the pulse immediately becoming slow and regular, and the patient feeling quite well. No premonitory signs occurred to indicate either the onset or ending of the attacks. One very severe attack in 1911 was accompanied by extreme cardiac dilatation, pulse-rate 140 to 180, with congestion of lungs and liver, and Cheyne Stokes respiration, rendering the patient *in extremis* and unresponsive to all the usual remedies; 0.5 mg. crystallin strophanthin was given intramuscularly, and repeated four times in twenty-four hours during the height of the attack and less often on succeeding days as symptoms indicated, until the attack suddenly terminated, leaving the heart irregular and showing the characteristics of auricular fibrillation, which has continued up to the present time without any recurrence of the tachycardia. Although the reserve accommodation force of the heart is slight, and there is some pulmonary congestion and ascites, the patient is far more comfortable than before and able to do more work. Digitalis has been constantly necessary, and he is most comfortable when the heart-rate is between 60 and 70. Two weeks after the onset of permanent auricular fibrillation, electrocardiograms were taken, which suggest that the case was one of auricular fibrillation, on the border line not far removed from cases of auricular flutter, in which are very rapid co-ordinated contractions of the auricles with a ventricle responding to every second or third auricular impulse. The case was one of paroxysmal tachycardia with the ventricular form of venous pulse, the attacks always ceasing in about an hour after the administration of strophanthin, transitory fibrillation of the auricle terminating the attack on several occasions. The paroxysms ceased altogether when permanent auricular fibrillation was induced under the combined effect of digitalis and strophanthin, which latter drug, in repeated doses if necessary, is recommended for prolonged attacks.

SURGERY.

146. Ether Applications for Infected Wounds.

SARLIGOUX (*Bull. et mém. de la Soc. de Chir. de Paris*, February 23rd, 1915) describes a case of comminuted compound fracture of the left leg, which is of interest because of the favourable effect of (1) the ether dressings, which were recommended by the author in an earlier communication as useful for infected wounds, and (2) the ambulatory splint of Delbet which was applied before the fracture had consolidated. The patient was wounded in August. The fracture was situated in the middle third of the leg; there was a large open wound and much comminution of the bone, fragments of bone presenting in the wound. Treatment was first directed to the wound. The wound and the surrounding parts were carefully cleaned and the ether dressing applied. Twice on the next day the dressing was opened up, but not removed, and ether in abundance was poured in, the impermeable outer covering being then replaced to close it afresh. On the next day the fracture was reduced as well as was possible; the wound was washed in ether and covered with compresses soaked in ether, and the leg put up in plaster; five weeks later the plaster was removed. The wound was now partially cicatrized, but a fragment of bone again presented

in it. This was removed. The leg was put up again in plaster. In December, after another three months, the wound had completely cicatrized, but the fracture had not consolidated. Delbet's ambulatory splint was now applied. Thanks to this the man can now walk well, and has regained the normal movements of the foot, and it is hoped that when the splint is removed the fracture will be found to have consolidated. The value of the ether dressings is shown by the fact that from first to last there was never any sign of infection and never the least rise of temperature.

147. Fracture of Clavicle.

MOORHEAD (*Amer. Journ. of Surgery*, March, 1915) advocates the treatment of certain fractures of the clavicle by the abduction method. While under present methods some deformity at the site of fracture is usual, and may be compatible with a functionally useful shoulder, there are cases where it is necessary to limit any deformity as much as possible—for example, in women, in men whose occupation necessitates carrying weights on the shoulder, and for whom a knob on the clavicle might prove disabling, and in certain comminuted badly displaced fractures associated with other injuries where it is inadvisable to adopt the usual treatment. The essentials of treatment of fractured clavicle are accomplished by abducting the arm to or beyond a right angle, and by further pulling back the abducted arm correction of overlapping is easily obtained. From the experience of the cases in which this method has been tried, it has been found most suitable where there is comminution or marked overlapping, or where deformity has to be specially guarded against from a social or occupational standpoint. To apply the treatment the patient is seated, stripped to the waist, on a stool, while an assistant standing behind elevates both arms to a right angle, or beyond, by grasping the elbows previously bent to a right angle. The elbows are then pulled further backward until overlapping or malalignment is corrected, the shoulder being still further elevated if necessary, and this abduction and retraction of the should be sufficient to over-correct if possible the original deformity. With the parts held in this position a flannel bandage is applied from the wrist to the shoulder, which is then bandaged spica fashion, leaving the sound arm entirely unbandaged. With pads of cotton wool in the axilla and over the prominences of the elbow the arm is retained in position by plaster-of-Paris bandages, which may be reinforced with strips of basswood or aluminium to maintain the bend of the elbow and the elevation of the arm. Instead of being seated, the same manipulation may be carried out by allowing the patient to rest the head on one table and the remainder of the body from the waist down on another, thus leaving the shoulders and upper chest free. If desired, the portion of the plaster spica over the fracture may be cut away to permit inspection. The case remains in position for three weeks, a sling being used for a week longer, and any joint stiffness treated in the usual way. The treatment is not unduly irksome to the patient, and though it may appear too elaborate a treatment for the ordinary fracture it has a definite value in a selected type of case, and is applicable in those cases in which plating or suturing might be advisable.

148. Nervous Retention of Urine.

J. COHN (*Berl. klin. Woch.*, March 1st, 1915) considers that nervous retention of urine is more rare than was formerly supposed. Many cases of retention were at one time traced to neurasthenia or hysteria, for want of scientific methods of diagnosis. To illustrate this point he records the case of a man, aged 28, who had never contracted gonorrhoea. He had been unable to micturate for eighteen hours, and was in considerable pain. A Nélaton's catheter could not be introduced into the bladder, but a silk catheter, No. 20, was successfully passed, and clear urine, containing no albumin, was withdrawn. An examination of the nervous system was negative, and the cystoscope showed nothing amiss, but a Goldschmidt's irrigation urethroscope showed marked enlargement of the colliculus seminalis. Adrenalin was applied to the posterior urethra, and after six days the patient could again micturate normally. The swelling of the colliculus, which was found to have subsided, arose presumably from masturbation. The author admits, however, that functional nervous retention of urine occurs in the male as well as in the female. He finds the diagnosis of nervous retention is aided by the estimation of the intravesical pressure by a water manometer. When the retention is due to organic obstruction, the intravesical pressure is above normal, but when there is no mechanical obstruction to account for the retention of urine, the intravesical pressure is much below normal. In such a case of complete retention of urine, following a bilateral operation for hernia and hydrocele, the manometer showed hardly any change in pressure after 300 grams of a boracic solution had been introduced into the bladder. The pressure rose to 5 cm. when 660 grams were introduced, to 10 cm. when 900 grams were introduced, and to 25 cm. when 1,300 grams were introduced, and violent strangury was provoked. In a case of stricture, on the other hand, the pressure rose to 45 cm. when 60 grams were introduced, and to 50 cm. when 125 grams were introduced. The author records three cases of nervous retention of urine in the male, characterized by great development of trabeculae in the bladder, exaggerated patellar reflexes, and an abnormally low intravesical pressure. He cannot explain how the bladder in these cases showing no organic obstruction to the escape of urine came to be hypertrophied. Nor is the apparent paradox of an hypertrophied bladder and the absence of organic obstruction yet understood. The author does not agree with Thomson Walker in distinguishing between the trabecular bladder of nervous disorders and that of organic obstruction.

149. Laparotomy and Suture of Five Intestinal Perforations.

R. BAUDET (*Bull. et mém. de la Soc. de Chir. de Paris*, February 9th, 1915) contributes an article based on the accounts of 4 cases of penetrating wounds of the abdomen treated by laparotomy by Dupont and Kendirdjy. The latter surgeons some weeks ago contributed to the journal notes on 40 cases of penetrating wounds of the abdomen treated expectantly without surgical intervention. The results were disastrous, the mortality being 100 per cent. These results decided Drs. Dupont and Kendirdjy to practise, when it was possible, laparotomy with suture of perforations or ligature of bleeding vessels as in civil practice. A good sized room is needed, warmed, well lighted, and with walls and floor covered with sheets. Gloves and instruments are boiled, dressings sterilized in an autoclave. Four cases are described. The one of greatest interest is one in which five perforations were sutured and recovery followed. This case presented several favourable features: (1) The bullet was partially spent—after traversing the abdomen from behind forwards, to the left of the middle line, it came to rest under the skin of the abdominal wall. (2) The patient was brought quickly to the ambulance station, and the operation took place only six hours after the wound had been inflicted. (3) The lesion was localized in the small intestine and consisted of 5 relatively small perforations which could each be closed by means of two sutures or of a single purse-string suture, without too great a diminution in the calibre of the intestine. The operation performed was a high umbilico-xiphoid laparotomy. No faecal matter had escaped into the peritoneal cavity. All five perforations were situated in the upper third of the small intestine, and this part of the intestine came into view at once on opening the abdomen looking congested and slightly dilated. A rapid examination was made of the whole intestinal tract in order to ensure that no other perforation had been overlooked. After the abdominal wound had been closed a small opening was made two fingerbreadths above the pubes, and a drain inserted into Douglas's pouch. For several days aspiration was carried out regularly, through the suprapubic drain. Seven days after the operation feeding by the mouth was begun. On the eleventh day castor oil was administered, and two natural motions followed. The patient made a complete recovery. The other three cases described in the article all ended fatally. In one of them the point of entrance of the bullet was on the left side, in the posterior axillary line at the level of the ninth space, and that of exit was in the sixth space, 10 cm. (3.9 in.) from the middle line. Operation was postponed in view of the absence of peritoneal symptoms and the possibility of a thoracic lesion. The authors are definitely of opinion that this postponement was a mistake, and that the favourable moment for operation was allowed to pass by. Laparotomy was performed nineteen hours after the infliction of the wound. A perforation was found in the anterior wall of the stomach, and this was sutured in two layers. Although it was certain that this was the point of exit, and that the point of entry must be in the posterior wall, no further perforation could be found. The patient died nineteen hours after the operation. The autopsy showed the presence of a linear wound of the spleen near its anterior pole, a wound through the left lobe of the liver and one of the posterior wall of the

stomach only marked by an ecchymotic discoloration. Bordet suggests that a method which he has employed in operating for extirpation of the spleen would have been useful on this occasion. In this method the seventh costal cartilage is divided near to the sternum, and the eighth and ninth ribs in the mammary line. A movable thoracic shutter is thus obtained which can be lifted to give a view of the spleen, the left lobe of the liver, and the upper part of the stomach. Bordet has previously successfully used this method in the case of a woman accidentally shot through in left breast, and he was thereby enabled to see a wound of the stomach near the cardiac end, and to suture both this wound and the wound in the diaphragm. The successful case described at the beginning of the article suggests that it might be advantageous, when armies are fairly stationary, to set up a special fixed ambulance station where such operation could be undertaken.

OBSTETRICS.

150. Painless Childbirth: "Tocanalgine."

HELLMAN of New York (*Amer. Journ. Obstet.*, February, 1915) was struck by the recent results obtained by Ribemont-Dessaignes, who used *tocanalgine obstétrique* in 112 labours. Paulin obtained it by the action of living ferments resembling beer-leavening or chlorhydrate of morphine. Toxic doses are only reached when 2 or 3 cg. are injected for each kilogram of body weight. and are indicated by passage of blood and mucus with loose motions. Symptoms like drunkenness set in later. The dose is given hypodermically—1.5 c.cm. for the first dose and 0.5 c.cm. for succeeding doses. The analgesia lasts from thirty minutes to twelve hours. Ribemont-Dessaignes employed forceps, sutured the perineum, and turned in several cases, no anaesthetic besides the drug in question being used. Hellman tried tocanalgine in two cases. The first patient had no headache during the administration of the drug, no nausea, thirst, or pricking sensations. She remembered nothing of her labour. In the second case results were similar, but the third patient suffered because a sufficient amount of the drug was not at hand, the promised shipment from France having been prevented from arriving in New York.

GYNAECOLOGY.

151. Malignant Ovarian Tumours in Childhood.

F. H. SMITH AND COLEMAN MOTLEY (*Surgery, Gynaecology, and Obstetrics*, April, 1915) performed double ovariotomy for bilateral tumour of the ovaries in a child aged 3. The tumours were detected during an examination of the patient for recurrent attacks of abdominal pain, nausea, and vomiting, which had lasted for a month; they could be defined as freely movable, solid, doughy masses, sausage-shaped, and quite distinct. The right tumour was covered with dense omental adhesions and coils of intestine looped around the adhesions. Thus the symptoms of obstruction were accounted for, and there was no torsion of either pedicle. A long tube-like structure adhered to the upper pole of the right tumour. The left was free from adhesions. Louis B. Wilson, of the Mayo Clinic, reported that the tumours were embryomata; that recurrence would take place, and that the recurrent tumour would be a sarcoma. The operation was performed in October, 1912. In March, 1913, a mass was detected in the region of the umbilicus, when the child was examined after a fall. There were several other tumours scattered over the abdomen. Death occurred in May, 1913. No necropsy was permitted. The authors tabulate forty-seven previously recorded cases of ovarian tumours in children, but patients up to seventeen are included; teratoma is common in young girls, and authors confound "teratoma" and "embryoma" with "dermoid." Smith and Motley's tables include one case of bilateral sarcoma in a fetus of the seventh month (Doran, *Trans. Path. Soc.*, vol. xl, 1889); one of carcinoma in an infant about 9 months of age (Brown u. Berent, *Ueber maligne Ovarialgeschwülste bei Kindern*, Dissert., Berlin, 1901); one of sarcoma in an infant, aged 1 year (Lesage and Girault, *Arch. de méd. d'enf.*, vol. xvi); one of cystic adenoma in a child aged $2\frac{3}{4}$ years (Walther, Dissert., Leipzig, 1911); and one of sarcoma in a girl aged 3 (Savoriaud, *Bull. et mém. de la Soc. de Chir. de Paris*, vol. xxxvii), to which the author's case must be added. Gaudier detected a hypernephroma in a girl aged 4; Jochmann reported a case of sarcoma in a child of the same age; and Rosanoff has published an instance of medullary carcinoma in a patient aged 5. Older cases, especially children with embryomata, are much better known.

THERAPEUTICS.

152. Vaccines in Typhoid Fever.

KRUMBHAAR AND RICHARDSON (*Amer. Journ. of Med. Sciences*, March, 1915) report distinctly favourable results from observations, extending over three years, of a large number of typhoid cases in the Pennsylvania Hospital treated by typhoid vaccines. During 1913 the vaccine used was prepared after Wright's method with 1,000,000,000 organisms to each c.cm. and 0.3 per cent. lysol added, previously vaccinated and unvaccinated cases being treated alike. Practical proof of the value of the treatment is afforded by the fact that a rise in agglutinin curves follows such vaccination. Beyond a transitory rise of temperature there is rarely any appreciable aggravation of symptoms, and relapses and complications are diminished in frequency, the treatment being found to be clinically harmless and usually beneficial. To produce the best results the injections should be begun early in the disease, especially before the tenth day, and a blood culture is more valuable than the Widal test in the early stages. Later in the course of the disease vaccines are of doubtful value, but good results have followed their use in certain chronic complications—such as periostitis and cholecystitis. Their use is contraindicated in moribund or very toxic cases, during haemorrhages or suspected perforations, or in the presence of such complications as pneumonia or otitis, where other micro-organisms are involved. The dosage must vary within certain limits for each patient, and the more severe the disease the smaller and more cautious it should be; and with this proviso the authors consider the best initial dose for the average adult should be 500,000,000, two or more larger doses being given at three day intervals if this proved to be the proper amount.

153. Treatment of "Psychasthenia."

THE term "psychasthenia" is used by DUHAIN (*Arch. d'électr. méd.*, June 10th) to describe the state of mental exhaustion which may manifest itself by obsessions or phobias, tics, or professional neuroses, etc. Whether the manifestation be psychical, motor, or vasomotor, the intensity of the trouble is always in proportion to the importance attached to it in the mind of the patient, and therefore purely symptomatic therapeutics are to be avoided, because they have the direct effect of fixing the attention of the patient more closely upon the disquieting phenomena. Search must be made backwards for the cause of the condition. A remote cause frequently is education, meaning by this all the influences which act upon physical and psychical development during childhood. Psychasthenic manifestations have a tendency to appear in a person who has been an only child, and, perhaps, on a suspicion of cleverness, has been flattered and intellectually forced. They are also frequent among those who have been brought up by their grandparents, or whose early years have been spent in convents. Predisposing causes which often come into action at the time of puberty are migraine, constipation, cholaemia, and glandular troubles, while the proximal causes may be overwork, emotional shock, or a traumatism. In the treatment of these cases, especially cases of obsession or fixed ideas, the author insists upon the value of forms of exercise which involve an element of sport, with spontaneous and pleasurable movement, in preference to scientific and rational gymnastics, which are less of a mental distraction. The nature of the exercise does not signify; with one patient it may be dancing, with another the bicycle, with a third golf. The effectiveness of physical exercise when carried up to a point of fatigue in dispelling a fixed idea may appear surprising, but it is explicable to some extent. The exercise produces, in the first place, a modification of the "soil," improving the circulation and internal combustion, but it does more than this. It is axiomatic that there should always exist an equilibrium between physical and intellectual activity. The organism appears to have at its disposal only a certain amount of nervous influx, and hence physical exercise may involve intellectual fatigue. That is the reason why, in an army on the march, the officers, military and medical, and all who will have occasion to use their intellectual

capacity, are mounted. An illustration of the reverse principle occurs in the extraordinary resistance of children, who for a long time can maintain a determined position, or repeat the same movement, as against the extreme fatigability of the psychasthenic, whose brain is continually under pressure. The author asks whether it is not possible that, in attracting this hypothetical nervous influx to the neglected side of physical activity, a relaxation is brought about on the mental side, thus breaking up the fixation of an idea.

151. The Treatment of Haemoptysis.

OF late the treatment of haemoptysis has become less empirical, according to A. PAWELETZ (*Die Therapie der Gegenwart*, December, 1914), and more rational. The so-called haemostatics—secale and its derivatives—are useless. Even if they were given in large enough doses to affect their circulation, they would be detrimental, as they would raise the blood pressure, and thus favour the further escape of blood. Narcotics, particularly morphine, are dangerous, for, during the sleep they induce, another haemorrhage may occur, and the blood may collect in the lungs instead of being coughed up. Aspiration pneumonia or a rapid spread of the disease may follow. Narcotics are, however, sometimes indispensable for restless patients, for whom codein, dionin, or heroin should be prescribed instead of morphine. But this may, however, be given in minute doses for small haemorrhages. The only method which effects local contraction of blood vessels in the lungs is the application of an icebag over the bleeding point. There are, on the other hand, many ways of lowering the blood pressure in the bleeding vessel. Formerly this object was effected by venesection. A safer and easier method is the application of a rubber band or cloth round both thighs close to the trunk, the pressure thus exerted being great enough to check the venous but not the arterial circulation in the legs. In this manner they become distended with blood. The withdrawal of such a large quantity of blood from the general circulation lowers the blood pressure at the bleeding point and favours thrombosis. Great care should be taken to release the blood slowly from the congested limbs, lest the blood pressure be raised again too suddenly. Amyl nitrite has been supposed, when inhaled, to lower the blood pressure in the lungs, but Frey has found it useless. The intravenous injection of a 10 per cent. solution of sodium chloride at body temperature is very effective, and if this strength proves ineffective a 15 per cent. solution may be substituted. This treatment is quite harmless, and Müller has recorded 50 cases thus treated. The injection should be given as early as possible, and can be repeated three times a day as a precautionary measure. This treatment may be supplemented by a tablespoonful of salt in a little water given by the mouth several times a day. The action of gelatine, serum, and organic extracts injected into the body is not fully understood. But injections of gelatine cause pain, fever, and headache, and should therefore be only employed as a last resort. Even in large doses gelatine, given by the mouth, has little or no effect on the circulation.

155. Fatal Anthelminitic Treatment in a Case of Addison's Disease.

TO illustrate the danger of prescribing filix mas with castor oil, F. SCHOTTEN (*Muench. med. Woch.*, November 3rd, 1914) records the case of a married woman, aged 27, who suffered from Addison's disease. Thinking that she harboured worms, she applied to her doctor for suitable medicine, and was given 15 capsules, 8 of which were dark and 7 light. In the evening she took 5 light capsules, and early next morning 8 dark capsules. In the afternoon of the same day she took the 2 remaining light capsules. In the evening of this day she developed lassitude, vomiting, diarrhoea, but no pain. Early next morning she was speechless and convulsed, and when admitted to hospital in the evening she was unconscious. There was no fever or profuse sweating. The limbs were cold, the jaw was clenched and the pulse was 90. There seemed little amiss with the lungs, heart or abdomen, but the urine contained much albumin, acetone, and aceto-acetic ether. There was no glycosuria. An enema yielded brownish-yellow motions, but no worms. There was no paralysis nor loss of reflexes. In spite of varied treatment, the patient died two days and a half after taking the first capsule. The necropsy showed punctiform haemorrhages on the surface of the heart and large blood vessels, and in the pia mater and the mucous membrane of the stomach and intestine. The large intestine and the lower section of the small intestine contained blood-stained mucus. The suprarenals were twice the normal size and were completely caseous. A hyperplastic accessory suprarenal body was found with no sign of tuberculosis. Though the Addison's disease was probably responsible to a certain extent for this catastrophe, it was undoubtedly precipitated by the injudicious combination of filix mas with castor oil. This combination has been fatal in several cases, and there is clinical and experimental evidence to prove that a toxic constituent of filix mas is rendered soluble in castor oil and is, accordingly, absorbed through the digestive tract. This is also the case with other oils, though possibly not to the same extent. As it is advisable to give an aperient to expel intestinal parasites stupefied by filix mas, the practitioner should use such drug as calomel in preference to oils. As the active principle of filix mas may also be soluble in alkalis, these should also be withheld during a course of anthelmintic treatment.

PATHOLOGY.

156. Wassermann Reaction.

T. H. WEISENBURG (*Journ. Amer. Med. Assoc.*, March 20th, 1915) says it seems to him that practitioners have placed too much dependence on the Wassermann reaction and neglected too much the clinical diagnosis. He has come to the conclusion that the percentage of errors in the diagnosis of the specific diseases of the nervous system was no greater in the pre-Wassermann days than at the present time, as many mistakes are made by depending too much on the serum test. The clinician should regard the Wassermann test as a symptom aiding the diagnosis, not as its principal factor. Serology should be the main work of any one who takes it up; with the various reagents and technics used by different individuals, it is not at all infrequent to have different reports on the same specimen, and uniform results can be obtained only when we have uniform technic and reagents. The clinical symptoms should be the first and last word in the diagnosis. The Wassermann reaction is absent in both the cerebro-spinal serum and the blood in certain types of syphilis of the nervous system, and it would be well if we could have a definite statement as to the types of nervous involvement in which this is the case, if such were possible. It must be acknowledged that a specific infection may be incurred in the absence of a chancre or so-called secondary symptoms. Again, syphilis may appear in the guise of a Neisserian infection. These facts are important, for it is such cases that are later followed by tabes and paresis. As regards syphilitic diseases of the nervous system, in all cases the cause is the *Treponema pallidum*, and there is no real difference between the syphilitic and the so-called parasyphilitic disorders. When once degeneration of the nerve cells and their fibres has occurred, treatment fails to mend matters. The theory that there is a special *Treponema* for nervous syphilis must be abandoned. Sometimes the nervous system may be the line of least resistance. No one knows the percentage of general syphilis which is to be followed by nervous lesions. It is important to discover the primary infection, which may be overlooked. To any one like himself, says Weisenburg, who has examined many sections of the brain and cord, the fact has been established that the clinical symptoms are hardly ever in accord with the pathological findings. They indicate only the site, but not the nature and extent of the lesions. He recognizes a distinction between paresis and brain syphilis, but admits that the clinical differentiation is sometimes difficult. A weak positive Wassermann taken first could not be accepted as conclusive. Other tests should be made, preferably by a number of serologists, and the cerebro-spinal fluid thoroughly examined. One of the important points between paresis and brain syphilis is that treatment will never cause an eradication of the Wassermann in the cerebro-spinal fluid, whereas in plain syphilis this can be done. The laboratory findings are specially important in persons about 50 years of age with indefinite symptoms of cerebral arterio-sclerosis. As regards treatment, Weisenburg says the Swift-Ellis method should never be employed in a patient with spinal cell count small and the Wassermann faintly positive or negative, though salvarsan may be given intravenously and carefully watched. In the cerebral arterial cases mentioned, in which there is sometimes a history of syphilis, and in which the serologic findings are sometimes negative, he finds mercurial treatment better than salvarsan. In early syphilis, however, intensive salvarsan treatment is advised.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

157. Angina Pectoris.

H. VAQUEZ (*Archives des maladies du coeur, des vaisscaux, et du sang*, March–April, 1915) discusses the symptoms, pathology, causation, and diagnosis of angina pectoris. Clinically he divides the cases into the two groups of the angina of effort and the angina of decubitus, but in the later stages of either form of the disease the distinction becomes less clearly marked, and either form may rapidly be followed by the other. The complications of the disease belong to either form, although as a rule pulmonary oedema is more particularly associated with the angina of decubitus. Certain atypical forms are met with, and one form to which the name of "abdominal" or "epigastric" angina has been given, frequently results in errors of diagnosis. In determining what organic lesions may be present, very great importance attaches to the results of radioscopic examination. As a rule, in the angina of effort, aortitis is present. The qualitative changes shown by radioscopy are diminution of transparency of the walls of the aorta, which on the screen look either uniformly dark or sown with scattered dark patches. Very often there is more or less complete immobility of the vascular contours, indicating loss of elasticity in the vessel walls. Radioscopy may also reveal modifications in volume whose detection has escaped ordinary methods of observation. One change of much significance in the diagnosis of the epigastralgic form of the disease is enlargement of the aortic arch, or rather of the cord subtending the arch, and this change, when it is present, is always accompanied by vascular changes affecting especially the descending branch. In some cases in which even radioscopy fails to show any organic lesion during life, marked changes in the aorta may be found *post mortem*. The aortitis in the angina of effort is most often localized to the suprasigmoid region, to the origin of the great vessels and the coronary arteries, whose openings are very frequently narrowed. But the essential fact underlying the anginal attacks is, in the author's opinion, the aortitis and not the affection of the coronary arteries. In the angina of decubitus, although atheroma of the aorta may exist accompanied by dilatation of the vessel and narrowing or insufficiency of the aortic valves, yet the most striking feature is the change in the volume of the heart, more especially of the left heart. The coexistence of aortic lesions and of left ventricular hypertrophy and sclerous nephritis explains the fact that the clinical types of the disease are not always distinct. The pain in the angina of effort is explained as being due to sudden distension at its origin of an aorta whose walls are, as a rule, more or less infiltrated by inflammatory foci extending towards the outer coat, and thus involving the nerves contained in it. Where chronic aortitis is present, the obstinacy of the pain depends on the accompanying peri-aortitis. The pain of the angina of decubitus is explained in a manner similar to that of the other form, except that here it is sudden distension of the left ventricle which determines the attack. In considering the method of causation of the pain, the author ascribes a considerable rôle to the depressor nerve of Cyon, which has been shown to be a sensory nerve, and whose ramifications are located in the region of origin of the great vessels at the base of the heart. The pain which originates at the heart or the aorta is conducted first to the cardiac plexus, and its initial seat is in the corresponding region—that is, the retrosternal region. The paths by which the stimuli reach the central nervous system and the resulting distribution of the radiating pains are followed out in the article. With regard to causes of angina pectoris, heredity is undoubtedly an important factor. Syphilis is often, though not invariably, a cause of the angina of effort. Alcoholism appears to have at most an indirect effect, while it is very doubtful whether excessive use of tobacco has even an indirect action. In the author's opinion, the symptoms of the angina of effort are, as a rule, so characteristic that the disease ought not to be mistaken for any other, and the term "false angina" should only be used to relieve the anxieties of nervous patients; at the same time, methodical examination by auscultation and radioscopy must be carried out in every case. Diminution of the pains after a series of typical anginal attacks does not invalidate the diagnosis, and may be merely the result of precautionary measures. In cases where the angina of effort has altered its type as the disease progressed, the history of the first few attacks makes the diagnosis clear. The diagnosis of angina from various forms of neuralgia is considered, and also from a fixed paroxysmal pain, made worse by pressure and due to small areas of cellulitis in the precordial region. The pain of angina may be closely simulated by that of extra-systoles with arrhythmia, but there is no necessary connexion with effort. The heart and vessels are probably absolutely sound, and the extra-systoles can frequently be perceived. The diagnosis of angina of decubitus is, as a rule, comparatively an easy matter.

158. Fatal Poisoning with Benzene Vapour.

A. HEFFTER (*Deut. med. Woch.*, February 11th, 1915) records the following case, on which he had to give his opinion as a medico-legal expert. A workman went down one morning into a cellar containing large quantities of raw benzene, some of which had escaped. While working with the taps controlling the escape of the benzene he was drenched with the fluid, and, feeling unwell, he and two other workmen escaped into the fresh air. He returned to the cellar and worked for about half an hour, after which he came out again, and at once collapsed. Though artificial respiration was practised and oxygen was given, he died in three and a half hours. At the necropsy the blood in the veins was found to be dark and fluid. The brain and the thoracic organs did not smell of benzene, and an examination of the urine and blood for benzene and sulphocarbolates was negative. The mucosa of the stomach and small intestine showed numerous haemorrhages, and blood-stained mucus was found in the small intestine. The ventricles of the heart were empty, while the auricles contained much dark red blood. The kidneys and spleen were congested. According to one opinion, death was due to benzene vapour; but according to another, this view was incorrect, because the blood was dark instead of bright red; because the organs did not smell of benzene; and because the chemical examination of the blood and urine was negative. Death was, therefore, according to this second opinion, due simply to heart failure. The matter was accordingly referred to the author, whose decision that death was really due to poisoning by benzene vapour was based on the following considerations: In the cases already recorded, in which death was undeniably due to benzene poisoning, the blood was dark and fluid after death, and the lungs, pancreas, and the lining of the stomach and intestine showed small haemorrhages. The thoracic organs did not smell of benzene, and the chemical analysis failed to demonstrate benzene in any part of the body. When the benzene vapour had been concentrated, death had in many cases rapidly followed the loss of consciousness. In the present case the history of the accident and the necropsy tallied in the most essential features with a typical case of benzene poisoning. As for the opinion that death was due to heart failure unconnected with benzene poisoning, it should be borne in mind that the patient had led an active life for several years before the accident, and had never shown any sign of heart disease.

159. Tetanus and Cerebro-spinal Meningitis.

A. F. PLIQUE (*Journ. de méd. et de chir.*, January 25th, 1915) deals with the differential diagnosis between tetanus and cerebro-spinal meningitis—diseases which have many symptoms in common. He finds that (1) if the possibility of confusion between the two diseases be kept in mind, a thorough clinical examination, even without the use of laboratory methods, will almost always make the diagnosis clear, and (2) that even in doubtful cases it is possible to follow a line of treatment which shall be useful in either disease, or at least shall not be harmful in either. Amongst the symptoms common to the two diseases are muscular spasm, either generalized or partial, great hyperaesthesia of the skin, and fever. The presence or absence of a perceptible wound is clearly not decisive as to the presence or absence of tetanus. Each disease has, however, distinguishing symptoms. Symptoms which are frequently met with in meningitis are: Intense cerebral symptoms at the outset, disturbances of the special senses, tenderness of the eyeballs to pressure, eruptions appearing early which may simulate the rash of measles, scarlet fever,

purpura, or urticaria; herpes round the nose and mouth, and fairly severe naso-pharyngeal catarrh. The most important symptom, however, is the presence of Kernig's sign. In tetanus convulsive spasms and contractions are more extensive and more violent; intermittent spasm of the vesical sphincter is fairly common from the outset, laryngeal spasm may lead to attacks of dyspnoea and convulsive cough. Pressure on the flexor tendons will fairly often evoke a sharp clonic contraction. The variable paroxysmal strabismus due to spasm is easily distinguishable from the strabismus of meningitis, and it is often accompanied by contraction of the orbicularis palpebralis, causing partial or complete closing of one or of both eyes. The temperature in tetanus is more irregular than in meningitis, and corresponds with the intensity of the muscular contractions. The pulse-rate corresponds with the temperature, and is not slow, as it often is in meningitis. Apart from symptoms there remains the isolation by culture method of the meningococcus from the naso-pharyngeal mucus and the blood. Culture methods or the precipito reaction of Vincent after lumbar puncture give even more precise results. The fluid withdrawn may indicate meningeal inflammation on inspection alone, as when it appears turbid or even puriform, emerges under pressure, viscous sedimentation is present and albumin in large quantities. As regards prophylaxis and treatment in doubtful cases, strict isolation is useful in either disease. Exposure to cold is disastrous in tetanus, and is harmful in meningitis from the point of view of mucous membrane complications. Long journeys are equally bad in either disease. With regard to serum treatment of meningitis, we are, in doubtful cases, between the two dangers—(1) that of aggravating tetanus by puncture and intraspinal injections, and (2) failing to give the benefit of serum treatment in meningitis. The latter danger is by far the most serious, and where cerebro-spinal meningitis is suspected serum treatment should always be given, the injection being made with the patient either under chloroform or under the influence of chloral and morphine.

SURGERY.

160. Ether Oil Colonic Anaesthesia.

LUMBARD (*Surgery, Gynaecology, and Obstetrics*, May, 1915), strongly advocates Gwathmey's method of administering ether oil per rectum for general anaesthesia when the operation is performed in any part of the head or neck. Lumbard's technique differs from Gwathmey's in three respects: (1) Lumbard does not use oil for a cathartic before giving the anaesthetic, but compound liquorice powder. Soapsuds must not be employed, as the soap forms an emulsion which retards the action of the anaesthetic. (2) Lumbard uses no preliminary bowel medication. (3) He takes care that the ether and oil are thoroughly mixed by shaking them in a bottle for a minute before injection. The mixture is usually three parts of ether and one of olive oil by measure. One fluid ounce should be allowed to every twenty pounds of the body weight, and the dose should never exceed eight ounces. A hypodermic injection of morphine and atropine should be given half an hour before the solution is administered. A small, well-oiled soft rubber catheter, with a funnel, is introduced for three inches into the rectum. The solution, well shaken, is introduced very slowly, and the catheter withdrawn; pressure is then applied to the anus until surgical anaesthesia supervenes. Lumbard adds notes on certain precautions. Ether oil anaesthesia can be induced without the patient's knowledge—a great advantage in operations on nervous and insane persons and on subjects with exophthalmic goitre. There is no free mucous secretion, so troublesome in bronchoscopy, no mask or inhaler is needed, there is less haemorrhage in head operations, less nausea and vomiting, no post-anaesthetic excitement, and the apparatus can be carried in the surgeon's waistcoat pocket. Lumbard tabulates 36 cases in his own practice. Ten were thyroidectomies. The average pulse-rate was 87 per minute, the average respiration a little over 21. A patient who underwent thyroidectomy, and another who was subjected to a radical mastoid operation, had both been under anaesthesia by inhalation, and declared their preference for the rectal method. The rectum must be emptied during the last part of the operation, and after the patient has been returned to bed it must be irrigated with tepid water and three ounces of olive oil introduced to be retained.

161. Removal of Cicatricial Tissue Ensheathing Nerves.

LUCIEN PICQUÉ (*Bull. et mém. de la Soc. de Chir. de Paris*, February 17th) has twice presented a case of lesion of the median and ulnar nerves, the result of a wound, once before operation and again a month after it. Before operation the hand was hanging in a position of supination, and flexion or opening out of the fingers was impossible. There was complete anaesthesia of the palmar surface of the hand and fingers, and of that portion of the dorsal surface supplied by the ulnar. A long incision was made from high up the arm downwards to the bend of the elbow, in order to pass the limits of the cicatricial tissue. The median nerve was exposed at the level of the bend of the elbow. The nerve was followed upwards and freed from cicatricial tissue. About a fingerbreadth above the bend of the elbow the nerve presented an olive-shaped enlargement about 2 cm. (0.78 in.) in length, and 1 cm. (0.39 in.) in thickness. This enlargement consisted of a hard central fibrous core and a periphery, whose aspect and consistency were those of normal nerve tissue. The ulnar nerve was exposed at the upper part of the incision, and was followed downwards and separated from cicatricial tissue. It also presented an olive-shaped enlargement similar to that of the median nerve, and almost as large, but situated two fingerbreadths above the former. Both these enlargements were completely freed from the cicatricial tissue which ensheathed them, but the fibrous cores were not enucleated. On the day after the operation the patient felt a tingling in the fingers. He began to flex the fingers on the fourth day. A month after the operation all the movements originally lost were partially restored. The hand could still not be completely closed, but the fingers had become agile, and the flexion sufficient to enable the patient to use the hand and carry a glass to his mouth with it. Sensation was still very incomplete, but it was returning from above downwards; the hand and the first phalanges were already almost normal, the second and third phalanges still insensitive.

162. The "Positive Diagnosis" of Duodenal Ulcer.

A. E. BARCLAY, writing with regard to the claims of some radiographers to speak of the "positive diagnosis" of duodenal ulcer, states his belief (*Arch. Roentgen Ray*, January, 1915) that formation of a duodenal ulcer is a more or less accidental sequel to a state of duodenal irritation, and that this state of duodenal irritation is itself a secondary manifestation. The symptoms ascribed to duodenal ulcer, and usually cured by operation, are the result, in his opinion, of this state of irritation, and not of the ulcer itself. Thus there may occur a "clinical duodenal ulcer," without any definite and constant deformity of the shadows in the duodenum on which this positive or negative diagnosis is based. Furthermore, the tendency of duodenal ulcers towards recurrence and healing postulates the formation of an ever-increasing scar, and this scar may produce just those deformities and pits on which the so-called positive diagnosis of ulceration depends. It is rather the effects of ulceration which are demonstrated by this radiographic method, and no clue is furnished as to whether the deformity is or is not of pathological significance. The author's point is that it is not the detection of the ulcer which matters, but, given a condition which may lead to ulcer, such as duodenal irritation, it would be well to direct attention to seeking and removing the causes of the condition. He ventures the opinion that some day the operation of gastro-jejunostomy for this trouble will be a confession of weakness, for it will indicate failure to find and remove the cause of the recurring attacks.

OBSTETRICS.

163. Extragenital Pneumococcal Infection of the Peritoneum in the Puerperium.

E. WETZEL (*Muench. med. Woch.*, January 26th, 1915) points out that while pneumococcal infection of the peritoneum through the uterus and its appendages after labour is not rare, peritonitis occurring as a sequel to a pneumococcal infection of the lungs during the puerperium, as in the following case, is very uncommon. The patient was a 4-para, aged 31, who was admitted to a maternity hospital on June 1st. Over the bases of both lungs dullness, bronchial respiration, and râles were audible. The pulse was rapid and the abdomen was diffusely distended and everywhere tympanitic. On June 2nd labour began and lasted from six to seven hours. The placenta was expelled half an hour after the completion of labour, only a moderate

amount of blood being lost. No great injury was inflicted during labour, but the temperature was 38.4° C. and the pulse 104. On June 3rd the abdomen was distended and there was retention of flatus. Dullness was now demonstrable in the most dependent parts of the abdomen. On June 4th laparotomy was performed under local anaesthesia and a fibrinous exudate was found on the coils of intestine, between which was a little yellow viscid pus. The patient rallied after the operation, but died next day. The infant at first appeared perfectly well, but on June 4th dyspnoea and severe jaundice developed, and death occurred next day. The necropsy on the mother showed cloudy fluid in both pleural cavities, pneumonic infiltration of the bases of both lungs, and muco-pus in the bronchi. In spite of the diffuse peritonitis, the uterus, tubes, and ovaries were perfectly healthy. Only the *Diplococcus pneumoniae* could be found in the peritoneal and pleural cavities, whereas the muscular and serous layers of the uterus were perfectly sterile. Numerous diplococci were, however, demonstrable in the endometrium. The necropsy on the infant showed bilateral pneumonia of the lower lobes, in which Gram-positive diplococci were found. The infant's death must, therefore, be traced to diplococcal septicaemia. It was clear that the mother's peritonitis was not caused by infection of the reproductive organs, but by extension of the pneumonic infection to the abdominal cavity. It is practically certain that the infant was infected through the placenta, and this verdict was confirmed by the demonstration of pneumococci in the inner layers of the endometrium. It was probably also infected by the mother during and after labour.

GYNAECOLOGY.

164. The Gilliam Operation for Deviations of the Uterus.

GILLIAM (*Surgery, Gynaecology, and Obstetrics*, May, 1915) explained at a meeting of the Philadelphia Medical Society that the operation to which his name has been applied is simply the pioneer ventrisuspension method by means of the round ligaments, in which those ligaments are left intact in their natural investments. The usual median abdominal incision is made, the round ligament picked up, and a thread passed under it an inch and a half from the uterus; the ends of the thread are then brought out of the abdominal incision. The process is repeated on the opposite side. The peritoneum, muscle, and fascia are caught up by a volsella, and pinned together at a point an inch and a half above the pubes. Care must be taken that the edges of these layers lie approximately in line. Traction is then made, and the skin and superficial fat are drawn in the opposite direction, and the face of the fascia is laid bare by a sweep of the knife. A stab wound is made with a ligature carrier, passing through the surface of the fascia into the peritoneal cavity one inch from the edge of the abdominal incision. The jaws of the instrument are opened and made to catch the two ends of one of the ligatures, which are then drawn through the stab wound. The ligature is held taut with its loop end just above the surface of the fascia and a catgut suture is passed through it, including the tissues on either side, then back again, where it is tied. The suture is cut close to the knot. Lastly, the suspending thread is removed, preferably by clipping it close to the point where it passes under the ligament, so as to avoid possible contamination. The opposite ligament is treated in the same manner. Gilliam claims for this method that the uterus is not suspended, but rests easily on the bladder, and should pregnancy ensue the ligaments develop *pari passu* with the growths of the uterus. There is no narrow gap between the uterus and the abdominal walls, but a wide space, within which strangulation of the bowel would be inconceivable.

THERAPEUTICS.

165. X-ray Treatment of Pernicious Anaemia.

H. VAQUEZ AND CH. AUBERTIN (*Archives de maladies du cœur, des vaisseaux, et du sang*, December, 1914) deal with radiotherapy in pernicious anaemia. Applied in massive doses *x* rays have a destructive action upon bone marrow, but in moderate doses they cause a certain degree of hyperplasia, which shows itself clinically as a leucocytosis. Vaquez was the first to suggest the treatment of pernicious anaemia by "excitant" doses, and three cases are described in the article. In the first case—that of a man 41 years of age—a large dose, 18 H., was given at the first sitting, and this was followed by an exacerbation of the disease. The authors consider that the dose caused haemolysis, since the number of red corpuscles fell from 800,000 before the sitting to 620,000 a few hours afterwards and 610,000 the next day, and the leucocytes from 6,000 before the sitting to 1,200 the following day. The sittings were continued at the rate of one a week, a dose of 6 H. only being given. The patient for six weeks appeared to become worse, but after this gradual, steady improvement set in, and he finally left the hospital after nine months of treatment convalescent, and able to try to take up work again; the red corpuscle count was then 2,500,000. Unfortunately a relapse occurred in the following month. In a second case, of a young girl of 14, seven sittings in a month caused remarkable improvement, which showed itself, not immediately, but after several weeks. A real convalescence appeared to have resulted, but here again relapse occurred in the following year. In the first case arsenic was given after the relapse; in the second, every kind of treatment, including a second trial of radiotherapy, was given, but both cases ended fatally. A third case, due to Beaujard, is described, in which a cure was obtained, which has lasted for three years—that is, up to the present time. The case was one of fairly severe cryptogenetic anaemia, the number of red corpuscles being 1,900,000, and mononucleosis being present. The patient continued throughout the treatment to work hard in unhygienic conditions. During the first seven weeks only seven sittings, each of three or four applications of 2 to 3 H., were given, and this dose appeared to be too small. Improvement was slow; a relapse occurred when treatment was discontinued for a month, and in the relapse the number of red corpuscles fell to 1,500,000. During the next seven weeks the number of sittings was increased to two a week, and definite improvement set in. Two months after the end of treatment the number of red corpuscles had risen to 3,770,000. This patient, when seen three years later, was in good health; the globular count was 4,800,000; the haemoglobin content 100 per cent.; and the white corpuscle count was 5,000. Examination of the blood conditions under *x*-ray treatment shows that improvement is caused by excitation of haematopoiesis and not by an arrest of the haemolytic process. After the first sittings there was an enormous increase in the number of nucleated red corpuscles, reaching to 80 per cent., together with the appearance of megaloblasts and karyokinetic forms, and also a marked leucocytosis, the polynuclears increasing from 53 to 80 per cent. The practical conclusion is that in *x*-ray treatment of pernicious anaemia, as in all forms of treatment which stimulate the activity of the bone marrow, repeated estimations should be made of the numbers of nucleated red corpuscles. The prognosis will be favourable or otherwise according as these are, or are not, increased in numbers. The method of application of *x* rays is almost the same as for myeloid leukaemia. The rays are applied specially over the knees, in the tibio-tarsal and tarsal region, over the shoulders and elbows; the sternal region can also be irradiated. The filtration is the same—2 mm. to 4 mm. of aluminium. The cutting off the less penetrating rays is a matter of great importance, since they will in any case be stopped by the bony layer and therefore be useless, and they certainly have an injurious action on the skin. *X*-ray treatment appears to act in the same way as arsenic, and it may well be employed along with medullary opotherapy. It will always remain an exceptional method of treatment.

166. Respiratory Failure following Intralumbar Injection of Neo-salvarsan.

THE danger of giving an intralumbar injection of neo-salvarsan in tabes, in which the respiratory centre is occasionally involved, is illustrated by the following case, recorded by J. LEWINSOHN (*Deut. med. Woch.*, February 25th, 1915). A man of 40, who had contracted syphilis twenty-two years earlier, developed signs of tabes at the age of 36. For this intermittent treatment with salvarsan, neo-salvarsan, and salvarsan serum was prescribed. On March 17th, 1914, an intravenous injection of 0.4 gram of salvarsan was given, and was followed by an intralumbar injection of 30 c.cm. of the patient's own serum on March 18th. On March 30th an intralumbar injection of 6 c.cm. of neo-salvarsan, in the proportion of 0.15 gram to 300 c.cm. of saline solution, was given. As a violent gastric crisis, with vomiting and abdominal pain, supervened, 0.02 gram of morphine was given on March 31st. About five minutes later the patient became unconscious and ceased to breathe. The pulse diminished till it could

no longer be detected. During the following four hours the patient was kept alive by artificial respiration, the temporary cessation of which led to the return of cyanosis and the suspension of respiration. Next day, however, the patient was again well. Though the paralysis of the respiratory centre occurred only a few minutes after the administration of morphine, the author considers this drug less responsible than the neo-salvarsan, for much larger doses of morphine had been tolerated by the patient when given for severe gastric crises on previous occasions. The author admits, however, that the disease of the central nervous system, as well as the morphine, also contributed to the temporary cessation of respiration. He refers to other published cases, which show that paralysis of the respiratory centre may occur spontaneously in tabes, in which the involvement of the respiratory centre may be latent for some time. He also refers to a case recorded by Foerster, in which the relief of pain by morphine during gastric crises more than once caused temporary cessation of respiration.

167. Strychnine and Caffeine as Cardio-vascular Stimulants.

Newburgh (*Arch. of Intern. Med.*, March 15th, 1915) discusses the question as to whether failure of either the heart or the vasomotor apparatus is the chief cause of death in the acute infectious diseases, and he examines the evidence for and against the use of strychnine and caffeine as cardio-vascular stimulants therein. Summarizing previous researches there is no evidence that the vasomotor apparatus is injured in the acute infectious diseases, and therefore it is not logical to direct treatment chiefly towards that system. The hypothesis that the heart may be fatally injured in the acute infections, though unproved, is still tenable, and renders it logical to attempt to assist it when failing. From a review of several studies of the action of strychnine it appears that there is no reason for prescribing it as an aid to a failing myocardium, and it does not seem to exert any influence on the blood pressure. The circulatory effects of moderate doses of caffeine in experimental animals with normal hearts consist in vaso-dilatation, together with sufficient cardiac stimulation to maintain, or even increase, blood pressure, but whether a similar effect is produced in diseased hearts still remains to be demonstrated. From the author's own experiments strychnine produced no change in systolic pressure eight times out of seventeen, there being a slight, brief rise, unaccompanied by clinical improvement in the remaining nine, while there was no effect on the diastolic pressure nine times out of thirteen. Eleven times out of sixteen the pulse was unchanged, and no slowing attributable to the drug was noted. Experiments with caffeine never showed any rise in the systolic pressure, and in five out of six times the diastolic pressure was unaffected, and in nine out of ten times the pulse-rate was unaltered, and there was no measurable change in respiration. There is no evidence that the vasomotor apparatus is injured in the acute infectious diseases, nor does it seem that the functional activity of the myocardium is seriously impaired. Since strychnine sulphate, in medicinal doses, does not increase the cardiac output, slow the pulse, or raise the blood pressure, there is no logical basis for its use as a cardio-vascular stimulant, while caffeine-sodio-salicylate does not raise blood pressure or slow the pulse, and there is no definite evidence as to whether the blood flow is increased.

168. Sulphur in Typhoid Fever.

Goubeau (*Soc. de Thérapeut. de Paris*, April 15th, 1915) gives sublimed sulphur in typhoid fever, in cachets containing 1 gram, five or six times during the twenty-four hours. Under this treatment the temperature quickly falls and follows a more regular curve. The good effects are to be explained by the antiseptic action of the sulphur.

PATHOLOGY.

169. Gastric Cancer.

An analysis of 712 consecutive cases of gastric cancer from his records at the Mayo Clinic and in the Augustana Hospital at Chicago is given by F. Smithies (*Journ. Amer. Med. Assoc.*, February 20th, 1915). All the cases were operatively and pathologically proved to be gastric cancer. There were 483 males and 229 females, mostly ranging in age between the fifth and eighth decades of life, though there were some cases as young as 20 years. A family or blood relationship history was proved in 9.4 per cent. of cases. Trauma was demonstrated in 3.1 per cent. and in 2.2 per cent. it appeared to precipitate symptoms; 1.9 per cent. of cases presented no clinical symptoms pointing to gastric cancer, which was only determined by exploratory or *post-mortem* examination. Early diagnoses, says Smithies, are usually lucky guesses, or occur after gastric exploration. The only dependable early diagnosis is after laparotomy and examination by a capable surgical pathologist; the Roentgen ray, the Wolf-Junghans test, or edestin digestion may sometimes be useful in excluding cancer in its early stages, but are of relatively small value in determining its presence. His studies indicate that there are at least three sets of conditions leading up to a diagnosis of cancer. (1) A symptom complex of two definite and different stages, (*a*) gastric disturbance, non-malignant and generally chronic; (*b*) gastric malfunction of malignant type. (2) A symptom complex of distinctly apparent pernicious nature. (3) A group of cases in which there is usually evidence of irregular gastric disturbance on which is superimposed an easily recognized malignant type. Sixty-one per cent. of the proved cancer cases were of the first type, the average of the first stage being over 11.7 years, and of the second stage nearly 6 months. The symptomatology of the first period was practically that recognized as gastric ulcer, with indigestion, hunger pains relieved by eating or alkalis, some pain in the back, in 54 per cent. gradual loss of weight during the attacks, partly compensated for in the intervals, vomiting in the majority, and bleeding in 17 per cent. In this class of cases there may be complete cure with arrest of symptoms, or typical chronic benign ulcer or gastric cancer may result. The prognosis of the occurrence of any one of these is impossible. In the second stage vomiting is more constant, and the gastric disorder becomes more continuous. The loss of weight is more constant, the vomiting becomes darker, and is sometimes of the "coffee ground" type in advanced cases. Macroscopic changes are not usually visible in the stools unless other organs are involved, but on a milk diet chemical tests for blood were positive in 83.4 per cent.; 225 of the 712 cases, or 31.6 per cent., were of the second type, and careful inquiry failed to elicit any history of gastric disturbances previous to an average time of 7.4 months before the patient came under observation. The longest history of gastric disturbances in this group extended over three and a quarter years, the shortest barely three weeks. The symptom complex is largely like the others to which the manifestations of malignant systemic poisoning are added. Fully two-thirds of the patients have more or less vague recollections of how they were gastrically affected before loss of appetite, weakness, mental inertia, abdominal distress, loss of weight, or physical signs indicating more than chronic indigestion, gave them warning. Capricious appetite was common, and disagreeable eructations frequently appeared early. Vomiting was observed in 79 per cent., and in 64 per cent. it was a daily occurrence. There were 13 instances which Smithies calls "fulminant" cancer, in which profound cancer intoxication was marked from the first. The third group of gastric malignancies showing long histories of atypical dyspepsia was seen in only 9 cases, and the clinical symptomatology usually pointed to disease of the gall bladder, appendix, large bowel, or pancreas. The beginning of the malignant period was similar to that in the other groups. Smithies concludes that at present we have no means of prognosing the future course of any gastric ulcer, acute or chronic. The life-history of the affection seems to depend on certain unknown factors that are apparently highly individual.

170. Action of Typhoid and Cholera Endotoxins on the Adrenals.

C. A. Démétrescu has made an experimental study of the action of typhoid and cholera endotoxins on the adrenals of rabbits (*Réunion Biol. de Bucarest*, December 17th, 1914, in *Compt. Rend. Soc. de Biol.*, 1915, lxxvii, p. 591). He finds that the typhoid endotoxin has scarcely any effect on the chromaffin substance of the adrenals. But the cholera endotoxin causes disappearance of their normal chromaffin staining reaction. Further, an extract prepared from the adrenals of animals which had been injected with an emulsion of cholera vibrios killed at 60° contains little or no adrenalin, for (*a*) this extract causes only slight or no rise of arterial pressure, (*b*) fails to give the reaction of Ehrmann-Meltzer on the frog's pupil, and (*c*) does not give the characteristic staining with phosphomolybdenic acid.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

171. Paroxysmal Tachycardia.

E. DOUGELOT (*Archives des maladies du coeur, des vaisseaux, et du sang*, November, 1914) divides cases of paroxysmal tachycardia into three groups: (1) Total regular paroxysmal, (2) partial regular paroxysmal—the so-called "auricular flutter," (3) irregular. Cases of total regular paroxysmal tachycardia are again subdivided, according as extra-systoles are absent or present. The first attack occurs very often when the patient is in good health and often without any known cause; a sudden sensation of shock is felt in the thorax, the heart at once begins to beat very rapidly, until a second shock similar to the first is felt, and the attack is at an end. Examination during the attack shows that the normal heart-beat is replaced by a rapid vibration, felt in several intercostal spaces. Pressure, if at all firm, over the cardiac region almost invariably causes severe pain. The heart sounds are peculiarly sharp, and recall the sound of an extra-systole: the rhythm resembles the fetal rhythm; as a rule there is marked accentuation of the second sound over the pulmonary area. Any pre-existent murmur, due to chronic valvular disease, usually disappears during the attack. As a rule the rate is about 200 beats per minute, but it may be as low as 140 or occasionally as high as 300. Disorders of the sympathetic nervous system are sometimes noticed during the attack. The form with extra-systoles is common. The attack may be preceded by two or three slow energetic contractions only, or there may be a true arrhythmia with extra-systoles, which may last for several minutes, for hours, or even for days before the attack. Similarly, at the end of the attack there may be two or three shocks only, or the extra-systoles may persist for hours or days with decreasing frequency. The evolution of the disease is very variable. The attack may be single and never repeated, there may be frequent short attacks, or attacks of longer duration but at longer intervals, while not infrequently the attacks may at first be at long intervals, but afterwards may come more often and of longer duration. Sometimes continuous tachycardia supervenes, and in such cases the rate of beat usually drops to 130 or 140. Every heart in a condition of tachycardia is overtaxing its myocardium. If the attacks are short the heart is uninjured, but if they lengthen and the condition progresses towards a continuous tachycardia, signs of cardiac distress supervene. In some cases where the tachycardia has become continuous the patient dies after several days or weeks, with all the symptoms of cardiac insufficiency. (2) Partial paroxysmal tachycardia. This differs from the form already described in that the tachycardia is particularly rapid, and is more or less limited to the auricles; the ratio of auricular to ventricular beat is usually 2 to 1, but may be 3 or 4 to 1, or even higher. This form for a long time escaped detection until electro-diagrams and experimental work made it clear. The signs and symptoms are practically the same as for the total form. Simultaneous examination of the heart and the jugular veins will suggest the diagnosis. The pulse is most frequently irregular; if it is regular, it may be alternating. In this, as in total tachycardia, extra-systoles may precede and follow the attack. Partial tachycardia appears to attack patients who already suffer from valvular lesions rather more frequently than does total tachycardia. Partial attacks tend to be of longer duration than the total ones, and show a greater tendency to become continuous. Where the condition ends unfavourably it runs as a rule a course of several years (two to eight); death may be sudden, but usually there is a progressive asystole. (3) Irregular paroxysmal tachycardia is distinguished from the other forms by (*a*) complete irregularity of the ventricles, and (*b*) fibrillation or paralysis of the auricles appreciable solely by graphic methods. In this form the attacks are seldom isolated, and as a rule the condition progresses by a series of marked stages to complete permanent arrhythmia. The three varieties of tachycardia are intimately connected. Regular total paroxysmal tachycardia frequently passes into the partial form, and then ends in complete arrhythmia, or may pass to complete arrhythmia without the intermediate stage. Moreover the same person may have sometimes a regular, sometimes an irregular attack, but in these cases the regular form is the one which sooner or later definitely supervenes.

172. Bronchopneumonic Pseudo-croup.

ACCORDING to E. SUNER (*Jahrb. für Kinderheilk.*, vol. xxx, No. 6), bronchopneumonic pseudo-croup occurs only in infancy, and is characterized by symptoms of croup, unaccompanied by any pathological changes in the larynx. He describes three stages. In the first stage, of catarrh, the symptoms may be only those of an ordinary cold in the head; but in most cases there is a more or less severe bronchitis. In a few cases, again, the symptoms point to tracheitis. There is constant fever of no special type, and the duration of the first stage usually varies from two to eight days. There are, however, a few cases in which this catarrhal stage lasts only a few hours. In the second or laryngeal stage the voice is hoarse, and there is some stridor, which is loudest on deep inspiration. There is progressive aphonia until, as in true croup, there is total loss of speech. The patient becomes more and more dyspnoeic, and the inspiratory efforts are indicated by retraction in the epigastrium and neck and, in the most severe cases, in the intercostal spaces. The patient suffers from orthopnoea and dyspnoea. In the third stage, of asphyxia due to stenosis of the larynx, the pulse is small and the heart failing. Unless tracheotomy or intubation is performed, this stage often terminates fatally. During all three stages there is evidence of bronchopneumonia, although, towards the end of the second stage, when the respiratory movements are failing, the characteristic signs of bronchopneumonia may be absent on auscultation. When, however, tracheotomy or intubation has been performed, the auscultatory signs in the chest return. The temperature is seldom very high in the first stage, but in the second and third stages it is often 104° or more. Throughout the illness, which usually lasts ten to fourteen days, but may sometimes last from two to twenty days, no false membrane of the nose, throat, larynx, or trachea can be detected. Any of the germs responsible for bronchopneumonia may also give rise to pseudo-croup, and the course of the illness is probably affected more by the patient's inherent disposition than by the nature of the infection. The features characteristic of the disease and of diagnostic importance are the initial catarrhal condition, the absence of false membranes, the presence of bronchopneumonia, and a positive bacteriological examination. The latter is, however, often not feasible when, in acute cases, early diagnosis and treatment are called for. Though he does not discuss treatment in detail, the author insists that in all cases occurring after measles, diphtheria antitoxin should be given, even though the bacteriological examination is negative. Antitoxin should also be given in other cases in which diphtheria is suspected. Intubation is often indispensable, for, though it does not directly benefit the bronchopneumonic condition, it greatly relieves the respiratory difficulties, and tides the patient over a critical period.

173. Malignant Scarlet Fever.

HUTINEL (*Journ. des praticiens*, March 27th, 1915) points out that it is particularly interesting to note the course of these cases in view of the recent treatment by adrenalin. He relates a number of cases in which the mortality was reduced to one-half as the result of this treatment. With regard to the etiology of the malignant forms of scarlet fever, it is generally found that the resistance of the patient has been lowered by a previous attack of measles, pertussis, purpura, or pneumonia. In some cases the victims had suffered from adenoids or some form of adenitis. Several were very stout, and the gravity of scarlet fever in such patients has been noted. The eruption in these cases has some distinguishing characteristics, which mark it off from that of ordinary scarlet fever. It is very intense, not an ordinary rosy red, but is violet coloured; it lasts a long time, and desquamation is much exaggerated. Further, an erythema may appear either at the commencement of the illness or after the eruption has paled and convalescence has begun. This was noted in a third of the cases, and attacked the knees, elbows, buttocks, and more rarely the face, and sometimes became purpuric. Another phenomenon to be noted is the "white ray" of Sargent—a vasomotor phenomenon

evoked by drawing the nail of the index finger over the lower part of the abdomen. This has been considered pathognomonic of alteration in the suprarenal capsules. There is sometimes a brown pigmentation similar to that in Addison's disease. During convalescence there is generally a state of profound asthenia comparable to that which obtains in Addison's disease. In the grave cases there may be a state of coma vigil or low delirium, while at other times there are meningeal symptoms. There is a notable fall of arterial pressure, embryocardia, and sometimes also arrhythmia. The urine contains acetine or diacetic acid, and the patient has often an odour of acetone. Serpiginous ulceration of the tongue and pharynx has been noted. Haemo-culture sometimes yields a streptococcus. Death may occur before the eruption appears or some days after from profound asthenia.

174. Phosphaturia in Childhood.

ACCORDING to H. KLEINSCHMIDT (*Berl. klin. Woch.*, January 11th, 1915) phosphaturia in childhood is largely dependent on nervous phenomena. Children who pass cloudy, milk-like urine, containing large quantities of calcium carbonate and calcium phosphate, are often the subjects of sleeplessness, headache, mental depression, excessive perspiration, itching, loss of appetite, abdominal pain, vomiting, diarrhoea, and hystero-epileptic attacks. The earlier views as to the etiology of phosphaturia in childhood have been varied and conflicting. Inflammatory conditions of the large intestine, intestinal parasites, digestive disturbances, and a diet rich in calcium, have all been blamed for this condition; but measures adopted in accordance with these views have frequently failed, because the nervous factor has been neglected. In support of the contention that phosphaturia is largely a nervous phenomenon, the author records two cases in which a change of surroundings was sufficient at once to banish the phosphaturia, although practically no change was made in the diet. Indeed, so independent was the phosphaturia of the diet, that even when large quantities of milk and calcium lactate were given phosphaturia was not provoked while the patients were in hospital. One patient was a girl aged 10 years, who had been weakly and bottle-fed in infancy. She presented numerous nervous phenomena, including nocturnal and diurnal enuresis, dermographia, and exaggeration of the reflexes. The other patient was a bottle-fed boy aged 4 years. He was subject to attacks of rigidity and loss of consciousness, which occurred when he was excited. Both patients were the offspring of nervous mothers who had no other children. When the children were admitted to hospital the phosphaturia at once disappeared, the urine meanwhile being either neutral or slightly acid. During the stay in hospital the phosphaturia did not recur; but the one child who had been fretful and unhappy in hospital developed phosphaturia again on being sent home. The other child, who had spent four happy weeks in hospital, continued to pass clear urine after returning home. As the conditions were the same for both children, and the diet prescribed in hospital was continued in the patients' homes, the only explanation of the complete recovery of one patient, and the relapse of the other, is, according to the author, to be sought in the nervous element in each case.

SURGERY.

175. Rupture of the Rectum during Sleep.

IN the following case, recorded by N. HELLSTRÖM (*Hygiea*, vol. lxxvi, No. 23) the cause of the rupture of the rectum remained obscure in spite of a *post-mortem* examination by a skilled pathologist. The patient was a farmer, aged 63. He had presented no rectal symptoms apart from the occasional passage of a little blood with the faeces. On November 16th he passed a normal motion without having to take an enema. He went to bed in the evening, feeling perfectly well. He had slept for about three hours, when he was awoken by abdominal pain, which was most violent below the umbilicus. He was admitted to hospital early next morning, when the pain was still worse. The whole of the abdomen was very tender and rigid, and the pain was worst in the right, lower abdomen, where some dullness was demonstrable close to Poupart's ligament. The pulse was 120, and the temperature 37.8°. A laparotomy revealed much pus in the abdominal cavity, including the pelvis. The appendix was adherent, but not actually inflamed. Faeces were found in the pelvis; and when the pelvic colon was explored, a rupture was found in its right, anterior wall just above the deflection of the peritoneum from the colon to the wall of the pelvis. There was not a sign of clotted or fluid blood near the rupture, the margins of which were thin, cleanly cut and smooth. The rupture was sutured, but the patient died thirty-eight hours after the pain began. At the necropsy the position and attachments of the pelvic colon were found to be normal. The rupture was 2.5 cm. long, and ran a somewhat oblique course, 11 cm. above the anus. An examination of the rest of the intestine showed nothing amiss; and the slight changes observed in the mucous membrane in the neighbourhood of the rupture were regarded by the pathologist as *post-mortem* phenomena. The author discusses, and rejects as improbable, the suggestions that this rupture may have been due to homo-sexual practices, to intentional injury inflicted by the patient or someone else, or to the swallowing of a foreign body, for no such body could be found at the operation or necropsy. Had the rupture been traumatic, there would have been an effusion of blood; but this could not be detected even by a microscopic examination of the intestine at the point of rupture. As the patient was asleep when the pain began, it is highly improbable that the rupture was due to any violent abdominal strain. The author is accordingly driven, by a process of exclusion, to conclude that the intestine was not perfectly healthy at the point of rupture, although the pathologist's report did not confirm this view.

176. Simulation of Appendicitis by Foreign Bodies in the Intestine.

SCHATZ (*Deut. med. Woch.*, January 28th, 1915) believes that many attacks of so-called appendicitis which pass off rapidly without fever are simply due to temporary obstruction of foreign bodies at the ileo-caecal valve. The following personal experiences have confirmed him in this belief: One morning, after he had taken his coffee in bed, he was seized with colic and diarrhoea. After defaecation the pain became still worse, and was most severe over the small intestine, particularly over the appendix, where the abdomen was tender and distended. This condition lasted about an hour, after which the abdomen again became flaccid and painless, except over the appendix, where the rigidity and tenderness remained for another hour. This attack was accompanied neither by vomiting nor fever, and had completely passed off within three hours of its onset. On the previous evening he had eaten mushrooms, which he had only partly masticated, and he blames them for the attack. A fortnight later a similar attack occurred, but on this ocassion he also suffered from nausea and vomiting. The attack lasted about four hours, and ceased spontaneously. His meal on the previous evening had included a slice of raw ham, some fibres of which he had swallowed whole, as he could not cut or bite them through. An examination of the faeces next day revealed these fibres, which formed the nucleus of two scybala, joined by an isthmus to form a dumb-bell. It is probable that this dumb-bell got caught at the ileo-caecal valve, one end lying in the large intestine, the other in the small intestine, while the isthmus dragged over the ileo-caecal valve. On two subsequent occasions the author traced attacks of abdominal pain to lumps of undigested food subsequently found in his faeces. He considers that such attacks can be cut short by narcotics; and during his second attack he took 15 minims of tincture of opium per rectum. This treatment, supplemented by a daily dose of rhubarb, and a hot bottle over the appendix, is often sufficient for the relief of such attacks. The author urges the necessity for examination of the faeces in such cases, and he is convinced that many an attack of abdominal pain simulating appendicitis is simply due to insufficient mastication of food. Since he has taken to chewing his food thoroughly he has experienced no more abdominal pain.

177. Thyroidectomy in Post-puerperal Mania.

TO illustrate the part played by the thyroid gland in mental diseases, and the benefit of thyroidectomy under certain conditions, C. PARHON (*Wien. med. Woch.*, January 2nd, 1915) records the case of a married woman, aged 22. The first mental symptoms developed after the birth of her third child, when she was 20 years old. She presented many signs of faulty development, including asymmetry of the ears, irregularity of the teeth, and extreme arching of the hard palate. As the mental symptoms increased, and mania developed, she was admitted to an asylum, where diffuse enlargement of the thyroid gland was detected. The enlargement of the isthmus was particularly noticeable. The pulse was 100, and slight tremor of the hands, particularly the left, was observed. She was very restless, her expression was much elated, her

conception of time and space was faulty, her memory of the past was very imperfect, and she could not fix her attention for long on any subject. She mistook the asylum attendants for her relatives, and constantly found fault with them. She could not do the easiest sums, nor remember three names at a time. She was also very erotic and sleepless. Abderhalden's reaction was negative to serum alone, and to a combination of serum with placental tissue. The reaction was positive to a combination of serum with thyroid gland. Accordingly, after the patient had been several weeks in the asylum without making any satisfactory progress, the isthmus and the right lobe of the thyroid gland were removed. They weighed 45 grams, and were found to consist of much dilated follicles, filled with colloid, and lined with flattened epithelial cells, which stained normally. A small cyst, no larger than a nut, was also found in the excised portion of the gland, which contained but little connective tissue. The operation had not been performed three days when great improvement was noticed. This progressed rapidly, and within three weeks of the operation the patient's conception of time and space was no longer at fault, her memory of past events was restored, she could remember several names at a time, and do easy sums. She realized that she had been mad, that she had been confined in an asylum, and that she had been abusive on the day of her operation, and on other occasions during her stay in the asylum. She no longer suffered from hallucinations, her elated expression had given place to a pensive expression, and her sleep and appetite had returned. On her discharge from the asylum she was considered to be cured, and Abderhalden's reaction to thyroid gland was now found to be negative. The author points out that this is not an isolated case, and that thyroidectomy has, according to several authorities, cured melancholia and mania associated with paranoia when these conditions have been accompanied by exophthalmic goitre.

OBSTETRICS.

178. Retention of Dead Fetus.

LASALLE (*Annales de gynec. et d'obstét.*, August, 1914, to April, 1915) reported, at a recent meeting of a society, an instance where the fetus died about the end of the fifth month and was retained for six months, being delivered spontaneously two months after term. The patient had been ten times pregnant and was 38 years of age. The last period ended on August 17th, 1912. By the fourth month the patient began to be very ill, albuminuria appearing with anarsarca. She was submitted to milk diet, and she declared that the fetal movements were very active at the time, and remained so for a fortnight, when they ceased entirely. At the end of the ninth month there was a typical false labour, but the ovum was not expelled until July 17th, 1913. The membranes were thickened, and enclosed a fetus quite mummified and 7 in. in length, with 5 oz. of turbid fluid. Lasalle, dwelling on abnormal gestation, mentioned the fact that he had kept under observation a patient in her eighth pregnancy, and through its whole course the catamenia had remained perfectly regular. Gaujoux (ibid.) reported how gestation was arrested, through no apparent cause, in a woman during her fourth pregnancy. Characteristic retrogressive symptoms were observed, and at the beginning of the ninth month a mummified fetus of the third month was delivered spontaneously. Gaujoux noted that he found the placental relics, removed by the curette, distinctly putrefied. De Rouville, in discussion, stated that he once removed from the uterus a big piece of placenta two years after delivery. Puech described a case where the curette was applied, fibroma having been diagnosed. A few hours later an ovum of the fourth month was expelled.

GYNAECOLOGY.

179. Atresia Hymenalis with Pyocolpos in an Infant.

BJERRUM (*Ugeskrift for Laeger*, March 18th, 1915) records the case of a breast-fed infant who was admitted to hospital when 7 weeks old. She had been born at term and without complications. She progressed satisfactorily during the first three weeks, at the end of which the lower abdomen was found to be abnormally large and constantly increasing in circumference. The motions were frequent, watery, mucous, and green. The infant became emaciated, and on admission to hospital she presented a tense, fluctuating, pear-shaped swelling in the middle line, just above the symphysis. The base of the swelling, which was movable and as large as a clenched fist, extended upwards to the umbilicus. The swelling was most suggestive of a dilated bladder. The urethra was somewhat drawn upwards, but it was still possible to insert a catheter, through which a few drops of cloudy urine were withdrawn. Examination of the hymen, while the infant was crying and while pressure was exerted on the swelling above the symphysis, showed a prominence of the size of a hazel nut. A little in front of the middle of this prominence was a punctiform retraction of the hymen, surrounded by faintly marked, radiating lines. Exploration of the rectum revealed no uterus, but the swelling could be felt through the rectal wall. The hymen was punctured over the prominence, and 800 c.cm. of grey, thick fluid were evacuated. The removal of this fluid, which contained numerous pus cells and some epithelial cells, was followed by the disappearance of the swelling in the lower abdomen. The opening in the hymen was dilated, and its closure was prevented by the insertion of a strip of silver nitrate gauze. A subsequent examination showed that the vagina no longer contained pus, that it measured 4 to 5 cm. in depth, and that the opening in the hymen had not closed. The uterus could now be felt through the wall of the rectum in its normal position. The infant progressed satisfactorily, the motions and the lower abdomen were normal, and there was no retention of discharge. As there were no symptoms of inflammation, such as tenderness, oedema, or a rise of temperature, the character of the infection must have been very mild. It is probable that avirulent germs reached the vagina through a small opening in the hymen, which subsequently became closed. The clinical picture was one of "cold abscess," but the appearance of the pus, the subsequent course of the case, and other factors, did not point to tuberculosis.

180. Retrodisplacements of the Uterus.

HOWARD KELLY (*Surgery, Gynaecology, and Obstetrics*, May, 1915) reviews in full the history of retrodisplacements as recognized by the profession and as treated from ancient times. Retroflexion of the gravid uterus was distinguished as a dangerous complication in the seventeenth century, and it led to the extension of digital exploration to other women besides patients in labour. From 1810 to 1885 the pessary was in great request. At length treatment became almost exclusively surgical. The true nature and degrees of displacements are now better diagnosed and carefully registered in hospital practice. Howard Kelly states that out of 13,600 gynaecological cases at the Johns Hopkins Hospital there were 1,886 retroflexions, and out of these 415 were uncomplicated. In 1,000 operations of all kinds performed between August, 1904, and November, 1905, there were 95 cases of retroflexion. Kelly makes the important announcement that he has abandoned his original operation "on account of the occasional accidents." He had performed it nearly 800 times. Kelly notes over fifty different operations all designed to correct retrodisplacements. His own practice now is to make a single silk or linen thread encircle the round ligament on either side, and to draw it forward to the abdominal wall. Each thread is then tied to the deep fascia over the rectus muscles. The peritoneum between the abdominal wall and the ligament must be picked up at every half-inch in order not to leave a hole under which the bowel may slip. Kelly has done over eighty operations of this kind, and believes that it will prove the most satisfactory procedure yet contrived for the cure of retrodisplacements.

THERAPEUTICS.

181. Treatment of Goitre by Continuous Intestinal Disinfection.

F. MESSERLI (*Rev. méd. de la Suisse Romande*, March 20th, 1915) records the cases of eleven recruits, suffering from simple goitre, whom he treated by continuous intestinal disinfection. Among the drugs used were benzo-naphthol, thymol as recommended by MacCarrison as the outcome of his experimental and clinical work, salol, creosote, and certain laxative pastilles containing aloes 0.05 gram, resina jalapae 0.1 gram, and radix rhei 0.5 gram. By these means he attempted to produce a slight continuous purgation and a mechanical disinfection of the intestine. Those patients who were treated by benzo-naphthol took three daily doses of half a gram cachets; those treated

by thymol had two cachets daily, each containing 0.1 gram with sacch. alb. q.s.; those treated by salol took a one-gram pastille twice daily; others had three creosote pills daily, consisting of 0.05 gram with sacch. vanill. obduct.; and two patients had one of the laxative pastilles, named above, every night. Careful measurements of the patients' necks were made before and after treatment, and photographs of each case are given. As a rule, after about five weeks' treatment, the goitre was either very greatly diminished or was not palpable nor measurable. Messerli concludes that these results confirm MacCarrison's conclusions that goitres experimentally induced by the drinking of polluted waters can be cured by intestinal disinfectants such as thymol or anticolic or antistaphylococcic serums; they also confirm his own previous work with benzonaphthol, and likewise fit in well with the finding of Gaylord and de Plehn that a slow but sure regression of the goitre of goitrous fish in certain ponds is obtained by the addition of antiseptics to the water of these ponds, in the form of sublimate and potassium iodide in a solution of 1 in 5 million.

182. Intra-articular Pneumatic Compression by Oxygen in Hydrarthroses and Haemarthroses.

NUMEROUS cases of synovitis and haemorrhagic effusion into the knee-joint have occurred during the war, coming on after long marches or after lying on damp ground or the frozen mud of trenches. BAYEUX has had excellent rapid results by his new method (*Compt. rend. de l'Acad. des Sciences*, February 15th, 1915). In the case of the knee he proceeds thus: With his special intravenous needle he punctures the joint at a point 2 cm. above and outside the upper outer angle of the patella, and by means of gentle pressure removes as much fluid as possible. Without removing the needle he insufflates oxygen gas at the rate of 70 c.mm. a minute, until the pressure of the gas contained in the joint attains to 70 cm. (reckoned in centimetres of water). This intra-articular pressure, which acts on even the smallest folds of the synovial membrane, enables one to evacuate all the residual fluid, provided the needle's point be kept in the most dependent part. Finally, the cavity being thus dried, oxygen is insufflated a second time and the needle is withdrawn quickly, the joint being left swollen. The whole operation lasts usually for about ten minutes. For the distribution and dosage of the oxygen Bayeux uses his own exact oxygenator (described and figured by him in *Compt. rend. de l'Acad. des Sciences*, 1911, cliii, p. 999). The procedure, then, comprises three stages: (1) Puncture of the joint, (2) gaseous insufflation for evacuation, and (3) the terminal compressive insufflation. As a rule, four or five insufflations have always cured in his hands. Five cases are detailed, cured thus in from four to thirteen days; one was of four months' duration. No relapse has yet been noted. Up to the present time only the knee-joint has been treated by this method, but Bayeux says it is capable of application to other joints.

183. The Hypertensive Action of Preparations of Colchicum.

O. CROUZON (*Bull. et mém. Soc. Méd. des Hôp. des Paris*, April 22nd, 1915) has sometimes seen a rise of arterial tension occur in the course of the treatment of gout by colchicum. And he has often seen definite hypertension supervene, in persons of normal tension, within a day or two of the beginning of treatment by tincture of colchicum seeds in doses of 15 to 20 drops a day; he has also seen it after the use of colchicine. Further, he has found that, in psychasthenic and other patients whose tension is below normal, a rapid increase of tension occurs within a day or two after colchicum preparations are begun and does not disappear till a day or two after the cessation of the drug. He thinks that some of the unfavourable symptoms attributed to colchicum may really be due to its hypertensive action; and he offers the practical suggestion that whenever any preparation of colchicum is given to gouty or arterio-sclerotic patients the arterial tension should be examined every day.

PATHOLOGY.

184. Intestinal Obstruction.

MURPHY AND BROOKS (*Arch. of Intern. Med.*, March 15th, 1915) studied experimentally the causes of symptoms and death in intestinal obstruction with a view to explaining certain apparent contradictions in deductions drawn from previous research, by determining the proper relationship of the various factors concerned and those leading to the production of the toxic substance. The experiments, 88 in number, were carried out aseptically on completely anaesthetized dogs, a sufficient number being carried out in each subdivision to satisfy the correctness of the conclusions arrived at. Nine different groups of experiments were carried out in order to show the effect of high and low obstruction, with and without interference with the blood supply, with thoracic duct and gall bladder observations, etc., from which it was concluded that in intestinal obstruction the content of the obstructed bowel contains a toxin absorption of which in sufficient quantities produces definite symptoms, lesions, and death. These toxins result from bacterial growth and are not specific for any part of the intestinal tract and may be formed in the gall bladder, their chemical and physical characteristics varying with the duration of the obstruction as well as with the different conditions under which the obstruction occurs. This toxin may enter the circulation by way of the thoracic duct. Death is the result of a toxaemia which may be independent of peritoneal or general circulatory infection. The toxic substance does not pass through the normal mucous membrane, but interference with the circulation of the obstructed intestine is an essential factor in allowing abnormal absorption, the factors making this absorption possible being more important than those producing the toxin. Simple obstruction of a segment of duodenum or jejunum causes earlier and severer symptoms than similar obstruction of a segment of ileum, since the secretion into the former sets up rapid distension and circulatory disturbance in the bowel wall. The symptoms and lesions following intravenous injection of the contents of an obstructed bowel segment are the same as those resulting from intravenous injection of certain ptomaine poisons. In the surgical treatment of intestinal obstruction, that portion of the intestine whose mucous membrane has been so damaged as to allow of abnormal absorption should be resected rather than drained.

185. The Gonococcic Complement-Fixation Test.

THOMAS, IVY, AND BIRDSALL (*Arch. of Intern. Med.*, February 15th, 1915) record some further observations on the employment of specific and non-specific antigens in the performance of the gonococcic complement-fixation test, previous observations having conclusively shown that a positive reaction is most dependable, not being obtained in a large series of infectious and other diseases. Since many Gram-positive and Gram-negative bacteria are found in the urine after massage of the prostate and seminal vesicles in the involvement of these organs in Neisserian infection, the specificity of the gonococcus antigen in the complement-fixation test was determined by employing non-specific antigens made up from various bacteria isolated. Antigens were prepared from the following micro-organisms and utilized routinely in a series of serums from gonorrhoeal subjects: 9 strains of gonococci, 15 strains of meningococci, 6 strains of streptococci, 6 strains of *Micrococcus albus*, 6 strains of pneumococci, 6 strains of *Micrococcus aureus*, 3 strains of *Micrococcus catarrhalis*, 6 strains of *Corynebacterium pseudodiphtheriticum*, and 6 strains of *Bacillus coli*. A technique similar to that of the Wassermann reaction was employed, the specific or non-specific antigen in each case being substituted for the syphilitic antigen, always using the carefully standardized single unit of complement and the routine standardization of antigen and amboceptor. Two hundred and sixteen serums were tested, in which both the specific and non-specific antigens were employed, 135 giving negative results, 67 giving positive results with specific gonococcus antigens, and 15 giving positive results with non-specific antigens, the *Micrococcus catarrhalis* giving positive results in 5 cases, the pneumococcus in 4, the *Micrococcus aureus* in 3, the streptococcus in 1, the *Corynebacterium pseudodiphtheriticum* in 1, and the meningococcus in 1 case. Although mixed infections are commonly found, antibodies of the non-specific organisms rarely bind complement in the presence of the non-specific antigens, but when such is the case it can be attributed to the implantation of a superimposed mixed infection. While the specificity of the gonococcus complement-fixation test when positive in cases of Neisserian infection is proved, a negative reaction is of no value clinically. In cases of mixed infection those organisms capable of binding complement were the *Micrococcus catarrhalis*, the pneumococcus, the *Micrococcus aureus*, the streptococcus, the *Corynebacterium pseudodiphtheriticum*, and the meningococcus.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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RETURN OF RECORD CARDS.

THE circular Med. 2 (December 21st, 1914) issued by the Insurance Commissioners in England should receive the attention of all medical practitioners working under the Insurance Act. It points out that the currency of the present series of record cards expires on December 31st, and that all cards in respect of persons attended on or before that date should be sent in. It points out that the lower halves of the cards prepared during 1914 should be sent in to the Commissioners at Buckingham Gate, London, S.W., as soon as possible after December 31st, and in any case not later than January 15th. The upper halves of the record cards should at the same time be forwarded to the Insurance Committee concerned. As the keeping of these records is one of the conditions attached to the payment of the additional grant of 2s. 6d. per insured person provided by the parliamentary grant towards the cost of medical benefit, the Insurance Committee will not be in a position to make further payments in respect of 1914 until the upper and lower halves of the record cards have been received by the Committee and the Commissioners respectively.

We understand that in some areas last year the final payments to the doctors were seriously delayed because some were dilatory in sending in the record cards. It would seem to be an obligation of every medical man working under the Act to send in his cards promptly on this occasion.

LOCAL MEDICAL AND PANEL COMMITTEES.

EDINBURGH.

PANEL COMMITTEE.

A MEETING of the Burgh of Edinburgh Panel Committee was held on December 8th, 1914, under the presidency of DR. DEWAR.

The War.—In connexion with attendance on necessitous dependants of men in the military services, the question was raised of the income weekly which rendered a person necessitous, and it was resolved to make further inquiries. It was also resolved to obtain from the Deputy Director, Medical Services, Scottish Command, precise information as to the proper course to adopt when a practitioner in civil practice was called to attend a member of one or other of His Majesty's Forces, and to ascertain the proper authority to whom the account for professional services should be rendered.

Alleged Excessive Prescribing.—Several cases of alleged excessive prescribing were considered. In five the replies were considered satisfactory; in a sixth the practitioner was warned not to exceed the amount available—namely, 1s. 6d. per insured person per annum in ordinary times of sickness and a supplementary 6d. in times of excessive sickness. In two other cases it was resolved to draw the attention of the practitioners concerned to the fact that it was undesirable to order medicines for patients to be consumed outside the Edinburgh area.

Assignment Scheme.—The SECRETARY read a letter from the Insurance Committee dealing with the Assignment Scheme under Section 21 (4), in which it was stated that cases might be expected to arise of persons who in an emergency outside of the Insurance Committee's office hours, or on Sundays, might find it necessary to apply direct to a practitioner. In order to meet this difficulty the Insurance Commissioners suggested:

That in such an event arrangements should be made that the practitioner will either agree to take the person on to his list, or will give the treatment immediately required until—

(*a*) He has arranged with another practitioner to accept the person; or

(*b*) He has communicated with the Clerk to the Insurance Committee, notice of any arrangement arrived at being made to him in due course.

The letter stated that, subject to the insertion of a provision of this nature, the Commissioners had approved of the scheme. The clause was approved, with a recommendation that a written message, with evidence of insurance, be produced to the doctor.

Transfer of Patients during the Medical Year.—The SECRETARY read a letter from the Clerk to the Insurance Committee, from which it was noted with satisfaction that the irregularities complained of by the Panel Committee would now be rectified.

MEETING OF PRACTITIONERS.

A meeting of insurance practitioners resident in the Edinburgh area was held in the Royal Victoria Dispensary on December 17th, 1914.

Central Bureau for Checking Prescription Forms.—The Chairman, Dr. DEWAR, explained that the meeting had been convened for the purpose of considering the proposal of the Commissioners to charge a portion of the expenditure of a central bureau for checking prescription forms to the Drug Fund. In this connexion he sketched the doings of the Insurance Committee during the past eighteen months. After full discussion the following resolutions were unanimously approved:

That this meeting of insurance practitioners in the Edinburgh area generally approves of the establishment by the Commissioners of a central bureau for the purpose of checking prescription forms.

That the practitioners present at this meeting are of opinion that the checking of prescription forms is a part of the administration of medical benefits.

That the practitioners present at this meeting see no reason why they should relieve the Insurance Committee of what they consider to be a part of its administrative expenses.

Excessive Prescribing.—The CHAIRMAN warned practitioners to exercise the utmost economy in prescribing, in order that the expenditure on the Drug Fund might be kept if at all possible within the 1s. 6d., and certainly within the 2s. available.

RENFREW.

COUNTY PANEL COMMITTEE.

A MEETING of the Renfrew County Panel Committee was held at Paisley on December 9th, 1914, when Dr. CORBETT was in the chair. The Clerk and Deputy Clerk of the Insurance Committee also attended.

Insured Persons in the Forces.

In reply to an inquiry attention was directed to Memo. 210/I.C. published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of November 28th, 1914, which stated that men who have joined His Majesty's Forces were not entitled to receive medical attendance and medicine or sanatorium treatment under the Insurance Acts, and that no liability for their treatment rested on panel practitioners by whom they had been accepted. The CLERK added that he had not received any information on the subject from the Scottish Commissioners.

In reply to a further inquiry, the CLERK stated that in the event of a man being discharged from the army for health reasons his former panel doctor was not responsible for his treatment. Attention was directed to Memo. 210/I.C., where it was stated that upon discharge, or in the case of the Reserve or Territorial Forces upon demobilization or disembodiment of these forces, the insured person will again become entitled to medical benefit (unless otherwise disentitled), and can then make a selection of the method by which he desires to obtain treatment as though he had newly entered into insurance.

Insurance Cards.—The CLERK stated, in reply to an inquiry, that as soon as information was received of a person ceasing to stamp his card because of his income having risen above the maximum, the doctor on whose list the patient appeared was communicated with. In answer to another question the Clerk stated that if an insured person had a medical card with the doctor's name, the doctor was responsible for the treatment, even if he had no list card. If a practitioner had any insured persons for whom he had no list cards, application should be made to the Insurance Committee giving the names and addresses of those persons and also the approved societies and membership number as shown by the medical card.

The CLERK expressed the opinion that in the case of a patient accidentally breaking a bottle of medicine he was entitled to have another prescription form supplied to him and a second mixture provided by the chemist. Practitioners would, however, be well advised to note on the second prescription form the circumstances causing the issue, so as to avoid any appearance of over-prescribing.

Over-payments.—With regard to money overpaid to panel doctors, the CLERK stated that each individual case would be dealt with. Each practitioner's proportion of the total income for medical benefit being ascertained, his share in the over-payment would be made out and deducted from the amount due for the current year.

FORFAR.

LOCAL MEDICAL COMMITTEE.

AT a meeting of the County of Forfar Local Medical Committee held at Forfar on December 16th, 1914, with Dr. PETERKIN in the chair, the estimate of income and expenditure up to the end of the current year was read, and it was decided to make no deduction from the fourth quarter's cheque in view of the balance standing at the Committee's credit. Drs. Hoile and Barron were appointed auditors for the current year.

The draft constitution of the proposed federation of Local Medical and Panel Committees was approved.

PANEL COMMITTEE.

At a meeting of the Panel Committee held on the same day and place, a letter was read from the Scottish Insurance Commissioners stating that in their opinion vaccination, for which calf lymph would be provided at the expense of the Drug Fund, came within the scope of medical benefit, and that accordingly no insurance service practitioner would be entitled to charge therefor.

Pharmaceutical Committee Expenses.—It was reported that the Commissioners had intimated that they were prepared to allot such further sums to the Pharmaceutical Committee for administration expenses as would not with any sum which may be allotted to the Panel Committee exceed one penny per insured person in all. It was decided to put forward a claim for the available balance after deduction of the £30 already allotted to the Pharmaceutical Committee. The alterations in the terms of the schedule of the agreement with a view to introducing a uniform system of medical certification were accepted.

The Secretary was instructed to write to the Clerk of the County Insurance Committee requesting that the mileage for each practitioner be again ascertained in the same manner as last year, and it was agreed that the money for unallotted persons should be allocated in the same manner as last year.

PERTH.

PANEL COMMITTEES.

MEETINGS of the Panel Committees for the Burgh and County of Perth were held on December 11th, 1914.

Unallocated Insured Persons.—At both meeting letters were submitted from the Clerks of the Insurance Committees in reference to the apportionment amongst the practitioners on the panel of the portion of the Panel Fund which will ultimately be due in respect of persons who did not choose doctors during the past year. After consideration it was unanimously decided to recommend that the apportionment be made on a simple *pro rata* basis.

Over-prescribing.—Dr. TROTTER reported to the County Panel Committee that he had received a letter from the Clerk of the Insurance Committee returning the observations by the Pharmaceutical Committee on the accounts for the first two quarters of the current year, and asking for a report by the Panel Committee. In reply to the observations the meeting expressed the opinion that it was undesirable to prescribe certain articles in a list submitted, and that these should be surcharged in future, but that no surcharge should be made for any date previous to that on which the circular of July 11th was issued.

BERKSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

THE twenty-sixth meeting of the Berkshire Local Medical Committee, and the ninth meeting of the Panel Committee, was held at the Royal Berks Hospital, Reading, on December 10th, 1914.

Payments.—A discussion arose as to the payments made by the Commissioners to the Insurance Committee and as to the proportion of that really due to the doctors which had been paid to them. Dr. NAPIER JONES pointed out that great care should be taken to keep a correct list, so that a case might be taken to the courts if the whole sum due on the list was not paid. It was decided to postpone further consideration until after the end of the present financial year.

The scheme prepared by the Berkshire Insurance Committee under Articles 21 (4) and 35 (1) of the Medical Benefit Regulations, 1913, was read and the following resolution passed:

> That whereas these articles refer to certain benefits given by the doctors on one hand, against a division of surplus funds on the other, and far from the doctors receiving any surplus funds they are not even being paid in full for all patients on their lists, the Berkshire Panel Committee is unable to guarantee that insured persons whose names do not appear on a doctor's list shall receive free treatment until they have been placed on such list.

Expenses of Pharmaceutical Committee.—The Honorary Secretary was instructed to inform the Insurance Committee that the arguments in a long letter from the Secretary of the Pharmaceutical Committee to the Insurance Committee on the subject of the administration expenses of the Pharmaceutical Committee in no way altered the opinion of the Panel Committee that the expenses of the Pharmaceutical Committee should not be paid out of the drug fund, and that the Panel Committee could not agree to any arrangement by which it was called upon to finance a committee on which it had no representation.

New Member.—Dr. NORMAN MAY (Sonning) was elected to fill the vacancy created by the resignation of Dr. Crouch. Much regret was felt by the Committee, as Dr. Crouch had done much useful work as Chairman of the Drug

Subcommittee, and as the medical representative on the Tuberculosis Subcommittee of the Insurance Committee.

GLOUCESTERSHIRE.

COUNTY PANEL PRACTITIONERS' MEETING.

OWING to the unsatisfactory methods of payment, the arrears of 1913 not having then been settled and the quarterly payments always being weeks overdue, a mass meeting of the panel practitioners was summoned by request. Nearly seventy practitioners attended, and Mr. Gardom, the Clerk to the Gloucester Insurance Committee, was present by invitation. A long discussion on the agreement took place, and it was left to the Panel Committee to examine the new forms of certification (when supplied), to consider them and, if approved, to notify the panel practitioners of their acceptance. Mr. GARDOM stated that the difficulties attending the administration of the Act were so great that considerable delays had hitherto been inevitable, but that every effort would be made by his staff to pay the quarterly accounts punctually.

The model tariff was agreed to and was finally accepted by the chemists after some hesitation.

PANEL COMMITTEE.

At a Panel Committee meeting held after the general meeting, arrangements were made to communicate the decision of the meeting to the Gloucestershire Committee, and at a later Panel Committee, held at Gloucester Infirmary on December 17th, 1914, the certificates and regulations thereon were discussed and approved.

Fee to Returning Officer.—A cheque for £5 5s. was forwarded to Mr. Gardom with the thanks of the Panel Committee for his services as returning officer at the late Panel Committee election.

Levies.—The difficulty of collecting the voluntary levy was commented upon, and the restrictions of the official levy were considered so unreasonable that a further communication was directed to be made to the Commissioners.

OXFORD.

LOCAL MEDICAL AND PANEL COMMITTEES.

THE fourth meeting of the Oxford Local Medical and Panel Committees was held on December 16th, 1914, when Dr. RIVERS-WILLSON was in the chair.

Transfer.—The SECRETARY reported that the Insurance Commissioners had refused the request to suspend the right of transfer by panel patients for this year. Only thirty-seven had, in fact, requested to be transferred, the reason assigned in nearly all instances being the desire to select doctors residing nearer to them.

Prescribing.—It was resolved to make arrangements with the Secretary of the Pharmaceutical Committee for an examination of the prescriptions to be made at the end of each quarter, and a grant of £5 was made to cover the expense. The average cost per prescription for the last quarter was 7.2d., as against 7.8d. for the corresponding period of last year.

It was decided to recommend panel practitioners to exercise care in the following respects: (1) Quantities should always be specified and not left to the judgement of the chemist. (2) Forms should be marked under their proper headings. There was evidence that drugs ordered for sanatorium patients were being charged to the ordinary fund owing to want of proper marking, and the same remark applied to temporary residents. (3) As far as possible the term "Rep. Mist." should be avoided, as it was inconvenient to the chemist and was not really needed now that the panel pharmacopoeia was in general use. It was reported that the Pharmaceutical Committee had notified the chemists to continue using the *British Pharmacopoeia* 1898, for the Oxford panel pharmacopoeia, and that in accordance with the circular issued by the Panel Committee in August, 1913, all chemists were to dispense the *B.P.C.* equivalent for any proprietary article ordered unless the doctor especially requested the latter.

Index Register.—It was reported that the index register on October 11th contained 18,722 names, and the doctors' acceptances numbered 16,330.

Tuberculosis.—A communication was received from the Insurance Committee stating that urgent cases of insured persons suffering from tuberculosis would be admitted to the Radcliffe Infirmary on the recommendation of the doctor, providing there was a vacant bed, and that the Insurance Committee had undertaken to pay for such cases.

Enlisted Men.—A communication was received from the Insurance Committee pointing out that soldiers and sailors were removed from the insured list from the day of enlistment or mobilization, and that the panel doctors were not, therefore, liable for their treatment. A letter was read from the Soldiers' and Sailors' Help Society requesting panel doctors to give free attendance to men on furlough or sick leave. The Secretary reported that he had stated in reply that there were thirty military doctors in Oxford, quoted Circular 210/I.C., and expressed the opinion that in these circumstances there was no necessity for the panel doctors to undertake this duty. The action of the Secretary was approved.

A request was received from the Insurance Committee that any man discharged from the force who applied for treatment to his former panel doctor should be reported to the clerk so as to prevent confusion between the panel and army and navy funds.

Record Cards.—A letter of October 13th from the British Medical Association was read, and special attention was drawn to the importance of keeping record cards accurately.

New Certificate Forms.—The new rules as to certification were discussed and the importance of strictly carrying them out was pointed out. The Secretary called attention to the action and remarks of the General Medical Council in a recent case.

Incapacity for Work.—The Secretary was instructed to ask the Commissioners for a definition of the word "work" in the certificates, as the local friendly societies interpreted it as usual employment whereas the insurance societies interpreted it as meaning any kind of work whatever. The Secretary reported an instance which occurred in respect of one of his patients; the society refused to pay, as the sick visitor found a woman getting her own tea; while her usual occupation was working in a laundry.

EAST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the East Suffolk Panel Committee was held at Saxmundham on December 8th, 1914, when Dr. HELSHAM presided.

Deputy Secretary.—Mr. Frank Sisson, solicitor, was appointed Deputy Secretary during the absence of Mr. Snell on military service.

Recognition.—A letter was read notifying that the Commissioners had, with the concurrence of the Joint Committee, recognized the Panel Committee as the Local Medical Committee for East Suffolk, and that such recognition would hold good until July 15th, 1915. It was resolved to send a fresh notice to panel doctors who had not already subscribed towards the expenses of the Local Medical Committee.

WEST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the West Suffolk Panel Committee was held at Bury St. Edmunds on December 8th, 1914, when Dr. WILKIN was in the chair.

Voluntary Deduction Towards Expenses.—In order to meet current expenses it was decided to make arrangements for the deduction of one farthing per person from the next payment due to each of the practitioners who had signed the agreement to this intent.

Suspense Slips.—The Secretary was directed to forward detailed report on his "suspense slips" received from Dr. Barwell to Dr. Cox.

GREAT YARMOUTH.

PANEL COMMITTEE.

THE monthly meeting of the Panel Committee was held on December 3rd, 1914, when Dr. H. BLAKE was in the chair.

Accounts Subcommittee.—A letter was read from the Clerk to the Insurance Committee asking the Panel Committee to appoint a member to serve on the Accounts Subcommittee to examine certain chemists' accounts. The Panel Committee declined on the ground that it was not its duty to check chemists' accounts thoroughly, and that this should be done by an independent and professional bill checker.

Distilled Water.—The Panel Committee dissented from a recommendation of the Medical Benefit Subcommittee

that when *aqua* was ordered without any qualifying word it was to be interpreted to mean distilled water.

Co-ordination of Work of Local Medical and Panel Committees.—The Committee decided to notify the British Medical Association that it was willing that its Secretary should enter into a steady and close relationship with the central office of the Association.

NORTHAMPTONSHIRE.

PANEL COMMITTEE.

A MEETING of the Northamptonshire Panel Committee was held at the Northampton Hospital on December 1st, 1914, when Dr. BAXTER was in the chair.

Checking Prescriptions.—It was reported that the Insurance Committee had not yet appointed a sub-committee to deal with the question of the continuous statistical analysis of prescriptions, etc.

Payments.—It was decided to recommend a payment on account of 80 per cent. of doctors' claims for the fourth quarter of the year.

Allocation.—An amended scheme for the allocation of rejected patients was adopted for submission to the Insurance Committee.

Co-ordination of Work of Local Medical and Panel Committees.—It was resolved to act in conjunction with the Local Medical and Panel Committee of the British Medical Association, and it was recommended that it should be strengthened by the addition of non-prescribing practitioners conversant with the conditions of practice in rural areas.

KINGSTON-UPON-HULL.

LOCAL MEDICAL AND PANEL COMMITTEES.

A SPECIAL meeting of Local Medical and Panel Committees was held on November 20th, 1914, when Dr. DAVY presided.

Co-ordination of Work of Local Medical and Panel Committees.—It was resolved:

That the present time is inopportune for the formation of a federation of Local Medical and Panel Committees with the proposed constitution, more especially having regard to the new Local Medical and Panel Subcommittee set up by the British Medical Association with the machinery for the co-ordination of the work of Local Medical and Panel Committees which it has at its disposal.

That the Secretary be instructed to enter into the steady and close relationship with the office of the British Medical Association as suggested in Circular M. 2, paragraph 15.

PANEL COMMITTEE.

The Panel Committee met on December 4th, 1914, when Dr. HARTLEY presided.

Local Pharmacopoeia.—It was resolved:

That the revision of the local pharmacopoeia should stand over until January next when the new *British Pharmacopoeia* would be available.

Doctors' Lists.—A letter was read from a practitioner complaining of receiving lists from the Insurance Committee of patients marked "Cannot be traced." Last autumn he had received a list of 47 names, 38 of which were of patients residing in his area and entitled to benefit. This autumn of 33 names he had received he had been able to trace 19; 3 of these residing at their original addresses. After discussion it was resolved:

That representation should be made to the Local Insurance Committee that the only grounds for removal of names from doctors' lists should be that they were definitely known to be disentitled to medical benefit, or that they had removed from the area of practice of the doctor concerned or from the area of the Local Insurance Committee, and that the Medical Benefit Subcommittee be asked to receive a deputation from the Committee on the subject.

Payments.—The position on the question of credits from the Commission permitting of the payment of only 1s. 6d. per insured person per quarter during the current year was considered very unsatisfactory, and it was resolved:

That this meeting express its great dissatisfaction with the inadequacy of the Commissioners' grants which fail to meet all quarterly instalments due, and call upon the Local Medical and Panel Subcommittee to take the matter up with a view to payment of back balances and prompt future payments in full.

It was resolved similarly to call upon the Local Insurance Committee also to take action.

Surcharge of Practitioner.—It was recommended to surcharge a practitioner in respect of (*a*) Persistent neglect in marking prescriptions "Sanatorium benefit," (*b*) prescribing at the expense of the Drug Fund for people not on his list.

CORRESPONDENCE.

THE DEFECTIVE BASES OF THE ACT.

DR. B. G. M. BASKETT (Rayleigh, Essex) writes: The Departmental Committee on Sickness Benefit Claims is said to be "satisfied, speaking generally, that the medical practitioners who have entered into arrangements with Insurance Committees have brought to their work a desire to do their best for their patients."

No other evidence is needed of the defective nature of the Insurance Act which, for a system where that consummation was certain, substitutes one that makes this offensively patronizing criticism either called for or possible, and suggests as the incentive for good work fear of the informer instead of the ultimately infallible principle of enlightened self-interest, leaving out of account the kindliness which is a tradition of our profession. Social service based on fear or force is a contradiction in terms.

We all (I presume) received early last month a notice from the Commissioners, the sting of which lay in the hint that we must accede or resign within fifteen days. Now, this short notice was meant either (1) to preclude concerted action, in which case it is taking a mean advantage of the war; or (2) to advertise the fact that they knew that no medical men would embarrass their work at this juncture—a fact which they could learn from that one of their number who from being our protagonist has become our despot. In the latter case it is a cruel taunt to men bound by their sense of patriotism to reject the freedom which the Commissioners pretended to offer.

The generous thing was to say nothing; they have been the means, under Government, of revolutionizing our conditions. We know for a time the worst, or nearly the worst, and no act of theirs should threaten a radical change till the war is past. But, failing generosity, that notice served no purpose which would not equally have been served by a notice to the medical press that the Commissioners postponed the changes which, but for the war, they would have made. That would have cost nothing; instead they have (if all the notices were sent, like mine, by registered post) spent some £150 of their trust money, merely to make an ostentatious show of the scrupulous fairness which characterizes modern State Bumbledom. It goes without saying that it is at our expense that the first efforts will be made to compensate for official extravagance.

Our patriotic duty is to go on, whatever they do. Hostilities are not to be thought of. But these two humiliations impel me to make an appeal which else I should have deferred.

The attack on the Act, suspended at the outbreak of war, will be at its cessation resumed with bitterness and efficacy redoubled—bitterness, because the distress (infinitely greater, as experience shows, after than during a great war) will make the tax a grievous burden; efficacy, because with England seething with hatred of Prussia and things Prussian, this piece of Prussia transplanted into its incongruous English surroundings will be peculiarly vulnerable.

The German people have been taught, and have learnt, that their thinking must be done for them from above. Hence the Belgian horrors, hence the war itself, hence the threatened ruin of their empire. It is the lesson taught by the policy of which in England the most marked and noxious expression is this Act—a policy which has made it possible for the State to fasten on a politically weak body of men and redistribute their wealth without a question asked as to merit or demerit, without a suggestion of duty neglected, without a hint of compensation to the dispossessed.

If this precedent stands, no body, unless it is politically strong, is for the future safe. I appeal to all who read this, whether richer or poorer for the Act, to help us to bring home to the people the danger. More especially I appeal to those who, like me, believe in the independence and self-reliance of the working class as our chief imperial asset, to help us to prepare a crushing indictment of the Act, to be issued after the resumption of peace. The preparation need not, and will not, in the least interfere with our whole-hearted loyalty to ministers from now till the end of the war. We have "one only love, one only hate" at present. But it behoves us to prepare to repel a

German invasion more real (because actually begun), more dangerous (because more insidious) than any which the Kaiser proposes. The form of help asked is that any reader should send (to me) from time to time authentic cases which illustrate the injustice and mischief inherent in a system which delivers up large bodies of men into the hands of State officials. Of special value would be evidence of—

1. A tendency of the Act to reduce wages, real or nominal.
2. Hardships to individuals, especially consumptives, among the insured caste.
3. The tendency to benefit the well-to-do rather than the poor.
4. Official inertia, arrogance, or waste.
5. Hardships to medical men.
6. Evasion of the Act.

IRREGULAR CERTIFICATES.

DR. GEORGE JEFFERSON (Talke, near Stoke-on-Trent) writes: I read with disgust and indignation the report in the JOURNAL of December 5th, 1914 (SUPPLEMENT, p. 258) of the Medical Council's proceedings against Dr. Walker of Manchester. It seems almost incredible that any doctor trying to work conscientiously the Insurance Act should be called upon to engage counsel to defend his honour and home because he has issued a bona fide certificate. From what I know of panel practice I say deliberately that thousands of us are compelled to sign certain certificates every week without seeing our patients. The other week I sent a man into hospital for operation, and since then his wife has brought the weekly form for my signature. Must I in future send her ten or twelve miles off for the signature of the house-surgeon? Surely it is time some definite instructions were given to both doctors and insured, otherwise the panel practitioner will be obsessed with the fear of "infamous conduct" and his life rendered intolerable.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, January 27th, 1915, in the Council Room, 429, Strand, London, W.C.

By order,

GUY ELLISTON,

Financial Secretary and Business Manager.

December 24th, 1914.

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH.—Dr. R. E. Crosse and Mr. N. Bishop Harman, Honorary Secretaries, give notice that a Council meeting will be held at 429, Strand, W.C., on Tuesday, January 12th, 1915, at 4 p.m.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

NORTH WALES BRANCH:

SOUTH CARNARVON AND MERIONETH DIVISION.

A MEETING of the South Carnarvon and Merioneth Division was held at Barmouth on December 10th, 1914, when Dr. H. R. GRIFFITH (Portmadoc) was in the chair.

Election of Officers.—The following officers were elected:

Chairman: Dr. R. Jones Evans (Pwllheli).
Vice-Chairman: Dr. Livingstone Davies (Criccieth).
Secretary: Dr. E. Lewys-Lloyd (Towyn).
Representatives on Branch Council: Dr. Davies (Criccieth), Dr. Hugh Jones (Dolgelley), Dr. Evans (Festiniog).
Executive Committee: Dr. H. R. Griffith, Dr. J. P. Jones, Dr. H. Gladstone Jones, Dr. Richard Jones (Festiniog), Dr. Wynne Griffith (Pwllheli), Dr. Ll. Owen (Criccieth).

Vote of Thanks.—A vote of thanks was unanimously accorded to Dr. L. E. Cox for his services as secretary.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Fleet Surgeon H. B. HALL to the *Laurentic*, vice Bradley. Fleet Surgeon J. BRADLEY (retired), to the *Challenger*, vice Hall. Staff Surgeon JOHN VERDON has retired from the service with a gratuity. Surgeon ARCHIBALD L. ROBINSON, M.B., has been placed on the retired list. Staff Surgeon THOMAS A. SMYTH, to the *Vivid*, additional, for Trevol infectious sick quarters. Surgeon G. J. CARR, to the *Imperieuse*, vice Barratt. Surgeon F. ST. B. WICKHAM, to the *Vivid*, for the Plymouth Hospital, vice Carr. Surgeons A. T. RIVERS, W. BRADBURY, M.B., J. N. BURDETT, and H. B. PARKER, M.B., to the *Victory*, additional, for Royal Naval Division. Temporary Surgeons: M. B. HAY, to the *Leda*; J. W. K. BRUCE, M.B., to the *Circe*; E. R. BAILEY, to the *Halcyon*, additional; N. F. LLOYD, M.B., to the *Vernon*; WALTER C. P. WHITE, M.B., GEORGE G. MOORE, THOMAS E. FRANCIS, M.B., THOMAS D. POWER, M.B., and ANDREW M. GRAY, M.B., to the *Victory*, additional, for Haslar Hospital; ALFRED G. SWORN and PETER B. KELLY, to the *Pembroke III*, for Royal Naval Air Service; BASIL H. PAIN, M.B., and HENRY WILKS, to the *Pembroke*, for Royal Naval Air Service; HORACE C. NIXON, M.D., to the *Ganges*, for Shotley, vice Wilkes; STANLEY S. BEARE, to the *Vivid*, for Plymouth Hospital; BERNARD W. DAKERS, to the *Pembroke*, additional, for disposal; EDWARD S. MELLOR, M.B., appointed to the *Pembroke*, additional, for disposal; GEORGE C. MORT, M.B., NOEL N. WADE, M.D., NORMAN C. CLIFTON, M.B.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationers: The following have been appointed to the *Attentive*, additional, for the ships indicated: C. MCDONALD, *Afridi*; G. A. PARIS, *Amazon*; N. K. HENDERSON, *Cossack*; W. O. LODGE, *Crane*; C. T. HALSHAM, *Crusader*; W. O'G. DONOGHUE, *Fawn*; and W. W. K. BROWN, *Falcon*. The following have been appointed to the *Tyne*, additional, for the ships indicated: P. G. S. DAVIS, *Cheerful*; K. MACK. ROSS, *Express*; W. J. MCB. ALLEN, *Mallard*; W. A. TURNER, *Ostrich*; J. F. SMITH, *Peterel*; D. S. PRENTICE *Stag*; P. H. S. SMITH, *Vigilant*. N. A. H. BARLOW, to the *Victory*, additional, for the *Murray*. To be Surgeon Probationers: G. M. S. LINDSAY, T. B. BAILEY, G. LILIES, D. R. M. NICOL, T. C. ST. C. MORTON, J. BRUMWELL, R. J. PATCHETT, R. O'CONNELL REDMOND, G. A. CLARK, J. F. HAYNES, P. S. CLARKE, D. A. KNIGHT, J. E. PHILLIPS, R. E. BATSON, F. R. LAW, and T. L. P. HARRIES.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT WILLIAM N. ALEXANDER relinquishes his temporary commission.

Temporary Lieutenant FREDERICK G. SHARPE resigns his commission.

To be temporary Lieutenants: HENRY MOORE, HENRY H. WHITE, M.D., JAMES M. BARKLEY, M.B., LEWIS A. WALKER, M.D., ERNEST P. CHENNELLS, M.B., REGINALD SHERMAN, M.B., CHARLES C. HOLMAN, M.B., F.R.C.S., FREDERICK PAINE, M.D., VYNNE BORLAND, M.B., ARCHIBALD L. GEORGE, JOHN MCA. HILL, M.B., JOHN C. MCCONAGHEY, M.D., JOSEPH S. ENGLISH, M.B., JAMES R. G. GARBUTT, M.B., NORMAN BOOTH, M.B., FRANK A. MURRAY, M.D., SIDNEY J. ORMOND, M.D., RODERICK A. CAMPBELL, M.D., JOHN J. JOHNSON, M.D., JOHN N. DOBBIE, M.B., SYDNEY G. BILLINGTON, M.B., F.R.C.S.E., MONTGOMERY DU B. FERGUSON, M.D., WILLIAM F. DUNLOP, M.B., FREDERICK R. DOUGAN, M.B., IGNATIUS A. DOWLING, SAMUEL CAMPBELL, M.B., JOHN C. P. BAYLEY, EDWIN C. A. SMITH, JOHN W. C. GUNN, M.B., GEORGE W. ARMSTRONG, HENRY THWAITES, LEONARD D. SAUNDERS, STUART MURRAY, M.B., JAMES CRAIG, M.B., ERNEST D. WORTLEY, HORACE E. H. TRACY, THOMAS DUNCAN, JOHN LUMB, M.B., J. A. MONTGOMERY, M.D., ROBERT MARSHALL, M.B., JAMES R. KEMP, GUY MATTHEWS, M.B., JAMES D. C. SWAN, M.B., VINCENT J. LAWLESS, WILLIAM L. HODGE, ARTHUR V. J. HARRISON, M.B., ROBERT M. GREIG, M.B., DOUGLAS H. D. WOODERSON, M.B., CLARE O. STALLYBRASS, M.D., PATRICK J. S. O'GRADY, M.B., RICHARD C. MONNINGTON, M.D., THOMAS B. MCKENDRICK, JOHN STEPHENSON, M.B., DERWENT C. TURNBULL, M.B., ROBERT M. BOYD, M.B., SYDNEY J. SIMPSON, M.B., F.R.C.S.E., EDWIN KIDD, M.B., WILLIAM MORRIS, CECIL A. BOYD, M.D., CARL R. B. VON BRAUN, ARNOLD C. S. COURTS, M.D.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN J. C. MCCARROLL resigns his commission on account of ill-health.

Lieutenants confirmed in their rank: JOHN P. HUBAN, JOHN C. A. DOWSE, RICHARD E. GRANDY, GEOFFREY L. TROWER, OSBORNE H. MAYOR, SAMUEL K. YOUNG, FREDERICK G. FLOOD, WILLIAM A. N. FOX, ROBERT R. G. ATKINS, GEORGE S. MCCONKEY, FRANCIS M. TAYLOR, CECIL L. GAUSSEN, JAMES DAVIDSON, HUGO R. FRIEDLANDER, ERIC CATFORD, RICHARD P. BALLARD, ALEXANDER L. ROBB, WILLIAM H. SHEPHARD, HERBERT SMITH, CECIL J. ROGERSON, ARTHUR F. I. PATTERSON, WILLIAM A. MACLENNAN, GEORGE E. CLIFTON, ERNEST F. GUY, THOMAS W. MARTIN, RONALD C. OZANNE, JOHN MCKERCHER, COLIN GRANT, HUGH A. FAWCETT, NORMAN CAMERON, JOHN R. CALDWELL, ARMANDO D. CHILD, HECTOR SMITH, JAMES E. BLACK, GERALD T. MULLALLY, WALTER A. ELLIOTT, NEALE L. LOCHRANE, HENRY B. SHERLOCK, JOHN LE M. KNEEBONE, THOMAS M. MILLER, MARK AVENT, RICHARD A. STEWART, FREDERICK A. BEARN, WILLIAM S. HAYDOCK, JOHN B. MINCH, ORIEL J. O'B. O'HANLON, CYRIL JACOBS, WILLIAM W. SHORTEN, JOHN COWAN, JOHN A. RYLE, KINGSLEY L. O'SULLIVAN, JOHN F. HILL, STUART D. ROBERTSON, RICHARD H. HODGES, THOMAS K. BONEY, CHARLES H. G. PENNY, JOHN S. COCKS, HUGH C. STORRIE, THOMAS G. SHAND, EDWIN C. W. STARLING, PENSAM THORNTON, JOHN P. LITT, JOHN PAULLEY, GRIFFITH L. JONES, WILLIAM H. CORNELIUS, FRANK SYKES, SAMUEL A. LANE, LESLIE H. W. WILLIAMS, JAMES MACALLAN, KINGSLEY W. LEWIS, JOHN W. MCNEE, BERNARD GRELLIER, FRANK R. KERR, FREDERICK V. BEVAN BROWN, RICHARD F. FAGAN, WILLIAM C. B. MEYER, BERNARD GOLDSMITH, THOMAS C. KIDNER, CLAUDE W. TREHERNE, JAMES R. MCCURDLE, DAVID C. BARRON, ROBERT G. BANNERMANN, ERIC W. WILLIAMS, KENNETH D. MURCHISON, EDWARD R. LOVELL, SAMUEL W. M. JONES, ERNEST M. COWELL, PATRICK MCDONNELL, KENNETH BIGGS, CASSIDY DE W. GIBB, HUGH G. CRAWFORD, EDWARD S. WALLS, ALFRED M. THOMSON, MATHEW W. PATERSON, JOHN H. MAGOVENY, JAMES C. YOUNG, CYRIL J. B. WAY, RONALD STEWART, CHARLES N.

GOVER, ANDREW A. FYFFE, ALBERT A. ATKINSON, JOHN A. W. EBDEN, STANLEY WICKENDEN, JOSEPH C. A. MCCALDEN, ARCHIBALD B. MITCHELL, DAVID C. L. VEY, SIDNEY W. RINTOUL, FRANK S. GILLESPIE, ROGER D. D. D. BROWNSON, HENRY W. EVANS, JOHN W. CRAW, JOHN H. BEVERLAND, WILLIAM W. MACNAUGHT, DAVID S. BADENOCH, BERTRAM SHIRES, GORDON A. HODGSON, BRYAN M. TUKE, ALFRED P. SMITH, JOHN E. FOLEY, WILLIAM B. ALCOCK, ROBERT G. MARTYN, CHARLES L. BALKWILL, GEORGE V. STOCKDALE, R. A. AUSTIN, HUGH G. TRAVER, WILLIAM R. BLORE, ARTHUR L. SHEARWOOD, GEOFFREY N. SMYTH, ROBERT E. BELL, ARCHIBALD WILSON, WILLIAM C. FLEISCHMANN, JAMES C. SPENCE, WILLIAM J. S INGRAM, ROBERT P. A. KIRKLAND, GRANTLY D. READ, FREDERICK J. H. T. FRERE.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL R. J. BAKER, I.M.S. (retired), to be Commanding Officer, Indian Field Ambulance Training Corps.

Lieutenant-Colonel J. GOULD, M.B., Assistant Director-General, Indian Medical Service (Stores), appointed to officiate as Deputy Director-General, Indian Medical Service, during the absence of Brevet-Colonel B. G. Seton, V.H.S., who has reverted, temporarily, to military duty

Lieutenant-Colonel H. E. DRAKE-BROCKMAN, Director to H.H. the Nizam's Medical Department, appointed temporarily to hold charge of the current duties of the office of Resi lency Surgeon at Hyderabad, in addition to his own duties, with effect from October 27th, 1914.

Lieutenant-Colonel G. H. D. GIMLETTE, C.I.E , M.D. (retired list), is appointed to be medical officer in charge of a hospital ship, September 11th, 1914.

Major F. E. WILSON appointed, temporarily, to hold visiting charge of the office of the Residency Surgeon, Mewar, in addition to his own duties, with effect from November 1st, 1914.

Lieutenant to be Captain: D. F. MURPHY, M.B.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

LIEUTENANT-COLONEL JOHN R. J. RAYWOOD is appointed an Assistant Director of Medical Services, South Midland Division, with the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Second London General Hospital.—ARTHUR W. ORMOND, F.R.C.S., to be Captain.

Third London (City of London) Field Ambulance.—To be Lieutenants: LEONARD H. WOOTTON, M.B., ARTHUR E. HUXTABLE.

Second London Sanitary Company.—JOHN CRAWFORD, M.B., to be Lieutenant.

Second Home Counties Field Ambulance.—Lieutenant ARTHUR C. WATKIN, from Attached to Units other than Medical Units, to be Lieutenant.

Second Southern General Hospital.—Captain HAROLD F. MOLE, F.R.C.S., resigns his commission on account of ill-health.

East Anglian Casualty Clearing Station.—Major WILLIAM A. GIBB, M.D., from Attached to Units other than Medical Units, to be Lieutenant-Colonel.

Second East Anglian Field Ambulance.—ARCHIBALD B. PETTIGREW to be Lieutenant.

Third East Anglian Field Ambulance.—Major GEORGE A. TROUP, M.D., from Attached to Units other than Medical Units, to be Major.

First South Midland Mounted Brigade Field Ambulance.—ALEXANDER MITCHELL, M.B., to be Lieutenant.

Sanitary Service.—Major E. SERGEANT resigns his commission. Captain HERBERT E. CORBIN, from Attached to Units other than Medical Units, to be Captain.

Northumbrian Casualty Clearing Station.—Lieutenant-Colonel WILLIAM E. HUME, M.B., from First Northern General Hospital, to be Major.

Third Northumbrian Field Ambulance.—Surgeon-Captain CLARENCE B. WHITEHEAD, M.B., from Fourth Battalion, Alexandra Princess of Wales's Own (Yorkshire Regiment), to be Captain.

Third Highland Field Ambulance.—Captain JOHN TAIT to be Major, temporary. THOMAS C. BRITTON, M.B., late Cadet, Edinburgh University Contingent, Senior Division, Officers' Training Corps, to be Lieutenant.

Attached to Units other than Medical Units.—JOSIAH F. HALL, M.B., late Surgeon-Captain, Third V.B. Queen's (Royal West Surrey Regiment), to be Captain. To be Lieutenants: Lieutenant HERBERT V. CAPON from the Second East Anglian Field Ambulance; Lieutenant CHARLES F. SEARLE, M.B., from the First East Anglian Field Ambulance; Lieutenant FREDERICK C. KEMPSON, M.B., from the Third East Anglian Field Ambulance; AUSTEN A. HEARNE, LESLIE M. LADELL, M.B., WILLIAM L. R. WOOD, HUGH A. MCLEAN, M.B., THOMAS J. THOMSON, M.D., ARCHIBALD N. S. CARMICHAEL, M.B., ANGUS CAMERON, M.B., LESLIE E. HUGHES.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL SIR SEYMOUR J. SHARKEY, M.D., from the Second London (City of London) General Hospital, to be Lieutenant-Colonel.

The announcement regarding Surgeon-Captain C. GAYER, printed in the *London Gazette* of ecember 4th, is cancelled.

Vital Statistics.

EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

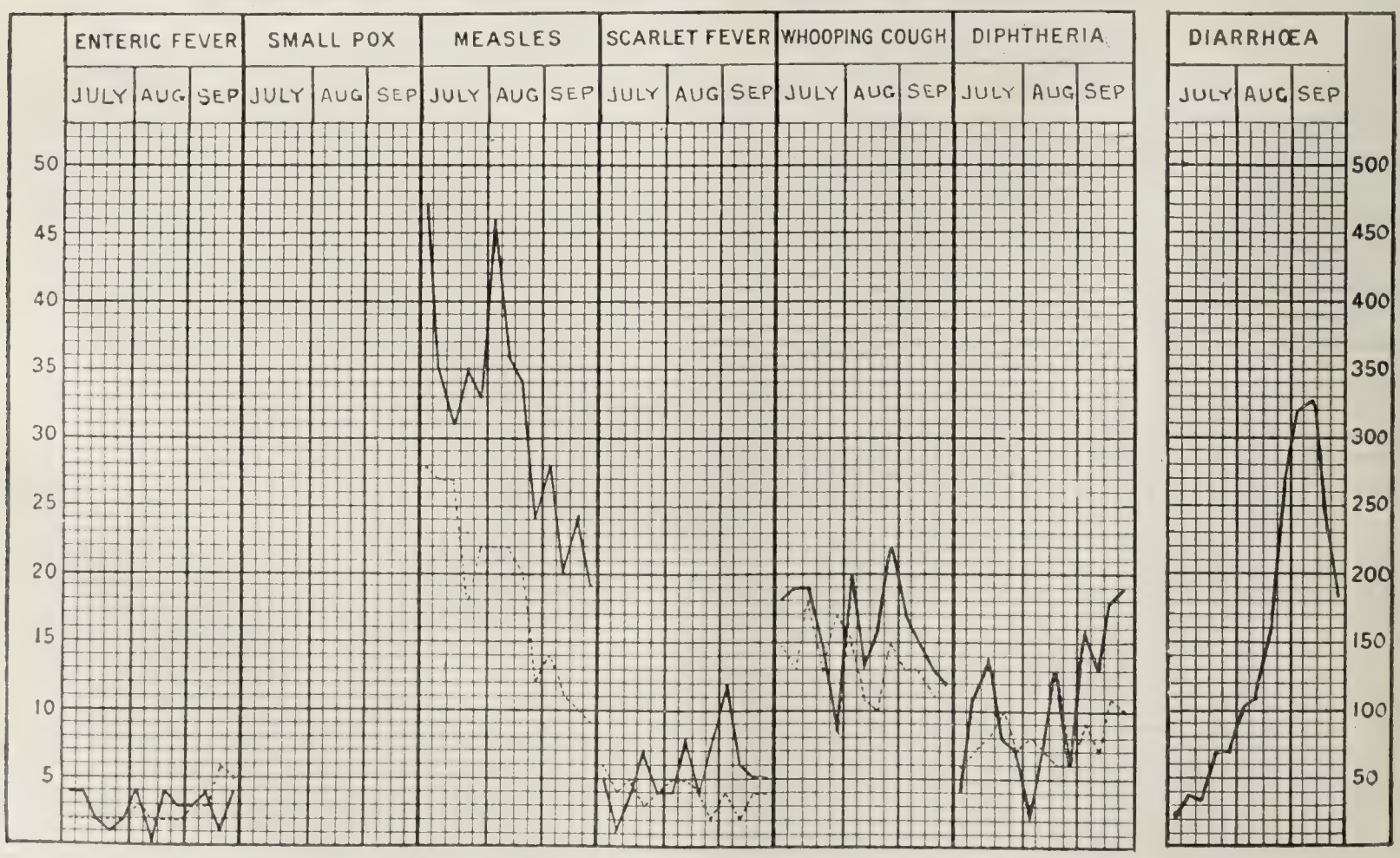
THE accompanying diagram shows the prevalence of the principal epidemic diseases during the third quarter of the year. The fluctuations of each disease and its relative fatality compared with the average in the corresponding periods of recent years can thus be readily seen, except in the case of diarrhoea and enteritis among children under 2 years of age, for which the average mortality is not available.

Enteric Fever.—The fatal cases of enteric fever, which had been 47 and 32 in the two preceding quarters, rose again last quarter to 36, and were equal to the average number in the corresponding period of the five preceding years. This disease showed the highest proportional mortality last quarter in Chelsea, the City of Westminster, Bethnal Green, and Battersea. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 65 and 40 at the end of the two preceding quarters, had risen again to 57 at the end of last quarter: 109 new cases were admitted during the quarter, against 147 and 88 in the two preceding quarters.

Small-pox.—No death from small-pox was registered during the quarter, and no cases of this disease were under treatment in the Metropolitan Asylums Hospitals.

Measles.—The deaths from measles, which had been 52, 148, and 346 in the three preceding quarters, further rose last quarter to 412, and were 169 in excess of the average number in the third quarters of the five preceding years. This disease was proportionally most fatal last quarter in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey.

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE THIRD QUARTER OF 1914.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the five preceding years, 1909-13. Under the heading "Diarrhoea" are given the deaths from diarrhoea and enteritis among children under 2 years of age; the corrected average number of these deaths is not available.

Scarlet Fever.—The fatal cases of scarlet fever, which had been 66 and 69 in the two preceding quarters, further rose last quarter to 75, and were 21 above the average number in the corresponding period of the five preceding years. Among the several metropolitan boroughs this disease was proportionally most fatal in Fulham, Chelsea, St. Marylebone, Stepney, Bermondsey, Camberwell, and Greenwich The Metropolitan Asylums Hospitals contained 4,157 scarlet fever patients at the end of last quarter, against 3,137 and 3,046 at the end of the two preceding quarters; 6,283 new cases were admitted during the quarter, against 4,799 and 4,731 in the two preceding quarters.

Whooping-cough.—The deaths from whooping-cough, which had been 281 and 310 in the two preceding quarters, declined again last quarter to 206, and were 30 in excess of the corrected average number. The highest death rates from this disease last quarter were recorded in Paddington, Finsbury, Shoreditch, Bethnal Green, Southwark, and Camberwell,

Diphtheria.—The fatal cases of diphtheria, which had been 161 and 143 in the two preceding quarters, further declined last quarter to 138, but were 36 in excess of the corrected average in the corresponding quarters of the five preceding years. This disease was proportionally most fatal last quarter in St. Pancras, Bethnal Green, Stepney, Poplar, Southwark, Lambeth. Deptford, and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1,307 and 1,079 at the end of the two preceding quarters, had risen again to 1,296 at the end of last quarter; the number of new cases admitted during the quarter was 1,975, against 2,069 and 1,673 in the two preceding quarters.

Diarrhoea.—The 1,944 deaths under this heading are those attributed to diarrhoea and enteritis among children under 2 years of age; measured in proportion to the births registered during the quarter, the mortality from this cause was greatest in Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford.

In conclusion it may be stated that the aggregate mortality last quarter from these epidemic diseases, excluding diarrhoea, was 42 per cent. above the average.

HEALTH OF ENGLISH TOWNS.

In ninety-seven of the largest English towns 8,251 births and 5,580 deaths were registered during the week ended Saturday, December 19th, 1914. The annual rate of mortality in these towns which had been 16.6, 15.3, and 15.7 per 1,000 in the three preceding weeks, rose to 16.1 per 1,000 in the week under notice. In London the death-rate was equal to 16.5, against 16.4, 15.3, and 15.5 per 1,000 in the three preceding weeks. Among the ninety-six other large towns the death-rate ranged from 6.3 in Cambridge, 7.5 in Gillingham, 8.0 in Ilford, 8.2 in Ipswich, 8.5 in East Ham, and 8.7 in Wimbledon and in Wolverhampton, to 22.7 in Gateshead, 22.8 in Oldham, 24.3 in Plymouth, 25 1 in Wigan, 25.4 in Southport, and 35.6 in West Hartlepool. Measles caused a death-rate of 1.9 in Huddersfield, 2.0 in Wakefield, 3.1 in Newcastle-on-Tyne, 3.2 in Plymouth, 4.0 in Grimsby, 4.3 in Merthyr Tydfil, 4.6 in Wigan, and 6.6 in Gateshead; and diphtheria of 1.3 in Southampton and 1.8 in Great Yarmouth. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 58, or 1.0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner; of this number, 14 were recorded in Liverpool, 9 in Birmingham, 6 in Bootle, 4 in St. Helens, 4 in Gateshead, 3 in Stoke-on-Trent, and 2 in Tynemouth. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5,035, 4,980, and 4,893 at the end of the three preceding weeks, had further fallen to 4,763 on Saturday, December 19th; 451 new cases were admitted during the week, against 623, 537, and 504 in the three preceding weeks,

In the ninety-seven largest English towns 5,859 births and 4,882 deaths were registered during the week ended Saturday, December 26th, 1914. The annual rate of mortality in these towns, which had been 15.3, 15.7, and 16.1 per 1,000 in the three preceding weeks, fell to 14.0 per 1,000 in the week under notice. In London the death rate was equal to 12.8, against 15.3, 15.5, and 16.5 per 1,000 in the three preceding weeks. Among the ninety-six other large towns the death-rate ranged from 5.6 in Eastbourne, 6.6 in Ealing, 7.0 in Wimbledon and in Hornsey, 8.0 in Bournemouth, and 8.2 in East Ham, to 21.2 in Stoke-on-Trent, 21.7 in Wigan, 21.9 in Newcastle-on-Tyne, 22.2 in St. Helens, 24.5 in Oldham, and 26.7 in West Hartlepool. Measles caused a death-rate of 1.7 in Croydon, 1.8 in Cambridge, 1.9 in Birkenhead, 2.6 in Gateshead, 3.4 in Wigan and in Newcastle-on-Tyne, 4.2 in Huddersfield, 4.3 in Merthyr Tydfil, and 7.3 in Grimsby; scarlet fever of 1.8 in Preston; and whooping-cough of 1.3 in Rhondda and 1.8 in Merthyr Tydfil. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 56, or 1.1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner; of this number, 15 were recorded in Birmingham, 7 in Liverpool, and 2 each in Coventry, Nottingham, Warrington, Blackpool, South Shields, Newcastle-on-Tyne, Tynemouth, and Carlisle. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which has been 4,980, 4,893, and 4,763 in the three preceding weeks, had further fallen to 4,583 on Saturday, December 19th; 348 new cases were admitted during the week, against 537, 504, and 451 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,140 births and 791 deaths were registered during the week ended Saturday, December 19th, 1914. The annual rate of mortality in these towns, which had been 18.4, 18.3 and 17.7 per 1,000 in the three preceding weeks, rose to 18.0 in the week under notice, and was 1.9 per 1,000 above the rate in the ninety-seven large English towns. Among the several towns the death rate ranged from 9.4 in Falkirk, 12.2 in Hamilton, and 12.6 in Motherwell, to 19.6 in Aberdeen, 24.1 in Greenwich, and 32.2 in Perth. The mortality from the principal infective diseases averaged 1.8 per 1,000, and was highest in Dundee and Greenock. The 380 deaths from all causes in Glasgow included 24 from whooping-cough, 11 from scarlet fever, 6 from infantile diarrhoea, 3 from diphtheria, 1 from measles, and 1 from enteric fever. Five deaths from whooping-cough were recorded in Dundee, 2 in Greenock, and 2 in Clydebank; from diphtheria, 3 deaths in Edinburgh; from scarlet fever, 2 deaths in Edinburgh and 2 in Aberdeen; and from measles, 2 deaths in Dundee.

In the sixteen largest Scottish towns 952 births and 791 death were registered during the week ended Saturday, December 26th, 1914 The annual rate of mortality in these towns, which had been 18.3, 17.7, and 18.0 per 1,000 in the three preceding weeks, was again 18.0 in the week under notice, but was 4.0 per 1,000 above the rate in the ninety-seven large English towns. Among the several towns the death-rate ranged from 5 1 in Kirkcaldy, 10.7 in Perth, and 10.8 in Hamilton, to 20.7 in Greenock and 22.2 in Dundee and in Aberdeen. The mortality from the principal infective diseases averaged 1.8 per 1,000, and was highest in Dundee and Aberdeen. The 398 deaths from all causes in Glasgow included 21 from whooping-cough, 8 from scarlet fever, 8 from infantile diarrhoeal diseases, 5 from diphtheria, and 1 from enteric fever. Four deaths from measles, 5 from whooping-cough, and 2 from diphtheria were recorded in Dundee; 5 deaths from scarlet fever and 5 from diphtheria in Aberdeen; and 2 deaths from diphtheria in Edinburgh.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, December 12th, 1914, 585 births and 488 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 549 births and 464 deaths in the preceding period. These deaths represent a mortality of 21.1 per 1,000 of the aggregate population in the districts in question, as against 19.1 per 1,000 in the previous period. The mortality in these Irish areas was therefore 5.4 per 1,000 higher than the corresponding rate in the ninety-seven English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 25.3 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 23.2 (as against an average of 20.1 for the previous four weeks), in Dublin city 25.2 (as against 21.5), in Belfast 20.8 (as against 19.4), in Cork 25.2 (as against 19.4), in Londonderry 17.8 (as against 15.2), in Limerick 19.0 (as against 16.0), and in Waterford 30.4 (as against 23.3). The zymotic death-rate was 2.0 as against 1.9 in the previous week.

During the week ending Saturday, December 19th, 1914, 593 births and 503 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 585 births and 488 deaths in the preceding period. These deaths represent a mortality of 21 8 per 1,000 of the aggregate population in the districts in question, as against 2.11 per 1,000 in the previous period. The mortality in these Irish areas was therefore 5.7 per 1,000 higher than the corresponding rate in the ninety-seven English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 25.7 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 24.7 (as against an average of 21.3 for the previous four weeks), in Dublin city 24.7 (as against 23.0), in Belfast 18.3 (as against 20.5), in Cork 27.2 (as against 21.8), in Londonderry 15.2 (as against 14.6), in Limerick 20.3 (as against 17.6), and in Waterford 22.8 (as against 24.2). The zymotic death-rate was 2.1, as against 2.0 in the previous period.

During the week ending Saturday, December 26th, 1914, 383 births and 393 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 593 births and 503 deaths in the preceding period. These deaths represent a mortality of 17.0 per 1,000 of the aggregate population in the districts in question, as against 21.8 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.0 per 1,000 higher than the corresponding rate in the ninety-seven English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 16 6 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 16.4 (as against an average of 22.8 for the previous four weeks), in Dublin city 16.5 (as against 24.1), in Belfast 22.0 (as against 20.3), in Cork 14.3 (as against 21.6), in Londonderry 11 4 (as against 14.5), in Limerick 13.5 (as against 21 0), and in Waterford 9.5 (as against 21.8). The zymotic death-rate was 1.4, as against 2.1 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDARE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon (male). Salary, £150 per annum.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—House-Surgeon. Honorarium, £100 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior and Junior House-Surgeons. Salary, £110 and £100 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM UNION.—(1) Second, Third, and Fourth Assistant Medical Officers at the Dudley Road Infirmary; salary, £210, £170, and £160 per annum respectively. (2) Assistant Medical Officer at the Selly Oak Infirmary. Salary, £180 per annum.

BOLTON INFIRMARY AND DISPENSARY.—(1) Junior House-Surgeon; (2) Third House-Surgeon. Salary, £120 and £110 per annum respectively.

BRADFORD ROYAL INFIRMARY.—House-Surgeon (male). Salary, £100 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon. Salary, £100 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Surgical Registrar. Salary, £100 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—(1) Two House-Surgeons; salary, £140 per annum each. (2) House-Surgeon (lady) for the Ophthalmic and Ear and Throat Departments; salary, £140 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House-Surgeon. Salary, £150 per annum.

CHICHESTER: WEST SUSSEX COUNTY MENTAL HOSPITAL.—Second Assistant Medical Officer. Salary, £250 per annum, rising to £300.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £100 per annum.

EDMONTON EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Salary, £80 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. Salary, £120 and £100 per annum respectively.

HULL CITY ASYLUM.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KENT AND CANTERBURY HOSPITAL.—Senior and Junior House-Surgeons. Salary, £100 and £90 per annum respectively.

LANCASHIRE COUNTY ASYLUM, Winwick.—Locumtenent Medical Officer. Salary, £6 6s. weekly.

LEEDS: GENERAL INFIRMARY.—Ophthalmic House-Surgeon. Salary at the rate of £50 per annum.

LINTON UNION.—Medical Officer for the Balsham District. Salary, £75 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Salary, £60 per annum each.

LIVERPOOL STANLEY HOSPITAL.—House-Surgeon. Salary, £80 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—(1) Assistant Medical Officer; salary, £250 per annum, increasing to £300, and upon promotion to £450. (2) Locumtenent; salary, £6 6s. per week.

MANCHESTER EDUCATION COMMITTEE.—Assistant School Medical Officer (female). Salary, £300 per annum, rising to £450.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £180 per annum, increasing to £20 .

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

MANCHESTER TOWNSHIP. Second Resident Assistant Medical Officer at the Poor Law Institution at Crumpsall. Salary, £180 per annum.

MANCHESTER: VICTORIA MEMORIAL JEWISH HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary at the rate of £100 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at the rate of £100 per annum, rising to £150.

NOTTINGHAM: GENERAL HOSPITAL.—Senior House-Physician. Salary, £120 per annum. (Women eligible.)

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Resident Medical Officer. Salary, £90 per annum.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—District Resident Medical Officer. Salary at the rate of £60 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—House-Surgeon. Salary at the rate of £8 per annum.

ROCHDALE INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £110 per annum.

ROYAL WATERLOO HOSPITAL FOR WOMEN AND CHILDREN, S.E.—Resident Medical Officer for duration of the war. Salary at the rate of £150 per annum.

SALFORD ROYAL HOSPITAL.—(1) Resident Surgical Officer; (2) Casualty House-Surgeon. Salary, £120 and £100 per annum respectively.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £80 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. (Males.) Salary, £100 per annum each.

SIDLAW SANATORIUM.—Resident Medical Officer. Salary, £125 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STAFFORDSHIRE, WOLVERHAMPTON, AND DUDLEY JOINT COMMITTEE FOR TUBERCULOSIS.—Resident Medical Officer for Moxley Sanatorium. Salary, £300 per annum.

STOKE-ON-TRENT EDUCATION COMMITTEE.—Lady School Medical Inspector. Salary, £300 per annum, rising to £350.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) House-Physician. (2) House-Surgeon. Salary, £150 per annum each, rising £10 annually.

SUNDERLAND COUNTY BOROUGH.—Tuberculosis Medical Officer (temporary). Salary at the rate of £500 per annum.

SUNDERLAND ROYAL INFIRMARY.—(1) Senior Resident Medical Officer (Surgeon); (2) two Junior House-Surgeons. Salary, for (1) £150 per annum, and for (2) £120 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Surgeon. Salary, £125 per annum.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £200 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Physician. Salary, £100 per annum.

WESTERN OPHTHALMIC HOSPITAL, Marylebone Road, N.W.—House-Surgeon (non-resident). Salary, £100 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

YORK COUNTY HOSPITAL.—House-Physician and House-Surgeon. Salary, £150 per annum.

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

BANBURY, R. A., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Woolwich Union Infirmary.

BROWNE, F. G. F., M.B., Ch.B.Liverp., District Medical Officer of the Birkenhead Union.

COOMBES, Percival Charles, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent of the Surrey County Asylum, Netherne, Merstham.

COURTAULD, R. M., M.D.Camb., D.P.H., Assistant County Medical Officer of Health to the West Suffolk County Council, vice H. L. Hopkins, M.B., B.S.Lond.

FIELDEN, H. A., M.D.Durh., Certifying Factory Surgeon for the Shildon District, co. Durham.

MACKENZIE, M. D., M.B., B.S.Lond., District Medical Officer of the Huddersfield Union.

QUENNELL, A., M.R.C.S., L.R.C.P., Medical Officer of "The Meads" Children's Home of the Poplar Borough Parish.

STEELE, T., M.B., C.M.Edin., Certifying Factory Surgeon for the Hamilton District, co. Lanarkshire.

THOMPSON, R. B., M.B., Ch.B.Vict.Manch., District Medical Officer of the Totnes Union.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—The following appointments have been made:

Acting Assistant Physician.—J. O'Donovan, M.D.Lond, M.R.C.P.
Medical Registrar.—Miss Pickard, M.D., B.S.
Surgical Registrar.—Miss Davies-Colley, M.D., B.S., F.R.C.S
Clinical Assistant to Throat, Nose, and Ear Department.—Miss Lowry, M.B., B.S.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

GAUNTLETT.—On December 27th, at 39, Oakhill Road, Putney, S.W., the wife of Lieutenant H. Leon Gauntlett, R.A.M.C., 6th Battalion Gloucester Regiment, of a son.

PHILLIPS.—On December 26th, at Clinton Road, Redruth, Cornwall, the wife of Lionel L. Phillips, M.R.C.S., of a daughter.

DEATHS.

MACKINNON.—On Sunday, December 27th, at Nairobi, British East Africa, Margaret Isabel, the infant daughter of Lily and Murdoch Mackinnon, M.D., D.P.H., aged 8 weeks. (By cable.)

MACNALTY.—On December 26th, at Dublin, Francis Charles MacNalty, M.A., M.D., M.Ch.Dubl late Senior Assistant Physician to the Metropolitan Free Hospital, aged 68.

WILKINSON.—On December 24th, at 3, Dingle Hill, Dingle, Liverpool, George Wilkinson, M.B., C.M.Edin., aged 49 years, only son of the late George Wilkinson of York.

DIARY FOR THE WEEK.

TUESDAY.

ROENTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C., 8.15 p.m.—General Meeting. Resumed Discussion on the Localization of Foreign Bodies by X Rays.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8 p.m.—Annual General Meeting; Election of Officers; President's Address; Conversazione.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Clinical Meeting.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Courses are to be given next week at the following schools, colleges, and hospitals:

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn Road. Tuesday and Friday, 3 p.m., Diseases of the Larynx.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 9TH, 1915.

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OVER-PRESCRIBING:

SOME CAUSES AND REMEDIES.

By H. HOWARD MURPHY, M.D.,

TWICKENHAM.

"OVER-PRESCRIBING" has become a serious matter for panel doctors and Insurance Committees; but what over-prescribing means has not been defined. The Insurance Committees have warned the profession about it, and are taking steps at great expense and trouble to search out the guilty, and threaten to fine them. The cost of many drugs, etc., has gone up, and a solemn warning has been addressed by a committee of leading medical men of great authority telling us to use these drugs sparingly, and to substitute others that are cheaper whenever possible. But they do not tell us what the alternative drugs are, and in many cases it is hard to think of any.

The Insurance Act allows 1s. 6d. for drugs and appliances, and the floating sixpence is available in case the allowance is exceeded. All this 2s. has been spent, and yet the chemists' bills under the tariff have been unpaid some 30 per cent. The chemists clamour for more money, that they may be paid in full; but have not made any suggestions for lessening the cost of prescriptions.

What is Over-prescribing?

In the absence of any authoritative definition we may learn something from the following. In the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of December 5th, 1914, under the heading, "Drug Fund in South Wales," it is stated that the average cost of prescriptions was 7.8d. in 1913, when there was no complaint of over-prescribing. This year (1914) the average cost is 9.68d. for each prescription, and an estimated deficit of 30 per cent. on the chemists' bills. Therefore it would appear that anything over 7d. a prescription—about 1d. an ounce—is over-prescribing. This is a very rough criterion, for it takes no account of the amount of illness, nor of the number of doses in the bottle, nor the frequency with which the doses are administered, nor yet the sum due to expenditure on appliances, etc.

Causes of Over-prescribing.

It is not due to deliberate intention, that we may safely assert. Is it education or want of it? Medical men whilst students at a hospital learn practically nothing of dispensing, and but little of pharmacy beyond what the *British Pharmacopoeia* contains. The wiser men take assistantships before settling in private practice, thereby making good their defective hospital education in this and other respects. A minority of men get into consulting work and prescribing practices which do no dispensing, and they continue using the *British Pharmacopoeia*, and never learn or, perhaps, need any other way.

Consequently, there are a good many men who are ignorant of the economy of prescribing; and others are careless and reckless by nature. Such men are not equipped or suited for panel practice, and are probably the chief offenders in over-prescribing. They can plead, "We prescribe what we learnt from our *British Pharmacopoeia* and according to our hospital teaching," and we can hardly blame them for their faulty performance. But as panel practitioners they must learn, or they will suffer. It is costing all the rest of us trouble and loss of money. Not we, but the chemists, have got hold of the floating sixpence. The Insurance Committees are hunting up these gentlemen at much trouble and expense, and can and will fine them. "Oh, but it is according to the *Pharmacopoeia*," will not save them. For us it throws a light, probably correct, on the ultimate cause of over-prescribing—the extravagant *British Pharmacopoeia* and the neglect of proper education in pharmacy and dispensing.

Remedies.

The following courses suggest themselves, and may be described as political in nature:

1. Increase of insurance funds by a parliamentary grant, but this may be put aside as very unlikely at present.

2. The chemists suggest that the panel doctors' fund (already too small) should be merged with the drugs and appliance fund, and from this the chemist should be paid in full, and the remainder, if any, should be divided amongst the doctors. Of course, they have long ago secured for themselves the floating sixpence. Another suggestion is that the doctors should do the dispensing and take the drug fund; and, again, that the chemists should take the whole fund and do both the doctoring and the dispensing, but this must be a joke. The doctors will probably refuse panel work if any such schemes are carried, and the chemists will refuse if they are not paid in full. The result in either case would be a breakdown of the whole insurance scheme, with the possible formation of a whole-time State service of both doctors and chemists.

3. Take the tax off alcohol used for medicinal purposes, or at any rate greatly reduce it. This has been attempted before, but without success. Could not the Chancellor of the Exchequer be induced to reconsider the matter now that the panel finance seems on the verge of failure? The Council of the British Medical Association might try, and the chemists would certainly help.

4. Conference and co-operation between the panel doctors and chemists would be the ideal method of solving many difficulties. There seems to be some unwillingness to do this, some holding back on both sides. A few scattered

meetings here and there—inconclusive, irreconcilable, and futile, so far as one can gather from the reports in the SUPPLEMENT. What is needed is a meeting really representative of the whole country; all the men determined to find a solution and with instructions to do so from every committee. One wonders what is the cause of this absence of united action, obviously present, when both chemists and doctors are suffering and losing money. And whether that floating sixpence is the real source of contention.

5. A panel pharmacopoeia for the whole country would most likely get us out of the present difficulties and prevent their recurrence. The chemists would have to help to make it economical, and the doctors would have loyally to use it in prescribing whenever possible. There is a book, the *Pharmacopoeias of the London Hospitals*, that would be most useful; each being compiled by the staff of the hospital has a guarantee of excellence. But it would be necessary for panel purposes to make certain changes to reduce the cost of the mixture, etc., on the lines to be described later.

6. If the doctors and chemists cannot pull together, then as a last resort, to prevent disaster to panel finance, the Commissioners or Committees could with their extensive powers intervene.

7. Every medical man can and should prescribe economically. This can at present only be learnt by experience in the dispensary of a general practitioner with a practice including many poor people. They cannot afford to pay for fancy articles. Only what is good is used, but by avoiding unnecessary expense, it is possible to reduce the cost to suit their means. Every medical man and chemist to pass his qualifying examinations has to show a thorough knowledge of the *British Pharmacopoeia*, but that book does not inculcate economy, far otherwise. He can learn a great deal about the newer remedies from studying the *Extra Pharmacopoeia*, and the *Pharmaceutical Codex* will supply many excellent prescriptions as well. But they again are not aids to economy. This he will find explained in Hart's *How to cut the Drug Bill*, Sutherland's *Dispensing Made Easy*, and similar works.

Rules for Economy in Prescribing.

Here are some simple rules and hints from these and other sources for the guidance of the practitioner:

1. Always use the best quality drugs, but avoid a multiplicity of drugs and preparations, both in the dispensary and in each prescription.

2. Avoid the use of preparations containing alcohol when possible, substituting other menstrua and vehicles.

3. Any good potable water can be used for aqua in nearly all prescriptions. The *Pharmacopoeia* does not order otherwise, in spite of what the *British Pharmacopoeia Codex* says and many chemists assert.

4. Compressed drugs, tablets, and triturates, etc., are cheaper than pills, powders, and lozenges, etc. They can be used in making mixtures also, and have the advantage of being accurate in dosage.

5. Prescribe mixtures as concentrated, and consequently the doses as small, as possible. It saves time and trouble, and the patient will call less often for his refill. He advantages nothing by the amount of water in the bottle.

6. Avoid the use of all patent and proprietary medicines. The *Secret Remedies* and *More Secret Remedies*, published by the British Medical Association, has shown how expensive they are without any compensating merits.

7. If you wish to continue using the old *Pharmacopoeia* and its weights and measures, write "*B.P. 1898*" at the head of the prescription.

How the "British Pharmacopoeia" can be Improved.

It is very much less used than in years past, as it is quite behind the times. The chemicals, drugs, and alkaloids, though not capable of alteration, could be much added to in number. The dispenser buys nearly everything ready-made from the manufacturers and wholesale chemist. The pills, for instance, are purchased ready-made and coated; there are only twenty in the *British Pharmacopoeia*, but hundreds in some of the manufacturers' lists; and the compressed drugs, tablets, etc., not mentioned in the *British Pharmacopoeia* are in universal use. The emplastra are bought ready spread, the aquae made by using the oils dissolved in spirit, or rubbed up with magnesia and filtered; and most of the spirits are used 1 in 4, and not in the *British Pharmacopoeia* 1 in 10 solution. Of the 80 tinctures made with alcohol in the *British Pharmacopoeia* only 20 really need alcohol; the rest are purchased as aqueous tinctures and liquors, or the liquid extracts are used. And so on with the wines and the syrups, the decoctions and infusions.

The contents of the *British Pharmacopoeia* may be divided into three classes:

(*a*) Chemicals and crude organic drugs and their alkaloids.
(*b*) Galenical preparations, as tinctures, infusions, etc.
(*c*) Prescriptions for common use, as pills, mixtures, etc.

The first class needs many additions; the other two an entire overhauling and alteration.

The leading article on the new *British Pharmacopoeia*, in the BRITISH MEDICAL JOURNAL of November 21st, 1914, quoting from the introduction to the *British Pharmacopoeia*, says: "The Council has for its principal object to afford to members of the medical profession and those engaged in the preparation of medicines throughout the British Empire one uniform standard and guide whereby the nature and composition of substances to be used in medicine may be ascertained and determined." The writer says: "This has been carried out well, and may be praised without reservation." Another duty is the selection of new drugs that are thus made official. The comment is: "Serious doubts must be felt as to the wisdom of leaving outside the official book so many medicines that are in common daily use." "It is only revised at long intervals of ten to twenty years." The last revision was in 1898, now seventeen years ago, and yet in the new *British Pharmacopoeia* only forty-three new remedies appear. Many changes in composition and strength have been made, and, says the BRITISH MEDICAL JOURNAL, "some so considerable as to involve serious risk of danger from altered dosage." This is a very grave matter, and one asks, Are all, or any, of these changes necessary or reasonable?

The writer in the BRITISH MEDICAL JOURNAL has no doubt made his criticism looking at the matter from the scientific chair, and, as far he goes, every one will agree with him. But, from the dispensing and panel man's point of view, there are many other defects in the *Pharmacopoeia* quite as serious.

1. There is not the least attempt at economy even when that can be obtained without impairing efficiency.

2. Many of the articles are difficult or impossible to make in a surgery, and take much time.

3. Their form is inconvenient for rapid and accurate work.

4. Many are so bulky that they cannot be accommodated in the average dispensary; for instance, the aquae in the *British Pharmacopoeia*, about ten of which are directed to be distilled and are therefore not used.

He says nothing about the aqua used in the prescription. The *British Pharmacopoeia* 1885 said that "distilled water should be used in dispensing prescriptions." The last revision, 1898, omits this injunction, no doubt deliberately. There is therefore no official order or authority for using aqua destillata when aqua is prescribed. Yet the *Pharmaceutical Codex* says (in 1911) that it should be used, and chemists tell us they consider it their duty to do so. It is a delusion and a costly one. No one can have a still or use it without a licence, under legal penalties. The wholesale houses supply it at about 6d. a gallon. It is reported in the BRITISH MEDICAL JOURNAL, November 28th, 1914, that the Chairman of the London Panel Committee regretted that a proposed arrangement with the chemists in this respect had broken down, and said that the result was a loss of £15,000 a year. Apparently this is for London alone, and as the population is about one-tenth of that of the whole country, a saving of £150,000 a year would be gained if it were agreed to. And all this on the mistaken notion that aqua destillata must be used in making up prescriptions. Of course, aqua destillata is necessary for some substances, as for dissolving alkaloids, etc.

Alcohol, again, is enormously used in the *British Pharmacopoeia*. The actual cost of alcohol is about 3s. a gallon, but the selling price is 32s. The difference is due to the tax imposed by Parliament. In *Dispensing Made Easy* it is stated that: "If the drug bill for twelve months

of an average general practice be dissected, it will be found that the cost of spirit is very nearly 50 per cent. of the whole amount." The wholesale chemists who especially cater for medical men have recognized this, and many of them manufacture aqueous tinctures and other inexpensive substitutes for the *British Pharmacopoeia* galenicals; they are economical in use, and yet are quite as efficient medicines, as the official preparations.

It seems that the British Pharmacopoeia Committee needs strengthening by the addition of practical dispensers, medical men and chemists. It should also have manufacturing and wholesale chemists to help it to get in touch with what is needed and used, and what is made, and to suggest economical alternatives, time-saving materials, new drugs, etc., to its notice. The manufacturers and wholesale chemists make up almost everything on the shelves and in the dispensary, and much of that in the chemist's shops. We trust them as to the quality of the drugs and preparations. If any examination of these is necessary, it should be made at the factories. Who has the power to do so? Perhaps the Apothecaries' Company. And how and when is it done? Somebody ought to be duly appointed to this work, in the interests of all—doctors, chemists, and the public—otherwise the *Pharmacopoeia* is practically useless. The composition and dosage of all preparations should be systematized and standardized, on some rational plan, so as not to require frequent alterations. Revision should be more frequent, say, every five years; well-tried and much-used drugs and preparations should be more easily and freely admitted.

These changes proposed seem very radical, but nothing less will make the *Pharmacopoeia* really useful and take the place it should as a standard for the empire.

LOCAL MEDICAL AND PANEL COMMITTEES.

LIVERPOOL.

PANEL COMMITTEE.

A MEETING of the Liverpool Panel Committee was held on December 18th, 1914, at the Medical Institution, when the chair was taken by Dr. BENNETT.

Analysis of Prescriptions.—A letter from the administration officer of the Insurance Committee was read with reference to the Joint Committee proposed to be formed for the examination of prescriptions. The Insurance Committee was willing to pay one-third of the expenses of the Joint Committee. The further discussion of this matter was postponed until the next meeting of the Panel Committee.

Stock Mixtures.—It was reported that the clause directed to be inserted in the Drug Tariff by the Insurance Commissioners authorizing stock mixtures had been approved by the Medical Benefit Subcommittee and by a special subcommittee of the Insurance Committee, as well as by that Committee.

Practitioners' Lists.—The Panel Committee expressed approval of the procedure of furnishing with the quarterly cheques the number of insured persons on each panel practitioner's list.

Allocation of Surplus Funds.—Drs. Parkinson, Baxter, and Allen were appointed a subcommittee to interview two practitioners who had not signed the necessary declaration, and had thus caused delay in the allocation of the surplus funds.

Seamen's National Insurance Society.—The report of the Subcommittee with reference to the Seamen's National Insurance Society was received and adopted.

WOLVERHAMPTON.

PANEL COMMITTEE.

A MEETING of the Wolverhampton Panel Committee was held on December 14th, 1914, when Dr. CRAIG was in the chair.

Model Rules.—The Model Rules for the administration of medical benefit for 1915, as adopted by the Medical Benefits Committee of the Insurance Committee, were approved.

Certification of Incapacity for Work.—Circular 52/I.C. and Memorandum 211/I.C. were approved.

Checking Prescriptions.—The following draft scheme for the checking of prescriptions of panel practitioners in the areas of the Dudley, Smethwick, West Bromwich, and Wolverhampton Insurance Committees was then considered.

1. An officer shall be appointed at a salary of £120 per annum whose duties shall be to check and scrutinize prescriptions for each of the Insurance Committees above named. The appointment to be terminable by one month's notice.
2. The Dudley, Smethwick, West Bromwich, and Wolverhampton Committees shall each pay a share of the officer's salary, as well as of any other expenses which may be incurred, in the proportion which the number of scripts per annum in each area bears to the total number of scripts per annum in all the areas.
3. A joint committee shall be formed to consider all matters relating to this scheme, and the carrying out of the provisions thereof, which shall consist of representatives from each area, provided that where in any area the Panel and or Pharmaceutical Committees are contributing towards the cost of the scheme those committees shall be each empowered to appoint one of the representatives for the area.
4. The officer shall until further order carry out his duties at the offices of the Smethwick Insurance Committee.
5. The officer shall not be required by any of the parties hereto to devote more than the due proportion of his time to the work of a particular committee.
6. Any of the parties to the scheme desiring to terminate or revise, the arrangements herein provided shall give notice to the Joint Committee not later than October 31st.
7. Matters arising for consideration at meetings of the Joint Committee shall be decided by a majority of the votes of the members present and voting, and in the event of an equal division of votes the chairman of the meeting shall have a second or casting vote.
8. The salary of the officer to be appointed shall be advanced by the Smethwick Insurance Committee, and the other parties hereto shall pay to that Committee one month after the expiration of each year as may be the proportionate amount due.
9. The provisions of this scheme shall come into operation on January 1st, 1915, and shall be subject to the approval of the Insurance Commissioners.

After some discussion as to the practicability of the scheme, which was further explained by Dr. MACTIER, who attended the conference with the other Insurance Committees as Chairman of the Wolverhampton Insurance Committee, it was proposed by Dr. RIDLEY BAILEY, seconded by Dr. DAVIDSON, and resolved:

> That Dr. Craig be appointed as Representative of the Wolverhampton Panel Committee to attend the first meeting of the Joint Committee, but to have no power to bind the Wolverhampton Panel Committee.

LOCAL MEDICAL COMMITTEE.

The Wolverhampton Local Medical Committee, which has the same personnel as the Panel Committee, then met, and having confirmed the minutes of last meeting, formally approved of Circular 52/I.C. and Memo. 211/I.C.

NORTH RIDING OF YORKSHIRE.

MEETING OF PRACTITIONERS.

THE fifth meeting of practitioners was held at York on October 24th, 1914, when Dr. CANDLER-HOPE was in the chair.

Agreements.—After consideration it was decided to recommend panel practitioners to sign the agreement.

Unallotted Funds.—It was decided that in the matter of dividing the unallotted funds a unit scale similar to that passed in July, 1914, should be adopted.

Payment of Expenses.—It was resolved that medical members of the County Insurance Committee should be paid railway fares and subsistence allowance.

PANEL COMMITTEE.

A meeting of a newly constituted Panel Committee was held at York on December 10th, 1914, when Dr. Candler-Hope and Dr. Thomas I. Mills were re-elected chairman and honorary secretary respectively.

Vote of Thanks.—A vote of thanks was unanimously accorded to Dr. Mills for the great amount of work he had done on behalf of the practitioners in the North Riding.

Allocation of Insured Persons.—The meeting adopted certain principles with regard to the allocation of insured persons, and as to the distribution of capitation fees.

Mileage.—The Clerk to the Insurance Committee having outlined the amendments it was proposed to make to the mileage scheme, the meeting decided to approve of the changes.

Excessive Prescribing.—The Chairman, the Secretary, and Dr. Baigent were appointed to act with the Pharmaceutical Committee in compiling the circular suggested by the Commissioners (Memo. 199). It was also decided to make some arrangements with the checker for the North Riding prescriptions with a view to his surveying on behalf of the Panel Committee prescriptions which were abnormal or otherwise.

Model Rules.—It was decided to approve of the model rules submitted by the Insurance Committee.

LOCAL MEDICAL COMMITTEE.

The newly constituted Local Medical Committee held its first meeting immediately after the meeting of the Panel Committee.

Emergency Committee.—The Chairman and the two practitioners' representatives were appointed to act as the Emergency Committee of the Local Medical and Panel Committee.

Financial Statement.—The financial statement submitted by Dr. Mills was approved.

SURREY.

PANEL COMMITTEE.

THE monthly meeting of the County of Surrey Panel Committee was held at Surbiton on December 18th, 1914, when Dr. C. P. LANKESTER presided.

Medical Referees.—It was decided that in any case brought to the notice of the Committee, in which a referee had visited a patient without informing the practitioner in attendance, the Secretary should write pointing out that such procedure was contrary to the usual custom of the medical profession.

Trained Nurse Visitor.—The Committee was of opinion that no objection could be raised to the appointment of a trained nurse visitor by an approved society so long as she did not interfere with or criticize the treatment of the practitioner in attendance.

District Committees.—It was decided not to continue representation on the district committees.

Prescribing.—It was resolved to print and circulate among practitioners on the panel a circular on economy in prescribing. It was agreed that the Surrey Insurance Committee should join with the London and Middlesex Insurance Committees in their scheme of checking prescriptions for 1915, the Panel Committee paying one-third of the cost if the County Committee and the Pharmaceutical Committee would each pay a third.

Medical Service Subcommittee.—Dr. Crichton (Redhill) was elected the representative of the Panel Committee on the Medical Service Subcommittee, vice Dr. Evans, resigned.

Proceedings of Committee.—It was decided to circulate every two months to practitioners on the panel an abstract report of proceedings of the Panel Committee. It was also decided to allot a fixed time at each meeting for the purpose of asking questions or to bring forward suggestions or complaints.

ROXBURGHSHIRE.

PANEL COMMITTEE.

A MEETING of the Panel Committee of Roxburghshire was held at St. Boswells on December 22nd, 1914, when Dr. SAMUEL DAVIDSON was in the chair.

Model Tariff.—The model tariff for 1915 was submitted, and generally approved of. The CLERK intimated that the Pharmaceutical Committee also approved of it, except as regards the prices, which, during the period of the war, would require to be periodically adjusted.

Incapacity for Work.—Circular No. 607 from the Insurance Commissioners, dealing with the new method of certification of incapacity for work, the sample book of medical certificates, and Memo. 211/I.C., were submitted, and the several matters in connexion with the new system of certification were discussed, and explanations given.

Fees of Medical Referees.—Letters were read regarding the attitude with reference to the fees to be paid to medical referees taken up by an approved society of London, which offered a fee of 7s. 6d., and alleged that the British Medical Association was not insisting on a fee of 10s. 6d. in several districts. After discussion, it was decided to advise members to adhere to the original resolution of the Committee to charge a fee of 10s. 6d., and mileage in addition, and at the same time to ascertain on what ground the society based its allegation that the British Medical Association was not now insisting on the fee of 10s. 6d., and further to explain that whatever might be done in other parts of the country, there was no reason why practitioners in this area should not hold out for the fee as originally fixed.

Administration Expenses.—It was unanimously resolved to request the Clerk of the Insurance Committee to deduct from the next payment 1d. per insured person on the list of each panel practitioner to meet administration expenses.

Remuneration Due to Practitioners.—The following reply from the Commissioners to the communication addressed to them through the Insurance Committee in accordance with the instructions of the Panel Committee on October 15th was read:

National Health Insurance Commission (Scotland),
83, Princes Street, Edinburgh,
No. 58007. November 30th, 1914.

Sir,—I am directed by the Scottish Insurance Commissioners to refer to your letter of 19th instant with copy of a communication received from the clerk to the Roxburghshire Panel Committee, and with regard to what is stated in the latter document have to say generally that, as was indicated in circular letter of March 31st last on the question of credits to Insurance Committees, the distribution then made was a provisional one, and that it is expected that a further payment of medical benefit monies will be made to Insurance Committees in the course of the coming month. With regard to the particular points raised in the letter from the Panel Committee, I am to reply as follows:

Paragraph 2.—The Commissioners observe that the argument here proceeds upon the assumption that every notification in the form of an index slip in the Committee Register represents an insured person in the area. To that consideration the Commissioners are unable to assert. Experience has shown that there are through duplication and otherwise at least 100,000 such notifications in Index Registers of Committees in excess of the insured population of the country, as shown by the contribution card surrendered, and the Commission cannot suppose that the Register of your Committee is any more correct in this particular than that of other Committees. At the same time, it is to be remembered that, as indicated in the circular letter on provisional credits, the medical fund or pool, which had up till then accumulated, was not wholly distributed, and when a final apportionment comes to be made a further sum will be paid over to your Committee. As already mentioned, a statement on the matter will, it is expected, be made shortly.

Paragraph 3.—The argument here again proceeds on the ground that the Register is the insured population. It may, however, be pointed out in regard to what is said as to the rising Register and doctors' lists, and there is reason for thinking that, owing to emigration and other causes, the population of Scotland last year at the most favourable computation remained stationary, if it did not indeed show an actual decrease, and that index and medical registers continue to rise merely because notifications have not been received from societies whose members have failed to intimate changes of address or of status in relation to insurance.

Paragraph 4.—The question raised in Mr. Simpson's letter as to whether panel practitioners are actually being paid for all persons entitled to or claiming medical benefit, and whether panel practitioners are supplying treatment to insured persons for whom they are not paid, is at present before the Commission, who propose to make a statement for general information on the position, in view of a recent meeting on this and other matters with representatives of the Central Committee of the British Medical Association.

With regard to the request for information as to the steps which are being taken by the Commissioners for the clearance of the Register, I have to refer to what has already been done in connexion with the Suspense Register and to the centralizing scheme, which, it will be within your knowledge, is at present in operation. The Commission have now had for some time a considerable staff engaged upon the scheme under which the index and suspense slips of Insurance Committees in Scotland are being called up and collated society by society. Up till now more than one-third of the Register has been dealt with and requests made to the societies concerned for the index slips which have been found awanting or for explanations where the slips are not forthcoming. This work is still proceeding, but it is proper to mention that the result of the action taken so far has been an addition to the Register, which in total, is known to be already much inflated. The Commissioners have, however, under consideration the steps which may usefully be taken to cope with the difficulties of the position due more especially, it is believed, to duplication arising from transfers as between societies. At the same time, it is hoped that the recent Circular 152/A.S. as to the transmission of Orange Slips in cases of suspension due to arrears will have a considerable influence in effecting a clearance of the Register.

Paragraph 5.—It is presumed that it is not suggested that any deduction was or could have been made in the case of the practitioner who joined the panel only this year in respect of last year's excess payment on the funds available to the Committee. The doctors who were under agreement with the

Committee last year and still remain so, being in the position of having a continuing account with the Committee, the payments to them under the regulations proceeded on the basis of advances, and there is no other convenient method by which an overpayment of last year could be put right than by setting it against the sums due in the current year.—I am, Sir, your obedient servant,

(Signed) JOHN JEFFREY, Secretary.

After considerable discussion it was resolved to ascertain from one or two panel practitioners the number of patients on their lists for 1913, and the amount of the payments received from the Commissioners, with a view to insisting upon receiving full payment under the agreements with the Committee.

CORRESPONDENCE.

OVER-PRESCRIBING.

DR. JAMES HAMILTON (London, S.W.) writes: In order to ascertain, if possible, what was excessive prescribing, I have looked over a great number of the prescriptions which I have given during the past year, and roughly calculated the cost price of their ingredients, taking the cost of drugs from first-class wholesale druggists' lists. The results must be an eye-opener to the Insurance Committee. I enclose specimens of the most numerous prescriptions, with the cost price of the ingredients. Any one studying these prescriptions and their cost, and then comparing them with what chemists are paid, will understand why the amount allocated for chemists falls so much below their charges, and will perhaps explain why they are content to accept payment with a large discount. Medical practitioners would be bankrupt if they had to pay for prescriptions dispensed by themselves the amount which the London Insurance Committee allows the chemists for dispensing prescriptions—the dispensing fee alone exceeding the cost of the drugs. I have not filled up the amount the chemists are allowed to charge, but have given only the cost as if a doctor dispensed the drugs; the actual amount the chemist receives can be ascertained by looking at the drug price list and adding the amount for dispensing fee. Of course the chemist must be paid for his labour and also a fair percentage, but I contend he is overpaid.

Mist. Acid. Tonic.

Acid. nitro-mur. dil.	℥ iij	= ⅛d.
Infus. gent. co. conc.	℥ j	= 1¼d.
Aq.	℥ viij	

Total cost less than 1½d.

Mist. Acid. Hydrochlor. dil. et Strych.

Acid. hydrochlor. dil.	℥ iij	= about $\frac{1}{60}$d.
Liq. strych.	℥ ss	= ⅙d.
Aq.	℥ viij	

Total cost less than ¼d.

Mist. Gent. Alk.

Sod. bicarb.	℥ ij	= $\frac{1}{16}$d.
Ammon. carb.	℥ ss	= $\frac{1}{32}$d.
Inf. gent. co.	℥ viij	= 1¼d.

Total cost less than 1½d.

Mist. Alba.

Mag. sulph.	℥ j	= ¼d.
Mag. carb. lev.	℥ j	= ¼d.
Aq. menth. pip.	℥ viij	= 1d.

Total cost 1½d.

Mist. Ferri c. Strych.

Liq. ferri. perchlor.	℥ ij	= $\frac{1}{20}$d.
Liq. strych.	℥ ss	= ⅙d.
Aq.	℥ viij	

Total cost less than ¼d.

Mist. Carmin.

Mag. carb. lev.	℥ j	= ¼d.
Rhei in pulv.	℥ j	= 1d.
Sp ammon. aromat.	℥ iij	= 1d.
Aq.	℥ viij	

Total cost 2¼d.

Many other usual mixtures cost about the same; the great majority of mixtures and prescriptions are very inexpensive, but yet many men are accused of over-prescribing if, in cases of need, they give more elaborate prescriptions. Who is looking after the interests of the insured people and the doctors?

*** The anomalies of the drug tariff have by no means been overlooked by the British Medical Association. The Insurance Act Committee has had a subcommittee at work on the subject for some time past, and much useful evidence has been collected for presentation to the Departmental Committee on the drug tariff appointed by Mr. Masterman last July. We understand there is a probability of this Committee commencing its work shortly, and until it reports there is no chance of any radical revision of the tariff.

NEW INSURANCE CERTIFICATE.

DR. GEORGE JOHNSTON (Liverpool) writes: I am inclined to agree with Dr. J. Pollock (SUPPLEMENT, December 19th, 1914) that the new insurance certificate will not receive the welcome you expect from practitioners. In the leading article you say the Commissioners have been guided largely by the report of the Departmental Committee. There is internal evidence in that report that the Committee have been obsessed by the evidence of societies, and the fact that the approved society alone is the judge under the Act whether an insured person is to receive sickness benefit. Relying on such partial and uninformed evidence heretofore, the Government and framers of the Act have induced all the difficulties that now beset the question of medical benefits. The tuition of the Committee is manifest in the examples given, which the societies have to investigate, to distinguish cases which may come under the Workmen's Compensation Act or personal misconduct. Both types of cases, in practice, require no investigation, because the nature of the injury would always be stated in the one case and the disease in the other, but they are just the type of cases in which the societies can stop paying. They claim that the societies are in a position to check certificates by their knowledge of their members and investigations of sick visitors—a claim which shows that they have not yet learnt how societies have been formed. The societies have no knowledge of their members individually and their sick visitors have no accomplishments which would enable them to investigate disease and least of all the causes of debility, which, according to them, is not precise language. But debility is a diagnosis. It is, in a word, the description of *abnormal weakness in the vital functions.* I do not see how it is "feeble" on the part of a doctor to use it. And, again, it is an error to state that debility cannot last for weeks. I am not recommending the word, but I mention the point because it shows the type of evidence they wanted to support the complaints of the societies. Then, in the case where a vague certificate may be given, the advice given shows, as in many other cases, how the Commission's recommendations cannot be carried out, because the conditions they suppose exist do not exist. Most of the insured persons do not know the address of their society or secretary. How is it possible for the doctor to communicate with either of them? In my opinion the Act did wrong in making the approved society "alone the judge under the Act if a patient is incapable of work." Before such a decision the qualifications of secretary and other officials should have been ascertained or defined and made compatible with such a duty. What is the class of the individual who has to receive and adjudicate on the doctor's precise terms? It is truth to say that three-quarters of them are semi-illiterate, and have no understanding of disease or ailments by their names or otherwise. Clothed in a little brief authority they continually make it disagreeable for the insured. A case of threatened abortion was certified suffering from haemorrhage, and because the cause of the haemorrhage was not stated payment was refused. A case of tachycardia—which somewhat resembles debility in that an exact definition of the cause could not be given—the secretary remarked on receiving the certificate, "That is nothing; he has been smoking too many cigarettes," and this young man went without sickness benefit. Only yesterday I had to give cholecystitis on a certificate which falls into the hands of a carter. When he will know or what means he can have of knowing to justify him alone to judge if the sufferer is entitled to sickness benefit we may not say. The thing appears to be absurd. To put these men in this position is on a par, though not parallel, with setting the cat to watch the cream. Their anxiety is to save the society's funds; if that is done, precise terms do not matter. In addition, though the powers that be have continually asked these societies for information as to sickness, they possess

no accurate knowledge of the sickness in the community. In the quarter ending September 13th I treated 203 patients: the societies knew of and on their funds 46. Quarter ending December, 1913, 192 patients; on the funds, 40. Quarter ending March, 1914, 272 patients; on the funds, 65. Quarter ending June, 1914, 271 patients; on the funds, 40. The new system of certification, notwithstanding the friendly verbosity of 211/I.C., is simply continuing to add more and more responsibility on the doctor, and because the Act fails to suit the circumstances it was meant to suit—that is, because the circumstances were and are not understood—the end and the means will be made compatible by squeezing the doctor. What with "stock mixtures," which is an invitation to stop all discriminating study of our patients and effectually inhibits the production of Ringers, and proposals like comparing one doctor's practice with another doctor's practice and conclude as to one being right or wrong without any knowledge as to what the patients were suffering from, and the creation of new committees for which he has to pay, and many other nick-nacks, such as going around with this new book of certificates as if we were insurance agents, and all this from the powers that be, doctors will soon have to cease to think of themselves as physicians practising the art of healing in sympathy with and consideration of our patients and be content with the rank the official servant places us in, and in this case it is humble enough, but what about the public good?

Meetings of Branches and Divisions.

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

A MEETING of the South-Eastern Counties Division was held at Newtown St. Boswells on December 29th, 1914, when Dr. P. C. MCROBERT was in the chair and eleven other members were present.

Belgian Doctors' and Pharmacists' Relief Fund.—Dr. J. R. HAMILTON strongly commended this fund to favourable consideration by the Division, and the meeting resolved that the members of the Executive Committee should make a canvass, each in his own district, and that subscriptions should be received by the Treasurer of the Division.

Local Medical and Panel Subcommittee, British Medical Association.—Dr. J. CARLYLE JOHNSTONE spoke on the important duties of this Committee, and considered that its appointment was almost a necessity, as the Federation of Local Medical and Panel Committees was in abeyance.

School Medical Officers.—The meeting approved of the action taken by the Executive Committee with reference to the appointment of a school medical officer. It was reported that the school authority in question had decided to increase the salary to £500, the minimum laid down by the representative of the meeting. The Executive Committee was instructed to take any necessary action to support the policy of the Association in the matter.

War Emergency.—The SECRETARY read the minute of the Executive Committee relating to this matter, under which a circular was issued to the Local Medical Committees within the Division. The action taken was approved.

Payments to Panel Practitioners.—Some discussion took place with regard to payments due to panel practitioners, It was reported that in Roxburghshire in 1914 while some 18,000 insured persons received medical attendance the payments to practitioners had been calculated on the basis of only 14,000 insured persons. An instance was mentioned in which one practitioner had attended a case whilst another practitioner received the fee. After other irregularities regarding the lists of medical practitioners had been mentioned the meeting resolved to communicate with the Local Medical and Panel Subcommittee of the British Medical Association in order that an investigation should be made in a larger area and the possible advantages of raising a test case in the law courts considered.

Annual Dinner.—It was decided that the annual dinner should be held at Inverleithen if a sufficiently large number of members intimated their intention to be present.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, January 27th, 1915, in the Council Room, 429, Strand, London, W.C.

By order,

GUY ELLISTON,

Financial Secretary and Business Manager.

December 24th, 1914.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Fleet Surgeon KENNETH H. JONES, M.B., to the *Duke of Edinburgh*, vice Marshall; Staff Surgeons RICHARD WILLAN and GERALD NUNN to the *Victory*, additional; PALMER D. RAMSAY to the *Vivid*, additional; LEONARD WARREN to the *Victory*, additional, for the *Agadir*, vice Jones; Surgeons C. M. R. THATCHER to the *Vivid*, additional, for disposal; GILBERT B. SCOTT to the *Pembroke III*, additional; FRANCIS H. HOLL to the *Pembroke*, additional; HORACE C. DEVAS to the *Victory* for R.N. Division; temporary Surgeons BERNARD W. DAKERS to the *Cumberland*, vice Scott; WILLIAM P. COWPER to the *Cumberland*; DOUGLAS K. ADAMS to the *Vivid*, additional, for Keyham College, vice Cowper; AENEAS ROSE, M.B., to the *Pomone*, additional, for Dartmouth College, vice Warren; HUGH WETHERLEE to the M.F.A. *Soudan*, vice Phillips; FREDERICK G. L. SCOTT to the *Warrior*, vice O'Brien; GERALD C. SCOTT to the *Wildfire*, additional, for the *Pembroke III*, for R.N Air Service; NORMAN C. CARVER, M.B., to the *Vivid*, for Plymouth Hospital; NOEL N. WADE, M.D., GEORGE C. MORT, M.B., JAMES S. JOBSON, M.B., F.R.C.S., and EDWARD HEFFERNAN, M.B., to the *Victory*, for Haslar Hospital. To be temporary Surgeons: JOHN S. FARRIES, JOHN A. THOMPSON, M.B.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationers THOMAS H. R. MCKIERMAN, to the *St. George*, for the *Ness*, vice Imrie; CANNING SUFFERN, to the *Leander*, additional for the *Griffin*; CARL D. NEWMAN, to the *St. George*, additional for the *Moy*; HOWARD D. MCILROY, to the *St. George*, additional for the *Nith*; DAVID BAXTER, to the *St. George*, additional for the *Ouse*; J. S. WEBSTER, to the *St. George*, additional for *Rother*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

EDWARD T. THRING to be temporary Major whilst serving with the Australian Medical Unit.

WALTER S. ARMSTRONG to be temporary Captain whilst serving with the Australian Medical Unit.

CHARLES S. MYERS, M.D., and THOMAS W. BODY to be temporary Captains whilst serving with the Duchess of Westminster's War Hospital.

To be temporary Lieutenants: FRANK DALLIMORE, M.B., PHILIP H. BAHR, M.D., ALFRED G. STEWART, M.B., ALLAN R. WILSON, M.D., DOUGLAS ELDER, M.B., JAMES J. SINCLAIR, M.B., SAMUEL B. B. CAMPBELL, M.B., EDWARD L. MIDDLETON, M.B., ERNEST E. HOBSON, M.B., LESLIE E. PIMM, SAMUEL LYLE, M.B., GEOFFREY R. HEARD, JOHN B. MCCABE, M.B., WILLIAM MCH. BINNING, EVAN EVANS, M.B., EDMUND C. FAWCETT, M.B., JOHN CHISHOLM, M.B., JAMES LEE, M.D., FRANCIS G. CROOKSHANK, M.D., THOMAS J. L. THOMPSON, M.B., JOHN C. MATTHEWS, M.B.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

CAPTAIN JOHN J. H. BECKTON to be Deputy Assistant Director of Medical Services of the South Midland Territorial Division, vice Major James W. Jennings, D.S.O.

First London (City of London) Sanitary Company.—Captain H. S. FREMLIN to be Major (temporary).

Second London (City of London) Sanitary Company.—Captain ARTHUR J. MARTIN, M.D., to be Major (temporary). To be Lieutenants: KENNETH MACLENNAN, JOHN H. N. PRICE.

Third London General Hospital.—Major ARTHUR E. J. BARKER, F.R.C.S., is seconded; Major JAMES E. LANE, F.R.C.S., is restored to the establishment.

Fourth London General Hospital.—ROBERT KNOX, M.D., to be Captain, whose services will be available on mobilization. DAVID E. S. DAVIES to be Lieutenant.

Fifth London Field Ambulance.—Captain WILLIAM C. MACAULAY, M.B., to be Major (temporary).

Sanitary Service.—Lieutenant-Colonel and Honorary Surgeon-Colonel WILLIAM R. SMITH, M.D., retired list, T.F., to be Lieutenant-Colonel. FRANCIS J. ALLAN, M.D., to be Captain, whose services will be available on mobilization.

First Home Counties Field Ambulance.—Captain THOMAS H. PEYTON, M.D., to be Major (temporary). JOHN S. WARD to be Lieutenant.

Second Home Counties Field Ambulance.—Captain GEORGE T. WILLAN to be Major (temporary). EDGAR W. MATTHEWS, M.B., to be Lieutenant.

Third Home Counties Field Ambulance.—Captain HECTOR G. G. MACKENZIE, M.D., to be Major (temporary). To be Lieutenants: MILWARD HAYWARD, and HENRY W. WIER, late Cadet, Edinburgh University Contingent, Senior Division, O.T.C.

Second East Anglian Field Ambulance.—ARTHUR W. HAYWARD to be Lieutenant.

Third East Anglian Field Ambulance.—Lieutenant LEONARD R. TOSWILL, to be Captain (temporary). To be Lieutenants: LAURENCE H. HUTCHINS, EDWARD C. HOBBS.

First Wessex Field Ambulance.—Captain FRANCIS D. BLANDY, M.D., from Attached to Units other than Medical Units, to be Captain.

Second North Midland Field Ambulance.—Lieutenants to be Captains: CLAUDE M. COWPER, ALFRED C. F. TURNER, M.B.

Second South-Western Mounted Brigade Field Ambulance.—Captain HENRY N. BARNETT, F.R.C.S.E., to be Major (temporary). To be Lieutenants: PHILIP S. MARTIN, HAROLD B. PORTEOUS, M.B., BERTRAM M. YOUNG.

First Western General Hospital.—ERNEST E. GLYNN, M.D., to be Captain, whose services will be available on mobilization.

Second Welsh Field Ambulance.—JOHN H. ROBINSON to be Lieutenant.

Welsh Board Mounted Brigade Field Ambulance.—Lieutenant ROBERT F. BERRARD to be Captain; DAVID W. REESE, late Captain, Northern Bengal Mounted Rifles, to be Captain.

Third West Riding Field Ambulance.—HERBERT H. EMMERSON, late Captain, West Riding Divisional Engineers, to be Captain.

First East Lancashire Field Ambulance.—Lieutenant JOHN BUCKLEY resigns his commission on account of ill-health.

Second East Lancashire Field Ambulance.—To be Lieutenants: GEORGE R. HITCHIN, M.B, WILLIAM J. COWAN.

Third East Lancashire Field Ambulance.—To be Lieutenants: JAMES COWAN, FREDERIC B. SMITH.

East Lancashire Casualty Clearing Station.—Lieutenant THOMAS B. WOLSTENHOLME, M B., to be Captain (temporary)

Second West Lancashire Field Ambulance.—Captain OWEN H. WILLIAMS, M.B., to be seconded. To be Lieutenants: JAMES H. RAWLINSON, M.B., EDWARD MANSFIELD, GEORGE C. KING, LEONARD S. GASKELL.

West Lancashire Casualty Clearing Station.—Captain GEORGE C. E. SIMPSON, M.B., F.R C.S., from the Second West Lancashire Field Ambulance, to be Captain.

Second Northern General Hospital.—Lieutenant FRANK J. STANSFIELD, from the First West Riding Field Ambulance, to be Captain, whose services will be available on mobilization. ALFRED RICHARDSON, M.B., F.R.C.S., to be Captain, whose services will be available on mobilization.

Fourth Northern General Hospital.—BASIL H. C. LEA-WILSON to be Captain, whose services will be available on mobilization.

Second Northumbrian Field Ambulance.—To be Lieutenants: THOMAS W. CROWLEY, M D, ARTHUR E. TAIT, M.B

Lowland Mounted Brigade Field Ambulance.—Major JAMES BRUCE, M.B., to be Lieutenant-Colonel, temporary; Captain ROBERT Y. ANDERSON, M.B., to be Major, temporary; EDWARD N. THOMSON, M.B., late Cadet, Glasgow University Contingent, Senior Division O.T.C., to be Lieutenant.

First Lowland Field Ambulance.—Lieutenant NEIL MACINNES, M.B., to be Captain, temporary. To be Lieutenants: STUART ROBERTSON, M.B., ADAM RANKINE, M.B., ROBERT A. LENNIE, M B., late Cadet, Glasgow University Contingent, Senior Division O.T.C.

Attached to Units other than Medical Units.—Captain WILLIAM G. SUTCLIFFE, F.R.C.S., to be Major, temporary; Lieutenant ARTHUR S. TURNER to be Captain; Captain GEORGE P. CHAPPEL, M.D., to be Major, temporary; Surgeon-Captain ERNEST SOLLY, M.B., F.R.C.S., retired list (late 5th Battalion, Prince of Wales's Own, West Yorkshire Regiment), to be Captain; Lieutenant CHARLES S. WINK to be Captain, temporary. To be Lieutenants: NORMAN P. LAING, M.B., RALPH A. BURDETT, TOM R. KENWORTHY, late Cadet Corporal, Leeds University Contingent, Senior Division, O.T.C.; GEORGE EUSTACE, M.D., JAMES H. CHAUNCY, FRANK G. PRESTWICH, late Second Lieutenant, 7th Battalion, Lancashire Fusiliers; EDWARD J. BLAIR, M.B., late Captain, 5th Battalion, Queen's Edinburgh Rifles, Royal Scots (Lothian Regiment); JOHN H. JORDAN, SAMUEL RUTHERFORD, M.B., ROBERT L. GUTHRIE, M.D., FREDERICK HUNTON, M.D., PERCY H. BURTON. The announcements of the appointment as Lieutenants of HAROLD DEARDEN and GEORGE J. WILSON, M.B., published in the *London Gazette* of August 18th and November 14th, 1914, respectively, are cancelled.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

MAJOR FREDERICK LACE, from Attached to Units other than Medical Units, to be Major.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-seven of the largest English towns 9,261 births and 7,395 deaths were registered during the week ended Saturday, January 2nd. The annual rate of mortality in these towns, which had been 15.7, 16.1, and 14.0 per 1,000 in the three preceding weeks, rose to 21.3 per 1,000 in the week under notice. In London the death-rate was equal to 23.7, against 15.5, 16.5, and 12 8 per 1,000 in the three preceding weeks. Among the ninety-six other large towns the death-rate ranged from 8.6 in Bournemouth, 10.6 in Oxford, 12 2 in Acton, 12 3 in Hornsey, 13.0 in Lincoln, and 13.1 in Darlington, to 27.4 in Huddersfield, 27.5 in Liverpool, 27.7 in Newcastle-on-Tyne, 30.8 in Wigan, 32.1 in St. Helens, and 33.1 in Grimsby. Measles caused a death rate of 3.1 in Newcastle-on-Tyne, 3.7 in Plymouth and in Merthyr Tydfil, 4.1 in St. Helens, 4.2 in Huddersfield, 5.1 in Wigan, 5.5 in Devonport, and 8.0 in Grimsby; whooping-cough of 2.1 in Gloucester and 2.8 in Bootle; and diphtheria of 1.3 in Norwich and 2.6 in Darlington. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 80, or 1.1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner, and included 20 in Liverpool, 19 in Birmingham, 6 in London, 4 in Sheffield, and 3 each in Stoke-on-Trent, Bootle, and Preston. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 4,893, 4,763, and 4,583 at the end of the three preceding weeks, further fell to 4,503 on Saturday, January 2nd; 436 new cases were admitted during the week, against 501, 451, and 348 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,098 births and 899 deaths were registered during the week ended Saturday, January 2nd. The annual rate of mortality in these towns, which had been 17.7 18.0, and 18.0 per 1,000 in the three preceding weeks, rose to 20.5 in the week under notice, but was 0.8 per 1,000 below the rate in the ninety-seven large English towns. Among the several towns the death-rate ranged from 7.7 in Perth, 8.8 in Kilmarnock, and 8.9 in Kirkcaldy, to 23.9 in Glasgow, 27.4 in Greenock, and 30.2 in Dundee. The mortality from the principal epidemic diseases averaged 2.2 per 1,000, and was highest in Dundee and Clydebank. The 479 deaths from all causes in Glasgow included 27 from whooping cough, 6 from scarlet fever, 3 from diphtheria, 3 from infantile diarrhoea, 2 from enteric fever, and 1 from measles. Eight deaths from measles were recorded in Dundee; from scarlet fever, 5 deaths in Aberdeen and 3 in Paisley; from diphtheria, 4 deaths in Edinburgh, 2 in Aberdeen, and 2 in Motherwell; from whooping-cough, 6 deaths in Dundee, 4 in Clydebank, and 3 in Greenock; and from infantile diarrhoea, 4 deaths in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, January 2nd, 649 births and 643 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 383 births and 393 deaths in the preceding period. These deaths represent a mortality of 27 8 per 1,000 of the aggregate population in the districts in question, as against 17.0 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.5 per 1,000 higher than the corresponding rate in the ninety-seven English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28 1 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 35.2 (as against an average of 22.2 for the previous four weeks), in Dublin city 37.6 (as against 23.3), in Belfast 23.1 (as against 20.5), in Cork 30.6 (as against 20.2), in Londonderry 22.8 (as against 13.6), in Limerick 28.4 (as against 19.6), and in Waterford 51.3 (as against 19.0). The zymotic death-rate was 2.1, as against 1.4 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDARE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

ASHTON-UNDER-LYNE UNION. — Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—House-Surgeon. Salary, £150 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £120 per annum.

BARNSTAPLE: NORTH DEVON INFIRMARY. — Lady House-Surgeon Salary, £100 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon male). Salary, £150 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior and Junior House-Surgeons. Salary, £110 and £100 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Physician. (2) House-Surgeon. (3) House-Surgeon to Special Departments. Salary, £50 per annum each.

BIRMINGHAM MATERNITY HOSPITAL. — House-Surgeon (lady). Salary, £50 per annum.

BIRMINGHAM UNION.—(1) Second, Third, and Fourth Assistant Medical Officers at the Dudley Road Infirmary; salary, £210, £170, and £160 per annum respectively. (2) Assistant Medical Officer at the Selly Oak Infirmary; salary, £180 per annum.

BRADFORD ROYAL INFIRMARY.—House-Surgeon (male). Salary, £100 per annum.

BRENTWOOD ASYLUM.—Locumtenent Assistant Medical Officer (male). Salary, £5 5s. per week.

BRIDGWATER HOSPITAL. — House-Surgeon. Salary, £125 per annum.

BRISTOL: COSSHAM MEMORIAL HOSPITAL, Kingswood. — House-Surgeon (male). Salary, £120 per annum.

BRISTOL EYE HOSPITAL. — House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL. — Resident Obstetric Officer. Salary, £120 per annum.

BURY INFIRMARY. — Junior House-Surgeon. Salary, £150 per annum.

CAMBERWELL: PARISH OF ST. GILES.—Medical Officer for the St. George's No. 1 District. Salary, £120 per annum and fees.

CARDIFF: KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION. — Assistant Resident Medical Officers at Sanatoriums. Salary, £250 per annum.

CARDIFF: KING EDWARD VII HOSPITAL. — House-Surgeon (lady) for the Ophthalmic and Ear and Throat Departments. Salary, £140 per annum.

CHICHESTER: WEST SUSSEX COUNTY MENTAL HOSPITAL.—Second Assistant Medical Officer. Salary, £250 per annum, rising to £300.

CITY OF LONDON UNION.—Assistant Medical Officer at the Poor Law Institution and Infirmary. Salary, £200 per annum.

DEVON COUNTY COUNCIL.—Temporary Resident Junior Medical Officer at the County Sanatorium, Hawkmoor. Salary, £250 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £100 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Salary, £80 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL. — House-Surgeon. Salary, £150 per annum

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. Salary, £120 and £100 per annum respectively.

HEREFORDSHIRE COUNTY COUNCIL. — Assistant to Medical Officer of Health. Salary, £300 per annum.

HULL CITY ASYLUM.—Junior Assistant Medical Officer. Salary, £200 per annum.

KENT AND CANTERBURY HOSPITAL.—Senior and Junior House-Surgeons. Salary, £100 and £90 per annum respectively.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KENT COUNTY COUNCIL, Maidstone. — Tuberculosis Officer. Salary, £500 per annum

LEEDS PUBLIC DISPENSARY.—Resident Medical Officer (lady). Salary, £130 per annum.

LEICESTERSHIRE EDUCATION COMMITTEE. — Temporary Assistant School Medical Officer. Salary, £300 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—(1) House-Physician; (2 House-Surgeon. Salary, £60 per annum each.

LIVERPOOL STANLEY HOSPITAL.—House-Surgeon. Salary, £80 per annum.

LONDON THROAT HOSPITAL, Great Portland Street, W.—House-Surgeon. Salary, £50 per annum.

MANCHESTER CORPORATION. — Two Assistant Tuberculosis Medical Officers. Salary, £350 per annum each.

MANCHESTER: COUNTY ASYLUM, Prestwich. — (1) Assistant Medical Officer; salary, £250 per annum, increasing to £300 and upon promotion to £450. (2) Locumtenent; salary, £6 6s. per week.

MANCHESTER: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—(1) Resident Surgical Officer; (2) House-Surgeon. Salary, £90 and £70 per annum respectively.

MANCHESTER: VICTORIA MEMORIAL JEWISH HOSPITAL. Cheetham —Resident Medical Officer. Salary. £100 per annum.

METROPOLITAN ASYLUMS BOARD. — Assistant Medical Officers in the Infectious Hospitals and Sanatoriums. Salary, £250 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary, £85 per annum.

NEWPORT: ROYAL GWENT HOSPITAL. — Resident Medical Officer. Salary for first six months at the rate of £100 per annum, rising to £150.

NORDRACH-UPON-MENDIP SANATORIUM, Blagdon, near Bristol. —Assistant Medical Officer Salary, £200 per annum.

NOTTINGHAM: GENERAL HOSPITAL.—Senior House-Physician. Salary, £120 per annum. (Women eligible.)

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Resident Medical Officer. Salary, £90 per annum.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—House-Surgeon. Salary at the rate of £80 per annum.

ROCHDALE INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £110 per annum.

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL. — Assistant House-Surgeon.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident House-Surgeon. Salary, £100 per annum.

ROYAL WATERLOO HOSPITAL FOR WOMEN AND CHILDREN, S.E.—Resident Medical Officer for duration of the war. Salary at the rate of £150 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Assistant House-Surgeon, non-resident. Salary, £20 for six months.

ST. MARYLEBONE PARISH.—Medical Officer for the St. John's District. Salary, £100 per annum.

SALFORD ROYAL HOSPITAL.—(1) Resident Surgical Officer. (2) Casualty House-Surgeon. Salary, £120 and £100 per annum respectively.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

SHEFFIELD ROYAL HOSPITAL. — Assistant House-Physician. Salary, £80 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. (Males.) Salary, £100 per annum each.

SIDLAW SANATORIUM.—Resident Medical Officer. Salary, £125 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary, £120 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

SOUTH SHIELDS UNION —Assistant Male Medical Officer at the Harton Poor Law Institution. Salary, £200 per annum, rising to £250.

STAFFORDSHIRE, WOLVERHAMPTON, AND DUDLEY JOINT COMMITTEE FOR TUBERCULOSIS.—Resident Medical Officer for Moxley Sanatorium. Salary, £300 per annum.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Third Assistant Medical Officer (lady). Salary, £140 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Surgeon. Salary, £125 per annum

TRURO: ROYAL CORNWALL INFIRMARY. — House-Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL. — House-Surgeon. Salary, £100 per annum.

WALSALL AND DISTRICT HOSPITAL. — Junior House-Surgeon and Anaesthetist. Salary, £110 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Resident House-Physician. Salary at the rate of £100 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WEST RIDING ASYLUM, Wakefield.—(1) Assistant Medical Officer; salary, £250 per annum, rising to £300. (2) Locumtenent Assistant Medical Officer.

WEST RIDING OF YORKSHIRE.—Assistant Medical Officer at the Cardigan Asylum, near Wakefield; non-resident. Salary, £250 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £125 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

WORKSOP VICTORIA HOSPITAL AND DISPENSARY.—Medical Officer and House-Surgeon. Salary, £150 per annum.

CERTIFYING FACTORY SURGEONS. — The Chief Inspector of Factories announces the following vacant appointment: Barnard Castle (Durham).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

ST. THOMAS'S HOSPITAL.—The following appointments have been made:—

Resident Assistant Surgeon: Stewart Rouquette, M.A., M.B., M.C.Cantab., F.R.C.S.Eng.

Medical Registrar: Geoffrey Hoffmann, B.A., M.B., B.C.Cantab., M.R.C.P.Lond.

Surgical Registrar: P. H. Mitchiner, M.B., M.S.Lond., F.R.C.S.Eng.

Obstetric Registrar: J. M. Wyatt, M.B., B.S.Lond., F.R.C.S.Eng.

Ophthalmic Registrar: G. W. Spencer, B.A., M.B., B.C Cantab., M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

MARRIAGE.

MILNE—ALCOCK.—On January 4th, 1915, at the Church of Our Lady and St. Peter, Stoke-on-Trent, by the Rev. Denis Nunan, Rector, C. I. Milne, M.B., Ch.B., Egerton House, Hartshill, Stoke-on-Trent, younger son of the late J. K. Milne, M.D., Shipdham, Norfolk, to Katherine, third daughter of the late Samuel Alcock and Mrs. Alcock, Richmond Villas, Penkhull, Stoke-on-Trent.

DEATH.

LOCKERBIE. — At Miss Porter's Nursing Home, Carlisle, on the 3rd inst., William Lockerbie, M.B., Ch.B., of Annan, aged 37 years.

DIARY FOR THE WEEK.

WEDNESDAY.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell Street, E.C., 9 p.m.—Second Hunterian Society's lecture by Mr. Donald J. Armour, F.R.C.S.: Surgical Experiences during the Present War.

THURSDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF BALNEOLOGY AND CLIMATOLOGY, 5.30 p.m.—Discussion: The Value of Military Medical Baths; opened by Dr. Fortescue Fox. Members of the Medical and Surgical Sections are invited to take part in the discussion.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF ELECTRO-THERAPEUTICS, 830 p.m.—The Effect of Modern Projectiles on Tissues, as Demonstrated by *X* Rays. Lantern slides and skiagrams will be shown. Discussion: (1) Methods for Localization of Foreign Bodies; (2) the Treatment of Shell Wounds, etc., by Ionization.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W., 8.30 p.m.—Discussion on Bacillary Dysentery, to be opened by Dr. H. S. Gettings.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, 8 p.m.—Clinical meeting.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		JANUARY.
8	Fri.	London: Central Ethical Committee, 2 p.m.
11	Mon.	London: Dominions Committee, 2 p.m.
		London: Naval and Military Committee, 3.30 p.m.
12	Tues.	London: Organization Committee, 2 p.m.
		London: Public Health Committee, 3 p.m.
13	Wed.	London: Medico-Political Committee, 2 p.m.
14	Thur.	London: Hospitals Committee, 2.30 p.m.
16	Sat.	London: Science Committee, 10.30 a.m.
20	Wed.	London: Finance Committee, 2 p.m.
21	Thur.	London: Insurance Act Local Medical and Panel Subcommittee.
27	Wed.	London: Central Council.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 16TH, 1915.

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SCOTTISH EMERGENCY COMMITTEE.

A MEETING of the Scottish Medical Service Emergency Committee, on January 9th, in the Royal College of Physicians of Edinburgh, was attended by: The President of the College, the President of the Royal College of Surgeons, the Dean of the Faculty of Medicine, Aberdeen University; Drs. Hamilton (Hawick), Curric (Edinburgh), Adams (Glasgow), Stevens (Edinburgh), Anderson (Methil), and Norman Walker (Convener). Sir Donald MacAlister was present by invitation.

The Committee considered a draft statement which had been prepared by the Subcommittee appointed at the last meeting, and approved of it in the following terms:

*Statement.**

From information in its possession the Scottish Medical Service Emergency Committee has reason to believe that some advice on the general principles which should be followed in making arrangements for the carrying on of the practices of those members of the profession who are serving with the King's Forces would be welcome. The available supply of locumtenents is so small that those whose duty keeps them at home must be depended upon to do the work of the absentees.

The Committee recognize that in many, perhaps most, cases there are special circumstances with which it is not possible to deal in a general way. There are, however, certain broad principles of equity which are generally applicable.

The man who is with the forces has the stimulus of fresh and interesting work, and he has the satisfaction and honour of directly serving his country. On the other hand, he may imperil the position he has established perhaps after many years of hard work. The man who remains to do the necessary work at home has a more prosaic duty. He has to take on a large addition to work which may be already considerable, and he has to do this without the prospect of its being of any lasting benefit to him, for it is the essence of these arrangements that they are only "for the period of the war," and that the absentee when he returns shall find his practice as nearly as possible intact.

Bearing these facts in mind, and, further, that although the man who is absent is receiving pay and allowances, he is nevertheless bound to submit to, it may be, considerable loss of practice, the Committee suggest the following arrangements for three classes of practice:

Class I.—Large towns, where the question of mileage is not a very important consideration. Here it is suggested that an equal division of the remuneration should be agreed upon, this to apply both to private and insurance practice.

Class II.—Towns with a considerable population, but with a large amount of country work, necessarily involving the question of travelling expenses. It may be possible to ascertain these with more or less exactness, but as a general rule probably a division of all remuneration on the basis of three-eighths to the absentee and five-eighths to the man who is doing all the work and paying all the expenses is the nearest to equity.

Class III.—Smaller centres or single practice areas, where the question of travelling expenses and consumption of time becomes still more important. In such, possibly, a fractionally larger proportion should be allotted to the man who is doing the work. It is not desirable that a man should undertake the duties of a practice whose centre is perhaps ten miles from his own, and the Committee will do their utmost to provide locums in such cases.

It should be noted with regard to the three classes of practice that the difference between, say, a town practice (Class I) on the one hand, and a town and country practice (Class II) on the other, is not entirely one of geographical situation. Practices in large cities will in general offer no difficulty. They are town practices pure and simple. For practices in towns of moderate size, however, much will depend on the character of the town. In industrial burghs many practices will suitably be classed as town practices (Class I); while in a market town of the same population all practices will probably be of the town and country class (Class II). In the same town again some practices will belong to Class I and others to Class II. Lastly, in many small towns where the bulk of the work lies in the surrounding country, the town element may be practically non-existent; and the practice would fairly be counted in the country class (Class III). Consideration of the facts and of local conditions can alone determine the correct point of view in doubtful cases.

The foregoing considerations are thought to be applicable both to private and insurance practice, including under private practice all fees for medical attendance, operations, midwifery, and the like, and under insurance practice all capitation fees, mileage, and dispensing allowances and other charges if any. The sum total of such amounts would be divided between absentee and deputy in the proportion of half and half, three-eighths and five eighths, and one quarter and three-quarters according as the practice falls under Class I, Class II, or Class III.

In private practice the treatment of cash payments will be simple. As regards the rendering of accounts for work on behalf of absentees, these should be sent out by the deputy at the same time as he sends out his own, and it is suggested that they should be sent by Dr. A. on behalf of Dr. B. "absent on duty with the King's Forces."

The Committee are confident that in insurance practice no deputy acting on behalf of a practitioner absent on war service will wittingly endeavour to secure the transfer of the absentee's patients to his own list. It is not necessary for a transfer to be made in order that attendance may be given. By the terms of the existing practitioner's agreements the position of the deputy is recognized and provision is made for his employment.

In certain cases, however, insured persons on the lists of absentee doctors may themselves have already taken

* opies of this statement may be had on application to the Convener, Emergency Committee, Royal College of Physicians, Edinburgh.

the initiative with a view to transfer. They may have given due notice of their desire to change their doctor. It appears that having done so, they are at liberty to make a fresh choice, and that if they fail to be accepted they have the right to be assigned to a practitioner on the panel. It seems to the Committee that it would be a proper course for the practitioner to whom such patients apply to accept them "in trust for the absentee," sharing the capitation and other allowances on the principles above proposed, and giving the patient the opportunity of being transferred back to his own doctor's list immediately on the latter's return from active service.

It is necessary to recognize that proposed transfers may in some cases have nothing to do with the war. Such applications must be considered on their merits, and the decision will often be difficult. In any case of uncertainty the deputy will no doubt lean to generosity, and accept the patient in trust for his absent colleague.

Exchanges.

The Committee expressed satisfaction with the terms of the Director-General's circular, and the convener was directed to convey their thanks to Sir Alfred Keogh. Several communications with reference to it had been received, and the Committee expressed the hope that full advantage would be taken of this provision, and that even if the individual himself was not benefited by an exchange he would facilitate it in the interests of his colleagues and of the public.

Belgian Doctors.

Reference was made at the meeting to the Order in Council applying Part II of the Medical Act, 1886, to Belgium, the outcome of which might be that Belgian doctors could legitimately practise in this country.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BOMBAY BRANCH.

Special Meeting.

A special meeting of the Bombay Branch of the British Medical Association was held in the University Library on August 20th, 1914, when members of the medical profession were specially invited to meet Dr. A. Lankester, who had been deputed by the Research Fund Association to make an inquiry into the epidemiology of tuberculosis in India, and as to measures best adapted for prevention, having regard to Indian conditions, etc. Lieutenant-Colonel Ashton Street, I.M.S., was in the chair, and about fifty medical men were present. Dr. Lankester addressed the meeting at length on the various aspects of the question he was deputed to inquire into, soliciting suggestions from members of the profession present. Drs. Shivdas, Rajabali Patel, A. G. Viegas, Sorab K. Engineer, Professor J. Nadgir, and Dr. Bana took part in the discussion which followed the remarks of Dr. Lankester. After some interesting remarks by the Chairman and the reply of Dr. Lankester the meeting was dissolved.

Ordinary Meeting.

An ordinary meeting of the Bombay Branch of the British Medical Association was held in the University Library on October 15th, 1914, when Surgeon-General R. W. Lyons, I.M.S., occupied the chair, and about twenty-five members, including Dr. D. R. Bardi, the honorary secretary, were also present. On the motion of the Chairman, Rs.100 were subscribed for the War Fund (Red Cross section). Dr. Deshpandi showed a skiagram and read notes of foreign body in the knee (pieces of glass) successfully removed by Lieutenant-Colonel Ashton Street, I.M.S. Perfect movements of the knee-joint resulted. Dr. Sorab K. Engineer read notes of cases of Parkinson's disease, bulbar paralysis, hemiplegia initiated by a malingerer, and spastic paraplegia due to myelitis. Dr. A. Powell showed a calcareous spleen, which had to be divided by a saw, obtained from a dead body brought to the morgue by the police. No history was available. Other signs of anaemia were present. Dr. Sorab Nariman welcomed the Surgeon-General's presence amongst the members for the first time as their chairman, and hoped that he would continue his very welcome visits. After a hearty vote of thanks to all those who had contributed to the success of the meeting it was dissolved.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

The Quarterly Meeting of Council will be held on Wednesday, January 27th, at 2 p.m., in the Council Room, 429, Strand, London, W.C.

By order,

Guy Elliston,

Financial Secretary and Business Manager.

December 24th, 1914.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

The following volumes were added to the Library during April, May, and June, 1914:

Presented by the Secretary of State for Foreign Affairs.

Statistique Médicale de l'Armée Française pour l'Année 1911, 1913

Presented by the Surgeon-General, United States Army, Washington.

The Index Catalogue, vol. xviii, second series; Teb—Tzs. 1914

Presented by Dr. Alexander Thomson, Glasgow.

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LOCAL MEDICAL AND PANEL COMMITTEES.

CROYDON.

Local Medical Committee.

At a meeting of the Local Medical Committee held on December 17th, 1914, when Dr. Willock was in the chair, the model rules for administration of medical benefit for 1915 as provisionally adopted by the Insurance Committee were approved, and Dr. Willock was asked to continue to serve on the Insurance Committee.

Panel Committee.

At a meeting of the Croydon Panel Committee held on December 19th, 1914, when Dr. Scudamore presided, it was decided to enter into steady and close relationship with the British Medical Association, and generally to conform with the suggestions contained in Circular M.2. Drs. Grapel, Ridley, and Turner were elected members of the Committee in the place of Drs. Menzies, Sells, and Harris, resigned.

The medical members of the Special Joint Subcommittee were empowered to act on behalf of the Panel Committee in dealing with such cases of excessive prescribing as were detailed in the Committee's circular on the subject, adopted by the Insurance Committee.

Drs. Scudamore, Beard, and the Honorary Secretary were appointed trustees of the voluntary levy fund. It was decided to inform the Insurance Committee that the Panel Committee did not propose to make application for the payment from the statutory fund of the administrative expenses for the next year. The model rules for the administration of medical benefit for 1915, as provisionally adopted by the Insurance Committee, were approved.

BIRMINGHAM.

Panel Committee.

A meeting of the Birmingham Panel Committee was held on January 5th.

Prescribing.—At this and previous meetings certain practitioners whose prescribing had been considered excessive were interviewed by the Committee, and the Secretary was now instructed to forward the following letters:

1. To the Insurance Committee, intimating that at the request of the Pharmaceutical Committee, and in accordance with Regulation 40 an inquiry into excessive prescribing had been held, and that after interviewing the practitioners concerned certain of them had been recommended for surcharge.
2. A warning to those considered to have prescribed excessively, but who had given an explanation sufficient to justify the Committee in refraining from recommending surcharge.
3. To all practitioners on the panel, pointing out the various ways in which excessive prescribing had taken place, and indicating lines on which economy could be practised.

A scheme for the checking and examination of prescriptions by the Insurance, Pharmaceutical, and Panel Committees jointly was provisionally approved.

Expenses of Committees.—The application from the Pharmaceutical Committee to the Insurance Committee for expenses during the ensuing year was approved, as was the estimate of expenses of the Panel Committee for the same period, for the purpose of forwarding to the Insurance Committee.

LIVERPOOL.

Panel Committee.

A meeting was held at the Liverpool Medical Institution on January 5th, at 3.30 p.m., when Mr. F. C. Larkin was in the chair.

Quarterly Payments.—A letter was read from the Medical Secretary of the British Medical Association in reference to the decision of the Liverpool Insurance Committee to pay 1s. per head instead of 1s. 9d. for the next quarter, and the following resolution was adopted:

> That the Panel Committee strongly protests against the decision of the Insurance Committee to pay 1s. per head, instead of 1s. 9d., for the next quarter, as, while recognizing that some deduction may be necessary, it considers this deduction excessive, and that such a deduction without very good cause being shown is a grave injustice to practitioners who make their arrangements in accordance with the payments they expect from the Insurance Committee.

Examination of Prescriptions.—The offer of the Insurance Committee to pay one-third of the expenses of the Joint Committee, provided the Panel and Pharmaceutical Committees contribute a similar proportion, was again considered, and it was resolved:

> That the Panel Committee adheres to its original offer to contribute one-quarter of the expenses of the Joint Committee, as the Insurance Committee will not sanction requirements which the Panel Committee considers essential.

[In the report of the proceedings of the Liverpool Panel Committee on December 18th, 1914, published last week, p. 11, the paragraph regarding stock mixtures should have stated that while the Insurance Committee, the Medical Benefit Subcommittee, and the Special Subcommittee strongly disapproved of the clause suggested, the Panel Committee highly approved of the proposals of the Commissioners.]

DURHAM.

Panel Committee.

A meeting of the Durham County Panel Committee was held on December 16th, 1914.

Alleged Excessive Prescribing.—The Chairman, Mr. L. G. Dillon, submitted the report of a special subcom-

mittee appointed to consider the representations of the Pharmaceutical Committee as to cases of excessive and extravagant prescribing by practitioners; it was decided to notify certain practitioners that it was the Committee's intention to recommend the Insurance Committee to make deductions from the amounts payable to them on the ground that certain of the orders given by them were extravagant either in character or in quantity unless an intimation was received from the practitioner concerned within fourteen days after the receipt of the notification that he desired to be heard by the Panel Committee. An amended drug formulary, presented by the subcommittee, to which was added a "maximum" monthly quantity of "first dressings" for surgery use by practitioners, was adopted.

Supply of Drugs and Appliances.—On consideration of Memorandum 199/I.C. on the supply of drugs and appliances, it was decided, subject to the assent of the Insurance Committee, to issue a circular following the suggestions contained in the memorandum to all practitioners on the Medical List.

Medical Benefit Fund.—It was also resolved that, instead of the alternative method of making application to the Insurance Committee for a grant from the Medical Fund in pursuance of Section 33 (2) of the 1913 Act, the annual income of the Committee be raised by a voluntary levy, calculated at the capitation rate of one halfpenny per annum per insured person on the practitioners' lists, according to the Insurance Committee's Register on January 1st in each year.

Co-operation with British Medical Association.—The Acting Secretary was instructed to complete and return the schedule of questions from the British Medical Association, and at the same time to intimate the Committee's desire that the relationship between it and the Association should be steady, harmonious, and close.

Certificates.—The meeting also considered Circular 52/I.C., dealing with the new system of medical certification of incapacity of insured persons for work to come into operation on January 1st, 1915.

Secretaryship.—The CHAIRMAN referred to the absence of the Honorary Secretary (Mr. D. F. Todd) on active service with His Majesty's Forces, when it was unanimously agreed that Mr. Edwin Potts be appointed to carry out the duties *pro tem.*

EDINBURGH.

PANEL COMMITTEE.

A MEETING of the Burgh of Edinburgh Panel Committee was held on January 7th, when Dr. DEWAR occupied the chair.

Medical Records.—It was decided to ascertain by circular which system of records (day-book or card) the insurance practitioners preferred.

Proposed Limitation of Doctors' Lists.—In response to an inquiry, it was resolved to inform the Insurance Committee that the Panel Committee did not consider it advisable to interfere with the method adopted at present for the following reasons: (*a*) That the fixing of a limit to the number of patients a doctor might have on his list would interfere with the free choice of doctor; (*b*) that in certain districts it was easier to attend from 3,000 to 4,000 than half the number in other districts; (*c*) that some doctors with a large list of insured had not much private practice; and (*d*) that if a doctor's list was too large and the attendance inefficient, the insured person had his obvious remedy.

Rules for Insured Persons.—It was unanimously agreed to adhere to the rules prescribing that cases of serious emergency would receive attention on receipt of a written message marked "Urgent," and that only urgent messages would be attended to on Sundays.

Excessive Prescribing.—The Committee noted with regret from the report on prescriptions from September 12th to October 11th, 1914, that excessive prescribing was still continuing. The Secretary was instructed to communicate with those practitioners whose prescriptions accompanied the report.

Co-ordination of Work of Local Medical and Panel Committees.—It was decided to enter into steady and close relationship with the central office of the British Medical Association.

Honorary Secretary's Honorarium.—It was unanimously resolved to give an honorarium of £25 to the Honorary Secretary.

KIRKCALDY.

LOCAL MEDICAL COMMITTEE.

THE annual meeting of the Kirkcaldy Local Medical Committee was held on January 5th, when Dr. CURROR was in the chair.

Checking Accounts.—It was decided to agree to contribute one-third of the expenses to the central bureau for checking accounts.

Secretary's Report.—The Secretary's annual report and statement of accounts were submitted and approved.

Election of Office-bearers.—The following were elected: *Chairman*, Dr. Curror; *Vice-Chairman*, Dr. Wallace; *Secretary*, Dr. Greig.

Medical Records.—Circular 617—dealing with a suggested change to card system of medical records—having been discussed, it was unanimously decided to continue the day-book system.

Drug Accounts Committee.—The meeting considered Memo. 610/I.C.—dealing with the nomination of a candidate to the Drug Accounts Committee—and remitted the matter to the Chairman and the Secretary.

INSURANCE ACT COMMITTEE.

A MEETING of the Insurance Act Committee was held at the office of the Association on Thursday, January 7th, Dr. J. A. MACDONALD, LL.D., was in the chair, and the other members present were:—*England and Wales:* Dr. Olive Claydon (Oldham), Dr. A. C. Farquharson (Spennymoor), Dr. E. R. Fothergill (Hove), Dr. Major Greenwood (London), Dr. Richard Harding (New Radnor), Dr. W. Ainslie Hollis (Hove), Dr. I. W. Johnson (Bury), Mr. Herbert Jones (Hereford), Mr. D. F. Todd (Sunderland), Dr. W. B. Crawford Treasure (Cardiff), Mr. E. B. Turner (London). *Scotland:* Dr. John Adams (Glasgow), Dr. John Hunter (Edinburgh). *Ex officio:* Mr. T. Jenner Verrall, LL.D. (Chairman of Representative Meetings), and Dr. E. Rayner (Stockport), (Treasurer).

PRACTITIONERS SUPPLYING DRUGS AND APPLIANCES.

It was reported that a reply had been received from the English Commissioners with reference to representations made to them in accordance with the instructions of the Committee on November 12th, 1914, asking that the equivalent of any special concessions allowed to chemists on account of the high prices of certain drugs owing to the war should be extended to those medical practitioners who dispensed drugs for insured patients. The reply was to the effect that the position of doctors with whom arrangements had been made to supply drugs, etc., on a capitation basis had been considered by the Commissioners, but that they had come to the conclusion that they would not be justified in approaching His Majesty's Treasury with a view to the concessions being extended to those doctors, and that they were not prepared to recognize that the position of a doctor supplying drugs on a capitation basis was, from the point of view in question, identical with that of a chemist under agreement with an Insurance Committee. The Committee, without prejudice to any further action it might take, made a note of the Commissioners' reply.

POSITION OF DEPOSIT CONTRIBUTORS.

It was reported that in reply to inquiries addressed to the Insurance Commissioners as to the proposals of the Government with regard to the position of deposit contributors after January 1st, 1915, the Commissioners had stated that provision had been made in the Expiring Laws Continuation Act, 1914, whereby Section 42 of the National Insurance Act, 1911, was continued until December 31st, 1915.

NON-PANEL PRACTITIONERS AND CERTIFICATE FORMS.

It was reported that in reply to an inquirer a letter had been sent pointing out that the new system of medical certification in no way affected the position of non-panel practitioners, that the new certificates and the rules for their use applied to insurance practitioners, but there was nothing in the rules to preclude a society from admitting

as evidence of incapacity for work evidence other than the medical certificates referred to; that if the Insurance Committees declined to furnish books of new certificates to non-panel practitioners the latter should simply continue to supply patients with their own private medical certificates, unless the society intimated that it required a special form of certificate, when certificates should be given in that form.

The Committee resolved to urge the Commissioners to make arrangements whereby non-panel practitioners should, on request, be provided with a book of forms, in order that they might give certificates to insured persons attended by them.

CHECKING PRESCRIPTIONS IN WALES.

The Committee had before it a scheme proposed by the Association of Welsh Insurance Committees for the establishment of a central bureau for checking prescriptions, together with criticisms of the scheme by the the Cardiff Insurance Committee. The Medical Secretary was instructed to prepare a memorandum based on the decision of the Committee with regard to Scotland (SUPPLEMENT, December 26th, 1914, p. 292), including a consideration of the criticisms of the Cardiff Insurance Committee, and that this memorandum should be forwarded to the panel committees in England and Wales.

EXCESSIVE SICKNESS BENEFIT CLAIMS.

On further consideration of the report of the Departmental Committee on excessive sickness benefit claims, the Committee adopted the following recommendations to Local Medical and Panel Committees:

(*a*) That as regards Recommendation 25, there is no reason that because of the proposed additional benefit to pregnant women there should be any greater laxity on the part of doctors in certifying, and that pregnancy *per se* should not be considered sufficient reason for a doctor certifying the woman as incapable for work.

(*b*) That as regards Recommendation 50 (*c*) the desirability be impressed upon insurance practitioners of the need for confining themselves strictly to the requirements of the new certification systems of the Commissioners, and that they be advised not to give any further information to societies of the nature suggested in this recommendation.

(*c*) That as regards Recommendation 52, insurance practitioners be urged that the more precise their certificates are as regards the nature of sickness or disease, the less possibility there is of either themselves or their patients being troubled by societies for further information.

(*d*) That the Association express (i) disapproval of the view expressed in the first sentence of Recommendation 60—namely, that insurance practitioners should contribute towards the cost of medical referees, and (ii) its intention of opposing any steps that may be proposed to carry the above suggestion out.

(*e*) That the Association express disapproval of the proposal in Recommendation 82 that the Medical Benefit Regulations should provide for the imposition of a pecuniary penalty upon doctors for neglect of duty, inasmuch as insured persons have at present their right under law to take action with such a view, and that there is no security that the imposition of such a penalty will finish the matter.

STATISTICS OF ATTENDANCES.

It was resolved to request the honorary secretaries of Panel Committees to ask medical practitioners in each area to send for the information of the Association statistics as to the number of attendances, etc., on insured persons on their lists.

INSURANCE COMMITTEES.

LEICESTERSHIRE.

THE reports of the various subcommittees of the Leicester Insurance Committee dealing mainly with the last quarter of 1914 have been published.

The Sanatorium Benefit Subcommittee stated that the Consulting Medical Adviser (Dr. T. Robinson) reported that on December 5th 25 patients (10 males and 15 females) were undergoing treatment at Mowsley Sanatorium, 6 females at Coalville, and 2 males at Hinckley. In the four weeks ending December 5th there were 119 attendances at the out-patient dispensaries at Leicester (52), Coalville (26), and Hinckley (41). Arrangements had been made for the opening of the dispensary in Loughborough early in January.

The Medical Benefit Subcommittee reported that the number of doctors under agreement with the Committee for 1914 was 184, while the number for 1915 was 180; the decrease is stated to be due to the resignation of four doctors with only a few panel patients on their lists.

In the quarter ending October 11th, 30,035 prescriptions had been given by doctors on the panel, the total cost being £915 6s., there being a decrease of 2,596 scripts and £127 16s. in cost, as compared with the previous quarter.

INSURANCE NOTES.

RETURN OF RECORD CARDS.

IN the note upon this subject published in the SUPPLEMENT on January 2nd, page 1, there was an error which has no doubt been observed by medical men concerned. The packets of record cards returned to the Commissioners should be addressed to the Secretary, National Health Insurance Commission (England), Leonard Street, St. Luke's, London, E.C.

CORRESPONDENCE.

STATISTICS FOR 1914.

DR. CHARLES FRASER (Brighton) has sent the following record of attendances upon insured persons during 1914:

Insured persons accepted for treatment, 1,305:	
Male	786
Female	519
Record cards taken, 852:	
Male	495
Female	357
Visits at home of patient, 868:	
Male	549
Female	319
Attendances at surgery, 4,630:	
Male	2,436
Female	2,194
Grand total of professional attendances for year...	5,498

The average number of attendances upon persons accepted for treatment was 4.2, compared with 3.3 for each potential patient for the nine months ending December, 1913. The number of prescriptions issued was just over 5,000 for the year.

DR. PERCY ROSE (Canning Town) has furnished us with the following note of his work under the Insurance Act for the two years 1913 and 1914:

	1913.	1914.
Mean number of register cards for year (number of insured persons on list) ...	734	950
Total record cards opened during year (number of actual patients)	569	733
Total attendances	3,696	5,602
Attendances per insured person taking the mean for the year	5.03	5.89
Attendances per actual patient ...	6.49	7.64
Percentage of insured persons becoming actual patients during the year ...	77.5	77.1

DR. LEGGE PAULLEY (Pulham Market, Norfolk) sends us the following statistics of his work under the Insurance Act during 1914:

Average number of patients on list ...	750
Record cards opened for	354
Number of attendances	3,100

THE DEFECTIVE BASES OF THE ACT.

DR. ARTHUR J. BROCK (Edinburgh) writes: Dr. B. G. M. Baskett is to be congratulated on the way he has sized up the present attitude of the State to our profession. He clearly realizes, by bitter experience, the extraordinary inroads upon our liberties which have already been carried out, and the still worse ones which are impending. The National Insurance Act, he says in effect, whatever local or temporary benefits it may have effected, is to be looked on simply as the most recent instalment of a policy which we may rightly call the Prussification of Britain.

I think, however, Dr. Baskett assumes too hastily that there is nothing left for us but to form a quasi-political party in order to do battle for our rights. We never could

defeat the legal talent available to the Government. A better alternative is for all general practitioners who can possibly afford it to come off the panel. They may lose some money, but they will help their profession and their country. They will also indirectly help those of us who are forced, for pecuniary or other reasons, to remain on the panel at present, for, if once the State should get us all in a bunch, it would certainly proceed to put on the screw with redoubled energy. As its servants, we would probably not be left even the liberty, in the last resort, of going on strike. The competition of a non-official system of doctoring on the other hand, would be found to act as a check on the last excesses of bureaucracy—as, for example, has happened in the case of the churches.

MEDICAL REFEREES.

Dr. E. F. O'FERRALL (Brixton) writes: In the issue of the BRITISH MEDICAL JOURNAL of January 2nd, p. 25, you report that the Departmental Committee on Sickness Claims under the National Insurance Act considers that the appointment of medical referees should be vested in the Commissioners alone. As a pious expression of opinion this is excellent, but has it occurred to the Committee that there exist means of rendering such a course entirely nugatory? Some approved societies, including the Prudential, have dexterously inserted in their rules a stipulation by which they can compel the person claiming sickness benefit to submit himself or herself to any doctor named by them and in practice, naturally, they name their own local doctor. Verily to the strength of the lion they add the guile of the serpent.

It is clear that circumstances might arise where this course might have most objectionable features and cause much embarrassment, not only to the patient and the original doctor but also to the society's doctor, who *nolens volens* has to carry out an examination directed by his principals. This objection would not apply to an official medical referee residing some distance away. The point seems to be worthy of the attention of the Panel Committees.

CARDS AND RECORDS.

Dr. DUDLEY F. TORRENS (Market Rasen, Lincs.) writes: I think that the following suggestion would, if carried out, save the medical attendant under the Insurance Act some of the irksome clerical work which makes the system so hateful.

Let the Insurance Committees issue to the practitioner, in the place of the present index card, a treatment card for each panel patient on his list, with all the particulars of name, address, doctor's name, Insurance Committee, patient's age, sex, and occupation fully entered up. It would mean very little more work for the Committee, and would save the medical attendant.

I hope this may be taken up and carried through by the Association and the Local Medical Committees.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

BY the inclusion of Devonport in the recently extended borough of Plymouth, the number of towns in the Registrar-General's weekly return is reduced to ninety-six. In these towns 9,434 births and 6,736 deaths were registered during the week ended Saturday, January 9th. The annual rate of mortality in these towns, which had been 16.1, 14.0, and 21.3 per 1,000 in the three preceding weeks, fell to 19.4 per 1,000 in the week under notice. In London the death-rate was equal to 20.1, against 16.5, 12.8, and 25.7 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 7.3 in Acton, 10.0 in Croydon, 11.6 in Barnsley, 11.7 in Newport (Mon.), 12.0 in Ilford, 12.2 in Eastbourne, and 12.3 in Gloucester and in Darlington, to 26.3 in Sunderland, 26.9 in Northampton, 27.1 in Hastings, 28.0 in York, 28.2 in Preston, and 47.9 in Gillingham. Measles caused a death-rate of 1.7 in Bolton and in Gateshead, 2.1 in St. Helens, 2.3 in Wigan and in Newcastle-on-Tyne, 2.5 in Merthyr Tydfil, 2.7 in Grimsby, 4.4 in Plymouth, and 4.8 in Preston; and whooping-cough of 1.1 in Newcastle-on-Tyne, 1.3 in Rhondda, 1.4 in Bristol and in Warrington, 1.6 in Willesden, 1.7 in Tynemouth, and 1.9 in Gillingham. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 66, or 1.0 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 16 were recorded in Birmingham, 13 in Liverpool, 5 in South Shields. 5 in Gateshead, 3 in Southend, and 3 in Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 4,763, 4,583, and 4,503 at the end of the three preceding weeks, further fell to 4,152 on Saturday, January 9th; 320 new cases were admitted during the week, against 451, 348, and 436 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns, 1,395 births and 1,100 deaths were registered during the week ended Saturday, January 9th. The annual rate of mortality in these towns, which had been 18.0, 18,0. and 20.5 per 1,000 in the three preceding weeks, rose to 24.5 in the week under notice, and was 5.1 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 12.5 in Motherwell, 14.0 in Ayr, and 14.7 in Perth, to 26.3 in Glasgow, 28.2 in Aberdeen, and 30.0 in Dundee. The mortality from the principal infective diseases averaged 2.6 per 1,000, and was highest in Greenock and Dundee. The 543 deaths from all causes in Glasgow included 38 from whooping-cough, 9 from scarlet fever, 7 from diphtheria, 5 from infantile diarrhoea, and 2 from enteric fever. Six deaths from measles were recorded in Dundee: from whooping-cough, 8 deaths from Dundee, 4 in Greenock, and 2 in Clydebank; from diphtheria, 7 deaths in Edinburgh and 5 in Aberdeen; and from infantile diarrhoea, 5 deaths in Dundee and 3 in Edinburgh.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, January 9th, 649 births and 615 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 649 births and 643 deaths in the preceding period. These deaths represent a mortality of 26.5 per 1,000 of the aggregate population in the districts in question, as against 27.8 per 1,000 in the previous period. The mortality in these Irish areas was therefore 7.1 per 1,000 higher than the corresponding rate in the ninety-seven English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 27.9 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 36.5 (as against an average of 24.9 for the previous four weeks); in Dublin city, 40.2 (as against 26.0); in Belfast, 21.0 (or the same as in the previous period); in Cork, 23.1 (as against 24.3); in Londonderry, 13.9 (as against 16.8); in Limerick, 33.8 (as against 20.3); and in Waterford, 22.8 (as against 28.5). The zymotic death-rate was 1.7, as against 2.1 in the previous period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Fleet Surgeons BEAUCHAMP F. PARISH to the *Black Prince*, vice Mackeown; RICHARD F. BATE to the *Acteon*, vice Parish; ROBERT HICKSON to the *Victory*, vice Bate. Surgeons J. A. O'FLYNN, M.B., to the *Vivid*, additional, for disposal; F. R. FEATHERSTONE and J. E. MCCAUSLAND to the *Pembroke*, additional, for Chatham Hospital. Temporary Surgeons: GEOFFREY W. KING to M.F.A. *Zaria*, ROBERT BUDDLE to the *Cumberland*, CHARLES H. BROWNE to the *Actaeon*, vice Buddle; E. G. SCHLESINGER and C. A. ELLIS to the *Victory*, additional, for R.N. Division; W. L. M. GOLDIE to R.M. Infirmary, Deal; H. C. BILLINGS to the *Hebe*, vice O'Flynn; G. WILLIAM to the *Columbine*, additional, for Queenstown Sick Quarters, vice Billings; JAMES W. K. BRUCE to the *King Edward VII*, vice Willan; AUGUSTINE K. ROCHE to the *Circe*, vice Bruce; ANDREW L. DYKES, M.D., to the *Pembroke III*, for R.N. Air Service; JOHN A. THOMPSON, M.B., JOHN S. FARRIES, ROBERT S. LAWSON, M.B., ERNEST F. COX to the *Victory*, additional, for Haslar Hospital; GERALD P. O'DONNELL, M.D., to the *Minerva*; CHARLES S. ARCHER to the *Vivid*, additional, for Devonport Dockyard, vice O'Donnell; THOMAS R. G. MELROSE to the *Doris*.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon-Probationers WILLIAM O. LODGE to the *Attentive*, for the *Ghurka*; WILLIAM W. K. BROWN to the *Attentive*, for the *Maori*; WILLIAM O. G. DONOGHUE to the *Attentive*, for the *Nubian*. To be Surgeon-Probationer: JOHN C. SINCLAIR.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

FRED. D. BIRD, M.B., to be temporary Lieutenant-Colonel.

To be temporary Captains: ROBERT S. BERRY, EDWIN ARTHUR PETERS, M.D., F.R.C.S., ARTHUR R. OWST, F.R.C.S.E., JOHN DAVIES.

Temporary Captain FREDERICK F. BOND, M.B., resigns his commission.

The appointment to a temporary Lieutenancy of WILLIAM H. WOTTON, notified in the *London Gazette* of December 11th, 1914, is cancelled.

Temporary Lieutenants EDWARD M. WOODMAN, F.R.C.S., ALFRED G. STEWART, M.B., and PHILIP L. DAVIES, relinquish their commissions.

To be temporary Lieutenants: ALFRED C. EDWARDS, M.B., BERTRAM M. BONE, M.B., F.R.C.S.E., WILLIAM J. G. GAYTON, HANS FLEMING, M.B., JAMES A. HENDRY, M.B., JOHN D. HARMER, M.B., F.R.C.S., CARL J. B. BUCKHEIM, M.B., FRANK A. COOKE, M.D., ARTHUR J. O. WIGMORE, M.B., JAMES A. IRELAND, VICTOR VASSOLOVSKY, WILFRID H. W. ATTLEE, M.D., DAVID H. PAUL, M.D., MARTIN HALLAM, STEPHEN NOCKOLDS, M.B., GEORGE B. HORROCKS, HERBERT P. SHACKLETON, M.B., DAVID H. GRIFFITHS, DAVID W. JONES, GWILYM L. PIERCE, WILLIAM F. GIBSON, M.B., JOHN ALLAN, JOHN H. H. PEARSON, M.D., GEORGE E. GENGE-ANDREWS, M.B., GEORGE R. PHILLIPS, FRANK H. RAE, PHILIP H. RAWSON, GEORGE RICHARDSON, M.D., WILLIAM G. THOMPSON, M.D., F.R.C.S.E., HAROLD C. GODDING, WILLIAM R. S. WATKINS, M.B., F.R.C.S.E., ALEXANDER E. A. BURKHARD, WILLIAM MILLER, M.D., THOMAS J. BURTON, M.D., ROBERT P. MCDONNELL, F.R.C.S.I., HARRY G. MASSY-MILES, ARTHUR G. G. PLUMLEY, M.D., KENNETH D. BEAN, M.B., PHILIP J. A. SECCOMBE, M.B., WILLIAM S. DICKIE, F.R.C.S., JOSEPH GRAHAM, M.B., EDWARD W. LAWRENCE, M.B., HARRY S. HALL, GEORGE PIRIE, M.B., GEOFFREY B. RICHARDSON, KENNETH G. HEARNE, M.B., PERCIVAL BUTLER, ALEXANDER C. W. KNOX, M.B., DONALD O. RIDDEL, M.B., ARTHUR W. S. CHRISTIE, M.B., F.R.C.S.E.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT ROBERT MCC. LINNELL to be Captain.

The following Cadets and ex-Cadets of the Officers' Training Corps to be Lieutenants on probation: DAVID S. MARTIN, JOHN G. BENNETT, GEORGE B. HADDEN, HALLOWES L. ADDISON.

Lieutenants confirmed in their rank: DOUGLAS G. EVANS, CHARLES C. ILES, FRANK GRIFFITH, JOHN P. MITCHELL, RONALD G. J. MCENTIRE, EDWARD C. LINTON, ENNIS R. CHAMBERS, JOHN L. PERCEVAL, ALEXANDER GLEN, WILLIAM BARCLAY, ALFRED L.

ROBERTSON, OSWALD C. S. TANDY, JOHN L. KILBRIDE, CLEMENT LOVELL, DANIEL DOUGALL, FRANK G. LESCHER, WILLIAM JOHNSON, JOHN H. PENDRED, FRANCIS BALKWILL, EDMUND B. JONES, JAMES VALLANCE, JOSEPH A. L. WILSON, ERNEST TALBOT, GEORGE R. BRUCE, GEOFFREY MARSHALL, WILLIAM DUNLOP, HENRY K. V. SOLTAU, GEORGE DALZIEL, ALFRED J. CLARK, WILLIAM G. SHAKESPEARE, PETER W. RANSOM, JOSEPH I. LAWSON, JOHN E. ALLAN, WILLIAM MCCOMBIE, JAMES Y. MOORE, GERALD P. KIDD, TREVOR B. HEATON, HARRY E. B. WHITE, KENNETH K. DRURY, GEORGE M. ROBERTS.

INDIAN MEDICAL SERVICE.

MAJOR F. D. S. FAYRER, an officiating Agency Surgeon of the Second Class, is posted as Residency Surgeon, Gwalior, with effect from November 10th, 1914.

Lieutenant to be Captain: L. F. BRANDENBOURG, M.B., July 29th, 1914.

Lieutenant-Colonel R. C. MACWATT, an officiating Agency Surgeon of the 1st Class and Chief Medical Officer in Rajputana and Civil Surgeon, Ajmere, is appointed temporarily to hold visiting charge of the office of Residency Surgeon, Western Rajputana States, in addition to his own duties, with effect from November 12th, 1914.

The following retired officers have been recalled for duty in India: Majors T. E. WATSON, P. C. GABBETT, C. THOMSON, C. H. L. PALK, and Lieutenant-Colonels W. F. SCOTT-MONCRIEFF, and P. KILKELLY.

So far 270 officers in civil employ have been replaced at the disposal of His Excellency the Commander-in-Chief for military duty.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

CAPTAIN WILLIAM MCC. WANKLYN, Sanitary Service, is appointed Deputy Assistant Director of Medical Services, North Midland Division.

ROYAL ARMY MEDICAL CORPS.

Second South-Western Mounted Brigade Field Ambulance.—JOSEPH GRANT-JOHNSTON to be Lieutenant.

First Welsh Field Ambulance.—EDWARD B. H. HUGHES to be Lieutenant.

Welsh Border Mounted Brigade Field Ambulance.—Lieutenant DEVONSHIRE P. H. GARDINER, M.B., from Attached to Units other than Medical Units, to be Captain, temporary. WALTER S. SNELL to be Lieutenant.

First London (City of London) Sanitary Company.—Lieutenant CHARLES J. D. GAIR is seconded.

Fourth London General Hospital.—CHARLES E. W. MCDONALD to be Lieutenant.

Second Eastern General Hospital.—Captains to be Majors (temporary): RICHARD WHITTINGTON, M.D., and WILLIAM H. BRAILEY, M.D.

Second East Anglian Field Ambulance.—WILLIAM J. CAIE, M.B., to be Major, temporary.

Third East Anglian Field Ambulance.—SIGISMUND H. RENTZSCH to be Lieutenant. Lieutenant WILLIAM BRANDER, M.D., is seconded.

South Midland Casualty Clearing Station.—To be Lieutenants: LAURENCE BALL, M.B., LEONARD J. MOIR, M.B.

Second South Midland Mounted Brigade Field Ambulance.—HENRY G. MAGRATH to be Captain.

Notts and Derby Mounted Brigade Field Ambulance.—LEWIS MOYSEY, M.B., to be Lieutenant. WILLIAM A. BRECHIN, M.B., late Cadet Lance-Corporal, Glasgow University Contingent, Senior Division, Officers' Training Corps, to be Lieutenant.

First West Riding Field Ambulance.—Captain JAMES EWING resigns his commission.

Third West Riding Field Ambulance.—WILLIAM T. D. MART to be Lieutenant.

First East Lancashire Field Ambulance.—LEONARD E. H. R. BARKER, M.B., to be Lieutenant.

Third East Lancashire Field Ambulance.—JAMES A. TOMB, M.B., to be Lieutenant.

First West Lancashire Field Ambulance.—FREDERICK RYAN, M.B., to be Lieutenant.

Second West Lancashire Field Ambulance.—To be Lieutenants: HERBERT E. MARSDEN, M.B., JOSEPH H. MATHER.

Third West Lancashire Field Ambulance.—To be Lieutenants: GILBERT W. ROGERS, M.B., SANDYS J. C. HOLDEN, M.B.

First Scottish General Hospital.—Captain JOHN R. LEVACK, M.B., to be Major (temporary), whose services will be available on mobilization.

Attached to Units other than Medical Units.—Captain THOMAS BEARD to be Major, temporary; Captain JAMES M. KIRKNESS, M.B., is seconded. To be Lieutenants: HENRY W. CASE, M.B., LANCELOT W. SPARROW, M.B., CHARLES H. SAMPSON, JOHN W. M. JAMESON, M.B., Lieutenant MAURICE H. BARTON, from the Second North Midland Field Ambulance; HENRY C. C. HACKNEY, THOMAS R. W. ATKINS, WILLIAM N. P. WILLIAMS.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ARROCHAR PARISH COUNCIL.—Medical Officer. Salary, £75 per annum.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £120 per annum.

BARNSTAPLE: NORTH DEVON INFIRMARY.—Lady House-Surgeon. Salary, £100 per annum.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary, £200 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

BIRMINGHAM UNION.—(1) Third and Fourth Assistant Medical Officers at the Dudley Road Infirmary. Salary, £170 and £160 per annum respectively. (2) Assistant Medical Officer to the Selly Oak Infirmary. Salary, £180 per annum.

BOLTON INFIRMARY AND DISPENSARY.—(1) Junior House-Surgeon; (2) Third House-Surgeon. Salary, £150 and £130 per annum respectively.

BRADFORD POOR LAW UNION.—Assistant Resident Medical Officer for the St. Luke's Hospital and Union House. Salary, £150 per annum.

BRADFORD ROYAL INFIRMARY.—House-Surgeon (male). Salary, £100 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRISTOL: COSSHAM MEMORIAL HOSPITAL, Kingswood.—House-Surgeon (male). Salary, £120 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—House-Surgeon (lady) for the Ophthalmic and Ear and Throat Departments. Salary, £140 per annum.

DEVON COUNTY COUNCIL.—Temporary Junior Resident Medical Officer at the County Sanatorium, Hawkmoor. Salary, £250 per annum.

DOUGLAS: NOBLE'S HOSPITAL.—Resident House-Surgeon. Salary, £150 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £100 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

EXETER CITY ASYLUM.—Assistant Medical Superintendent. Salary, £250 per annum, rising to £300.

GLASGOW: GARTLOCH MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £200 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Remuneration, £80 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—House-Physician. Salary, £60 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

HACKNEY UNION INFIRMARY.—Junior Assistant Medical Officer. Salary, £200 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. Salary, £120 and £100 per annum respectively.

HULL CITY ASYLUM.—Junior Assistant Medical Officer. Salary, £200 per annum.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Lady House-Surgeon. (2) Lady Assistant House-Surgeon. Salary, £60 and £50 per annum respectively.

KENT AND CANTERBURY HOSPITAL.—Senior and Junior House-Surgeons. Salary, £100 and £90 per annum respectively.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

LEEDS PUBLIC DISPENSARY.—Lady Resident Medical Officer. Salary, £130 per annum.

LEICESTERSHIRE EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

LIVERPOOL CITY.—Female Assistant Medical Officer. Salary, £350 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Salary, £60 per annum each.

LIVERPOOL PARISH.—Resident Assistant Medical Officer at the Brownlow Hill Institution. Salary, £280 per annum.

LIVERPOOL STANLEY HOSPITAL.—House-Surgeons and Physicians.

LONDON HOMOEOPATHIC HOSPITAL, Great Ormond Street, W.C.—(1) Assistant Physician. (2) Surgeon for Diseases of the Eye.

MANCHESTER CORPORATION.—Two Assistant Tuberculosis Medical Officers. Salary, £350 per annum each.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer; salary, £250 per annum, increasing to £300 and upon promotion to £450.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £180 per annum, increasing to £200.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Two Assistant House-Surgeons. Salary at the rate of £40 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Fitzroy Square, W.—Surgeon Laryngologist.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Junior House-Physician (temporary). Salary, £100 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at the rate of £100 per annum, rising to £150.

NOTTINGHAM: GENERAL HOSPITAL.—Senior House-Physician. Salary, £120 per annum. (Women eligible.)

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Resident Medical Officer. Salary, £90 per annum.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary, £150 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) Assistant Physician. (2) House-Surgeon. Salary, £80 per annum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, W.C.—Member of Court of Examiners.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—(1) Resident House-Surgeon; salary, £100 per annum. (2) Anaesthetist; Honorarium, £21 per annum.

ST. MARY'S HOSPITAL, Paddington, W — Resident Assistant Anaesthetist. Salary at the rate of £100 per annum.

SALFORD ROYAL HOSPITAL. — (1) Resident Surgical Officer. (2 Casualty House-Surgeon. Salary, £120 and £100 per annum respectively.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY. — Senior and Junior House-Surgeons. Salary, £100 and £80 per annum.

SHEFFIELD: CITY HOSPITALS FOR INFECTIOUS DISEASES AND TUBERCULOSIS.—Assistant Medical Officer. Salary, £180 per annum.

SHEFFIELD ROYAL HOSPITAL. — Assistant House-Physician. Salary, £80 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. (Males.) Salary, £100 per annum each.

SIDLAW SANATORIUM.—Resident Medical Officer. Salary, £125 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary, £120 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

SOUTH SHIELDS UNION.—Assistant Male Medical Officer at the Harton Poor Law Institution. Salary, £200 per annum, rising to £250.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Third Assistant Medical Officer (lady). Salary, £140 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

TRURO: ROYAL CORNWALL INFIRMARY. — House Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL. — House-Surgeon. Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Honorarium, £40 for six months.

WAKEFIELD: WEST RIDING ASYLUM.—(1) Assistant Medical Officer; salary, £250 per annum, rising to £300, and on promotion to £450. (2) Locumtenent Assistant Medical Officer.

WALSALL AND DISTRICT HOSPITAL. — Junior House-Surgeon and Anaesthetist. Salary, £110 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL. — (1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WESTMINSTER UNION INFIRMARY. Second and Third Assistant Medical Officers. Salary, £160 and £140 per annum, rising to £180 and £160 respectively.

WEST RIDING OF YORKSHIRE.—Assistant Medical Officer at the Cardigan Asylum, near Wakefield; non-resident. Salary, £250 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY. — Junior Lady House-Surgeon. Salary, £130 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Braunton (Devon), Mountrath (Queen's Co.), Paignton (Devon).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

ALEXANDER, W. H. M., M.B., Certifying Factory Surgeon for the Crowle District, co. Lincoln.

BUSHNELL, F. G., M.D., D.P.H., transferred as Tuberculosis Officer and Deputy Medical Officer of Health to the County Borough of Plymouth.

CLAPPERTON, T. J. M., L.S.A., District Medical Officer of the Daventry Union.

ELLIS, L. Erasmus, M.D., M.R.C.S., L.R.C.P., Assistant Physician to the Johannesburg General Hospital, Johannesburg, South Africa.

GENT, W. C., L.R.C.P. and S.Edin., L.R.F.P.S.Glasg., District Medical Officer of the Taunton Union

GILMOUR, R. W., M.B., B.S.Durh., District Medical Officer of the Droxford Union.

GRIFFITHS, D. R. T., L.S.A., District Medical Officer of the Aberayron Union.

MACPHERSON, Robert W., M.D., D.P.H., Assistant School Medical Officer for Cheshire.

MITCHELL, A. Philp, M.D., Ch.M., F.R.C.S.Ed., Temporary Assistant Surgeon, Royal Hospital for Sick Children, Edinburgh.

MORISON, D., M.B., C.M.Glas., Certifying Factory Surgeon for the Tobermory District, co. Argyll.

PAPADOPOULOS, T. G., M.B.Lond., M.R.C.S.Eng., L.R.C.P., Senior House-Surgeon to the Miller General Hospital for South-East London, Greenwich Road, S.E.

REES, J. H., M.D Edin., Certifying Factory Surgeon for the Penarth District, co. Glamorgan.

ROBINSON, Geoffrey S., M.A., B.M. and B.Ch.Oxon., M.R.C.S.Eng., L.R.C.P.Lond., House-Surgeon to the Royal Infirmary, Sunderland.

WARBURTON, Gilbert B., M.B., Ch.M.Vict., F.R.C.S.Eng., Temporary Honorary Surgeon to Ancoats Hospital, Manchester.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

MCCOLL.—On January 2nd, the wife of Dr. McColl, Laurel House, Tamworth, of a daughter.

PHIPSON.—On December 18th, 1914, at Cairo, Egypt, Mrs. E. Selby Phipson, wife of Captain E. Selby Phipson, M.B., B.S., D.P.H., I.M.S., 1st Battalion, 6th Ghurka Rifles, Indian Expeditionary Force, a daughter.

MARRIAGE.

NIXON—JOHNSON.—On January 7th, at S. Wilfrids Church, Harrogate, quietly on account of the war, by the Rev. Douglas Guy, Surgeon Horace Clulow Nixon, R.N., of Harrogate, youngest son of the late Benjamin Nixon and Mrs. Nixon, Ballington House, Leek, to Hilda De Angelis, younger daughter of Dr. and Mrs. T. Mason Johnson, The Gables, Harrogate.

SCOTT-STEVENSON KERR.—At Singleton Presbyterian Church, Manchester, on January 6th, by the Rev. James Stirling, Robert Scott-Stevenson, M.B., to Gertrude eldest daughter of Dr. and Mrs. Ferguson Kerr, Brunswick House, Prestwich. At home, 36, Wellington Road, Eccles, February 17th and 18th.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. HARRAP will publish immediately a *Soldier's Word and Phrase Book*, printed in English, French, and German in parallel columns. The words and phrases are selected with the view of meeting the peculiar needs of the British soldier. The same firm is also about to issue a pamphlet, entitled *America's Arraignment of Germany*, by Dr. J. William White, a trustee of the University of Pennsylvania.

The Cambridge University Press will shortly publish the third edition of Shipley and Macbride's *Zoology*. Zoology has made such advances in the eleven years which have elapsed since the publication of the second edition of this textbook that it has become necessary to rewrite considerable portions. There are many new illustrations.

DIARY FOR THE WEEK.

TUESDAY.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester Square, W.C., 4.30 p.m.—Cases sent for consultation. Demonstration of Pathological Specimens. Exhibition of Clinical Cases.

ROYAL SOCIETY OF MEDICINE:
SECTION OF THERAPEUTICS AND PHARMACOLOGY, 4.30 p.m. —Papers:—Dr. Douglas Cow: The Action of the Suprarenal on Renal Secretion. Dr. Ikeda and Professor Dixon: The Action of Ergot on the Pulmonary Circulation. General Meeting of Fellows, 5 p.m.; Ballot for Fellowship.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF THE HISTORY OF MEDICINE, 5 p.m.—Exhibition of Books illustrating the History of Military Hygiene. Dr. Norman Moore will discourse on some of the books. (The books to be shown and discussed at the meeting will be on view in the Library from January 14th to 21st, between 11 a.m. and 6.30 p.m.) Lucian and Medicine, Part I: Dr. J. D. Rolleston.

THURSDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF DERMATOLOGY, 5 p.m.—Exhibition of Cases at 4.30 p.m.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION FOR THE STUDY OF DISEASE IN CHILDREN, 4.30 p.m.—Exhibition of Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Course next week:

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		JANUARY.
16	Sat.	London: Science Committee, 10.30 a.m.
19	Tues.	London: Standing Ethical Subcommittee, 2.30 p.m.
20	Wed.	London: Finance Committee, 2 p.m.
21	Thur.	London: Insurance Act Local Medical and Panel Subcommittee.
27	Wed.	London: Central Council, 2 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 23RD, 1915.

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INSURANCE ACT.

IRISH MEDICAL COMMITTEE.

A MEETING of the Irish Medical Committee, which has charge of the Insurance Act so far as it affects medical matters in Ireland, was held in the Royal College of Surgeons on January 12th. Dr. P. J. MCNAMARA was in the chair, and the following members were present:

Dr. M. R. J. Hayes, Dr. S. Gawn, Dr. O. P. Kerrigan, Dr. P. J. O'Brien, Dr. J. Singleton Darling, Dr. E. Thompson, Dr. R. J. Blake, Dr. W. W. Murphy, Dr. J. F. Fagan, Dr. P. J. Hamilton, Dr. J. J. O'Sullivan, Dr. T. A. Davidson, Dr. J. Musani, Dr. B. C. Powell, Dr. H. T. Warnock, Dr. R. J. Johnstone, Dr. K. F. Lynn, Dr. D. Gray, Dr. R. J. Rowlette, and Dr. W. F. Delany. Dr. T. Hennessy (Medical Secretary), and Mr. C. H. Gick (Secretary), were also in attendance.

Interviews with Members of Parliament.

Reports regarding interviews with members of Parliament were submitted from the following Local Medical Committees: Waterford County Borough, Kilkenny, Tipperary North and South, Westmeath, Queen's County, Galway, Clare, Wexford, Wicklow, Limerick County and Borough, Antrim, Fermanagh, and Tyrone.

Appointment of Part-time Medical Certifiers.

Correspondence with numerous Local Medical Committees in regard to the action of the Irish Insurance Commissioners in making appointments of part-time certifiers in their areas, was read, and the following resolution, which had been passed at a meeting of the Poor Law Subcommittee held earlier in the day, was submitted, and adopted:

That the attention of the Local Government Board be again drawn to dispensary and union medical officers being appointed to certify either for the entire or large areas of unions, and to the physical inability of those doctors to carry out their Poor Law functions and travel to certify all over the country. We desire also to point out that we being unable to assist this class of practitioner at operations, etc., the sick poor must inevitably suffer.

This Committee would again draw the attention of the Insurance Commissioners to the grave injustice which the appointment of part-time medical certifiers is causing to insured sick persons and to the medical practitioners in attendance on them.

An arrangement by which a medical practitioner who is in competition with the medical practitioner in attendance on the insured is made the arbiter of the insured's capacity for work is not fair to any of the parties, and opens the door to very grave abuses. In the interests of professional ethics and good will as well as in the interests of the insured this Committee must protest against the continued appointment of part-time certifiers.

Copies of the above resolution were directed to be sent to the Insurance Commissioners and published in the press.

Circulation of Misleading Reports.

It was also resolved that a copy of the correspondence relative to the action of the Insurance Commissioners in regard to the report of a recent meeting of the County Cavan Local Medical Committee be forwarded to the press, the Chancellor of the Exchequer, Dr. Addison, M.P., Dr. Smith Whitaker, the Right. Hon. A. Birrell, Mr. Masterman, and the Royal College of Physicians, and that a protest be made to the Insurance Commissioners in regard to their action.

Approved Societies and the Certificates of Medical Attendants.

The Secretary of the County Galway Local Medical Committee reported a case in which the Ancient Order of Hibernians refused to pay sickness benefit to a sick insured member on the certificate of his medical attendant, the official medical certifier having certified that the claimant was able to work. The Medical Secretary was requested to make further inquiries into the case.

Local Medical Committees and Local Representatives of Approved Societies.

Arising out of communications received from two Local Medical Committees, the following resolution was passed:

That the Local Medical Committees in each area should meet with the representatives of the approved societies with a view to promoting a settlement of the certification question.

Finance.

The report of the Finance Committee, which had also met earlier in the day, was adopted, along with the audited abstract of accounts for the year ended July 31st, 1914.

PANEL MEDICO-POLITICAL UNION.

PROPOSED RULES.

A MEETING, of which notice had been sent to every practitioner on the panel, was held at Caxton Hall, Westminster, on January 14th, for the submission of the proposed rules of an organization called the Panel Medico-Political Union. A report of a meeting, at which it was decided to form the union, appeared in the SUPPLEMENT, July 18th, 1914, p. 75.

The draft rules gave No. 47, Fleet Street, E.C., as the registered office of the union, and stated that its objects would include the following:

1. The imposition of restrictive conditions on the conduct of the trade or business of medical practitioner.
2. The regulation of relations between medical practitioners and their employers and between practitioners themselves.
3. The regulation of the conditions of contract practice.
4. The establishment of a fund or funds for the purposes of the union.
5. To promote or oppose legislation, to take part in political propaganda, and to employ funds for the purposes defined in Section 3 (3) of the Trade Union Act, 1913.
6. To further the interests of the profession, to give legal assistance to members, and to provide for them insurance and pension benefits.

The rules further provided that any member of the profession should be eligible for membership, and rights of expulsion were vested in a council, which would have the absolute control and administration of the affairs and property of the union. The council, however, would have power to submit any question to the vote of members. The formation of district branches was contemplated. The annual subscription was fixed at one guinea, falling due on July 1st, but power was taken to make a levy not to exceed £5 in any one quarter of a year; nor must the total amount of the levies exceed £5 in any one year (unless after special ballots). Exemption was provided for members objecting to contribute towards the "Political Objects Fund," of which separate accounts were to be kept. Compensation to members suffering loss in the interests of the general body was provided for, and schemes of further benefits might be arranged. The expression "political objects" was stated to have the same meaning as in the Trade Union Act—namely, the payment of electoral expenses and the maintenance of a candidate or elected representative to Parliament or other public body.

About a hundred members of the profession attended the meeting, over which Dr. W. COODE ADAMS (Hampstead) presided. With him on the platform were Dr. H. J. Cardale (Chairman of the London Panel Committee), Dr. J. A. Angus (Paddington), and Dr. A. Welply (Secretary).

The CHAIRMAN said that as the meeting had been called to lay the proposed rules of the union before panel practitioners there could be only one motion—that the rules be adopted, and only one amendment—that the rules be referred back for reconsideration. The rules had been drawn up with legal advice, and could hardly be amended in detail by a large meeting, so that they must be either approved or referred back *en bloc*. He moved the adoption of the rules. Under them the widest powers had been taken because, unlike any other body of the kind, the union was essentially an offensive association; it went further than the British Medical Association, for it took power to oppose any member of Parliament, or member of a council, or of a committee under the Insurance Act. The union could claim the benefits and protection of the Trade Union Acts. It prided itself on being a trade union, and would fight, if necessary, by trade union methods. The Chairman alluded to other points in the constitution of the union summarized above, and claimed that the power to raise a levy from members would enable immediate action to be taken when necessity arose. Every care had been taken to secure the representative character of the executive, and the strictest fairness in regard to its election.

Dr. J. A. ANGUS, who seconded the motion, said that after the war practitioners concerned with the Insurance Act would find themselves against a great wall of difficulty, and in danger of being made the shuttlecock of political parties. Other associations were not devoting themselves entirely to the interests of panel practitioners, and a separate organization for their special purposes was needed. It was no use waiting until the struggle was upon them; a union must be formed now. In fighting for their own position under the Insurance Act practitioners would be acting in the interests of the health of the community.

Dr. ROWLAND FOTHERGILL (Brighton) moved that the rules be referred back. He agreed with all sentiments as to union in the profession, but the way to secure it was not by forming a number of organizations. The objection he saw to the constitution of the new body was its assumption that the profession could be dealt with in sections. This was described as a "panel" union, but no such watertight division was possible because the Insurance Act affected hospital staffs, medical officers of health, tuberculosis officers, and practitioners not on the panel. A new organization would have to buy its experience and trust that as it grew it would be recognized by the public. In the meanwhile, current affairs, such as the investigations of departmental committees into various phases of the administration of the Insurance Act, called for immediate action on behalf of the whole profession. The British Medical Association was already at work in these matters, and the great majority of the Panel Committees in the United Kingdom had agreed to act in close co-operation with the Association. The Association, on its part, had undertaken, before taking any action in regard to the Insurance Act, to communicate with the Panel Committees, so that the views of practitioners on the panel might receive due weight. Unless any organization claiming to act on behalf of the profession received the support of every section, it would never gain its points. It would be time enough to join a new association if the British Medical Association failed in its work in so far as it related to panel interests.

Dr. SALTER (Bermondsey) seconded the reference back of the rules, but not, he explained, for the same reasons as animated Dr. Fothergill. He believed in the urgent need for a union for panel practitioners, but he objected to the proposed rules as being more suited to the eighteenth than to the twentieth century. All the power seemed to be taken out of the hands of members and placed with the executive, except that the general secretary appeared to be in a position to defy even the executive. He wanted to see a workable organization; as proposed it would be so undemocratic that it would be impossible for many to join. The method of election to the executive was a serious defect; only those members who were approved of or nominated by the executive could ever hope to become elected, and no individual member could secure the election of a nominee of his own. The council sent out a list of its nominees before an election; there was no provision for any other nominations, so that the nominees of the council must be elected. By no possible procedure could the general body of members dismiss an executive of which it disapproved. The executive was superior to, and could override, every decision of the general membership; the general secretary was irremovable except by a three-fourths vote of all the members, and they had no power to appoint a successor. An annual general meeting would be an absolutely futile proceeding, because it had no legislative powers whatever. The meeting could only submit recommendations to the executive, which could entirely ignore them if it chose. The only body which could alter the rules was the executive. The rules contained dozens of other instances of a desire to place all power in the hands of the executive. All other trade union rules provided for control by the members, and only on that basis could the new organization be a success.

Dr. H. J. CARDALE assured the meeting that the executive had no intention of framing rules reserving to itself all the power, and a legal opinion had been given that the executive would be absolutely bound by a resolution of the annual general meeting. He thought the suggestions of Dr. Salter as to giving members power to nominate to the executive were extremely good, but these were matters that could easily be adjusted. Dr. Fothergill's remarks were quite fair, but the speaker held that practitioners on the panel needed an organization as much as did medical officers of health and poor law medical officers. There was no desire to act in opposition to the British Medical Association, and if the scope of the union were widened to include other sections of the profession it would tend to be a rival to the British Medical Association.

Dr. T. F. KEENAN (Hackney) said that although he had helped to frame the rules, on studying them still further,

he thought they contained defects which should be remedied before they were adopted.

The CHAIRMAN offered to give an undertaking that the alterations suggested by Dr. Salter should be incorporated in the rules and expressed the hope that the meeting would accept them on that understanding.

There was some objection to this proposal on the ground that the matter was one for the meeting as a whole to decide, and not for an individual critic. Dr. SALTER also mentioned that he had many other suggestions which had not been put before the meeting.

On a vote, the amendment to refer back the rules to the Committee which had framed them was carried, only a few voting to the contrary.

About twenty members of the Union remained behind to a meeting for the election of an executive to hold office until June next. The following were elected: President, Dr. W. Coode Adams; Vice-Presidents, Drs. J. Angus, H. J. Cardale, and R. J. Farman. The following were appointed to an executive committee, vacancies being left in order that representation might be given to members joining in the next few months: Drs. Alfred Salter, F. H. Lane, J. Jaffé, P. D. Pywell, E. G. Goldie, Macnamara, J. E. Boon, H. G. Cowie, H. J. Butler, T. H. Parkes Peers, V. Partridge, J. H. O'Brien, A. Welply, T. F. Keenan, J. Fleming, Young, R. G. Whitelaw, T. J. Evans, J. Paxton, T. G. Vaudrey (Plymouth), J. Round, Ll. Williams, J. C. Williams, R. V. Donnellan, and J. H. MacBurney.

LOCAL MEDICAL AND PANEL COMMITTEES.

ESSEX.

LOCAL MEDICAL AND PANEL COMMITTEES.

SINCE the last published report (SUPPLEMENT, August 22nd, 1914) there have been six regular and special meetings and two subcommittee meetings. Several important matters necessitating prolonged discussions have been dealt with—for example, (1) allocation, (2) balance-sheet of the Insurance Committee, (3) federation of Local Medical and Panel Committees and co-ordination of same by British Medical Association, (4) "Rep. Mist.," (5) deficit in Drug Fund, (6) delay in payment of practitioners, (7) new agreement, (8) new tariff, etc.

Financial Statement.—Regarding the financial statement, the Accountant attended and explained that final adjustments had to be made by the Commissioners, after which it was hoped about £10,000 would be available. There are now about 325 000 insured persons in Essex.

Federation of Local Medical and Panel Committees.—It had been decided not to commit the Panel Committee to either alternative, but for the present to allow the Secretary to give any assistance in his power to the British Medical Association and await more decisive action by one or other of the bodies.

Rep. Mist.—The question of "Rep. Mist." is still under consideration; for the present it will continue to be used, but there appears a possibility of an Insurance Act pharmacopoeia for the United Kingdom, and a drug committee of Panel Committee, Essex, is to prepare a pharmacopoeia to be used if and when occasion require. The use of such would probably remove all difficulties of "Rep. Mist."

Drug Fund.—The deficit in the Drug Fund had resulted in the formation of a Joint Drug Committee (two members each of Panel, Pharmaceutical and Insurance Committees), which had met several times. An enormous amount of searching scrutiny of prescriptions had taken place at considerable cost, and the Panel Secretary's suggestion of writing privately to practitioners had been sanctioned in the hope of reducing not only the work, but the deficit in funds in future. The Panel Committee had advised the Insurance Committee to disallow all private formulae, all formulae by wholesale houses, and all small local pharmacopoeias, as it was impossible to price them or check prices at the office.

Payment to Practitioners.—A letter had been addressed to the Insurance Committee, desiring that moneys should be disbursed at once to practitioners.

Pricing of Drugs.—The Committee approved of the suggested arrangements whereby the British Medical Association and Pharmaceutical Society of Great Britain should conjointly revise war prices from time to time as required.

Certification.—It was not considered that any additional information to approved societies was required of doctors by the Regulations, beyond such as is given on the new certificates.

LIVERPOOL.

MEETING OF PANEL PRACTITIONERS.

A MEETING of panel practitioners was held at the Liverpool Medical Institution on January 13th, when Mr. F. CHARLES LARKIN was in the chair. There was a large attendance, and eighty-seven signed the roll.

Payments to Practitioners.—The following resolutions were unanimously adopted:

1. That this meeting of Liverpool panel practitioners protests against the large deduction it understands is to be made in the quarterly payments now due. It considers the deduction excessive, and that it will be productive of much unnecessary inconvenience and in some instances actual hardship to panel practitioners. That this meeting further protests that earlier information was not given to panel practitioners conveying full reasons for the proposed reduction.
2. That this meeting urgently calls upon the Insurance Committee to distribute forthwith the unallocated funds due to panel practitioners.

Repeat Mixture and Duplicate Prescriptions.—The question of the refusal of the Insurance Committee to recognize the use of "Rep. mist.," and in connexion therewith the matter of writing duplicate prescriptions, having been discussed, it was resolved:

That this meeting protests against the refusal of the Insurance Committee to continue to recognize the formula "Rep. mist.," and against the misleading statement of the circular sent to panel practitioners to the effect that the Panel Committee had agreed to such non-recognition. In view of this refusal this meeting is of opinion that panel practitioners should be advised no longer to write prescriptions in duplicate.

Copies of the resolutions were directed to be forwarded to the Panel Committee for its guidance.

Service with the Forces.—The opinion was expressed that the conditions under which panel practitioners performed the duties of those on active service should be more equitable, and the Panel Committee was requested to consider the matter.

PANEL COMMITTEE.

A meeting of the Liverpool Panel Committee was held on January 15th under the presidency of Mr. F. C. LARKIN.

Allocation of Surplus Funds.—The CHAIRMAN reported that the subcommittee had interviewed the practitioner who had omitted to sign the declaration for the allocation of surplus funds, and had ascertained that his difficulties were the same as those complained of by many other panel practitioners. The practitioner had, however, finally agreed to waive his objection and sign the agreement.

Payments to Practitioners.—It was resolved to send the resolutions with regard to payments to practitioners adopted at the meeting of panel practitioners to the Insurance Committee.

Duplicate Prescriptions.—Before taking any action with regard to the resolution adopted at the meeting of panel practitioners it was decided to seek the opinion of the British Medical Association and the Medical Defence Union regarding the legality of refusing to write prescriptions in duplicate.

Service with the Forces.—The Committee expressed the opinion that, owing to the length of absence of panel practitioners who were serving with His Majesty's forces, some equitable arrangement should be made with those practitioners who were looking after their work.

Vacancy on Insurance Committee.—It was resolved to urge the Insurance Commissioners to fill the vacancy on the Liverpool Insurance Committee caused by the resignation of Professor Paterson. It was also decided to ask whether it would not be possible to appoint a practitioner to act as deputy for Miss Ivens, since she would probably

be serving at one of the military hospitals in France for a considerable period.

Repeat Mixture.—The Committee took exception to the statement contained in a circular letter issued by the Pharmaceutical Committee to the Liverpool panel chemists stating that the Panel Committee had agreed to the abolition of the formula "Rept. mist." It was decided to draw the attention of the Secretary of the Pharmaceutical Committee to the misleading nature of the statement.

The Pharmacopoeia.—A letter was read from the administrative officer of the Insurance Committee complaining of the non-receipt of a notice to his committee of the alleged agreement between the Liverpool Chemists' Association and the medical practitioners of Liverpool that medicines should be dispensed according to the *Pharmacopoeia* of 1898 until March 31st next.

Resignation.—The Committee received with regret the resignation of the Vice-Chairman, Dr. Richardson, and accorded him a vote of thanks for his past services.

WEST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the West Suffolk Panel Committee was held at Bury St. Edmunds on January 12th, when Dr. WILKIN was in the chair.

Voluntary Deduction for Expenses.—The SECRETARY reported that the Medical Benefit Subcommittee had sanctioned the payment on account of £30 to the Panel Committee.

Suspense Slips.—It was reported that in accordance with the instructions of the Committee Dr. Cox (Medical Secretary, British Medical Association) and the Secretary had submitted a memorandum to the Commissioners, and had subsequently a conference with Mr. Vivian, who agreed that the proposal to destroy the suspense register was entirely out of order. He had also promised to advise the new clerk as to the method of dealing with the suspense register, and to request him to report at intervals as to progress in the matter. He hoped that in return the Panel Committee would advise practitioners to assist in clearing the suspense register. A communication from the Commissioners, embodying Mr. Vivian's proposals, was read and approved. After personal discussion with the new clerk, it was decided to advise practitioners to assist the Insurance Committee in every way possible, and to issue a circular letter on the subject, when the preliminary sorting out of duplicates had been completed. The Committee felt that through the intervention of the British Medical Association and the consequent interview with the Commissioners their relations with the Insurance Committee had at length been put on a satisfactory basis.

Treatment of Men Serving with Forces.—Complaints having been made of the difficulty experienced of obtaining A.F.O. 1,667, on which claims for payment had to be made according to Memo. 210/I.C., the Secretary was instructed to obtain a supply of the forms for issue to the practitioners concerned.

KINGSTON-UPON-HULL.

PANEL COMMITTEE.

A MEETING of the Panel Committee was held on January 1st under the chairmanship of Dr. C. H. MILBURN.

Doctors' Lists.—It was reported that the Medical Benefit Subcommittee of the Local Insurance Committee had intimated that at the end of the year there would be a withdrawal from doctors' lists in respect of all those to whom medical cards were undelivered on account of inability to trace the insured person, and that no responsibility would lie upon practitioners until the insured persons could produce a medical card. This was considered satisfactory.

Credits.—The SECRETARY reported that the Local Medical and Panel Subcommittee of the Insurance Act Committee of the British Medical Association had by deputation conferred with the Commissioners on the subject of credits and that a report was in preparation for issue to the Panel Committees throughout the country.

Drug Tariffs.—The revision of the local pharmacopoeia was referred to the Drug Tariff Subcommittee. Special attention was drawn to the supplementary tariff for January, 1915, which considerably increased the prices of a large number of drugs. It was agreed to draw the attention of the Insurance Committee to this fact, and to place on record the great importance of the matter in relation to the responsibility of the practitioners in conserving the drug fund.

Duplicate Prescriptions. — In connexion with the checkers' report on prescribing, the explanation given by a doctor that he had given a second prescription on the same day because the patient had broken his bottle was considered satisfactory, as no warning on the point had previously been issued. It was, however, agreed to notify practitioners not to give a second prescription in such a case.

PERTH.

LOCAL MEDICAL AND PANEL COMMITTEES.

THE annual general meeting of the Local Medical Committees of the county and burgh of Perth was held in conjunction with a meeting of the Panel Committees on January 15th.

Annual Report.—The annual report submitted by the Secretaries stated that at the annual meeting of practitioners held in February, 1914, twelve were present, when the Local Medical Committee was constituted for the year. Four meetings of the Committees had been held during the year in conjunction with Panel Committee meetings. The statement of accounts for the year showed expenses for stationery, Acts of Parliament, etc., 20s.; postages, 10s.; total, 30s. The report and financial statement were approved for submission to the practitioners' meeting in February.

Pharmaceutical Committee's Expenses.—On the motion of Dr. TROTTER it was resolved *nemine contradicente:*

1. That the Panel Committees of the county and burgh consider it reasonable that the Pharmaceutical Committee's expenses be paid out of the Medical Benefit Fund.
2. That the said Panel Committees object to the principle of a compulsory levy for payment of administrative expenses.
3. That the Panel Committees are prepared to agree to make a voluntary levy to pay for the actual expenses of the Pharmaceutical Committees if the Panel Committees are conceded the right of auditing the accounts for the said expenses, and if the accounts are duly inspected and audited by the Commissioners.
4. That, judging from the known expenses of the Panel Committees and of the local Branch of the British Medical Association, it would appear that the estimate of expenses submitted by the Pharmaceutical Committee of the burgh is excessive.

Central Bureau for Checking Chemists' Accounts.—It was resolved *nemine contradicente:*

That no argument had been brought before the Panel Committees sufficient to convince them that they are likely to derive any benefit from the Central Bureau, and that therefore it be recommended that no payment be made towards the expenses of the bureau by practitioners in Perth and Perthshire.

ROXBURGHSHIRE.

A MEETING of the Panel Committee of Roxburghshire was held at St. Boswells on January 12th, when Dr. DAVIDSON was in the chair.

Election of Drug Accounts Committee.—Circular No. 612 from the Commissioners regarding the Drug Accounts Committee, to supervise the work of the Central Bureau for the checking of prescriptions, etc., was considered. The committee would consist of 14 members, 10 representing Insurance Committees, 2 the medical profession, and 2 the chemists. In view of the position originally taken up by the Committee against the setting up of a central bureau, it was unanimously decided not to nominate a candidate, but, in the event of an election being necessary, the chairman was empowered to record the vote of the committee in favour of a suitable candidate. The question raised in the circular as to Panel Committees contributing towards the expenses of the Drug Accounts Committee was held in abeyance.

Medical Records.—It was resolved to discuss the suggestion of the Commissioners (Circular 617) that the card system should be adopted in preference to the day book at the annual general meeting of the Local Medical Committee to be held next month.

Fees of Medical Referees.—It was reported that the question of the fees for medical referees was under the consideration of the South Eastern Counties Division of the Edinburgh Branch of the British Medical Association.

Auditor.—Dr. DAVIDSON (Kelso) was appointed auditor of the Committee's accounts for the year 1914.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, January 27th, at 2 p.m., in the Council Room, 429, Strand, London, W.C.

By order,

GUY ELLISTON,
Financial Secretary and Business Manager.

December 24th, 1914.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—Dr. M. J. Oliver (Honorary Secretary) St. Boswells, gives notice that a special meeting of the Division will be held at the Railway Hotel, Newtown St. Boswells, at 3 p.m. on Tuesday, February 2nd, when a resolution in terms of Rule 2 of the ethical rules of the Division will be proposed.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

THE following volumes were added to the Library during July, August, and September, 1914.

Presented by the Authors.

Freyberger, L.: The Pocket Formulary for the Treatment of Disease in Children. 4th ed. 1914.
Lane, Sir W. A.: Operative Treatment of Fractures. 2nd ed. 1914.
Muir, Professor R., and James Ritchie: Manual of Bacteriology. 6th ed. 1913.
Tuckey, C. Lloyd: Treatment by Hypnotism and Suggestion. 6th ed. 1913.

Presented by the French Minister of Public Instruction, Paris.

Catalogue des thèses et écrits académiques. 1910-11.

Presented by Dr. Habgood, Sutton, Surrey.

The Medical Officer. Vol. 2. 1909. Out of print. To complete.

Presented by Dr. John Lindsay, Glasgow.

Glasgow Pathological and Clinical Society Transactions, vols. 1 and 2. 1884-86.

Transactions of the Seventeenth International Congress of Medicine (London, 1913).

Section of Neuropathology, 2 vols. (Presented by Dr. F. E. Batten, London.)
Section of Surgery, 2 vols. (Presented by Dr. J. Patrick, Glasgow.)
Section of Medicine, 2 vols. (Presented by Dr. Robt. Saundby, Birmingham.)

Calendars, Reports, and Society Transactions, etc.

American Medical Association, The American Medical Directory. 1914.
American Ophthalmological Society, Transactions. 1914.
Assam, Triennial Report on Dispensaries. 1911-13; Returns on Lunatic Asylums. 1913; Annual Sanitary Report. 1913.
Bengal, Reports on Hospitals and Dispensaries; on Lunatic Asylums; on Sanitation for 1912; and on Vaccination for 1913.
Bihar and Orissa, Report on the Patna Lunatic Asylum; and Annual Sanitary Report for 1912.
Bombay, Administration Report (1913-14); and Report on Lunatic Asylums (1913).
Burma, Reports on Hospitals and Dispensaries. 1913; Lunatic Asylums. 1913; on Sanitary Administration. 1913; and on Vaccination. 1912-13.
Cape of Good Hope, Report on Hospitals. 1913.
Central Indian Agency, Report on Dispensaries and on Lunatic Asylums. 1912.
Ceylon, Returns on Hospitals. 1912.
Egypt, Annual Statistics. 1912.
Hong Kong, Medical and Sanitary Reports. 1913.
Madras Presidency, Reports on Civil Hospitals (1912), on Lunatic Asylums (1913), and of the Sanitary Commissioner (1912).
Malay, Federated States, Report of the Malaria Advisory Board. 1913.
New Jersey, Board of Health Annual Report. 1912.
New South Wales, Reports of Inspector-General of the Insane (1913), and on Water Supply and Sewerage (1913).
North-West Frontier Provinces, Reports on Dispensaries (1913); on Sanitary Administration (1913); and on Vaccination (1913-14).
Ontario, Board of Health Annual Report. 1912.
Philadelphia, Medical and Surgical Reports of the Episcopal Hospital. Vol. i, 1913.
Queensland, Report on Public Health. 1913.
Rangoon, Report, Government Medical School. 1913.
Shanghai, Annual Report, Health Department. 1913.
Tasmania, Annual Report, Public Health. 1912-13.
Trinidad and Tobago, Annual Report, Surgeon-General. 1913.
United Provinces, India, Report on Lunatic Asylums (1913), of Sanitary Commissioner (1914), and on Vaccination (1913).
United States War Department, Report of the Surgeon-General, U.S. Army. 1913.
Victoria, Report of Minister of Public Instruction. 1912-13.
Winnipeg City, Report on Public Health. 1913.

Added to the Library through the BRITISH MEDICAL JOURNAL.

Ash, E. L.: How to Treat by Suggestion. 1914.
Basu: Dietetic Treatment of Diabetes. 4th ed. 1914.
Baum, H.: Das Lymphgefass System des Rinds. 1912.
Bezançon et de Jong: Traité de l'examen des crachats. 1913.
Bischoff: Lehrbuch der gerichtlichen Psychiatrie. 1912.
Budge: Syrian Anatomy, Pathology, and Therapeutics. 2 vols. 1913.
Brosch: Die Gesundheits kontrolle durch den Organism. 1912.
Chauffard: Leçons sur la lithiase biliaire. 1914.
Cohnheim: Die Krankheiten des Verdauungs-kanals. 1913.
Cotoni: La virulence des pneumocoques. 1912.
Cripps, H.: Cancer of the Rectum. 6th ed. 1913.
De Keyser, L.: La physiothérapie du lupus. 1912.
Ehrlich: Abhandlung über Salvarsan. Bd. III. 1913.
Ehrmann: Atlas der Hautkrankheiten und der Syphilide. 1912.
Flexner, A.: Prostitution in Europe. 1914.
Funk, I. K.: The Psychic Riddle. 1907.
Gaultier: Précis de coprologie clinique. 1914.
Grober, J: Diätetische Behandlung innerer Krankheiten. 1914.
Hartmann: Travaux de chirurgie anatomo-clinique des voies urinaires. 1913.
Herschell and Abrahams: Chronic Colitis. 1914.
Heryng: Traité de laryngo copie et de laryngologie. 1912.
Hilger: Hypnosis and Suggestion. 1912.
Jacoby: Suggestion and Psychotherapy. 1912.
Jehle: Die Albuminurie. 1914
Kirchberg: Atmungs-gymnastik und Atmungstherapie. 1913.
Klotz: Kohlehydratkuren bei Diabetes. 1912.
Kneeland: Commercialized Prostitution. 1913.
Lagarde: Gunshot Injuries. 1914.
Le Double and Houssay: Les vaisseaux. 1912.
Le Sage: Lehrbuch der Krankheiten des Sauglings. 1912.
Lucas R. Clement: The Bradshaw Lecture on Heredity. 1912.
McCaw: Diseases of Children 1914.
McComb: The Power of Self-Suggestion. 1910.
McGowan: Investigation into Scrapie. 1914.
Mollier, S.: Das histologisch-embryologische Institut, München. 1912.
Morse, J. L. Case Histories in Pediatrics. 1913.
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A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six large English towns 8,897 births and 6,545 deaths were registered during the week ended Saturday, January 16th. The annual rate of mortality in these towns, which had been 14.0, 21.3, and 19.4 per 1,000 in the three preceding weeks, further fell to 18.8 per 1,000 in the week under notice. In London the death-rate was equal to 19.6, against 12.8, 23.7, and 20.1 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 7.2 in Gloucester, 11.2 in Tottenham, 12.9 in Rhondda, 13.0 in Smethwick, 13.2 in Northampton, and 13.7 in Ilford and in Southend, to 25.0 in Edmonton, 25.1 in Lincoln, 25.2 in Ipswich, 26.0 in Blackpool, 26.3 in Gillingham, and 28.8 in Merthyr Tydfil. Measles caused a death-rate of 2.3 in Wigan, 2.5 in Plymouth, 2.6 in Enfield and in Darlington, 3.1 in St. Helens, 3.3 in Huddersfield, 4.6 in Grimsby, and 6.7 in Merthyr Tydfil; and whooping-cough of 1.7 in Sunderland and 2.1 in Gloucester. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small pox was registered during the week. The causes of 64, or 1.0 per cent., of the total deaths, were not certified either by a registered medical practitioner or by a coroner; of this number 13 were recorded in Liverpool, 12 in Birmingham, 5 in Gateshead, and 3 in London. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 4,583, 4,503, and 4,153 at the end of the three preceding weeks, further fell to 3,952 on Saturday, January 16th; 338 new cases were admitted during the week, against 348, 436, and 321 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,123 births and 1,027 deaths were registered during the week ended Saturday, January 9th. The annual rate of mortality in these towns, which had been 18.0, 20.5, and 24.5 per 1,000 in the three preceding weeks, fell to 22.8 in the week under notice, but was 4.0 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 14.1 in Kilmarnock, 14.9 in Leith, and 15.1 in Motherwell, to 27.4 in Greenock, 28.2 in Dundee, and 29.5 in Ayr. The mortality from the principal infective diseases averaged 2.0 per 1,000, and was highest in Clydebank and Dundee. The 501 deaths from all causes in Glasgow included 30 from whooping-cough, 6 from scarlet fever, 4 from infantile diarrhoea, 3 from enteric fever, 1 from measles, and 1 from diphtheria. Eleven deaths from whooping-cough were recorded in Dundee, 5 in Aberdeen, and 4 in Clydebank; from measles, 6 deaths in Dundee; from scarlet fever, 3 deaths in Aberdeen; and from diphtheria, 4 deaths in Edinburgh and 2 in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, January 16th, 693 births and 568 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 649 births and 6 5 deaths in the preceding period. These deaths represent a mortality of 24.4 per 1,000 of the aggregate population in the districts in question, as against 26.5 per 1,000 in the previous period. The mortality in these Irish areas was therefore 6 3 per 1,000 higher than the corresponding rate in the ninety-seven English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 29.8 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 29.2 (as against an average of 28.2 for the previous four weeks), in Dublin city 31.8 (as against 29.7), in Belfast 21.7 (as against 21.1), in Cork 29.9 (as against 23.8), in Londonderry 27.8 (as against 15.8), in Limerick 17.6 (as against 24.0), and in Waterford 30.4 (as against 26.6). The zymotic death-rate was 2.1, as against 1.7 in the previous period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Fleet Surgeon HERBERT L. PENNY to the *Vivid*, additional, for disposal. Staff Surgeon THOMAS E. BLUNT to the *Pembroke*, additional, for disposal. Surgeons GEORGE F. B. PAGE to the *Vivid*, additional, for disposal; WILLIAM A. S. DUCK, ARCHIBALD FAIRLEY, M.B., LOVEL MOSS, M.B., to the *Victory*, additional, for disposal. Temporary Surgeons JAMES A. GORDON, M.B., PETER H. LEMASS, M.B., JOHN F. MCQUEEN, GEORGE L. RITCHIE, M.B., EDWARD M. LAUDERDALE to the *Victory*, additional, for Haslar Hospital; FREDERICK T. FISHER to the *Pembroke*, additional, for disposal; KENNETH WOLFERTON to the *Pembroke III* for Eastchurch Station, vice McCutcheon; A. L. SUTCLIFFE and F. J. HUMPHREYS to the *Pembroke III*, for R.N. Air Service; J. ALLEN to the *Racer*, for Osborne College, vice Sutcliffe; T. D. POWER to the *St. George*, vice Humphreys; JAMES GRIMOLDBY.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon-Probationer JOHN C. SINCLAIR to the *Woolwich* for the *Badger*, vice S. R. Prall, resigned. E. B. KELLEY to the *Blake* for the *Hope*, vice Evers. J. SHAW to the *Woolwich* for the *Druid*, vice Butcher.

ARMY MEDICAL SERVICE.

COLONEL THOMAS J. O'DONNELL, D.S.O., is retained on the active list under the provisions of Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary.

Brevet Colonel WILLIAM H. HORROCKS, M.B., is appointed Honorary Surgeon to the King, vice Surgeon-Major-General Sir J. B. C. Reade, K.C.B.

ROYAL ARMY MEDICAL CORPS.

To be temporary Captains: GORDON M. HOLMES, M.D., CLAUDE GOULDESBOROUGH, M.B., JAMES EWING.

To be temporary Captains whilst serving with the Red Cross Hospital, Netley: DONOVAN V. PASCALL, WALTER G. MARSDEN.

Supernumerary Captain JOHN GILMOUR, M.B., is restored to the establishment.

Supernumerary Captain WILFRED W. TREVES is restored to the establishment.

Temporary Lieutenant THOMAS R. ELLIOTT, M.D., to be temporary Captain.

Lieutenant ROBERT W. W. VAUGHAN, M.B., and Lieutenant JOHN SPENCER-DANIELL, M.B., relinquish their temporary commissions.

To be temporary Lieutenants: ARCHIBALD H. M. ROBERTSON, M.B., CHARLES CAVANAGH, DONALD CAMPBELL, M.B., ALFRED G. CALDWELL, M.D., ROBERT J. JONES, ALBERT E. S. MARTIN, CHARLES SAND, M.B., HERBERT H. RAW, GEORGE L. BRUNTON, M.D., ROLAND H. FLETCHER, FRANCIS DE S. MCMENAMIN, M.B., LESLIE C. JOHNSTON, GEORGE MITCHELL, M.D., ARCHIBALD LANGWILL, M.B., ALFRED S. TAYLOR, M.B., JOHN WARWICK, JEROME I. O'SULLIVAN, M.B., MICHAEL SULLIVAN, ROBERT A. S. SUNDERLAND, MORTIMER HYNES, M.B., NORMAN G. THORNLEY, M.B., JAMES S MARTIN, M.D., ROBERT M. VEITCH, M.D., EDWARD MANSFIELD, M.B., JOHN H. DOUGLAS, M.D., MARTIN M. CRUICKSHANK, M.B., DAVID C. HANSON, M.B., WILLIAM DE M. PEYTON, M.B., HARROLD J. PICKERING, DAVID HAIG, ALAN E. TAYLOR, M.B., EDGAR C. MYOTT, M.D., HARRY STANGER, SYLVESTER D. FAIRWEATHER, M.B., HUGH FAULKNER, M.D., ALEXANDER K. COSGRAVE, M.B., WILLIAM N. WATSON, M.B., HAROLD B. ATLEE, M.D., LESLIE D. ROBERTS, M.B., ELLIS T EVANS, SAMUEL R. RICHARDSON, M.D., HARRY H. CARTER, M.B., RICHARD E. SEDGWICK, M.D., FREDERICK D. WALKER, M.B., H. C. MULKERN, FRANCIS O'NEILL, GEORGE T. MOWAT, M.B., MORTIMER H. PEARSON, M.B., FRANCIS H. STOREY, GEORGE W. FLEMING, LACEY BATHURST, M.B., HENRY W. TURNER, PETER REID, M.B., JAMES ALLISON, M.B., HERBERT D ROBERTSON, M.B., CYRIL C. C. K. WHITE, CHARLES H. NASH, JAMES GASTON, M.B., WILLIAM TAYLOR, M.B., NORMAN P. L. LUMB, M.B., DAWSON C. ROBERTSON, M.B.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL J. GOULD, B.A., Assistant Director-General, Indian Medical Service (Stores), appointed to be Deputy Director-General, Indian Medical Service, substantively *pro tempore*.

Major F. A. SMITH, Administrative Medical Officer in Central India, appointed temporarily to hold charge of the current duties of the appointment of Agency Surgeon, Southern States of Central India, in addition to his own duties, with effect from November 25th, 1914.

The services of Lieutenant-Colonel A. GWYTHER, M.B., F.R.C.S.E., are replaced at the disposal of the Government of Bengal.

Major R. A. LLOYD, M.D., to be temporary Lieutenant-Colonel whilst in charge of No. 12 Indian General Hospital at Brockenhurst.

To be temporary Lieutenant: PREM NATH BERRY, M.B., C.M.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

LIEUTENANT-COLONEL CONRAD T. GREEN, from the Welsh Casualty Clearing Station, to be Assistant Director of Medical Services, Welsh Reserve Division, and to be granted the rank of Colonel, temporary.

Lieutenant-Colonel HARRY T. CHALLIS, M.D., from the 3rd East Anglian Field Ambulance, to be Assistant Director of Medical Services, East Anglian (Reserve) Division, with the temporary rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) General Hospital.—CHARLES E. WEST, F.R.C.S., to be Captain, whose services will be available on mobilization.

Second London Casualty Clearing Stations.—To be Captains: GEORGE H. HUNT, M.B., LIONEL COLLEDGE, M.B., F.R.C.S.

Third London General Hospital.—STANLEY H. WARREN to be Captain, whose services will be available on mobilization. To be Lieutenants: JOHN B. RAWLINS, CECIL R. HARRISON, M.B.

First London (City of London) Sanitary Company.—Lieutenant CRESACRE G. MOOR, to be Captain, temporary.

Second London Sanitary Company.—To be Lieutenants: PATRICK A. GALPIN, M.D., GEORGE G. JOHNSTONE, M.B., GEORGE L. EASTES, GERALD Q. LENNANE, F.R.C.S.I., GEORGE W. ELLIS, WILLIAM K. PARBURY, ERNEST B. PIKE.

Third Home Counties Field Ambulance.—To be Lieutenants: HENRY J. BROWNRIGG, M.B., PHILIP T. JONES.

Third East Anglian Field Ambulance.—Captain WILLIAM I. COWELL resigns his commission on account of ill health.

Third Southern General Hospital.—JAMES F. ROBINSON, F.R.C.S., to be Captain, whose services will be available on mobilization.

Second North Midland Field Ambulance. Lieutenant HORACE G. L. HAYNES, from Attached to Units other than Medical Units, to be Lieutenant.

Notts and Derby Mounted Brigade Field Ambulance.—FRANK STANDISH to be Lieutenant.

South Wales Mounted Brigade Field Ambulance.—JOHN A. COOKE to be Lieutenant.

West Riding Casualty Clearing Station.—Lieutenant-Colonel WILLIAM MCG. YOUNG, M.D., from the Second West Riding Field Ambulance, to be Lieutenant-Colonel. To be Lieutenants: CHARLES M. GOZNEY M.B., ARTHUR S. HEBBLETHWAITE, M.B.

First West Riding Field Ambulance.—To be Lieutenants: EDWIN S. G. FOWLER, HENRY W. ROBINSON, M.B.

Second West Riding Field Ambulance.—To be Lieutenants: WILLIAM H. SMAILES, M.D., DIGBY W. HARDY, M.B.

First East Lancashire Field Ambulance.—Lieutenant STANLEY HODGSON, M.D., from Attached to Units other than Medical Units, to be Lieutenant.

Second East Lancashire Field Ambulance.—JOHN J. HUMMEL, M.B., to be Lieutenant.

Second West Lancashire Field Ambulance.—The announcement of the appointment as Lieutenant of EDWARD MANSFIELD, which appeared in the *London Gazette* of December 30th, 1914, is cancelled.

First Northern General Hospital.—Major FREDERICK C. PYBUS, M.B., F.R.C.S., from the permanent personnel to the list of officers whose services will be available on mobilization; Captain DANIEL W. PATTERSON, M.B., from the list of officers whose services will be available on mobilization to the permanent personnel.

Third Northern General Hospital.—To be Lieutenants: ARTHUR R. WIGHTMAN, M.B., GEORGE E. MARTIN, M.B.

Fourth Northern General Hospital.—To be Captains whose services will be available on mobilization: GEORGE V LEVIS, P. W. YOUNG.

First Northumbrian Field Ambulance.—Lieutenants to be Captains, temporary: EDWARD B KITCHING, JOSEPH W CRAVEN, M.B.

Second Northumbrian Field Ambulance.—WILLIAM C. STEWART, M.B., F.R.C.S.E., to be Lieutenant.

Third Scottish General Hospital.—Captain ALEXANDER J. ARCHIBALD from the Fourth Scottish General Hospital, to be Captain.

Second Highland Field Ambulance.—Captain JAMES F. MACINTOSH, M.B., to be Major, temporary.

Sanitary Service.—ALFRED H. BYGOTT, M.B., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—Captain MATTHEW B. RAY, M.D., Captain ROBERT THORNTON, M.B., temporary, Captain VINCENT HOWARD to be Majors, temporary. Lieutenant CECIL W. ROWNTREE, M.B., F.R.C.S., is seconded; Lieutenant GEORGE C. JEAFFRESON and Lieutenant RICHARD V. FAVELL to be Captains, temporary. To be Lieutenants: HUGH D. MCCROSSAN, HAROLD F. L. HUGO, M.B., THOMAS RHIND.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

SURGEON-MAJOR EDWARD H. MYDDELTON-GAVEY, retired list, Honourable Artillery Company, to be Major.

Captain EDWARD P. MINETT, from the 6th London Field Ambulance, to be Captain.

Hospitals and Asylums.

THE LEBANON HOSPITAL, ASFURIYEH, SYRIA.

THE annual report for the year 1913-14 of Dr. H. Watson Smith, the director of this International Hospital for Mental Diseases, shows that on April 1st, 1913, there were 103 patients on the registers, and 109 on the corresponding date of 1914. In all, 201 patients received treatment during the year. During the year 98 patients were admitted, most of them from Lebanon, Beyrout, Homs and Damascus, but also in small numbers from residences in Egypt, Cyprus, and Persia. As to religious persuasion, 29 were Maronite, 28 Orthodox Greek, 21 Moslem, 7 Jew, 6 Protestant, 3 Roman Catholic, 2 Greek Catholic, and 2 Armenian.

The admissions were classified according to form of mental disorder into:—Recent mania, 14, chronic, 1; acute melancholia 11, dementia 1, dementia praecox 39, hysteria 11, general paralysis 9, epilepsy 1, exhausting psychoses 4, alternating insanity 3, delusional insanity 1, and congenital defect 1, whilst 1 was not insane. As to causation, alcohol was assigned in only 2 and syphilis in 8, epilepsy in 1, various bodily affections were assigned in 5, critical periods in 15, mental stress in 19, and in 38 no cause could be assigned; an insane heredity was ascertained in 4. The proportion of general paralytics in the list of admissions (10.2 per cent.) is interesting

in view of the often repeated statement that Eastern peoples are not subject to the same degree as Westerns to this fatal malady. During the year 20 were discharged as recovered, and 38 more were discharged in such a condition that they were capable of resuming their positions in society but whose disease, Dr. Watson Smith says, prevented him from claiming them as cures owing to the liability of future recurrence; also 24 were discharged unrecovered to the care of their relatives. Altogether these are satisfactory figures. During the year 9 died, the deaths being due in 2 to general paralysis, in 2 to exhaustion, and in the remainder in single numbers to phthisis, cerebral haemorrhage, malaria, intestinal obstruction, and suicide by hanging. The general health was good throughout the year, and much less malaria occurred than in former years.

The new English House, accommodating 36 male patients, was opened on February 6th, 1914, by Channes Pasha Couyoumjian, Governor-General of the Lebanon. Dr. Watson Smith says that it is well-constructed, bright and airy, and offers ample space for the patients. Its baths, sanitary system, locks, etc., form models for the rest of the hospital. The opening of this addition has done much to relieve the overcrowding previously existing.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDEEN DISTRICT ASYLUM, Newmachar.—Assistant Physician. Salary, £200 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £120 per annum.

BARRY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

BARRY URBAN DISTRICT COUNCIL.—House-Surgeon at the Accident and Surgical Hospital. Salary, £250 per annum.

BATH: EASTERN DISPENSARY.—Resident Medical Officer. Salary, £140 per annum.

BATH: ROYAL UNITED HOSPITAL.—House-Physician. Salary, £120 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Resident Lady Anaesthetist. Salary, £50 per annum, and bonus of £20 at end of six months' satisfactory service.

BIRMINGHAM MATERNITY HOSPITAL.—House-Surgeon (lady). Salary at the rate of £100 per annum.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

BIRMINGHAM UNION.—(1) Third and Fourth Assistant Medical Officers at the Dudley Road Infirmary. Salary, £170 and £160 per annum respectively. (2) Assistant Medical Officer at the Selly Oak Infirmary. Salary, £180 per annum.

BLACKBURN UNION.—Resident Assistant Medical Officer at the Workhouse and Medical Officer for the Union Cottage Homes. Salary, £250 per annum

BOLTON INFIRMARY AND DISPENSARY.—(1) Junior House-Surgeon; (2) Third House-Surgeon. Salary, £150 and £130 per annum respectively.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRADFORD POOR LAW UNION.—Assistant Resident Medical Officer for the St. Luke's Hospital and Union House. Salary, £150 per annum.

BRADFORD ROYAL INFIRMARY.—House-Surgeon (male). Salary, £100 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CAMBERWELL: PARISH OF ST. GILES.—Temporary Female Assistant Medical Officer at the Infirmary. Salary, £250 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—House-Surgeon (lady) for the Ophthalmic and Ear and Throat Departments. Salary, £140 per annum.

CARMARTHEN INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistants.

DERBY COUNTY BOROUGH EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

DERBYSHIRE EDUCATION COMMITTEE.—School Medical Officer. Salary, £300 per annum, rising to £400.

DEVON COUNTY EDUCATION COMMITTEE.—Assistant School Medical Officer and Oculist. Salary, £300 per annum.

DORSET COUNTY HOSPITAL, Dorchester.—House-Surgeon. Salary, £150 per annum.

DOUGLAS: NOBLE'S HOSPITAL.—Resident House-Surgeon. Salary, £150 per annum.

DUBLIN: ST. VINCENT'S HOSPITAL.—Visiting Physician.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £100 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

EXETER CITY ASYLUM.—Assistant Medical Superintendent. Salary, £250 per annum, rising to £300.

FIFE DISTRICT ASYLUM.—(1) Senior Assistant Medical Officer (male); (2) Assistant Medical Officer. Salary, £220 and £170 per annum respectively.

FULHAM TUBERCULOSIS DISPENSARY.—Senior Medical Officer. Salary, £500 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Remuneration, £80 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. (Males.) Salary, £120 and £100 per annum respectively.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—(1) Assistant Resident Medical Officer. Salary, £100 per annum. (2) Anaesthetist. Honorarium, 50 guineas per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Two House-Surgeons. Salary, £30 for six months, and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Lady House-Surgeon. (2) Lady Assistant House-Surgeon. Salary, £60 and £50 per annum respectively.

INFANT CONSULTATIONS AND SCHOOL FOR MOTHERS, Hackney Centre.—Medical Practitioner. Salary, £50 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

LEEDS PUBLIC DISPENSARY.—Lady Resident Medical Officer. Salary, £130 per annum.

LEICESTER CORPORATION.—Assistant Medical Officer of Health. Salary, £300 per annum.

LEICESTERSHIRE EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

LIVERPOOL CITY.—Female Assistant Medical Officer. Salary, £350 per annum.

LIVERPOOL STANLEY HOSPITAL.—House-Surgeons and Physicians.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant House-Surgeon (non-resident). Honorarium at the rate of 10 guineas per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Honorarium, £100 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300 and upon promotion to £450.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT.—Assistant Medical Officer for the Crossley Sanatorium. Salary, £100 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

MANCHESTER ROYAL INFIRMARY.—(1) Two Medical Officers for Out-patients and Accidents at Central Branch; (2) Accident Room House-Surgeon; (3) Five Junior House-Surgeons; (4) Two Senior House-Surgeons; (5) Five House Physicians; (6) House-Surgeon for the Ear, Eye, and Gynaecological Departments. Salary for (1) and (2) £100 per annum, and for (4), (5) and (6), £40 per annum.

MANCHESTER: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—(1) Resident Surgical Officer; (2) Two House-Surgeons. Salary, for (1) £90 per annum, and for (2) £70 per annum each.

MANCHESTER: VICTORIA MEMORIAL JEWISH HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Two Assistant House-Surgeons. Salary, £40 per annum.

MIDDLESBROUGH EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary, £85 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Junior House Physician (temporary). Salary, £100 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at the rate of £100 per annum, rising to £150.

NOTTINGHAM: GENERAL HOSPITAL.—Senior House-Physician. Salary, £120 per annum. (Women eligible.)

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House-Surgeon. Salary, £80 per annum.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary, £150 per annum.

ROCHDALE INFIRMARY AND DISPENSARY.—(1) Senior House-Surgeon; (2) Second House-Surgeon. Salary, £140 and £125 per annum respectively.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND, Newcastle, co. Wicklow.—Assistant Resident Medical Officer. Salary, £2 0 per annum.

SALFORD ROYAL HOSPITAL.—(1) Resident Surgical Officer; (2) Casualty House-Surgeon. Salary, £120 and £100 per annum respectively.

SALFORD UNION INFIRMARY.—Male Resident Assistant Medical Officer. Salary, £150 per annum.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £80 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. (Males.) Salary, £100 per annum each.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary, £120 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Honorarium, £40 for six months.

WALSALL AND DISTRICT HOSPITAL.—Junior House-Surgeon and Anaesthetist. Salary, £110 per annum.

WALTHAMSTOW HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary, £250 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Etc., Welbeck Street, W.—Honorary Registrar.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WESTMINSTER UNION INFIRMARY.—Second and Third Assistant Medical Officers. Salary, £160 and £140 per annum, rising to £180 and £160 respectively.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior Lady House-Surgeon. Salary, £130 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £125 per annum.

WOLVERHAMPTON UNION.—Assistant Resident Medical Officer of the Workhouse and Medical Officer of Cottage Homes. Salary, £250 per annum.

WORKSOP VICTORIA HOSPITAL AND DISPENSARY.—Medical Officer and House-Surgeon. Salary, £150 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

WORCESTERSHIRE ASYLUM, Bromsgrove.—Locumtenent Medical Officer.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Ollarberry (Shetland).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

ASHBY, H. T., M.D.Camb., Visiting Physician to the Withington Hospital of South Manchester Township.

CARDWELL, T., M.R.C.S.Eng., L.R.C.P.Edin., District Medical Officer of the Whitchurch Union, Hants.

DUNDAS, M. G., M.R.C.S., District Medical Officer of the Pembroke Union.

HUDSON, Arthur Cyril, M.A., M.D., B.C.Cantab., F.R.C.S.Eng., Ophthalmic Surgeon-in-Charge of Out-patients to St. Thomas's Hospital.

KAY, R., M.B., District Medical Officer of the Bideford Union.

LAMB, A. W., M.R.C.S., L.R.C.P., District Medical Officer of the Shifnal Union.

LEWIS, E. W., M.R.C.S., L.R.C.P., District Medical Officer of the St. German's Union.

MATHEWS, C. G., L.M.S.S.A., District Medical Officer of the Crediton Union.

PITT, O., M.R.C.S., L.R.C.P., Assistant Medical Officer to the Prestwich Union Infirmary.

SHEPHERD, D. R. C., M.B., B.S.Lond., reappointed Resident Medical Officer of the Middlesex Hospital.

SINCLAIR, Norman J., M.D., D.P.H., Medical Referee under the Workmen's Compensation Act for the Sheriffdom of Forfar, and to be attached more particularly to the Forfar District, vice J. D. L. Macalister, deceased.

WALDRON, Miss E. A., M.B., Ch.B.Birm., Assistant Medical Officer to the West Ham Union Infirmary.

WALKER, J. F., M.B.Lond., Medical Officer of the Rochford Union.

RECENT PUBLICATIONS.

Notes on Skin Diseases. By David Walsh, M.D.Edin., M.B., C.M. London: The Scientific Press, Limited. (Pott 8vo, pp. 120. 1s. net.)

This small book, one of a Pocket Guide Series, has been written, the author states, to bring together a brief collection of hints for the everyday guidance of the nurse. After a short definition of terms in ordinary use, there are chapters on skin dressings, on baths, on disinfection, and then on a number of common skin diseases. The longest chapter appropriately enough deals with ringworm.

The Garden Life Pocket Diary. London: *Garden Life* (Hatton House, Great Queen Street, W.C.). (1s., or post free 1s. 1d.)

This is an ordinary pocket diary with some fifty pages of notes and reminders for amateur and professional gardeners, monthly notes of current work, lists of plants for various purposes, hints on culture, and so on.

PUBLISHERS' ANNOUNCEMENTS.

THE *Paris Médical*, which, like most other French medical journals, "closed down" at the beginning of the war, came to life again on January 2nd. The number contains articles by Professor Hartmann on the surgery of war, by Professor Dopter on the prevention of cholera, by Dr. Milian on the hypnosis of battles, and some souvenirs of 1870, by the late Dr. Léon Lereboullet. The editor of the *Paris Médical*, which is published at 19, rue Hautefeuille, Paris, is Professor Gilbert.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

AIKEN.—On January 5th, 1915, at Drumadravey, Irvinestown, the wife of Dr. Acheson Aiken, of a daughter.

ANSTEY-CHAVE.—On January 17th, at Chilworth, Redhill, Surrey, the wife of T. Anstey-Chave, M.B., F.R.C.S.E., of a daughter.

DICKSON.—On January 9th, at 37, Holywell Street, Oxford, to Dr. and Mrs. Dickson, a son.

FINLAY.—On January 5th, 1915, the wife of Archibald Finlay, M.D., B.S., "Bryngelly," Hastings Road, Southend-on-Sea, of a daughter.

FOX.—On January 15th, at "The Moat House," Alvechurch, her father's residence, the wife (*née* Marjorie Boulton) of Lieutenant Charles Fox, 13th Battalion London Regiment, of a daughter (premature).

DEATH.

BRYDEN.—On January 16th, 1915, at No. 21, Harmer Street, Gravesend, Surgeon-Major Richard Joseph Bryden, V.D., M.R.C.S., L.R.C.P., aged 58 years. R.I.P. At his special request no flowers.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W., 8.30 p.m.—X-Ray Demonstration of items of interest connected with the war, by Dr. Ironside Bruce, Sir James Mackenzie Davidson, Dr. Howard Humphris, Dr. A. C. Jordan, Dr. Harrison Orton, Mr. Gilbert Scott, Dr. Stanley Melville, Dr. Robert Knox, and others.

TUESDAY.

MEDICO-LEGAL SOCIETY, 11, Chandos Street, W., 8.30 p.m.—Exhibition of Specimens. Fraudulent and Neurasthenic Cases, Sir John Collie, M.D. Discussion to be opened by Mr. F. O. Arnold, M.A., M.B.

ROYAL SOCIETY OF MEDICINE:

SECTION OF PSYCHIATRY, 8.30 p.m.—Presidential Address: The Application of Physiology to the Study of Mind in Health and Disease, by Dr. F. W. Mott.

WEDNESDAY.

HUNTERIAN SOCIETY, 4 p.m.—Pathological Department of St. Bartholomew's Hospital. Demonstrations: Wassermann's Reaction, Estimation of Blood Sugar, Abderhalden's Serum Diagnosis, Estimation of Alveolar CO_2, Projectoscope, Recent Additions to the Hospital Museum.

THURSDAY.

HARVEIAN SOCIETY, Paddington Green Children's Hospital, 8.15 p.m.—Clinical Meeting. Cases.

ROYAL SOCIETY OF MEDICINE:

SECTION OF NEUROLOGY, 8.30 p.m.—Presidential Address: Vasomotor Neuroses, by Dr. H. G. Turney.

POST-GRADUATE COURSES AND LECTURES.

Post graduate Course next week:

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	JANUARY.
27 Wed.	London: Central Council, 2 p.m.
	FEBRUARY.
2 Tues.	South Eastern Counties Division, Special Meeting, Newtown St. Boswells, 3 p.m.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 30TH, 1915.

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INSURANCE ACT COMMITTEE.

PAYMENTS TO PANEL PRACTITIONERS.

Interview between Deputation from a Subcommittee of the Insurance Act Committee of the British Medical Association and the Insurance Commissioners on the Question of Payments to Panel Practitioners.

A great amount of correspondence having been received at the office of the British Medical Association complaining of discrepancies between the cheques paid to panel practitioners in various areas and the amounts expected by them, the subject was discussed by the Insurance Act Committee at its meeting on October 9th and the matter was referred to the Subcommittee. The Subcommittee at first considered it might be possible to secure some practitioner with a comparatively small panel who was so certain of the accuracy of his list that he could prove that he had been underpaid and was willing, with the assistance of the Association, to take such a case into court. Inquiries showed, however, that this course was surrounded with great difficulties, because even if the most carefully kept doctor's list were taken, payments during the year are only provisional, and a final settlement can take place only after declaration of the final credit by Commissioners. An opinion could not be correctly formed until after this settlement, which means a long delay. The Subcommittee therefore resolved to approach the Commissioners by deputation.

The deputation was received on December 22nd, 1914, at the offices of the English Commission by Sir Robert Morant (Chairman), Mr. Smith Whitaker (Deputy Chairman), and Mr. H. N. Bunbury (Financial Member of the English Commission and Financial Adviser to the Joint Committee), and Messrs. J. Anderson (Secretary and Comptroller), S. P. Vivian (Assistant Secretary), and E. J. Strohmenger (Deputy Comptroller of the Accountant and Comptroller-General's Department).

The Subcommittee was represented by Dr. E. Rowland Fothergill, Chairman, Local Medical and Panel Subcommittee, Dr. B. A. Richmond (Secretary, London Panel Committee), Dr. J. Divine (Secretary, Hull Panel Committee), Mr. H. H. Tomkins (Secretary, Essex Panel Committee), and the Medical Secretary.

Dr. Fothergill thanked the Commissioners for receiving the deputation, and stated that the position in regard to the payments made by Insurance Committees to panel practitioners was so complicated and so unsatisfactory, as evidenced by the numerous complaints that had been received at the offices of the Association, that it had been felt absolutely necessary to try to clear the position up. The deputation had been appointed by the Local Medical and Panel Subcommittee of the Insurance Act Committee, a Subcommittee consisting almost entirely of practitioners who are under agreement with various Insurance Committees, and which had recently, in response to a circular it had sent out, been promised the cordial co-operation of more than 90 per cent. of the Panel Committees in England, Scotland, and Wales.

The Medical Secretary stated that according to his experience there was more confusion of thought, and consequent dissatisfaction, among insurance practitioners on the subject of how and under what system payments were made by the Insurance Commissioners to the various Insurance Committees, and from the latter to the individual practitioners, than on any other subject on the medical side of the Insurance Acts. The following were the points which had emerged with greatest frequency in the recent letters to the Association.

The panel practitioner's argument is that according to the agreement between the practitioner and his Insurance Committee, the practitioner was entitled to receive "the rate of per quarter for every person included in his list" at the beginning of that quarter. Regulation 25 placed on the Insurance Committee the duty of preparing a list of persons who have been accepted by or assigned to each practitioner, and furnishing the list to the practitioner. Therefore the practitioner assumes that he is entitled to the rate of per quarter for every person on that list.

Now the doctors have been relying on these lists to provide them with the means of ascertaining who are entitled to require attendance from them and for whom they are to expect payment. But the doctors in every area are now told that their lists cannot be regarded as accurate, nor can the register of the Insurance Committee, from which these lists are prepared, and on which the Insurance Committee relies for the payments from the Commissioners, which it in turn distributes to the doctors, be so regarded.

The accuracy of the register depends on the societies, who are bound by Regulation 3 (1) to supply to the Committee a list of the names and addresses of their members resident in the area of the Committee. It is now stated that the lists supplied by the societies are inaccurate or belated, and that therefore the registers cannot be relied upon. Apparently the only thing which can be relied upon is that the whole of the moneys received by the Commissioners on behalf of the medical benefit of all insured persons has been, or will be distributed among the various Insurance Committees.

But this one definite fact amid so many uncertainties gives no consolation to the doctors in an area where they are told that the Insurance Committee has been most careful to keep its register as accurate as possible, and estimates, as for example in Hull, that the mean of the quarterly counts of insured persons for 1914 is 103,279, while it is only given credit by the Commissioners for 89,728.*

* *Note by Commissioners, to whom the Report was submitted for agreement.*—The figures compared in the case of Hull were not comparable, as the figure of 103,000 was the mean of the counts of the register for 1914, whereas the figure of 89,000 was the number of insured persons for whom the Hull Committee were credited for 1915. The mean register figure comparable with the figure of 89,000 was 95,000, the difference being due to inflation.

If it be true that *all* the money of *all* the insured persons is being distributed among the Committees in proportion to the numbers on their index registers, it would appear that those Committees which take the most pains to verify their registers and eliminate duplicates, deaths, etc., will get a smaller credit from the Commissioners than they would have done if they had left their lists in the original state of inflation and incorrectness—that is, there appears to be a premium on slackness on behalf of the Insurance Committee.

The Medical Secretary also said that there was doubt in the minds of many as to whether an Insurance Committee did not lose financially by the greater accuracy of its index register—that is, apart from any question of paying money to the doctors, and he asked for some detailed statement as to the causes of the inflation of the register, what steps are being taken to reduce this, and how far they are showing any results.

The Medical Secretary then drew attention to the Payments to Insurance Committee Regulations, 1914, and asked (*a*) why is the credit to the Insurance Committee to be made only for the number ascertained from contribution cards for the first half of the year. Is this a fair method, seeing that the number of insured persons is gradually growing? (*b*) Is it a fact that the Commissioners are getting no records from approved societies for persons over 70, those who are getting disablement benefit, and those cases of sickness in which cards are not being stamped? If so, will this not inflict great injustice upon the medical men who are attending them?

Finally, the Medical Secretary urged that the Commissioners should either issue some detailed explanation of the whole system, made as simple as possible, or should put the deputation in a position to answer the following questions:

1. Can the Commissioners show that the funds collected by them for the remuneration of doctors receive contributions in respect of *all* the insured persons for whose treatment the doctors are collectively responsible?
2. Can it be shown that each Insurance Committee secures the proper share of those funds?
3. Can it be shown that each individual doctor under agreement with an Insurance Committee receives the amount properly due to him in respect of the insured persons for whom he is responsible, and also his proper share of any moneys due on account of the unallotted residue?

In reply, Sir ROBERT MORANT stated that, as, owing to the great complexity of the subject, there was no one person who could be said to have a complete knowledge of it in all its bearings, he had asked the heads of the various departments concerned to be present; and he suggested that the best plan which could be followed by the Association in approaching the panel committees was to assure them that the Commissioners had convinced the deputation, if this should be the outcome of the deputation, of the equity of the system and the desire of the Department to improve it by any means in their power.

It was then agreed to discuss the subject under the following heads:

1. The total debit to the societies.
2. The distribution of the central pool among Insurance Committees.
3. The distribution by the Insurance Committee to the individual doctors.

The Total Debit to Societies.

The debit to the societies is made centrally by the Commissioners, all the money received forming a pool, out of which each Insurance Committee is entitled to its share. A debit is raised against each society based on the number of members entitled to medical benefit who have surrendered contribution cards for the first half of the year, together with the number of members who were at the commencement of the year of the age of 70 years and upwards, as shown in an audited return obtained from societies.

The debit in respect of each member who at any time during the first half of the year was entitled to medical benefit is the full amount of the medical charge for the year, and a society is thus charged in respect of every such member for the whole year notwithstanding that he or she may have entered into insurance only towards the end of the half-year, or may at any time during the year have lapsed from insurance through death or any other cause, or have suspended payment of contributions.

The excess charges raised in respect of the above-mentioned members are computed to be the fair equivalent for the absence of any charge in respect of persons who come into insurance during the second half of the year, or who have not surrendered contribution cards owing to having been in receipt of sickness or disablement benefit or unemployed for the whole of the first half year.

The amounts thus debited against societies, together with the corresponding amounts debited against deposit contributors, and the State Grants payable towards the cost of medical benefit, are pooled for distribution amongst Insurance Committees. After a very careful weighing of all relevant considerations, it can be confidently stated that the basis of charge adopted results in a full payment being made for each insured person for the period of the year for which he is entitled to benefit.

As regards the 1913 medical year, the Commissioners' Annual Report for that year (pp. 506–7) contains a financial statement showing, as regards England, in the form of a balance sheet, how much money was received from societies, etc., and in what manner the whole sum received was disposed of. From this statement, it would seem that medical benefit funds were collected for distribution amongst Insurance Committees in respect of 10,400,000 insured persons entitled to medical benefit, and that doctors have accordingly been paid in respect of that number. This figure, which was obtained by the system explained above, is so close to the number of the total insured population (including those not entitled to medical benefit) arrived at on actuarial estimates and on actual returns, that there can be little doubt that the medical profession have been paid in respect of the whole insured population entitled to medical benefit.

Doubts as to the accuracy of those figures have been based upon the number of insured persons on doctors' lists. The following facts, however, demonstrate the fallacy of calculations based on those lists. At the end of 1913 the number of insured persons on doctors' lists in England was approximately 10,100,000. But the issue of medical cards to those persons at that time resulted in the return through the Dead Letter Office of 850,000; and, while it is true that some of the 850,000 were subsequently traced at other addresses in their respective doctors' practices, it is known, on the other hand, that many of those not returned through the post either did not reach the addressees at the addresses given or were forwarded on to a distant address. These figures prove, therefore, the existence of inflation on the doctors' lists at the end of 1913 to at least the extent of 850,000, thus reducing those lists to 9,250,000 effectives at most—a figure well within the total insured population as arrived at on the system employed by the Commissioners.

Again, any doubts as to the accuracy of the Commissioners' figures based upon the total figures of Insurance Committees' Index Registers, are demonstrably ill-founded, for the aggregate of these has been ascertained, and proves to be considerably in excess of the total membership of approved societies and the total of deposit contributors combined, and it is clear from this and from other evidence that the Committees' registers are inflated.

The Distribution of the Pool among Insurance Committees.

There can be no doubt, therefore, that the pool collected by the methods explained above contains all the money due in respect of all the inhabitants of all the several areas who are entitled to medical benefit. The next question which arises is whether every individual Insurance Committee receives out of this pool payment in respect of all the inhabitants of its own particular area who are entitled to medical benefit.

The procedure actually in operation is to distribute the pool by giving each Committee such proportion of the total pool as their insured population (as shown by their register) bears to the total insured population (as shown by the aggregate of the registers). Now, if the registers of Insurance Committees were exactly accurate, both severally and in the aggregate, this method would obviously afford to each Committee the precise payment in respect to its exact insured population. But the registers are known to be inflated. The only question for consideration is therefore whether every Insurance Committee's Register is

uniformly inflated to the same proportionate extent, and whether, as suggested by the Association, the system penalizes efficiency by ignoring the efforts of individual committees to reduce the inflation in their own respective registers.

As regards the first point, the Commissioners are satisfied that the causes of the inflation are general and not local—that is, they affect all areas alike. These causes are, in the main, two: The issue by more than one society of an index slip in respect of the same insured person, and the absence of knowledge on the part of societies as to their members who have died, lapsed from insurance, etc., and therefore their unavoidable failure to issue the necessary notifications. As the great majority of insured persons are members of societies having members all over the country, it follows that there can be no reason to apprehend the partial or local operation of the tendencies towards inflation Further, this conclusion and the correctness of the Commissioners' credits is supported by figures, quoted by the Commissioners, which were derived from the operations in connexion with the issue of medical cards.

As the duplication of index slips is widely spread throughout the various Insurance Committee areas, it follows that no efforts of an individual Insurance Committee could have any substantial effect upon the inflation due to this cause, as the duplicate slips will be in other Committee's registers; nor, where societies have failed to receive complete information as to the lapses, etc., among their membership, is there any possibility of Insurance Committees obtaining it. The Commissioners are satisfied, therefore, that it is not possible for any individual Insurance Committee by any degree of activity in the correction of their own register to reduce its proportionate share of the general *inflation*. This could only be done by some general clearing operations embracing all registers as a whole. The Commissioners already have under their consideration the question of undertaking such a clearance, and hope to take the necessary steps at the earliest practicable date.

But while in these circumstances, for the reasons stated, the Commissioners are satisfied that the efforts of Committees will not penalize them under the present system as regards *inflation*, those efforts must, in the different case of the *suspense register*, result in advantage to their funds, and therefore to the doctors in their area.

Substantially, therefore, the present system results in each Committee being credited with the funds necessary for the payment of the doctors in its area in respect of all the insured persons entitled to medical benefit who are resident in the area.

Distribution of the Committee's Fund among Individual Doctors on their Panel.

The next question which arises is as to the payment to the individual panel doctor. This is a share of the local pool. He is entitled to receive such proportion of the local pool as his annual credit bears to the aggregate annual credits of all the doctors on the panel for the area. His annual credit is arrived at by adding together his quarterly credits, which are in turn arrived at by multiplying the number of persons on his list by a given rate of money. But his contract is not to receive payment at the rate of any given number of shillings per person on his list, but to receive a share of the local pool, the share being calculated as above; and while the rate of credit specified in his agreement is the actual amount which he would receive per effective insured person per annum if all the lists were theoretically exact, it is not open to a doctor to claim that he is entitled under his agreement to that rate of actual money multiplied by the number of insured persons nominally comprised in his list.

Sir Robert Morant, in closing the discussion, said that the whole system was one of great complexity. There had never been in this country previously an attempt to deal centrally, for anything like the present purposes, with the registration of so many millions of people. He hoped that they had convinced the deputation that the Commissioners had no other purpose in view than to arrive as accurately as was humanly possible at the sum of money which was due from societies to the doctors. They had to do justice to both parties as regards the determination of the sums due, while as regards the actual sums collected, every stage in the disposition of those funds was subject to Government audit.

Many efforts had already been made, and every possible step would be taken to tighten up the machinery all round so as to make the lists more accurate and to make it more demonstrably certain that the payments actually received by individual doctors did amount to the agreed rate of from 7s. to 7s. 6d. per head per annum, of those in respect of whom he was at risk through the year. But it should be clearly understood that theoretical exactitude could not be expected in an undertaking of such dimensions; and could not even be approached without an elaborate census of the whole insured population being taken every night of the year. If, therefore, the medical profession were not satisfied with any system short of one which produced theoretically exact results, it would be necessary in order to give them satisfaction, to adopt some other method of payment of doctors than the capitation basis.

Dr. FOTHERGILL then thanked Sir Robert Morant for having received the deputation and asked that the Commissioners would allow some one on their staff to look over any statement which the Association thought it right to issue to the Panel Committees so that it might correctly represent the position of affairs. SIR ROBERT MORANT promised his co-operation in this matter.

COST OF DRUGS DURING WAR TIME.

THE Insurance Act Committee desires to draw the attention of practitioners in general, and insurance practitioners particularly, to the following list of drugs and preparations. Each of the substances named has recently increased very considerably in price. It is desirable, therefore, that they should be used and ordered with due discretion:

Salicylic acid.	Protargol.
Sodium salicylate.	Ol. juniperis.
Acetyl salicylic acid.	Paraldehyde.
Salol.	Thymol.
Liq. paraffin.	Phenazone.
Lanoline.	Phenacetin.
Novocaine.	Barbitone.
Ichthyol.	Potash salts.
Eucaine.	

IRISH COMMITTEE.

THE quarterly meeting of the Irish Committee of the British Medical Association was held in Dublin on January 12th. Mr. R. J. JOHNSTONE was in the chair, and the other members present were: Dr. J. S. Darling, Dr. J. Giusani, Colonel Johnstone, R.A.M.C., Dr. John Mills, Dr. W. L. Storey, Dr. D. Walshe, Dr. H. T. Warnock, and Dr. T. Hennessy (Irish Medical Secretary).

WORKHOUSE MEDICAL OFFICERS.

With reference to the communication from the Local Government Board (SUPPLEMENT, November 7th, 1914, p. 229), it was decided to take solicitor's opinion as to the prohibition of workhouse medical officers receiving fees from well-to-do patients treated in the hospital wards of workhouses, and as to whether it rested on statute or regulations.

AMALGAMATION OF THE BRITISH AND IRISH MEDICAL ASSOCIATIONS.

A resolution passed by the medical practitioners in County Monaghan at a meeting on December 11th was read suggesting, in view of the fact that the British Medical Association had established an office in Ireland and appointed a secretary for Irish business, the amalgamation of the British and Irish Medical Associations. A committee consisting of the Chairman, Mr. R. J. Johnstone, and Drs. Darling, Mills, Walshe, and Power, with the Irish Medical Secretary, was appointed to further the suggestion. A copy of the Monaghan resolution was directed to be sent to each Branch and Division in Ireland with the view of ascertaining the opinion of members, and to request the honorary secretaries of Branches and Divisions to communicate the results to the Irish Committee before March 31st.

MEDICAL ADVISERS (MEDICAL CERTIFIERS).

The meeting adopted a resolution expressing the opinion that no member of the British Medical Association

in Ireland should accept or continue to hold an appointment as medical adviser (medical certifier) under the National Insurance Acts. A copy of the resolution was directed to be brought to the notice of all Divisions and Branches of the Association in Ireland.

SALFORD INSURANCE COMMITTEE.

AT the last meeting of the Salford Insurance Committee, held on January 21st, several matters came up which were of importance not only locally, but to the medical profession throughout the country.

Effect of the War.

At a previous meeting, as already reported, the committee had resolved that the attention of the Government and the Commissioners should be drawn to the serious burden that would fall on both the panel practitioners and the approved societies through the withdrawal of a large number of the healthiest portion of the insured for military service, and the Medical Benefit Subcommittee had, as requested, framed a resolution. It was pointed out by Dr. Taylor that the resolution presented only covered part of the question, making no reference to the extra drain on the funds and the services of the panel doctors which would occur at the end of the war. He accordingly moved the addition, in the full resolution given below, of the words commencing "and seeing that," and ending "adequate provision made." This addition was at once accepted by the committee, and the resolution was adopted unanimously in the following terms:

> That having regard to the fact that the expectancy of the sickness-rate upon which the actuarial calculations in connexion with medical benefit were based has been destroyed by the withdrawal of a large proportion of the healthiest section of the insured population for service in His Majesty's forces, and inasmuch as there is no likelihood of a material reduction in the actual rate of sickness and the consequent demands upon the various funds,
>
> And seeing that it is practically certain that a large number of persons who were originally healthy lives will, on their discharge from the forces, be returned as wounded or chronic invalids who will cause a drain on the insurance funds for which there is no adequate provision made, the attention of the Commissioners be drawn to the injustice which will be occasioned to all parties concerned by any reduction in the amount available for the provision of medical benefit, and that the Commissioners be respectfully urged to take into consideration the necessity of provision being made to meet the exceptional circumstances.

Medical Certificates and Non-panel Practitioners.

The Clerk stated that approved societies were now requiring that insured persons should in all cases, when they desired sickness benefit, provide certificates on the new official forms issued to panel practitioners, but as a number of insured persons were foregoing their right to medical benefit and were paying for treatment by non-panel practitioners, several such practitioners had written asking to be supplied with the official forms by the Insurance Committees. The Clerk had accordingly written to the Commissioners inquiring whether he could supply books of certificates to non-panel practitioners. The reply from the Commissioners stated that when insured persons had obtained the permission of the Committee to make their own arrangements for medical treatment, the certificate books could be supplied to the doctor in attendance in accordance with the Regulations, but the Regulations did not apply where insured persons of their own accord paid for their treatment from non-panel practitioners without having obtained permission to make their own arrangements. This reply hardly answered the inquiry of the Clerk, and the Chairman said there appeared to be nothing to prevent the Committee supplying the books of certificates to any non-panel practitioners if it thought fit. Mr. Roberts then proposed that the books of certificates be supplied to any non-panel practitioners who applied for them to be used for insured persons under their care. Dr. Taylor then asked if the non-panel practitioners would be allowed to charge insured persons for such certificates, which had to be supplied freely by the panel practitioners. This led to some discussion, in which several members of the Committee expressed the feeling that non-panel practitioners ought not to be allowed to make a profit from certificates on forms supplied by the Insurance Committee; and an amendment was proposed and carried making the condition that certificates on the official forms should be given without charge. The resolution as amended was then adopted unanimously in the following form:

> That the official book of certificates be supplied to any non-panel practitioners who apply for them, to be used for insured persons, on condition that an undertaking is given that no charge will be made to insured persons for such certificates.

It was understood that this specially applied in cases in which the insured persons had not obtained permission from the Committee to make their own arrangements. Where "own arrangements" had been sanctioned by the Committee the question of charge or no charge for certificates would presumably be a matter included in the arrangements made, which already require the approval of the Committee.

Alleged Excessive Prescribing.

It was announced that the Commissioners had received a deputation, consisting of representatives of the Insurance Committee and the Panel and Pharmaceutical Committees, relative to alleged excessive prescribing by doctors on the Salford list in 1913. This deputation was appointed because the Panel and Pharmaceutical Committees had not been able to agree as to whether certain practitioners should be surcharged for excessive prescribing, and the Insurance Committee had hardly felt itself competent to judge between the two committees. The whole matter was carefully gone into before the Commissioners, who in a letter subsequently laid it down that the Local Medical Committee

> should for the purposes of establishing a criterion in examining prescriptions of individual doctors have regard in the course of their investigation of the prescriptions of any particular practitioner to the question whether, in the view of the Committee, it would have been possible for the doctor to have prescribed for his patients with equal efficacy at a lower cost, and in the event of the Local Medical Committee being satisfied that this is the case, they would, in the Commissioners' opinion, be justified in regarding the difference between the actual and the possible cost as "excessive" within the meaning of Article 46 of the Medical Benefit Regulations, 1912, and in reporting to the Insurance Committee accordingly.

This criterion appeared to the Insurance Committee to be fair and reasonable, and as the Commissioners' letter had also been sent to the Panel and Pharmaceutical Committees, it was resolved to await a further report from the Panel Committee on the matter.

Drug Tariff.

A letter was also read from the Pharmaceutical Committee, saying that it had agreed with the Panel Committee to delete from the Drug Tariff for 1915 the four aqueous tinctures of Hyoscyamus, Opium, Camph. Co., and Rhei Co., owing to the impossibility of obtaining guarantees that such tinctures complied with the *British Pharmacopoeia* standard. The Panel Committee, however, suggested that, "though these tinctures cannot be guaranteed to comply in respect to the active principles with the *British Pharmacopoeia* standard, yet practitioners should be at liberty to prescribe them if they wish to do so," and that a note to that effect should be put in the Tariff. The Pharmaceutical Committee had no objection to this, but the Medical Benefit Subcommittee had considered the matter, and recommended that, while the four aqueous tinctures should be deleted, it could not agree to the suggested note being inserted in the tariff. This recommendation was adopted by the Insurance Committee.

INSURANCE NOTES.

ASSIGNMENT OF PATIENTS.

WE are informed that two applications in the case Bazett *v.* The London Insurance Committee were made on January 26th in the King's Bench Division before the Master (Sir J. MacDonnell). The action is brought by Mr. H. Bazett for a mandamus to compel the London Insurance Committee to proceed to the "assignment" of those insured persons for whose treatment no arrangements had been made on March 31st, 1913, and for damages for their having failed to do so in the course of that year. The first, made by counsel for Mr. Bazett, was an application for the defendants to supply particulars of the insuperable difficulty of ascertaining with precision the numbers, names, and address of those persons,

which they allege in their defence; and an order to that effect was made by the Master. The second was an application by counsel for the defendants for the plaintiff to furnish particulars of the numbers of those unallotted persons for whom he claims payment of capitation fees would have been made to him had the "assignment" taken place, and for details of those persons and of the fees claimed. The order was made for such further particulars to be furnished as the plaintiff might be able to give after discovery or production by the defendants of the necessary documents in their possession.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

PANEL COMMITTEE.

Discrepancies in Lists of Insured Persons.

THE London Panel Committee on January 26th considered as a matter of urgency an intimation by the Medical Benefit Subcommittee of the Insurance Committee, that owing to discrepancies between the number of insured persons on the list in the office of the Insurance Committee and the number on practitioners' lists, it would not be possible to make two payments on account of 10d. a quarter to practitioners but that the payments must be at the rate of 9d. per insured person pending adjustment of the lists.

Dr. H. H. MILLS, Chairman of the Medical Benefit Subcommittee, said that the discrepancies were partly due to the withdrawal of a large number of insured persons who had joined the forces, and partly to the "appalling condition of uncertainty" of the register at the offices of the Insurance Committee. The first payment for 1915 would be due early in February and if the Panel Committee did not agree to the proposal of the Insurance Committee delay in disbursing the money would probably ensue.

Protests were expressed in subsequent speeches at a departure from the principle of payment in the instalments agreed upon; it was urged, on the other hand, that the money would be received by practitioners eventually and that if it were paid upon incorrect lists some practitioners would receive either more or less than the amount rightly due to them. It was stated that the names of many thousands of persons appeared on more than one doctor's list.

The Committee decided to concur in the proposed amended rate of payment on account, and, in so far as the necessity for the alteration was due to the alleged unsatisfactory state of the list of insured persons kept by the Insurance Committee, recorded a formal protest.

Alleged Excessive Prescribing.

The Pharmacy Subcommittee reported that it had considered further cases in which the Pharmaceutical Committee made representations that the cost of drugs and appliances ordered was apparently in excess of what was reasonably necessary. In 8 cases the Subcommittee found that the prescriptions were not excessive; in 19 cases it found the evidence insufficient to warrant a decision; and in 18 cases excessive prescribing, either generally or in specific instances, was found to be proved. As to a case which had been referred back by the Panel Committee for further consideration (SUPPLEMENT, December 19th, p. 287), the Pharmacy Committee adhered to its opinion that the prescribing was not excessive. In this case rheumatism phylacogen had been ordered at a cost of £7, acne vaccine at a cost of £5, and Kepler's ext. malt c. ol. morrh. at a cost of £5 5s.

In answer to criticism it was urged that the practitioner justified the prescription of the vaccines on the ground that they had proved effective in certain cases. Dr. C. W. HOGARTH, the Chairman of the Subcommittee, said that the Committee should do nothing to limit the right of a practitioner to order what he considered best for the patient; it should only deal with cases where careless or thoughtless prescribing had apparently taken place. It was also urged that doctors who, in special cases, ordered an expensive drug did not make so heavy a call upon the drug fund as practitioners who were habitually careless.

The view the Subcommittee took of the case was endorsed.

General Decisions.

The Committee decided to establish a fund to meet expenses which could not be regarded as "administrative expenses" within the meaning of the Act of 1913 and to invite contributions from practitioners on the panel.

The action of a subcommittee in inviting applications from medical practitioners willing to act as deputies to practitioners on the panel during temporary absences was authorized.

A subcommittee was appointed to consider the adequacy of the medical service in London and the powers and duties of the Panel Committee in connexion with the development of the service.

The Committee commended to the notice of practitioners the report of the Departmental Committee on Sickness Benefit Claims, and endorsed the suggestion therein that further consideration should be given to the scope of medical benefit.

CROYDON.

MEETING OF PANEL PRACTITIONERS.

A MEETING of panel practitioners of Croydon was held at the Croydon General Hospital on January 20th.

Standard Mixtures.—The following resolutions were unanimously adopted:

> This meeting of panel practitioners endorses and approves the action of the Panel Committee in selecting ten mixtures, for dispensing for which there shall be paid the reduced fee approved by the Insurance Commissioners.
>
> In the opinion of this meeting many mixtures (including the ten selected by the Panel Committee) can be kept for a reasonable time without deterioration, and their use is not harmful to patients, it being a matter of common knowledge that for many years hospitals, practitioners, and chemists, have commonly and with advantage used such mixtures.
>
> It is advisable that the Panel Committee should make full use of its powers under Article 40 in dealing with excessive prescribing.

The British Medical Association and Panel Practitioners.—Dr. ALFRED COX gave a short and interesting address on the relationship of the British Medical Association to panel practitioners, which was much appreciated. A hearty vote of thanks was accorded to Dr. Cox.

EAST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the East Suffolk Panel Committee was held at Saxmundham on January 12th, when Dr. HELSHAM was in the chair.

Drugs.—The meeting agreed to the proposal of the Pharmaceutical Society to make the following examination and report for a charge of £2 10s. per 10,000 prescriptions:

1. Number of prescriptions written by each doctor
2. Total value of prescriptions written by each doctor.
3. Average cost from Drug Fund per insured person per doctor.
4. Average cost per prescription per doctor.
5. General average cost per insured person.
6. Excess of general average cost per insured person.

Medical Treatment of Persons called up for Service with the Forces.—With regard to Memo. 210/I.C., the CHAIRMAN reported that a fresh card would be required after a person had been discharged from His Majesty's Forces, and that a circular letter on the subject had been sent out to all the panel doctors.

Special Mileage Grant.—The CHAIRMAN reported that the Committee's scheme for distributing the special mileage grant had been referred back by the East Suffolk Insurance Committee for further consideration for the following reasons:

1. To consider certain special cases.
2. To show good cause why a supplementary grant should be allowed, in which case a further grant might be anticipated.
3. Because, under any scheme to be submitted to them, the Commissioners could approve only payments in respect of insured persons resident in areas of special difficulty.

The Secretary was instructed to write to the Commissioners pointing out that the Panel Committee claimed that the whole of East Suffolk was an area of special difficulty.

Medical Referees.—It was decided to notify an approved society that its practice of sending medical referees to visit insured patients without informing the practitioner in attendance was neither in the best interest of the company

nor of the insured person, and that it was a source of annoyance to the medical referees in the area, most of whom were on the panel.

STAFFORDSHIRE.

Panel Committee.

A meeting of the Staffordshire Panel Committee was held on December 31st, with Dr. T. Ridley Bailey in the chair.

Medical Reference.—It was resolved:

That when a medical referee examines an insured person on behalf of an approved society he should not communicate any information so obtained except to the society for which he acts, and that the Insurance Commissioners be asked to notify the approved societies accordingly.

Honorarium to Returning Officer.—An honorarium of 10 guineas was voted to Mr. T. J. White in recognition of his services as returning officer and in connexion with the voluntary levy.

Excessive Prescribing.—It was resolved to recommend surcharges in eight out of eighteen cases of alleged excessive prescribing which had been referred to the Panel Committee by the Pharmaceutical Committee. It was further resolved:

That as a general rule 4 oz. of liniment be deemed a sufficient quantity to order at any one time.

At the adjourned meeting on January 14th the Committee investigated 26 cases of alleged excessive prescribing referred to them by the Pharmaceutical Committee, and surcharges were recommended in 18 cases.

Personnel of Local Medical Committee.—It was resolved to ask the Insurance Commissioners to approve of the scheme for the composition of the Local Medical Committee by which it will consist of the members for the time being of the Panel Committee for the area.

Executive Committee. — Dr. H. A. Bull (Honorary Treasurer) was added to the Executive Committee.

BERWICKSHIRE.

Local Medical and Panel Committees.

A joint meeting of the Local Medical and Panel Committees for Berwickshire was held at Duns on January 6th, when Dr. Young presided.

Medical Records.—Circular No. 617 of the Insurance Commission (Scotland) anent the method of keeping medical records was considered. The Secretary-Treasurer stated that a large proportion of the Berwickshire panel had expressed a preference for the card system over the day-book system. It was decided to adopt the card system, and to intimate to the Commissioners a request in this sense.

Drugs Account.—Circulars 610 and 612 anent the Drugs Accounts Committee election were considered. Dr. Campbell was nominated for election to the Drug Accounts Committee.

FORFAR.

Panel Committee.

A meeting of the County of Forfar Panel Committee was held on January 13th, with Dr. Hoile in the chair.

Medical Records.—The circular from the Scottish Insurance Commissioners with reference to the advisability of substituting cards for day books for the medical records for the year 1915 was, after consideration, remitted to the annual meeting of practitioners to be held on February 3rd, the decision of that meeting to be the finding of the Panel Committee.

Drug Accounts Committee.—The meeting having considered the circular from the Scottish Insurance Commissioners asking the Committee, if it so desired, to nominate a practitioner to act on the Drug Accounts Committee, decided to make no nomination; the Secretary was instructed to intimate accordingly to the Commissioners. In the event of a poll the Committee reserved the right to vote. It was unanimously agreed to contribute towards the Insurance Committee's share of the expenditure of the Drug Accounts Committee.

Certification.—The Committee, after discussion, expressed disapproval of the Regulations dealing with the new method of certification. It was agreed that the special final certificates should be used by practitioners when certifying insured persons resident more than two miles from the doctor's residence.

Medical Reference.—Two letters were read from the Medical Secretary of the British Medical Association regarding the fees payable by approved societies to practitioners acting as their medical referee. After discussion, it was decided to send copies of the letters to the practitioners in the area.

Dispensing Fees.—The meeting considered an application from a practitioner for payment of a sum due to him in respect of dispensing which he had performed for two years without formal application to the Forfarshire Insurance Committee to do so. It was decided to recommend the Insurance Committee for the county to make payment to the practitioner for such sums as were due to him in respect of his dispensing for 1913 and 1914.

Grant for 1913.—It was intimated that an amended provisional grant had been received by the Forfarshire Insurance Committee showing an addition of £626 17s. 10d. in respect of medical benefit for the year 1913.

WEST LOTHIAN.

Panel Committee.

A meeting of the West Lothian Panel Committee was held at Linlithgow on January 14th, when Dr. John Keay was in the chair.

Drug Accounts Committee. — Regulation 37 and Memo. 610/I.C. (Scotland) were considered and it was decided not to nominate a candidate for election to the Drug Accounts Committee. Drs. Scott, Dickson, and John Hunter were appointed a subcommittee with power to vote in case of an election. It was agreed to contribute a sum not exceeding a quarter of that payable by the Insurance Committee to the expenses of the Central Bureau for checking drug accounts, provided that copies of all reports issued by the Bureau were received by the Panel Committee, in addition to any special information which the Panel Committee might require in investigating cases of over-prescribing.

Financial Statement.—The statement of accounts for the year 1914 showed that the expenditure had been £16 4s. 7d.; to this, however, there remained to be added the sum of probably £5 as the share of the Panel Committee in the cost of checking chemists' accounts for 1914. The statement was approved.

Drugs and Appliances.—A draft circular letter to panel practitioners regarding prohibited drugs and appliances and emergency drugs was approved after a paragraph prohibiting "repeat" prescriptions had been deleted.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Edinburgh Branch: South-Eastern Counties Division.—Dr. M. J. Oliver (Honorary Secretary) St. Boswells, gives notice that a special meeting of the Division will be held at the Railway Hotel, Newtown St. Boswells, at 3 p.m. on Tuesday, February 2nd, when a resolution in terms of Rule 2 of the ethical rules of the Division will be proposed.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following announcements are notified by the Admiralty: Staff Surgeons Norman B. V. Jacob, to the *Pembroke*, additional, for disposal; A. B. Cox, to the *Challenger*, vice Hall. Surgeon W. L. Cowardin, to the *Pembroke*, additional, for disposal. Surgeon Probationers R.N.V.R. to be temporary Surgeons: Herbert G. Moser, Lewis S. Fry. Temporary Surgeons: S. L. Harke, to the *Impregnable*, vice Maxwell; A. M. Gray, to the *Woolwich*, vice Finegan; E. A. Linell, to the *Skipjack*, vice Cowardin; Percy O. Blanford, to the *Roxburgh*, vice Jacob; G. B. Moon, to the *Lion*, vice Cox; W. K. Chalmers, to the *Victory*, additional, for Haslar Hospital. To be temporary Surgeons: A. N. Pollock, J. D. Bangay, John G. Watkins, David Sutherland, M.B.

Royal Naval Volunteer Reserve.

Surgeon Probationer G. Pearson, to the *Blake*, additional for the *Goldfinch*, vice Kean. To be Surgeon Probationer: William L. Hunter.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

Lieutenant-Colonel Molesworth, retired list, to command of the Station Hospital, Nasirabad.

Honorary Major Guy Neville Stephen to be temporary Lieutenant-Colonel

C. V. Mackay, M.D., to be temporary Major.

To be temporary Captains: Charles E. F. Mouatt-Biggs, Robert S. Cock, F.R.C.S.E.

Peter Macdiarmid, M.B., is granted temporarily the honorary rank of Captain.

To be temporary Lieutenants: ARTHUR V. STOCKS, M.B., JAMES S. HALL, M.B., HUGH L. APTHORP, M.D., JAMES E. COOK, M.B., FREDERICK P. FISHER, M.B., JOHN S. MARTIN, JOHN GIBSON, M.B., RONALD B. MACFIE, M.B., F.R.C.S.E., ARTHUR H. GREG, M.B., F.R.C.S., JAMES E. RUTHERFORD, M.B., CHARLES E. PEPPER, M.B., JAMES D. FINLAY, M.B., ANDREW GRANT, M.B., GEORGE D. SHERWOOD, THOMAS L. LLEWELLYN, BERNARD C. EWENS, JOHN L. ANNAN, M.B., WILFRED GARTON, GEORGE H. STEVEN, M.B., DUDLEY FORDE, M.D., ALBERT E. HODGSON, M.D., JAMES J. KEIRANS, M.B., JOHN LONG, M.B., HENRY P. HARPUR, M.B., JAMES FETTES, M.B.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT WILLIAM H. JOHNSTON resigns his commission.

Lieutenants confirmed in their rank: ROBERT A. ANDERSON, HALLOWES L. ADDISON, JOHN G. BENNETT, GEORGE B. HODDEN, FRANCIS J. HALLINAN, THOMAS P. INGLIS, WILLIAM M. LANSDALE, FRANCIS C. LAPAGE, DAVID S. MARTIN, THOMAS SHEEDY.

To be Lieutenants on probation: FRANCIS A. DUFFIELD, JOHN J. MOLYNEUX, FREDERIC SANDERS, GEORGE S. PIRIE, EDWIN J. BRADLEY, FRANK OPPENHEIMER, JAMES W. WOOD, GEORGE M. SCOTT.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL T. A. GRANGER, M.B., I.M.S., has been appointed as Honorary Surgeon to His Excellency the Viceroy, with effect from September 16th, 1914.

Lieutenant-Colonel S. BROWNING-SMITH, I.M.S., has been appointed as Sanitary Commissioner, Punjab, with effect from November 13th, 1914.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) Sanitary Company.—ROBERT ROBISON to be Lieutenant.

First Wessex Field Ambulance.—WALTER FITZPATRICK, late Captain R.A.M.C.(T.F.), to be Captain, temporary.

Third Southern General Hospital. Lieutenant-Colonel HORATIO P. SYMONDS, F.R.C.S.E., resigns his command on account of ill-health.

West Riding Casualty Clearing Station.—DAVID R. CRAMB, M.B., to be Lieutenant.

Second West Riding Field Ambulance.—HARTAS FOXTON, M.B., to be Lieutenant

West Lancashire Casualty Clearing Station.—Lieutenant WILLIAM N. W. WEST-WATSON, M.D., from the Third West Riding Field Ambulance, to be Lieutenant

Second Highland Field Ambulance.—Lieutenant JAMES A. STEPHEN, M.B., to be Captain, temporary; THOMAS S. SLESSOR, M.B., to be Lieutenant.

Sanitary Service.—Lieutenant-Colonel ARCHIBALD K. CHALMERS, M.D., is seconded; THOMAS H. WARD, M.D., late Lieutenant R.A.M.C.T.F., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—Lieutenant JOHN B. BATE, M.D., to be Captain, temporary. Major ALEXANDER LEITCH, M.B., resigns his commission on account of ill-health, and is granted permission to retain his rank and to wear the prescribed uniform. Surgeon-Captain THOMAS D. GREENLEES, M.D. (late Grahamstown, South Africa), First City Volunteers, to be Major, temporary. Captain WILLIAM E. RIELLY, M.B., from the Second London Field Ambulance, to be Captain. To be Lieutenant: JAMES P. N. CASEY, from the 1st London Field Ambulance; HUGH G. BRUCE, M.B.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In the ninety-six large English towns 8,172 births and 6,259 deaths were registered during the week ended Saturday, January 23rd. The annual rate of mortality in these towns, which had been 21.3, 19.4, and 18.8 per 1,000 in the three preceding weeks, fell to 18.0 per 1,000 in the week under notice. In London the death-rate was equal to 18.4, against 23.7, 20.1, and 19.6 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 6.6 in Eastbourne, 8.0 in Ilford, 9.6 in Coventry, 10.5 in Acton, 10.9 in Southport and in Blackpool, and 11.1 in Rochdale, to 25.1 in Huddersfield, 25.3 in Gateshead, 27.1 in Cambridge, 31.9 in Merthyr Tydfil, 36.3 in Great Yarmouth, and 37.5 in Gillingham. Measles caused a death-rate of 2.1 in Newcastle-on-Tyne, 2.2 in Ealing, in Wolverhampton, and in Preston, 2.5 in Merthyr Tydfil, 3.1 in Gateshead, 3.2 in Rotherham, 3.3 in Grimsby, 3.7 in Plymouth, and 4.0 in Wigan; whooping-cough of 1.1 in Bristol, 1.4 in Bootle, 1.6 in Willesden, and 3.1 in Gloucester and in Merthyr Tydfil; and diphtheria of 2.6 in Stockton-on-Tees and 2.8 in Warrington. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 64, or 1.0 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 13 were recorded in Birmingham, 6 in Liverpool, 4 in Stoke-on-Trent, in Preston, and in Gateshead, and 2 each in Ilford, Dudley, Bootle, Bolton, and Manchester. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been been 4,503, 4,153, and 3,952 at the end of the three preceding weeks, further fell to 3,836 on Saturday, January 23rd; 308 new cases were admitted during the week, against 436, 321, and 338 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,258 births and 977 deaths were registered during the week ended Saturday, January 23rd. The annual rate of mortality in these towns, which had been 20.5, 24.5, and 22.8 per 1,000 in the three preceding weeks, fell to 21.7 in the week under notice, but was 3.7 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 12.5 in Motherwell, 14.2 in Coatbridge, and 15.2 in Falkirk, to 25.3 in Aberdeen, 25.9 in Dundee, and 29.4 in Perth. The mortality from the principal infectious diseases averaged 2.2 per 1,000, and was highest in Glasgow and Dundee. The 460 deaths from all causes in Glasgow included 37 from whooping-cough, 8 from scarlet fever, 4 from diphtheria, 3 from infantile diarrhœa, 1 from enteric fever, and 1 from measles. Six deaths from measles and 11 from whooping-cough were recorded in Dundee; 6 from whooping-cough and 2 from diphtheria in Edinburgh; and from scarlet fever, 3 deaths in Aberdeen and 3 in Paisley.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDARE URBAN DISTRICT COUNCIL.—Assistant School Medical Officer. Salary, £350 per annum.

AYR COUNTY.—Two Assistant Medical Officers. Salary, £300 per annum.

BARNSLEY COUNTY BOROUGH.—Medical Officer of Health. Salary, £500 per annum, rising to £650.

BATH: ROYAL UNITED HOSPITAL.—House Physician. Salary, £120 per annum.

BERMONDSEY MEDICAL MISSION.—Resident Junior Assistant (female).

BETHNAL GREEN INFIRMARY, Cambridge Road, E.—(1) Assistant Medical Superintendent. (2) Assistant Medical Officer. Salary, £280 and £250 per annum respectively.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

BIRKENHEAD EDUCATION COMMITTEE.—(1) Assistant School Medical Officer. (2) School Dental Officer. Salary for (1), £300 per annum, rising to £350; and for (2), £300 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

BOLTON INFIRMARY AND DISPENSARY.—(1) Junior House-Surgeon; (2) Third House-Surgeon. Salary, £150 and £130 per annum respectively.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary, £120 per annum.

BRADFORD POOR LAW UNION.—Assistant Resident Medical Officer for the St. Luke's Hospital and Union House. Salary, £150 per annum.

BRADFORD ROYAL INFIRMARY.—House-Surgeon (male). Salary, £100 per annum.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary, £100 per annum.

CARMARTHEN INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

COLCHESTER: ROYAL EASTERN COUNTIES' INSTITUTION FOR IMBECILES AND THE FEEBLE-MINDED.—Lady Medical Officer. Salary, £200 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—House-Physician. Salary, £110 per annum.

CUMBERLAND AND WESTMORELAND ASYLUM, Garlands.—Junior Assistant Medical Officer. Salary, £250 per annum

DERBY COUNTY BOROUGH EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

DERBYSHIRE EDUCATION COMMITTEE.—School Medical Officer. Salary, £300 per annum, rising to £400.

DORSET COUNTY COUNCIL.—Temporary Assistant Medical Officer of Health. Salary, £250 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £100 per annum.

EASTERN DISPENSARY, Leman Street, E.—(1) Physician Gynæcologist. (2) Medical Officers.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—(1) Senior House Surgeon. (2) House-Physician. (3) Assistant House-Surgeon. Salary for (1), £250 per annum; and for (2) and (3), £150 per annum.

FRANCE: BASE HOSPITAL.—Anæsthetist and House-Surgeon.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum

GLOUCESTER COUNTY ASYLUM, Barnwood.—Assistant Medical Officer (male). Salary, £250 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. (Males.) Salary, £120 and £100 per annum respectively.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—House-Physician. Salary at the rate of £70 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton. (1) Assistant Resident Medical Officer. Salary, £100 per annum. (2) Anæsthetist. Honorarium, 50 guineas per annum.

HOSPITAL FOR DISEASES OF THE SKIN, Stamford Street, S.E.—Assistant Physician or Assistant Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Two House-Surgeons. Salary, £30 for six months, and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—Lady House-Surgeon, also Lady Assistant House-Surgeon, salary £60 and £50 per annum respectively; or one male House-Surgeon, salary £60 per annum.

JEWISH MISSION, Leman Street, E.—Medical Practitioner.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

LEEDS PUBLIC DISPENSARY.—Two Honorary Officers, in charge of Medical and Surgical cases respectively, at the Southern Branch.

LONDON LOCK HOSPITAL, Dean Street, W.—House-Surgeon. Salary, £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Honorarium, £100 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £350, and upon promotion to £450

MANCHESTER EDUCATION COMMITTEE.—Two Assistant School Medical Officers. Salary, £300 per annum, rising to £450.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT.—Assistant Medical Officer for the Crossley Sanatorium. Salary, £100 per annum.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £180 per annum, increasing to £200.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon Salary, £120 per annum.

MANCHESTER: VICTORIA MEMORIAL JEWISH HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Two Assistant House-Surgeons. Salary, £40 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary, £85 per annum.

NEWCASTLE-UPON-TYNE PARISH.—Second Assistant Medical Officer, at the Poor Law Institution. Salary, £200 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at the rate of £100 per annum, rising to £150.

NORTHAMPTON COUNTY ASYLUM.—Second Assistant Medical Officer. Salary, £250 per annum, rising to £300.

NOTTINGHAM GENERAL HOSPITAL.—(1) Senior House-Physician. (2) Assistant House-Surgeon. Salary, £120 and £100 per annum respectively.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary, £150 per annum.

RICHMOND: ROYAL HOSPITAL.—House-Surgeon. Salary, £150 per annum.

ROCHDALE INFIRMARY AND DISPENSARY.—(1) Senior House-Surgeon; (2) Second House-Surgeon. Salary, £140 and £125 per annum respectively.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Second Resident Medical Officer. Salary, £100 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Assistant House-Surgeon (non-resident). Salary, £50 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon. Salary, £100 per annum.

SALFORD UNION INFIRMARY. Resident Assistant Medical Officer (male). Salary, £150 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SHEFFIELD CITY HOSPITALS.—First, Second, and Third Assistant Medical Officers. Salary, £250, £225, and £200 per annum respectively.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. (Males.) Salary, £100 per annum each.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) House-Physician (male). (2) House-Surgeon. Salary, £150 per annum, rising £10 annually.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary, £120 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STOKE-ON-TRENT COUNTY BOROUGH — Resident Assistant Medical Officer at the Stanfield Sanatorium. Salary, £350 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

SURREY COUNTY ASYLUM, Brookwood.—Second Assistant Medical Officer. Salary, £230 per annum, rising to £330.

TAUNTON AND SOMERSET HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

TRURO: ROYAL CORNWALL INFIRMARY. — House-Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WALSALL AND DISTRICT HOSPITAL.—Junior House-Surgeon and Anaesthetist. Salary, £110 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior Lady House-Surgeon. Salary, £130 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

WORCESTERSHIRE ASYLUM, Bromsgrove.—Locumtenent Medical Officer.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Clogher (County Tyrone). Hawes (Yorkshire, North Riding).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

ATWELL, E. D., L.M. and S.Dub., District Medical Officer of the Sheffield Union.

DUKE, Edgar, M.D., M.R.C.S., Surgeon to the 2nd (Hove) Battalion Home Protection Brigade, Divisional Surgeon to Brighton and Hove Division (No. 8), St. John Ambulance Brigade.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

SEALE.—On December 30th, 1914, at Oaklawn, Grahamstown, South Africa, the wife of E. A. Seale, M.D., of a daughter.

MARRIAGES.

MAGUIRE—WHITTET.—At St. Aloysius, Glasgow, on January 26th, by the Very Rev. Michael McMahon, S.J., assisted by the Rev. James Mullin, D.D., Peter Maguire, M.B., Ch.B., to Edith Margaret, daughter of James Whittet, 27, Scott Street, Glasgow. At home, 302, Bath Street, Glasgow, March 10th.

WILSON—ROWAN.—On the 20th inst., at Sherbrooke U.F. Church, Pollokshields, by the Rev. W. Mackintosh Mackay, B.D., Lieutenant George Jackson Wilson, Royal Army Medical Corps, younger son of Thomas Wilson, L.D.S., Corunna Street, Glasgow West, to Mynné Leck, younger daughter of Mr. and Mrs. James Rowan, "Furka," Pollokshields.

DEATH.

BARRETT.—On January 21st, at 6, Darnley Road, Holland Park, W., Dr. Alfred E. Barrett, M.R.C.S., L.S.A., of the above address and Grimston, Norfolk, aged 77 years.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF PATHOLOGY, 8.30 p.m.—Laboratory Meeting, Pathological Department, Guy's Hospital, S.E. Dr. R. A. Chisolm and Dr. G. Marshall: The Active Principle of the Pituitary in Health and Disease. Dr. W. P. Laidlaw: Some Anaërobic Methods. Dr. J. H. Ryffel: Haematoporphyrin in Faeces. Dr. G. W. Goodhart: (1) Tumours of the Suprarenal Medulla; Gangioneuroma and Neurocytoma; (2) Infarction of the Heart; (3) Tumour of the Liver and Spleen associated with *Bacillus tuberculosis*.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF OPHTHALMOLOGY, 8.30 p.m.—Cases. Papers: Dr. Batten and Mr. Stephen Mayou: Cerebral Degeneration associated with Macula Changes, with Pathological Examination of a Case. Mr. Leslie Paton: The Montessori System and its Use for Children with Defective Sight. (Members of the Section for the Study of Disease in Children are specially invited).

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Clinical meeting.

ROYAL SOCIETY OF MEDICINE:

SECTION OF OBSTETRICS AND GYNAECOLOGY, 8 p.m.—Specimens. Short Communications: Dr. Maxwell: Inversion of Uterus—(1) Acute; (2) Chronic. Dr Russell Andrews: Carcinoma in an Ovarian Teratoma. Paper: Dr. Herbert Spencer: Ruptured Unilateral Solid Cancer of Ovary Removed; Subsequent Pregnancies, and Good Health.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF LARYNGOLOGY, 4 p.m.—Specimens and Cases.

SECTION OF ANAESTHETICS, 8.30 p.m.—Paper: Mr. H. Finnemore, B.Sc., F.I.C.: Anaesthetic Ether. Discussion on Method of Induction of Anaesthesia.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Courses are to be given next week at the following schools, colleges, and hospitals:

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	FEBRUARY.
2 Tues.	South Eastern Counties Division, Special Meeting, Newtown St. Boswells, 3 p.m.

Printed and published by the British Medical Association at their Office, No. 420, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 6TH, 1915.

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Association Intelligence.

PROCEEDINGS OF COUNCIL.

THE first meeting of the Council since the Aberdeen Meeting was held at 429, Strand, London, on Wednesday, January 27th, the October meeting having been postponed owing to the war. There were present:

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the chair.
Dr. W. AINSLIE HOLLIS, Hove, Past-President.
Mr. T. JENNER VERRALL, LL.D., Bath, Chairman of Representative Meetings.
Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow
Lieutenant-Colonel Sir JAMES BARR, M.D., LL.D., Liverpool
Surgeon-General P. H. BENSON, I.M.S., Walmer, Kent (Indian Medical Service)
Dr. M. G. BIGGS, London
Mr. H. B. BRACKENBURY, London
Dr. CHARLES BUTTAR, London
Dr. H. J. CAMPBELL, Bradford
Dr. J. SINGLETON DARLING, Lurgan
Dr. E. ROWLAND FOTHERGILL, Hove
Dr. ADAM FULTON, Basford
Major JAMES GALLOWAY, London
Mr. T. V. H. GARSTANG, Altrincham
Dr. THOMAS A. GOODFELLOW, Manchester
Dr. JOHN GORDON, Aberdeen
Mr. JAMES GREEN, Portsmouth
Dr. MAJOR GREENWOOD, London
Captain W. J. GREER, Newport, Mon.
Lieutenant-Colonel R. I. D. HACKETT, M.D., A.M.S., Cheltenham (Royal Army Medical Service)
Dr. J. R. HAMILTON, Hawick, N.B.
Mr. RICHARD HARDING, New Radnor
Captain R. WALLACE HENRY, Leicester
Colonel W. T. JOHNSTON, M.D., R.A.M.C., Dublin
Mr. R. J. JOHNSTONE, Belfast
Captain F. CHARLES LARKIN, Liverpool
Captain ALBERT LUCAS, Birmingham
Dr. H. C. MACTIER, Wolverhampton
Dr. C. H. MILBURN, Hull
Dr. GEORGE PARKER, Bristol
Sir JAMES PORTER, K.C.B., LL.D., Chatham (Royal Navy Medical Service)
Dr. A. TENNYSON SMITH, Orpington
Captain F. J. SMITH, London
Dr. W. JOHNSON SMYTH, Bournemouth
Mr. E. B. TURNER, London

The following were unavoidably prevented from attending: Lieutenant-Colonel Sir Clifford Allbutt (President-elect), Major W. F. Brook, Dr. David Ewart, Major J. Livingstone Loudon, Lieutenant-Colonel J. Munro Moir, Dr. J. E. Moorhouse, Major D. F. Todd, and Dr. O. R. M. Wood.

ROLL OF HONOUR.

The CHAIRMAN, before commencing the ordinary business, conveyed to the Chairman of the Representative Body, Mr. T. Jenner Verrall, the sincere sympathy of the Council on the death of his son who had been killed in action.

The Chairman also was requested to convey to Dr. G. A. Williamson, the Honorary Treasurer of the Aberdeen Meeting, an expression of sympathy on the death of his only son, also killed in action.

DEATH OF FORMER MEMBER OF COUNCIL.

The CHAIRMAN undertook to convey to Mrs. Ker an expression of sympathy on the death of her husband, Mr. Hugh R. Ker, who had been a member of the Council for many years, first as a Representative of the Birmingham Branch, and later of the Metropolitan Counties Branch.

NEW MEMBERS OF COUNCIL.

The CHAIRMAN welcomed Colonel W. T. Johnson, of Dublin, appointed to fill the Irish vacancy which was not filled at the Representative Meeting, and Mr. Richard Harding, of New Radnor, appointed in place of Dr. D. W. Finlay (Gloucester), resigned.

THE ABERDEEN MEETING.

The CHAIRMAN, on behalf of the Council, expressed the deep gratitude of the Association to all those who had contributed to the success of the Aberdeen Meeting, and especially referred to the splendid work of the Honorary Local Secretaries, Dr. Thomas Fraser and Dr. Fred. K. Smith.

THE CAMBRIDGE MEETING.

A letter was read from Sir Clifford Allbutt, President-elect, pointing out that, owing to the war, there were unsurmountable difficulties which would prevent the successful organization of a meeting at Cambridge this year, whereupon the Council decided that this year there should be no ordinary scientific meeting, and at the same time expressed the hope that matters will have so improved by 1916 that Cambridge will then be able to renew its invitation. Under the Regulations the statutory General Meeting will be held, while there will also be a Representative Meeting.

NATIONAL RELIEF FUND.

A letter was read from the Treasurer to the Prince of Wales thanking the Association for services rendered by permitting some members of the staff to assist in the work of the National Relief Fund.

SOLICITOR TO THE ASSOCIATION.

Mr. W. E. Hempson was reappointed Solicitor to the Association for a further period of one year.

DISTRIBUTION OF UNALLOTTED FUNDS.

A resolution was read from the National Medical Union protesting against the distribution to panel doctors of unallotted funds, when the following was proposed by Dr. FRED. J. SMITH, and seconded by Dr. M. G. BIGGS:

> That in the opinion of the Council of the British Medical Association it is detrimental to the honour and interests of the medical profession that sections of the profession should receive public money for professional services not rendered and for which indeed the sections were not collectively responsible.

The Council, however, decided to pass to the next business.

BEQUEST BY THE LATE DR. FOTHERBY.

The TREASURER reported that the Association had received from the executors a bequest of £50, made by the late Dr. Henry Isaac Fotherby of Reigate. The hope was expressed that Dr. Fotherby's example of recognizing the good work the Association has accomplished for the medical profession will be followed by others.

FINANCE COMMITTEE.

ACCOUNTS.

The accounts for the September quarter amounting to £17,407 10s. 11d., and the accounts for the December quarter amounting to £14,933 5s. 2d., were duly approved.

CENTRAL ETHICAL COMMITTEE.

PROFESSIONAL SECRECY.

From time to time the question of professional secrecy in connexion with legal proceedings has been raised, and recently especially by the remarks of Mr. Justice Avery at the Birmingham Assizes.

The Council passed the two following resolutions:

That the Council is of opinion that a medical practitioner should not under any circumstances disclose voluntarily, without the patient's consent, information which he has obtained from that patient in the exercise of his professional duties.

The Council is advised that the State has no right to claim that an obligation rests upon a medical practitioner to disclose voluntarily information which he has obtained in the exercise of his professional duties.

It is proposed to forward copies of these resolutions to the appropriate department of the State, and to ventilate the question in the JOURNAL.

ORGANIZATION COMMITTEE.

CONFERENCES OF SECRETARIES.

It was decided to hold a Conference of Secretaries in connexion with the Annual Representative Meeting, 1915. In future years this Conference will form part of the annual fixture. A subcommittee, to consist of the Chairman of the Organization Committee, *ex officio*, and two other members of the Committee, together with three members nominated by the Conference of Secretaries of the previous year, will make all the necessary arrangements.

BOUND VOLUMES OF "SUPPLEMENT" FOR SECRETARIES.

The Council resolved to recommend the Representative Body to rescind its resolution of the Annual Representative Meeting, 1913, which terminated the arrangements by means of which secretaries of Divisions and Branches were supplied with half-yearly bound volumes of the SUPPLEMENT.

GRANTS TO BRANCHES.

A grant for 1914 of 2s. per head was made to the Wiltshire Branch, and a supplementary grant of £42 2s. 4d. to the South Wales and Monmouthshire Branch.

REPRESENTATION IN REPRESENTATIVE BODY, 1915–6.

(a) Divisions in United Kingdom.

The Divisions in the United Kingdom are provisionally grouped in constituencies for election of Representatives for 1915–16 in the same way as for 1914–15, except that the following provisional changes are made:

(*a*) *Dundee Branch.*—That the Dundee Division-Branch (103) form one constituency.

(*b*) *Essex Branch.*—That the Divisions of the Essex Branch be dealt with in the same way as the Essex Divisions of the late East Anglian Branch.

(*c*) *Kent Branch.*—That Isle of Thanet (30) be grouped with Canterbury and Faversham (48); and Sevenoaks (24) with Tunbridge Wells (44).

(*d*) *Lancashire and Cheshire Branch.*—That Chester (40) be grouped with Crewe (23); and Hyde (26) with Stockport, Macclesfield, and East Cheshire (77).

(*e*) *Norfolk Branch.*—That East Norfolk (66) be grouped with Great Yarmouth (17); and that Norwich (49) and West Norfolk (35) be independent constituencies.

(*f*) *North Wales Branch.*—That North Carnarvon and Anglesey (76) be grouped with South Carnarvon and Merioneth (40).

(*g*) *Southern Branch.*—That Channel Islands (35) be an independent constituency.

(*h*) *Suffolk Branch.*—That North Suffolk (32) be grouped with South Suffolk (66); and that West Suffolk (40) be an independent constituency.

(*i*) *Wiltshire Branch.*—That the Divisions of the new Wiltshire Branch—namely, Salisbury (33), Swindon (16) and Trowbridge (31), be grouped to form one constituency.

(b) Divisions outside United Kingdom.

Each Division and Division-Branch outside the United Kingdom which has an Honorary Secretary and the necessary organization is granted independent representation for 1915-16.

QUESTION OF ASSOCIATION BECOMING ALSO A FEDERATION FOR OTHER MEDICAL BODIES.

Arising out of Minute 81 of the Annual Representative Meeting, Aberdeen, Dr. FOTHERGILL claimed that as this was so far-reaching in its importance and was of interest to many important medical bodies, its consideration would be best undertaken by an *ad hoc* Committee consisting of members of the Association specially conversant with one or more of the questions involved, and should not stand referred to the Organization Committee.

The Council, however, did not accept the proposal.

Minute 81.—That it be referred to the Council to consider what alterations and additions to the Articles and By-laws and in the organization of the British Medical Association in the United Kingdom would be necessary to allow of it becoming also a Federation for other medical bodies formed to safeguard the interest of one or more sections of the medical profession, while allowing all such bodies to continue their separate existence, and to issue a report on the whole matter to the Representative Body.

JOURNAL COMMITTEE.

The CHAIRMAN drew attention to the steps which had been taken to conserve the interests of the JOURNAL since the outbreak of the war, and emphasized the difficulties in its production which had been so ably surmounted by the Editor and the Financial Secretary and Business Manager.

SCIENCE COMMITTEE.

STEWART PRIZE.

It was decided that the Stewart Prize shall be awarded in 1916. Particulars of the competition will be advertised in due course.

SCIENTIFIC GRANTS AND SCHOLARS.

The regulations as to Research Scholarships and Science Grants are suspended until those Research Scholars and Grantees who owing to the war are at present unable to continue the researches for which the scholarships and grants were awarded are able to resume their work.

MEDICO-POLITICAL COMMITTEE.

INSUFFICIENTLY TRAINED NURSES.

The Council considered the following minute of the Annual Representative Meeting, 1914.

Minute 125.—That this meeting views with concern the increasing number of insufficiently trained nurses, and instructs the Council to call upon the Government and the other authorities concerned to take steps to remedy this evil.

The Council will report to the Representative Body that it is of opinion that the number of untrained nurses who can obtain employment is due partly to there being an insufficient supply of trained nurses; that this deficiency will be remedied by anything which increases the status and attractions of the nursing profession, and that, therefore, the result desired will be best brought about by the Association continuing its efforts to obtain State Registration of Nurses.

Sir JAMES BARR, Drs. BUTTAR, J. R. HAMILTON and F. J. SMITH, and Mr. F. CHARLES LARKIN desired that their disapproval of the decision might be recorded.

SELECT COMMITTEE ON PATENT MEDICINES.

The Representative Body will be recommended to place on record its satisfaction with the recommendations of the Select Committee on Patent Medicines, and to instruct the Council as soon as it considers the time opportune to take all necessary steps to press for legislation on the lines of the report.

CRIME AND PUNISHMENT.

A report prepared by a Special Subcommittee of the Medico-Political Committee on the question of the present state of the law with regard to the legal responsibility for crime and the recommendations contained therein were

approved, and will be published in full in due course. Copies of the report are to be forwarded immediately to those bodies who appointed representatives upon the Sub-committee—namely, the Medico-Legal Society, the Medico-Psychological Society, the Bar Council and the Law Society, together with a statement that it had been approved by the Council, and was being recommended to the Representative Body for approval.

The Council placed on record its appreciation of the services of Mr. E. J. Domville as Chairman of the Crime and Punishment Subcommittee of the Medico-Political Committee.

Treatment of Incipient Insanity.

The Voluntary Treatment Bill, drafted by the Joint Committee of the Medico-Legal Society, on which the Association was represented, as introduced into the House of Lords on July 22nd, 1914, by Earl Russell, was approved.

Royal Commission on Venereal Diseases.

A Memorandum submitted on behalf of the Association to the Royal Commission on Venereal Diseases was approved. The memorandum dealt specially with the position of the general practitioner in the organization of the treatment of these diseases. It will be submitted to the Divisions later.

PUBLIC HEALTH COMMITTEE.

Forms of Report on Tuberculosis Cases receiving Domiciliary Treatment.

The attention of the Local Government Board is to be drawn to the need of improvement and simplification of the present form of report on tuberculous cases receiving domiciliary treatment, and the Council approved a revised form of report submitted by the Public Health Committee.

Superannuation of Medical Officers of Health.

The Public Health Committee was authorized to proceed with the drafting of a bill for the superannuation of medical officers of health based upon the lines of the Civil Service Superannuation Act.

NAVAL AND MILITARY COMMITTEE.

Army Medical Service Pay.

The Naval and Military Committee was requested to reconsider the question of difference of pay of civil surgeons called out by the Territorial Force and those commissioned on emergency to the R.A.M.C., and if deemed advisable, to approach the Government, or take such other steps as it may deem desirable.

INSURANCE ACT COMMITTEE.

Co-option of Members.

Pursuant to the terms of appointment by the Annual Representative Meeting, 1914, Dr. Olive Claydon, Mr. Herbert Jones, and Dr. Major Greenwood have been co-opted members of the Committee.

Conference of Representatives of Local Medical and Panel Committees.

In the event of the Commissioners calling a conference of representatives of Local Medical or Panel Committees on any Insurance Act matter, the Insurance Act Committee was authorized to invite such representatives to a preliminary conference immediately prior to the conference with the Commissioners, so as to arrange for combined action.

Departmental Committee on Drug Tariff.

Dr. Wallace Henry having resigned his membership of the Departmental Committee on the Drug Tariff of the Insurance Acts owing to the claims of his miltary duties, in response to a request the Association has nominated in his stead the Medical Secretary.

Local Medical and Panel Subcommittee.

The Chairmen of the various Standing Committees of the Association were authorized to attend meetings of and assist the Local Medical and Panel Subcommittee of the Insurance Act Committee if and when, in the opinion of the Subcommittee, such attendance would prove useful.

Non-Panel Practitioners and New Certification Arrangements.

Dr. Buttar referred to two cases mentioned in the *Lancet* of January 23rd of refusal by approved societies of certificates of non-panel practitioners and asked (1) what answer had been received from the Commissioners to the communications addressed by the Committee, and (2) what action it was proposed should be taken in the event of the Commissioners' answer being unfavourable.

The Chairman stated the matter had received the prompt and serious attention of the Committee and that two communications had been addressed to the Commissioners, to which only acknowledgements had so far been received, but it was understood that the matter was receiving their most earnest consideration.

It was therefore decided that the Insurance Act Committee should be authorized, if a satisfactory reply to the letters of the Association were not forthcoming, to take legal action in order to secure recognition of the certificate of any duly registered practitioner, and thus permit insured persons to employ any doctor they choose, whether on a panel or not.

NON-PANEL COMMITTEE.

A motion standing in the name of Mr. Turner, for the reappointment of the Non-Panel Committee, was deferred meantime at his request, as it appeared that for the present, with the exception of the matter just mentioned, there was no particular work for it.

War Emergency Committee.

Attention was called by Dr. John Adams to the work of the Scottish Medical Service Emergency Committee, formed to deal with difficulties due to the withdrawal of so many medical men from civil practice to serve with the forces; also to the known existence of difficulties of a similar nature in other parts of the United Kingdom. It was decided that, in order to increase the efficiency of service and to economize the resources of the medical profession, matters arising from the withdrawal of medical men from civil practice to serve with the military forces of the Crown should be referred for consideration to a Committee composed of the Chairmen of the Standing Committees of the Association, with instructions to take such action as might appear advisable.

CENTRAL NURSING COUNCIL FOR LONDON.

Mr. E. B. Turner reported that, as the representative of the Association on the Central Nursing Council for London, he had attended the first meeting of that body, when it was decided to elect an Executive Committee of twenty-five members, of which twenty were elected *en bloc* and the remainder by election; that, as a result, Sir William Church and himself had been elected upon the Executive Committee, and that he had also been appointed a member of the Executive Subcommittee.

Candidates for Election to the Association.

The seven candidates whose names appeared on the notice convening the meeting were duly elected Members of the British Medical Association.

The Council, having completed its business, adjourned at 7 o'clock.

LOCAL MEDICAL AND PANEL COMMITTEES.

BERKSHIRE.

Local Medical and Panel Committees.

The twenty-seventh meeting of the Berks Local Medical Committee was held concurrently with the tenth meeting of the Panel Committee at the Royal Berks Hospital on January 19th.

Tuberculosis Subcommittee.—Dr. May was elected as the nominee of the Medical Committee on the Tuberculosis Subcommittee, in place of Dr. Crouch retired.

Medical Attendance and Treatment.—The scheme prepared under Articles 21 (4) and 35 (1) by the Berks Insurance Committee was again discussed, and a letter was read from the Commissioners to the Insurance Committee, in which the following occurred:

In default of such arrangements (under Articles 21 (4) and 35 (1)) being made, the Commissioners would have to consider

whether arrangements made for the provision of medical attendance and treatment of insured persons in the area were satisfactory, and it would be necessary for them to take into consideration *inter alia* the question of the withholding of any moneys which would otherwise be payable to the Medical Benefit Fund of the Committee from the Parliamentary Grant.

After considerable discussion it was decided to send the following letter to the Insurance Committee:

Sir,—Replying to your letter of January 11th, enclosing a letter from the Insurance Commissioners dated January 9th, I desire in the first place to correct a misapprehension.

The Berkshire Panel Committee has not come to "a decision not to fulfil the duties devolving upon them under the Articles 21 (4) and 35 (1). On the contrary, in reply to a request for its formal acceptance of the regulations in question, the Panel Committee has pointed out by the resolution contained in my letter of December 10th that we have no power to guarantee that all panel practitioners in the county will observe the letter of these regulations.

As an elected Committee our powers are limited to advice and recommendation, and we desire to emphasize this point.

We are not aware either that the practitioners on the Berkshire panel intend or desire to evade their responsibilities under the Act, but we know that they are labouring under a sense of injustice, and that if we gave our consent to these regulations without making the strongest possible protest we should forfeit their confidence entirely. We therefore submit the following points for the consideration of your Committee:

1. The Berkshire Insurance Committee is aware by the distribution of the cards of unallotted persons the duplication of medical cards was to a large extent, if not wholly, eliminated. In the circumstances it does not seem fair that Berkshire should be treated upon the same basis as other insurance areas in which these steps, and all the expenses consequent upon their efforts to cleanse the register of errors, were not taken.

2. The Berks Insurance Committee also knows that, so far from surplus funds having been distributed, the money available has not been sufficient to pay doctors' premiums in respect of the medical benefit of all the insured persons whom your Committee believe to be entitled to such benefit in the county.

3. In the circumstances the surplus funds referred to in the regulations seem to us altogether illusory.

4. We know, however, that there should be surplus funds, because the steps taken to secure that every insured person should bring his medical card to a doctor to be signed have proved almost entirely ineffective, and, as a rule, insured persons only do so when they require treatment, and others apply for treatment who are entitled to medical benefit but have not received medical cards. This treatment by the unwritten law of our profession we are bound to give, and we shall continue to give it. Also we cannot but continue to regard it as pure charity.

5. The present system enables us to calculate neither the extent of our liabilities nor the limits of our income from industrial practice, and, even if it was admitted to be a fair distribution of the available funds, ought to be replaced by a more businesslike procedure.

SURREY.

PANEL COMMITTEE.

THE monthly meeting of the county of Surrey Panel Committee was held at the Surbiton Cottage Hospital on January 18th, when Dr. LYNDON was in the chair.

Drugs and Appliances.—A letter was read from the Insurance Commissioners stating that the cost of drugs and appliances in connexion with the treatment of insured persons not within the scope of medical benefits, or not ordered by the practitioner or his deputy giving treatment under the Act, could not be met out of the funds of the Insurance Committee. The Secretary was instructed to inquire of the Commissioners whether treatment in a cottage hospital or a general hospital was to be considered within the scope of medical benefit.

Assignment of Insured Persons.—In reply to a letter from the County Committee the Panel Committee expressed the opinion that an insured person should be assigned to the nearest resident physician.

Medical Referees.—On the motion of Dr. ELLIS, seconded by Dr. HODGSON, it was unanimously resolved:

> That in the opinion of the Surrey Panel Committee no practitioner called upon to act as a medical referee should accept a less fee than half a guinea for each examination.

In view of difficulties which had arisen through the medical referees of an approved society visiting insured patients without informing the medical practitioner in attendance, it was decided to point out to the Insurance Committee of the British Medical Association the difficulties arising in connexion with the society owing to the small fees offered to medical referees, and of the absence of notice to the practitioner in attendance.

Special Mileage Fund.—It was decided again to submit to the County Insurance Committee a scheme for the distribution of the Special Mileage Fund.

New Pharmacopoeia.—The Secretary was instructed to amend the pharmacopoeia according to the *British Pharmacopoeia* 1915. and to indicate that all prescriptions were to read as *B.P.* 1915. Copies of the pharmacopoeia were directed to be sent to all the chemists having agreements with the Insurance Committee in addition to the practitioners on the panel.

NORTHAMPTONSHIRE.

PANEL COMMITTEE.

A MEETING of the Northamptonshire Panel Committee was held at Northampton on January 26th.

Selection of Doctor.—On the motion of Dr. ROBB, seconded by Dr. HOPE, it was resolved:

> That it be a recommendation from this Committee that a slip, printed in red ink, be attached on the outside of every new medical card or transfer, intimating that insured persons must take their cards at once to the doctor of their choice, or difficulties may arise in procuring medical attendance.

Complaints.—A letter was read from the Clerk to the Insurance Committee reporting the receipt of complaints from several doctors that patients had been taken off their late doctor's list on December 31st, and were not in time to let the new doctor have credit for them for the current quarter. The Clerk suggested that in the circumstances a period of grace of fourteen days or a month might be allowed, during which time transfers might be accepted by doctors, to be credited as for the current quarter. The Committee considered that the period of grace should be a month.

Medical Referees.—It was reported that several practitioners in the county had been asked by approved societies to accept appointments as referees at a smaller fee than 10s. a case for examination and report. It was decided to issue a circular pointing out that the Local Medical Committee would view any acceptance of such appointments with grave disapproval, and would feel obliged to report any cases of which it had cognizance to the Local Ethical Committee.

Scrutiny of Prescriptions.—Dr. ROBB reported that a conference had taken place with representatives of the Insurance and Pharmaceutical Committees to discuss the advisability of a continuous statistical record of prescribing, and had recommended:

> That a scrutiny and analysis be carried out, provided that the Insurance Committee pay one half of the expense, the other half to be borne equally by the Panel and Pharmaceutical Committees.
>
> That, commencing with the prescriptions from January 1st, 1915, a chemist be engaged to carry out the work of checking and analysis of prescriptions (not exceeding a total of 150,000 per annum) at a salary of £100 per annum, payable quarterly, and subject to one quarter's notice to terminate his engagement.
>
> His duties to consist of:
>
> 1. Checking of charges on prescriptions and account forms and preparing summary of accounts so checked.
> 2. Report on prescribing, drawing attention to cases of apparent excess in expense or quantity of medicine.
> 3. Statistical chart, showing number of prescriptions by each doctor, cost of drugs prescribed, average cost per script of each doctor, excess cost of practitioners who are above the general average.
> 4. Generally advising the Committee on technical points connected with prescribing and dispensing and tariff.

Dr. Robb's report was adopted.

SOUTHPORT.

PANEL COMMITTEE.

A MEETING of the Southport Panel Committee was held on January 28th.

Allocation of Unallotted Insured Persons.—The draft scheme of the Insurance Committee, under Article 21 (4) and 35 (1) of the Medical Benefit Regulations, for the allocation of unallotted insured persons, was considered. The Secretary was instructed to intimate to the Insurance Committee that the Panel Committee agreed generally to the arrangements, but to point out some matters of detail which would require altering.

Scrutiny of Prescriptions.—The detailed report of the examiner of prescriptions was considered. The Secretary was instructed to write to those doctors whose prescriptions were above the average in price, pointing out the necessity for more care.

BOLTON.

LOCAL MEDICAL AND PANEL COMMITTEE.

A MEETING of the Bolton Local Medical and Panel Committee and a practitioners' meeting were held at Acresfield on January 22nd, when Sir THOMAS FLITCROFT was in the chair.

Local Pharmacopœia. — Ten prescriptions for stock mixtures, selected from a list of twenty compiled by a special subcommittee, were adopted by the meeting of practitioners.

Scrutiny of Prescriptions.—The report of the Pharmaceutical Committee contained charges of over-prescribing against thirty-seven practitioners. After discussion, the report was referred back in order that the cost of prescribing drugs might be distinguished from that of malt and oil, and emulsions of cod-liver oil, which were considered to be the chief cause of over-expenditure.

Medical Men on Military Service.—The Secretary was instructed to request the Clerk of the Insurance Committee not to transfer any insured person on the list of a practitioner serving with the colours, and to replace any so transferred. The resolution, previously passed, to attend such patients on behalf of those practitioners was reaffirmed.

Allocation of Insured Persons.—The scheme for the allocation of the residue of insured persons passed for 1913 was adopted for 1914.

Free Medical Attendance on Necessitous Dependants of Men Serving with the Forces.—A communication was read from the Secretary of the Branch of the British Medical Association stating that gratuitous attendance should be given only to those dependants who had become necessitous through the war. The meeting instructed the Secretary to write to the Committee responsible for the administration of the service asking them to exercise greater care in issuing the prescription books to the dependants, as dependants had come for treatment whose financial state had improved on account of the war.

Intermediate Certificate.—The Secretary was instructed to intimate to the Insurance Committee the opinion that the insured person should not be compelled to have the intermediate certificate issued on any one particular day in the week, as such a proceeding caused inconvenience both to the insured person and to the practitioner.

GLAMORGAN.

PANEL COMMITTEE.

A MEETING of the Glamorgan Panel Committee was held on January 21st, when Dr. W. E. THOMAS was in the chair.

Payments to Practitioners.—A discussion took place in regard to the intention of the Insurance Committee to pay only half of the money due last quarter, and Dr. MCCREA moved that a protest be addressed to the Insurance Commissioners and the Insurance Committee against the reduction of 50 per cent. to meet a possible reduction caused by soldiers having enlisted. The CHAIRMAN having pointed out that the Insurance Committee did not mean to halve the cheques but were waiting for information from the Government, the proposition was negatived.

Examination of Prescriptions.—It was agreed to pay one-third of the cost of the examination of prescriptions for 1914, the Insurance Committee and Pharmaceutical Committee each paying one-third.

Vacancies on Panel and Local Medical Committees.—Dr. R. M. Moynan (Cowbridge) was elected for the Bridgend district, and Dr. J. Walters for one of the vacancies in Neath district.

Report and Balance Sheet.—The report and balance sheet to December 31st, 1914, presented by the SECRETARY, were accepted and signed by the Chairman.

WEXFORD.

LOCAL MEDICAL COMMITTEE.

Medical Certification under the Insurance Act.

THE County Wexford Local Medical Committee at its meeting on January 27th condemned very strongly the present arrangement made for medical certification for sickness benefits by the Irish Insurance Commissioners and in connexion therewith unanimously agreed to forward the following statement of objections to the Right Hon. A. Birrell; M.P., and the Irish Local Government Board:

Statement.

The County Wexford Poor Law medical practitioners desire to point out to the Local Government Board that the arrangements made by the Irish National Health Commissioners for the medical certification of sickness benefits under the Insurance Act for sick insured persons, including Poor Law patients, make it impossible for us to treat with efficiency our Poor Law insured patients for amongst other reasons the following:

1. Unnecessary medical examinations and disturbance of surgical dressings by a medical certifier who is not the medical attendant.
2. Our Poor Law insured patients believe, rightly or wrongly, that it would prejudice their chances of receiving sickness benefits if they put the Insurance medical certifier to the inconvenience of visiting them at their homes for the purpose of medical certification, and owing to this belief undertake at great risk, when in a delicate and convalescent state of health, long journeys to meet the convenience of the medical certifier, who, in most cases, lives a long distance outside the dispensary district in which the Poor Law insured patients reside.
3. The medical certifier, appointed by the Insurance Commissioners, is only bound to visit a dispensary district once a week, so that there must occur a long delay before the Poor Law insured patients receive the necessary monetary assistance in the early and important stages of their illnesses, and now that Boards of Guardians consider themselves no longer under the obligation to provide provisional relief for insured Poor Law patients leaves such patients without the means of sustenance for, under the circumstances, a comparatively long time.
4. It is obvious that the medical certifier appointed by the Irish Insurance Commissioners who has only an opportunity of seeing insured sick patients once a week, and that without the co-operation of the medical attendant, is not in a position to form a proper estimate of the insured patient's illness, and in this way, for one reason, may be accounted the large number of deserving cases who are refused sickness benefits under the Insurance Act in Ireland, while on the other hand many undeserving cases receive such benefits.
5. The Irish Insurance Commissioners in their circular letter of December 23rd, 1914, to the secretaries of approved societies in Ireland, recognizing the shortcomings of the medical certification system, urge on the societies the necessity of supplementing it by a system of lay visitors who are to visit the sick insured. These lay visitors will be a source of irritation to our patients, as they will, of course, act independently of the medical attendant, and they will be also a fertile source of conveying infection in certain cases.

We believe that Poor Law medical officers who undertake to certify insured persons under the Insurance Act for three or four adjoining dispensary districts, in addition to their own Poor Law patients, can only do so by neglecting the medical treatment of their Poor Law patients, and that if the Local Government Board consent to sanction such an arrangement it is most unfair to their Poor Law medical officers who refuse such appointments from the Commissioners, for one reason, because their acceptance would interfere with the efficient treatment of the sick poor of their districts. In this respect we would also point out to the Local Government Board their refusal, in the interests of the sick poor, to allow one dispensary or workhouse doctor to do locum tenens for another, even in the summer months, when sickness is at its lowest.

INSURANCE COMMITTEES.

LONDON.

Drug Fund Deficiency.

IT was reported at the meeting of the London Insurance Committee on January 28th that the amount available for the payment of chemists for the medical year 1914 would be about 75 per cent. of the total of the accounts submitted, the deficit being approximately £46.000.

Mr. EDWARD SMITH said that if it were true that the chemists had no power under the Act of making any claim for payment of the balance due to them, the attention of the Committee and the public should be drawn to the matter.

Mr. J. CROSSMAN, Chairman of the Finance Subcommittee, promised a full report at the next meeting of the Committee. He admitted that the position was serious, for the chemists had not only given of their skill but had supplied goods for which they themselves had paid hard cash. Having made a contract with the chemists, the Committee should find some means by which they could be paid.

Discrepancies in Lists of Insured Persons.

The Medical Benefit Subcommittee recommended that a payment twice a quarter be made to practitioners at the rate of 9d. each payment instead of 10d. (See report of the London Panel Committee, SUPPLEMENT, January 30th, p. 37.)

Dr. H. H. MILLS, in moving this, mentioned that the reason for the step was that there were on doctors' lists on January 1st 1,550,000 insured persons, whereas the capitation fees available only represented 1,488,000 insured persons. Under strong protest the Panel Committee had concurred in the suggested rate of payment on the understanding that it was a payment on account and a temporary measure. The discrepancy between the two totals was largely due to the fact that adjustments had not been made in respect of many insured persons now serving with the forces.

Dr. B. A. RICHMOND remarked that the total number of insured persons on doctors' lists, though 62,000 in excess of the number of which the Insurance Committee had official cognizance, could not represent the total number of insured persons in London (for whom practitioners on the panel were entitled to receive payment), because there were still probably 100,000 insured persons who had not chosen a doctor, and whose names, therefore, did not appear on any doctor's list. This position caused a great deal of friction and difficulty in the administration of medical benefit, and he urged the imperative necessity of an early revision of the register at the offices of the Insurance Committee.

The recommendation of the Subcommittee was then approved.

Delay in considering Complaints against Practitioners.

The Insurance Commissioners notified the Committee that in two cases in which representations had been made by the Committee that the continuance of practitioners upon the panel would be prejudicial to the efficiency of the medical service, that representation had been upheld, and the names had been removed from the panel. It was pointed out that nearly six months had elapsed from the time the incidents occurred which led to the Commissioners' decision to the date of the removal of the practitioners' names from the panel. Mr. O. E. WARBURG said that representations had been made to the Commissioners as to the advisability of speeding up the procedure, and Dr. B. A. RICHMOND suggested that in these cases practitioners should be suspended and locumtenents provided.

CORRESPONDENCE.

DEPARTMENTAL COMMITTEE ON SICKNESS CLAIMS.

PANEL DOCTOR writes: The conclusion of the Departmental Committee on Sickness Claims in regard to excess is founded, of course, on the evidence of all the witnesses. May I ask if referees were represented or asked to give evidence? While I do not suggest that non-panel referees (and there are some) are likely to be biassed any more than panel men, I do contend that their reports are very important evidence as to the care and accuracy shown in our certificates. I contend further that seldom does a referee find out as much of a patient's condition as his panel doctor; as I hear now the fees are down to 2s. 6d. The deduction so easily drawn from referees' figures that because a patient refuses to see the referee or is declared fit by him, he necessarily returns to work, is not always correct.

So far I do not remember a single patient who, though declared fit by the referee and struck off by the society, has returned to work. Will readers draw their own deductions?

INSURANCE NOTES.

ARRANGEMENTS WITH UNQUALIFIED PERSONS.

THE question of insured persons being allowed to make their "own arrangements" with a herbalist, which has been discussed on several previous occasions by the Worcester Insurance Committee, came before that body again on January 26th. The chairman, Mr. R. R. Fairbairn, said that there were only two applications this year as compared with six last year; and moved that they be granted.

Dr. Bennett asked if any member of the Committee could say seriously that it was for the benefit of the insured person to be treated by a gentleman who, though no doubt very estimable, could not have had the necessary experience to deal with all manner of cases which might arise? Mr. E. T. Bennett spoke in the same sense, and Dr. Moore Ede asked whether the present applications stood on all fours with those of last year, because since then the herbalist had been concerned in several legal actions.

Dr. Mabyn Read, Medical Officer of Health, said that such unqualified treatment was detrimental to the health of the community. As tuberculosis officer he could bring one instance in which the individual became so ill with that disease that she probably communicated it to another person.

Dr. Neville Crowe quoted an instance in which a man with advanced consumption was told by the unqualified medical man that there was nothing the matter with his lungs.

Dr. Bennett pointed out that in the section which allowed people to choose unqualified medical men the word treatment was used. Was not Mr. Burden's defence in the recent case that he did not give "treatment"?

The Chairman objected that the Committee could not retry any case unless it had very strong grounds for doing so; it should not dispute the right of these persons. The resolution to allow the applicants to make their own arrangements was carried by 9 votes to 8.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Deputy Surgeon-General OCTAVIUS W. ANDREWS to the *Prince George*, vice Fleet Surgeon A. G. Andrews. Fleet Surgeon WALTER H. O CARDE, F.R C.S., to the *Revenge* (old), vice Deputy Surgeon-General Andrews. Fleet Surgeon WILLIAM ERNEST MARSHALL has been placed on the retired list. Surgeon M. F. CALDWELL to the *Vivid*, additional, for disposal. Temporary Surgeons ARTHUR G EVANS, M.B, to the *Pembroke III.* for R.N. Air Service; JAMES GRIMOLDBY, ALEXANDER N. POLLOCK, M.B, JAMES D BANGAY, to the *Pembroke*, additional, for Chatham Hospital; NOEL P. PRICE, DAVID SUTHERLAND, M B, LEWIS S. FRY, to the *Victory*, additional, for Haslar Hospital; JOHN G. WATKINS, CHARLES H. GOULD, to the *Vivid*, additional, for Plymouth Hospital; LIONEL F. STRUGNELL and GEORGE L. RANKING to the *Victory*, additional, for disposal; FREDERICK A. WILLIAMSON to the *Pembroke*, additional, for disposal; WILLIAM H. WATSON-CHEYNE to the *Soudan* hospital ship; JAMES S. JOBSON, M.B., F.R.C S., to the *China*, hospital ship, vice Watson Cheyne; WILLIAM LANDERSON to the *Pembroke III*, for R.N. Air Service. To be Temporary Surgeons: W. B. CUNNINGHAM, M B., W. L. CLEGG, M.B., A. G. STEWART, M B, D. S. MACKNIGHT, M.B., D. R. SIVRIGHT, G. S. ASPINALL.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon THOMAS TURNER to the *Pembroke*, additional, for Chatham Hospital. Surgeon Probationer WILLIAM J. HUNTER to the *Goshawk*, vice Gasperin. To be Surgeon Probationers: NEIL MACLEOD, DONALD STEWART.

ARMY MEDICAL SERVICE.

COLONEL R. PORTER is retained on the active list under Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary.

ROYAL ARMY MEDICAL CORPS.

Captains to be Majors: ALBERT E. B. WOOD, M.B., JAMES B. MELDON, M.B., CHARLES BRAMHALL, HENRY T. STACK, M.B.

Lieutenants to be Captains: BASIL H. H. SPENCE, M.B., WILLIAM B. LAIRD, ROBERT DAVIDSON, M.B., HERBERT S. BLACKMORE, JAMES M. ELLIOTT, M B., FRANCIS R. B. SKRIMSHIRE, DOUGLAS W. BRUCE, M.B., THOMAS E. OSMOND, RICHARD T. VIVIAN, EDWARD G. H. COWEN, M.B., LEONARD BUCKLEY, M.B., WILLIAM L. WEBSTER, M.B., EDWARD B. ALLNUTT, STANLEY P. SYKES, HARRY C. TODD, M.B., HENRY J. G. WELLS, M B., ERNEST C. DEANE, FRANK S. TAMPLIN, IVOR R. HUDLESTON, WILLIAM STEWART, M.B., ALEXANDER G. J. MACILWAINE, ARTHUR S. HEALE.

The following officers of the Home Hospitals Reserve are granted the temporary rank of Captain: J. E. MOORHOUSE, M.D., D. M. BARRY, A. B. LEAKEY, M.B.

To be temporary Captains: Lieutenant ROBERT H. COOPER, CHARLES R. STEWART, HENRY W. KAYE.

To be temporary Lieutenants whilst serving with the Red Cross Hospital, Netley: DONOVAN B. PASCALL, WALTER G. MARSDEN (substituted for the notification which appeared in the *London Gazette* of January 18th).

To be temporary Lieutenants: ALFRED S. TAYLOR, M.B, EDWARD FORBES, M.B., ROBERT H. HUTCHINSON, WILLIAM H. CLEMENTS, JAMES D. DRIBERG, ERNEST L. M. HACKETT, CONWY L. MORGAN, M.D., ANTHONY H. CORLEY, RALPH A. HUGHES, M.D., HAROLD B. DAY, M.D., HAROLD KEMPSEY, M.B., THOMAS B. MARSHALL, M.B., DANIEL BROUGH, M.B., EDWARD V. R. FOOKS, THOMAS L. BUTLER, GEORGE F. DARKER, M.D., HERBERT E. CLARKE, ROBERT W. GREATOREX, M.B., HOWARD G. PESEL, M.D., ROBERT C. LEONARD, M.D., JEROME O'FLYNN, M.B., BERNARD C. TENNENT, M.D, ARTHUR RILEY M.B., FREDERICK HARRIS, M.B, WILLIAM E. DAVID, M.B., WALTER T. JAMES, M.B., ROBERT K. NISBET, THOMAS MARRON, M.B., HENRY S. DE BOER, GEORGE A. C. GORDON, M.B., DAVID HERON, F.R.C.S.E., HUMPHREY R. POLLOCK, CYRIL A. SMALLHORN, M.B., BERNARD E. WALL, M.B., ROBERT J. D'A. IRVINE, M.B., FINBAR J. HUNT, M.B., ALBERT JONES, M.D., ROBERT F. JONES, ROBERT Y. STONES, M.B., F.R.C.S.E., GEORGE O. MAW, ARTHUR HINES, M.B., WALTER WINSLOW, M.B., DOUGLAS GREEN, M.B., F.R.C.S, ARTHUR C. D. FIRTH, M.D., CYRIL BANTING, M.D., F.R.C.S., CLAUDE H. PHILLIPS, THOMAS J. KELLY, CLIVE J. H. SHARP, M.B., CHARLES F. O. WHITE, ROBERT C. BEGG, M.B., ERNEST S. DIXON, M.B., MAURICE MACKENZIE.

The following have relinquished their temporary commissions with the Allied Forces Base Hospital: Captain NORMAN DUGGAN, Captain SIDNEY B. RADLEY, Lieutenant DOUGLAS E. DERRY, Lieutenant ROBERT H. LISCOMBE, M.D.

INDIAN MEDICAL SERVICE.

THE services of Major S. P. JAMES, I.M.S., have been replaced temporarily at the disposal of His Excellency the Commander-in-Chief in India.

Major S. R. CHRISTOPHERS, M.B., I.M.S., has been appointed, substantive *pro tempore*, as Director, Central Research Institute, Kasauli.

The promotion of Major A. MURPHY, I.M.S., to his present rank has been antedated to December 27th, 1912.

Captain H. W. ACTON, I.M.S., Health Officer, Simla, has been appointed to hold charge of the current duties of Civil Surgeon, Simla East, in addition to his own duties.

Captain C. I BRIERLEY, I.M.S., Civil Surgeon, Peshawar, has been appointed to hold charge of the office of Agency Surgeon, Khyber, in addition to his own duties, with effect from December 1st, 1914.

VINAVAK MAHADEO PHATAK is appointed to be a temporary Lieutenant with effect from October 8th, 1914.

Lieutenant-Colonel A. C. YOUNAN, M.B., has been permitted to retire from the service with effect from January 1st.

Lieutenant Colonel W. E SCOTT-MONCRIEFF, I.M.S.(ret.), on recall to duty has been posted to Quetta as Civil Surgeon.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) Sanitary Company.—WILLIAM D. FRASER, late Surgeon-Captain, Rand Rifles, to be Lieutenant.

Second Southern General Hospital.—ROBERT J. IRVING, M.B., F.R.C.S.E., to be Lieutenant.

Third Southern General Hospital. - Major ARTHUR P. DODDS-PARKER, M.B., F.R.C.S., to be Lieutenant-Colonel, temporary. Captain ROBERT RITSON, to be Major, temporary.

South-Eastern Mounted Brigade Field Ambulance.—CHARLES E. SILVESTER, M.B , late Surgeon-Captain, Burma Valley Light Horse, to be Lieutenant.

Third Home Counties Field Ambulance.—Captain WILLIAM D. STURROCK, M.D., from the Attached List for the Territorial Force to be Captain, temporary.

Second South-Western Mounted Brigade Field Ambulance.—Major JOHN R BENSON, F.R C.S., to be Lieutenant-Colonel, temporary.

Third South Midland Field Ambulance.—Lieutenant JAMES G. MCLANNAHAN, from Attached to Units other than Medical Units, to be Lieutenant.

North Midland Mounted Brigade Field Ambulance.—ARTHUR W. MCCLELLAND, M.D., to be Lieutenant.

Third West Riding Field Ambulance.—Lieutenant ERNEST WHITE, from Attached to Units other than Medical Units, to be Lieutenant.

First Northern General Hospital.—JAMES L WILSON, M.B., late Second Lieutenant, Unattached List for the Territorial Force, to be Captain, whose services will be available on mobilization.

Scottish Horse Mounted Brigade Field Ambulance. — JOHN E. LASCELLES to be Lieutenant.

Fourth Scottish General Hospital.—Lieutenant JAMES H. MARTIN, M.D., from Attached to Units other than Medical Units, to be Captain, whose services will be available on mobilization.

Sanitary Service.—Major CHARLES M. FEGEN, from the Second London Sanitary Company, to be Sanitary Officer.

Supernumerary for Service with the Officers' Training Corps.—To be Lieutenants for service with the Medical Unit, University of London Contingent, Senior Division, Officers' Training Corps: WILLIAM GILLIATT, RICHARD D. MAXWELL, M.B., JOHN H. RYFFEL.

Attached to Units other than Medical Units.—Captain LAWRENCE C. V. HARDWICKE, M.B. is seconded. Lieutenant GERALD R. RICKETT, M.D., to be Captain, temporary. Lieutenant PATRICK BLACK resigns his commission. Lieutenant GEORGE F. R. SMITH, M.B., is seconded. Lieutenant KENNETH MACKINNON, M.B., resigns his commission. To be Lieutenants: EVAN D. RICHARDS, GERALD A. CHILD, JOSEPH P. TAGAN.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

MAJOR AND HONORARY SURGEON-LIEUTENANT-COLONEL ALFRED REES, from Attached to Units other than Medical Units, to be Major.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six large English towns 8,938 births and 6,693 deaths were registered during the week ended Saturday, January 30th. The annual rate of mortality in these towns, which had been 19.4, 18.8, and 18.0 per 1,000 in the three preceding weeks, rose to 19.2 per 1,000 in the week under notice. In London the death-rate was equal to 20.3, against 20.1, 19.6, and 18 4 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 9.9 in Swindon, 10.3 in Edmonton, 11.3 in Grimsby, 11.7 in Hornsey, 13.1 in Wimbledon, and 13.6 in Leyton, to 28.0 in Darlington, 28.8 in Merthyr Tydfil, 29.1 in Wigan, 30.0 in Ipswich, 30.3 in Rotherham, and 32.6 in Carlisle. Measles caused a death-rate of 2.1 in St. Helens, 2.3 in Newport (Mon.), 2.6 in Stockton-on-Tees and in Gateshead, 2.7 in Plymouth, 3.1 in Newcastle-on-Tyne, 4.0 in Rotherham, 5.1 in Wigan, and 7.0 in Darlington, and whooping-cough of 1.4 in Bristol, 1.6 in Brighton, 1.7 in Tynemouth, 1.9 in Dewsbury and in Barnsley, 2.0 in Sunderland, 2.4 in Rotherham, 2.8 in Bootle, and 4.3 in Merthyr Tydfil. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 63, or 0.9 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 15 were recorded in Birmingham, 7 in Liverpool, 6 in Gateshead, 3 each in Nottingham, St. Helens, and Darlington, and 2 each in London, Southend, Rochdale, Halifax, Sunderland, and Tynemouth. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 4,153, 3,952, and 3,836 at the end of the three preceding weeks, further fell to 3,647 on Saturday, January 30th; 326 new cases were admitted during the week, against 321, 338, and 308 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,196 births and 1,009 deaths were registered during the week ended Saturday, January 30th. The annual rate of mortality in these towns, which had been 24.5, 22.8, and 21.7 per 1,000 in the three preceding weeks, rose to 22.4 in the week under notice, and was 3.2 per 1,000 above the rate in the large English towns. Among the several towns the death-rate ranged from 8.8 in Motherwell, 15.2 in Clydebank, and 16.2 in Perth, to 28.4 in Coatbridge, 33.5 in Dundee, and 39.5 in Falkirk. The mortality from the principal infective diseases averaged 2.8 per 1,000, and was highest in Kilmarnock and Dundee. The 447 deaths from all causes in Glasgow included 45 from whooping-cough, 8 from infantile diarrhoea, 6 from scarlet fever, 3 from enteric fever, and 3 from diphtheria. Twenty-five deaths from whooping-cough were recorded in Dundee, 4 in Edinburgh, and 2 each in Aberdeen, Leith, and Motherwell; from measles, 3 deaths in Dundee and 2 in Greenock; from scarlet fever, 2 deaths in Paisley; and from diphtheria, 2 deaths in Edinburgh and 2 in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, January 23rd, 665 births and 557 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 693 births and 568 deaths in the preceding period. These deaths represent a mortality of 24.0 per 1,000 of the aggregate population in the districts in question, as against 24 4 per 1,000 in the previous period. The mortality in these Irish areas was therefore 6.0 per 1 000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28.6 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 27.7 (as against an average of 29.3 for the previous four weeks), in Dublin city 30.0 (as against 31 5), in Belfast 20.2 (as against 22.0), in Cork 37.4 (as against 24.5), in Londonderry 19.0 (or the same as in the previous period), in Limerick 12.2 (as against 23.3), and in Waterford 26.6 (as against 28.5). The zymotic death-rate was 1.5 as against 2.1 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDARE URBAN DISTRICT COUNCIL. — Assistant School Medical Officer. Salary, £350 per annum.

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—House-Surgeon. Salary, £150 per annum.

BATH: EASTERN DISPENSARY.—Resident Medical Officer (lady). Salary, £140 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—(1) Resident Medical Officer. (2) Resident Surgical Officer. Salary, £80 per annum each

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill. — Junior Assistant Medical Officer (female). Salary, £200 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary, £150 and 130 per annum respectively.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRADFORD CITY.—Two Medical Officers in connexion with child welfare scheme. Salary, £350 per annum each.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—(1) House-Physician. (2) Junior House-Surgeon. (3) Assistant House-Surgeon. Salaries, £80 per annum.

BRISTOL EYE HOSPITAL. — House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £200 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY; VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary, £100 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Surgeon. Salary, £180 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Salary, £75 per annum.

COLCHESTER: ROYAL EASTERN COUNTIES' INSTITUTION FOR IMBECILES AND THE FEEBLE-MINDED.—Lady Medical Officer. Salary, £200 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—House-Physician. Salary, £110 per annum.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands. — Junior Assistant Medical Officer. Salary, £250 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

EAST LONDON HOSPITAL FOR CHILDREN. Shadwell, E.—(1) Resident Medical Officer. (2) House-Physician. (3) House-Surgeon.

EDINBURGH: ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.—Four Resident Medical Officers.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—(1) Senior House-Surgeon. (2) House-Physician. (3) Assistant House-Surgeon. Salary for (1), £250 per annum; and for (2) and (3), £150 per annum.

GLOUCESTER COUNTY ASYLUM, Barnwood.—Assistant Medical Officer (male). Salary, £250 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. (Males.) Salary, £120 and £100 per annum respectively.

HAMMERSMITH PARISH.—Second Assistant Medical Officer for the Infirmary and Workhouse. Salary, £130 per annum, increasing to £150.

HOSPITAL FOR DISEASES OF THE SKIN, Stamford Street, S.E. —Clinical Assistant.

HUDDERSFIELD COUNTY BOROUGH. — Medical Inspector of School Children. Salary, £300 per annum.

HULL: VICTORIA CHILDREN'S HOSPITAL. — Lady House-Surgeon, also Lady Assistant House-Surgeon, salary £60 and £50 per annum respectively; or one male House-Surgeon, salary £60 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

LEEDS: HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary at the rate of £50 per annum.

LEEDS UNIVERSITY.—Demonstrator of Bacteriology. Salary, £250 per annum.

LEICESTER EDUCATION COMMITTEE. — Temporary Assistant Medical Officer. Salary, £300 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Two Resident House-Physicians. Salary, £30 for six months each.

LONDON LOCK HOSPITAL, Dean Street, W.—(1) House-Surgeon. Salary at the rate of £100 per annum. (2) Honorary Anaesthetist.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Honorarium, £100 per annum.

MANCHESTER CORPORATION.—(1) Second and Third Medical Assistants at the Monsall Fever Hospital, salary £175 and £150 per annum respectively. (2) Two Assistant Tuberculosis Medical Officers, salary £350 per annum each.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and upon promotion to £450.

MANCHESTER EDUCATION COMMITTEE.—Two Assistant School Medical Officers. Salary, £300 per annum, rising to £450.

MANCHESTER: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—(1) Resident Surgical Registrar. (2) Two House-Surgeons. Salary for (1) £90 per annum, and for (2) £70 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary, £85 per annum.

NATIONAL SANATORIUM, Benenden. — Medical Superintendent. Salary, £350 per annum, rising to £500.

NEWPORT: ROYAL GWENT HOSPITAL. — Resident Medical Officer. Salary for first six months at the rate of £100 per annum, rising to £150.

NORTHAMPTON COUNTY ASYLUM. — Second Assistant Medical Officer. Salary, £250 per annum, rising to £300.

NOTTINGHAM GENERAL HOSPITAL. — Senior House-Physician. Salary, £120 per annum.

OLDHAM ROYAL INFIRMARY.—Second House-Surgeon. Salary, £120 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W. — House-Surgeon. Salary, £80 per annum.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

PLAISTOW: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £10 honorarium on completion of six months' service.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL. — House-Surgeon. Salary, £150 per annum.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

PLYMOUTH INCORPORATION OF GUARDIANS.—Resident Assistant Medical Officer for the Workhouse and Infirmary. Salary, £250 per annum.

ROCHDALE INFIRMARY AND DISPENSARY. — Second House-Surgeon. Salary, £125 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Temporary Honorary Assistant Physician. (2) Second Resident Medical Officer; salary, £100 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon. Salary, £100 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary, £120 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY. — Junior House-Surgeon (male). Salary, £115 per annum.

STOKE-ON-TRENT EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill. — (1) House-Physician (male). (2) House-Surgeon. Salary, £150 per annum, rising £10 annually.

STROUD GENERAL HOSPITAL.—House-Surgeon, Salary, £120 per annum.

TRURO: ROYAL CORNWALL INFIRMARY. — House-Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.— House-Surgeon. Salary, £100 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £110 per annum.

WALTHAMSTOW URBAN DISTRICT COUNCIL.—Resident Medical Officer for the Hospital for Infectious Disease. Salary, £250 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL. — (1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford. — Junior House-Surgeon. Salary, £100 per annum.

WHITECHAPEL UNION INFIRMARY.—Second Assistant Resident Medical Officer (male). Salary, £200 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY. — Junior Lady House-Surgeon. Salary, £130 per annum.

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

GUTHRIE, Douglas, M.D., F.R.C.S., Temporary Surgeon to the Edinburgh Ear and Throat Infirmary.

IBOTSON, E. C. B., M.D.Lond., District Medical Officer of the Dolgelly Union.

MEACHER, George N., M.D.Lond., Medical Officer to the Sherburn Hospital, near Durham.

MITCHELL, A. Philp, M.D., Ch.M., F.R.C.S.Edin., temporary Assistant Surgeon, Chalmers Hospital, Edinburgh.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

FINLAY.—On December 17th, at Wells Dene, Gloucester, the wife of Douglas E. Finlay, M.B., B.S., London (Lieutenant R.A.M.C.T.), of a son.

HAY.—On January 28th, at 20, St. James's Place, S.W., the wife of Kenneth R. Hay, M.B., of a son.

SWAN.—On January 21st, the wife of A. T. Swan, M.D., of 1, Cadogan Terrace, South Hackney, N.E., of a daughther.

MARRIAGES.

NEVE—PEDLEY.—On January 30th (very quietly), at St. James's Church, Croydon, by the Rev. C. A. Neve, father of the bridegroom, assisted by the Rev. A. St. John Thorpe, B.A., brother-in-law of the bride, and the Rev. A. J. Easter, A.K.C., Clement Treves Neve, M.B., F.R.C.S., only son of the Rev. C. A. and Mrs. Neve, of Haydon Vicarage, Sherborne, Dorset, to Elsie, younger daughter of R. Denison Pedley, F.R.C.S.Ed., L.D.S., and Mrs. Pedley, of Croydon.

TENNENT—WALLACE.—On Christmas Day, at the Presbyterian Church, Penang, by the Rev. Wm. Cross, M.A., J. Hall Tennent, M.B., Ch.B., Acting Medical Officer, Kulim, South Kedah, to Florinda, daughter of James Wallace, Lisadian, co. Armagh.

DEATHS.

BODGER.—On Sunday, January 24th, at the Smallwood Hospital, Redditch (after operation), Isabella, the beloved wife of Dr. S. Bodger, Studley, S.O., Warwickshire.

EXHAM.—On February 1st, at 1, Mutley Park Villas, Mannamead, Plymouth, Colonel Richard Exham, C.M.G., late R.A.M.C., eldest son of the late Thomas Exham, Esq., of Monkstown, Cork.

HORN.—On Wednesday, January 27th, at "Gildencroft," St. Faith's, Norwich, Sophia Jane, the beloved wife of Robert J. Horn, surgeon.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W., at 8.30 p.m.—Sir Victor Horsley, F.R.S., will introduce a discussion on Gun-shot Wounds of the Head, to be followed by Sir David Ferrier, M.D., F.R.S., Mr. R. Warren, Mr. W. H. Jessop, Mr. L. B. Rawling, and others.

WEDNESDAY.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell Street, E.C., 9 p.m.—Annual Oration by Dr. H. Russell Andrews: William Hunter's Work on Midwifery.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

CLINICAL SECTION, 8 p.m.—Cases.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Courses are to be given next week at the following schools, colleges, and hospitals:

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		FEBRUARY.
5	Fri.	Committee of Chairmen of Standing Committees (Special War Emergency), 2.30 p.m.
11	Thur.	London: Insurance Act Committee, 2 p.m.
18	Thur.	London: Insurance Act Local Medical and Panel Subcommittee (provisional).

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 13TH, 1915.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Branches and Divisions, until the subjects have been discussed by the Branch or Division to which he belongs.

BY ORDER.

MATTERS REFERRED TO BRANCHES AND DIVISIONS.

WAR EMERGENCIES.

AT the meeting of the Council of the Association on January 27th, as was mentioned last week, Dr. John Adams, a member of the Scottish Medical Service Emergency Committee, called attention to the work of that Committee, which has been formed to deal with difficulties due to the withdrawal of so many medical men from civil practice to serve with the forces. In view of the known existence of difficulties of a similar nature in other parts of the United Kingdom, the Council decided to refer the question, as it affected other parts of the United Kingdom, to a committee composed of the Chairmen of Standing Committees of the Association, with instructions to take such action as might be deemed advisable.

At a meeting of this Committee on February 5th a preliminary discussion took place, and ultimately it was decided to ask the Divisions and Branches to give immediate attention to the difficulties caused or likely to arise owing to the shortage of doctors for the treatment of civilians, and in particular to consider the advisability of instituting local arrangements for the treatment of patients of doctors absent on naval or military duty, where this has not already been done, and to discuss the basis on which money arising from practice, private or otherwise, should be divided between the absent doctor and his substitute.

The Committee desires to draw the attention of Divisions and Branches to the plan adopted in Scotland in this connexion, as set out in the Statement drawn up by the Scottish Medical Service Emergency Committee at its meeting in the Royal College of Physicians of Edinburgh on January 9th. The Statement was published in full on the first page of the SUPPLEMENT to the JOURNAL of January 16th.

The Scottish Emergency Committee, while recognizing that in many, perhaps most, cases there are special circumstances with which it is not possible to deal in a general way, yet thought that some advice on the general principles which should be followed for the carrying on of the practices of those members of the profession who are serving with the King's forces would be welcomed by the profession. The statement pointed out that the available supply of locumtenents is so small that those whose duty keeps them at home must be depended upon to do the work of the absentees. This was a more prosaic duty than serving with the King's forces, and might involve a large addition to work without any prospect of its being of lasting benefit to those who undertook it, for it was the essence of these arrangements that they were only for the period of the war, and that the absentee, when he returned, should find his practice as nearly as possible intact. On the other hand, though the man who was absent was receiving pay and allowances he nevertheless inevitably incurred the risk of a considerable loss of practice.

After careful consideration the Scottish Emergency Committee came to the conclusion that, in making arrangements for the period of the war, three classes of practice were to be distinguished: (I) Large towns, where the question of mileage is not a very important consideration, and where an equal division of the remuneration from both private and insurance practice should be agreed upon. (II) Towns with a considerable population, but with a large amount of country work. It was suggested that as a general rule the division of all remuneration on the basis of three-eighths to the absentee and five-eighths to the man doing all the work and paying all the expenses was the nearest to equity. (III) Small centres, or single practice areas, where travelling expenses and consumption of time were still more important. In such, possibly, a fractionally larger proportion should be allotted to the man who is doing the work.

These considerations were held to be applicable both to private and insurance practice, including under the former all fees for medical attendance, operations and midwifery, and the like, and under the latter all capitation fees, mileage and dispensing allowances, and other charges, if any. The Scottish Emergency Committee made the general recommendation that the sum total of such amounts should be divided between absentee and deputy in the proportion of half and half, three-eighths and five-eighths, and one-quarter and three-quarters, according as the practice fell under (I), (II), or (III). It recommended also that accounts should be rendered "by Dr. A. on behalf of Dr. B. 'absent on duty with the King's Forces.'"

The above is an attempt to give a brief abstract of the valuable Statement put out by the Scottish Emergency Committee, but it is hoped that the full text will be carefully considered by Branches and Divisions when the matter is discussed.

The Committee of Chairmen of Standing Committees desires also to call attention to the fact that in Scotland it has not been found difficult to persuade boards of guardians and other local authorities to accept deputies for carrying out the duties of any of their medical officers absent on naval or military duty, and any difficulties in connexion with similar bodies in the rest of the kingdom should at once be reported to the Medical Secretary.

All these suggestions are made by the Association primarily in the public interest, so that the greatest possible number of medical practitioners may be available for service with the naval and military forces with the least inconvenience to civil arrangements. Full use of such arrangements will depend upon the loyal co-operation of local authorities and other bodies as regards granting the necessary leave of absence to their medical officers.

In connexion with insurance practice, attention may be directed to the scheme brought into force at Dundee soon after the outbreak of war (JOURNAL, August 15th, 1914, p. 340). There is a central office and dispensary managed by a committee appointed by the Local Medical Committee. Consultations for patients able to attend are conducted at the dispensary. The scheme is financed on the basis of advanced insurance credits, 50 per cent. being paid to the Committee, the other 50 per cent. being paid to the representative of the absent practitioner, to meet household expenses. The doctors who have been called up have agreed to contribute for the expenses of the Committee.

The Committee of Chairmen of Standing Committees trusts that this matter will at once receive the attention of the Divisions or Branches. In all probability it will be found that the larger areas are more suitable as units of organization, but, however the matter be dealt with, it seems obvious that it is incumbent on the medical profession, through its organization, to so economize its forces as to meet the various public demands upon it, at the same time jealously preserving the interests of those who have responded to the call of military duty.

NATIONAL INSURANCE.

CO-OPERATION BETWEEN THE ASSOCIATION AND LOCAL MEDICAL AND PANEL COMMITTEES.

THE following letter has been addressed to the secretaries of Local Medical and Panel Committees, and is published for the information of honorary secretaries of Divisions and Branches of the Association and members generally, by instruction of the Local Medical and Panel Sub-committee of the Insurance Act Committee of the British Medical Association.

Dear Sir,

1 The response to the circular letter of the Sub-Committee of November 14th, 1914, offering the assistance of the Association to Local Medical and Panel Committees and asking for their co-operation, has been excellent. Out of 197 Insurance areas in England, Scotland and Wales, more or less favourable replies have been received from 173, most of them being very cordial and appreciative. There has been no refusal of co-operation and it is believed that within a few weeks every Local Medical and Panel Committee in the country will be helping the Association in its work for insurance practitioners generally. As a result of the circular letter much valuable information has been forwarded to the office of the Association which will, it is believed, be of great service in the future. The Sub-Committee, on the instruction of the Insurance Act Committee, wishes to bring to the notice of all Local Medical and Panel Committees the following points which it thinks are of importance, most of which arise from consideration of the replies received to the circular letter.

CONSULTATION OF LOCAL MEDICAL AND PANEL COMMITTEES.

2. It has been represented to the Sub-Committee that the co-operation of the Local Medical and Panel Committees with the Association would be much more cordial and effective if the Committees were consulted before the Association took action in matters specially affecting insurance practitioners. It must be realised that such consultation is not always possible. Frequently the Association must take action promptly, reporting subsequently what it has done, as delay might be dangerous. The Insurance Act Committee has, however, resolved that whenever possible the opinion of Local Medical and Panel Committees shall be previously ascertained on questions as to which the Insurance Act Committee proposes either to take definite action or to make representations to the Council and Representative Body. It will thus be seen that the fears of those who are of opinion that the Association could not represent the views of those insurance practitioners who are not members of the Association are groundless, inasmuch as all panel practitioners, whether members of the Association or not, may voice their views through the Local Medical and Panel Committees. It must be realised, however, that if this consultation is to be effective and is not to result in dangerous delays, Local Medical and Panel Committees must be prepared to meet promptly when required to do so, and send up their opinions to this office. Committees may consider it advisable to appoint a small Executive Sub-Committee with power to deal in emergencies with matters upon which a prompt decision is necessary.

CONFERENCES OF REPRESENTATIVES OF LOCAL MEDICAL AND PANEL COMMITTEES.

3. The recent experience gained through the local conferences which the Commissioners called to consider the question of medical certification under the Insurance Acts has convinced the Sub-Committee that it is highly unsatisfactory for the profession to enter into these conferences unprepared. It has therefore been decided that if the Commissioners should call central or local conferences of representatives of Local Medical or Panel Committees at any future date, the Association, on being advised of the fact, shall invite those representatives to a preliminary conference, either local or central as the case may demand, so as to arrange for combined action. Each conference would be attended, on behalf of the Association, if possible by the Chairman of the Local Medical and Panel Sub-Committee, by the members of the Sub-Committee residing in the area for which the conference is called, and by the Medical Secretary or some other member of the central staff. It is believed that in this way an approach to uniformity of action could be attained.

CENTRAL ARRANGEMENTS FOR SUPPLY OF INFORMATION.

4. The Association has now collected and filed a large amount of information connected with the Insurance Acts, which includes the experience of most of the Local Medical and Panel Committees, many legal opinions, the results of many discussions with the Commissioners, and the information derived from a very large correspondence. Some of this information is printed from time to time in the Supplement to the BRITISH MEDICAL JOURNAL, and Secretaries are earnestly requested to file this weekly, together with the index supplied at the end of the half year. But it is realised that Secretaries are not always able to look up the points on which they desire information, and, in addition, a good deal of the most valuable of our information could not be printed in the JOURNAL, as this would disclose it to persons outside the profession. The Sub-Committee hopes, therefore, that the Local Medical and Panel Committees will look upon this office as a central bureau of information on the medical side of the National Insurance Acts, and the office will at all times be glad to advise Secretaries to the best of its ability, furnishing such information as is in its possession, and trying to obtain information on new points which may arise. As regards legal opinions, it must be clearly understood that the Association has never undertaken to obtain legal opinions upon matters affecting only *individual* practitioners. To do so would be an enormous and very costly undertaking. But the Association has always obtained, and will continue to obtain, legal opinions upon general questions affecting the medical profession, and, as is well known, it has

as its adviser, a Solicitor who has undoubtedly far more experience in medico-legal matters than any other Solicitor in the Kingdom.

UTILISATION OF THE JOURNAL.

5. Many valuable suggestions have been received as to how the Supplement of the JOURNAL can be made more useful to insurance practitioners, and these have all received very careful consideration. The Editor of the JOURNAL is always glad to print reports of Local Medical and Panel Committees but care should be taken to condense these reports as much as possible, as space is valuable. Special attention should be given to those items which are of general interest and merely formal items should be omitted. If a report of any meeting is sent to me it will not be necessary also to send a copy to the Editor. I shall be very glad to extract from it and file, if it appears likely to be of general use, such information as seems to me not suitable for publication, and to forward the remainder to the Editor.

6. It must be clearly understood that discretion will be used in excluding from the printed report those matters which it is considered should not be made known to the public, and it should be noted that as regards the report of the Insurance Act Committee, which Secretaries are advised to read regularly, all its decisions are not published, but only those which the Chairman deems it advisable to print. Fuller information as to any point indicated in the report of that Committee as having been dealt with, but not fully reported, will be given to any Local Medical or Panel Committee Secretary on application.

7. The JOURNAL publishes most of the documents issued by the Commissioners which are of interest to insurance practitioners, but there are some which for various reasons cannot be published and many which are not on sale. It is proposed, however, to publish in the Supplement once a quarter, a list of documents of interest to insurance practitioners issued by the Commissioners, and the first list will it is hoped appear in the Supplement of February 13th. This list will give a brief indication as to the subject matter of the documents mentioned and will state (a) where and at what price those on sale may be obtained, (b) which documents have been printed in the JOURNAL and when, and (c) the date of any comment thereon which has appeared in the JOURNAL. Information as to those documents mentioned which are neither on sale nor have been printed in the JOURNAL may be got on application here.

ARRANGEMENT OF AREAS OF THE ASSOCIATION SO AS TO COINCIDE WITH THOSE OF THE INSURANCE ACT.

8. It has been suggested from some quarters that the Division and Branch areas of the Association should be re-arranged so as to coincide with insurance areas. This idea has been before the Association ever since the introduction of the Insurance Act, and is one which is *prima facie* to be encouraged. But it has been found to be by no means so easy to carry out as it looks, as some Divisions have grown up round a centre to which the practitioners in the area naturally gravitate for social and professional purposes, and it has been found very difficult and sometimes impossible to break up this arrangement merely because of some inconvenience in connection with the working of the Insurance Acts. However, this a matter almost entirely in the hands of the local members of the Association and if local agreement is arrived at as to re-arrangement of Association areas so as to make them coincide with an insurance area or areas, the Council will be quite willing to make the change.

THE EXISTENCE OF THE LOCAL MEDICAL COMMITTEE.

9. There seems to be a danger in some areas of the Local Medical Committee dropping out of existence in view of the fact that the greater part of the work in connection with the Insurance Acts now devolves upon the Panel Committee. The Sub-Committee would, however, urge that to allow this to happen is a mistake, as the Local Medical Committee has some duties* to perform which are outside those of the Panel Committee, and in addition it is important to retain the help of those practitioners, who, though not willing to undertake the detailed work of the Panel Committee, are quite willing to remain on the Local Medical Committee and give the benefit of their services and advice to their colleagues. It is desirable where possible, that the personnel of the Local Medical and Panel Committees should be made identical by adopting (at the time of the next re-appointment of the Panel Committee) Scheme A of the Insurance Commissioners' Model Schemes. This plan avoids overlapping and expense and retains the Local Medical Committee as a statutory body.

*Under the Regulations, Insurance Committees *must consult* with Local Medical Committees as to (1) conditions of service of practitioners (Regs. 5 (i.) and 16 (i.)), (2) arrangements for supply of drugs and appliances (Regs. 8, and 18) (1)), (3) income limit (Reg. 14 (2)), (4) as to the range of service (Reg. 50 (1)), and (5) rules concerning administration of medical benefit (Reg. 81).

Other duties and powers of Local Medical Committees are (6) appointment of 1 member of Medical Service Sub-Committee (Reg. 45 (2) (1)), (7) reference to it by Medical Service Sub-Committee of any question arising out of latter's investigation involving interpretation of range of service (Reg. 45 (14)), (8) consideration of complaints by one insurance practitioner against another involving any question of efficiency of the medical service (Reg. 48), (9) submission of representations to Commissioners, who *must* consider them, before latter approve arrangements of administration of medical benefit (Reg. 82), (10) participation in proceedings of Inquiry Committee (Regs. 61 (2) and 63 (1)).

DRUG TARIFF.

10. The important question of the procedure in enquiries into alleged over-prescribing is dealt with in a separate Memorandum (enclosed to Secretaries of Panel Committees). This Memorandum has been submitted to the Commissioners in order that they might, if thought desirable, take exception to any of the advice given therein. Although they do not accept responsibility for the document they have indicated that on the whole they think the advice given is sound and will be useful to Panel Committees. The Memorandum is marked Private and Confidential as it is intended solely for the information of members of the profession. It will not be published in the JOURNAL but additional copies can be obtained on application here. There are a few general points in regard to the economical use of the Drug Tariff which the Sub-Committee is anxious to bring to the notice of Panel Committees. In the first place it is to be noted that the Insurance Act Committee has a very active Sub-Committee working on this question, and that it is collecting evidence as to the necessity for a revision of the present Drug Tariff. It is proposed to place this material before the Departmental Committee on the Drug Tariff appointed last July by Mr. Masterman, and which it is believed will shortly commence operations. Many valuable hints have been received from Panel Committees, but any practitioner who has given special attention to this question, and any Panel Committee which has views as to the way in which the Tariff should be revised are asked to place themselves at once in communication with me. Further, it is hoped that as ideas occur from time to time to Panel Committees for alterations either of the Drug Tariff or of Regulations, they will forward them at once so that they may be considered by the Insurance Act Committee in order that representations may be made in ample time to the proper authorities.

11. The Sub-Committee is pleased to note from the information supplied to it, that most Panel Committees now seem to be giving the attention which the subject deserves to the various ways in which abuses in prescribing may be prevented. Many Committees have issued warnings to their constituents, and it is satisfactory to note that these warnings have begun to have their effect on the demands made on the Drug Fund. The Sub-Committee deprecates very strongly any suggestion that any insured patient should be deprived of the drugs and appliances which are necessary for his treatments and will certainly take all steps in its power to discourage the idea that insured persons should be supplied with an inferior quality of drugs or be restricted as to quantity merely to save the Drug Fund. But the experience of nearly every Panel Committee has shown that some practitioners have not exercised due care in prescribing, and that many demands on the Drug Fund have been made which could easily have been avoided without any detriment to the patients concerned. The following are the points on which the Sub-Committee would lay special stress and would urge those Panel Committees which have not already included them in a circular to their constituents to do so at the first opportunity :

(a) *The use of secret remedies*, that is remedies the composition of which is not published, and of articles to be used as foods or cosmetics and not as remedies for the treatment of disease, should be prohibited, and, if practitioners persist in using them, representations should be made to the Insurance Committee that the cost thereof be met by the practitioner and not out of the Drug Fund.

(b) Great care should be exercised as regards *quantity*, in the prescribing of liniments, ointments, tablets, pills, powders, cod liver oil and malt, gauzes, wool and lint. Numerous reports show that if a little care be taken to prescribe not more than the patient is likely to require, considerable waste which now goes on might be avoided.

(c) Economy should be exercised in prescribing *flavouring agents*, and only one should be included in any one prescription. Aromatic waters might be used instead of glycerine, tinct. aurant. ext. glycyrrhiz.

(d) *Tinctures* should not be used when Liquors would suffice.

(e) Arrangements should be made with the Pharmaceutical Committee so that *methylated liniments* should be dispensed unless otherwise prescribed.

(f) Practitioners should be warned to exercise care as to the *frequency* of their prescribing. It is evident that some practitioners exercise no supervision over the length of time mixtures prescribed for their patients last. The request of a patient for more medicine before the original supply should have been exhausted, should lead to a suspicion either that the patient is over-dosing himself, or wasting the medicine, or that the medicine is being used for persons other than the one for whom it was prescribed.

12. The Sub-Committee wishes to remind Local Medical and Panel Committees that the representatives of the Association are meeting representatives of the Pharmaceutical Society in conference each month in order to settle the prices of those items of the Tariff which were left unsettled in consequence of the scarcity of drugs owing to the war. It is not possible to go into details, but it may be stated briefly that these conferences have been distinctly useful, and insurance practitioners may be assured that their interests in regard to this matter are being carefully watched. Further, from time to time, general conferences on questions affecting the Drug Tariff have been and will be held, and Panel Committees may be reminded that one result of these conferences has been the recent arrangement that Aqua should mean tap water unless distilled water be specifically prescribed, thereby saving a large sum of money to the Drug Fund.

Procedure of the Insurance Committee in Enquiries into Over-Prescribing.

13. The Insurance Act Committee has urged the Commissioners to provide that in those cases where inquiries by Panel Committees into charges against medical practitioners for alleged over-prescribing have been determined by the Insurance Committee in favour of the practitioner, the name of the practitioner concerned should not appear in the report of the Insurance Committee. The English and Welsh Commissioners have expressed their concurrence in this view. The English Commissioners have stated that they will take an opportunity to convey their opinion to the Insurance Committees in England. The Welsh Commissioners have already conveyed their opinion to the Welsh Insurance Committees. It now rests very largely with the Panel Committees to see that no injury is inflicted upon practitioners who may be charged with over-prescribing but are exonerated. The Panel Committee should see that the doctors reported on to the Insurance Committee, are referred to not by name, but under a letter, or by case number, and an attempt should be made, preferably by recommendation from the Medical Benefit Sub-Committee, to induce the Insurance Committee by resolution or by the adoption of a Standing Order, to discuss all such cases under a number or letter, so that the names of the practitioners need not be divulged at all in the case of those exonerated from blame, and should only be published (if at all) in the other cases after the practitioner has either foregone his right of appeal to the Commissioners, or has been found on appeal to the latter body to be guilty.

Transfer of Insured Patients of Practitioners on Military Duty.

14. It is believed that most areas have already made arrangements to protect the interests of practitioners who have been called away from home on military duty. The Sub-Committee would suggest that the most effective way in which insurance practitioners can show their support of their absent colleagues, is to decline in any circumstances to accept transfers of patients of doctors on military duty *until the expiration of one year after the absent doctors' return*, and to attend their patients during their absence as deputies. By adopting this procedure the wishes of those insured persons who might have desired to transfer if their doctor had been at home, can be met. No hardship would be felt by those persons who genuinely wish to transfer if the doctor to whom they go, while refusing to accept the transfer, offers to attend the patients until the doctor on whose list they are returns Difficulty may be experienced with the Insurance Committee, especially at the end of the year when the recognised transfer period comes round, but it is believed that few Committees will refuse to assist the local doctors in their efforts to protect the interests of their absent colleagues if the Committee is informed that the patient who wishes to transfer will be attended by the doctor to whom he wishes to transfer as the deputy of the former doctor. The Insurance Committee should also be asked to fall in with any financial arrangements which may be settled between the deputy and the doctor on military service. It has been found by experience that it is most important that a doctor leaving for military duty should give a power of attorney to someone (preferably a relative) to act for him in financial matters. The Secretary of the Panel Committee might be given power to act for him in other relations with the Insurance Committee.

New Certification System.

15. In connection with the new system of certification, which is largely the result of the report of the Departmental Committee on Excessive Sickness Claims, the Sub-Committee trusts that the following points will be impressed upon all panel practitioners:—

(a) It is evident that the more precise the information given on the certificate as to the cause of incapacity, the less likelihood there is of either the practitioner or the patient being troubled by Societies for further information. The interests of both practitioner and patient are served by precision in certification.

(b) Much dissatisfaction has arisen on the part of the Approved Societies in the past on account of the alleged laxity of doctors in certifying pregnant women as incapable of work, and, as you are aware, the difficulties of the Approved Societies have been met to some extent by the new benefit to pregnant insured women. The Committee trusts, however, that all insurance practitioners will exercise great care in this matter, and will note that although pregnancy itself may possibly cause incapacity for work the practitioner must be careful to satisfy himself of the existence of incapacity in addition to the existence of pregnancy. When in addition complications exist which render a woman incapable of work these should also be clearly stated on the certificate.

Payments to Panel Practitioners.

16. The attention of members of Panel Committees should be specially drawn to the Report of a Deputation from the Sub-Committee to the Commissioners on the question of the Credits and payments made to insurance practitioners, which appeared in the Supplement to the BRITISH MEDICAL JOURNAL, January 30th, 1915. The interview was asked for on account of the large number of enquiries which are constantly being sent to this office on this subject, and it is hoped that the Report of the Deputation will help to clear the minds of Panel Committees on this very abstruse question as it undoubtedly helped to do so for the Local Medical and Panel Sub-Committee.

Relation of Insurance Act Committee to Scottish Committee.

17. The Scottish Committee of the British Medical Association has been recognised by the Commissioners as the mouthpiece of the profession in Scotland on questions connected with the Insurance Act. Steps have been taken to keep that Committee in close touch with the work done by the Insurance Act Committee and its Local Medical and Panel Sub-Committee. The Scottish Committee will continue to deal with those matters specially affecting Scotland. Matters affecting insurance practitioners generally will be dealt with through the Insurance Act Committee and its Sub-Committee, on both of which Scotland is represented.

1915 Panel Lists.

18. Secretaries of Panel Committees who have not already done so are asked to forward to this office as soon as possible copies of their local panel lists, as these are found of great value here in keeping the card register of practitioners up to date, and in thus making the machinery of the Association more efficient.

Statistics from Panel Practitioners.

19. Secretaries of Panel Committees are asked to make known to panel practitioners in their area that the Association desires to receive statistics from all those who have kept a careful account of their number of attendances during the past year. All that is required is the name of the doctor, number on panel, number of visits, number of attendances, and average number of attendances per person on panel list. It would be of great assistance if doctors would get into the habit of sending here a quarterly statement to this effect. We should then have a continuous record of a large number of figures which could be used at any time when required.

The Association appreciates that it will be difficult for many practitioners to furnish this information for 1914 as they will by now have sent in their record cards, but it is hoped that many practitioners have for their own information taken a note of the year's results and will send the information here.

Additional Copies.

20. An additional copy of this letter is enclosed which it is hoped you will forward to your Chairman. The letter will be

printed in the Supplement to the British Medical Journal of February 5th,* and it is hoped that the Members of Committees will be referred to the Supplement for it. *Additional copies will however be supplied gratis on application* to Secretaries who think their work would be assisted thereby.

I should like to thank Secretaries for the handsome way in which many of them have responded to our appeals for information. Knowing what busy men most of them are, one hesitates to ask them to undertake further correspondence. But if the interests of the profession in relation to the Insurance Acts are to be properly protected, it is absolutely necessary that there should be co-operation between the Local Medical and Panel Committees and some central body. I hope Secretaries will continue to give me all the help they can, and will make the fullest possible use of the co-operation the Association has offered them.—I am, yours faithfully,

ALFRED COX, Medical Secretary.

British Medical Association, 429, Strand, W.C.,
February 8th, 1915.

NON-PANEL PRACTITIONERS AND THE NEW CERTIFICATION FORMS.

THE following is the text of three communications (A) (B) and (C) addressed by the Medical Secretary, acting under the instructions of the Insurance Act Committee of the British Medical Association to the Insurance Commissioners, together with the text of their reply dated February 9th. The communications were considered by the Insurance Act Committee at its meeting on February 11th, and a report will be published in due course.

A.

January 13th, 1915.

The attention of the Insurance Act Committee of the Association has been drawn by numerous practitioners in various parts of the country to the difficulties they are experiencing in connexion with the new certification system under the Insurance Acts. It is well known that many practitioners who are not on the panel are attending insured persons and have been in the habit in the past of filling up the form of certificate provided by the approved society.

Since the introduction of the new certification system clerks to Insurance Committees have declined to furnish non-panel practitioners with books of forms of certificates, and some approved societies have refused sickness benefit unless the insured person introduced produces a certificate on the form issued by the Commissioners. Such an attitude appears to my Committee to be very unfair, and it is undoubtedly raising a strong feeling of resentment on the part of insured persons who in spite of the many discouragements placed in their way prefer to employ practitioners not on the panel, also on the part of these practitioners themselves.

The Insurance Act Committee would therefore strongly urge upon the Commissioners that arrangements be made whereby non-panel practitioners shall on request be provided with a book of forms of the new certificates in order that they may give certificates to insured persons attended by them.

B.

January 20th, 1915.

I shall be glad if my letter of the 13th inst., referring to the question of the non-acceptance by certain approved societies of certificates given to insured persons by practitioners not on the panel could have an early reply. The question is acute, and there is no doubt that the new system of certification is being used by some, if not all, of the approved societies in a way which is proving to be a serious injustice to practitioners who are not under agreement with Insurance Committees. We have now had many complaints that insured persons, on the production of certificates signed by registered medical practitioners not on the panel, have been told that they can only have their sickness benefit if they produce a certificate on the new form signed by a panel doctor. Even where the statement has not been made that the certificate must be signed by a panel doctor, insured persons have been given to understand that their benefit can only be paid on production of a certificate in the official form, which, as you are aware, is only available at present to panel practitioners. It is believed that the new system was not intended to have this effect, and certainly the British Medical Association never contemplated such a state of affairs. The Association would be extremely glad if the Commissioners would see their way to send an early answer on this question, and to make such arrangements as will remove the sense of injustice which undoubtedly many insured persons and many practitioners are at present time feeling.

C.

February 3rd, 1915.

On January 13th and January 20th last I addressed letters to you raising the question of the position of a large number of practitioners, not under agreement with any Insurance Committee, in relation to certificates given to insured persons. I would again draw the attention of the Commissioners to the extreme urgency of this matter, and would most respectfully press for an early reply to those letters. The letters we are receiving on this question show that the present position is deeply resented by a large number of practitioners, and the Association is most anxious to get this matter settled satisfactorily, if possible, by a pronouncement from the Commissioners.

REPLY.

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
80239/15. 9th February, 1915.

Sir,—In reply to your letters on the subject of non-panel practitioners and the new Certification Forms, I am directed by the National Health Insurance Commission (England) to state that arrangements have been made for the supply of these forms not only to the doctors on the panel and the medical officers of institutions approved under Section 15 (4) of the Act, but also to all doctors attending insured persons making their own arrangements for medical benefit under Section 15 (3). For the reasons given below, however, the Official Certificate Forms Med. 40 cannot be issued for the use of doctors when attending insured persons who are not receiving medical benefit under the Act.

It must be remembered that the forms themselves are a part only of the whole system of certification embodied in the Certification Rules issued by the Commissioners, to which indeed the wording of the forms makes explicit reference, and on which they depend for a part of their effect. And, as the purposes which the official forms are intended to serve cannot be realized unless they are used in strict accordance with the Certification Rules, it is obvious that misleading and unsatisfactory results would be liable to arise if those official forms (containing, as they do, explicit reference to the rules) were used for insured persons attended in a purely private capacity by a doctor to whom the rules would not be applicable. For example, an approved society on receipt of a certificate from a panel doctor would (if satisfied as to the title of the applicant for sickness benefit) feel secure in making payment for a certain number of days *beyond the date of the examination*, in reliance upon the safeguards provided (expressly for the purpose of making such payments possible) by the obligations imposed on doctors using the official certificates to comply with paragraph 7 of the Certification Rules. In the case, however, of the same certificate given by a private doctor, since he is subject to none of those obligations, the society could infer no guarantee of this nature from the certificate, which could only provide them with evidence of what its words state—namely, that the insured person was incapable of work on or up to the day of examination.

With reference, however, to the particular difficulty referred to in your letters, I am to point out that the introduction of the new system of certification has not altered the former position of societies in relation to the claims for sickness benefit of insured persons not receiving medical benefit. The societies are able, as before, to accept from such members any certificates from a doctor privately employed which they would previously have been justified in accepting. This has been explained by the Commissioners to societies who have made inquiries on the point. As, however, it is possible that some misapprehension exists in this matter, the Commissioners propose shortly to issue a circular on the subject.—I am, Sir, your obedient servant,

(Signed) S. P. VIVIAN.

The Medical Secretary, British Medical Association.

*This date should be February 13th; the correction has been notified to secretaries.

INSURANCE ACT.

OFFICIAL DOCUMENTS.

QUARTERLY LIST.

THE JOURNAL publishes the more important documents issued by the Commissioners which are of general interest to insurance practitioners, but there are some which are not placed on sale, and others which for various reasons cannot be published. It is proposed, however, to publish in the SUPPLEMENT once a quarter a list of documents issued by the Commissioners concerning matters of interest to insurance practitioners.

This list will give a brief indication of the subject matter of the documents mentioned, and will state (*a*) where and at what price those on sale may be obtained; (*b*) which documents have been printed in the JOURNAL, and when; and (*c*) the date of any comment thereon which has appeared in the JOURNAL. Information as to those documents mentioned which are neither on sale nor have been printed in the JOURNAL may be obtained on application to the Medical Secretary of the Association, 429, Strand.

NOVEMBER, 1914.

Draft of Regulations proposed to be made by National Health Insurance Joint Committee with respect to crediting and payment of sums payable to Insurance Committees. (November 10th. Price 1d.)

Comment on parts of this was made at the deputation to the Commissioners on December 22nd, 1904, reported in the **Supplement** of January 30th, 1915.

Circular 47/I.C. (*England*). Memorandum *re* Administrative Expenses of Insurance Committees.

Circular A.S./152 (*Scotland*). Notice *re* Members of Approved Societies suspended from Medical and Sanatorium Benefits on account of Arrears.

Form Med. 39 (*a*) (England). Form for use by Chemists in recording Prescriptions in case of Drugs scheduled by Commissioners as having Advanced in Price owing to War. (November 24th.)

I.C.L. 102/C. (*England*). Covering letter forwarding Form Med. 39 (*a*) mentioned above, to Insurance Committees. (November 24th.)

National Insurance (Navy and Army) Bill, 1914 (November 26th; price ½d., now an Act), which provides that in the case of a seaman, marine, or soldier who on his discharge from service during or within the prescribed period after the conclusion of the present war is certified by the Admiralty or Army Council to be suffering from any disease or disablement, or bodily or mental unfitness, he shall not be required to prove that his state of health is such that he cannot obtain admission to an approved society as a condition on which he can become entitled to benefit payable out of the Navy and Army Insurance Fund, but that every such man shall become entitled to benefits payable out of that fund as from the date of his discharge in like manner as if he had satisfied such requirements. There is a proviso that if in any such case the Insurance Commissioners are of opinion that the state of the man's health on discharge is not such as would disqualify him for admission to an approved society they may after notice fix a time (not being less than three months from the date of such notice, and not being more than six months from the date of his discharge) at which he shall cease to be entitled to benefits out of the fund unless he has satisfied them that he has been unable by reason of the state of his health to obtain admission to an approved society. This Act also provides that Section 46 of the 1911 Act shall apply to seamen and marines who have entered or enlisted for the purpose of the present war as it applies to men on the Territorial Forces called out on embodiment.

Memo. 210/(I.C.) (*England*) *re* Medical Treatment of Insured Persons called up for Service for His Majesty's Forces.

Printed in **Supplement,** *November 28th, p. 251. Commented on in* **Supplement,** *December 12th, p. 281.*

Memo 205/A.S. (*England*) *re* State Grant towards Cost of Medical Attendance and Treatment of (1) Insured Members of Approved Societies aged 65 and upwards on July 15th, 1912; (2) Aged and Disabled Members of Societies not qualified to become insured persons.

Commented on in **Supplement,** *December 12th, p. 282.*

DECEMBER, 1914.

Circular A.S./155 (*Scotland*) *re* Position of Soldiers and Sailors on Discharge.

Memo. 205/A.S. (*Scotland*). Same as above 205/A.S. (England)

Memo. 210/I.C. (*Scotland*) *re* Medical Treatment of insured persons called up for Service with His Majesty's Forces.

Memo. 211/I.C. Memorandum on new system of medical certification of incapacity of insured persons for work.

Commented on in **Journal,** *December 12th, p. 1034; December 19th, pp. 1070–72.*

Circular 52/I.C. Covering letter forwarding Memo. 211 to Insurance Committees in England. (December 10th.)

Circular A.S./156. Covering letter forwarding Memo. 211 to Approved Societies.

Form Med. 40. New forms of certificates.

Form Med. 40 A. Special final certificate and declaration to be used only in certain rural cases.

Form A.S./160. Notice to insured persons *re* new arrangements as to Medical Certificates.

Circular 51/I.C. (*Scotland*). Covering letter to Scottish Insurance Committees *re* Memo. 211/I.C. (December 11th.)

I.C. 125 (*England*). Circular letter to Insurance Committees stating that par. 2 of Form 43/I.C., par. I (*b*) of Form 43 (*b*)/I.C., and par. (2) of Form 43 (*c*)/I.C., for use of Insured Persons making their own arrangements, required amendment to bring them into line with the new certification system. (December 14th.)

Circular A.S./157 (*England*) *re* Rate of Benefit in cases dealt with under Circular 37 K/A.G.D., concerning questions of arrear.

Form 151 A/A.G.D. (*Scotland*). Form of claim for State Grant of 2s. 6d. per annum in respect of Medical Attendance and Treatment of Insured Persons aged 65 and upwards on July 15th, 1912, during period from January 15th, 1913, to January 11th, 1914.

I.C.L. 82 A. (*England*). Circular letter to Insurance Committees (December 16th), informing them that the Commissioners had fixed the calendar year from January 1st to December 31st, 1915, as the "year" for purposes of medical benefit, the "quarters" for the same purpose to be January 1st to March 31st, April 1st to June 30th, July 1st to September 30th, and October 1st to December 31st, 1915.

Circular Med. 2. (*England*). Letter to Panel Doctors and Approved Institutions *re* Record Cards. (December 21st.)

Commented on in **Supplement,** *January 2nd, 1915, p. 1; and January 16th, p. 21.*

Form Med. 41 (*England*). Covering form forwarding lower halves of record cards to Commissioners. (Forwarded to Panel Doctors and Approved Institutions with Med. 2.)

I.C.L. 110 (*England*). Circular letter to Insurance Committees forwarding copy of Circular Med. 2 (December 21st), and drawing particular attention to the need for Insurance Committe s satisfying themselves that the records have been duly furnished before making further advances to a particular doctor or inst tution.

I.C.L. 110 B. (*England*). Further (undated) letter to Insurance Committees *re* I.C.L. 110 and Circular Med. 2, to the effect that the Commissioners would not object to further advances being made in the case of practitioners from whon. the Committee had not received the upper halves of record cards, even if the

Committee had not been notified by the Commissioners of the receipt of the lower halves, provided the doctor was continuing on the panel of that Committee.

I.C. 115 D. (England). Circular letter sent direct by the Commissioners to certain doctors *re* their failure to furnish records for 1913. (December 21st.)

I.C.L. 111 (England). Letter to Insurance Committees (December 18th) to the effect that in view of risk that partial or incomplete notification of cases in which insured persons had been suspended from Medical Benefit by reason of transfer from civil to military life might result in inequitable distribution between Committees of sums available for credit, the Commissioners were instructing societies to defer issue of notifications for present until comprehensive steps could be taken. In cases where notification of suspension had been sent by Society to Insurance Committee, or where latter was aware that an insured person had become a soldier or sailor the name should be removed from the doctor's list and doctor notified accordingly.

Form 133/I.C. (England). Notice to Insured Persons drawing attention to the necessity of their obtaining Medical Cards.

Form 133/I.C. (Wales). Notice to Insured Persons on same subject as Form 133/I.C. (England).

Statutory Rules and Orders, 1914.

No. 1834/S. 97 (Regs. No. 37 (Scotland)). Drug Accounts Committee Regulations, 1914. (December 19th. Price 1d.)

Model Rules for Administration of Medical Benefit (Scotland). (Conduct of Persons in receipt of Medical Benefit and Procedure of the Medical Service, Pharmaceutical Service, and Joint Services Subcommittees.)

Regulations (Statutory Rules and Orders) No. 1631, re Exempt Persons' Benefits. (October 27th. Price 1d.)

Commented on in **Supplement**, *December 12th, p. 283.*

No. 1865 Medical Benefit Regulations (Final Form). (December 23rd.)

The provisions of these in their draft form was commented upon in the **Supplement**, October 10th, 1914, in connexion with the 1915 Agreements and Memo. 201/I.C.

JANUARY, 1915.

Form Med. 29 (Revised). Agreement between Medical Practitioner and Insurance Committee.

Commented on in **Supplement**, *December 5th, p. 264.*

Memorandum 209/I.C. (Scotland). Memorandum on Regulations of the Commissioners as to crediting and payment of sums payable to Insurance Committees.

NOTE.

The prices of the documents are net and not post free. They may be purchased, either directly or through any bookseller, from Messrs. Eyre and Spottiswoode, East Harding Street, E.C.; or Messrs. Wyman and Sons, Limited, 29, Breams Buildings, Fetter Lane, E.C., and 54, St. Mary Street, Cardiff; or H.M. Stationery Office (Scottish Branch), 23, Forth Street, Edinburgh; or E. Ponsonby, Limited, 116, Grafton Street, Dublin; or from the Agencies in the British Colonies and Dependencies, the United States of America, the Continent of Europe, and abroad of T. Fisher Unwin, London, W.C.

LOCAL MEDICAL AND PANEL COMMITTEES.

OXFORDSHIRE.

PANEL COMMITTEE.

THE third meeting of the Panel Committee for the county of Oxford was held at the Radcliffe Infirmary on January 30th, when Dr. SUSMANN was in the chair.

Quarterly Forms of Account.—The SECRETARY explained that heretofore the forms sent out by the Insurance Committee had proved very unsatisfactory to the panel practitioners inasmuch as they were never uniform, and gave no clue of what the total sum should be for which they were now receiving payment on account. In conjunction with the clerk, he had drawn up a form which was submitted and unanimously approved.

Quarterly Count.—The SECRETARY explained that in future the quarterly advance would be reckoned on the count of the Insurance Committee's index on the first day of each quarter. This had been arranged owing to well-founded complaints that doctors were persistently late in making their returns, not only delaying their own cheques, but keeping open a subject which hindered the medical members of the Insurance Committee. As there was no doubt that the returns as made were too frequently incorrect the Panel Committee suggested this new method, thereby throwing the whole onus upon the Insurance Committee.

Medicine Supplied to Temporary Residents. — The SECRETARY reported that in place of a flat rate of 6d. a bottle granted last year he had obtained the flat rate of 7d. for twelve doses for the future.

Medicine for Sanatorium Patients.—The SECRETARY reported that he had approached the Tuberculosis Association with reference to a flat rate for medicine supplied by doctors who dispensed for tuberculous patients notified on Form 1 (*a*) for sanatorium treatment; that the association was prepared to pay 7d. a bottle of twelve doses and 6d. an ounce for inhalations and sprays, and that these accounts should be rendered quarterly to the clerk. He submitted a form of account, which was approved.

Drug Tariff.—The SECRETARY reported that it had been decided that the prices of certain drugs affected by the war should be omitted from the tariff and that a supplementary list of them should be made and the prices fixed monthly by a conference between the Pharmaceutical Society, the British Medical Association, and the Commissioners.

Payments to Panel Practitioners. — Questions were asked with regard to the credits of the past year; it appeared that on a list of 800 persons nearly £100 had been held over. The Committee considered this too much. The SECRETARY drew the attention of the meeting to the report of the interview between the deputation from the Subcommittee of the Insurance Act Committee of the British Medical Association and the Insurance Commissioners on the question of payments to panel practitioners published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of January 30th, p. 33.

Local Medical Committee. — It was reported that the Commissioners desired the appointment of a local Medical Committee. It was pointed out that every active practitioner in the county except one was on the panel. On the motion of Dr. CRUICKSHANK, seconded by Dr. CAUDWELL, it was decided to adopt Scheme A.

Scrutiny of Prescriptions.—The chemists' report stated that the county average per prescription was 7.28d., per capita 4.09d. The prescriptions of certain practitioners were mentioned, and it was reported that the subcommittee had issued warnings to all except two to whom the Secretary was instructed to write. The Secretary was directed to inquire into certain anomalies in the drug tariff such as why 8 oz. of Aqua Menth. Pip. should cost treble the equivalent prescribed as Ol. Menth. Pip.

Co-option.—Dr. Stobie, the Tuberculosis Officer, was unanimously co-opted a member of the Committee.

Temporary Residents.—The CHAIRMAN reported that after some discussion the Medical Benefits Committee had decided that a doctor was under no obligation to treat a temporary resident unless the latter produced his medical ticket at or before the first visit.

Circular to Employers of Domestic Labour.—It was pointed out that in large private houses servants were continually changing, and that frequently the new servants omitted to get their medical card signed until they were ill. It was decided to issue the following circular to the employers, explaining the regulations on the subject, and asking their co-operation. It was agreed to send sufficient copies to each member of the panel for circulation:

National Health Insurance.

Dear Sir,—It has been brought to the notice of the Medical Committee for this county that employers of domestic labour are for the most part unaware of the arrangements that have been made for the medical treatment of their servants under the Insurance Act. They are of opinion that employers will welcome authentic information on the subject, and as a result will assist the Committee by as far as lies in their power directing their servants to comply with the regulations.

1. Every servant should possess a brown medical ticket, signed by a doctor, preferably in the neighbourhood.
If this is not signed, and illness occurs, difficulties may arise in obtaining free attendance.
2. When a new servant is engaged he or she should be advised to get his medical ticket signed by a local doctor of his choice.
3. In cases where a servant is employed for a less period than three months he will be attended by any panel doctor of his choice as a temporary resident on producing his medical ticket, it being unnecessary to permanently cancel his previous choice of doctor.
4. If a servant has no medical ticket he should immediately obtain Form 50 from the nearest Post Office, fill it in, and post to the Clerk of the Insurance Committee of the county in which you reside.
5. When attending at the doctor's surgery the medical ticket must always be produced.
6. When sending for the doctor the messenger must bring the insured person's card with him, but this should not be left with the doctor.
7. It is the duty of an insured person to provide a bottle for his medicine, failing which he must deposit 1d. with the doctor for a bottle.
8. When sending for a fresh supply of medicine it is necessary to send the original bottle, as in many cases doctors make a note of the prescription on the label.
By seeing that his servants comply with the above the employer will find no difficulty will arise with regard to attendance on his servants.
The following Model Rules, that must be conformed to by insured persons, are added for your information:
(*a*) He shall obey the instructions of the practitioner attending him.
(*b*) He shall not conduct himself in a manner which is likely to retard his recovery.
(*c*) He shall not make unreasonable demands upon the professional services of the practitioner attending him.
(*d*) He shall, whenever his condition permits, attend at the surgery or place of residence of the practitioner attending him on such days and at such hours as may be appointed by that practitioner.
(*e*) He shall not summon the practitioner to visit him between the hours of 8 p.m. and 8 a.m. except in cases of serious emergency.
(*f*) He shall, when his condition requires a home visit, give notice to the practitioner, if the circumstances of his illness permit, before 10 a.m. on the day on which the visit is required.
The Insurance Committee have the power to inflict a fine not exceeding 10s. for any breach of these rules.—Believe me, yours faithfully,

J. H. HEBB,
Honorary Secretary.

Nurse Visitors.—The SECRETARY reported that he had been in communication with the Commissioners on the subject of nurse visitors, and that they had asked for an instance of a visitor criticizing or interfering in matters affecting the medical treatment of any person. The Secretary gave an instance to the meeting, and was instructed to follow up the matter.

The British Medical Association.—The SECRETARY said there were only 21 members of the panel who were not members of the British Medical Association, and pointed out how desirable it was that every member should join it. The Commissioners having accepted the Association as the mouthpiece of the profession, therefore the more members there were on each panel the more pressure they could bring to bear on the Association, and the better the position of the Association. Members of the Committee agreed to approach non-members of the Association, and the Secretary was directed, when time allowed, to issue a circular on the subject. The Committee expressed its willingness to communicate its proceedings to the Panel Subcommittee of the Insurance Act Committee of the British Medical Association.

BRISTOL.

PANEL COMMITTEE.

A MEETING of the Bristol Panel Committee was held on January 26th, when Mr. H. F. DEVIS was in the chair.

On the motion of the CHAIRMAN, the following were elected a temporary executive committee to assist him in dealing with urgent matters: Drs. C. Bernard, J. W. Llewellyn, and J. W. Wallace. The meeting considered the following questions referred to it by the Medical Service Subcommittee:

Responsibility of Panel Doctor.—A case was reported in which an employer called in a private doctor in a case considered too urgent to wait for the panel doctor, and objected to pay the private doctor. It was decided that as the employer did not communicate with the panel doctor, the responsibility for the fee was a matter between the employer and the private doctor.

Panel Service at Avonmouth.—In view of the shortage of the panel service at Avonmouth, it was resolved to recommend the Insurance Committee to allow insured persons at Avonmouth to "make their own arrangements."

Certificates.—It was decided to call the attention of the local profession to the necessity for great care in signing sickness certificates.

Scrutiny of Prescriptions.—The report of the Pharmaceutical Subcommittee on alleged extravagance in prescribing was amended and approved. It was resolved to circularize the panel practitioners of the area on the subject and to inform them that, although convinced that practitioners were prescribing only what they believed to be necessary, the Panel Committee regretted to have to inform them that in the event of any practitioner overstepping the 2s. he would lay himself open to surcharge.

Medical Adviser.—It was decided to pay a portion of the salary of the medical adviser for the last quarter at the same rate and on the same conditions as before; the question of future payments was placed on the agenda for the next meeting.

BIRMINGHAM.

PANEL COMMITTEE.

A MEETING of the Birmingham Panel Committee was held on February 2nd.

Payments to Practitioners.—Letters having been read from panel practitioners regarding the reduction by 30 per cent. of the last quarter's cheque, the Committee resolved to inquire thoroughly into the matter, and decided to ask the Insurance Committee to furnish a statement as to the number of insured persons on each doctor's list and the percentage of deduction from the amounts due when sending each quarterly cheque.

Excessive Prescribing.—A subcommittee was appointed to meet a minor subcommittee of the Medical Benefit Subcommittee to discuss the proposed surcharges for extravagant prescribing.

MANCHESTER.

LOCAL MEDICAL AND PANEL COMMITTEE.

A MEETING of the Manchester Medical and Panel Committee was held on January 23rd, when Dr. SKINNER was in the chair.

Appointment to Insurance Committee.—The appointment of Dr. Goodfellow as the Commissioners' representative on the Manchester Insurance Committee was reported.

Quality of Drugs.—The Committee, having considered a report of a conference between the Pharmaceutical Committee and the Panel Committee held to consider a complaint by a doctor that the quality of drugs supplied was not good, came to the conclusion that the complaint was not proved, and the doctor agreed to withdraw it.

Excessive Prescribing.—A doctor appeared before the Committee to appeal against a proposed surcharge. After hearing the finding of the Drug Subcommittee and the doctor, it was decided to support the finding of the Subcommittee, which was confirmed. Dr. FRASER introduced the following resolution forwarded by the North Manchester Medical Union:

> That the present system of surcharging medical men's accounts because of alleged excessive prescribing, based on a principle of averages, has tended gravely to depreciate the efficiency of the treatment given to insured persons, and is dangerous to the reputation of the medical profession in Manchester.

The resolution was lost.

Drug Tariff.—A request was submitted from the Insurance Committee suggesting that a conference between representatives of the Panel and Pharmaceutical Committees, with a view to altering the basis of examination of the 1913 drug account. The Secretary was instructed to reply that, until the Pharmaceutical Committee gave some reason for such a step, the Medical and Panel Committee must confirm its original report.

LIVERPOOL.

PANEL COMMITTEE.

A MEETING of the Liverpool Panel Committee was held on January 26th, when Dr. J. C. BAXTER was in the chair. Dr. Percy Edwards was appointed a member of the Committee to fill the vacancy due to the resignation of Dr. Richardson. Dr. Baxter was elected Vice-Chairman.

Repeat Mixture.—A letter was read from the Commissioners with reference to "Rept. mist.," stating that "as the Commissioners may be called upon to decide, in a judicial capacity, the question in a particular case after considering all the facts and circumstances relevant thereto, it would not appear proper for them at this juncture to express an opinion on the question." A copy of a letter sent to the Commissioners by the Liverpool Insurance Committee was also considered. Strong objection was expressed by the Panel Committee to several of the statements made in the letter of the Insurance Committee, and the Honorary Secretary was directed to write to the Commissioners pointing out the difference of opinion.

Stock Mixtures.—A letter was read from the Commissioners stating that they had required the insertion of a clause ordering stock mixtures in the drug tariff adopted by the Liverpool Insurance Committee.

WEST RIDING OF YORKSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEE.

MEETINGS of the Committee were held in Wakefield on September 4th, October 16th, and December 18th, 1914.

Election of Officers.—The following officers have been appointed:

Chairman.—Dr. R. May.
Vice-Chairman.—Dr. G. B. Hillman.
Treasurer.—Dr. P. V. Fry.
Secretary.—Dr. W. Eardley.

The following were appointed to fill vacancies: Dr. T. A. Glover (Doncaster), Dr. J. A. Hargreaves (Wetherby), Dr. A. G. Webster (Colne Valley), Dr. J. Sutherland (Spen Valley), Dr. E. P. Pickersgill (Tadcaster), Dr. H. A. L. Banham (Worsborough), and Dr. Newton Wade (Handsworth).

Financial and General Subcommittee.—The four officers, together with Drs. Glover, Russell, and Steven.

Pharmacy Subcommittee.—Drs. Castle, Fry, Gabriel, Orford, and Smailes.

Election to Vacancy.—Dr. J. E. H. Scott was elected to represent Keighley in place of Dr. Gabriel, resigned owing to absence on military service.

Secretary's Salary.—The Committee having decided to appoint a paid secretary at £150 per annum offered the post to Dr. Eardley, who accepted.

Administrative Expenses.—It was decided to adopt the "compulsory levy" provided for under Section 33 (2) of the Insurance Act, 1913. At the meeting on December 18th the TREASURER reported that he had drawn up an estimate and had applied for a grant of £250 for expenses for the year July, 1914, to June, 1915. The Insurance Committee had agreed to the amount, subject to the Commissioners' approval.

Range of Medical Service.—It was decided to reply to an inquiry from the Clerk of the Insurance Committee that attendance on a specified case of white leg was part of the attendance on the confinement. The Committee expressed the opinion that a panel practitioner was entitled to charge a fee for: (1) Removal of a mammary tumour (adenoma) under an anaesthetic, and (2) for refraction under a mydriatic, but that the giving of an anaesthetic by the panel doctor was a service within the scope of medical benefit.

Drugs and Appliances.—Drs. Fry and Smailes were appointed as representatives on the subcommittee formed to consider Memorandum 199/I.C. Dr. FRY reported at the meeting of December 18th that as the result of the conference the new drug tariff had been accepted for the coming year.

Travelling Expenses.—It was decided to support, by a letter to the Commissioners, the action of the Cumberland Panel and Pharmaceutical Committees protesting against the decision of the Commissioners that the travelling expenses of Panel and Pharmaceutical Committees could not be recognized as part of the respective committees' administrative expenses.

Motor Ambulance Fund.—At the meeting on December 18th it was reported that £600 had been subscribed in response to the appeal to medical practitioners in Yorkshire to provide funds for a motor ambulance for soldiers wounded at the front.

Doctors Absent on Military Service.—The Secretary was instructed to get particulars of any case in which wholesale transfers from the lists of any doctors absent on military service might have taken place.

Co-ordination of Work of Local Medical and Panel Committees.—The Secretary was instructed to enter into steady and close relationship with the central office of the British Medical Association.

Administration of Medical Benefit.—It having been reported that the Insurance Committee had decided to delete a rule or rules, notably that discouraging night calls, from the model rules drawn up by the Commissioners, the Secretary was directed to make a protest to the Commissioners, questioning the right of the Insurance Committee to make such alterations.

NEWCASTLE-ON-TYNE.

PANEL COMMITTEE.

A MEETING of the Newcastle-on-Tyne Panel Committee was held on January 26th, under the chairmanship of Dr. H. L. RUTTER.

Medical Benefit Credit for 1914.—The Secretary was empowered to forward a letter to the Commissioners raising arguments as to why the medical benefit credit should at least not be less than the sum provisionally credited for the previous year.

Reinstatement of Discharged Soldiers and Sailors.—It was unanimously agreed that insured persons returning from active service to civil life should be automatically restored to their former doctors' lists without however prejudicing the right of the insured person to change his doctor and conversely the right of the doctors to refuse to accept the insured person.

Medical Certificates.—It was pointed out that certain approved societies insisted upon their members producing weekly certificates from their doctors. The Committee considered that demands for such certificates were a distinct hardship and increment of work to the doctors, and the Secretary was empowered to communicate with the executive of the council of approved societies with a view to coming to some arrangement whereby such certificates should not be desired at less than monthly intervals.

Scrutiny of Prescriptions.—The CHAIRMAN commented on the distinct improvement as regards reduction of cost compared with the previous quarter, due very largely to the good work done by the Panel Committee in drawing the attention of panel doctors to the true facts of the situation.

GLASGOW.

THE annual report of the Local Medical Committee for Glasgow states that eleven meetings, with an average attendance of 28, were held during the year, and that at seven meetings of the Executive Subcommittee the average attendance was 6.

In view of certain duties of the Local Medical Committee having been transferred by the amending Act to the Panel Committee, and the reference to other matters to the two committees, the practice of holding joint meetings had been adopted; this had effected economy, secured uniformity of policy, and provided a wider outlook upon matters of general interest. The report of the Local Medical Committee might therefore, it is stated, be accepted as outlining the activities of the Panel Committee also.

Range of Services.—It was reported that the Commissioners had definitely decided that where the operation itself came within the scope of medical benefit, the provision of an anaesthetist, where such was necessary, was part of the duty of the practitioner. This decision did not, however, hold good in cases where the operation was not part of medical benefit.

Removal of a chalazion, cauterization of turbinals, removal of tonsils, and eye testing had been excluded by the Committee. While the Insurance Committee and the Commissioners had confirmed the exclusion of the former two and the Insurance Committee had acquiesced in the exclusion of the latter two, the decision of the Commissioners on the latter had not yet been intimated.

Complaints.—The hope is expressed that the promised appointment of referees by the Commissioners will remove difficulties which had arisen.

Certification.—Satisfaction is expressed with the new uniform system of certification, though it is stated that the actual wording of the certificate was not altogether free from objection. The report emphasizes the necessity for the accurate observance of the rules in the giving of certificates in view of the attitude of the General Medical Council.

In connexion with the meaning of "incapacity for work," it is suggested that effect should be given to the recommendation of the Departmental Committee that "incapable of work" should read "incapable of following his usual occupation."

Administration of Medical Benefit.—The report states that representations had been made to the authorities with regard to the dissatisfaction felt by practitioners at the many faults of administration; but it was a matter for consideration whether a more effective protest might not require to be made.

Medical Service Subcommittee.—Thirteen complaints against doctors had been considered; of these five were not substantiated, in two the practitioners had been at fault and were required to pay the necessary expenses incurred by the patients in obtaining treatment, the eighth case—refusal to grant a certificate—had been dismissed; in the ninth case—that of charging for certificates—the matter had been adjusted, the doctor having acted under a misapprehension and refunded the fees. Of the remaining four cases, which were brought at the instance of societies, one of carelessness was not substantiated; another, of antedating, was substantiated, but no action was taken, as the doctor had acted in good faith; the remaining two cases, which referred to the dating of certificates when the practitioners could not have seen the patients, were proved and the practitioners warned.

Free Medical Attendance on Necessitous Dependants.—The report concluded with an expression of thanks to the medical profession for its generous response to the recommendation to give free attendance to the necessitous dependants of soldiers and sailors, and to the Belgian refugees, and for its co-operation in the scheme for doing the work of fellow practitioners on service.

INSURANCE COMMITTEES.

MIDDLESEX.

Sickness Certificates by Private Practitioners.

THE following resolution was adopted by the Middlesex Insurance Committee at its last meeting:

> That it is desirable that every insured person in the county should be made aware of the fact that certificates under the Insurance Acts and Regulations may be legally given by any registered medical practitioner; and that, if such certificates are required to be in accordance with a special form, provision should be made whereby any medical practitioner requiring such forms may obtain them without difficulty.

Dr. H. B. BRACKENBURY, in moving the resolution, said the right of every doctor to give certificates under the Insurance Act had been obscured by the adoption, since January 1st, of a common form for certificates. These were now supplied only to practitioners on the panel, whereas formerly the insured person could take the approved society's form to any practitioner he chose. There were insured persons who preferred to receive treatment from practitioners who had attended them for years, but who had not joined the panel. It was necessary that these practitioners should be able to give them the certificates entitling them to sickness benefit in a form which complied with the requirements of approved societies. Certain societies had issued notices implying that members must go to practitioners on the panel for all purposes; this was an interference with the liberty of insured persons. The position had also led to suspicion that practitioners on the panel were in league with approved societies to steal a march on their colleagues who had not accepted service under the Act. Of course, there was not a word of truth in that, and none were more anxious than practitioners on the panel to avoid any administrative methods that might give colour to such a suspicion.

Subsequent speakers expressed sympathy with the motion, which was carried unanimously, and ordered to be communicated to the Insurance Commissioners and the Association of Insurance Committees.

LIVERPOOL.

Payments on Account.

The Liverpool Insurance Committee on February 5th discussed a proposal to reduce the payments on account to practitioners on the panel from 1s. 9d. to 1s. a quarter for each person on the lists. Dr. BYRNE, in explaining the recommendation, mentioned that the Committee had not received from the Commissioners a list of persons entitled to benefit, as modified by the removal of the names of those serving with the forces, and the proposed payment on account was the most generous possible in the circumstances. With the distribution of the surplus panel fund the doctors on the panel received, for 1913, 8s. 2½d. for every insured person on their lists. They must now realize, in common with other professional men, that they might have to suffer financial loss owing to the war.

It was decided to issue to practitioners a statement explaining the position of the medical benefit fund.

IRELAND.

MEDICAL CERTIFICATION UNDER INSURANCE ACT.

THE following protest refers to the policy of the Irish Insurance Commissioners in grouping several dispensary districts into one administrative area for medical certification for sickness benefits under the Insurance Act:

> We, the undersigned medical practitioners of the co. Cavan, strongly protest against the present system of medical certification for sickness benefits under the Insurance Act in this county, and demand that such medical certification should be at once replaced, in justice to the sick insured and the doctors, by a system of medical certification whereby the medical attendant certifies for his insured patients.

(Signed)	WILLIAM O'ROURKE.	RICHARD RYAN.
	F. P. SMITH.	JOHN LUNDIE.
	H. C. HALLOWES.	P. J. DEMPSEY.
	H. W. ACHESON.	JOHN RYAN.
	E. W. MCQUAID.	W. W. MOORE.
	J. SHERIDAN.	J. V. MCNALLY.
	M. J. MCQUAID.	P. F. DOLAN.
	J. B. KENNY.	C. J. DOUGLAS.
	T. H. MOORHEAD.	M. J. LOUGHREY.
	L. BUCHANAN.	R. MCELWAINE.
	J. W. TATE.	

The chief objection from a medical point of view to this grouping by the Insurance Commissioners is that its object is to prevent the medical attendant certifying his own insured patients. We have received from Dr. J. B. Kenny, of Killeshandra, co. Cavan, an individual letter of protest. He states that the Insurance Commissioners propose to make one appointment of a medical officer for the two dispensary districts of Ballinagh and Killeshandra for the purpose of certification under the Insurance Act. The two districts, he states, do not touch at any point; part of another dispensary district intervenes. His application to be appointed for the Killeshandra dispensary district has merely been acknowledged.

CORK.

The annual general meeting of the Cork medical profession was held in Cork on January 23rd, when Mr. J. COTTER, F.R.C.S., was in the chair. The chief business of the meeting, which was largely attended, was to consider the decision of the Irish Insurance Commissioners to appoint part-time medical certifiers under the Insurance Act in Ireland. The past committee and officers were re-elected.

President's Address.

Mr. COTTER, in thanking the members for having reappointed him chairman, said he had intended not to allow himself to be re-elected, but in consequence of the peculiar situation of the profession he felt it was his duty to accede to the unanimous wish of the members. In referring to the work of the past year he said that various meetings had been held for negotiations as regards the Insurance Act, but these negotiations had borne no fruit. It had been emphasized to the Medical Commissioner, Dr. Maguire, that all dealings with the Commissioners were to be conducted solely through the Irish Medical Committee.

It would appear that at present the Commissioners intended to give up the panel system and appoint part-time certifiers—in fact, some had already been appointed in certain areas. At its meeting on October 24th, the Cork medical profession had by a unanimous resolution expressed its disapproval of such appointments, and the Irish Medical Committee and other medical bodies had objected in a similar manner. The meeting that night was asked to define its relations towards those men who had accepted such posts, and he called on Dr. Hennessy, the Secretary of the British Medical Association in

Ireland, to inform the Cork profession as to what was being done in other areas.

DR. HENNESSY said that he would have preferred, before speaking, to have heard the views of those present, but, in response to the wish of the President, would point out that the much-talked-of State Medical Service was a myth; it would be quite inoperable as regards the legislative bodies. In reply to Dr. Maguire's statement "that the panel was a failure," Dr. Hennessy quoted the report of the Orange Society, which showed the facts in a completely different light. He looked upon the part-time scheme as most mischievous. Opposition to it was organized by the medical profession and the leading friendly societies in Ulster. The Commissioners themselves were the cause of the failure of the panel system, and if they succeeded in introducing the appointment of part-time certifiers the extra money grant would not be given. The appointment of part-time certifiers was resented in Ireland. The Commissioners knew that in such officers they would have pliant men to do their behests. Fifteen out of every sixteen medical men in Ireland were in strong opposition to the Commissioners' part-time scheme of certification; no consultant in Dublin would meet a part-time certifier.

On the motion of Professor ASHLEY CUMMINGS it was unanimously resolved:

> That we, the Cork medical profession, refuse to meet professionally any medical man who takes up the position of part-time or whole-time certifier under the National Insurance Act.

It was also resolved that every medical man in Cork should sign this rule, and that any medical man in the city refusing to attach his signature should be deemed to have violated the rule.

A vote of thanks was accorded to Dr. Hennessy for attending the meeting.

INSURANCE NOTES.

SCOTTISH DRUG ACCOUNTS COMMITTEE.

Glasgow Insurance Committee v. *Scottish Insurance Commissioners.*

IN the Court of Session before Lord Anderson on February 2nd an application by the Glasgow Insurance Committee was heard to interdict the Scottish Insurance Commissioners from carrying into effect the National Health Insurance (Drug Accounts Committee) Regulations (Scotland), 1914, made by the Scottish Insurance Commissioners under Section 59 and Section 80 of the National Insurance Act, 1911, and dated December 19th, 1914, and from laying the regulations before the Houses of Parliament. The complainers stated that various regulations had been issued by the respondents from time to time providing *inter alia* for agreements being made between the Insurance Committees and chemists or other persons for the supply of drugs and appliances at specified prices. In carrying out their administrative duties the complainers had made provision for a careful and systematic check of the accounts for drugs and appliances which fell to be paid by them out of a fund known as the Drug Fund, which was under their administration. In or about the month of October, 1914, the respondents convened a meeting of representatives of Insurance Committees for the purpose of considering the advisability of establishing a central checking office for the whole of Scotland. Thereafter the respondents drew up and issued a memorandum setting forth certain proposals for the constitution of a Drug Accounts Committee, which should take over from the various Insurance Committees the duty of checking accounts for drugs and appliances at present discharged by them. The complainers objected to the establishment of the proposed central organization upon the ground that it involved an interference with the Committee's administration within the area entrusted to them by the provisions of the Insurance Acts, and similar objections were also intimated by other Insurance Committees. Notwithstanding these objections, the respondents in December, 1914, intimated that they had resolved to require Insurance Committees in Scotland to combine as from January 1st, 1915, for the purpose of establishing a central organization to be known as the Drug Accounts Committee. Thereafter they issued the regulations complained of. The complainers maintain that the action of the respondents in setting up the proposed committee is *ultra vires* in respect that it interferes with the scheme of administration of medical benefit provided by the statute, and constitutes an invasion of the statutory jurisdiction and rights of the Insurance Committees. The respondents were about to take steps to lay the regulations before both Houses of Parliament with a view to their obtaining statutory effect. An action of declarator and interdict was about to be raised at the instance of the complainers, along with various other Insurance Committees, for the purpose of having the validity of the regulations determined. It was accordingly necessary that the respondents should not be permitted to take any further steps to secure for the regulations the force of statute until the legal questions about to be raised had been determined by a court of law.

Mr. Graham Robertson, for the respondents, said the regulations had been sent to the Clerks of Parliament, and the matter was out of the hands of the Commissioners. The interdict should have been directed against the Clerks of Parliament. The Commissioners had already taken proceedings towards the formation of the new Committee under the regulations, on the assumption that they were valid. He submitted that the appropriate place for objection to be taken to the regulations was Parliament.

Mr. Clyde, K.C., for the complainers, stated that in the case of Lockwood the judges in the House of Commons stated that once such regulations were laid upon the table of Parliament they acquired the force of statute unless a petition was presented to the King requesting him not to sanction them. In this case such a petition was impossible, as the Government was to occupy the full time of the House during the present session.

Lord Anderson suggested that the respondents might in the circumstances ask the authorities in London to hold their hands in the meantime.

Mr. Graham Robertson said he would prefer his lordship to order them to do so.

Lord Anderson pronounced an interlocutor allowing the note to be amended and ordaining the respondents to recall, cancel, and countermand any directions or requests given by them, either directly or indirectly, for laying the regulations before both or either the Houses of Parliament. His lordship said he thought it was only right to stop the further procedure of these regulations through the Houses of Parliament, because it was quite clear on the case of Lockwood that Mr. Clyde's clients would be debarred from having the legal question tried if the regulations were laid on the table of Parliament. According to the opinions of certain of the judges in the case of Lockwood, once regulations of this character received the imprimatur of Parliament they became in fact part of the Act of Parliament, under the authority of which they were framed. The legal question to be tried here was more appropriate for a court of law than for the House of Commons.

CORRESPONDENCE.

THE DEFECTIVE BASES OF THE ACT.

DR. B. G. M. BASKETT (Rayleigh, Essex) writes: You were good enough to print, on January 2nd, a letter in which I said "We know the worst, or nearly the worst."

We—or at least I—did not. I have since received this startling "Notice to insured persons."

> 1. You are entitled to apply for acceptance to each and any practitioner on the panel who, however, is entitled, subject to Clause (2) below, to refuse to accept you.
>
> In the event of refusal—
>
> 2. You are entitled to apply to the practitioner on the panel residing nearest your residence, who, by agreement with the ..... Insurance Committee, is bound to accept you, etc.

Absurd as are the words, the meaning they try to hide is painfully clear; if they stand, the right of refusal, which was a condition precedent of our service, is recalled. The Act so patently was a threat to us, that the authors perforce set up a machinery, the Panel Committee, to defend us. Just as the German army invades a peaceful town and exacts from it an indemnity to pay for the privilege of being invaded, so we are taxed from our fees to force us to pay for defending ourselves from an unprovoked attack—an arrangement which, like the refusal to frank necessary communications on their business, being a reduction from our irreducible minimum wage, is a breach of faith.

But at least we may claim that they are there to protect us, not to work the Act. If I have correctly understood my informant, the Commissioners extorted their consent to this extraordinary proposal by threats to withhold the unallotted patients' money.

One can conceive the Panel Committees' dilemma. But—again if I have correctly understood my informant—the conduct of the Commissioners was inexcusable. It was conceivable that they should bargain with next year's moneys; but to threaten to withhold money already due, is as if a trustee should say to his *cestui qui trust*—"I have money of yours in hand, but I am in a hole myself, and you shall not have it, unless you will help me." Of course they must shoulder their own burdens.

It not only is not true, it *can* not be true, that I have agreed to accept a man whom I have refused to accept. Surely no court could uphold this Commissioner-made law, which abrogates a right, not only statutory but common law, and degrades a panel doctor below all other citizens. Who else is forced to enter into a contract with

a private person? Even the Bath footmen in *Pickwick* carried up the coals only in consideration of sickness in the house and out of good nature.

I have often heard it said that as far as official utterances in the JOURNAL go, the Association might be wholly wedded to the Act. Seeing that only half of the profession is serving, and of that half many hate the Act more bitterly than ever, it is quite plain that the JOURNAL does not officially represent a very important section of the profession. Now we enemies of the Act have as much right to be represented as its friends—nay, the unhappy man who has been driven by threats (an injury which ought never to be forgiven or forgotten) into a poorly-paid service, which he is sure is bad for the people and knows to be degrading to himself, has a moral right to be represented, more clamant than his who flaunts golden fetters. I appeal through you to our leaders to take up a firm attitude on this question; let the Council advise the Commissioners that we submit for the time, but that after the war the point shall be threshed out in the courts.

It is not merely a question of a low-down doctor such as the lofty official naturally uses to wipe his boots on—a man who is to be fined if he dares to prescribe the drugs for a panel patient he would ordinarily use, while his masters throw away thousands of pounds on fancy record books, on yearly reissues of more and more useless certificates, on reams of literature which could only be read for a handsome salary. It is a question whether irresponsible officials are to make laws, and the Association can decide it for the nation.

May I say one word in answer to Dr. Brock's kindly note? I do not see how it would help the insurance caste if all the doctors went off the panel to-morrow; the deadweight "insurance" machine would remain. In my eyes the one hope is the electorate. Once they realize that the 5d. given "free" is not free, but a synonym for an extra, say, 1s. extorted indirectly, all history shows that it cannot survive, in compulsory form, another election. What I aim at is a general educative campaign. In such a campaign one is more useful as a co-sufferer and sympathizer than as an outside practitioner who rarely comes in contact with members of the caste. So, however distasteful it is, however much I resent the compulsion that drove me into a degrading service (degrading the compeller, however, more than the compelled), I think it is my duty for the time to remain.

UNDERPAYMENT OF PANEL DOCTORS.

"A PANEL PRACTITIONER" writes: Although all panel doctors are probably under the impression that they are not being fully paid for work done, the following deficiencies in payments which have actually occurred during 1914 to the practice in which I am a partner may prove of interest:

We received £398 17s. plus £40 5s. 2d. extra for mileage in payment for the whole of the year 1914. This sum, according to the Insurance Committee, was for the 1,293 patients on our panel; this works out at 6s. 2d. a head per annum. The actual number of patients on our panel was 1,442; for these we had 1,248 buff slips and 65 suspense slips; this left 179 patients unaccounted for by the Committee. Now, 1,442 patients at 7s. 6d. a head per annum is £504 15s., which represents a loss of £141 18s. for the year. Doctors as a class are inclined to bow their heads to bad debts, but being paid £398 17s. instead of £504 15s. is, I think, under the circumstances, somewhat of a record.

Another point is that a large proportion of the missing 179 patients for which we had no slips were country people, so we obviously lost mileage as well as the capitation fee for them. Also we were not paid, as far as we could make out, for any of the temporary patients that we had treated.

There are two facts that show that the missing 179 patients mentioned above are not quite the mythical people that the Insurance Committee would have us believe, as 22 of their number (some of whom have been on our panel since 1913) have already been under treatment since January 1st, 1915. The Insurance Committee have also sent us ten buff slips, as a result of, I believe, rather strong letters from a proportion of the 22, thus acknowledging the fact that they were on our panel.

These tremendous deficiencies are through no fault of our own, as twice during the year we have given to the Insurance Committee a complete list of the missing patients: and if any reader has tried to do this, he will know that it represents very many hours of most irritating clerical work.

There are two questions I should very much like to have authoritatively answered.

1. In such a case as the above mentioned—of shortage of payment by an Insurance Committee—is there any chance of a doctor recovering at least some of the amount due to him, and, if so, how can it be done?

2. Is a patient entitled to any panel treatment whatsoever if the doctor has not received a buff slip for that patient?

If we were purely business men instead of professional the Insurance Committees would not dare to treat us as they do; for at the present time, if only we liked to use our power, we are absolute masters of the situation. Supposing we all refused to do any more work unless they paid us in full for past work and bound themselves to pay us at the same rate in the future, I feel certain they would have to concede to our demands and just rights, as they could not possibly find enough men to do even a hundredth part of the work.

We must not forget that after this vile war is over they will, if it suits them, still further reduce their payments, as they will have a grand chance to put the screw on again with a large number of medical men suddenly thrown out of employment.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

LANCASHIRE AND CHESHIRE BRANCH:

LIVERPOOL DIVISION.

THE annual meeting of the Liverpool Division was held at the Liverpool Medical Institution on January 29th.

Election of Officers. — The following officers were elected:

Chairman: Dr. Walker.
Vice-Chairman: Dr. Bushby.
Honorary Secretary: Dr. Percy Edwards.
Representatives on Representative Body: Drs. Paterson, Walker, Tisdall, and Richardson.
Representatives on Branch Council: Drs. Barendt, E. T. Davies, Bowen, Claxton, and Edwards.
Executive Committee:—Bootle Ward: Drs. Dunn and Sugden; Northern Ward: Drs. Sheldon and Bennett Jones; Southern Ward: Drs. Bennett and Donnelly; Central Ward: Drs. Newbolt and Marsh; Western Ward: Drs. Allen and Henry Jones.
Ethical Committee: Drs. Given, Marsh, Richardson, Harvey, Newbolt, and Bradshaw, together with Drs. Walker and Edwards (*ex officio*).

Medical Attendance on Dependants.—The following resolution was passed:

> That, concerning the question of free medical attendance to the necessitous dependants of men serving with the forces, the Liverpool Division is of opinion that such gratuitous attendance should be given only to those dependants who have become necessitous through the war.

Service with the Forces.—It was resolved:

> This meeting is of opinion that where practitioners are doing the work of their colleagues who are away on active service, the former should receive all out-of-pocket expenses, and where the amount of work is large, some further arrangement, such as equal division of fees, should be come to.

The Honorary Secretary was instructed to send the first resolution to the four relief committees established in the Liverpool Divisional area, and both resolutions to all practitioners in the same area.

MUNSTER BRANCH.

A GENERAL meeting of the Branch was held on January 23rd, when Dr. WILLIAM DONOVAN, Vice-President, was in the chair.

New Members.—The following were unanimously elected members: Humphrey J. O'Sullivan, M.B., B.Ch. (Crookstown, co. Cork); Michael J. Ahern, L.R.C.P.and S.Edin. (Brosna, co. Kerry).

Medical Certification under the Insurance Act.—Dr. HENNESSY, Irish Medical Secretary, detailed the present position of medical men in Ireland as regards the Insurance Act and the matter of the appointment of part-time

certifiers by the Commissioners. The policy of the British Medical Association in Ireland, as in England, was to uphold the dignity of the medical profession. The appointment of part-time or whole-time certifiers was repugnant to the profession in Ireland. In Dublin no consultant would meet a medical certifier. The Commissioners had determined to abolish the panel system, and had arranged to appoint part-time certifiers in areas in which the panel system was in vogue as well as in areas in which it did not exist. The Irish Medical Committee and other medical bodies had emphatically condemned the appointments of part-time certifiers. He was pleased to say that the posts, with few exceptions, had not been accepted by members of the British Medical Association. In reply to Dr. BARRY, he said that the Commissioners would not agree to a medical man certifying for his own patients alone. The following resolution was unanimously adopted:

> The Munster Branch of the British Medical Association expresses its strongest disapproval of the acceptance by Irish practitioners of the posts of part-time or whole-time certifiers under the National Health Insurance Act, and considers such appointments inconsistent with the honour and interests of the medical profession.

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

A SPECIAL meeting of the Division was held at Newtown St. Boswells on February 2nd, when Dr. MUIR was in the chair.

Medical Referees.—The HONORARY SECRETARY explained the position of matters as regards medical referees and read Rule 2 of the Ethical Rules. After considering the alternative rules, of which notice was given in the circular convening the meeting, the following resolution was unanimously adopted:

> That in the opinion of this Division no medical practitioner should accept an appointment as medical referee to an approved society at a rate of remuneration less than £750 per annum, for whole-time service, or 10s. 6d. in respect of each insured person examined and reported upon, such remuneration to be exclusive of travelling and other expenses necessary in cases where an insured person is visited at his own home, and any medical practitioner accepting or continuing to hold such an appointment at a rate of remuneration less than the above shall be deemed to have acted in a manner detrimental to the honour and interests of the profession.

GENERAL MEDICAL COUNCIL.

EXECUTIVE COMMITTEE.

A SPECIAL meeting of the Executive Committee of the General Medical Council was held on January 22nd, when Sir DONALD MACALISTER, President, was in the chair. The other members present were Dr. Norman Moore, Sir Henry Morris, Mr. Tomes, Mr. Hodsdon, Dr. Norman Walker, Sir John Moore, and Sir Charles Ball.

RECIPROCITY WITH BELGIUM.

It was reported that a Royal decree by the King of the Belgians had been communicated to the Foreign Office on December 19th, 1914, providing that during the continuance of the war authorization to practise in Belgium the art of healing and the profession of dentist or pharmacist might be granted by the Minister of the Interior to an applicant who had obtained abroad the status of a medical practitioner, pharmacist, or dentist. It was also reported that on January 7th an Order in Council had been made extending Part II of the Medical Act, 1886, to Belgium until otherwise ordered. The committee considered certain evidence which had been submitted to it by Belgian professors, graduates, and others in regard to the course of study and examinations which had to be undergone in order to obtain the degree of doctor of medicine in the universities of Belgium, and the legal authorization to practise in that country. The committee, being satisfied with the evidence produced, resolved as follows:

> That, so long as the Order in Council of January 7th, 1915, remains in force, any person who produces evidence satisfactory to the Registrar that he has obtained the degree of doctor of medicine in the Belgian Universities of Brussels, Ghent, Liege, and Louvain, and is legally authorized to practise medicine, surgery, and midwifery in Belgium; and who satisfies the Registrar as to the other particulars specified in Section 12 of Part II of the Medical Act, 1886, shall be entitled to be registered in the Foreign List of the *Medical Register*.

THE NUMBER OF MEDICAL STUDENTS.

The PRESIDENT reported that, by the courtesy of the deans and other officers of the medical schools, he had been able to ascertain that, as compared with the session beginning October, 1914, the number of students in attendance in each year of the curriculum was lower to the following extent:*

First year	49 fewer.
Second year	220 ,,
Third year	256 ,,
Fourth year	202 ,,
Fifth year (or higher)	312 ,,

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Staff Surgeon BERTRAM R. BICKFORD to the *Pembroke*, additional; Surgeon GEORGE D. MACINTOSH, M.B., to the *Victory*, additional, for disposal. Temporary Surgeons: GEORGE M OAKDEN to the *Prince George*, vice Allan; D. R. BEDELL-SIVRIGHT and G. R. ASPINALL to the *Victory*, additional, for Haslar Hospital; W. B. CUNNINGHAM and W. L. GLEGG to the *Pembroke*, additional, for Chatham Hospital; A. G. STEWART and D. S. MACKNIGHT to the *Vivid*, additional, for disposal; J. A. THOMPSON, M.D., to the *Sirius*, vice Holliot; THOMAS E. FRANCIS, M.B., to the *Britannia*, vice Bushe.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon WILFRID H. BLEADEN to the *Pembroke*, additional; Surgeon Probationers D. STEWART to the *Miranda*, vice Williams; N. MACLEOD to the *Sandfly*, vice Moser; RALPH COYTE to the *Matchless*. To be Surgeon Probationer: Mr. P. S. MARSHALL.

ARMY MEDICAL SERVICE.

COLONEL JOHN C. CULLING is retained on the active list under the provisions of Article 129, Royal Warrant for Pay and Promotion, 1913, and to be supernumerary.

ROYAL ARMY MEDICAL CORPS.

Brevet-Colonel FREDERICK SMITH, D.S.O., is retained on the active list under Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary.

ROBERT T. LEIPER, M.B., to be Lieutenant-Colonel, temporary.

The following relinquish their temporary commissions with Allied Forces Base Hospital: Major ARTHUR WHITEHORNE-COLE, Major BARNARD HUDSON, M.D., Major PHILIP M. HEATH, F.R.C.S., Captain ERNEST D. ROBERTS, Lieutenant OSWALD T. DINNICK, Lieutenant WILLIAM M. S. ROBINSON, F.R.C.S.

The Christian names of DOUGLAS WILBERFORCE SMITH, M.B., F.R.C.S., are as now described, and not as stated in the *London Gazette* of August 28th, 1914.

SYDNEY G. L. CATCHLOVE, M.B., to be temporary Captain.

Temporary Lieutenant JAMES G. FERGUSON resigns his commission.

To be temporary Lieutenants: DOMINIC F. CURRAN, JOHN H. GLOVER, M.B., WILLIAM PRITCHARD-AIREY, JAMES MORRISON, M.B., HERBERT W. FANKHAUSEN, M.B., JAMES C DUNN, M.D., WILFRED C. S. WOOD, DONALD WATSON, M.B., FERGUS H. YOUNG, M.B., GEORGE A. MALING, M.B., STANISLAUS READER, WALTER N RISHWORTH, M.B., LEONARD A. P BURT, M.B., SAMUEL R. MACKENZIE, M.D., CHARLES P V MACCORMACK, ARTHUR RYLAND, F.R.C.S E., CHARLES J. GLASSON, M.D., JAMES N. G W MCMORRIS, HENRY W. DOLL, JAMES TATE, M.B., FRANK L GILL, M.B., WILLIAM A. TAYLOR, M B., CHARLES BIRCH, ARTHUR W H. DONALDSON, M.B., HENRY S. C HOOPER, JOHN F. VENABLES, M B., EDWARD B SUNDERLAND, CLIVE W ROE, FRANK C. GREIG, JOHN P. BLOCKLEY, M B., DESMOND W BEAMISH, WILLIAM LESLIE, M.B., ROBERT W MURPHY, M.D., JAMES PARKER, ARTHUR POOLE, M.B., GERALD ROBINSON, CYRIL C BEATTY PATRICK STEELE, M D., WILLIAM A. BROWN, M.B., REGINALD H. FOTHERGILL, M.B., DESMOND M. MACMANUS, WILLIAM G RIDGWAY, F.R.C.S.I., ROBERT A. WRIGHT, JAMES HILL, M.B., BEVIL M. COLLARD, THOMAS J. R. MAGUIRE, M.B., HAROLD M. CORY, REGINALD P. COCHIN, M.D., JOHN GORDON THOMSON, M.B.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT ROBERT G. GOLDIE to be Captain.

Lieutenants confirmed in their rank: JOHN S. DOCKRILL, HENRY P. WHITWORTH, THOMAS H S. BELL, FRANCIS A DUFFIELD, JOHN J. D. LA TOUCHE, JOSEPH H BAIRD, JOHN J MOLYNEUX, JOHN STEPHENSON, JAMES PURDIE, CLARK NICHOLSON, WILLIAM S WALLACE, SAMUEL D. G MCENTIRE, GERALD G ALDERSON, ARTHUR A. MAILEY, WILFRID R WOOD, FRANCIS A. RODDY, HAROLD A CROUCH, HERBERT S MILNE, JOHN S POOLEY, QUENTIN V. B WALLACE, WILLIAM H. NICHOLLS, HENRY ALCOCK, JOHN KENNEDY, THOMAS F. KENNEDY.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) Sanitary Company.—ANDREW A. MCWHAN, M.B., to be Lieutenant.

Second London (City of London) Field Ambulance.—Lieutenant HORACE L. G. HAYNES, from the Second North Midland Field Ambulance, to be Lieutenant. The following announcement is substituted for that in the *London Gazette* of October 23rd, 1914: (Honorary Lieutenant in the Army) WILLIAM E. RIELLY, M.B., from the Territorial Force Reserve, to be Captain.

Second London (City of London) General Hospital.—MAYNARD HORNE, M.B., to be Captain (temporary).

Second Home Counties Field Ambulance.—Captain JAMES DUNDAS, M.B., from the Sanitary Service, to be Captain; Lieutenant ERNEST M. MORRIS, from Attached to Units other than Medical Units, to be Lieutenant.

First Southern General Hospital.—ROBERT B. D HIRD, M.B., to be Captain whose services will be available on mobilization.

* These figures are revised from those contained in the letter from the President published in the JOURNAL of December 26th, 1914.

South-Eastern Mounted Brigade Field Ambulance.—Captain CHARLES H. CALDICOTT, M.B., and Captain ARTHUR L. HEISER, from Attached to Units other than Medical Units, to be Captains.

Second North Midland Field Ambulance.—Lieutenant ROBERT PINTO-LEITE, from the Second London (City of London) Field Ambulance, to be Lieutenant.

Third Northern General Hospital.—NORTON MILNER to be Captain, whose services will be available on mobilization.

Second Northumbrian Field Ambulance.—WILLIAM SMITH, M.B., to be Lieutenant.

Second Lowland Field Ambulance.—To be Lieutenants: STEPHEN A. MACPHEE, M.B., COLON C. PHILIP, late Cadet, Edinburgh University Contingent, Senior Division, Officers' Training Corps.

Sanitary Service.—ALFRED E. WILLIAMS, M.D., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—To be Lieutenants: WILLIAM BROWN, M.D., WILLIAM A. PHILLIPPS, M.D.

Vital Statistics.

VITAL STATISTICS OF LONDON DURING THE FOURTH QUARTER OF 1914.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

In the accompanying table will be found summarized the vital statistics of the City of London and of the metropolitan boroughs based upon the Registrar-General's returns for the fourth quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided. The 26,398 births registered in the quarter under notice were equal to an annual rate of 23.4 per 1,000 of the population, estimated at 4,516,612 persons in the middle of the year; in the corresponding quarters of the three preceding years the birth-rates were 24.0, 23.9, and 23.7 per 1,000 respectively. The lowest birth-rates last quarter were 11.2 in the City of Westminster, 13.0 in Hampstead, 15.9 in Holborn, 16.6 in Kensington, 17.6 in Wandsworth, and 17.7 in Chelsea; among the highest rates were 27.3 in Shoreditch, 28.9 in Bermondsey, 29.9 in Poplar, 30.3 in Stepney, and 37.3 in Finsbury.

During the quarter the deaths of 17,179 London residents were registered, equal to an annual rate of 15.3 per 1,000; in the corresponding quarters of the three preceding years the rates were 14.3, 15.0, and 14.1 per 1,000 respectively. The death-rates last quarter ranged from 11.3 in Wandsworth, 11.6 in Hampstead, 11.8 in Lewisham, 13.1 in the City of London and 13.7 in the City of Westminster, to 17.0 in Bethnal Green, 17.2 in St. Pancras and in Holborn, 17.5 in Poplar, 19.2 in Southwark, and 21.4 in Finsbury.

The 17,179 deaths from all causes included 32 from enteric fever, 479 from measles, 107 from scarlet fever, 121 from whooping-cough, 264 from diphtheria, and 592 from diarrhoea and enteritis among children under 2 years of age. Enteric fever was proportionally most fatal in the City of Westminster, St. Marylebone, Hampstead Holborn, the City of London, and Greenwich; measles in Hammersmith, Hackney, Shoreditch, Bethnal Green, and Southwark; scarlet fever in Fulham, the City of Westminster, Stoke Newington, Stepney, and Deptford; whooping-cough in Hammersmith, Fulham, Finsbury, Shoreditch, Bethnal Green, Southwark, and Deptford; and diphtheria in Hammersmith, Fulham, St. Marylebone, Bethnal Green, Stepney, Deptford, and Woolwich. The mortality from diarrhoea and enteritis among children under 2 years of age in proportion to the births registered during the quarter was greatest in Paddington, the City of Westminster, Shoreditch, Bethnal Green, Poplar, and Southwark.

The deaths from phthisis among London residents last quarter numbered 1,672, and were equal to a rate of 1.48 per 1,000, against 1.40, 1.47, and 1.32 in the corresponding quarters of the three preceding years. The death-rates from this disease last quarter ranged from 0.70 in the City of London and in Lewisham, 0.79 in Paddington, 0.97 in Hampstead, and 1.05 in Wandsworth, to 1.80 in Deptford, 1.85 in St. Pancras, 1.92 in Holborn, 1.95 in Southwark, 2.36 in Finsbury, and 2.69 in Shoreditch.

Infant mortality measured by the proportion of deaths among children under 1 year of age to registered births was equal to 109 per 1,000 last quarter, against 113, 103, and 115 per 1,000 in the corresponding quarters of the three preceding years. Among the lowest rates recorded last quarter were 36 in the City of London, 60 in Hampstead, 69 in Woolwich, 71 in Chelsea, 84 in Stoke Newington, and 88 in Lewisham; the highest rates were 129 in Paddington, 132 in Bermondsey, 140 in Southwark, 143 in Shoreditch, and 172 in Bethnal Green.

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Death occurring in Public Institutions during the Fourth Quarter of 1914.

BOROUGHS.	Estimated Population middle of 1914.	Births.	Deaths.	Annual Rate per 1,000 Living.		Deaths from								Deaths of Children Under 1 Year of Age to 1,000 Registered Births
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (Under 2 Years).	Phthisis.	
COUNTY OF LONDON	4,516,612	26,398	17,179	23.4	15.3	32	—	479	107	121	264	592	1,672	109
Paddington	142,055	634	506	17.9	14.3	1	—	1	3	4	5	27	28	129
Kensington	170,817	707	606	16.6	14.2	1	—	8	4	1	4	12	50	113
Hammersmith	124,750	683	477	22.0	15.3	2	—	33	1	9	10	10	45	101
Fulham	158,849	969	550	24.5	13.9	—	—	21	10	11	13	27	55	124
Chelsea	63,791	281	228	17.7	14.3	1	—	2	2	—	1	3	19	71
City of Westminster ...	152,346	424	520	11.2	13.7	3	—	3	6	2	7	14	44	104
*St. Marylebone	112,892	957	388	34.0	13.8	2	—	—	2	3	9	12	38	49
Hampstead	86,731	281	251	13.0	11.6	2	—	—	2	—	6	—	21	60
St. Pancras	212,497	1,218	909	23.0	17.2	—	—	29	4	5	11	27	98	112
Islington	324,764	1,825	1,284	22.5	15.9	1	—	30	10	7	22	48	132	115
Stoke Newington ...	50,454	226	173	18.0	13.8	—	—	—	2	—	—	2	16	84
*Hackney	223,724	1,388	856	24.9	15.3	2	—	87	2	4	8	30	94	91
*Holborn	45,861	182	197	15.9	17.2	2	—	1	1	2	2	—	22	99
*Finsbury	83,212	774	443	37.3	21.4	—	—	1	3	9	2	19	49	105
City of London	17,129	110	56	25.8	13.1	1	—	1	—	—	1	1	3	36
Shoreditch	108,869	741	519	27.3	19.1	1	—	23	2	5	7	30	73	143
Bethnal Green	127,662	789	542	24.8	17.0	—	—	23	3	7	10	43	54	172
*Stepney	273,265	2,065	1,143	30.3	16.8	1	—	40	14	2	24	41	109	122
Poplar	160,222	1,195	700	29.9	17.5	1	—	15	2	1	11	39	63	126
Southwark	186,941	1,267	896	27.2	19.2	—	—	46	4	10	12	43	91	140
Bermondsey	124,213	895	514	28.9	16.6	2	—	16	1	3	5	26	42	132
*Lambeth	296,724	2,000	1,208	27.0	16.3	4	—	42	4	8	16	32	125	104
Battersea	167,338	958	579	23.0	13.9	—	—	18	6	3	5	28	66	101
Wandsworth	338,998	1,491	954	17.6	11.3	—	—	7	6	9	18	23	89	91
Camberwell	262,020	1,578	926	24.2	14.2	1	—	19	2	3	15	23	89	108
Deptford	109,182	738	434	27.1	15.9	—	—	1	4	7	11	16	49	110
Greenwich	96,037	524	389	21.9	16.2	2	—	—	3	2	5	7	28	113
Lewisham	172,433	805	507	18.7	11.8	1	—	1	1	1	9	7	30	88
Woolwich	122,836	693	424	22.6	13.8	1	—	11	3	3	15	2	50	69

* No correction is made for births in lying-in institutions; the boroughs principally affected are marked thus (*).

HEALTH OF ENGLISH TOWNS.

In the ninety-six large English towns 8,680 births and 6,995 deaths were registered during the week ended Saturday, February 6th. The annual rate of mortality in these towns, which had been 18.8, 18.0, and 19.2 per 1,000 in the three preceding weeks, rose to 20.1 per 1,000 in the week under notice. In London the death-rate was equal to 21.5, against 19.6, 18.4, and 20.3 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 10.3 in Ilford, 10.9 in Swindon, 11.8 in Southampton, 12.5 in Edmonton and in Warrington, and 12.9 in Wakefield to 29.7 in Hastings, 29.9 in Great Yarmouth, 31.6 in Brighton, 32.5 in Merthyr Tydfil, 35.2 in Stockton-on-Tees, and 40.7 in Cambridge. Measles caused a death-rate of 2.5 in Plymouth, 2.7 in Grimsby, 2.8 in Wigan, 3.1 in Gateshead, 3.5 in Darlington, 3.6 in Cambridge, 4.1 in St. Helens, 4.8 in Rotherham, 6.7 in Merthyr Tydfil, and 9.7 in Stockton-on-Tees; whooping-cough of 1.2 in Blackburn, 1.7 in Reading and in Bristol, 1.9 in Rhondda, 2.4 in Sunderland, 3.1 in Gloucester, and 3.7 in Merthyr Tydfil; and diphtheria of 1.7 in Southampton and 2.1 in Halifax. The mortality from scarlet fever or from enteric fever showed no marked excess in any of the large towns. A fatal case of small-pox was registered in London, but not one in any other of the ninety-six towns. The causes of 61, or 0.9 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 15 were recorded in Birmingham, 11 in Liverpool, 5 in Manchester, 5 in Preston, and 2 each in West Bromwich, Bootle, Blackburn, and Darlington. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,952, 3,836, and 3,647 at the end of the three preceding weeks, further fell to 3,395 on Saturday, February 6th; 365 new cases were admitted during the week, against 338, 308, and 326 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,224 births and 1,086 deaths were registered during the week ended Saturday, February 6th. The annual rate of mortality in these towns, which had been 22.8, 21.7, and 22.4 per 1,000 in the three preceding weeks, further rose to 24.1 in the week under notice, and was 4.0 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-

rate ranged from 16.4 in Clydebank, 17.0 in Kilmarnock, and 20.8 in Edinburgh, to 29.5 in Coatbridge, 32.3 in Perth, and 39.1 in Dundee. The mortality from the principal epidemic diseases averaged 3.3 per 1,000, and was highest in Hamilton and Dundee. The 470 deaths from all causes in Glasgow included 47 from whooping-cough, 9 from scarlet fever, 8 from infantile diarrhoea, 4 from diphtheria, 1 from enteric fever, and 1 from measles. Twenty-two deaths from whooping-cough were recorded in Dundee, 6 in Edinburgh, 4 in Motherwell, and 3 in Greenock; from measles, 11 deaths in Dundee; from scarlet fever, 2 deaths each in Edinburgh, Hamilton, and Clydebank; and from diphtheria, 4 deaths in Edinburgh, 2 in Aberdeen, and 2 in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, January 30th, 680 births and 575 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 665 births and 537 deaths in the preceding period. These deaths represent a mortality of 24.7 per 1,000 of the aggregate population in the districts in question, as against 24.0 per 1,000 in the previous period. The mortality in these Irish areas was therefore 5.7 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 29.2 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 29.8 (as against an average of 32.1 for the previous four weeks), in Dublin city 33.7 (as against 34.9), in Belfast 20.4 (as against 21.5), in Cork 26.5 (as against 30 2), in Londonderry 21.5 (as against 20.9 in Limerick 20.3 (as against 23.0), and in Waterford 32.3 (as against 32.8). The zymotic death-rate was 1.5, or the same as in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE: DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House-Surgeon. Salary, £140 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—Male House-Surgeon. Salary, £150 per annum.

BEDFORD COUNTY HOSPITAL.—Temporary House-Surgeon.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—House-Surgeon. Honorarium, £100 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

BIRKENHEAD EDUCATION COMMITTEE.—Assistant School Medical Officer Salary, £300 per annum, rising to £350.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill. — Junior Assistant Medical Officer (female). Salary, £200 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOURNEMOUTH: ROYAL NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST. — Resident Medical Officer. Salary, £300 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRADFORD CITY.—Two Medical Officers in connexion with child welfare scheme. Salary, £350 per annum each.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—(1) House-Physician. (2) Junior House-Surgeon. (3) Assistant House-Surgeon. Salaries, £80 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £200 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House-Physician. Salary, £10 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary, £100 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Surgeon. Salary, £180 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CHESTER CITY.—Assistant Medical Officer of Health. Salary, £300 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E. - (1) Resident Medical Officer. (2) House-Physician. Salary, £200 and £75 per annum respectively,

COLCHESTER: ROYAL EASTERN COUNTIES INSTITUTION FOR IMBECILES AND THE FEEBLE-MINDED. — Medical Officer. Salary, £200 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—House-Physician. Salary, £110 per annum.

DAGENHAM TEMPORARY SANATORIUM. — Resident Medical Officer. Salary, £300 per annum.

DERBYSHIRE COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary, £400 per annum.

DEVON COUNTY EDUCATION COMMITTEE. — Temporary Assistant School Medical Officer. Salary, £7 7s. per week.

DEVONPORT: ROYAL ALBERT HOSPITAL. — House-Surgeon. Salary, £150 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

EDINBURGH PROVINCIAL COMMITTEE FOR TRAINING OF TEACHERS. Lady Medical Officer and Lecturer in School Hygiene. Salary, £300 to £350 per annum.

EDINBURGH: ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.—Four Resident Medical Officers.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—(1) Senior House-Surgeon. (2) House-Physician. (3) Assistant House-Surgeon. Salary for (1), £250 per annum; and for (2) and (3), £150 per annum.

GLAMORGAN COUNTY COUNCIL.—Medical Inspector of School Children. Salary, £300 per annum.

GLASGOW: ROYAL SAMARITAN HOSPITAL FOR WOMEN.—Resident Medical Officer. Honorarium, £25 per annum.

GOVERNMENT LYMPH ESTABLISHMENT.—Temporary Assistant Bacteriologist. Salary, £300 per annum.

HACKNEY UNION INFIRMARY.—Junior Assistant Medical Officer. Salary, £250 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £60 and £50 per annum respectively.

ISLINGTON INFIRMARY, Highgate Hill, N.—Junior Assistant Medical Officer. Salary, £140 per annum.

KENSINGTON TUBERCULOSIS DISPENSARY. — Temporary Medical Officer. Salary, £500 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH.—Bacteriologist. Salary commencing £170 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Two Resident House-Physicians. Salary, £30 for six months each.

MANCHESTER CORPORATION.—(1) Second and Third Medical Assistants at the Monsall Fever Hospital. Salary, £175 and £150 per annum respectively.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and, upon promotion, to £450.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £180 per annum, rising to £200.

MANCHESTER: VICTORIA MEMORIAL JEWISH HOSPITAL.—(1) Resident Medical Officer. (2) House-Surgeon. (3) Assistant House Surgeon. Salary, £100, £60, and £50 per annum respectively.

MIDDLESEX COUNTY ASYLUM, Napsbury.—Temporary Assistant Medical Officer. Salary, £6 6s. per week.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary, £80 per annum.

NATIONAL SANATORIUM, Benenden.—Medical Superintendent. Salary, £350 per annum, rising to £500.

NEWPORT: ROYAL GWENT HOSPITAL. — Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORTHAMPTON COUNTY ASYLUM.—Second Assistant Medical Officer. Salary, £250 per annum, rising to £300.

NORWICH: NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £300 per annum, rising to £350.

NOTTINGHAM GENERAL HOSPITAL.—(1) Senior House-Physician. (2) Assistant House-Physician. Salary, £120 and £100 per annum respectively.

OLDHAM ROYAL INFIRMARY.—Second House-Surgeon. Salary, £120 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—House-Surgeon. Salary, £80 per annum.

PADDINGTON INFIRMARY.—Two Assistants to the Medical Superintendent of the Infirmary and Medical Officer of the Workhouse. Salary, £250 per annum.

PAISLEY: ROYAL ALEXANDRA INFIRMARY.—Resident House-Physician.

PLAISTOW: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £10 honorarium on completion of six months' service.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—House-Surgeon. Salary, £150 per annum.

PRESTON: ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary, £120 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Assistant Surgeon.

RHONDDA URBAN DISTRICT COUNCIL.—Temporary Assistant Medical Officer of Health and School Medical Officer. Salary, £300 per annum.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.—Joint Afternoon House Anaesthetist. Honorarium, £24 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Temporary Honorary Assistant Physician. (2) Second Resident Medical Officer. Salary, £100 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House-Surgeon. Salary, £75 per annum.

SALFORD COUNTY BOROUGH.—Assistant Tuberculosis Officer. Salary, £350 per annum, rising to £450

SALFORD ROYAL HOSPITAL. Casualty House-Surgeon. Salary, £100 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SCARBOROUGH UNION.—District Medical Officer. Salary, £110 per annum.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SHEFFIELD CITY HOSPITALS.—First, Second, and Third Assistant Medical Officers. Salary, £250, £225, and £200 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Lady Assistant House-Surgeon. (2) Lady Assistant House-Physician. Salary, £85 and £80 per annum respectively.

SOUTHAMPTON; ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary, £120 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annnum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Two Honorary Anaesthetists.

SWANSEA UNION.—Resident Assistant Medical Officer. Salary, £295 per annum, rising to £345.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £150 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annnm.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Honorarium, £40 for six months.

WAKEFIELD CITY.—Temporary Assistant Medical Officer of Health. Salary, £300 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £110 per annum.

WANDSWORTH UNION INFIRMARY.—Assistant Male Medical Officer. Salary, £5 5s. weekly.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Resident House-Physician. Salary, £100 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WHITECHAPEL UNION INFIRMARY.—Second Assistant Resident Medical Officer (male). Salary, £200 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—(1) House-Surgeon (male). (2) Junior Lady House-Surgeon. Salary, £170 and £130 per annum respectively,

WORCESTER CITY EDUCATION DEPARTMENT.—Assistant School Medical Officer (lady). Salary, £300 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Lerwick (Shetland), Newent (Gloucestershire), Stewartstown (co. Tyrone).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

CAMPBELL, Colin G. H., M.B., C.M., Acting Medical Officer in Charge of British Ankylostomiasis Commission, Trinidad, B.W.I.

HONEYBURNE, William R., M.D.Camb., D.P.H., Assistant Medical Officer to the Chester Town Council.

LEASK, Henry L. G., M.D., F.R.F.P.S.Glasg., Surgeon to the Glasgow Eye Infirmary, vice James Hinshelwood, M.A., M.D., F.R.F.P.S.Glasg., resigned.

MCALLISTER, A. C., M.B., B.S.Lond., M.R.C.S., Obstetric Registrar to King's College Hospital, Denmark Hill, S.E.

MACKENZIE, T. C., M.B., Assistant Medical Superintendent to the Bury and District Joint Hospital Board.

OLIVER, Geo. H., D.O.Oxon., M.R.C.S.Eng., L.R.C.P.Lond., Honorary Surgeon to the Ophthalmic Department of the Royal Eye and Ear Hospital, Bradford.

OWEN, A. J., L.R.C.P.Lond., District Medical Officer of the Steyning Union.

PATTON, Alex., M.B., Dispensary Medical Officer and Medical Officer of Health for Saintfield district of the Lisburn Union.

ST. THOMAS'S HOSPITAL.—The following appointments have been made:—

Casualty Officers and Resident Anaesthetists: J. A. G. Sparrow, M.A., M.B., B.Ch.Oxon.; G. A. Bird, M.B., B.S., B.Sc.Lond., M.R.C.S., L.R.C.P.; L. W. Shelley, B.A.Cantab., M.R.C.S., L.R.C.P.; G. T. Herbert, B.A., M.B., B.Ch.Oxon.; J. C. Davies, B.A., M.B., B.Ch.Oxon., M.R.C.S., L.R.C.P.; D. S. E. Milligan, M.R.C.S., L.R.C.P.; G. A. G. Bonser, B.A.Cantab., M.R.C.S., L.R.C.P.; P. Sai, M.R.C.S., L.R.C.P.

Casualty Assistants: W. F. Stiell, M.R.C.S., L.R.C.P.; R. T. Raine, B.A.Cantab., M.R.C.S., L.R.C.P.

Resident House-Physicians: J. E. Sharp, B.A.Cantab., M.R.C.S., L.R.C.P.; G. Cranstoun, B.A.Oxon., M.R.C.S., L.R.C.P.; F. C. Gladstone, B.A., M.B., B.Ch.Oxon.; C. O. H. Jones, M.R.C.S., L.R.C.P.

Resident House-Surgeons: W. H. C. Romanis, B.A.Cantab., M.R.C.S., L.R.C.P.; C. L. Gimblett, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; A. L. Blunt, M.R.C.S., L.R.C.P.; K. H. McMillan, M.R.C.S., L.R.C.P.

House-Surgeon to Block 8: W. H. Marshall, B.A.Cantab., M.R.C.S., L.R.C.P.

Obstetric House-Physicians: (Senior) W. Burt, M.R.C.S., L.R.C.P.; (Junior) V. T. Ellwood, B.A., M.B., B.Ch.Oxon.

Ophthalmic House-Surgeons: (Senior) P. G. Doyne, B.A., M.B., B.C.Oxon., F.R.C.S.Eng.; (Junior) S. H. Miles, B.A.Cantab., M.R.C.S., L.R.C.P.

PUBLISHERS' ANNOUNCEMENTS.

THE editor of the *British Review* having been given access, by the kindness of the owner, to a private collection of hitherto unpublished water-colours, chalk studies, and other drawings by eminent Masters, he proposes to publish a selection of them in facsimile as supplements to the *Review*. The first of the series is a pastel portrait by Sir Joshua Reynolds, very beautifully reproduced by a new process on a rough surface paper to match the text in the *Review* for February, 1915.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

JORDAN.—On February 4th, at 13, Upper Wimpole Street, W., to Dr. and Mrs. Alfred C. Jordan, a son.

ORMEROD.—On February 7th, at Beauchamp Lodge, Wimborne, the wife of Ernest William Ormerod, M.D.Camb., of a daughter.

DEATHS.

BINGHAM.—On February 7th, at the Kent County Asylum, Maidstone, of bronchopneumonia, Samuel Bingham, M.R.C.S., L.S.A., Acting Assistant Medical Officer, aged 67 years.

RISELEY.—On February 5th, 1915, at Ashlands, Park Lane, Sheffield, Dr. Stanley Riseley, aged 47 years.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 4 p.m. — Hunterian Oration by Sir William Watson Cheyne, Bt.

TUESDAY.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester Square, W.C., 4.30 p.m.—Cases and Pathological Specimens. Paper: The Treatment of Diseases of the Skin and Mucous Membranes with Carbon Dioxide Snow, by Dr. W. Knowsley Sibley.

WEDNESDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Professor Harry Blakeway: Treatment of Harelip and Cleft Palate.

ROYAL SOCIETY OF MEDICINE:
SECTION OF THE HISTORY OF MEDICINE, 5 p.m.—Dr. J. D. Rolleston: Lucian and Medicine (Part II). Sir Alexander Simpson: Jean Astruc.

THURSDAY.

MEDICO-PSYCHOLOGICAL ASSOCIATION, 11, Chandos Street, W., 3.15 p.m. Paper: Meningo-Vascular Syphilis, by Roy M. Stewart, M.D., with lantern demonstration.

ROYAL SOCIETY OF MEDICINE:
SECTION OF DERMATOLOGY, 4.30 p.m.—Exhibition of Cases.

FRIDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Professor Frederic C. Pybus: Some Infections of the Tonsil.

ROYAL SOCIETY OF MEDICINE:
SECTION OF OTOLOGY, 5 p.m.—Discussion on Tuberculosis of the Auditory Apparatus. Sir William Milligan, Mr. Lake, Mr. J. S. Fraser, Mr. Hugh E. Jones, Mr. C. E. West. 4.15 p.m., Exhibition of Specimens.
SECTION OF ELECTRO-THERAPEUTICS, 8.30 p.m.—Discussion on the Electrical Treatment of Wounds, Sinuses, Frost-bite and Sprains. Exhibition of Skiagrams.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W., 8.30 p.m.—Paper: The War and Cholera, by Professor W. J. Simpson, C.M.G., M.D.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Courses are to be given next week at the following schools, colleges, and hospitals:

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		FEBRUARY.
16	Tues.	London: Naval and Military Committee, 3.30 p.m.
17	Wed.	London: Committee of Chairmen of Standing Committees, 2 p.m.
18	Thur.	London: Insurance Act Local Medical and Panel Subcommittee (provisional).
19	Fri.	London: Standing Ethical Subcommittee, 2.30 p.m.
		London: Supplementary Tariff Conference, 7 p.m.

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NON-PANEL PRACTITIONERS AND THE NEW CERTIFICATION FORMS.

IN the SUPPLEMENT of last week (February 13th, p. 53) the letters addressed by the Medical Secretary, acting under the instruction of the Insurance Act Committee of the British Medical Association, to the Insurance Commissioners, together with the text of their reply, dated February 9th, were published. The following correspondence has since passed:

February 13th, 1915.

Sir,—I submitted your letter of February 9th to the Insurance Act Committee at its meeting on the 11th inst., and I am instructed to make the following comments:

The Insurance Act Committee feels certain from the great number of representations that have been made to the Association on this subject that the method of dealing with the difficulty suggested in your letter will by no means remove the sense of grievance felt by a considerable number of insured persons who go to non-panel doctors, and by those doctors themselves. My Committee would again urge that some way should be found of making the new form of medical certificate available for the use of every registered medical practitioner to whom an insured person may apply for medical attendance and possibly for a certificate of inability to follow his employment, and that it should be possible for the insured person to get the form from his approved society and present it to his doctor when that doctor is not on a panel, and therefore has no supply of the forms.

Assuming, without prejudice, and for the purpose of argument, the contention in your letter that misleading and unsatisfactory results would be liable to arise if the official form of certificates were used by non-panel practitioners, as illustrated by the example given, my Committee would submit its opinion that unfortunate results would be much more likely to happen if the non-panel practitioners used their own form of certificate, as these would doubtless vary considerably.

The Insurance Act Committee is of opinion that the example given by you does not prove the existence of any drawback of sufficient importance to outweigh the inconveniences which will be bound to arise if the insured person produces a certificate not in the official form. The fact that part of the official form is to be filled up by the insured person is bound to be used by approved societies, who naturally will consult their own convenience, as an excuse for compelling or seeking to persuade all insured persons to produce the official form of certificate—that is, to go to a panel doctor. My Committee would submit that it is very little use telling the approved societies that they are able to accept certificates as before, whether from panel or non-panel doctors, now that the introduction of the new system has apparently led the societies to infer that it is essential for their interests that all certificates should be on the new form. My Committee would further point out that in its opinion there is nothing in the form of certificate which suggests that it could not be used by non-panel practitioners.

Further, in the opinion of the Insurance Act Committee, the use of the word "able" in the following sentence of the Commissioners' letter: "The societies are able, as before, to accept from such members any certificates from a doctor privately employed which they would previously have been justified in accepting" does not indicate the full force of the decision in the case of Heard *v.* Pickthorne, in which three judges of appeal unanimously decided that a friendly society *was not entitled to refuse* payment of a claim upon its State sick fund unless the certificate in support of the claim was signed by a medical man on the panel. In my Committee's opinion, there is a great difference between a society not being "entitled to refuse" and being "able to accept," and if your circular to the societies is intended to bring home to them their true position, the case needs to be stated quite directly in the terms of the judgement above alluded to.

The Insurance Act Committee considers that the Commissioners have not sufficiently realized the deep sense of injustice which the action of many approved societies has aroused in the medical profession generally, and in those insured persons who deliberately prefer to consult a doctor not under agreement with an Insurance Committee, even at the cost of foregoing their medical benefit. The medical profession feels that the way in which the new system of certification is being interpreted is a serious reflection upon the professional status of the registered medical practitioner as such, and I am to point out that this opinion is shared by doctors on the panel as well as those who are particularly affected. The approved society quite naturally takes the line of least resistance, which is at present to refuse sick benefit to insured persons who bring their certificates on any other than the new form, some of them going so far as to intimate that if their members desire to secure sickness benefit they must get a certificate from their panel doctor.

If your circular is worded as is indicated in your letter, my Committee is of opinion that while not refusing a certificate because it is not on the new form, approved societies will be able and will be inclined to make so many difficulties that the ultimate result will be the same as if they had the right to refuse a medical certificate simply because it was not signed by a doctor on the panel—that is to say, the insured person, unless he is a particularly tenacious person, will give in to this pressure, and will go to a doctor whom he would not of his own free will have consulted. This will certainly result in a crop of legal actions against societies, as the Association is determined to do all in its power to prevent what appears to be petty tyranny, as applied to the insured person, and a serious

reflection on the registered practitioner whose certificate is virtually declared to be less reliable than that of the practitioner who happens to be on the panel. Such a state of things would be conducive neither to the smooth working of the Insurance Act, to the welfare of the public, nor to the best interests of the medical profession, and it appears to my Committee that such an undesirable state of things can only be prevented by prompt and firm action on the part of the Commissioners.

The Insurance Act Committee would therefore urge that the Commissioners should very seriously reconsider this question.—I am, your obedient servant,

ALFRED COX,
Medical Secretary.

The Secretary,
National Health Insurance Commission (England),
Buckingham Gate, S.W.

Buckingham Gate, S.W.,
17th February, 1915.

SIR,—In reply to your letter of the 13th instant on the subject of the suggested supply of the new forms of certificate for the use of practitioners treating insured persons in a private capacity, I am directed by the National Health Insurance Commission (England) to express their regret that the considerations put forward in the letter of the 9th instant have not commended themselves to the Insurance Act Committee of the British Medical Association.

As you are aware, the new arrangements apply, and the new forms of certificate are issued, not only to doctors on the insurance panels and to those employed by institutions approved under Subsection 4 of Section 15 of the Act of 1911, but also to practitioners with whom insured persons have made their own arrangements under Subsection 3 of that section. The questions raised by the Committee therefore affect only those practitioners who may be asked for certificates by insured persons whom they are treating quite outside the Insurance Act in a purely private capacity. The Commissioners take this opportunity of reaffirming the position in this respect, as they are inclined to the opinion that the medical profession do not generally appreciate how comparatively few must be the cases of difficulty that can arise.

If the Commissioners correctly gather from your letter that the Association is still pressing the desire of certain private doctors that the *actual official forms* (absolutely identical in all respects with Form Med. 40) should be supplied to them for their use in a private capacity, the Commissioners regret that they do not appear to have been successful in their previous letter in bringing to the notice of the Association the inherent circumstances of the position which render this proposal impracticable. In the view of the Commission the position is as follows:

Under the arrangements as to certification for sickness benefit in force prior to the 1st January of this year, each of the large number of doctors concerned acted, in giving certificates, in accordance with his own individual standards and methods. But the experience gained in the course of the working of these arrangements, and the numerous representations received by the Commissioners from the medical profession as well as from approved societies, conclusively demonstrated the necessity (fully recognized by the medical practitioners who took part in the very numerous conferences on this subject during the course of last year) of a definite understanding between those engaged in the administration of sickness and disablement benefits and the medical practitioners from whom insured persons claiming benefit are entitled to obtain certificates.

In order that such an understanding might hold good between any one of the numerous societies administering sickness benefit and any one of the practitioners above referred to, it was, of course, essential that the understanding between them should be uniform; and this has been ensured (in the only way in which it was possible to ensure it) by establishing a uniform routine procedure, and securing its observance as an integral part of the medical benefit machinery.

Now it is essential that, if a society is itself to carry out its own part in that understanding, it should be in a position to rely upon the understanding being accepted and observed by the doctor whose certificate it is called upon to consider in support of a claim for sickness benefit. Under the present system the whole of the understanding, and of the procedure in which it is embodied, is not, and cannot be, expressed or even implied upon the form of certificate itself. But a society on receiving the certificate can, quite apart from any question as to the literal accuracy of the actual statements made on the face of the certificate, rely upon the fact that so much of the understanding as is not explicit on the face of the certificate is being observed by the doctor who gave the certificate, since the society is aware that the official form of certificate cannot come into the hands of any doctor who is not under obligations to comply with the system of which the certificate is a part.

If, however, the official form were to be issued to doctors attending in a private capacity, the society, on receiving a certificate, would have no means of knowing whether it was given by a doctor in accordance with the procedure. Thus, so far from the society being able to rely upon the procedure being followed in *all* cases in which Form Med. 40 was presented to them, it would be unable without exhaustive investigations to assure itself that the procedure had been followed in the case of *any* certificate presented in that form. The result would inevitably be, therefore, that the issue of the official forms to doctors who had not entered into the obligations of the certification rules would not only defeat its own ends but would destroy the value, and even the existence, of the understanding which at present exists between each society and each one of the general body of practitioners who have entered into the system and accepted its obligations.

These observations apply not only to such definite features of the new system as that referred to in the Commissioners' previous letter, and the special provisions relating to the naming of the cause of incapacity, but also to many features of the form of certificate itself. The advantages of the new system are in the main a matter of organization and systematization; and these advantages obviously cannot be secured in the case of doctors who, doubtless for good and sufficient reasons, elect to remain outside the system and decline to be bound by its rules. If the rules are of value and assistance to doctors and societies, as the Commissioners believe them to be, it is essential that the society should have the means of distinguishing between the certificates signed by a doctor who has accepted them and those signed by one who has not.

For it is clear that, if certificates were given by private doctors upon Form Med. 40, they would inevitably have a different significance from those given on the same form (and even in the same language) by a doctor acting in full accordance with the whole of the understanding embodied in the Certification Rules. Thus, the giving of certificates by private doctors on Form Med. 40 would necessarily have one or other of the following alternative consequences. Either the society, in ignorance of the fact that any certificates on Med. 40 could have been given by a private practitioner, would draw unfounded and mistaken inferences from any such certificates it might receive; or else the society, being aware that some of the forms Med. 40 which it received are given by doctors who are not parties to the understanding embodied in the Certification Rules, will be forced to discount the value of that understanding in *all* cases, and to fall back upon the bare face value of the statements borne by the actual certificates, thus losing most of the advantages accruing from the system.

At the same time, looking at the whole matter apart from this natural and inherent distinction between certificates which are amplified in significance by the observance of a certain understanding and procedure and those which are not so amplified, the Commissioners recognize (as stated in their previous letter) that the actual and intrinsic value of the private doctor's certificate is at the present time, owing to misapprehensions on the part of some societies, not receiving in every case the full measure of consideration to which it is entitled. As the Commissioners have already stated, where this misapprehension has come to their notice they have corrected it; and they will shortly issue a circular with the object of giving wider currency to the correct view of the subject. But in this connexion the Commissioners are not clear from your letter whether your reference to the case of Heard *v.* Pickthorne does not suggest the existence of some confusion (to which the language of the Commissioners' previous letter may possibly have contributed) as to the point at issue in the present matter. It therefore appears to the Commissioners,

that it would be well to state here their view of the position in this respect.

The Decision in question cannot be construed as implying that a society has not power to *refuse payment* on private doctors' certificates. Obviously the society is justified, in a proper case, in refusing payment of sickness benefit after receiving the certificate of any doctor, whether panel or private. On the other hand it is not open to a society to *refuse to consider* the certificate of any doctor.

This is the view which the Commissioners intended to express in their previous letter. The Commissioners stated therein that in their view a society is able to accept a private doctor's certificate, meaning that a society is able to make payment upon such a certificate if satisfied as to the claimant's title on the evidence afforded by that certificate. They did not say, and obviously could not properly have said, that a society is bound to accept a private doctor's certificate in the sense that a society is *bound to pay* upon a private doctor's certificate. But in the sense in which "accept" means "accept for consideration" or "admit as evidence," the Commissioners take the view that a society is bound to accept for consideration the certificate of any doctor, and is not entitled to refuse to admit as evidence the certificate of any particular class of doctors.

The Commissioners, therefore, must attach great importance to the two following principles—namely, (1) that a society is bound to admit as evidence the certificate of any doctor, and to weigh the evidence in each case on its merits, though not necessarily bound to pay on the certificate of any doctor; and (2) that there is of necessity an inherent distinction between the evidence afforded by a certificate given under the obligations imposed by the certification rules and that afforded by one not so given. These two principles being established, it will, doubtless, be possible to consider practical methods to relieve private doctors of the embarrassment at present resulting from the fact that no standard form of certificate is available to them upon which to certify for the purposes of sickness benefit in the case of their insured patients.

As regards the possible methods by which certificate forms of a suitable kind may be made available to private doctors, it will, on consideration, be appreciated by the medical profession that arrangements (as suggested in your letter) for the supply of such forms *by the society* to its members on the rare occasions upon which they would be needed would fail to relieve the private doctor of much of the inconvenience which he now encounters. It has not been the practice of societies to furnish their members with initial certificate forms for the purpose of sickness benefit, and it is no longer their practice to furnish forms for continuing certificates. The patients of a private doctor would, if forms were only to be obtained from the society, be required to send to the society a special request which, owing to its infrequency, would be bound to result in delay and inconvenience. It would, in all probability, be found the more convenient course if the forms were always in the possession of the doctor, and thus immediately available for his use. In this connexion I am to add that, subject to what is said below, the Commissioners are not aware of any reason why arrangements should not be made by the profession themselves whereby private doctors would be able to procure a supply of suitable forms for their private use. The actual terms of the medical certificate portion of such a form would be a matter for consideration by the practitioners concerned in its preparation; and they would, of course, require to bear in mind the specific objects which the certificate would be designed to meet. But there would be no objection to the incorporation, in such a form, of the insured person's Declaration and Claim for sickness benefit contained in the present official form. It must, of course, be remembered that, for the reasons explained earlier in this letter, any certificate form which is prepared in accordance with the above suggestions must be clearly distinguishable from the official form in use under the certification rules.

I am to add that, in connexion with the preparation of the circular which the Commissioners will issue as soon as possible to approved societies, the Commissioners would be pleased to consider any suggestions with regard thereto which the Association may desire to put forward.—I am, Sir, your obedient servant,

S. P. VIVIAN.

LOCAL MEDICAL AND PANEL COMMITTEES.

SWANSEA.

LOCAL MEDICAL COMMITTEE.

MEETINGS of the Swansea Local Medical Committee were held on January 14th and 22nd.

Unallotted Funds.—Dr. MORGAN WILLIAMS reported that, after much discussion in the Insurance Committee, it was finally decided with regard to the £1,200 due for 1913 to pay *pro rata* up to 75 per cent. of the amount. The floating sixpence to the extent of £200 was also available for the same period.

Medical Referees.—It was reported that the scheme with regard to referees was working satisfactorily. Twelve doctors had been appointed medical referees by the panel, and a panel practitioner having any doubt with regard to a patient could inform the patient that he was not allowed by the Panel Committee to give a further certificate until he had been examined by a referee. The necessary details were then communicated to the referee who saw the patient and reported.

Scrutiny of Prescriptions.—After discussing the scheme for a central bureau for checking prescriptions, etc., it was resolved strenuously to oppose the formation of a central bureau for checking prescriptions, the Committee being prepared to support and finance a local scheme and to pay one-third of the cost.

WEST RIDING OF YORKSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEE.

THE fourth meeting of the Local Medical and Panel Committee was held at Wakefield on January 29th, when Dr. MAY (Wakefield) was in the chair. The CHAIRMAN, on behalf of the Committee, welcomed Dr. Haig Scott, the new member for Keighley. It was announced that the Commissioners had recognized the Committee until July 15th, 1915. It was arranged to hold a meeting on the second Friday of each month if, in the opinion of the Chairman, there was sufficient business, and that he should have authority also to call additional meetings. It was also announced that Mr. Walter Thompson, F.R.C.S. (Leeds), and Dr. Bronner (Bradford) had accepted the invitation to become co-opted members of the Committee.

Doctors Absent on Military Service.—A letter was read from the Clerk stating that there had not been any wholesale transfers from the lists of doctors absent on military service, the average number of transfers having been not more than 5 for each doctor on the panel throughout the whole area of the West Riding. The question of looking after the interests of panel practitioners who were absent on military service was referred to the Finance and General Subcommittee.

Administration of Medical Benefit.—A correspondence with the Commissioners regarding alteration of rules for the administration of medical benefit was submitted, together with a letter from the Clerk of the Insurance Committee (dated December 21st, 1914), enclosing a copy of the proposed rules as prepared by the Insurance Committee. The Secretary was directed to notify to the Clerk that it was the desire of the Local Medical and Panel Committee that none of the rules, as at present printed on the medical cards, should be altered or deleted.

Travelling Expenses of Panel Committee.—A correspondence with the Commissioners was submitted stating (*a*) that travelling expenses of members of a Panel Committee could not be regarded as part of the administrative expenses of the Committee, therefore any sum allotted to the Committee under Section 33 (2) of the Act of 1913 was not available for payment of travelling expenses; and (*b*) pointing out that travelling expenses of members of Insurance Committees were expressly provided for in Section 61 of the Act of 1911, but there was no similar provision made for Panel Committees. On the motion of Dr. RUSSELL, seconded by Dr. KERSHAW, the Secretary was directed to ask the Commissioners that provision should be made in any amending Act for the payment of travelling expenses of members of Panel Committees.

Supply of Drugs and Appliances, etc.—Dr. FRY reported with regard to the second conference with representatives of chemists and Insurance Committee which he and

Dr. Smailes attended on January 20th. Memo. 199 I.C. had been further discussed, with special reference to the proposed "joint administrative arrangements between the Insurance, Panel, and Pharmaceutical Committees for checking and scrutiny of prescriptions and chemists' accounts," for which the Panel Committee was asked to contribute a sum of money towards the payment of the extra staff required. The conference had agreed to the increase of staff, but thought it desirable that the whole cost should be borne by the Insurance Committee.

Payments to Practitioners.—The SECRETARY reported the receipt of many protests from doctors throughout the West Riding area in regard to the reduced payments recently made to practitioners, which had fallen to 58 per cent. of the total "credits" to practitioners for the last quarter of the year 1914. The matter was referred to the Finance and General Subcommittee.

The New British Pharmacopoeia.—The adoption of the new *British Pharmacopoeia* 1914 was postponed till after March 31st, 1915, and the Secretary was instructed to notify the Clerk of the Insurance Committee accordingly.

IRELAND.

MEDICAL CERTIFIERS AND THE INSURANCE ACT.

CO. TYRONE LOCAL MEDICAL COMMITTEE.

A MEETING of the co. Tyrone Local Medical Committee was held at Dungannon on February 5th, when Dr. E. C. THOMPSON (Omagh) was in the chair. The meeting was well attended, and many of those who were unable to be present sent apologies by letters or telegrams.

Medical Certifiers and the Insurance Act.—The CHAIRMAN, in the course of his remarks, said the meeting was convened to enter the protest of the co. Tyrone medical practitioners against the action of the Irish Insurance Commissioners in appointing, in opposition to the wishes of the entire profession in Ireland, a small body of doctors whose duty would be to certify for the patients of other doctors. Doctors accepting such appointments would receive the severest professional ostracism from their colleagues. The methods adopted by the Irish Insurance Commissioners were unworthy of a Government department. The policy of the Irish Insurance Commissioners towards the Irish medical profession was actuated by the most paltry motives, and in pursuit of that policy the Commissioners did not even hesitate to inflict intolerable hardship and injustice on the insured people of Ireland. The Chairman congratulated the profession in Ireland on its long-continued fight against the methods of the Irish Insurance Commissioners, and reminded those present that they were not only fighting for the best traditions of their profession but they were also making a good fight for the rights of their poor insured fellow countrymen, whose best champions in Ireland, at least, were to be found amongst the Irish doctors.

On the motion of Dr. BURGESS a resolution was adopted, *nemine contradicente*, condemning as most reprehensible the action of the Irish Insurance Commissioners in appointing part-time medical certifiers who were not the medical attendants on the insured.

Dr. HENNESSY, Irish Medical Secretary, who was present at the meeting and gave an account of the present position of the Irish medical profession under the Insurance Act, was accorded a hearty vote of thanks.

BIRR (KING'S CO.) BOARD OF GUARDIANS.

The Birr (King's Co.) Board of Guardians, at its meeting on January 23rd, passed the following resolution:

> That we, the Birr Board of Guardians, consider it a hardship on persons applying for benefit under the Insurance Act to be supplied with certificate of illness only on a certain day in each week, as they are thus deprived of the benefit for a period when it is most needed in many cases.
>
> In the interests of the poor of this Union, we cannot permit our medical officers to absent themselves from their districts, as they must do, if holding position under the Insurance Commissioners, and we hereby call upon any medical officer who persists in absenting himself from his dispensary district to resign his position as medical officer of this Union.

It was directed that copies of the resolution should be forwarded to the Secretary of the National Health Insurance Commission, and to the six dispensary medical officers in the Union.

MUNSTER BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

A general meeting was held on Saturday, January 23rd, when Dr. WILLIAM DONOVAN, Vice-President, was in the chair.

Dr. HENNESSY, Irish Medical Secretary, attended the meeting, and detailed the present position of medical men in Ireland as regards the Insurance Act, and the matter of the appointment of part-time certifiers by the Commissioners. He reminded the members that the policy of the British Medical Association in Ireland as well as in England was the same—that is, to uphold the dignity of the medical profession. The appointment of part-time or whole-time certifiers was repugnant to the profession in Ireland. In Dublin no consultant would meet one of these medical certifiers. He regretted to say that a large part of the Munster Branch area was the worst in Ireland for defections; some districts were very good, but as a whole Cork had not acted in concert with the other counties in resistance to what must be regarded as hostile to the best interests of Irish practitioners. The Commissioners had determined to abolish the panel system, and had arranged to appoint part-time certifiers in areas in which the panel system was in vogue as well as in areas in which it did not exist. The Irish Medical Committee and other medical bodies had emphatically condemned the appointments of part-time certifiers. He was pleased to say that these posts, with few exceptions, had not been accepted by members of the British Medical Assoiation. The following resolution was unanimously adopted:

> The Munster Branch of the British Medical Association expresses its strongest disapproval of the acceptance by Irish practitioners of the posts of part-time or whole-time certifiers under the National Health Insurance Act, and considers such appointments inconsistent with the honour and interests of the medical profession.

H. G. O'Sullivan, M.B., B.Ch., Crookstown, co. Cork, and M. J. Ahern, L.R.C.P. and S.Edin., Brosna, co. Kerry, were unanimously elected members of the Association at this meeting.

INSURANCE NOTES.

PANEL MEDICO-POLITICAL UNION.

A MEETING of the Panel Medico-Political Union was held at Caxton Hall, Westminster, on February 12th to consider the proposed rules of the organization after amendment by the executive committee. At a recent meeting of the union[1] the draft rules were referred back to the committee on the ground that they were not sufficiently democratic in respect of the measure of control of the executive exercisable by ordinary members.

The Chairman, Dr. W. COODE ADAMS, claimed that the rules as amended contained ample provision for safeguarding the rights of members in respect of the nomination and election of the executive—matters as to which there had been criticism. The question whether practitioners who were not on the panel should be admitted as members had been carefully considered, and it was decided not to exclude them, although the executive would have power to refuse membership to any who were half-hearted. A letter had been received from a practitioner who objected that it was impossible for a society with a subscription of one guinea to give legal assistance to members, to provide insurance and pensions for members, and to grant money in aid of medical charities. The answer made to that objection was that the rules were the constitution of the union; they were not its programme. Nothing that was not specifically stated in the rules could be legally carried out by a body operating under the Trade Union Acts, and it was therefore necessary to include any proposals which the organization might at any time desire to carry into effect.

Dr. ALFRED SALTER moved that the rules be adopted *en bloc*. He said that the features to which he had objected as being undemocratic had been eliminated, and there was now every protection for members.

Dr. H. J. BUTLER, in seconding, said that the Insurance Act could only be met by the profession on trade union principles. He admired the British Medical Association

[1] SUPPLEMENT, January 23rd, p. 26.

as a scientific body, but did not think it could safeguard the interests of practitioners working the Insurance Act because it could not be converted into a trade union organization. He looked forward to a time when the Panel Medico-Political Union would be strong enough to establish all over the country branches which would advise the executive as to the needs of a particular district. Such branches would have a degree of autonomy which would safeguard them from the tyranny of a central executive.

The rules were then adopted.

Those present were invited to make any comments or bring forward any grievances with regard to the working of the Insurance Act. Amongst the subjects mentioned were—interference between doctors and patients by visitors representing approved societies; the hardship to insured persons involved by long hours of work; and practitioners' difficulties with approved societies in regard to certification.

It was announced that the union would shortly call a meeting of medical practitioners to discuss the working of the Insurance Act.

CORRESPONDENCE.

The Defective Bases of the Act.

Dr. Garratt (Chichester) writes in reply to Dr. Baskett: If medical attendance is to be guaranteed to all insured persons, some doctor must attend each one, either voluntarily or otherwise. If the nearest is not to be compelled, where others refuse, will Dr. Baskett kindly make an alternative suggestion? None occurs to me but a whole-time service, to which most of us are strongly opposed. After all the club doctor was obliged to attend the whole club. The Poor Law doctor must see all sick paupers, and no public servant paid, with public money, may select only those duties which appeal to him. Mere criticism, without alternative practical proposal, has been already our undoing. May I offer some suggestions which seem to me both desirable and practical.

1. Destroy that portion of the new certificate which does not concern us. When did we become the paper boys of the approved societies, to carry their leaflets? Let them distribute these themselves if they really want them.

2. Transfer to some body on which we are properly represented the decision as to what cases require weekly certificates and what do not. Now interested, and often ignorant laymen may order hard working, and highly educated professional men to travel dozens of miles a week, often over vile roads or no road at all, and in any weather, solely to say "How do you do?" to chronic incurables, and sign a superfluous paper. For many years I have regularly certified that a young man has still "Lost his right arm." Happily he is uninsured, and able to come to me, but had he lost his legs, and been insured, under these precious Regulations I might have had to visit him, five miles away, weekly until he was 70!

3. Compel societies to forego intermediate certificates in the case of all hospital in-patients. Now, hapless dependants, already afflicted with the loss of the breadwinner, must trudge, often many miles in foul weather, once a week, either to the panel doctor, for a certificate which he is absolutely forbidden to give, or to a hospital officer, for one which he is entirely at liberty to refuse. Who is responsible for these Regulations? Surely enough experience should have been gained by now to avoid such rules as these, as unnecessary as they are ridiculous.

Dr. Arthur J. Brock (Edinburgh) writes: May I say one more word in reply to Dr. B. G. M. Baskett? I did not for a moment suggest that "all" doctors should come off the panel. This is quite impracticable, and in many places the panel system is probably at least an improvement on the system which preceded it. My point was to urge that there is in many districts plenty of room for a voluntary service over and above the panel service, and that such doctors as find the latter system distasteful, and who can at the same time take the risk of losing a little money, will best benefit not only themselves but their country by bidding adieu to the mandarins of National Insurance. Further, I urged that the existence of such a voluntary service would indirectly benefit those who, for financial or other reasons, are compelled to do panel work. The State can only proceed to the last extremes if its victims have no loophole of escape. The best possible safety-valve will be a well-manned non-panel system. Let it be clear that this, no less than the panel, has "come to stay." Competition is the soul of progress. Let not our watchword be either "a pan-panel trade-union" on the one hand, or "disestablishment" on the other. As in education and in religion, so in medical practice, there is abundant room for independent organizations relatively free from interference by official bumbledom.

INSURANCE ACT IN PARLIAMENT.

Business of Insurance Committees.

Mr. Booth asked the Chancellor of the Exchequer (1) if the Commissioners were aware that a special subcommittee of the London Committee had unanimously advised the appointment of a registrar, but that the Committee adjourned on January 27th for a month without considering the matter; and whether, to avoid results unjust to the medical profession, the Commissioners would send a staff immediately to write up the registers and accounts; (2) if the Insurance Committees outside the metropolis had all been duly formed and were well staffed and working to the satisfaction of the Insurance Commissioners; if the medical registers were kept in good order; and if the various committees were working harmoniously with the medical profession; (3) if the Insurance Commissioners were aware that the work of the London Committee was alleged to be in a state nearly approaching chaos, and that alterations in the personnel of the staff were necessary; whether the Committee had seen a report signed by the Chairman and Deputy-Chairman of the Committee, the Chairman of the General Purposes Committee, the Chairman of the Medical Benefit, and the Chairman of the Medical Service Subcommittees, dated January, 1915; if not, whether they would demand to be supplied with a copy, and would inquire if a subcommittee sat previously on this subject and suppressed any report of its proceedings, and (4) if the Insurance Commissioners were aware that the London Insurance Committee, on January 27th, decided by a majority that the Subcommittee on Office Staff Organization be directed definitely to formulate the exact matters of complaint which the Committee had found against the clerk, and to furnish the same to him with this report, and invite the clerk to furnish a reply thereto; and whether, in view of the situation disclosed by this resolution, they would appoint an impartial officer forthwith to investigate all the circumstances, so as to prevent injustice being done to any public servant?

Mr. Booth asked whether more definite information could not be given with regard to printing reports of statistics, and Dr. Addison promised to ask that inquiries should be made.

The Parliamentary Secretary to the Board of Education (Dr. Addison) said that the Commissioners understood that the question of staff organization was still engaging the attention of the Insurance Committee in question. No conclusions had yet been communicated to the Commissioners, and they are not aware that any occasion has arisen for their intervention at the present stage.

Diminution of Sickness Claims.

Mr. Booth asked whether the second year's working of the National Insurance Act showed a marked diminution in the sickness claims of the approved societies, and to what this improvement was to be attributed.—Dr. Addison said that returns for the second year of benefit expenditure (which was only just completed) were not yet available. He was unable, therefore, to make any general statement of the kind suggested. Some reduction in expenditure would, of course, result from the fact that since August last so many insured persons had been serving with the colours. Apart from this, however, many societies had doubtless profited by their own experience or been assisted by advice from the Commissioners, and had effected improvements in their administration of sickness benefit as compared with the previous year.

Mr. Booth asked whether it was not the case that there had been a most marked improvement in the sickness rate amongst women. Dr. Addison, in reply, said that he had heard reports to the effect mentioned, but there were no official reports in the Commissioners' office.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL, 1915-16, BY BRANCHES NOT IN THE UNITED KINGDOM.

THE following nomination has been received from the undermentioned Grouped Branches (By-law 49):

Branches (Grouped).	Candidate.
South Australian Tasmania Victoria Western Australian	G. A. SYME, M.S., 19, Collins Street, Melbourne.

Only one nomination having been received, the said G. A. Syme is hereby duly elected member of the 1915–16 Council, and will come into office at the first meeting of the 1915–6 Council in July next.

By order of the Council,

GUY ELLISTON,

Financial Secretary and Business Manager.

February 20th, 1915.

BRANCH AND DIVISION MEETINGS TO BE HELD.

STAFFORDSHIRE BRANCH.—Dr. Harold Hartley (Honorary General Secretary), Basford, Stoke-on-Trent, gives notice that the second general meeting of the session will be held at the Swan Hotel, Stafford, on Thursday, February 25th. The President, Dr. John Russell, will take the chair at 5.15 p.m. Exhibition of living cases, pathological specimens, etc. Papers:—Dr. John Priestley: Sex and the Incidence of Children's Diseases. Dr. J. A. Codd: The Treatment of Malignant Disease by *X* rays, its limitations and the lines upon which such limitations might be overcome. Dinner at 6.30 p.m. Charge 5s.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Temporary Surgeons A. MCMILLAN to the *Egmont*; ARTHUR E. ILES to the *Victory*, additional, for Haslar Hospital; H. P. MARGETTS to the *Victory*, additional, for disposal; WALTER E. FOX to the *Laurentic*, vice Robertson. To be temporary Surgeons; FREDERICK H. REES, M.B., STANLEY WORTHINGTON, M.B.

ROYAL NAVAL VOLUNTEER RESERVE.

Staff Surgeon ARTHUR R. BRAILEY, M.B., F.R.C.S., to the *Victory*, additional, for Haslar Hospital, vice Evans. Surgeon CHARLES S. BREWER, Honorary Staff Surgeon, R.N.V.R., Mersey Division.

ARMY MEDICAL SERVICE.

MAJOR HENRY M. W. GRAY, M.B., F.R.C.S.E., R.A.M.C., to be temporary Colonel.

Colonel JAMES M. IRWIN, M.B., is retained on the Active List under Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary.

ROYAL ARMY MEDICAL CORPS.

Major JOHN M. BUIST, M.B., is placed temporarily on the half-pay list on account of ill health.

MERVYN H. GORDON, M.D., is granted temporarily the honorary rank of Major.

Temporary Captain GEORGE E MILES to be temporary Major.

Captain L. D. BAILEY has been appointed a Specialist in Electrical Science in the 8th (Lucknow) Division.

Supernumerary Captain TRAVIS C. LUCAS, M.B., is restored to the establishment.

Temporary Lieutenant KENNETH W. MACKENZIE, M.B., late Captain, Indian Medical Service, to be temporary Captain.

Temporary Lieutenant NORMAN W. ANDERSON, M.D., relinquishes his commission.

To be temporary Captains: JOHN C. WEBB, M.B., JOHN J. ESMONDE.

To be temporary Lieutenants: ULICK J. BOURKE, HORACE N. EVERARD, M.D., BERTRAM H. BARTON, M.D., GEORGE F. BARR, M.B., PERCY H. MACDONALD, M.B., THOMAS H. BROWN, M.B., JOHN ELLISON, CHARLES L. WIGAN, M.B., JOHN C. ROBB, M.B., WILLIAM S. HERON, M.B., GEORGE MCCALLUM, M.B., ROGER MACGRATH, M.B., CEDRIC N. VAISEY, LESLIE A. DRAKE, M.B., THOMAS R. TROUNCE, MARTIN P. THOMAS, GEORGE M. DE VINES, M.B., HENRY J. COTTER, THOMAS S. GOODWIN, M.B., JOHN S. PRENTICE, M.B., WILLIAM J. A. B. WISHART, M.B.

Lieutenant CHARLES E. RECKITT relinquishes his temporary commission.

Temporary Lieutenant WILLIAM ANDERSON, having ceased to serve with the British Red Cross Hospital, Netley, relinquishes his commission.

Lieutenant CECIL CORBIN, M.B., relinquishes his temporary commission.

Lieutenant ARTHUR A. MARTIN, M.D., F.R.C.S.E., relinquishes his temporary commission.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT JAMES F. QUIGLEY, M.B., resigns his commission.

To be Lieutenants on probation: STANLEY B. KING, Second Lieutenant OWEN PARRY-JONES, from General Reserve of Officers.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Second Home Counties Field Ambulance.—GEORGE M. MCGILLIVRAY, M.B., to be Lieutenant.

First Southern General Hospital.—ERNEST C. BRADFORD to be Lieutenant.

Third Southern General Hospital. — FRANK G. GARDNER to be Lieutenant.

Third London General Hospital.—ALFRED H. GOSSE, M.D., to be Lieutenant.

First South Midland Field Ambulance.—Major WILLIAM M. STURROCK, M.B., to be Lieutenant-Colonel, temporary.

Third North Midland Field Ambulance.—JAMES C. S. SMITH, M.B., to be Lieutenant.

Eastern Mounted Brigade, Field Ambulance.—KENNETH B. CLARKE to be Lieutenant.

First East Anglian Field Ambulance.—AMBROSE C. WILSON to be Lieutenant; HUGH F. G. HALL, M.B., to be Lieutenant.

First Welsh Field Ambulance. Major JOHN HOWARD-JONES, M.B., to be Lieutenant-Colonel, temporary: Captain JOHN O'SULLIVAN to be Major, temporary.

Second Welsh Field Ambulance.—To be Lieutenants: DAVID T. LEWIS, THOMAS P. EDWARDS, M.D.

First Northern General Hospital.—Captain WILLIAM T. HARKNESS, M.B., from the Northumbrian Casualty Clearing Station, to be Captain.

First East Lancashire Field Ambulance.—GILBERT BAILEY to be Lieutenant.

First West Lancashire Field Ambulance.—Major JOHN E. W. MCFALL, M.B., to be Major, temporary.

West Lancashire Casualty Clearing Station.—HARRY D. LEVICK, M.B., F.R.C.S., to be Lieutenant.

First Northumbrian Field Ambulance.—HOWE A. P. ROBERTSON to to be Lieutenant.

Fourth Scottish General Hospital.—WILLIAM A. CAMPBELL, M.B., F.R.C.S., to be Captain, whose services will be available on mobilization.

Sanitary Service.—Major ALFRED GREENWOOD, M.D., to be Lieutenant-Colonel, temporary. Major FRANCIS E. FREMANTLE, M.B., F.R.C.S., to be Lieutenant-Colonel, temporary. GEORGE H. WESTON, M.B., late Lieutenant, 2nd V.B. Hampshire Regiment, to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—Captain JAMES AITKEN, M.B., to be Major, temporary. ROBERT W MEIKLE, late Captain R.A.M.C.(T.F.), to be Captain. Lieutenant Colonel and Honorary Surgeon-Colonel GEORGE HOLLES, M.D., resigns his commission on account of ill-health. Major PEVERELL S. HICHENS, M.D, from the First Eastern General Hospital, to be Major. CHARLES S. YOUNG, late Surgeon-Captain 3rd V B. Royal Highlanders, to be Captain. To be Lieutenants: GERALD F. CARR, F. W. A. STOTT, M B., ARTHUR H. FULLERTON, M B. late Lieutenant, First V.B. East Yorkshire Regiment, WILLIAM SMARTT, F R.C.S I. Lieutenant HERBERT W. JOYCE resigns his commission on account of ill-health.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six large English towns 8,971 births and 6,558 deaths were registered during the week ended Saturday, February 13th. The annual rate of mortality in these towns, which had been 18.0, 19.2, and 20.1 per 1,000 in the three preceding weeks, fell to 18.9 per 1,000 in the week under notice. In London the death-rate was equal to 19.6, against 18.4, 20.3, and 21.5 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death rate ranged from 8.7 in Wimbledon, 10.9 in Bournemouth and in Smethwick, 11.3 in Bolton, 12 0 in Enfield and in Ilford, and 12.3 in Bury, to 28.0 in Darlington, 29.1 in Gillingham, 29.2 in Northampton, 22.6 in Carlisle, and 32.5 in Cambridge and in Merthyr Tydfil. Measles caused a death-rate of 1.7 in Tottenham and in Enfield, 1.8 in Stockton-on-Tees, 1.9 in Barnsley, 2.0 in Grimsby, 2.4 in Rotherham, 3.1 in St. Helens, 4.9 in Merthyr Tydfil, 5.2 in Gateshead, and 5.3 in Darlington; and whooping-cough of 1.6 in Bristol, 1.7 in Reading, 1.9 in Willesden and in Dewsbury, 2.0 in Carlisle, and 3.1 in Merthyr Tydfil. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 45, or 0.7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner; of this number 9 were recorded in Liverpool, 8 in Birmingham, 4 in Gateshead, 3 in London, 3 in Preston, and 2 each in Stoke-on-Trent, Blackpool, and Carlisle. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,836, 3,647, and 3,395 at the end of the three preceding weeks, further fell to 3 299 on Saturday, February 13th; 368 new cases were admitted during the week, against 308, 326, and 365 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,132 births and 1,037 deaths were registered during the week ended Saturday, February 13th. The annual rate of mortality in these towns, which had been 21.7, 22 4, and 24.1 per 1,000 in the three preceding weeks, fell to 23.1 in the week under notice, but was 4.2 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 13.5 in Hamilton, 15.1 in Motherwell, and 16.0 in Paisley, to 28.9 in Falkirk, 36.8 in Perth, and 37.4 in Dundee. The mortality from the principal epidemic diseases averaged 2.7 per 1,000, and was highest in Clydebank and Dundee. The 446 deaths from all causes in Glasgow included 42 from whooping-cough, 5 from infantile diarrhoea, 4 from scarlet fever, 2 from diphtheria, 1 from enteric fever, and 1 from measles. Twenty deaths from whooping-cough were registered in Dundee, 5 in Greenock, 4 in Edinburgh, 2 in Leith, and 2 in Clydebank; from measles, 9 deaths in Dundee; and from scarlet fever, 2 deaths in Falkirk.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, February 6th, 661 births and 609 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 680 births and 575 deaths in the preceding period. These deaths represent a mortality of 26.2 per 1,000 of the aggregate population in the districts in question, as against 24.7 per 1,000 in the previous period. The mortality in these Irish areas was

therefore 6.1 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28.4 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 30.5 (as against an average of 30.8 for the previous four weeks), in Dublin city 30.8 (as against 33.9), in Belfast 25.2 (as against 20.8), in Cork 27.9 (as against 29.2), in Londonderry 29.1 (as against 20.6), in Limerick 23 0 (as against 21.0), and in Waterford 15.2 (as against 28.0). The zymotic death-rate was 1.8, as against 1.5 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—Male House-Surgeon. Salary, £150 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £120 and £100 per annum respectively.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—House-Surgeon. Honorarium, £100 per annum.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM: YARDLEY ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—Third Assistant Medical Officer. Salary, £200 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURSLEM: HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary, £100 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary, £100 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Surgeon. Salary, £180 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, W.C.—House-Surgeon. Salary, £50 per annum.

CHESTER CITY.—Assistant Medical Officer of Health. Salary, £300 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—(1) Resident Medical Officer (2) House-Physician. Salary, £200 and £75 per annum respectively.

COLONIAL OFFICE.—(1) Medical Officer for service at Weihaiwei; salary, £300 per annum, rising to £400. (2) Three Medical Officers for the Gilbert and Ellice Islands Protectorate and the Solomon Islands Protectorate. Salary, £350 per annum, rising to £500.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon. Salary, £150 per annum.

DEVON COUNTY EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £7 7s. per week.

DEVONPORT: ROYAL ALBERT HOSPITAL.—House-Surgeon. Salary, £150 per annum.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House-Surgeon. Salary, £170 per annum.

DUBLIN: CORK STREET FEVER HOSPITAL.—Junior Assistant Resident Medical Officer. Salary, £120 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—(1) Senior House-Surgeon. (2) House-Physician. (3) Assistant House-Surgeon. Salary for (1), £250 per annum; and for (2) and (3), £150 per annum.

GLAMORGAN COUNTY COUNCIL.—Medical Inspector of School Children. Salary, £300 per annum.

GLASGOW ROYAL MATERNITY AND WOMEN'S HOSPITAL.—Two Indoor and two Outdoor House-Surgeons; also Outdoor House-Surgeon at West End Branch.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HOLBORN UNION INFIRMARY, Archway Road, N.—Second Assistant Medical Officer. Salary, £150 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £60 and £50 per annum respectively.

INVERNESS: NORTHERN INFIRMARY.—House-Surgeon. Salary, £100 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KINGSTON-UPON-HULL CITY AND COUNTY.—Senior Tuberculosis Medical Officer. Salary, £500 per annum.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH.—Bacteriologist. Salary commencing £170 per annum.

LEICESTER ROYAL INFIRMARY.—House-Physician. Salary, £120 per annum, and £5 bonus per month during the war.

LEWISHAM CENTRE FOR DENTAL TREATMENT OF SCHOOL CHILDREN.—Anaesthetist. Salary, £25 per annum.

LINDSEY (LINCOLNSHIRE) COUNTY COUNCIL.—Temporary Assistant Tuberculosis and Assistant School Medical Officers. Salary, £300 per annum.

LIVERPOOL CITY HOSPITAL.—Visiting Physician. Salary, £130 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Three House-Surgeons. (2) Two House-Physicians Salary, £60 per annum.

LONDON HOSPITAL.—Assistant Surgeon.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and, upon promotion, to £450.

MIDDLESEX COUNTY ASYLUM, Napsbury.—Temporary Assistant Medical Officer. Salary, £6 6s. per week.

MIDDLESEX EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

MILE END OLD TOWN INFIRMARY.—Senior and Junior Assistant Medical Officers. Salary, £200 and £150, rising to £250 and £170 per annum respectively

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary, £85 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORWICH: NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £300 per annum, rising to £350.

NOTTINGHAM GENERAL HOSPITAL.—(1) Senior House-Physician. (2) Assistant House-Physician. Salary, £120 and £100 per annum respectively.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—House-Surgeon. Salary, £80 per annum.

PLAISTOW: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £10 honorarium on completion of six months' service.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary, £50 per annum, rising to £60 on appointment as senior.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROCHDALE TOWN COUNCIL.—Medical Assistant in the Public Health Department. Salary, £300 per annum.

ROYAL EYE HOSPITAL, Southwark.—House-Surgeon.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Qualified Clinical Assistant.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Temporary Honorary Assistant Physician. (2) Second Resident Medical Officer. Salary, £100 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House-Surgeon. Salary, £75 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon. Salary, £100 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Lady Assistant House-Surgeon. (2) Lady Assistant House-Physician. Salary, £85 and £80 per annum respectively.

SHEFFIELD: ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SOUTH AFRICA: FRERE HOSPITAL, East London.—Resident Medical Officer. Salary, £300 per annum, rising to £350.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon. Salary, £120 per annum.

SOUTH LONDON HOSPITAL FOR WOMEN, Newington Causeway, S.E.—Assistant Physician (female).

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

SOUTH YORKSHIRE ASYLUM, Wadsley, near Sheffield.—Locum-tenent Assistant Medical Officer (male).

STATE CRIMINAL LUNATIC ASYLUM, Broadmoor.—Assistant Medical Officer. Salary, £250 per annum, rising to £300.

STOCKPORT INFIRMARY.—Junior House-Surgeon (male). Salary, £100 per annum.

SUNDERLAND: ROYAL INFIRMARY (Children's Hospital).—Resident Medical Officer (lady). Salary, £100 per annum.

SWANSEA UNION.—Resident Assistant Medical Officer. Salary, £295 per annum, rising to £345.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £150 per annum.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £120 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £110 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary. £200 per annum.

WARWICK COUNTY LUNATIC SYLUM.—Temporary Assistant Medical Officer (male). Salary, £6 6s. per week.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary, £100 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £150 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—(1) House-Surgeon (male). (2) Junior Lady House-Surgeon. Salary, £170 and £130 per annum respectively.

YORKSHIRE: WEST RIDING.—Assistant Medical Officer at the Cardigan Sanatorium. Salary, £300 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Ballinrobe (co. Mayo), Llansawel (Carmarthenshire), Rathgormuck (co. Waterford), Slievereagh (co. Cork), Southwold (Suffolk), Tarbert (Argyllshire).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

ASHBY, William J., M.D., B.Ch., B.A.O., N.U.I., Surgeon-in-Ordinary to the Royal Buckinghamshire Hospital, Aylesbury, at the last meeting of the Governors.

DANIELS, D. Davis, F.R.C.S.Eng., M.D., B.S.Lond., Senior Surgeon to the Mansfield General Hospital.

FOSTER, N. K., M.B., Third Assistant Medical Officer at Horton Asylum, Epsom.

KENNEDY, F. J. M., L.R.C.P. and S.I., Certifying Factory Surgeon for the Montrath District, Queen's County.

PEARN, O. P. N., M.R.C.S., L.R.C.P., Second Assistant Medical Officer at Horton Asylum, Epsom.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

ADAMS.—On February 9th, at Lygon House, Cale Green, Stockport, the wife of Eustace H. Adams, M.R.C.S., L.R.C.P., of a son.

DEATHS.

BIRD.—On February 4th, suddenly, from heart failure, William E. F. Bird, M.R.C.S., L.R.C.P., eldest son of the late Dr. Bird and Mrs. Bird, 3, St. Leonard's, York, aged 47.

HUNTER.—At 31, St. James Street, Paisley, Scotland, John Baird Hunter, M.D.Glasg., of 3, Smithhills Street, Paisley, on February 4th, aged 78.

MCGOWAN.—January 29th, 1915, at his residence, "Hill-side," Tabankulu, Pondoland, Cape Colony, of pneumonia, W. Oscar S. McGowan, M.B., Ch.B., eldest son of Dr. Wm. McGowan, Maghera, co. Derry. (Cablegram.)

RECENT PUBLICATIONS.

A Short Handbook of Cosmetics, By Dr. Max Joseph. Second English edition, revised, with appendix. London: William Heinemann. (Crown 8vo, pp. 93. 2s. 6d. net.)

The translator, whose name is not given, but who dates his preface from Edinburgh, hopes that his version of Dr. Max Joseph's book will be useful because at the present time much work that should fall to the lot of medical men devolves upon the barber and the inventors and manufacturers of various preparations. The text contains a number of formulae, and the translator has added a few more.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. SMITH ELDER AND CO. published a fifth and enlarged edition of Dr. Ralph W. Leftwich's *Index of Symptoms* on February 11th. The new edition contains a large number of new symptoms and many new tests, while the interlineary notes have been amplified. An attempt has further been made to devise a scientific classification of symptoms.

The Health Series published by Messrs. Methuen and Co., London, is written with the purpose to aid seekers after good health and wholesome bodies. Each is a complete whole and deals with some one aspect of health as it affects the child, the adult, the middle aged, or some special organ of the body. Each is written by a medical man who has made the subject on which he writes his study. The first volumes are: *Throat and Ear Troubles*, by Macleod Yearsley, F.R.C.S.; *Health of the Middle-Aged*, by Seymour Taylor, M.D.; *The Care of the Teeth*, by A. T. Pitts, M.R.C.S., L.D.S.; *The Eyes of Our Children*, by N. Bishop Harman, M.B. Mr. Bishop Harman is the editor of the series.

Mr. H. K. Lewis of Gower Street announces for immediate publication the sixteenth edition of the *Extra Pharmacopoeia*, by W. H. Martindale, F.C.S., and Dr. Wynn Westcott. Amongst other additions this edition contains a syllabus of the additions, deletions, and alterations in the new *British Pharmacopoeia*. Mr. Lewis will also publish the eleventh edition of Swanzy's *Handbook of Diseases of the Eye*, revised and edited by Dr. Louis Werner, who was associated with the late Sir Henry Swanzy in the issue of the two previous editions. The same publisher has in the press a new work, *Occupational Diseases of the Skin*, by Dr. R. Prosser White of Wigan; a translation by Dr. Henry de Méric of Delorme's *Surgery in War*; and a new edition of *Diseases of the Nose and Throat*, by Dr. Herbert Tilley. This work has been largely rewritten, and the number of plates and text illustrations is greatly increased.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W., 8.30 p.m.—Adjourned *X*-ray demonstration of Items of Interest in connexion with the War, by Dr. C. Jordan, Dr. Harrison Orton, Mr. Gilbert Scott, Dr. Stanley Melville, Dr. Robert Knox, and others.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ODONTOLOGY, 8 p.m.—Short Communications:—Dr. Ackerley: (1) Some Primary Factors in the Causation of Gingivitis; (2) Disappearance of Adenofibroma of Breast after Adequate Treatment of Oral Sepsis. Paper:—Dr. H. Ewan Waller: The Influences of the Thyroid Gland upon Dental Caries. Members of the Section of Medicine are specially invited to attend.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF MEDICINE, 5.30 p.m.—Dr. Frederick Taylor: Case of Multiple Pulsating Tumours Secondary to Hypernephroma. Dr. Parkes Weber: (1) Bilateral Hypernephroma with Secondary Thrombosis of the Inferior Cava and Uraemia. (2) Latent Addison's Disease revealed by the occurrence of Pneumonia.

WEDNESDAY.

HUNTERIAN SOCIETY, Barbers' Hall, E.C., 9 p.m.—Demonstration by Dr. T. D. Lister of apparatus for producing artificial pneumothorax. Paper:—Dr. G. T. Western: Vaccine Therapy: its Present Scope.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Paper:—Dr. E. Graham Little: Rodent Ulcer: its Nature, and some Methods of Treating it.

ROYAL SOCIETY OF MEDICINE:
SECTION OF NEUROLOGY, 8 p.m.—Clinical Meeting. Demonstration of Cases.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF EPIDEMIOLOGY AND STATE MEDICINE, 8.30 p.m.—Special Discussion: The Epidemiology of Cerebro-spinal Meningitis. Opened by Sir William Osler.

Monday, Wednesday, and Friday: Royal College of Surgeons, 5 p.m.—Professor Arthur Keith: The Anatomy and Mechanism of the Alimentary Canal.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Courses are to be given next week at the following schools, colleges, and hospitals:

MANCHESTER HOSPITALS POST-GRADUATE CLINICS, Ancoats Hospital.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		FEBRUARY.
19	Fri.	London: Ethical Subcommittee, 2.30 p.m.
		London: Supplementary Tariff Conference, 7 p.m.
25	Thur.	London: Insurance Act Drug Tariff Subcommittee, 11.30 a.m.
		Staffordshire Branch, Swan Hotel, Stafford, 5.15 p.m.; Dinner, 6.30 p.m.
		MARCH.
23	Tues.	London: Hospitals Committee.
26	Fri.	London: Central Ethical Committee, 2 p.m.
29	Mon.	London: Dominions Committee (*provisional*).
		London: Naval and Military Committe (*provisional*).
30	Tues.	London: Public Health Committee.
31	Wed.	London: Medico-Political Committee.
		London: Journal Committee, 2 p.m.
		APRIL.
6	Tues.	London: Organization Committee, 2 p.m.
21	Wed.	London: Council.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 27TH, 1915.

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INSURANCE ACT COMMITTEE.

A MEETING of the Insurance Act Committee was held at the office of the Association on Thursday, February 11th. Mr. T. JENNER VERRALL, LL.D. (Chairman of Representative Meetings), was in the chair, and the other members present were:—*England and Wales:* Dr. Olive Claycon (Oldham), Dr. E. R. Fothergill (Hove), Dr. Major Greenwood (London), Mr. R. Harding (New Radnor), Dr. W. Ainslie Hollis (Brighton), Dr. I. W. Johnson (Bury), Mr. E. B. Turner (London), Dr. G. K. Smiley (Derby). *Scotland:* Dr. John Hunter (Edinburgh). *Ireland:* Dr. J. S. Darling (Lurgan).

RESIGNATION.

Mr. W. Doolin (Dublin) finding it impossible to attend meetings sent in his resignation; the Chairman undertook to take the usual steps to have the vacancy filled.

CHAIRMAN'S REPORT.

The CHAIRMAN stated that the Council of the Association had at its meeting on January 27th adopted the various recommendations of the Committee.

EXPENSES OF PHARMACEUTICAL COMMITTEE.

The Committee approved the letter of the Medical Secretary to the Scottish Commissioners asking for a definite decision as to whether an Insurance Committee had a right to deduct the expenses of the Pharmaceutical Committee from the Medical Benefit Fund instead of from the Drug Fund.

DRUG TARIFF.

It was reported that a communication addressed to the Scottish Committee of the British Medical Association from the Scottish Commissioners transmitting a proof of the alterations in the drug tariff, and asking for observations thereon, had been referred by the Chairman of the Scottish Committee to the Medical Secretary, who had addressed a letter to the Commissioners on the subject. In this letter attention was called to the fact that a joint conference was held monthly between the British Medical Association and the Pharmaceutical Society of Great Britain to revise the list of starred drugs, and urging the Commissioners to use their influence with the Pharmaceutical Standing Committee on Insurance (Scotland) to induce it to combine with the Pharmaceutical Society of Great Britain in order that the price of the starred drugs might be settled at the monthly conferences, as dealing with the same matters twice over, once in England and again in Scotland, seemed an unnecessary waste of time and energy. A formal acknowledgement only had been received.

ATTENDANCE ON SOLDIERS ON FURLOUGH.

With regard to the question of medical attendance on soldiers on furlough it was decided to point out to the Commissioners that medical practitioners had endeavoured to carry out the procedure outlined in Circular 210/I.C., which, however, was not found in practice to be workable owing to the great distances of the military doctor in many cases from the soldier requiring attendance, and to ask the Commissioners to approach the War Office on the subject.

NON-PANEL PRACTITIONERS AND THE NEW CERTIFICATION FORMS.

The correspondence with the Commissioners on this subject published in the SUPPLEMENT of February 13th, p. 53, having been considered, it was decided to address a further letter to the Commissioners (see SUPPLEMENT, February 20th, p. 65).

CIRCULAR LETTER TO INSURANCE PRACTITIONERS.

The Local Medical and Panel Subcommittee was empowered to prepare and issue to all insurance practitioners a letter informing them of the action taken by the Association in protecting their interests with regard to Insurance Act matters.

THE DEPARTMENTAL COMMITTEE ON DRUG TARIFF.

The Drug Tariff Subcommittee was instructed to prepare and submit on behalf of the Association a memorandum of evidence to the Departmental Committee on the Drug Tariff of the Insurance Acts, to collect evidence and appoint on behalf of the Association witnesses to give oral evidence before the Committee.

A WAR ECONOMY.

SUGGESTION TO APPROVED SOCIETIES AS TO LESS FREQUENT CERTIFICATES IN CHRONIC CASES.

THE following letter has been addressed to the secretaries of all the large approved societies:

February 23rd, 1915.

SIR,—The British Medical Association is very much concerned with the strain under which the medical profession is at present working in its efforts to deal with the national emergency. The doctors in many areas are greatly overworked owing to the withdrawals of a large number of their colleagues for military service. Further, it is known that the naval and military authorities need more doctors, and the pressure on the profession is thus likely to increase. In these circumstances the Association is anxious to find a means of reducing as much as possible all professional work which is not absolutely necessary.

In furtherance of this policy the Association would call the attention of approved societies to paragraph 36 of Memo. 211/I.C. of the Insurance Commissioners, in which an indication is given that where societies are satisfied that it is not necessary to require an insured person to obtain a medical certificate every week they may arrange for certificates being furnished at less frequent intervals. The British Medical Association is of opinion that the approved societies, by adopting this suggestion, could lessen to some extent the visiting and clerical work of the profession, and would urge that societies should at once

arrange that in the really chronic cases certificates shall not be required weekly but only at longer intervals. In some areas arrangements have already been made between the approved societies and the doctors whereby certificates will only be asked for monthly in such cases. The Association hopes that the approved societies generally will co-operate with the medical profession in helping to solve what is admittedly a difficult problem—namely, how to release sufficient doctors to meet military needs without depriving the civil population of the necessary medical attendance.—I am, yours faithfully,

ALFRED COX,
Medical Secretary.

To the Secretaries of Societies
approved by the Joint Committee,
National Health Insurance Commission.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

PANEL COMMITTEE.

AT a meeting of the London Panel Committee on February 23rd a resolution was passed expressing sympathy with the relatives of the late Dr. J. T. Richards, who was chairman of the Committee last year.

Adequacy of the Medical Service.

The General Purposes Subcommittee stated that, in view of the criticisms made from time to time as to the adequacy of the medical service in various areas in London and the suggestions sometimes put forward for radical alterations in the condition of service, it was desirable that the Panel Committee should prepare statistics with regard to the amount of work actually being performed by practitioners on the panel, and the time they were devoting to their duties. A schedule of questions had been prepared which the Subcommittee proposed to send to practitioners.

The proposal aroused some criticism. Dr. H. G. COWIE urged that the adequacy of treatment rendered by an individual practitioner depended upon personal factors, which could not be estimated by inquiry. Dr. FLETCHER thought the number of insured persons on a doctor's list was the principal factor, but Dr. CUNNINGTON suggested that if 2,000 was a suitable list in a poor neighbourhood where the incidence of sickness was high, the limit might well be fixed at 3,000 in a district having a well-to-do population. Dr. TOLAND thought that an inquisition of the character proposed would be most derogatory. The best check upon the efficiency of the practitioner was the exercise by the insured person of his right to choose another doctor. Dr. BERNSTEIN urged that the adequacy of the pharmaceutical service should also be considered. Dr. B. A. RICHMOND (Secretary of the Committee) said the information was principally required for the protection of practitioners themselves. There was much criticism of the present system, and when an attack was made practitioners should have material with which to defend themselves. Dr. ATTERIDGE said he believed the inquiry would show that the industrial classes were receiving very much better treatment than before the Insurance Act was passed.

The New Form of Certificate.

The Panel Service Subcommittee invited the Committee to express the opinion that books of certificate forms should be supplied to practitioners not on the panel so that they might be able to give certificates in the form required by approved societies.

This led to a debate on the general question of certification, and adverse comments were made upon the practice of some approved societies in refusing to pay sick benefit except up to the date of the last certificate and in requiring a weekly certificate for chronic cases. The Chairman (Dr. H. J. CARDALE) remarked that the new system of certification was the result of concessions on the part of both doctors and approved societies, but some approved societies were interpreting the new rules in a way which made them a fresh burden instead of a benefit to the doctors. Practitioners were loyally observing their side of the bargain, but approved societies were taking advantage. Ultimately the Subcommittee took back its report with a view to representations being made to the Commissioner on the general working of the new system of certification.

Number of Practitioners on the Panel.

The Panel Service Subcommittee noted that the medical list for 1915 contained the names of 1,449 practitioners in general practice and the names of 103 institutions whose medical officers were under agreement to treat insured persons. In this connexion the Subcommittee remarked that it was reported to the British Medical Association last July that there were then resident in the county 1,303 practitioners on the panel, 969 practitioners not on the panel in general practice, and 2,957 practitioners not on the panel and not in general practice.

LIVERPOOL.

PANEL COMMITTEE.

A MEETING of the Liverpool Panel Committee was held at the Medical Institution on February 9th, when Mr. F. CHARLES LARKIN was in the chair, and seventeen other members were present.

Duplicate Prescriptions.—Letters were read from the Secretary of the British Medical Association stating that the question of duplicate prescriptions had already been raised at Brighton by way of appeal to the Commissioners. It was decided to postpone further action until the result of this appeal was known.

Proposed Central Bureau for Checking Prescriptions.—A letter was read from the Insurance Act Committee of the British Medical Association with reference to a proposed central bureau for checking prescriptions. It was decided to instruct the representatives of the Panel Committee on the Liverpool Insurance Committee to oppose any arrangement for such a central bureau.

OLDHAM.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Oldham Local Medical and Panel Committees was held on Monday, February 8th.

Complaints.—It was decided that representations should be made to the Insurance Committee that it would be advisable to so amend the suggested rules for the conduct of insured persons that the "complainant" and the "defendant" should not both be present at the same time before the Medical Service Subcommittee, as it had been found in practice that such a course led to unseemly behaviour.

Scrutiny of Prescriptions.—Letters from the Clerk to the Oldham Insurance Committee strongly urging the Committee to contribute towards the expenses of the Joint Committee for the checking of prescriptions were ordered to lie on the table.

Carbon Copy Prescriptions.—The Insurance Committee was requested to inform chemists on the panel that carbon copy prescriptions would not be paid for.

EDINBURGH.

LOCAL MEDICAL COMMITTEE.

THE annual general meeting of the Burgh of Edinburgh Local Medical Committee was held in Edinburgh on Friday, January 29th, when Dr. DEWAR occupied the chair.

Annual Report and Financial Statement.—The Committee's annual report for 1914, for submission to the Practitioners' Meeting, was unanimously adopted. The financial statement for 1914, showing a balance of £2 18s., was unanimously adopted. It was agreed to transfer the balance to the credit of the Panel Committee's account.

Subscription. — On the motion of Dr. SHOOLBREAD, seconded by Dr. BIANCHI, it was unanimously resolved to rescind the resolution fixing the annual subscription at £1 1s.

Proposed Alteration of Constitution.—Dr. JOHN MCLAREN (in the absence of Dr. MARTIN) moved the following motion:

> That the constitution be so altered as to reduce the number of the Local Medical Committee from 36 to 16.

The CHAIRMAN moved as an amendment:

> That the Local Medical Committee be now dissolved.

Eleven voted for the Chairman's amendment, and when put to the meeting as a substantive motion, it was agreed to unanimously. After further discussion, however, it was agreed to decide the question finally at the practitioners' meeting to be held on February 9th.

Burgh Insurance Committee.—Dr. Angus Macdonald was nominated to fill the vacancy on the Insurance Committee caused by the resignation of Dr. Haultain. The appointment is made by the Commissioners.

MEETING OF PRACTITIONERS.

A meeting of medical practitioners resident in the Edinburgh insurance area was held on February 9th, when Dr. DEWAR was in the chair.

On the motion of the CHAIRMAN, the Local Medical Committee's annual report and financial statement for 1914 were unanimously approved.

It was unanimously agreed to allow the Local Medical Committee to drop out of existence.

STIRLINGSHIRE.

PANEL COMMITTEE.

A MEETING of the Panel Committee was held at Stirling on February 4th.

Election of Chairman and Secretary.—Dr. Joss (chairman) and Dr. Young (secretary) consented, at the special desire of the meeting, to be re-elected to those offices.

Medical Records.—It was agreed to recommend the adoption of the card medical records, instead of the present day-book system.

Drug Accounts Committee.—The meeting unanimously agreed to take no part in the election of the Drug Accounts Committee.

Administration Expenses.—A requisition was submitted from the Secretary of the Pharmaceutical Committee in terms of Section 33 (2) for £25 to cover that Committee's administration expenses for the past year. The Secretary was instructed to notify that the Panel Committee took no objection to the payment thereof by the Insurance Committee, and at the same time to intimate that the Panel Committee had decided to make a requisition for a payment towards their outlays for the year 1915.

MEETING OF PRACTITIONERS.

The annual meeting of duly qualified medical practitioners resident within the county of Stirling was held in Stirling on the same day, when Dr. MCDIARMID (Kippen) took the chair.

Annual Report.—The report of the proceedings of the Local Medical Committee during the past year was read by the SECRETARY and cordially approved. The Secretary submitted a financial statement of the Committee's finance, and the meeting agreed not to ask for any further voluntary levy for administration purposes, but at the same time instructed the Secretary to make a final appeal to those who had not contributed towards the expenses for the past year.

Election to County Local Medical Committee.—The former members of the Local Medical Committee were re-elected for the ensuing year.

Medical Records.—The meeting agreed to the proposed adoption of card medical records instead of the present day-book system.

COUNTY OF FORFAR.

MEETING OF PRACTITIONERS.

A MEETING of duly qualified medical practitioners in the area of Forfarshire was held at Forfar on February 3rd, when Dr. CAMERON was in the chair.

The Annual Report and Balance Sheet for the year ending December 31st, 1914, was submitted, and ordered to be circulated among the practitioners in the area. The Secretary was thanked for his trouble and labour in preparing the report.

Medical Records.—The Secretary was instructed to intimate to the Insurance Commissioners that it had been decided to substitute the card index system in lieu of the day-book at present in use, and that the new form of record would come into operation on April 1st next.

Election of Local Medical Committee.—The following were elected to form the Local Medical Committee for the ensuing year:

Drs. Cameron, T. B. Adam (Brechin); Burgess, Cable, Kerr, Peterkin (Forfar); Hoile, Johnston, Grant (Montrose); Sillars, Mill (Kirriemuir), Taylor (Carnoustie), Yule (Arbroath), Morris (Glamis), Tait (Alyth), Dalgetty (Liff), Johnston (Newtyle), H. Gowans (Broughty Ferry), Barron (Letham), Sinclair (Edzell), B. P. Campbell (Brechin).

Attendance on Dependants of Soldiers and Sailors.—After consideration whether maternity attendance should be allowed free of charge to the wives of soldiers and sailors at present engaged in the war, it was agreed that they should be charged at the usual fee.

Medical Certification.—The Secretary was instructed to intimate to the Scottish Insurance Commissioners the dissatisfaction of the Forfarshire medical practitioners with the new form of certification, and it was decided to consider the matter.

Vote of Thanks to Retiring Chairman.—A vote of thanks was accorded to Dr. Cameron for the able way in which he had performed the duties of Chairman of the Local Medical Committee.

Representative on Forfarshire Insurance Committee.—The SECRETARY intimated that he had been informed that as the Local Medical Committee was not an association recognized by the Insurance Commissioners for the purposes of Section 59 (2) (*c*) of the Act, the recent election by that Committee of Dr. Burgess to the Forfar County Insurance Committee in place of the late Dr. Macalister was not valid. It had therefore been necessary to call a special meeting according to the Commissioners' regulations on the subject, of all practitioners resident in the area for the purpose of filling the vacancy. The Secretary having intimated that the provisions of the regulations had been duly carried out, Dr. Burgess (Forfar) was appointed the practitioners' representative to the Forfarshire Insurance Committee.

LOCAL MEDICAL COMMITTEE.

The meeting of the newly elected Local Medical Committee was held at Forfar on February 3rd immediately after the practitioners' meeting.

Election of Officers.—The following officers were elected:

Chairman: Dr. Hoile (Montrose).
Medical Secretary: Dr. Burgess (Forfar).
Subcommittee: Drs. Hoile and Johnston (Montrose), Cameron and T. B. Adam (Brechin), Peterkin and Burgess (Forfar), Sillars and Mill (Kirriemuir), Morris (Glamis), Dalgetty (Liff), Barron (Letham), and Taylor (Carnoustie).

Levy.—It was agreed that for the current year a levy of 1d. per five insured persons a quarter should be deducted by the Clerk to the County Insurance Committee from the cheques payable to practitioners for the first, second, and third quarters, and, should funds be required, a suitable levy for the fourth quarter.

Capitation Fee for Uninsured Persons.—It was decided that no practitioner should undertake to attend any uninsured person connected with any body or society at a sum less than 7s. a head per annum.

PANEL COMMITTEE.

A meeting of the Panel Committee was held at Forfar on February 3rd.

Appointment of Chairman.—Dr. Hoile (Montrose) was appointed Chairman of the Committee.

Medical Records.—The SECRETARY intimated that the card index system of medical record had been agreed to at the practitioners' meeting, and that that decision was the finding of the Panel Committee.

Scrutiny of Prescriptions.—The Committee nominated Dr. George C. Anderson (Methil) representative on the board of management of the bureau for the checking of chemists' prescriptions.

A letter, dated January 20th, was read from the British Medical Association (Scottish Committee), intimating that Panel Committees should bear no part of the expense of carrying on the central bureau for the checking of prescriptions. After consideration the Committee agreed to abide by their former resolution.

RENFREW.

PANEL COMMITTEE.

A MEETING of the Renfrew County Panel Committee was held at Paisley on January 13th, when Dr. CORBETT presided.

Dr. M. H. Taylor was nominated to take the place on the Medical Service Subcommittee of Dr. J. B. Stevens, who is on active service, and Dr. William Stewart was appointed auditor.

Drug Accounts Committee.—The Committee decided not to nominate a candidate for the Drug Accounts Committee.

Administration Expenses.—An estimate of administration expenses for 1915 was adopted and directed to be submitted to the Commissioners for approval.

Medical Benefit Income.—It was reported that the Scottish Insurance Commissioners had intimated that the sum of £1,066 5s. 6d. was due to the Medical Benefit Fund for the year ended January 11th, 1914, which amount would more than meet the amount overpaid to practitioners on the provisional credit for that year, and that consequently it would not be necessary to make any deductions from payments due to practitioners for the year ended December 31st, 1914.

INSURANCE COMMITTEES.

SALFORD.

The Drug Fund.

AT the monthly meeting of the Salford Insurance Committee a resolution was passed requesting the Panel Committee to report, as soon as it could, on the question of the alleged over-prescribing by certain panel doctors in 1913. The CLERK then gave a report as to the cost of drugs and appliances for the two years 1913 and 1914, which gave rise to considerable discussion. The report stated that the total claims by chemists during the year 1913 amounted to £12,064, the number of prescriptions dispensed was 405,748, and the average cost per prescription was about 7.1d. The number of insured persons was between 82,000 and 90,000. The arrangement which came into force in Salford at the beginning of 1914 must be understood in order to appreciate the figures. Under the Salford system the whole of the money belonging to the panel fund is pooled and the doctors are paid out of it at an agreed rate per visit or consultation, so far as the pool suffices. Up to the present the pool has only sufficed to pay about two-thirds of the doctors' accounts. The chemists were in no better position, and owing to the great dissatisfaction expressed by them and the charges levelled against the doctors of general over-prescribing in 1913, a somewhat novel method was adopted at the beginning of 1914 which was intended to secure more careful prescribing. The arrangement was that the whole of the drug fund of 2s. per insured person should be credited to the panel practitioners' pool, and, on the other hand, each panel doctor should be debited with the cost of the prescriptions given by himself. In order to comply with the Act and Regulations, the chemists were in any case to be assured of at least 1s. 6d. but not more than 2s. per insured person in the aggregate. In this way, while the aggregate sum available for the chemists would not be affected, an individual responsibility would be thrown on each panel doctor for his own prescriptions. It has now been found that the effect on prescribing has been much greater than was ever expected—so much so, that members of the Insurance Committee are now suggesting that the insured are not receiving the medicines they ought to get. The report went on to show that in 1914 the chemists' accounts amounted to £7,275, which is £4,789 less than in 1913. The number of prescriptions had fallen from 405,748 in 1913 to 344,554 in 1914—a drop of 61,194; and the average cost per prescription had fallen from 7.1d. to 5.1d. The chemists will now receive at least 90 per cent. of their accounts for 1914, and possibly, when the total number of the insured is properly known, they may be paid in full.

Mr. SPEAKMAN said he felt some misgivings, in view of the enormous drop in the drug bill. In many other towns the cost per prescription was from 7d. to 8d., and, unless there was excessive prescribing there, it would seem that the sum of 5d. in Salford could not be sufficient to provide proper drugs. He thought that the Committee ought to be satisfied as to whether the insured were getting what the law said they ought to get—proper and adequate drugs.

Mrs. GARRETT thought there was not sufficient money provided for drugs. No doctor in Salford could possibly dispense medicines at an average of 5d. per bottle for his private patients. She knew that many of the doctors were supplying medicines to insured persons out of their own surgeries, because they were afraid of being surcharged if they prescribed in the ordinary way.

Dr. TAYLOR said the figures given were sufficiently serious to justify the Committee in taking the matter in hand. In some months the average cost per prescription had only been 4.7d., and he agreed that it was impossible to supply adequate medicines at anything like that sum, which included the dispensing fee. It was a fact that many of the doctors had supplied medicines, and especially dressings, out of their own stocks gratis. The whole matter was complicated by the system now in use in Salford. The great drop in the number of prescriptions could be accounted for in several ways. There had not actually been any decrease in the amount of sickness, and though it was true that a number of men had been away part of the year on war service, that would not make much difference, as they were the healthiest part of the population, who required but little medicine. By far the greatest cause of the drop in the number of prescriptions was to be found in the Salford system, under which each doctor is debited with the cost of each prescription he gave, and, if it were only in order to save the dispensing fee of 2d. a bottle, the doctors were tempted to give medicines out of their own stocks. That had been done to a great extent, and had considerably reduced the number of prescriptions sent to the chemists. The Salford scheme had also largely brought about the reduction in the average cost per prescription, which had fallen from 7d. to 5d., and the Committee had a right to satisfy itself that 5d. was sufficient on an average to provide proper medicines. He doubted very much whether it was legal for the panel doctors to give medicines out of their own stocks, except in emergencies, even though no charge was made for them. When Mr. Lloyd George determined to "separate drugs from the doctors," it was generally understood that one object was to be able to prove at any time whether proper medicines were being supplied. If the doctors themselves gave the medicines, there was absolutely no control; but if prescriptions were given there was a standing record to which any doctor, charged with giving inadequate medicines, might appeal. The committee appeared to feel, and he quite agreed, that the sum of 2s. per person was insufficient in a town like Salford to provide adequate drugs and appliances, and that, combined with the system now in use in Salford, made it necessary that an inquiry should be held into the whole matter.

Miss HEYGATE, Lady Superintendent of the District Nurses, said that in 1913 dressings were supplied in such quantities that they had actually been used for washing floors, but during the last year patients had even been told to use old rags for dressings, and the district nurses had often had to supply even the most necessary dressings.

It was finally decided to refer the whole question to the Medical Benefit Subcommittee for inquiry and report.

CORRESPONDENCE.

APPROVED SOCIETIES AND CERTIFICATES FROM NON-PANEL PRACTITIONERS.

WE have received the following communication, dated February 22nd:

Sir,—A non-panel practitioner in this district is attending an insured person. The secretary of his society refuses to give the patient sick pay unless he produces a certificate from his panel doctor, and that certificate must be on Form Med. 40.

We understand that Insurance Committees have no power to issue Form Med. 40 to doctors not on the panel.

In the JOURNAL of February 13th the Commissioners state that societies are *able to* (*not bound to*) accept certificates on other forms.

We think steps should be taken *at once* to settle the question whether societies have a legal right to refuse a certificate from a non-panel practitioner. If they have this right, then the position of non-panel men is intolerable. —We are, etc.,

GEORGE ALEXANDER,
Honorary Secretary, Furness Division, British Medical Association.

LORTON WILSON,
Honorary Secretary, Barrow Local Medical and Panel Committee.

J. LIVINGSTON,
Honorary Secretary, North Lancashire and South Westmorland Branch British Medical Association, and Chairman of Barrow Local Medical and Panel Committee.

*** The question largely turns on the rules of the society to which the patient belongs. It is probable that the society would find it difficult to defend its action

in refusing the certificate of any registered medical practitioner, though according to the Commissioners (see letter in the SUPPLEMENT of February 20th, p. 67) a society is not *bound* to pay on the certificate of any doctor, whether on the panel or not. The whole circumstances should be reported to the Medical Secretary of the British Medical Association with any documentary evidence available.

INSURANCE ACT IN PARLIAMENT.

DISABLED SOLDIERS AND SAILORS.

MR. WILLIAM THORNE asked whether all disabled soldiers and sailors who were State insured were to be paid their benefits under the Insurance Act from the funds of their respective approved societies; if so, whether he was aware that this would result in a drain upon the funds of some societies and was a contingency not contemplated in their schemes of benefits for sickness and disablement; and whether consideration had been given to the advisability of the State assisting these societies, at any rate to some extent. Mr. Montagu replied that in accordance with the recommendation of the Select Committee, the Government was considering the question of giving assistance to societies in respect of the drain upon their resources directly attributable to disablement suffered by soldiers and sailors serving the State in the war.

CHEMISTS' ACCOUNTS.

In reply to Mr. Wiles, who asked a question with regard to the delay in the payment of chemists' accounts in London during November and December, 1914, Mr. Montagu said that any payments made pending a settlement in respect of remuneration due to chemists for the whole year were of the nature of advances only. The Committee had made advances to an amount of nearly 75 per cent. of the total, but the checking had not yet been completed.

Association Notices.

ELECTION OF MEMBER OF COUNCIL, 1914-15 AND 1915-16 BY BRANCHES NOT IN THE UNITED KINGDOM.

THE following nomination has been received from the undermentioned Grouped Branches (By-law 49):

Branches (Grouped).	Candidate.
Border South Africa Cape of Good Hope (Eastern) Cape of Good Hope (Western) East Africa and Uganda Egyptian Gibraltar Griqualand West Malta and Mediterranean Natal Coastal Natal Inland Orange Free State Pretoria Rhodesian Witwatersrand	THOMAS DUNCAN GREENLEES, M.D., Rostrevor, Kirkleton Avenue, Weymouth.

Only one nomination having been received, the said Dr. Thomas Duncan Greenlees is hereby duly elected member of the 1914–15 and 1915–16 Council.

By order of the Council,

GUY ELLISTON,

Financial Secretary and Business Manager.

February 27th, 1915.

SUGGESTED CHANGES OF BOUNDARIES.

1. PROPOSED TRANSFER OF MOTTINGHAM FROM BROMLEY TO WOOLWICH DIVISION.

NOTICE is hereby given to all concerned of a proposal made by the Woolwich Division that the Parish of Mottingham be transferred from the area of the Bromley to that of the Woolwich Division. Written notice of the proposal has been given to the Bromley Division and Kent and Metropolitan Counties Branches, and the matter will be determined in due course by or on behalf of the Council. Any member affected by the proposed change, and objecting thereto, is requested to notify the fact and his or her reason therefor to the Medical Secretary, 429, Strand, W.C., not later than March 27th, 1915.

2. PROPOSED TRANSFER OF ABERCRAVE AND YSTRADGYNLAIS FROM NORTH GLAMORGAN AND BRECKNOCK TO SWANSEA DIVISION.

Notice is hereby given to all concerned of a proposal made on behalf of the Swansea Division that the districts of Abercrave and Ystradgynlais be transferred from the area of the North Glamorgan and Brecknock to that of the Swansea Division. Written notice of the proposal has been given to the North Glamorgan and Brecknock Division and South Wales and Monmouthshire Branch, and the matter will be determined in due course by or on behalf of the Council. Any member affected by the proposed change, and objecting thereto, is requested to notify the fact and his or her reason therefor to the Medical Secretary, 429, Strand, W.C., not later than March 27th, 1915.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Fleet Surgeon MICHAEL J. SMITH, M.B., F.R.C.S., to the *Victory*, additional; Fleet Surgeon JOHN F. HALL to the *Vivid*, additional; Fleet Surgeon EDWARD D. J. O'MALLY to the *Pembroke*, additional. Surgeons MICHAEL J. FITZGERALD, M.B., and BERNARD E. P. SAYERS to the *Victory*, additional; FREDERICK W. QUIRK to the *Vivid*, additional. Temporary Surgeons JOHN D J. BRUCE and JAMES N. McB. ROSS, M.D., to the *Pembroke*, additional; THOMAS BEATON, M.D., to the *Swiftsure*, vice Adshead; RANDOLPH UPTON to the *Pembroke*, additional, for Chatham Hospital; F H. REES to the *Vivid*, additional, for Plymouth Hospital; STANLEY WORTHINGTON and H. G MOSER to the *Victory*, additional, for Haslar Hospital; THOMAS McC. CREIGHTON, to the hospital ship *China*, vice Stergman; WILLIAM K. CHALMERS, M.B., to the *Argonaut*, vice Creighton; R. W. TOWNLEY to the hospital ship *China*. vice McEwen. To be Temporary Surgeons: WILLIAM BELL, M.B, BENJAMIN LEWITT.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeons EDWARD J. STEEGMAN, M.B., to the *Pembroke*, additional, for disposal; TOM D. MCEWAN, M.B., to the *Pembroke*, additional, for disposal; P. G. HORSBURGH to be Surgeon Probationer.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL W. D. C. WILLIAMS, C.B., Director-General of Medical Services, Australian Forces, to be Honorary Surgeon-General in the army.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel ALFRED BLENKINSOP, on appointment as Assistant Director-General, Army Medical Service, to be supernumerary.

Lieutenant-Colonel WILLIAM E. BERRYMAN is retained on the active list under Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary.

Major R. L. POPHAM appointed temporarily D.A.D.M.S. (Mobilization) Sixth (Poona) Divisional Area.

Captain W. A. FROST appointed to the officiating charge of the Brigade Laboratory, Nasirabad.

Captain CLAUDE M. RIGBY is seconded for service on the staff of the Governor of Bombay.

Captain J. E. GATT appointed D.A.D.M.S. (Sanitary) Second (Rawalpindi) Division.

Temporary Captain GEORGE E. MILES to be temporary Major

LAURANCE MACLAGAN-WEDDERBURN, M.D., to be temporary Captain.

To be Temporary Lieutenants: NORMAN BLACK, M.B., ALEXANDER F. W MILLAR, M.B., JAMES P. LAVERY, WALKER S. LINDSAY, M.B, JOSIAH R. TURNER, M B., GEORGE DAVIDSON, M.B., GEORGE T. CREGAN, M B., JOHN A. G. BURTON, M.B., ALFRED C. WARREN, M.D., JOHN R. MCGILVRAY, M.B., HUBERT S. STOCKTON, M.B., FRANK R. FEATHERSTONE, CHARLES DE C PELLIER, VIVIAN P. FOOTE, DELBERT EVANS, M.B, FREDERICK P. WALSH, GEOFFREY FILDES M B, HENRY W. S. WRIGHT, EDMUND C. MALDEN, WILLIAM K A. RICHARDS, CHARLES ROCHE, JOHN W. GILBERT, SIDNEY H. BROWNING, KENNETH PLAYFAIR, JAMES H BAMPTON, M B., FREDERICK R. HARRIS, THOMAS A. WATSON, M.D., THOMAS L ENRIGHT, HENRY H. WEEKES, M.D., JOHN W. BINGHAM, M B., ARTHUR H. WILSON, ARTHUR G. P. HARDWICK, WILLIAM J. B. SELKIRK, M.D., ROBERT M. FRASER, JOHN R. FORDE, M B., FRANK S SCOTT, M.B., HERBERT T. LUKYN-WILLIAMS, M.B., WILLIAM D. DUNLOP, M.B, THOMAS H F. ROBERTS, DAVID WILSON, M B, GEORGE W. B. JAMES, M.D., FRANCIS J HENRY, M B., F.R.C.S.E., CHARLES O'BRIEN, M.D., KENNETH D. C. MACRAE, M.B., BERNARD R PARMITER, M.B., JAMES W MCKINNEY, M.B., ERNEST TAWSE, M.B., JAMES D. FORRESTER, M.B., GRAHAM SMITH, JOHN P. BROWN, M.B., ARTHUR R. WIGHTMAN, M B, REGINALD A. MORRELL, HAROLD A. HAIG, M.B., NORMAN DUGGAN, M.B., F.R.C.S., SIDNEY B. RADLEY, M.B., F.R.C.S., DOUGLAS A. DERRY, M.B., LOMOND C. DILLON-KELLY, CECIL F. DILLON-KELLY, EUGENE P. LEAHY, M.B., FRANCIS P. HALKYARD, M.B., ROBERT TINDALL, M.B., THOMAS MCK. WATT, M B., ROBERT H. LISCOMBE, M.B., FRANK L. CLELAND, M.B. ARCHIBALD FULLERTON, M.B., ERNEST E. HERGA, WILLIAM A. COATS, M.B., THEODORE E. ROBERTS, RICHARD R. ARMSTRONG, M.B., ALEXANDER N. CRAIG, M.B., MALCOLM GROSS, ARTHUR W. COMBER, WILLIAM ANDERSON, M.B., F.R.C.S.E, ADRIAN ST. JOHNSTON, DUNCAN M. MORISON, M.B., CLAUDE E. FREEMAN, HERBERT SMITH, M.B., WILLIAM B SANDERS, M.B., HORACE J. GATER, FRANKE C. HART-SMITH, M.B., F.R.C.S.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

COLONEL DE B. BIRCH, C.B., M.D., retired list, Territorial Force, to be Assistant Director of Medical Services, West Riding Reserve Division.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) Sanitary Company.—CONSTANT W. PONDER to be Lieutenant.

First London (City of London) Field Ambulance.—ROGER P. STEWART, M.B., to be Lieutenant.

Second London Casualty Clearing Station. Captain CLAUDE H. S. FRANKAU, M.B., F.R.C.S., from the Fourth London General Hospital, to be Captain.

Second London (City of London) General Hospital.—Captain CHARLES A. LEES to be Major on the permanent personnel

Fourth London Field Ambulance.—To be Lieutenants: LESLIE P. HARRIS, GEORGE B. PRITCHARD.

Second Western General Hospital.—THOMAS P. KILNER, M.B., to be Lieutenant. The announcement of the appointment of FRANK G. WRIGLEY, M.D., which appeared in the *London Gazette* of November 23rd, 1914, is cancelled.

First East Anglian Field Ambulance.—Captain WILLIAM J. HOYTEN, M.D., from Attached to Units other than Medical Units, to be Captain.

Second East Anglian Field Ambulance.—EDMUND A. GOULDEN, M.D., to be Lieutenant.

First South Midland Mounted Brigade Field Ambulance.—Captain DOUGLAS M. SPRING, M.B., to be Major, temporary.

Second South Midland Mounted Brigade Field Ambulance.—ALFRED G. LEVY, M.B., to be Lieutenant.

Third South Midland Field Ambulance.—Major BERTRAM M. H. ROGERS to be Lieutenant-Colonel, temporary.

Third North Midland Field Ambulance.—To be Lieutenants: WILLIAM B. WILLIAMS, M.B., GEORGE F. DENNING.

Third Southern General Hospital.—FIELDING CLARKE to be Captain whose services will be available on mobilization.

Third West Riding Field Ambulance.—Surgeon Captain WILLIAM S. KERR, M.B., F.R.C.S.E., from the Fourth (Hallamshire) Battalion, York and Lancaster Regiment, to be Captain.

Second Lowland Field Ambulance.—JAMES ANGUS, M.B., to be Lieutenant.

Attached to Units other than Medical Units.—Honorary Captain ARTHUR RICKETTS, C.M.G., M.D., to be Captain; Surgeon-Major BERTRAM ADDENBROOKE, M.D., from the Seventh Battalion, Worcestershire Regiment, to be Major; Captain FRANCIS ROWLAND, from the Sixth London Field Ambulance, to be Captain; Lieutenant CHARLES D. MATHIAS, M.B., to be Captain, temporary; Captain ELLERINGTON R. TURNER, M.B., resigns his commission on account of ill-health. To be Lieutenants: IVAN W. MACKINNON, M.B., ERNEST OSBORNE, HUGH A. SANDFORD, FREDERICK G. VICARS, KENNETH J. T. KEER, HENRY F. J. GREAVES, JOHN J. E. BIGGS, late Captain Seventh (Cyclist) Battalion Welsh Regiment.

Vital Statistics.

EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE accompanying diagram shows the prevalence of the principal epidemic diseases in London during the fourth quarter of last year. The fluctuations of each disease and its relative fatality, compared with the average in the corresponding periods of recent years, can thus be readily seen, except in the case of diarrhoea and enteritis among children under two years of age, for which the average mortality is not available.

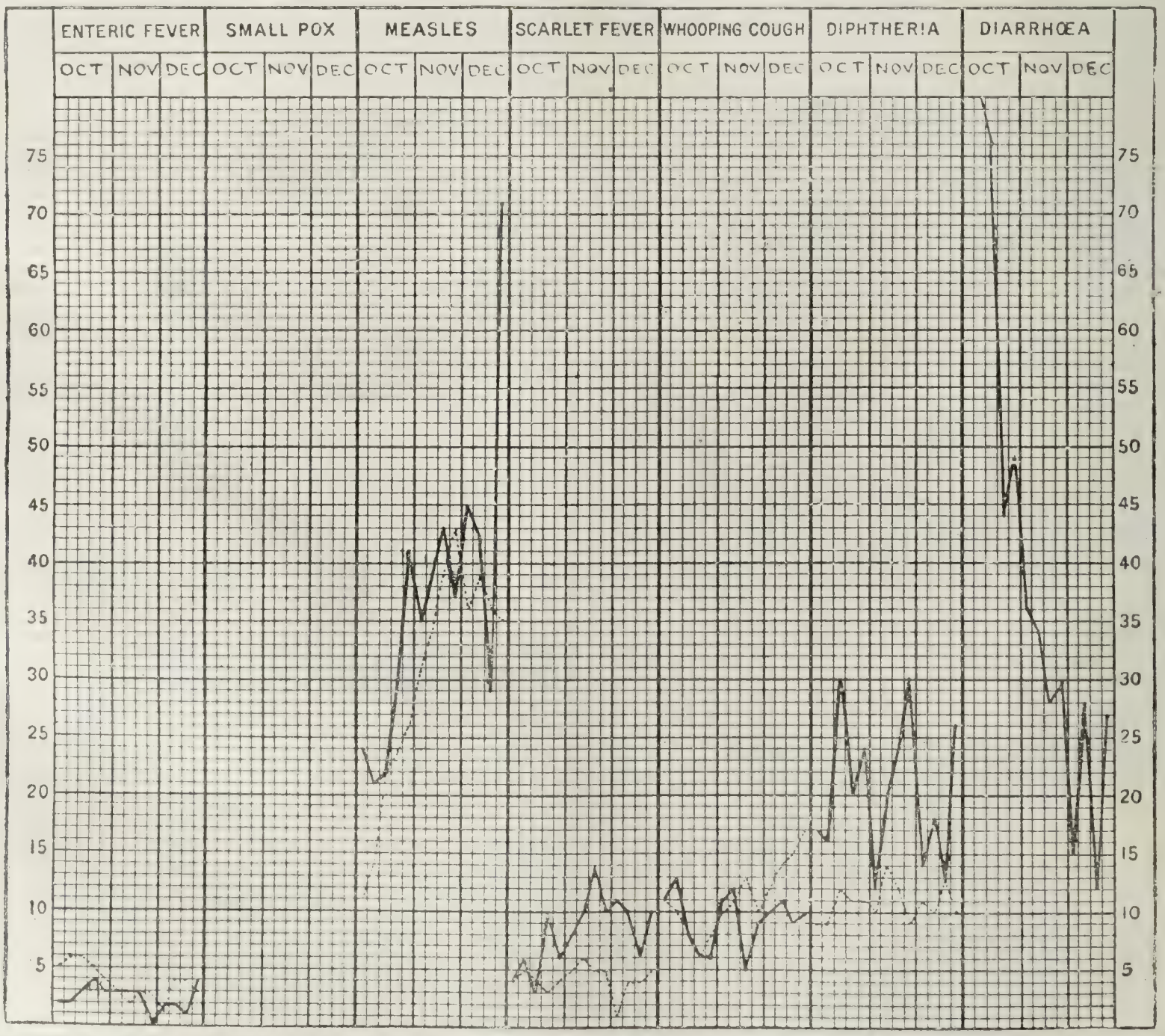
Enteric Fever.—The fatal cases of enteric fever, which had been 48, 32, and 36 in the three preceding quarters, declined again last quarter to 32, and were 17 below the corrected average number in the corresponding period of the five preceding years. This disease was proportionally most fatal last quarter in the City of Westminster, St. Marylebone, Hampstead, Holborn, the City of London, and Greenwich. The Metropolitan Asylums Hospitals contained 68 enteric fever patients at the end of last quarter, against 66, 40, and 57 at the end of the three preceding quarters; 126 new cases were admitted during the quarter, against 147, 83, and 109 in the three preceding quarters.

Small-pox.—No death from small-pox was registered in London last quarter, and no case of this disease was under treatment in any of the Metropolitan Asylums Hospitals.

Measles.—The deaths from measles, which had been 148, 316, and 412 in the three preceding quarters, further rose last quarter to 479, and were 89 in excess of the corrected average number. The highest death-rates from this disease last quarter were recorded in Hammersmith, Hackney, Shoreditch, Bethnal Green, and Southwark.

Scarlet Fever.—The fatal cases of scarlet fever, which had been 66, 69, and 73 in the three preceding quarters, further rose last quarter to 108, and were 53 in excess of the corrected average number in the corresponding period of the five preceding years. Among the several boroughs this disease was proportionally most fatal in Fulham, the

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE FOURTH QUARTER OF 1914.



NOTE.—The black lines show the recorded number of deaths from each disease during each week of the quarter. The dotted lines show the average number of deaths in the corresponding weeks of the five preceding years, 1909-13. Under the heading "Diarrhoea" are given the deaths from diarrhoea and enteritis among children under 2 years of age; the corrected average number of these deaths is not available.

City of Westminster, Stoke Newington, Stepney, and Deptford. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 3,138, 3,045 and 4,157 at the end of the three preceding quarters, had further risen to 4,431 at the end of last quarter; 7,340 new cases were admitted during the quarter, against 4,8 0, 4,731, and 6,283 in the three preceding quarters.

Whooping-cough.—The deaths from whooping-cough, which had been 281, 310, and 206 in the three preceding quarters, declined again last quarter to 121, and were 24 fewer than the corrected average number. The greatest proportional mortality from this disease was recorded in Hammersmith, Fulham, Finsbury, Shoreditch, Bethnal Green, Southwark, and Deptford.

Diphtheria.—The fatal cases of diphtheria, which had been 161, 143, and 138 in the three preceding quarters, rose again last quarter to 214, and were 73 above the corrected average number. The highest death-rates from this disease occurred in Hammersmith, Fulham, St. Marylebone, Bethnal Green, Stepney, Deptford, and Woolwich. There were 1,663 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last quarter, against 1,306, 1,080, and 1,296 at the end of the three preceding quarters; 2,728 new cases were admitted during the quarter, against 2,068, 1,673, and, 1,975 in the three preceding quarters.

Diarrhoea.—The deaths under this heading are those attributed to diarrhoea and enteritis among children under 2 years of age; measured in proportion to the births registered during the quarter, the mortality from this cause was greatest in Paddington, the City of Westminster, Shoreditch, Bethnal Green, Poplar, and Southwark.

In conclusion, it may be stated that the aggregate mortality last quarter from these epidemic diseases, excluding diarrhoea, was 22.3 per cent. above the average.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six large English towns 8,710 births and 7,191 deaths were registered during the week ended Saturday, February 20th. The annual rate of mortality in these towns, which had been 19.2, 20.1, and 18.9 per 1,000 in the three preceding weeks, rose to 20.7 per 1,000 in the week under notice. In London the death-rate was equal to 20.8, against 20.3, 21.5, and 19.6 per 1,000 in the three preceding weeks. Among the ninety-five other large towns it ranged from 9.4 in Leyton, 9.9 in Swindon, 12.0 in Ilford, 12.2 in Acton, 12.5 in Edmonton, and 12.7 in Aberdare, to 28.4 in Gateshead, 29.4 in Merthyr Tydfil, 30.7 in Newcastle-on-Tyne, 35.6 in Southport, 37.7 in Darlington, and 39.8 in Cambridge. Measles caused a death-rate of 2.9 in Plymouth and in Newcastle-on-Tyne. 3.4 in Northampton, 3.7 in Merthyr Tydfil, 5.8 in Tottenham, 4.4 in Gateshead, 4.7 in St. Helens, 7.0 in Darlington, and 8.1 in Cambridge: whooping-cough of 1.6 in Brighton, 1.7 in Wigan, 2.0 in Carlisle, 2.1 in Gloucester, 3.7 in Merthyr Tydfil, and 5.0 in Bootle; and diphtheria of 1.3 in Preston, 1.4 in Warrington, 1.7 in Southampton, and 1.8 in Stockton-on-Tees. The mortality from enteric fever and scarlet fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 45, or 0.6 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 7 were recorded in Birmingham, 4 in Liverpool, 3 in St. Helens, and 2 each in Warrington, Bury, Huddersfield, Sheffield, Hull, Darlington, South Shields, Gateshead, and Carlisle. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,647, 3,395, and 3,299 at the end of the three preceding weeks, further fell to 3,165 on Saturday, February 20th; 295 new cases were admitted during the week, against 326, 365, and 368 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,164 births and 1,024 deaths were registered during the week ended Saturday, February 20th. The annual rate of mortality in these towns, which had been 22.4, 24.1, and 23.1 per 1,000 in the three preceding weeks, fell to 22.8 in the week under notice, but was 2.1 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 8.9 in Paisley, 10.5 in Clydebank, and 15.1 in Motherwell, to 29.2 in Leith, 32.6 in Ayr, and 37.1 in Dundee. The mortality from the principal infective diseases averaged 3.1 per 1,000, and was highest in Motherwell and Dundee. The 461 deaths from all causes in Glasgow included 50 from whooping-cough, 6 from measles, 4 from scarlet fever, 4 from diphtheria, 3 from infantile diarrhoea, and 1 from enteric fever. Twenty-seven deaths from whooping-cough were recorded in Dundee, 4 each in Edinburgh and Motherwell, and 3 each in Greenock and Kilmarnock; from measles, 6 deaths in Dundee; and from scarlet fever, 5 deaths in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, February 13th, 680 births and 615 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 661 births and 609 deaths in the preceding period. These deaths represent a mortality of 26.5 per 1,000 of the aggregate mortality in the districts in question, as against 26.2 per 1,000 in the previous period. The mortality in these Irish areas was therefore 7.6 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 29.2 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 28.0 (as against an average of 29.3 for the previous four weeks), in Dublin city 29.0 (as against 31.6), in Belfast 24.6 (as against 21.9), in Cork 39.4 (as against 30.4), in Londonderry 27.8 as against 24.4), in Limerick 23.0 (as against 18.3), and in Waterford 13.3 (as against 25.1.) The zymotic death-rate was 2.0, as against 1.8 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDEEN COUNTY.—(1) Chief School Medical Officer; (2) Assistant School Medical Officer; (3) Dentist. Salary, £500, £300, and £250 per annum respectively.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—Male House-Surgeon. Salary, £150 per annum.

BATH: EASTERN DISPENSARY.—Resident Medical Officer (lady). Salary, £140 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £120 and £100 per annum respectively.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM: YARDLEY ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—Third Assistant Medical Officer. Salary, £200 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOLTON UNION.—Resident Assistant Medical Officer for the Townleys Hospitals. Salary, £250 per annum.

BOOTLE BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BURNLEY COUNTY BOROUGH.—Temporary Assistant Medical Officer of Health. Salary, £400 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURSLEM: HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary, £100 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CAMBERWELL: PARISH OF ST. GILES.—Temporary Resident Medical Officer at the Constance Road Institution. Salary, £200 per annum.

CANCER HOSPITAL, Fulham Road, S.E.—House-Surgeon. Salary, £100 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Surgeon. Salary, £180 per annum.

CANTERBURY MENTAL HOSPITAL.—Locumtenent Assistant Medical Officer (male). Salary, £6 6s. per week.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Third Honorary Anaesthetist.

COLONIAL OFFICE.—(1) Medical Officer for service at Weihaiwei; salary, £300 per annum, rising to £400. (2) Three Medical Officers for the Gilbert and Ellice Islands Protectorate and the Solomon Islands Protectorate. Salary, £350 per annum, rising to £500.

CREWE BOROUGH.—Temporary Assistant Medical Officer of Health. Salary, 7 guineas per week.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon. Salary, £150 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—House-Surgeon. Salary, £150 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

EAST HAM COUNTY BOROUGH.—Tuberculosis Officer. Salary, £500 per annum.

EAST HAM EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

ESSEX EDUCATION COMMITTEE, Chelmsford.—Temporary Lady School Medical Inspector. Salary, £300 per annum, rising to £400.

GOVAN DISTRICT ASYLUM, Hawkhead.—Senior Assistant Medical Officer. Salary, £250 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £200 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HAMMERSMITH PARISH.—Assistant and Second Medical Officers of the Infirmary and Workhouse. Salary, £180 and £170, rising to £2 0 and £190 per annum respectively.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £60 and £50 per annum respectively.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KINGSTON-UPON-HULL CITY AND COUNTY.—Senior Tuberculosis Medical Officer. Salary, £500 per annum

LANCASHIRE COUNTY ASYLUM, Winwick.—Locumtenent Medical Officer. Salary, £6 6s per week.

LEICESTER ROYAL INFIRMARY.—House-Physician. Salary, £120 per annum, and £5 bonus per month during the war.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Three House-Surgeons. (2) Two House-Physicians. Salary, £60 per annum.

LIVERPOOL: WEST DERBY UNION.—Two Temporary Assistant Medical Officers. Salary, £300 per annum each.

LONDON HOSPITAL.—Assistant Surgeon.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and, upon promotion, to £450.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officers in the Infectious Hospitals Service. Salary, £250 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORFOLK COUNTY ASYLUM, Thorpe.—Temporary Assistant Medical Officer. Terms, 5 guineas per week.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—House-Surgeon. Salary, £80 per annum.

PLAISTOW: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £10 honorarium on completion of six months' service.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Physician.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROCHDALE TOWN COUNCIL.—Medical Assistant in the Public Health Department. Salary, £300 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square.—House Anaesthetist. Honorarium, £60 per annum.

ROYAL EYE HOSPITAL, Southwark.—House-Surgeon.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary, £120 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Temporary Honorary Assistant Physician. (2) Second Resident Medical Officer. Salary, £100 per annum.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, E.C.—House-Surgeon. Salary, £100 per annum

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon. Salary, £100 per annum.

SALFORD UNION INFIRMARY.—Medical Superintendent. Salary, £500 per annum, rising to £700.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £10 and £75 per annum respectively.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Lady Assistant House-Surgeon. (2) Lady Assistant House-Physician. Salary, £85 and £80 per annum respectively.

SHEFFIELD: ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH AFRICA: FRERE HOSPITAL, East London.—Resident Medical Officer. Salary, £300 per annum, rising to £350.

SOUTH LONDON HOSPITAL FOR WOMEN, Newington Causeway, S.E.—Assistant Physician (female).

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STATE CRIMINAL LUNATIC ASYLUM, Broadmoor.—Assistant Medical Officer. Salary, £250 per annum, rising to £300.

STOCKPORT INFIRMARY.—Junior House-Surgeon (male). Salary, £100 per annum.

SUFFOLK DISTRICT ASYLUM, Melton.—Second Assistant Medical Officer (male). Salary, £250 per annum.

SUNDERLAND: ROYAL INFIRMARY (Children's Hospital).—Resident Medical Officer (lady). Salary, £100 per annum.

TRURO ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—(1) House-Surgeon; (2) House-Physician. Honorarium, £40 for six months.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £120 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £200 per annum.

WARWICK COUNTY LUNATIC ASYLUM.—Temporary Assistant Medical Officer (male). Salary, £6 6s. per week.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WESTMINSTER HOSPITAL, S.W.—House Appointments.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £150 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior Lady House-Surgeon. Salary, £130 per annum.

YORK DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

YORK: WEST RIDING.—Assistant Medical Officer at the Scalebor Park Asylum, salary £250 per annum; or Locumtenent, salary £5 5s. per week.

YORKSHIRE: WEST RIDING.—Assistant Medical Officer at the Cardigan Sanatorium. Salary, £300 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Downpatrick (co. Down), Enniskillen (co. Fermanagh), Milford (Hampshire).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

AUSTIN, E. C., F.R.C.S.Edin., Medical Superintendent of the Withington Poor Law Institution, Manchester.

DUFFETT, H. A., F.R.C.S., Medical Officer of the Children's Homes, Sidcup, of the Greenwich Union.

DU PRÉ, William Henry, M.R.C.S., L.R.C.P.Lond., appointed Assistant School Medical Officer for Derbyshire

KUNZ, H. de Dreux, M.B., C.M.Edin., District Medical Officer of the Morpeth Union.

SHARPE, Frederick A., M.D.Lond., Medical Officer of Health to the Barnsley Town Council.

WEIR, Ferguson J., M.D., R.U.I., Honorary Medical Officer to the Passmore Edwards Hospital, Wood Green, N.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

MARRIAGE.

MERRALL—FIELD.—On February 15th, at St. James's Church, Bugsworth, Derbyshire, Frederic Crompton Merrall, M.B., Ch.B. Aberd., to May, daughter of the late Mr Harry Field of Skelmanthorpe, Yorkshire, and Mrs. E. M. Field, Woodstock, Chinley, Derbyshire.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, 8.30 p.m.—Paper:—An Outbreak of Toxic Jaundice among Aeroplane Workers—(*a*) Clinical and Toxicological (Dr. W. H. Willcox); (*b*) Pathological (Dr. B. A. Spilsbury); (*c*) Industrial Aspects (Dr. J. M. Legge, H.M. Inspector of Factories).

TUESDAY.

ROENTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C., 8.15 p.m.—The Chemistry of the Radio-Elements, by Mr. Alexander Fleck, B.Sc..

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF OPHTHALMOLOGY, 8.30 p.m.—Cases at 8 p.m. Papers:—Mr. Leslie Paton: The Montessori System and its Use for Children with Defective Sight. Mr. Bishop Harman: The Education of Children with Defective Vision. Mr. J. H. Fisher: Retinitis in Pregnancy. The members of the Section for the Study of Disease in Children are specially invited to attend the discussion on the first two papers.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Clinical Meeting.

ROYAL SOCIETY OF MEDICINE:

SECTION OF BALNEOLOGY AND CLIMATOLOGY, 5.30 p.m.—Paper:—Dr. Leonard Williams: The Teutonic Health Resorts and their Substitutes. Members of other sections are invited.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF LARYNGOLOGY, 4 p.m.—Cases and Specimens.

SECTION OF ANAESTHETICS, 8.30 p.m.—Discussion on The Influence of Preliminary Narcotics on the (*a*) Induction, (*b*) Maintenance, (*c*) After-results of Anaesthesia, to be opened by Dr. J. Blumfeld.

Monday, Wednesday, and Friday: Royal College of Surgeons, 5 p.m.—Professor Arthur Keith: The Anatomy and Mechanism of the Alimentary Canal.

POST-GRADUATE COURSES AND LECTURES.

Post-graduate Courses are to be given next week at the following schools, colleges, and hospitals:

MANCHESTER HOSPITALS POST-GRADUATE CLINIC, Ancoats Hospital.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		FEBRUARY.
26	Fri.	London: Medico-Political Assistant Asylum Medical Officers Subcommittee, 3.30 p.m.
		MARCH.
23	Tues.	London: Hospitals Committee.
26	Fri.	London: Central Ethical Committee, 2 p.m.
29	Mon.	London: Dominions Committee (*provisional*).
		London: Naval and Military Committee (*provisional*).
30	Tues.	London: Public Health Committee.
31	Wed.	London: Medico-Political Committee.
		London: Journal Committee, 2 p.m.
		APRIL.
6	Tues.	London: Organization Committee, 2 p.m.
21	Wed.	London: Council.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 6TH, 1915.

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INSURANCE ACT.

COMMITTEE ON THE DRUG TARIFF.

WE understand that the Committee to consider the question of the Drug Tariff has been appointed and has already entered upon its investigations.

The constitution of the Committee is as follows;

Sir Rowland Bailey, C.B., M.V.O. (Chairman);
John Adams, Esq., M.B., C.M., a member of the Council of the British Medical Association;
Alfred Cox, Esq., M.B., Medical Secretary to the British Medical Association;
James P. Gilmour, Esq., member of the Pharmaceutical Society of Great Britain;
J. F. Tocher, Esq., D.Sc., F.I.C., Aberdeen;
R. V. Vernon, Esq., of the Treasury;
S. P. Vivian, Esq., an Assistant Secretary in the National Health Insurance Commission (England);
W. J. Uglow Woolcock, Esq., Secretary and Registrar to the Pharmaceutical Society of Great Britain.

The joint secretaries to the Committee are E. W. Adams, M.D., and Mr. James Rae of the National Health Insurance Commission (England), Buckingham Gate, London, S.W., to whom any communications should be addressed.

Readers will remember that the appointment of a committee on this subject was foreshadowed by Mr. Masterman in his reply to the deputation of June last from the Pharmaceutical Society. The exceptional circumstances created by the outbreak of war have hitherto prevented the actual setting up of the Committee.

LOCAL MEDICAL AND PANEL COMMITTEES.

LANCASHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Lancashire Local Medical and Panel Committees was held at Preston on February 10th, when Dr. J. HARRISON was in the chair.

Treatment of Discharged Soldiers.—A discussion took place with regard to the treatment of soldiers discharged owing to ill health. The Clerk to the Lancashire Insurance Committee had stated that in such cases it would be necessary for the insured person to make a fresh application on Form Med. 50. It was reported that no reply had been received to the letter on the subject addressed by the Lancashire Insurance Committee to the Insurance Commissioners.

Payments for Dispensing.—It was reported that a letter had been received from the Lancashire Insurance Committee to the effect that some doctors had not yet completed the returns, thereby causing a delay in the making of the payments due to doctors for drugs, etc., supplied to insured persons during the quarter ended October 14th, 1914. The Secretary had written to the Lancashire Insurance Committee asking for the particulars of those doctors.

Treatment of Insured Persons in Absence of Panel Doctor with H.M. Forces.—A letter was read from the Lancashire Insurance Committee stating that they had received a communication from the secretary of an approved society in the Wigan district, stating that some of the members of the society, residing in the county administrative area, who were on the panel list of a practitioner who had joined H.M. Forces, had made a complaint that the provision for their medical treatment during that doctor's absence was inadequate. A panel practitioner in the vicinity had consented to act as deputy so far as certain patients were concerned, and another practitioner residing in another district had undertaken to render what services he could. The Committee directed the secretary to try to come to some satisfactory arrangements as regards the treatment of these persons, and if necessary to approach another panel practitioner in the neighbourhood.

Pharmacopoeia and Metric System.—The Committee decided that the old *Pharmacopoeia* should be used in dispensing for insured persons during the next six months, and that the question of using the metric system be left over for the present.

Small Amounts Due to Doctors.—A statement was submitted concerning several small amounts (of 1s. and under) which were due to doctors who had only remained on the panel for very short periods, for the treatment of insured patients during that time. As the total amount was so small the Committee decided that it should be paid over to the panel fund.

Doctor's Agreements.—An amended form of doctor's agreement was submitted, which would be required to be signed by any new doctor coming on the panel during the year. The only modifications were (1) the first schedule altered by the Commissioners with the consent of the doctors, and (2) the second schedule altered by an agreement between the Insurance Committee and the Panel Committee so as to have one pool for the county instead of one for each local area.

Special Mileage.—Claims were received from a number of panel practitioners for the attendance and treatment of insured persons residing in districts difficult of access, which cases are provided for by the £150 reserved out of the special mileage grant for the county of Lancashire.

Expenses of Members of the Committee.—It was decided to pay to members of the Committee first class railway fares incurred in attending the meetings of the Committee.

MONMOUTH.

PANEL COMMITTEE.

A MEETING of the Monmouthshire Panel Committee was held on February 19th, when Dr. J. W. MULLIGAN was in the chair.

Doctors' Lists.

A letter was read from Dr. H. T. Bevan, stating that he had resigned from the panel. He had informed the Clerk

of the Insurance Committee that if he were supplied with a list of the insured persons for whom he was paid he was willing to attend them, as he could then refuse attendance on the many others on his panel list. It was stated by several of the members that they were not paid for anything like the numbers on their lists. The SECRETARY said that this matter was giving rise to great discontent amongst the panel doctors, and many of them were threatening to take some drastic steps to remedy it. The CLERK to the Insurance Committee stated that he was now going carefully through each doctor's list, and hoped soon to have matters put straight. The fault really lay with the secretaries of the approved societies, who had failed to furnish the clerk with correct lists.

Medical Certification : Chemists' Accounts : Mileage.

Dr. RICHARDS, Deputy Chairman of the National Health Commission for Wales, addressed the meeting, and said that the new certificates must be filled up in accordance with the wording, that they must be dated from the day they were signed and on which the insured person had been seen, and that if signed on a day on which the insured person had not been seen that fact must be stated on the certificate. It might be stated on the initial certificate that the person to whom the certificate was issued was on a previous date unable to work owing to the cause mentioned in the certificate, but it could not be antedated or post-dated. He invited information concerning any official of approved societies who endeavoured to have a certificate incorrectly dated so as to tally with his own books. In regard to the checking of chemists' accounts, he said that the formation of a central bureau had been put aside for the present, as many of the insurance committees did not favour the idea. As to mileage, he understood that the scheme prepared for Monmouthshire had been accepted by the panel doctors concerned. It might require revision, owing to the fact that the practices of some of the doctors now serving with the colours would have to be worked from neighbouring villages, and the doctors doing this duty would be entitled to claim mileage. He sympathized with the trouble entailed on busy colliery and works surgeons in keeping record cards, and, without committing himself to the idea, asked the opinion of the Panel Committee as to the keeping of cards only for those actually receiving sick benefit. A small committee had been appointed to go into this matter, but the war had interfered with its work. He would place their suggestions before the Commissioners.

A general discussion then took place on the keeping of record cards, and the unanimous feeling of the Committee was that it entailed an amount of clerical work far greater than it was worth. It was stated that the cards did not contain anything like a correct record of the amount of work actually done, and that any conclusions drawn from them as to the fee per attendance would be unfair to the doctor. Some members of the Committee advocated a movement for the doing away with the keeping of records, and this met with general approval.

A very hearty vote of thanks was passed to Dr. Richards for his interesting address.

Finance.

Notice of motion was given to rescind the resolution passed refusing a grant to the Pharmaceutical Committee, and also the resolution adopted to ask for a compulsory levy for the Panel Committee's expenses. Notice was also given to propose at the next meeting to raise money required for the Panel Committee by a voluntary levy.

SUNDERLAND.

PANEL COMMITTEE.

A MEETING of the Sunderland Panel Committee was held on January 30th.

Proceedings.—It was decided to continue to make a quarterly levy during the current year. Dr. Campbell was elected a member of the Council in place of Dr. MacNaughton, resigned.

Prescribing.—It was resolved to adhere to the decision that prescriptions should apply to the new *British Pharmacopoeia*. A conference was held with a deputation from the Pharmaceutical Committee with reference to the reduction of the dispensing fee for certain stock mixtures, and subsequently ten stock mixtures were selected for reduced fee.

GLAMORGAN.

PANEL COMMITTEE.

A MEETING of the County of Glamorgan Panel Committee was held in the Glamorgan County Hall on February 18th, when Dr. W. E. THOMAS was in the chair.

Vote of Condolence. — A resolution of sympathy and condolence with Dr. J. H. Rees (Penarth), on the death of his son at the front, was adopted.

Scrutiny of Prescriptions.—The committee agreed to pay one-third of the cost of the scrutiny after the cost of pricing had been deducted. An amendment declining to pay anything was moved, but lost.

Vacancy.—Dr. C. Armstrong (Seven Sisters) was elected to fill the vacancy in the Neath District.

KIRKCALDY.

PRACTITIONERS' MEETING.

A PRACTITIONERS' meeting was held in the Station Hotel, Kirkcaldy, on February 11th, when Dr. MACDONALD (Cupar) was in the chair.

Annual Report.—The annual report of the Local Medical Committee for 1914 was approved. It stated that the Committee had only met once during the year, as most of the work in connexion with the Insurance Act had been done by the Panel Committee. The financial statements showed a credit balance of £13 9s. 10d. It was announced that 56 practitioners had paid the 5s. levy for 1914, and that 13 had paid arrears for 1913.

Election of Committee for 1915.—The following were appointed members of the Local Medical Committee for the ensuing year: Drs. Macdonald (Chairman), Dickson, Macnicol, Shearer, Craig, Keay, Douglas, Orr, Heron, Crawford, Eggeling, Love, Jack, Zuill, and Anderson (Honorary Secretary).

Central Bureau for Checking Prescriptions.—It was reported that Dr. G. C. Anderson (Denbeath) had been elected to represent the medical profession in the county areas of Scotland.

PERTH.

MEETING OF PRACTITIONERS.

IN accordance with the regulations of Local Medical Committees the "Annual Practitioners' Meeting" was held, in conjunction with a meeting of the Panel Committees of the Burgh and County, at Perth on February 12th.

Local Medical and Panel Committees.—Drs. Burnet and Edwards were appointed members of the Local Medical and Panel Committees to fill the vacancies caused by the retirement of Drs. Robertson and Taylor. The remaining members were re-elected. In the absence of Drs. Paton and Stirling on military duty, Drs. Lyell and Bisset were appointed to take their places *pro tem.* on the Insurance Committees for Burgh and County.

Administrative Expenses of Pharmaceutical Committees.—After considerable discussion, in the course of which strong exception was taken to the amounts estimated for (£37 2s. for the County, and £19 for the Burgh), it was remitted to the Secretaries to make out a detailed criticism of the items, and to transmit the criticism to the insurance clerks, pointing out to them that the pecuniary interest of panel practitioners was concerned, inasmuch as the amounts referred to must come out of the floating sixpence if the Drug Fund was exhausted.

Scrutiny of Prescriptions.—A communication was read from the Secretary of the Scottish Committee, British Medical Association, recommending that the profession in Scotland should bear no part of the expense of carrying on the Central Bureau for checking chemists' accounts.

Medical Certificates.—After a long discussion it was resolved:

> That the uniform principle of medical certificates is approved of, but strong objection is taken to the form of the new certificates, as causing a great deal of unnecessary labour to the doctor, besides involving in many cases a serious pecuniary loss to the patient.

During the course of the discussion it was also resolved to give public notice of the necessity, owing to the present shortage of doctors, of insisting on the "Rules for the conduct of persons in receipt of benefit," more especially that they shall, when requiring a home visit, give notice to the practitioner before 9.30 a.m. on the day of the visit. In cases of serious emergency, requiring a special visit, a written message must be sent, stating the nature of the emergency.

Surcharging Doctors.—A letter was read from the Clerk of the County Committee containing a statement of items which the Pharmacy Committee considered should be surcharged in respect of prescriptions during the last quarter of 1914. It was recommended that, as the items were comparatively trivial, and had occurred after the circular of July 11th, the doctors should be surcharged.

Allocations for the County.—A letter was read from the Clerk of the County Committee, requesting the Panel Committee to accept on behalf of the doctors collective responsibility for insured persons who had not chosen a doctor. The meeting came to the conclusion that no such resolution was necessary, it being understood that in signing his agreement, each doctor (Section 3) must accept all allocations made to him by the Insurance Committee, the scheme on which such allocations were to be made, namely, on a pro rata basis, having been already intimated to the Clerk.

INSURANCE COMMITTEES.

LONDON.

The Drug Fund Deficiency.

THE Medical Benefit Subcommittee reported to the London Insurance Committee on February 25th that the amount available for payments to persons supplying drugs and appliances during the medical year 1914 would be about £140,000, and the total demand on the fund approximately £193,000, leaving a deficiency of about £53,000. The amount available for payment would be therefore about 72½ per cent. of the claims. The Subcommittee was of opinion that the extent to which the drug fund would be replenished as the result of inquiries into allegations of excessive prescribing by practitioners would not reduce the deficiency to any great extent. The position was one to be viewed with grave concern, and the Subcommittee recommended that the Insurance Commissioners should be asked to take steps to ensure that the chemists were adequately remunerated for the drugs and appliances supplied during 1914.

Mr. KINGSLEY WOOD, who declared that the deficit was due to over-prescribing on the part of some doctors on the London panel, suggested that there should be a full inquiry conducted by independent persons.

Dr. H. H. MILLS (Chairman of the Medical Benefit Subcommittee) said the Panel Committee was holding inquiries into cases of alleged excessive prescribing, and hoped that some money would be added to the drug fund by this means, though undoubtedly the amount would be small. The position was very unsatisfactory. The Medical Benefit Subcommittee was doing what it could, but, to a great extent, it was powerless. He agreed that representations should be made to the Commissioners.

Mr. H. UGLOW WOOLCOCK said that on the year the chemists were out of pocket £53,000, and from the public point of view, it meant a most prodigious waste of the nation's supply of drugs at a time of crisis. The clause in the chemists' agreements under which the present position arose was a most iniquitous one, but the chemists were compelled to sign it or not take service under the Act. In a large number of areas there had been sufficient money in the drug fund; only a few had overspent. There were only two means of accounting for this—either by proving that there had been excessive sickness in the area, or that there had been excessive prescribing. He did not know if it could be held that there had been excessive sickness in London, but they had the authority of the Panel Committee for the statement that there had been excessive prescribing. Had there been £53,000 worth of excessive prescribing, and was the machinery for checking it suitable? The machinery had not proved sufficient. With all the good work of the Panel Committee it had only been possible to trace £250 worth of excessive prescribing, not enough to justify the clerical labour. He hoped strong representations would be made, because it would be a positive disaster to the chemists to find that 27½ per cent. of their accounts could not be paid.

Dr. B. A. RICHMOND, Secretary of the Panel Committee, commenting on the fact that the shortage in the drug fund was much greater in 1914 than in the previous year, said that in the first year medical benefit was only partially in operation, whereas in 1914 medical benefit was in full operation and about 1,500 doctors were on the panel. It was probable that the number of insured persons dealt with was twice as large in the second year The Panel Committee had to face a very difficult problem. Practitioners were asked to come up and justify certain prescriptions and they were able to do so quite readily. The sum set aside for the drug fund was an average based on the Plender report, which was not produced under the most satisfactory conditions, and in which the amount spent on drugs for certain large towns was worked out. The figure reached was 5d. or 6d. for twelve months. Medical practitioners regarded with great abhorrence the contract system in connexion with which those figures were obtained. The feeling that the Insurance Act would continue the contract system caused most of the opposition to the Act. It was a pity the Government did not look forward to a better and ampler service than it appeared to contemplate in taking the Plender report as the basis of the drug fund. Doctors under the Insurance Act all justified their prescribing—and he hoped they had the sympathy of the Insurance Committee in so doing—by saying that they made no distinction between insured and private patients, but endeavoured to give them the same treatment and the same drugs.

Mr. HANDEL BOOTH, M.P.: Are you claiming that for all the panel doctors?

Dr. RICHMOND said he was relating what was said by doctors referred to the Panel Committee for alleged excessive prescribing in defence of the principles on which they proceeded. It was an extremely difficult and even impossible proposition for the Panel Committee to limit prescribing; the doctor himself had to decide what was adequate, and no one else could decide, always leaving out the question of anything deliberately careless. Certain factors had been unforeseen in estimating the drug fund. The first was that practitioners now had a great many women on their lists; these had not been treated under the contract system on which the drug fund was based. Another factor was represented by the persons coming under the Sanatorium Benefit scheme, or about to come under it. They had not previously been accepted for insurance, but under the Insurance Act they received treatment of an expensive kind. A great deal of the money spent on drugs was due to the ordering of cod-liver oil and malt. It had been suggested that this should be restricted to tuberculous patients only, but it would be a foolish policy to limit the right of doctors to order these drugs in cases in which it was hoped to ward off tuberculosis. It was suggested that in a great many areas the drug fund had been found sufficient. In all densely populated areas, however, the amount had not been sufficient, and less than forty areas were solvent; they had saved no part of the floating sixpence. In London there were boroughs where the drug fund was sufficient and others where it was not, and the practitioners against whom excessive prescribing was alleged came entirely from the densely populated areas. He agreed that the bargain the chemists made with the Government was not a business proposition, but more like a speculation, and it was unfair that the chemists should bear the whole of the cost of the excess in drugs for the metropolis. It must be remembered that as the drug tariff stood at present over 50 per cent. of the cost of a particular medicine was represented by the professional fee of the pharmacist; the doctors did not object to that, but they felt, however, that they could not bring about reductions at the expense of the insured person and that something must be done by the Government to increase the fund.

Mr. HANDEL BOOTH, M.P., urged that, as the drug fund had been found sufficient in many areas, it ought to have been sufficient in all. He blamed a minority of practitioners and said that the doctors who punished the chemists by excessive prescribing were the same individuals as those who put a high sickness rate upon approved societies by lax certification.

The Committee decided to make representations to the Insurance Commissioners as proposed by the Subcommittee.

Practitioners Surcharged.

At the same meeting fifteen practitioners were surcharged small sums, generally considerably less than £10, but three practitioners were surcharged £10, £14, and £45

respectively, the Panel Committee having reported that it had found instances of excess in the prescriptions given by these practitioners.

INSURANCE NOTES.

SCOTTISH DRUG ACCOUNTS COMMITTEE.

Glasgow Insurance Committee v. *Scottish Insurance Commissioners.*

JUDGEMENT was given in the reclaiming note by the Scottish Insurance Commissioners against a decision of Lord Anderson in the Outer House (SUPPLEMENT, February 13th, p. 59), in which his Lordship granted a note of suspension and interdict by the Glasgow Insurance Committee and ordained the Scottish Commissioners to recall, cancel, and countermand any directions or requests given by them for laying before both or either of the Houses of Parliament the National Health Insurance (Drug Accounts Committee) Regulations (Scotland) 1914, made by the Commissioners under Section 59 and Section 80 of the National Health Insurance Act. The regulations complained of provided *inter alia* for agreements being made between the Insurance Committee and chemists or other persons for the supply of drugs and appliances at specified prices. The Insurance Committee sought to prevent the regulations obtaining statutory effect by being laid before Parliament, as an action was about to be raised by various insurance committees for the purpose of having the validity of the regulations determined. The Insurance Committee contended that the regulations were *ultra vires*. For the Commissioners it was pleaded that the regulations were not open to the jurisdiction or review of the Court.

The Division, Lord Johnston dissenting, recalled the interlocutor of the Lord Ordinary and refused the note of suspension and interdict with expenses.

The Lord President said the interlocutor of the Lord Ordinary rested on a misconception of the true meaning of Section 65 of the National Insurance Act and of the effect of the judgement of the House of Lords in the case of the Institute of Patent Agents *v.* Lockwood in 1894. The Lord Ordinary held that the pleadings disclosed a question of law which it was for the Court to consider and to decide, and that if certain parliamentary procedure enjoined by statute was once adopted redress would be impossible. With that view he could not agree. The question of law raised in these pleadings it appeared that Court had no right or power to entertain. But if it had, then no parliamentary procedure, even although enjoined by statute, could deprive the Court of its jurisdiction. The Glasgow Insurance Committee sought interdict against any steps being taken to carry into effect the National Health Insurance (Drug Accounts Committee) Regulations (Scotland), 1914, professing to be made by the Scottish Insurance Commissioners under certain sections of the National Insurance Act, and from laying these regulations before both or either House of Parliament. In their statement of facts they set out that the Scottish Insurance Commissioners in December, 1914, issued a circular letter to the Committees intimating that they had resolved under powers conferred by a certain section of the Act to require Insurance Committees in Scotland to combine, as from January 1st, 1915, for the purpose of establishing a central organization to be known as the Drug Accounts Committee. The respondents thereafter issued to the Committees regulations, dated December 19th, 1914, made by them for the purpose of giving effect to the resolution. These were the regulations referred to in the prayer of this note. It was clear, therefore, that what was complained of was regulations designed to carry into effect the first part of the National Insurance Act—to wit, that relating to health benefit—and the complainers set forth with clearness and precision the grounds of their complaint. First, they complained of the action of the National Insurance Commissioners for Scotland in setting up the proposed Drug Committee as being *ultra vires*, in respect that it interfered with the scheme of administration of medical benefit provided by the statute, and constituted an invasion of the statutory jurisdiction and rights of the Insurance Committees. Secondly, on the ground that the constitution of the proposed Drugs Committee was *ultra vires* of the respondents in respect that it was a new and independent committee, for the constitution of which the Act contained no warrant. These two questions, the Glasgow Insurance Committee said, it was for the Court to consider and decide. But the statute said the contrary, for the statute empowered the National Insurance Commissioners to issue certain regulations for the purpose of carrying into effect the health benefit part of the Act, and distinctly provided that these regulations, when made and issued, were to have effect as if they were enacted in the National Insurance Act. The regulations, in short, when issued, became additional clauses of the Act of Parliament. In other words, the regulations, taken as a whole, constituted in effect an amending Act of Parliament. Obviously that would not be so if the regulations related to any other topic. If, for example, the regulations related to the unemployment part of the Act, they would not have statutory force, and the Court would have power at once to set them aside. The regulations here were only challenged on the ground that they invaded the complainers' powers as conferred by the National Insurance Act. But the statute said they were to have exactly the same effect as if they were enacted by Parliament itself. Although it confided limited legislative powers to the National Insurance Commissioners, Parliament had not parted with all control over their action. On the contrary, the National Insurance Commissioners were enjoined instantly they had made their regulations to lay them before both Houses of Parliament. And then it was provided that His Majesty in Council might annul these regulations if an address was presented to His Majesty by either House of Parliament within the next subsequent twenty-one days on which the House had sat next after such regulations were laid before it. But unless and until either House passed a resolution annulling the regulations they were to have statutory effect. His Lordship quoted from opinions of judges in the House of Lords in the case of Lockwood, a case which related to rules framed by the Board of Trade under a similar parliamentary sanction in support of his opinion. In conclusion, he said that as the complainers alleged that the regulations of which they complained were passed for the purpose of carrying into effect the first part of the National Insurance Act, he was of opinion that the Court had no jurisdiction to consider the validity of the regulations, and that Parliament alone could intervene.

Lord Johnston, who dissented, said that he entertained great doubt and difficulty on the question whether the Insurance Commissioners had power to proceed as they proposed. His Lordship was of opinion that the note should be passed in order to admit of the important question raised being more fully heard and considered. The opinions in Lockwood were expressed in a case where the orders or regulations in question had not only already been held to be *ultra vires* of the authority making them, but where the statutory procedure requisite to give them the force of statute was complete. His Lordship did not in any way preclude the Court from entertaining the question of the power of the authority making such orders or regulations, if such power were challenged, before they had been submitted to Parliament.

CORRESPONDENCE.

THE DEFECTIVE BASES OF THE ACT.

DR. B. G. M. BASKETT (Rayleigh, Essex) writes: Dr. Garratt asks me to suggest an alternative by which the Insurance Commissioners could have fulfilled their obligations without breaking their pledges to us or to the insured.

If a body of men pledges my services without consulting me, it is for them, not for me, to solve the problem they have themselves set. I am on the panel not to help the Commissioners, but because they, after making loss certain for me, threatened me with greater loss if I did not accede to their entirely new conditions. But I do not think they are so stupid as Dr. Garratt would have us believe; they assuredly saw the perfectly obvious way out.

But before they made any arrangement at all, it was incumbent on them to find out whether there *were* any patients who would be rejected by all doctors. They do not, so far, know of one, I expect. It could not, of course, do for them publicly to acknowledge that the Act was so little called for that there are many thousands of people who have not yet thought it necessary to choose a doctor, nor dare they employ duress on them as they dare to do on us. Therefore, to cover up their inertia, they hit on this device, which gives them the credit of charity, while we must earn it for them. Ours the dirty work, theirs the meed of praise.

Dr. Garratt's analogy with the Poor Law is wholly erroneous. You contract under the Poor Law with your eyes open. I venture to say that there is no medical man in England who did not think that he had, under the Act, the liberty to refuse. It is not four months since the Commissioners issued a circular wherein they declared their intention not to make any radical changes for some time; in return for which assurance we allowed our renewal of contract to be tacitly assumed. Why should these very tender consciences have borne their heavy responsibility for two years, and only have found the burden too heavy in war time?

Everything which increases and feeds resentment of tyranny is a practical remedy; there is none other so practical in a country where in the long run the electorate decides. I did not suppose, or say, that Dr. A. Brock suggested the resignation of all panel doctors: I merely put the extreme case. But I do suggest that the voluntary system needs no proving: it has done well in cases where patients can pay, and the obvious remedy is to make poor people richer by the easy but unobtrusive method of reducing taxation. No; there is no need to prove the success of the voluntary system; but there is need to demonstrate the mischief of the compulsory, and it seems to me that the remedy is to keep dinning into the ears of our patients that this is an Act in restraint of wages.

INSURANCE ACT IN PARLIAMENT.

PAYMENTS TO DOCTORS AND PHARMACISTS.

In reply to Mr. Wiles, Mr. Montagu said that the calculation of the sums available to Insurance Committees for the purpose of effecting a settlement with doctors and chemists in respect of last year was in progress. The matter was, however, complicated by the effects of the war, and it was not at present possible to state when a final result would be arrived at.

CONSUMPTION: EXTRA NOURISHMENT.

In reply to Mr. Jowett, Mr. Montagu said that the supply of additional nourishment in a particular case was a matter within the discretion of the Insurance Committee, which would, of course, take into account the nature of the other claims before it, and the necessity of employing the funds at their disposal to the greatest advantage.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty; Fleet Surgeon EDWARD C. SAWDY to the *Vivid*, additional, for War College; H. B. HALL is placed on the Retired List; Staff Surgeons JOHN H. MCDOWALL, M.B., to the *Indus*; NORMAN B. V. JACOB to the *President*, additional, vice Wolferstan; WALTER T. HAYDON to the *Pembroke*, additional, for disposal; DOUGLAS V. LOUNDES to the *Victory*, additional, for disposal; RICHARD R. HORLEY to the *Royal Arthur*; REGINALD H. STB. E. HUGHES to the *Sentinel*, vice Campbell. Temporary Surgeons: JAMES SOUTER, M.B., to the *Wildfire*, vice Malaher; FREDERICK C. BLAKISTON to the *Vivid*, additional, for Devonport Yard, vice Archer; ARTHUR E. ILES, M.B., F.R.C.S., to the Hospital Ship *Plassy*, vice Howe; EVAN J. PARRY to the *Indus*; KENNETH WOLFERSTAN to the *Pembroke*, additional; BERTRAM FLACK to the *Hampshire*; EDGAR W. TODD, CLIVE N. PITT, and WILLIAM BELL, M.B., to the *Victory*, additional, for Haslar Hospital; ALFRED G. WILLIAMS to the *Pembroke*, additional, for Chatham Hospital; OSCAR PARKES, M.B., to the *Vivid*, additional, for Plymouth Hospital; BENJAMIN LEWITT to the *Vivid*, additional, for disposal; ROBERT S. LAWSON, M.B., to the *Zealandia*, vice Ellis.

ROYAL NAVAL VOLUNTEER RESERVE.

Staff Surgeon WILLIAM ALLAN, M.B., to the *Vivid*, additional for R.N. Barracks, vice Blakiston; Surgeons EDWARD J. STEEGMANN to the *King George V*, TOM D. MCEWAN to the *St. Vincent*. Surgeon Probationers: PERCY G. HARBOROUGH to the *Morris*, HAROLD E. ANDREWS for the *Mentor*. To be Surgeon Probationer: W. E. BOYD.

ARMY MEDICAL SERVICE.

THE following Colonels to be Surgeon-Generals: MENUS W. O'KEEFE, C.B., M.D., RICHARD H. S. SAWYER, C.M.G., M.B., JOHN C. CULLING, WILLIAM G. BIRRELL, M.B., FRANCIS J. JENCKEN, M.B., FRANCIS H. TREHERNE, C.M.G.

The following Lieutenant-Colonels, R.A.M.C., to be Colonels: ROBERT L. R. MACLEOD, M.B., GOFTON G. ADAMS, JAMES M. F. SHINE, M.D., NICHOLAS C. FERGUSON, C.M.G., M.B., GERALD CREE, C.B., SAMUEL C. PHILSON, SYDNEY G. ALLEN, PHILIP C. H. GORDON, LLEWELLYN T. M. NASH, C.M.G., JAMES H. DALY, HENRY D. ROWAN, M.B., HOWARD CARR, M.D., THOMAS DALY, MICHAEL J. SEXTON, M.D., HERBERT E. CREE, WILLIAM H. STARR, ALEXANDER A. SUTTON, D.S.O., MICHAEL T. YARR, F.R.C.S.I., CHARLES H. MELVILLE, M.B., JAMES B. WILSON, M.D., FREDERICK W. G. GORDON-HALL, M.B., HENRY M. ADAMSON, M.B., TUDOR G. LAVIE, CHARLES H. BURTCHAELL, C.M.G., M.B., JOHN J. GERRARD, M.B., JOHN S. DAVIDSON, M.B., JAMES FALLON, CHARLES J. MACDONALD, M.D., ROBERT W. WRIGHT, M.B., EDWIN ECKERSLEY, M.B., DENNIS M. O'CALLAGHAN, GEORGE H. BAREFOOT, C.M.G., FOSTER R. NEWLAND, M.B., REGINALD J. WINDLE, M.B., JOHN J. RUSSELL, M.B., THOMAS DU B. WHAITE, M.B., HENRY T. KNAGGS, M.B., RICHARD B. PENTON, D.S.O., FREDERICK J. MORGAN, Brevet Colonel WILLIAM H. HORROCKS, M.B., K.H.S., CHARLES H. HALE, D.S.O., HUGH C. THIRSTON, C.M.G., BERTAL H. SCOTT, OLIVER R. A. JULIAN, C.M.G., EUSTACE A. BURNSIDE, STUART MACDONALD, M.B., Brevet Colonel MAURICE P. C. HOLT, D.S.O., WILLIAM L. GRAY, M.B., EDWARD G. BROWNE, JAMES C. MORGAN, HERBERT I. POCOCK, CHARLES R. ELLIOTT, M.D., CHARLES A. YOUNG, JOHN W. BULLEN, M.D., BENJAMIN J. INNISS, STEPHEN F. CLARK, EDWARD M. HASSARD, Sir WILLIAM B. LEISHMAN, Kt., C.B., F.R.S., M.B., F.R.C.P., K.H.P., JAMES THOMSON, M.B., GERALD T. RAWNSLEY, ALFRED P. BLENKINSOP, JOHN GIRVIN, Brevet Colonel ANTHONY JOHN LUTHER, WILLIAM HALLARAN, SAMUEL G. MOORES, THOMAS B. BEACH, CORYNDON W. R. HEALEY, JOHN H. E. A. AUSTIN, WILLIAM T. MOULD, ALFRED W. BEWLEY, ROBERT J. COPELAND, M.B.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel JOHN DONALDSON to be placed on the retired pay.

The following Majors to be Lieutenant-Colonels: EDWARD W. SLAYTER, M.B., HUGH S. THURSTON, LANCELOT P. MORE, THEOPHILUS P. JONES, M.B., ALBERT G. THOMPSON, M.B., GEORGE A. MOORE, M.D., RICHARD C. LEWIS, HENRY W. H. O'REILLY, M.B., EDGAR H. CONDON, M.B., HAROLD W. K. READ, FREDERICK M. MANGIN, CHARLES E. POLLOCK, WILLIAM J. TAYLOR, M.B., BELL W. LONGHURST, FERBERD R. BUSWELL, FRANK A. SYMONS, D.S.O., M.B., CHARLES T. SAMMAN, THOMAS H. J. C. GOODWIN, D.S.O., ALFRED E. C. KEBLE, DENIS J. COLLINS, M.D., JOHN B. ANDERSON, JAMES R. MCMUNN, HAROLD V. PRYNNE, F.R.C.S., ALFRED E. MASTER, M.B., GEORGE DANSEY-BROWNING, ERNEST S. CLARK, M.B., KENNET B. BARNETT, M.B., ARTHUR C. FOX, D.S.O., SEBERT F. ST. D. GREEN, M.D., MICHAEL BOYLE, M.B., PERCY EVANS, M.B., CLAUDE K. MORGAN, M.B., GEORGE ST. C. THOM, M.B., JOHN P. SILVER, M.B., Brevet Lieutenant-Colonel WILLIAM S. HARRISON, M.B. HARRY A. L. HOWELL, DOUGLAS LAWSON, CHARLES W. PROFEIT, M.B., FREDERICK KIDDLE, M.B., HENRY E. STADDON, SAMUEL J. C. P. PERRY, F.R.C.S.Ire., LIONEL F. SMITH, M.B., ROBERT J. BLACKHAM, C.I.E., and to remain seconded; HENRY W. GRATTON, JOHN GRECH, ST. JOHN B. KILLERY, SEPTIMUS H. FAIRRIE, M.B., GEORGE T. K. MAURICE, C.M.G., FRANCIS E. GUNTER, M.B., JOHN H. CAMPBELL, D.S.O., JOHN V. FORREST, M.B., JOHN C. B. STATHAM, EDWIN C. HAYES, EDWIN T. F. BIRRELL, C.M.G., M.B., Brevet Lieutenant-Colonel ERNEST W. BLISS, PERCY J. PROBYN, D.S.O., M.B., Brevet Lieutenant-Colonel ARTHUR W. HOOPER, D.S.O., ANTHONY H. WARING, EDWARD W. W. COCHRANE, M.B., ARTHUR H. MORRIS, SAMUEL A. ARCHER, ROBERT W. CLEMENTS, M.B., ALEXANDER J. MACDOUGALL, M.B., MAURICE SWABEY, GEORGE B. RIDDICK, HENRY HEWETSON, GEORGE E. F. STAMMERS, CHARLES F. WANHILL, WILFRID E. HUDLESTON, MARTIN P. CORKERY, LEONARD ADDAMS-WILLIAMS, MALCOLM MACG. RATTRAY, M.B., THOMAS H. M. CLARKE, C.M.G., D.S.O., M.B., EDWIN W. P. V. MARRIOTT, STEVENSON L. CUMMINS, M.D., PETER MACKESSACK, M.B., HENRY L. W. NORRINGTON, D.S.O., JOHN MCD. MCCARTHY, M.B., JOHN POE, M.B., HAMILTON G. F. STALLARD, ERNEST BRODRIBB, ARTHUR W. N. BOWEN, WILLIAM H. S. NICKERSON, V.C., M.B., HUBERT O. B. BROWNE MASON, FREDERICK S. PENNY, M.B., BRIAN WATTS, HENRY G. MARTIN, FREDERICK F. CARROLL, M.B., and to remain seconded; JOHN D. G. MACPHERSON, M.B., WILLIAM P. GWYNN, STANDISH DE C. O'GRADY, M.B., AUGUSTUS H. O. YOUNG, ERNEST A. BOURKE, MONTAGU M. LOWSLEY, NORMAN H. ROSS, M.B., EDGAR T. INKSON, V.C., PERCY H. COLLINGWOOD, CHARLES J. O'GORMAN, D.S.O., ROBERT S. H. FUHR, D.S.O., HAROLD P. W. BARROW, DAVID HARVEY, M.D., GEORGE J. S. ARCHER, M.B., SYDNEY O. HALL, ALFRED E. WELD, JAMES S. GALLIE, FRANCIS J. C. HEFFERNAN, F.R.C.S.I., HENRY HERRICK, JAMES COWAN, M.B., AUSTIN R. O'FLAHERTY, HENRY B. G. WALTON, GEORGE B. CRISP, CECIL W. MAINPRISE, ALEC. L. SCOTT, GERALD H. GODDARD, JOHN E. HODGSON, Brevet Lieutenant-Colonel MATTHEW H. G. FELL, WILLIAM B. WINKFIELD, JONAS W. LEAKE, JOHN W. H. HOUGHTON, M.B., GEORGE M. GOLDSMITH, M.B., RICHARD H. LLOYD, Brevet Lieutenant-Colonel JOHN M. SLOAN, D.S.O., M.B., HARRY D. PACKER, LAWRENCE HUMPHRY, FRANK ASHE, JAMES G. GILL, THOMAS C. LAUDER, M.B., DUNCAN E. CURME, HERBERT S. TAYLOR, FRANCIS J. BRAKENRIDGE, EDMUND P. HEWITT, NATHANIEL J. C. RUTHERFORD, D.S.O., M.B., GILBERT J. A. ORMSBY, D.S.O., M.D., HORACE K. PALMER, FRANCIS J. PALMER, VINCENT J. CRAWFORD, D.S.O., ARTHUR L. A. WEBB, Brevet Lieutenant-Colonel HOWARD ENSOR, D.S.O., M.B., ROBERT A. CUNNINGHAM, M.B., GEORGE D. DELAP, D.S.O., HAROLD SIMSON, WILLIAM R. BLACKWELL, ARTHUR CHOPPING, SYDNEY G. BUTLER, D.S.O., JOHN J. W. PRESCOTT, D.S.O., ARTHUR O. B. WROUGHTON, PERCY H. FALKNER, F.R.C.S.I., HENRY E. M. DOUGLAS, V.C., D.S.O., ERNEST E. ELLERY, JAMES W. LANGSTAFF, LEONARD WOOD, HAROLD B. FAWCUS, M.B., EVELYN P. SEWELL, M.B., LAWRENCE W. HARRISON, D.S.O., M.B., HUGH M. MORTON, M.B., MARCUS H. BABINGTON, HORACE S. ROCH, FREDERIC HARVEY, HENRY C. R. HIME, M.B., CHARLES C. CUMMING, M.B., CHARLES R. EVANS, D.S.O., HAROLD H. NORMAN, M.B., WILLIAM A. WOODSIDE LITTLETON, F. F. WINSLOW, OTTO W. A. ELSNER, ARTHUR A. SEEDS, M.D., HENRY S. ANDERSON, LANGFORD N. LLOYD, D.S.O., THOMAS C. MACKENZIE, D.S.O., EDWARD P. CONNOLLY, JAMES H. R. BOND.

Captain WILLIAM HUNTER, M.D., F.R.C.P., Fourth London General Hospital R.A.M.C.(T.F.), to be temporary Colonel.

Temporary Captain ROBERT S. RODGER, M.B., to be Temporary Major.

To be Temporary Captains: Temporary Lieutenant JOHN F. O'MALLEY, F.R.C.S.; Temporary Lieutenant LANYON E. OWEN; BERTIE B. HAM, M.D.; FRANK C. HART-SMITH, M.B., F.R.C.S.

Temporary Lieutenant CHARLES CAVANAGH relinquishes his commission.

To be Temporary Lieutenants: DAVID J. JONES, CHARLES H. G. PRANCE, GEORGE G. BARTHOLOMEW, M.B., WALTER R. KNIGHTLEY, PHILIP M. HEATH, F.R.C.S., SYDNEY B. FAULKNER, M.B., ARCHIBALD H. JACOB, HENRY B. SMITH, M.B., JOSEPH CATON SHELMERDINE, EDWARD L. MANSEL, M.D., HAROLD C. HARRISON, ALFRED E. SELLER, HAROLD W. WILSON, M.B., THOMAS P. HERRIOT, M.B., ARCHIBALD COWE, M.B., JOHN E. DAVIES, JOHN C. NEIL, M.B., JOHN KELLY, WILLIAM MACLEOD, FRANCIS E. SPRAWSON, OLIVER B. PRATT, TOM W. WADSWORTH, M.D., EDWARD H. FENNESSY, M.B., STANLEY T. LEWIS, M.B., TREVOR F. A. NEILSON, LEONARD H. TERRY, WILLIAM H. CROLY, THOMAS E. HAMMOND, F.R.C.S., GRIFFITH L. JONES, PERCY L. T. BENNETT, JOHN H. BOAG, M.B., CHARLES G. G. KEANE, WILLIAM F. MACALEVEY, KENNETH M. NELSON, ARTHUR H. TOWERS, M.B., HENRY S. TURNER, PERCY P. WARREN, PATRICK W. WHITE, M.B., ARTHUR J. B. LECKIE, M.D., HUGH G. MORRIS, M.B., MAXWELL RAMSAY, M.B., CHARLES R. NICHOLSON, ABRAM LEACH, M.B., ANDREW R. DOUGLAS, M.B., FRANCIS P. EVERS, M.B., ARTHUR L. TAYLOR, M.B., WILLIAM CAMPBELL, M.B., JOSEPH MARMION, LAURENCE U. GERATY, GEORGE LEGGAT, M.B., CHRISTOPHER R. DUDGEON, FRANK H. WOODS, LLEWELLYN MCI. WEEKS, M.B., JOHN MACINTYRE, M.B., HAROLD E. A. BOLDERO, CEDRIC S. L. ROBERTS, HENRY A. GILLESPIE, M.B., HENRY C. DUFFY, M.B., LENNOX R. BROSTER, M.B., JAMES P. FITZPATRICK, LOUIS T. EDEN, M.B., ERIC S. MARSHALL, JAMES I. P. WILSON, M.D., F.R.C.S.E., HENRY G. FREAN, M.B., F.R.C.S., PATRICK ASHE.

Vital Statistics.

ENGLISH URBAN MORTALITY IN THE FOURTH QUARTER OF 1914.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

IN the accompanying table will be found summarized the vital statistics of ninety-seven of the largest English towns, based upon the Registrar-General's returns for the fourth quarter of the year. The 105,289 births registered in these towns during the quarter under notice were equal to an annual rate of 23.3 per 1,000 of the population, estimated at 18,120,059 persons in the middle of the year. In London the birth-rate last quarter was 23.4 per 1,000, while among the other large towns it ranged from 12.3 in Bournemouth, 12.8 in Eastbourne, 13.1 in Hastings, 13.9 in Bath, 14.1 in Southport, 14.8 in Blackpool, 15.2 in Hornsey, and 15.6 in Oxford, to 29.1 in West Bromwich, 29.2 in Barnsley, 29.5 in Liverpool, 29.6 in Gateshead, 30.1 in South Shields, 30.3 in St. Helens, 30.4 in Stoke-on-Trent, and 30.9 in Rhondda.

The 67,537 deaths registered in these towns were equal to an equal rate of 14.9 per 1,000; in London the rate was 15.3 per 1,000, while among the other large towns it ranged from 8.0 in Hornsey, 8.1 in Ilford, 9.2 in Eastbourne, 9.7 in Lincoln, and 9.8 in Acton, Enfield, and Leyton, to 17.9 in Plymouth and in Rotherham, 18.3 in Birkenhead, 18.9 in Gateshead, 20.3 in Wigan, 20 in Wigan, 20.2 in Liverpool, and 21.1 in Newcastle-on-Tyne.

The deaths included 201 from enteric fever, 1,988 from measles, 454 from scarlet fever, 598 from whooping-cough, 944 from diphtheria, and 2,215 (among children under 2 years of age) from diarrhoea and enteritis. The 201 deaths from enteric fever were equal to an annual rate of 0.04 per 1,000; in London the death-rate from this disease was 0.03 per 1,000, while among the other large towns it ranged upwards to

Analysis of the Vital Statistics of Ninety-seven of the Largest English Towns during the Fourth Quarter of 1914.

TOWNS.	Population estimated to the middle of Year 1914.	Births.	Deaths.	Annual rate per 1,000 Living.		Deaths from Principal Infectious Diseases.							Deaths under 1 year to 1,000 Births.	Uncertified Deaths per Cent. of Total.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (under 2 years.)		
97 Large Towns	18,120,059	105,289	67,537	23.3	14.9	201	—	1,988	454	598	944	2,215	117	0.9
London	4,516,612	26,398	17,180	23.4	15.3	32	—	479	108	121	263	593	123	0.1
Croydon	181,956	968	537	21.3	11.8	—	—	9	2	1	1	14	85	—
Wimbledon	59,598	276	150	18.6	10.1	—	—	1	1	1	2	5	80	—
Ealing	71,030	299	187	16.9	10.6	—	—	5	1	3	—	3	60	0.5
Acton	64,369	342	157	21.3	9.8	—	—	—	1	2	3	3	99	—
Willesden	167,922	869	475	20.8	11.3	—	—	7	4	14	12	13	106	—
Hornsey	88,953	336	177	15.2	8.0	—	—	—	1	—	3	—	51	—
Tottenham	149,495	920	440	24.7	11.8	1	—	7	3	2	18	14	98	—
Edmonton	71,024	478	215	27.0	12.1	1	—	12	1	1	3	11	98	—
Enfield	61,069	301	149	19.8	9.8	2	—	8	2	—	5	4	86	—
West Ham	296,570	2,132	1,090	28.8	14.7	3	—	14	3	4	16	27	107	0.2
East Ham	146,526	781	405	21.4	11.1	2	—	1	2	2	7	4	92	—
Leyton	133,719	626	327	18.8	9 8	1	—	1	—	1	7	3	65	—
Walthamstow	134,825	729	377	21.7	11.2	1	—	13	2	5	8	10	97	—
Ilford	91,041	370	184	16.3	8.1	—	—	—	—	1	1	—	73	—
Gillingham	55,559	298	145	21.5	10.5	2	—	—	1	1	2	1	67	3.4
Hastings	59,620	194	226	13.1	15.2	—	—	—	—	—	—	1	31	0.4
Eastbourne	55,662	177	128	12.8	9.2	1	—	—	—	3	2	4	96	—
Brighton	133 936	555	466	16 6	14.0	1	—	2	1	8	5	7	90	—
Portsmouth	245,827	1,259	751	20.5	12.3	7	—	2	1	9	19	9	87	1.1
Bournemouth	85,254	262	217	12.3	10.2	—	—	—	—	1	5	2	65	—
Southampton	123,948	766	448	24.8	14.5	1	—	3	7	1	15	8	89	0.9
Reading	90,083	426	278	19.0	12.4	—	—	1	—	2	1	8	89	1.8
Oxford	54,339	211	171	15.6	12.6	—	—	1	—	1	2	3	38	—
Northampton	91,123	429	344	18.9	15.1	—	—	12	1	1	14	5	89	0.3
Cambridge	57,676	231	169	16.1	11.8	—	—	3	—	—	4	2	61	—
Southend-on-Sea	83,908	356	222	17.0	10.6	3	—	—	1	1	1	3	59	4.1
Ipswich	76,472	380	247	19.9	13.0	1	—	—	3	7	—	8	118	—
Great Yarmouth	57,502	339	216	23.6	15.1	—	—	—	—	—	13	7	94	—
Norwich	124,107	613	386	19.8	12.5	2	—	2	2	1	11	6	78	—
Swindon	52,750	296	166	22.5	12.6	1	—	—	—	2	3	1	57	0.6
Exeter	60,788	284	212	18.7	14.0	1	—	—	1	—	2	3	95	—
Plymouth	113,559	631	506	22.3	17.9	—	—	37	—	3	8	16	133	—
Devonport	85,589	468	253	21.9	11.9	1	—	14	2	—	4	9	88	—
Bath	70.292	244	228	13.9	13.0	1	—	1	1	—	2	—	86	0 4
Bristol	363,312	1,867	1,276	20.6	14.1	—	—	—	7	40	18	26	85	—
Gloucester	50,759	243	175	19.2	13.8	—	—	—	—	5	3	1	123	1.7
Stoke-on-Trent	241,430	1,830	943	30.4	15.7	4	—	14	1	14	18	54	117	1.9
Wolverhampton	95,725	604	335	25.3	14.0	1	—	7	1	4	6	14	93	—
Walsall	94.093	639	329	27.2	14.0	—	—	1	—	2	3	13	113	—
West Bromwich	69,430	503	262	29.1	15.1	—	—	—	4	2	5	14	121	2.3
Dudley	51,895	368	211	28.4	16.3	1	—	4	7	2	—	8	149	1.9
Birmingham	868,430	5,415	3,368	25.0	15.6	2	—	154	25	4	76	137	144	4.1
Smethwick	76,314	496	247	26.1	13.0	—	—	10	3	2	2	9	112	1.2
Coventry	119,003	667	329	22.5	11.1	1	—	1	1	—	1	6	75	1.5
Leicester	232,664	1,239	770	21.4	13.3	1	—	—	2	4	5	17	105	1.0
Lincoln	60,243	305	146	20.3	9.7	—	—	—	—	—	2	2	79	—
Grimsby	78,667	511	311	26.1	15.9	1	—	49	1	2	2	6	106	1 0
Nottingham	266,918	1,476	1,046	22.2	15.7	—	—	1	2	20	7	41	164	1.1
Derby	126,389	731	387	23.2	12.3	—	—	—	3	—	3	7	86	—
Stockport	126,040	618	444	19.7	14.1	1	—	—	2	—	1	25	120	0.5
Birkenhead	137,710	846	630	24.6	18.3	1	—	53	1	8	3	19	139	0.2
Wallasey	87,175	441	301	20.8	13.9	1	—	13	2	2	6	10	129	—
Liverpool	767,992	5,649	4,006	29.5	20.9	11	—	195	34	34	38	193	153	3.0
Bootle	73,230	509	292	27.9	16.0	—	—	8	—	5	4	10	126	7.2
St. Helens	100,775	762	433	30.3	17.2	—	—	14	1	7	3	22	155	3.9
Southport	71,747	252	258	14.1	14.4	—	—	1	1	5	3	2	119	1.6
Wigan	91,491	628	462	27.5	20.3	5	—	69	1	7	2	14	153	—
Warrington	74,923	522	285	28.0	15.3	4	—	1	10	8	4	7	88	3.5
Bolton	185,247	955	639	20.7	13.8	3	—	40	—	4	10	24	116	—
Bury	59,213	279	219	18.9	14.8	—	—	—	—	1	1	7	122	2.7
Manchester	738,538	4,174	2,951	22.7	16.0	7	—	77	47	8	27	107	130	0.2
Salford	234,975	1,413	1,010	24.1	17.2	4	—	43	10	4	8	41	146	0.3
Oldham	151,044	795	636	21.1	17.4	1	—	42	13	6	15	31	172	—
Rochdale	94,320	409	322	17.4	13.7	1	—	1	—	2	11	9	125	0.6
Burnley	110,040	594	397	21.7	14.5	1	—	—	2	8	4	28	136	—
Blackburn	134,387	649	502	19.4	15.0	1	—	2	2	7	3	22	157	2 0
Preston	118,514	633	473	21.4	16.0	2	—	26	18	5	11	14	128	2.7
Blackpool	62,266	230	238	14.8	15.3	—	—	5	—	1	—	1	122	3.8
Barrow-in-Furness	65,921	430	243	26.2	14.8	1	—	—	1	4	4	5	112	3.7
Huddersfield	112,265	458	457	16.4	16.3	1	—	42	1	5	2	8	142	0.7
Halifax	100,373	414	342	16.5	13.7	5	—	1	2	—	4	13	75	—
Bradford	291,482	1,319	1,095	18.2	15.1	9	—	4	4	7	9	16	118	0.3
Leeds	459,260	2,565	1,667	22.4	14.6	5	—	65	6	21	10	33	111	—
Dewsbury	54,083	307	221	22.8	16.4	—	—	—	1	3	—	4	121	—
Wakefield	52,643	287	180	21.9	13.7	1	—	15	1	1	9	5	80	1.1
Barnsley	53,929	392	201	29.2	14.9	2	—	1	2	6	1	9	128	1.0
Sheffield	476,971	3,044	1,822	25.6	15.3	1	—	52	17	4	16	63	118	0.8
Rotherham	65,313	463	291	28.4	17.9	—	—	17	3	6	3	9	160	1 0
York	83,802	434	277	20.8	13.3	2	—	2	1	—	4	7	124	—
Hull	291,118	1,824	1,105	25.1	15.2	16	—	8	3	9	20	29	114	0.7
Middlesbrough	126,452	890	541	28.2	17.2	1	—	—	7	1	23	26	133	0.9
Darlington	59,500	370	189	24.9	12.7	3	—	—	4	—	4	2	70	4.2
Stockton-on-Tees	59,311	413	262	27.9	17.7	2	—	—	1	7	2	7	121	0.8
West Hartlepool	61,374	417	247	26.0	15.4	1	—	2	1	2	—	7	98	1.2
Sunderland	152,927	1,129	579	29.6	15.2	1	—	3	5	9	6	30	120	1.9
South Shields	111,357	835	417	30.1	15.0	8	—	1	3	4	5	15	110	2.6
Gateshead	119.362	881	563	29.6	18.9	4	—	52	5	2	2	27	138	4.4
Newcastle-on-Tyne	273,415	1,699	1,439	24.9	21.1	5	—	202	16	30	6	52	170	0.4
Tynemouth	61,408	385	225	25.2	14.7	4	—	1	1	7	2	13	122	4.4
Carlisle	52,813	259	165	19.7	12.5	—	—	—	2	1	—	—	97	4.8
Newport (Mon.)	89,404	502	278	22.5	12.5	3	—	2	3	1	3	6	106	—
Cardiff	188,495	1,106	659	23.5	14.0	1	—	—	5	8	19	15	109	—
Rhondda	166,365	1,283	648	30.9	15.6	1	—	22	2	24	9	27	156	—
Merthyr Tydfil	85,082	536	355	25.3	16.7	1	—	30	—	12	4	12	118	0.3
Aberdare	53,427	370	185	27.8	13.9	1	—	—	1	1	5	6	78	0.5
Swansea	121,665	781	402	25.7	13.3	3	—	—	3	1	5	16	142	—

0.20 in Halifax and in Darlington, 0.21 in Warrington, 0.22 in Wigan, and in Hull, 0 26 in Tynemouth, and 0.29 in South Shields. The death-rate from measles averaged 0.44 per 1,000 in the ninety-seven large towns, and slightly exceeded the rate recorded in London; among the other towns the highest rates were 1.50 in Huddersfield, 1.54 in Birkenhead, 1.75 in Gateshead, 2.50 in Grimsby, 2.96 in Newcastle-on-Tyne, and 3.03 in Wigan. The 454 fatal cases of scarlet fever corresponded to a rate of 0.10 per 1,000; the rate in London was equal to the average for the ninety-seven towns, among which the highest rates were 0.23 in Southampton, West Bromwich, and Newcastle-on-Tyne, 0.26 in Manchester, 0.27 in Darlington, 0.35 in Oldham, 0.54 in Dudley and in Warrington, and 0.61 in Preston. The 598 deaths from whooping-cough were equal to a rate of 0.13 per 1,000; in London the death-rate from this disease was 0.11 per 1,000, while among the other large towns the rates ranged upwards to 0.40 in Gloucester, 0.43 in Warrington, 0.44 in Bristol and in Newcastle-on-Tyne, 0.45 in Barnsley, 0.46 in Tynemouth, 0.47 in Stockton-on-Tees, 0.57 in Merthyr Tydfil and 0.58 in Rhondda. The 944 fatal cases of diphtheria corresponded to a rate of 0.21 per 1,000; in London the rate was 0.23 per 1,000, the highest rates in the other large towns being 0.47 in Rochdale, 0.48 in Tottenham, 0.49 in Southampton, 0.62 in Northampton, 0.69 in Wakefield, 0.73 in Middlesbrough, and 0.91 in Great Yarmouth. The mortality from diarrhoea and enteritis among children under 2 years of age, measured in proportion to the births registered during the quarter, was equal to 21.04 per 1,000; in London the proportion was 22.46, while among the other towns it ranged upwards to 33.90 in Blackburn, 35.95 in Liverpool, 38.99 in Oldham, 40.45 it Stockport, 47.14 in Burnley, and 79.37 in Southport.

Infant mortality measured by the proportion of deaths among children under one year of age to registered births was equal to 117 per 1,000; in London the proportion was 123, while among the other large towns it ranged from 31 in Hastings, 38 in Oxford, 51 in Hornsey, 57 in Swindon, 59 in Southend, 60 in Ealing, and 61 in Cambridge, to 153 in Liverpool and in Wigan, 155 in St. Helens, 156 in Rhondda, 157 in Blackburn, 160 in Rotherham, 164 in Nottingham, and 172 in Oldham.

The causes of 0.9 per cent. of the deaths in the ninety-seven towns last quarter were not certified either by a registered medical practitioner or by a coroner. In forty-one of the towns the causes of all the deaths were duly certified: the highest proportions of uncertified deaths were 3.0 per cent. in Liverpool, 3.4 in Gillingham, 3.5 in Warrington, 3.7 in Barrow-in-Furness, 3.8 in Blackpool, 3.9 in St. Helens, 4.1 in Southend-on-Sea and in Birmingham, 4.2 in Darlington, 4.4 in Gateshead and in Tynemouth, 4.8 in Carlisle, and 7.2 in Bootle.

HEALTH OF ENGLISH TOWNS.

In the ninety-six large English towns 8,916 births and 7,089 deaths were registered during the week ended Saturday, February 27th. The annual rate of mortality in these towns, which had been 20.1, 18.9, and 20.7 per 1,000 in the three preceding weeks, fell to 20.4 per 1,000 in the week under notice. In London the death-rate was equal to 21.2, against 21.5, 19.6, and 20.8 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the rate ranged from 5.5 in Smethwick, 6.3 in Ilford, 9.7 in Leyton, 10.0 in East Ham, 10.6 in Hornsey, and 11.6 in Walthamstow, to 28.4 in Gateshead, 29.8 in Northampton, 31.6 in Darlington, 31.8 in Blackpool, 32.9 in Gloucester, and 42.5 in Cambridge. Measles caused a death-rate of 3.2 in Acton, 3.4 in Northampton, 3.5 in Tottenham and in Stockton-on-Tees, 3.9 in Gateshead, 4.3 in Enfield, 4.4 in Wolverhampton, 7.9 in Darlington, and 8.1 in Cambridge, and from whooping-cough 1.4 in Bristol and in Warrington, 1.6 in Blackburn, 1.7 in Tynemouth, 2.1 in Bootle, 2.3 in Reading, and 2.5 in Merthyr Tydfil. The mortality from the remaining infective diseases showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered during the week, both of which belonged to the Metropolitan Borough of Fulham. The causes of 55, or 0.8 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 16 were recorded in Birmingham, 14 in Liverpool, 3 in Bolton, and 2 each in London, Barrow-in-Furness, and Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,395, 3,299, and 3,165 at the end of the three preceding weeks, further fell to 3,041 on Saturday, February 27th; 302 new cases were admitted during the week, against 365, 368, and 295 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, February 20th, 639 births and 617 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 680 births and 615 deaths in the preceding period. These deaths represent a mortality of 26.5 per 1,000 of the aggregate population in the districts in question, or the same as in the previous period. The mortality in these Irish areas was therefore 5.8 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 27.5 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 31.5 (as against an average of 29.0 for the previous four weeks), in Dublin city 33.2 (as against 30.9), in Belfast 23.3 (as against 22.6), in Cork 31.3 (as against 32.8), in Londonderry 27.8 (as against 24.4), in Limerick 19.0 (as against 19.6), and in Waterford 34.2 (as against 21.9). The zymotic death-rate was 1.5, as against 2.0 in the previous period,

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ARROCHAR PARISH COUNCIL.—Medical Officer. Salary, £75 per annum.

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—Male House-Surgeon. Salary, £150 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £120 and £100 per annum respectively.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Honorarium, 52 guineas per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £240 per annum.

BIRMINGHAM MENTAL HOSPITAL, Rubery Hill.—Junior Assistant Medical Officer (female). Salary, £200 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOLTON UNION.—Resident Assistant Medical Officer for the Townleys Hospitals. Salary, £250 per annum.

BOOTLE BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer (male). Salary, £250 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Offieer. Salary, £200 per annum, rising to £230.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn Road, W.C.—Resident House-Surgeon. Salary, £50 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CHESHIRE COUNTY ASYLUM, Parkside.—Junior Assistant Medical Officer. Salary, £250 per annum.

COLCHESTER: ROYAL EASTERN COUNTIES' INSTITUTION FOR IMBECILES AND THE FEEBLE-MINDED.—Medical Officer. Salary, £200 per annum.

COLONIAL OFFICE.—Medical Officer for service at Weihaiwei. Salary, £300 per annum, rising to £400.

DEVONPORT: ROYAL ALBERT HOSPITAL.—House-Surgeon. Salary, £150 per annum.

DORSET COUNTY COUNCIL.—Temporary Assistant Medical Officer of Health. Salary, £250 per annum.

DUBLIN: ST. VINCENT'S HOSPITAL.—Physician for the Extern Department.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

DUNDEE ROYAL INFIRMARY.—Resident Medical Officers. Salary, £60.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon, Salary, £70 per annum.

EDMONTON UNION INFIRMARY.—Second Assistant Medical Officer. Salary, £200 per annum.

ESSEX EDUCATION COMMITTEE, Chelmsford.—Temporary Lady School Medical Inspector. Salary, £300 per annum, rising to £400.

GLASGOW ROYAL ASYLUM.—Senior Assistant Physician. Salary, £300 per annum.

GOVAN DISTRICT ASYLUM, Hawkhead.—Senior Assistant Medical Officer. Salary, £250 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer (male). Salary, £225 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—(1) Physician; (2) Assistant Physician; (3) House-Physician; salary, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician. Salary, £30 for six months and £2 10s. washing allowance.

HOSPITAL FOR WOMEN, Soho Square, W.—Resident Medical Officer. Salary, £80 per annum.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Two House-Surgeons. (2) Assistant House-Surgeon. Salary for (1) £100 and £60 per annum respectively, and (2) £50 per annum.

ITALIAN HOSPITAL, Queen Square, W.C.—House-Surgeon. Salary, £80 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KINGSTON-ON-THAMES INFIRMARY.—Two Resident Assistant Medical Officers. Salary, £300.

LIVERPOOL ROYAL INFIRMARY.—(1) Three House-Physicians; (2) Three House-Surgeons; (3) House-Surgeon to Gynaecological Department; (4) House-Surgeon to other special departments. Salary, £60 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Surgeons; (2) House-Physician. Salary, £60 per annum.

LONDON FEVER HOSPITAL, Liverpool Road, N.—Assistant Resident Medical Officer. Salary, £250 per annum.

MANCHESTER, CHILDREN'S HOSPITAL.—Assistant Medical Officer to Out-patients' Department. Salary, £100 per annum.

MANCHESTER CORPORATION.—Second and Third Medical Assistants at the Monsall Fever Hospital. Salary, £175 and £150 per annum respectively.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and, upon promotion, to £450.

MERTHYR TYDFIL COUNTY BOROUGH.—Assistant School Medical Officer. Salary, £300 per annum, increasing to £400.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NATIONAL SANATORIUM, Benenden.—Assistant Medical Officer. Salary, £120 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORFOLK COUNTY ASYLUM, Thorpe.—Temporary Assistant Medical Officer. Terms, 5 guineas per week.

NORTHUMBERLAND EDUCATION AUTHORITY.—Assistant School Medical Inspector. Salary, £300 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—House-Surgeon. Salary, £150 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

OCHILTREE PARISH COUNCIL.—Medical Officer. Salary, £40 per annum.

OUGHTERARD UNION.—Medical Officer for the Cloonbur No. 2 Dispensary District. Salary, £100 per annum, increasing to £160.

PLAISTOW: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £10 honorarium on completion of six months' service.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Physician.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary, £50 per annum, rising to £60 on appointment as Senior.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C. Resident Medical Officer. Salary, £120 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Temporary Honorary Assistant Physician. (2) Second Resident Medical Officer. Salary, £100 per annum.

ST. PETER'S HOSPITAL FOR STONE, ETC., Henrietta Street, W.C.—Junior House-Surgeon. Salary, £75 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon. Salary, £100 per annum.

SALISBURY GENERAL INFIRMARY. (1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Lady Assistant House-Surgeon. (2) Lady Assistant House-Physician. Salary, £85 and £80 per annum respectively.

SHEFFIELD: ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHOREDITCH: PARISH OF ST. LEONARD.—Senior Assistant Medical Officer at the Infirmary. Salary, £280 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH AFRICA: FRERE HOSPITAL, East London.—Resident Medical Officer. Salary, £300 per annum, rising to £350.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STIRLING INFIRMARY.—Resident House-Surgeon. Salary, £100 per anum.

STOCKPORT INFIRMARY.—Junior House-Surgeon. Salary, £180 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) House-Physician; (2) House-Surgeon. Salary, £150 per annum, rising £10 annually.

SUFFOLK DISTRICT ASYLUM, Melton.—Second Assistant Medical Officer (male). Salary, £250 per annum.

TRURO ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—(1) House-Surgeon; (2) House-Physician. Honorarium, £40 for six months.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £120 per annum.

WANDSWORTH UNION INFIRMARY.—Assistant Male Medical Officer. Salary, £5 5s. weekly.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £200 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary, £100 per annum.

WEST HAM UNION INFIRMARY.—Second Assistant Resident Medical Officer (male). Salary, £250 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £150 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior Lady House-Surgeon. Salary, £130 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £125 per annum.

YORK DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

YORK: WEST RIDING.—Assistant Medical Officer at the Scalebor Park Asylum, salary £250 per annum; or Locumtenent, salary £5 5s. per week.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Ruddington (Nottingham), Saintfield (co. Down), Turriff (Aberdeen).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

MCFARLAN, W. M., M.D.Edin., Certifying Factory Surgeon for the Hawes District, North Riding of Yorksbire.

MITCHELL-LEONARD, J. C., M.B., B.S.Melb., Acting Ophthalmologist to the Melbourne Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

MARRIAGE.

KELLETT-SMITH—HUBIN.—On February 18th, at All Souls', Langham Place, W., by the Rev. Prebendary F. S. Webster, M.A., J. S. Kellett-Smith, F.R.C.S.Eng., of Cavendish Place, W., and of Eastbourne, to Marie Jacqueline, daughter of the late Eugène Hubin, of Liège, Belgium.

DEATHS.

MONK.—On February 20th, at Southampton, Katharine Henrietta Monk, late Sister-Matron, King's College Hospital, London.

WALKER.—On Sunday, February 28th, at 33, Westgate, Peterborough, in her 71st year, Mary Elizabeth, since May 9th, 1865, the dearly beloved wife of Thomas James Walker, M.D., F.R.C.S. Funeral service at St. John's Church, Peterborough, Thursday, March 4th. Interred in Peterborough Cemetery.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Professor W. Sampson Handley: Entero-colic Ileus.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, 5 p.m.—First Milroy Lecture by Dr. E. L. Collis: Industrial Pneumonoconioses, with special reference to Dust and Phthisis.

WEDNESDAY.

HUNTERIAN SOCIETY.—Clinical Afternoon at the Royal Hospital for Diseases of the Chest, City Road, E.C., 4 p.m. Cases. Cardiograph Demonstrations by Dr. A. W. Stott. Epidiascope and Fluorescent Screen Demonstrations by Dr. A. C. Jordan. Pathological Demonstrations by Dr. Carnegie Dickson.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Professor J. Howell Evans: Some Congenital Lesions of the Small Intestine, their Origin, Clinical Bearings, and Treatment.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Harveian Lecture, illustrated by lantern slides. Sir StClair Thomson: Modern Methods in Rhino-Laryngology.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, 5 p.m.—Second Milroy Lecture by Dr. E. L. Collis.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

CLINICAL SECTION, 8 p.m.—Dr. J. Porter Parkinson: Tumour of the Neck with Obstruction of the Superior Vena Cava. And other Cases.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE, 8.30 p.m.—Adjourned Discussion, to be opened by Dr. J. C. Ledingham, on The Interpretation of the Features of Cerebro-Spinal Meningitis Epidemics and Preventive Measures. Members of other Sections are invited to attend.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Course will be given next week:

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MARCH.
11	Thur.	London: Insurance Act Committee, 2 p.m.
		Salisbury: Wiltshire Branch, 2.30 p.m.
12	Fri.	London: Medical Inspection and Treatment of School Children Subcommittee, 3.30 p.m.
17	Wed.	London: Committee of Chairmen of Standing Committees, 2 p.m.
19	Fri.	London: Standing Ethical Subcommittee, 2.30 p.m.
23	Tues.	London: Hospitals Committee.
		London: Grants Subcommittee, 2.15 p.m.
26	Fri.	London: Central Ethical Committee, 2 p.m.
29	Mon.	London: Dominions Committee (*provisional*).
		London: Naval and Military Committee (*provisional*).
30	Tues.	London: Public Health Committee.
31	Wed.	London: Medico-Political Committee.
		London: Journal Committee, 2 p.m.
		APRIL.
6	Tues.	London: Conference of Secretaries Subcommittee, 12.30 p.m.
		London: Organization Committee, 2 p.m.
14	Wed.	London: Finance Committee, 2 p.m.
21	Wed.	London: Council.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 13TH, 1915.

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MEDICAL TREATMENT OF SOLDIERS ON FURLOUGH.

THE Insurance Act Committee at its meeting on February 11th[1] gave instructions for representations to be made to the Insurance Commissioners drawing attention to the difficulties practitioners in various parts of the country have been experiencing in obtaining payment for services rendered to soldiers who are ill on furlough.

It will be remembered that the Commissioners issued in November last Memorandum 210/I.C. dealing with the question, which was published in the SUPPLEMENT to the JOURNAL of November 28th, 1914, and commented on in the SUPPLEMENT of December 12th. In the latter issue particulars were also given of the form (Army Form O. 1667) which must be filled up by civilian practitioners who give attendance to soldiers together with particulars of the fees payable. In some cases brought to the notice of the Committee the military authorities on being applied to have been unable to supply A.F.O. 1667, and the civil practitioner has been unable to carry out the procedure outlined in Memorandum 210/I.C. In one case the military authorities informed a practitioner applying for payment in respect of attendance upon a soldier that the claim could not be entertained, as there was a military doctor in the district—ten miles away.

These facts were accordingly brought to the notice of the Insurance Commissioners by the Committee, which, while admitting that difficulties were to be expected when Circular 210/I.C. was first issued, expressed the opinion that sufficient time had since elapsed for every commanding officer to have made arrangements by means of which every soldier on furlough could obtain medical attendance when necessary, without delay. It was pointed out that there are numbers of instances of illness among soldiers who are only on furlough for a short time—often twenty-four or forty-eight hours—and no arrangement which necessitated local inquiries and probably a journey of several miles could be said to be satisfactory. The Committee believed that the members of the profession had tried their best to carry out the procedure outlined in Circular 210/I.C., but the failure of the military authorities to make access to a military doctor easily available, coupled with the difficulty which practitioners were experiencing in obtaining payment for services rendered to soldiers on furlough, impelled the Committee to ask the Commissioners to take up the question with the War Office.

In reply the Commissioners have forwarded for the information of the Committee the following circular letter (I.C.L.119), which has recently been addressed to Insurance Committees in England, and a similar one in Scotland:

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
26th February, 1915.

Sir,—1. Inquiries have been received from Insurance Committees on behalf of doctors on their panels as to the circumstances in which soldiers may call in the services of a civilian doctor at the cost of the funds of the War Office, and as to the steps the doctor should take to obtain payment. The Commissioners have been in communication with the War Office on the subject, and are in a position to state as follows:

2. For the purposes of this letter soldiers may be divided into three groups, namely:

(*a*) Soldiers quartered in barracks or camps.
(*b*) Soldiers on furlough.
(*c*) Soldiers who whilst training reside at home or in billets.

3. No occasion will arise for soldiers in group (*a*) applying to a civilian doctor for treatment, inasmuch as a medical officer of the Army Medical Corps will be located at the barracks or camp.

4. As regards Group (*b*), when a soldier proceeds on furlough he is supplied with a "Furlough paper" which instructs him, should he require medical aid, to apply at the nearest military hospital whenever practicable. In the event of the soldier living more than two miles from a military hospital, or his condition being such that he is unable to travel to the hospital, he may, at the cost of the funds of the War Office, call in a civilian doctor. The rates allowed for attendance are given on the "Furlough paper," which the soldier is instructed to show to the doctor.

5. Soldiers who, whilst training, reside at home or in billets should apply, if they need medical aid, to the medical officer attached to their unit. In emergencies where the medical officer attached to the unit or a military hospital is not available, the soldier may call in a civilian doctor.

6. A list of military hospitals arranged under Insurance Committee areas, is shown in Column 3 of the enclosed statement.

7. To obtain payment from the War Office a civilian doctor must procure and fill in Army Form O. 1667. The form must be sent on the conclusion of treatment to the Deputy Director of Medical Services of the district, whose address will be found in Column 2 of the enclosed statement. The claim may be sent to the Deputy Director either by the doctor or by the Insurance Committee or Panel Committee in the event of either of the latter Committees undertaking the collection and transmission of the claims.

8. The Insurance Committee will doubtless communicate at an early date with the Panel Committee with a view to the information given above and in the enclosed statement being made known to the doctors on the panel. A copy of Army Form O. 1667 is enclosed and a supply will be forwarded by the Commissioners upon application to the Insurance Committee or Panel Committee in order that they may deal with applications made to them by doctors who require the form in order to submit a claim.

9. It will, of course, be appreciated that where a soldier applies to a civilian doctor for treatment in circumstances where he should have recourse to military arrangements the War Office cannot accept responsibility for payment.—I am, Sir, your obedient servant,

(Signed) S. P. VIVIAN.

[1] SUPPLEMENT, BRITISH MEDICAL JOURNAL, February 27th, 1915.

The new arrangement whereby practitioners may obtain copies of A.F.O. 1667 from the Local Insurance Committee will doubtless obviate the very considerable delays experienced by them in obtaining this form. With the Commissioners' letter there is forwarded a list of the addresses to which the form A.F.O. 1667 should be sent, which, owing to its length, it is impossible to print. Copies, however, will be in the hands of the Clerk to every Insurance Committee, who will doubtless supply the necessary information to any practitioner desiring to send his account direct, or the information may be had on application to the Medical Secretary. For the convenience of practitioners we again print the following instructions as to the making out of the bills contained in A.F.O. 1667.

INSTRUCTIONS.

The following instructions must be conformed to in each instance of any claim made by a civilian medical practitioner for medical attendance and medicines furnished to soldiers in cases in which the public is liable.

Scale of Charges: Visit and Medicine.

	Under 1 Mile.	Over 1 but under 2 Miles.	Over 2 but under 3 Miles.	Over 3 but under 4 Miles.	Over 4 but under 5 Miles.	Greater Distances.
	s. d.	s. d.	s. d.	s. d.	s. d.	
Day	2 6	3 0	4 0	5 0	6 0	An addition of 1s. for each mile over five.
Night	3 6	4 6	6 6	8 6	10 6	An addition of 2s. for each mile over five.

Secondly, charges for surgical appliances, when necessary, will be allowed according to circumstances.

Thirdly, minor surgical operations (including revaccination), each case, 2s. 6d.

Fourthly, for other operations, and for special cases, remuneration will be allowed according to circumstances and nature of case.

Memorandum.

1. On the face of the bill must be stated the nature of the case, the dates of visits, and whether medicine was supplied.
2. No bill can be approved unless made out in strict conformity with these instructions.
3. This form will not be passed to a civil medical practitioner in any case in which the War Department is not liable under regulation for the cost of treatment.

PATIENTS OF PRACTITIONERS SERVING WITH THE COLOURS.

AT a meeting of practitioners in the Birmingham district, held on February 25th, it was decided that, after March 31st, the medical men serving with the colours, whose work has hitherto been done gratuitously by their colleagues, are to be requested to hand over to those doing the work half the panel and appointment fees. Private fees, it was decided, shall belong, as hitherto, to the absentee.

LOCAL MEDICAL AND PANEL COMMITTEES.

BURGH OF EDINBURGH.

PANEL COMMITTEE.

A MEETING of the Burgh of Edinburgh Panel Committee was held in Edinburgh on March 4th, when Dr. DEWAR occupied the chair.

Honorary Secretary's Honorarium.—The HONORARY SECRETARY cordially thanked the committee for the honorarium voted him at the last meeting, and it was unanimously agreed, on the motion of Dr. ORR, that the honorarium should be 25 guineas instead of £25.

Scrutiny of Prescriptions.—The checker's reports were examined, and the Secretary was instructed to write to those doctors whose prescriptions accompanied the reports. Replies from two practitioners regarding instances of excessive prescribing were considered satisfactory. The Secretary was instructed to communicate again with one practitioner who had not replied.

Revised Drug Tariff List.—It was agreed to inform the Insurance Committee that the committee considered it unnecessary to send copies of the revised drug tariff list to all panel practitioners each month.

Certification of Chronic Cases.—The CHAIRMAN drew attention to complaints regarding the demands of some societies for weekly certificates in chronic and long continued illnesses. While it was within the rights of societies to demand a weekly certificate if they thought fit, it was the opinion of the Commissioners and the British Medical Association that societies might waive their right of demanding what might be looked upon as unnecessary certificates, with the view of minimizing the work of the medical profession. It was pointed out that the majority of the societies had practically agreed not to require too many certificates, but the larger approved societies had not yet formally acquiesced.

Records.—It was unanimously decided to continue the keeping of records in the area by means of the day book.

BERWICKSHIRE.

LOCAL MEDICAL COMMITTEE.

THE third annual general meeting of the Berwickshire Local Medical Committee was held at Duns, on February 10th, when Dr. MCWHIR occupied the chair.

Election of Officers.—The office-bearers of the past year were re-elected; in the absence of Dr. Taylor on military duty, Dr. Maclagan was appointed to act as his substitute on the Subcommittee, and Dr. Macdonald, of Cockburnspath, was elected to fill the vacancy caused by the retirement of Dr. Homer, who had left the district.

Expenses of Committee.—It was announced that in view of the balance in hand from the previous year it would not be necessary to call on the members during the current year for the usual subscription.

DURHAM.

PANEL COMMITTEE.

A MEETING of the Durham County Panel Committee was held on February 12th, when Mr. L. G. DILLON was in the chair.

Alleged Excessive Prescribing.—After hearing certain of the practitioners named in the report of the Special Subcommittee appointed to inquire into the representations of the Pharmaceutical Committee as to cases of excessive and extravagant prescribing and considering the correspondence with other practitioners, it was decided that the Insurance Committee be recommended to make the deductions specified from the amounts payable to the practitioners named in the report with one exception, and to pay the amounts so deducted to the credit of the Drug Fund in pursuance of Article 40 (2) of the Medical Benefit Regulations. It was also decided not to recommend any surcharge in the exceptional case and to inform the Pharmaceutical Committee that in the opinion of the Committee it was more efficacious and economical for practitioners to order dressings in bulk to be used for subsequent as well as first dressings instead of the alternative method of supplying the articles under Section 12 of the agreement with the Committee and writing prescriptions in individual cases. The CHAIRMAN submitted a report of the Special Subcommittee for the next quarter, when it was again decided to notify certain practitioners that it was the Committee's intention to recommend the Insurance Committee to make deductions from the amounts payable to them unless an intimation was received within fourteen days that the practitioner desired to be heard by the Committee. The Pharmaceutical Committee is to be afforded an opportunity of being heard at the next meeting in connexion with the supply of dressings.

Expenses of Pharmaceutical Committee.—The meeting considered correspondence between the Chairman of the Committee and the British Medical Association with reference to the expenses of the Pharmaceutical Committee, and the application of the Pharmaceutical Committee to the Insurance Committee in pursuance of Section 33 (2) of the Act of 1913 for an allotment from the Medical Benefit Fund towards its administrative expenses was approved.

Supply of Drugs and Appliances.—It was reported that the Drug Formulary adopted on December 16th, 1914, had been printed and circulated, and the thanks of the Committee were extended to the Chairman and Dr. J. Charles, Dr. J. W. Smith, and Mr. W. Pattullo for their services. It was agreed that a Joint Committee, consisting of the members of the Medical Service and Pharmaceutical Service Subcommittee, be appointed to prepare a scheme for the checking and statistical analyses of chemists'

accounts and prescriptions, and a draft scheme was generally approved.

Vote of Thanks.—The Acting Secretary (Mr. Edwin Potts) was cordially thanked for the manner in which he dealt with the removal of patients from the panel list of practitioners owing to the non-delivery of medical cards.

KINGSTON-UPON-HULL.

PANEL COMMITTEE.

THE Committee met on February 5th, Dr. LILLEY presiding.

Payments.—The statement on payment to practitioners in the BRITISH MEDICAL JOURNAL SUPPLEMENT of January 30th was considered, and was looked upon as a reasonable explanation of an unsatisfactory state of affairs.

British Pharmacopoeia.—It was agreed, pending revision of the local *Pharmacopoeia*, to recommend practitioners to adhere to the dosage of the 1898 *Pharmacopoeia* until further notice.

STAFFORDSHIRE.

LOCAL MEDICAL COMMITTEE.

A MEETING was held at Stafford on February 25th, when Dr. T. RIDLEY BAILEY was in the chair.

Recognition of Committee.—Correspondence from the Commissioners with regard to the recognition of the Committee was received, and a circular for issue to all practitioners resident in the area was approved.

Panel Committee.—The Chairman, Secretary, Treasurer, and Executive Committee of the Local Medical Committee were appointed the Chairman, Secretary, Treasurer, and Executive Committee of the Panel Committee for the time being.

PANEL COMMITTEE.

A meeting of the Panel Committee was held at Stafford on February 25th, when Dr. T. RIDLEY BAILEY was in the chair. Dr. F. E. Fernie was unanimously elected to fill a vacancy caused by the resignation of Dr. Hodder owing to his absence on military service. Dr. Lefevre was nominated to fill the vacancy on the Staffordshire Insurance Committee.

Model Rules.—The Model Rules for the administration of medical benefit were received, considered, and approved.

Payments.—It was resolved to request the Insurance Committee to ascertain the amounts payable to individual practitioners for 1914 and to pay the balance due forthwith, and that a protest should be made against the amount of percentage deducted during 1914, especially for the last quarter, as being excessive.

WEST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the Committee was held at Bury St. Edmunds on February 23rd, when Dr. WILKIN was in the chair.

Financial Statement.—The SECRETARY reported that he had received a payment of £30 in advance for Panel Committee expenses.

Payments.—The reply of the Commissioners to the deputation from the Special Panel Subcommittee of the British Medical Association, as set out in BRITISH MEDICAL JOURNAL SUPPLEMENT, January 30th, 1915, was considered. The Secretary was instructed to draw the attention of the panel practitioners to this statement of the position.

British Medical Association Circulars.—The circular M.4, which appeared in BRITISH MEDICAL JOURNAL SUPPLEMENT, February 13th, 1915, was considered in detail. It was decided to draw the attention of panel practitioners particularly to Paragraph II on economy in prescribing. In regard to certificates, discussion showed that there is still considerable misunderstanding as to the new rules as they affect doctors, and the Secretary was instructed to remind practitioners of the more important points, particularly in regard to ante- or post-dating. The Circulars M. 6 and M. 5 were considered, and the Committee resolved to oppose the establishment of a central bureau. The Secretary was instructed to bring to the notice of the Clerk to the Insurance Committee and the joint Panel and Pharmaceutical Committees the statistical analysis recommended in Circular M. 5, Appendix A.

Payment of Sick Benefit.—The SECRETARY read a letter from the Medical Secretary, pointing out that the society is within its rights in making payments only up to the date of the last certificate of incapacity obtained by the insured member.

Rules for Administration of Medical Benefits.—A draft of the rules proposed to be adopted by the Insurance Committee was considered. It was decided to frame for inclusion in the rules governing the procedure of the Medical Service Subcommittee a clause such as that suggested in the Circular M. 18 (June 20th, 1914) of the British Medical Association. This provided that in cases of complaint the names of doctors and patients should be excluded from the report of the subcommittee to the Insurance Committee.

BIRMINGHAM.

PANEL COMMITTEE.

THE Birmingham Panel Committee meeting was held on March 2nd.

Excessive Prescribing.—A report was drawn up for presentation to the Insurance Committee, in which certain practitioners considered to have over-prescribed were recommended for surcharge.

The Pharmaceutical Committee.—The estimate for the administrative expenses of this Committee was approved after modification.

New Agreement.—The new agreement was approved, and a subcommittee was appointed to interview representatives of the largest approved societies on the subject of certification, sick visitors, etc.

Attendance on Reservists, etc.—A communication from the Commissioners was read and the Secretary was instructed to send a copy to all practitioners and to give them, in addition, information with regard to obtaining Form A.F.O. 1667, the address of the nearest military hospital, etc.

Proposed Central Bureau for Checking Prescriptions.—The Committee disagreed with the idea of a central bureau for checking prescriptions.

COVENTRY.

PANEL COMMITTEE.

A MEETING of the Panel Executive Committee was held on February 26th, when Dr. ORTON was in the chair.

Scrutiny of Prescriptions.—A letter from the Clerk to the Insurance Committee was read, asking for the view of the Panel Committee on the checking of prescriptions for 1915. It was decided to agree to the appointment of a prescription clerk for the checking of prescriptions on the basis that their Panel Committee paid £15 per annum towards the expense of the clerk, and has a proportionate voice in the selection of such, and that the arrangement be for one year only, as after that time it would probably be found from experience to be more economical to join with another Committee for this purpose.

Emergency Drugs and Dressings.—It was resolved to ask the Insurance Committee to pay a flat rate in the future to doctors for emergency drugs and dressings, and to suggest that the rate be 1s. per annum for 100 insured persons.

CROYDON.

PANEL COMMITTEE.

A MEETING of the Croydon Panel Committee was held on February 23rd.

Stock Mixtures.—Resolutions were received from the Croydon Insurance Committee expressing disapproval of the introduction into the tariff of anything in the nature of "stock mixtures" as prejudicial to the interests of insured persons and requesting the Panel Committee not to continue to use its power of selecting ten mixtures for which should be paid a reduced dispensing fee. The Panel Committee decided not to recommend any alteration of the present arrangements with regard to the new clause in the Tariff, inserted by the Commissioners.

British Medical Association Circulars.—The Circulars M.4, M.5, and M.6 from the British Medical Association were considered and discussed.

Expenses of Pharmaceutical Committee.—It was agreed to concur in the application of the Pharmaceutical Committee for the allotment of a sum not exceeding £50 for the administrative expenses of that Committee for the current year.

WEST HAM.

PANEL COMMITTEE.

THE monthly meeting of the West Ham Panel Committee was held on March 2nd, Dr. H. S. BEADLES presiding.

Deductions from Monthly Payments.—A letter was read from the Clerk to the West Ham Insurance Committee relating to deductions from cheques to panel practitioners in 1914. The SECRETARY further reported receiving a telephonic communication from the Clerk to the effect that the amount on the current cheque, being the first monthly payment on account for 1915, was an arbitrary figure, based on the previous monthly payment, that reliable figures of the total amount available were not yet to hand, and that the matter would be put right at the end of the quarter. It was resolved:

> That the Clerk be advised that in cases of deductions from amounts apparently due, a slip giving the explanations should be enclosed with the monthly cheque.

Documents received from the British Medical Association.—Three communications (M.4, M.5, and letter *re* Central Bureau) received from the British Medical Association were considered. In connexion with the last mentioned, the Panel Committee appeared averse to the establishment of a Central Bureau for the checking of prescriptions.

Attempted Abolition of the Local Pharmacopoeia.—It was decided to call the attention of the West Ham Insurance Committee to the letter of the Insurance Commissioners of February 15th dealing with the attempted abolition of the local pharmacopoeia, and to request the Insurance Committee to notify forthwith every practitioner and pharmacist in the West Ham panel that the West Ham Insurance pharmacopoeia was still available.

LOCAL MEDICAL COMMITTEE.

A meeting of the West Ham Local Medical Committee was held subsequently, when the action of the West Ham Panel Committee on those points which are required to be submitted to both Committees was endorsed.

INSURANCE NOTES.

PANEL MEDICO-POLITICAL UNION.

A MEETING of practitioners on the panel, called by the Panel Medico-Political Union, was held at Caxton Hall, Westminster, on March 4th, when discussion was invited of grievances and difficulties under the Insurance Act. Dr. W. COODE ADAMS presided.

Dr. ALFRED SALTER, who moved a resolution calling upon the executive of the Union to take action with the object of improving the conditions of service of practitioners under the Insurance Act and of alleviating grievances under which they might labour, said that when the present Regulations were issued by the Commissioners and laid on the table of the House of Commons it was nobody's business to look into them and see if any clause should be challenged or not. The Regulations went through exactly as they were framed, and contained conditions gravely adverse to the profession. The Regulations to be issued in July next would contain revolutionary changes, and before that practitioners should be in possession of such machinery as to influence the House of Commons if the Regulations were found to contain clauses detrimental to medical interests. The 7s. for each insured person was already subject to deduction of 1d. for case value and another 1d. for travellers, and, so far as he could see, that money had never been redistributed. The deduction of ½d. in respect of the cost of the Panel Committee organization was a considerable tax upon individual incomes, for the work was of little value to practitioners as a whole. Part of the money was spent in trying, if possible, to reduce practitioners' incomes still further by surcharge in respect of prescriptions. A deduction of 3d. a quarter had now been made pending adjustment of lists in respect of those who had enlisted. This deduction operated unfairly against practitioners whose lists were comprised mainly of domestic servants. The result of the various deductions was that doctors were being paid *pro rata* instead of *per capita*, and he was not sure that was legal or that the Commissioners had the right to authorize the deductions. Before the war, grants were proposed by the Government for the establishment of laboratories and a nursing service, and to pay the fees of referees and consultants. Now the suggestion was being made in influential quarters that these services would be of great use to practitioners on the panel, and that the cost should be met from the medical benefit fund; in other words, that the practitioners themselves should pay for them. It was also suggested that the domiciliary 6d. should be added to the sanatorium fund; he believed the idea was endorsed by the Society of Medical Officers of Health and by tuberculosis officers generally. If all these deductions were made practitioners under the Insurance Act would be worse off than they were in the days of club practice. At the present time the Employers' Council—a very influential body—was representing to the Commissioners that practitioners on the panel were public servants, and should be required to give certificates not only to approved societies but to employers. The employers' contention was that their weekly contributions under the Act entitled them to this *quid pro quo*. Dr. Salter quoted correspondence in which a large firm addressed such a demand to a practitioner on the panel, and threatened to complain to the Commissioners when he disregarded the request. The Section of the Act of 1911, which empowered the Commissioners to hold inquiries in districts where there appeared to be excessive sickness was about to be put into force, and practitioners on the panel would be called upon to furnish reports and certificates entirely without remuneration. As to the position of the drug fund, Dr. Salter urged that efforts to surcharge doctors were undesirable in the public interest because in order to avoid difficulties there would be a tendency to limit unduly the supply of drugs needed by insured persons. Panel Committees, in surcharging practitioners on trivial grounds, had given colour to the suggestion that the deficiency in the drug fund was due to excessive prescribing instead of to the unfair basis of the drug fund. For example, of 1,000 consecutive prescriptions costing £25 which had been examined, the actual cost of the drugs was £6, and the chemist made an inordinate profit. While the drug tariff continued on the present basis doctors would be constantly accused of wastefulness. In conclusion Dr. Salter said that the objects of the Panel Medico-Political Union were to inform public opinion regarding the grievances of practitioners under the Insurance Act and to bring pressure to bear upon Parliament for their redress. He appealed for the support of practitioners on the panel in a campaign on these lines.

Dr. H. F. BUTLER seconded the resolution, and after a somewhat desultory discussion it was declared by the CHAIRMAN to be carried *nemine contradicente*.

NATIONAL INSURANCE THROUGH APPROVED SOCIETIES.

The task of summarizing and co-ordinating all the Orders and Regulations,[1] affecting approved societies, which have been issued by the Commissioners and other bodies under the National Insurance would seem to present almost hopeless difficulties. From the beginning of 1912 to the end of May, 1914, no fewer than 515 Orders and Regulations were issued, and even this number does not include the Orders constituting Insurance Committees, nor the numerous drafts, some of which have been ultimately developed into effective documents, whilst others have either been dropped or still remain as drafts. Writing in July, 1914, the author tells us that, roughly speaking, only a little over half of the 515 Orders and Regulations were actually in force at that time, the remainder having being either superseded or in some way modified. In many cases, too, the supersession of Orders has followed so rapidly on their first promulgation that it is quite impossible for any book to be up to date for more than a few weeks. With this unavoidable proviso, the author has succeeded in a distinctly commendable way in weeding out the obsolete documents and in presenting those which are still operative in a comprehensive and consecutive form. The scope of the work is limited to that part of the subject which concerns approved societies and the administration of National Insurance through such associations. The work of Insurance Committees, including the administration of

[1] *National Insurance through Approved Societies: Being a Practical Legal Treatise Incorporating the Operative Orders and Regulations.* By W. Addington Willis, LL.B.Lond. London: Published for the University Press by Hodder and Stoughton. 1914. (Demy 8vo, pp. 514. 10s. 6d. net.)

medical and sanatorium benefits, is not dealt with in detail, but only so far as the societies themselves are directly concerned with these benefits. Neither does the author consider the numerous Orders and Regulations that more directly affect the medical profession except so far as the approved societies are concerned. In short, the book is distinctly and almost entirely one for the approved societies alone, but within this limited scope it cannot fail to be of great value to the officials of these societies. It is divided into twenty chapters, each dealing with a particular subject, such as the organization of societies, membership, benefits, finance of societies, and so on, and under each heading are either quoted or summarized all the appropriate Orders or Regulations, a separate list of all the Orders and Regulations being also given for ease of reference. Owing to the outbreak of the war, it was deemed advisable to postpone the publication of the work, and advantage was taken of the delay to insert several pages of addenda, which include reference to all Orders and Regulations obtainable by the public up to the end of October, 1914. With regard to medical benefit, we are told that the remarks are limited to those portions of the subject which affect societies directly, while it was found necessary to omit such matters of detail as only concern Insurance Committees, medical practitioners, and those who provide drugs and appliances. Nevertheless, this part of the book will well repay study by medical practitioners, if only because it shows how intimately connected are the interests of approved societies and the medical profession.

CORRESPONDENCE.

THE DEFECTIVE BASES OF THE ACT.

DR. GARRATT (Chichester) writes: Dr. Baskett published on February 13th a letter denouncing vigorously a grievance which, though a study of the Act should have revealed it from the first, and it was admitted categorically in the "Explanatory statement as to medical benefit" issued in *December, 1912*, he has but just discovered—namely, that all insured persons being entitled to medical attendance from the medical panel, the Insurance Committees have power, in cases in which the doctors cannot arrange the matter among themselves, to select a doctor, and will naturally choose the one nearest the patient. I asked Dr. Baskett for a practical alternative. His proposal is that the working classes should, "by the easy but unobtrusive method of reducing taxation," be placed in a position to pay fees on a voluntary system. This is, in his opinion, a perfectly obvious way out, which the Commissioners, who have no concern with taxation, cannot have been so stupid as not to recognize. The idea is certainly most original. Frankly it would never have occurred to me. Dr. Baskett moreover states that these Commissioners should, before they made any arrangements, have ascertained whether there were any patients who would be rejected by all doctors. How they would have accomplished this feat is not revealed, but his opinion is that no person would have been found unacceptable to a doctor. Seeing that, at that time, the entire profession was absolutely pledged to reject every one, this conclusion of Dr. Baskett's is curious; but, if it is correct, it is obvious that his grievance does not exist, and his long letter was therefore superfluous.

Now my own letter was intended to divert attention from a burden, which I regarded as trifling and unavoidable, to one, in my opinion, most unbearable, yet capable of being removed. Is it not plain that, under the specious excuse of a necessity for a certificate, the approved societies are by the new Regulations given that control over us which we determined at all costs to resist, and which Parliament wisely, after full discussion, decided that they should not have? If they now dictate to us that we must pay weekly visits, however superfluous, shortly they may alter their certificates to require two or three visits a week. Now no Regulation made under Act of Parliament can override the Act itself, and I am convinced that this Regulation, being a direct violation both of the letter and spirit of the Act, which expressly places medical benefit under the control of the Insurance Committees and not the societies, could not be upheld in any court of law. Ample provision is made in the Act to guard insured persons from any neglect by doctors, so that this rule is as unnecessary in their interests as it is intolerable to our own. It should be resisted at any price. I am myself willing to guarantee £5 towards the expenses of carrying a test case, approved as suitable, either by the Council of our Association or one of the medical defence societies, into court. May I invite others to show practical loyalty to our profession by doing the like, and not to waste energy on unfeasible propositions?

INSURANCE ACT IN PARLIAMENT.

SICKNESS BENEFIT IN IRELAND.

IN reply to a long question of Mr. Ginnell, which included a number of inquiries, Mr. Montagu said that he would be glad to make inquiry into any case brought to notice where undue delay or difficulty had been experienced in obtaining a certificate to support a claim for sickness benefit. The granting of Poor Law relief did not fall within his province; but as regards claims for sickness benefit, the doctors who were giving certificates under the National Insurance Acts had arranged convenient places in their districts at which insured persons might attend for examination, and in any case where an insured person was prevented by distance or by his physical condition from leaving his own home, he must be visited by the doctor in his own home. It was the duty of approved societies to scrutinize all claims for sickness benefit, and where the necessary conditions were fulfilled to their satisfaction, benefit was payable from the fourth day of incapacity for work. There was no provision in the National Insurance Acts for making repayments to the Poor Law authorities who on the advice of the medical attendant gave prompt relief in cases subsequently certified valid under Section 109 of the Act of 1911, any benefit received under the Act was not to be taken into account in granting outdoor relief except in as far as the benefit exceeded 5s. a week. The annual amount derived from the contributions of employers and employed persons in Ireland was approximately £724,000. These contributions were paid into the Irish National Health Insurance Fund, set up under Section 81 (2) of the Act of 1911, and not into a common fund. As regards the basis on which grants had been made to facilitate the provision of medical certificates in Ireland, the Chancellor of the Exchequer stated on August 14th, 1913, that he was satisfied that a grant of £50,000 was insufficient to cover the cost of satisfactory arrangements for this purpose, and undertook to ask Parliament to increase the grant up to a maximum limit of 2s. 6d. per insured person per annum. This latter grant was equivalent to a sum of £97,100 per annum, and the estimates provided that payments out of the account under this head should be subject to conditions determined by a scheme made by the Irish Insurance Commissioners with the approval of the Treasury. Pending the approval of such a scheme, expenditure might be incurred for the purpose of certification in Ireland to an annual amount not exceeding £50,000 voted for this purpose. The present annual expenditure was about £44,000, the remuneration paid being inclusive of travelling expenses. He was informed that doctors who visited insured persons desirous of obtaining medical certificates were instructed to exercise every care in visiting persons who were seriously ill, and were not permitted to interfere with the treatment prescribed by the doctor in attendance. The system of appointment of sick visitors by approved societies was of much value to approved societies in exercising a proper supervision over claims for sickness benefit. Either he or the Irish Insurance Commissioners would be happy at any time to receive suggestions for the improvement of the existing system of certification. With regard to the refusal of the Local Government Board for Ireland to allow workhouse doctors to do locumtenent work for one another in adjoining districts, while yet allowing such practitioners to act as certifiers under the Insurance Act, he was informed that such work was only undertaken by Poor Law medical officers on the distinct understanding that it would not interfere with the proper performance of their other duties.

CHEMISTS' CLAIMS.

Mr. Samuel Samuel asked the Secretary to the Treasury whether he can see his way to pay the chemists under the

National Insurance Act for the material supplied under the Act, such as drugs and appliances, in view of the hardship inflicted upon small traders, many of whom had not had any settlement since the Act came into operation; would a settlement be made once a quarter at the very least? Mr. Montagu referred to the reply given to Mr. Wiles (SUPPLEMENT, March 6th, p. 85). It was not possible for Insurance Committees to effect a settlement more frequently than once a year. The regulations provided, however, for very substantial payments on account at least once a quarter.

Association Notices.

CHANGES OF BOUNDARIES.

TRANSFER OF ABERCRAVE AND YSTRADGYNLAIS FROM NORTH GLAMORGAN AND BRECKNOCK TO SWANSEA DIVISION.

THE following change has been made in accordance with the Articles and By-laws and takes effect as from the date of publication of this notice:

That the Parish of Ystradgynlais Lower be transferred from the area of the North Glamorgan and Brecknock Division of the South Wales and Monmouthshire Branch to that of the Swansea Division of the same Branch, the areas of the two Divisions being modified accordingly.

Representation in Representative Body.—Unaffected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.—Dr. J. A. Lee, Honorary Secretary *pro tem.*, gives notice that a meeting of the Division will be held at the Pontypool and District Hospital, on Thursday, March 18th, at 3.45 p.m., to discuss (1) the terms of contract practice and rates of remuneration throughout the Division; (2) the question of free attendance on dependants of men serving with His Majesty's Forces, as requested by the Newport Panel Committee. Clinical cases and specimens. (Members are requested to show any cases of interest.)

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Fleet Surgeon LAWRENCE BIDWELL, to the *Marmora;* Surgeon HORACE E. R. STEPHENS, to the *Vivid*, additional, for disposal; Temporary Surgeons WILLIAM P. COWPER, to the *Vivid*, additional, for Plymouth Hospital; JOHN MORRISON, M.B., to the *Vivid*, additional, for R.N. Barracks; NORMAN V. WILLIAMS and JAMES G. JUDSON, to the *Pembroke*, additional, for disposal: FRANCIS J. R. COWIE and ALEC. G. HOLMAN, to the *Victory*, for disposal; JAMES F. QUIGLEY, M.B., to the *Vivid*, additional, for disposal.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeons W. J. A. QUINE, to the *Collingwood*, vice Todrick; HUGH S. REID, M.D., F.R.C.S., to the *Victory*, additional, for disposal; DONALD A. MACPHERSON, to the *Vivid*, additional, for disposal; Surgeon Probationer WILLIAM E. BOYD, to the *Columbine*, additional, for R.N. Hospital, Isle of Bute; JAMES E. PURVES and ALEXANDER T. WOODWARD have entered as Surgeon Probationers for temporary Service.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

MAJOR HENRY M. NICHOLLS, M.B., to be Lieutenant-Colonel.

To be Temporary Captains: Temporary Lieutenant ARTHUR MARTIN LEAKE, V.C., ARTHUR C. KEEP, M.D., GEORGE STOKER.

To be Temporary Lieutenants: WILLIAM B DAVY, JOHN F. HUTTON, M.B., JOHN A. F. HATCH, GEORGE A. SHIEL, MATTHEW H. FLEMING, FREDERICK A. MILLS, M.B., WILLIAM T. COLLIER, CLAUDE W. S. SABERTON, M.D., WALLACE C. G. ASHDOWNE, F.R.C.S., JOHN T. SMEALL, M.B., EDWARD B C. MAYRS, JOHN J. DUNNE, HAROLD A. ROWELL, IFAN S. JAMES, RICHARD D. FITZGERALD, M.B., LOUIS L. MCKEEVER, AUGUSTINE S. FRY, M B., REGINALD L. E. DOWNER, M.D., HENRY W. B. DANAHER, EDWARD S. GOODDY, F.R.C.S., HAROLD D. DUKE, CARL L. ANTHONISZ, CHARLES W. DONALD, M.D., F.R.C.S.E., BURGESS BARNETT, JOHN H. WRIGHTSON, M.B., HENRY J. MILLIGAN, M D., WILLIAM R. G. HAMILTON, F R.C.S.I., NINIAN E. M. HOME-HAY, M.B., DAVID C. ALEXANDER, M.B., ALEXANDER JAMIESON, M.B., ERNEST C. PEAKE, M.B., HAROLD ACKROYD, M.D, HUGH W. FOX, CHARLES S. PALMER, SYDNEY G. TIPPETT, M.B., ARTHUR R. CHAVASSE, M.B., GEORGE W. DAVIS, M.D., FRANK GRAVELY, GAVIN MUIR, M.B., FRANK G. MILNE, M.B., DAVID A. D. KENNEDY, M.B., WILLIAM H. BUTLER, JOHN P. WALKER, M.B., THOMAS B. MCKEE, M.B., MEREDITH M. TOWNSEND, GEORGE M. MAYBERRY, GERALD D. SHANN, FREDERIC C. BARLOW, JOHN KIRTON, M.B., HAYDEN PETERS, WILLIAM F. MORGAN, EDWARD JOHNSON, M.B., ROBERT CONDY, M.B., ERNEST B. LEECH, M.D., ERNEST W. WITHAM.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN GEORGE H. USMAR resigns his commission.

Captain THOMAS D. INCH, M.B., from the Unattached List, Territorial Force, to be Lieutenant.

Lieutenants confirmed in their rank; FREDERICK SANDERS, GEORGE S. PIRIE, HOWELL M. WILLIAMS, WILLIAM D. ANDERTON, EDWIN J. BRADLEY, FRANK OPPENHEIMER, JAMES W. WOOD, GEORGE M. SCOTT.

To be Lieutenants on probation: EDWARD W. MANN, M.B., Ex-Cadet O.T.C., WILLIAM T. HARE, CHARLES M G. CAMPBELL, Ex-Cadet O.T.C., NOEL H. W. SAW, JOHN D. MACCORMACK.

INDIAN MEDICAL SERVICE.

THE services of Captain H. A. H. ROBSON, M.B., are placed, temporarily, at the disposal of the Government of the Punjab, for employment as Officiating Superintendent, Central Lunatic Asylum, Lahore.

Lieutenant-Colonel C. R. PEARCE, M.B., is appointed to the Bacteriological Department substantively *pro tempore*.

To be Temporary Lieutenants: C. STIEBD, M.B., F.R.C.S.E., S. G. RANADAY, S. N. MUKERJI, M.B., F.R.C.S.E., S. N. CHAUDHURI, D. V. GIRI, J. K. NARIMAN, R. C. P. BERRYMAN, G. C. RAMSAY, M.B., K B. KANGA, F.R.C.S.E., G. L. BATRA, M.B., J. B. DE W. MOLONEY, M.B., F.R.C.S.E., B. P. SAHAWALA, F.R.C.S., P. PRASAD, M.B., S. ROY, M.B., F.R.C.S.E., J. M. D. GUPTA, M.B., M. B. YIN, M.B., P. BANERJEE, T. H. BISHOP, S. S. BANKER, I. D. GRANT, M.B., K. K. DADACHANJI, P. J. KOLAPOREWALLA, A. BOSE, M.B., S. R. KAPOOR, D. P. OLIVER, M.B., C. M. GANAPATHY, M.B., M. G. BHANDARI, M.B.

Lieutenant-Colonel D. M. DAVIDSON, Civil Surgeon, Lahore, is appointed to be Professor of Midwifery, Medical College, Lahore, in addition to his own duties, with effect from December 1st, 1914.

Captain R. H. BOTT, M B., F.R.C.S., is appointed to be Professor of Surgery, Medical College, Lahore, substantively *pro tempore*, with effect from December 1st, 1914.

J. R. H. WALKER, M.D., is granted the temporary rank of Lieutenant, with effect from December 22nd, 1914.

The Military Cross has been conferred on Captain K. I. SINGH, M B. (deceased).

The Volunteer Officer Decoration has been conferred on the Honourable Surgeon-General Sir C. P. LUKIS, K.C.S.I., K.H.S., M.D., F.R.C.S.

Lieutenant-Colonel J. FISHER, D.S.O., Residency Surgeon, Jaipur, is appointed temporarily to hold visiting charge of the offices of Agency Surgeon, Eastern Rajputana States, and Agency Surgeon, Kotah and Jhalawar, in addition to his own duties, with effect from December 29th, 1914.

Major W. M. ANDERSON, Medical Officer, IV (Quetta) Division, Quetta, is appointed to hold charge of the current duties of the office of the Civil Surgeon, Quetta, in addition to his own duties, with effect from November 18th, 1914.

The retirement of Lieutenant-Colonels ARTHUR C. YOUNAN and VIVIAN G. DRAKE-BROCKMAN has been approved.

To be Brevet Lieutenant-Colonel: Major FRANK WALL.

To be Major: Colonel GEORGE FRANCIS ROWCROFT, D.S.O., Indian Army, retired.

The promotion of Major ANDREW MURPHY to his present rank is antedated from June 27th, 1913, as notified in the *London Gazette* of August 15th, 1913, to December 27th, 1912.

Lieutenants to be Captains: DENIS F. MURPHY, M.B., LEON F. BRANDENBOURG, M.B.

To be Temporary Lieutenants: VINAYAK MAHADEO PHATAK, HIRA SINGH ANAUD, HENRY C. SEMON, M.D., ARTHUR WILLIAMS, PHERON FRAMJI LASKARI.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

London Mounted Brigade Field Ambulance.—ERNEST G. T. POYNDER to be Lieutenant.

First London (City of London) Sanitary Company.—WILLIAM N. W. KENNEDY, M.B., to be Lieutenant.

Third London General Hospital.—Captain DENNIS EMBLETON is seconded. PHILIP W. GREEN to be Lieutenant.

Fourth London Field Ambulance.—Major ARTHUR E. JERMAN, M B., to be Lieutenant-Colonel, temporary. Captains to be Majors: PERCY W. THOMPSON, JOHN R. HOLMES, M.B.

Second Home Counties Field Ambulance.—Captain ANTONY A. MARTIN M D., from First Home Counties Field Ambulance, to be Captain.

Third Home Counties Field Ambulance.—Major STANLEY A. COAD to be Lieutenant-Colonel, temporary. Captain JAMES BARKLEY to be Major, temporary.

Third Southern General Hospital.—JAMES A. GUNN, M.D., to be Lieutenant.

Second South Midland Mounted Brigade Field Ambulance.—HENRY J. BLACKLER, M.B., to be Lieutenant.

East Anglian Casualty Clearing Station.—Captain JOHN H. DAUBER, M.B., F.R.C.S.I., from Attached so Units other than Medical Units, to be Major.

Third East Anglian Field Ambulance.—Major GEORGE A. TROUP, M.D., to be Lieutenant-Colonel, temporary.

South Wales Mounted Brigade Field Ambulance.—Major HERBERT JONES to be Lieutenant-Colonel, temporary

Welsh Casualty Clearing Station.—Major ALEXANDER P. SWANSON, from Attached to Units other than Medical Units, to be Lieutenant-Colonel, temporary.

First Welsh Field Ambulance.—To be Lieutenants: HENRY MILLS, ALEXANDER E. MACKENZIE. Lieutenant A. JONES, from Attached to Units other than Medical Units.

Third Welsh Field Ambulance.—Captains, from Attached to Units other than Medical Units, to be Captains: FREDERICK A. W. DRINKWATER and PERCY C. P. INGRAM, M B. Lieutenant PEYTON T. WARREN, from Attached to Units other than Medical Units, to be Lieutenant.

Third East Lancashire Field Ambulance.—HENRY WILSON, M.B., to be Lieutenant.

First West Riding Field Ambulance.—Lieutenant HENRY N. GOODS, M B., F.R.C.S., to be Captain, temporary.

Second Northumbrian Field Ambulance.—Captain ARTHUR C. H. MCCULLOGH, M.B., to be Major, temporary.

Lowland Casualty Clearing Hospital.—Lieutenant-Colonel PETER F. SHAW resigns his commission on account of ill health, and is granted permission to retain his rank and wear the prescribed uniform.

First Scottish General Hospital.—GEORGE STUART, M.B., to be Captain, whose services will be available on mobilization.

Sanitary Service.—Captain LEONARD R. TOSSWILL, from the Third East Anglian Field Ambulance, to be Sanitary Officer, East Anglian Reserve Division.

Attached to Units other than Medical Units.—Major JOHN GRIFFITHS from South Wales Mounted Brigade Field Ambulance, to be Major. Captain LEONARD A. AVERY, to be Major, temporary. Lieutenant ROBERT DONALD to be Captain. To be Lieutenants: MICHAEL BRANNAN, M.B., late Cadet, Durham University Contingent, Senior Division, O.T.C., CECIL R. HARPER, JOSEPH L. BASKIN.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In the ninety-six large English towns 9,024 births and 7,040 deaths were registered during the week ended Saturday, March 6th. The annual rate of mortality in these towns, which had been 18.9, 20.7, and 20.4 per 1,000 in the three preceding weeks, fell to 20.2 per 1,000 in the week under notice. In London the death-rate was equal to 20.6, against 19.5, 20.8, and 21.1 per 1,000 in the three preceding weeks. Among the ninety-five other large towns, the rate ranged from 9.6 in Wimbledon, 10.3 in Edmonton, 10.6 in Hornsey, 12.5 in Leyton, 13.1 in Southend, and 13.7 in Swansea, to 26.6 in Hastings, 28.3 in West Hartlepool, 30.2 in Halifax, 30.7 in Cambridge and in Darlington, 31.2 in Bath, and 34.3 in Stockton-on-Tees. Measles caused a death-rate of 2.9 in Ealing, 3.1 in Tottenham, 3.2 in West Hartlepool, 3.3 in Salford, 3.6 in St. Helens, 3.8 in Wolverhampton, 3.9 in Gateshead, 4.0 in Rotherham, 4.4 in Darlington and in Stockton-on-Tees, 5.7 in Northampton, and 7.2 in Cambridge, and whooping-cough of 1.2 in Brighton, in Reading, in Blackburn and in Merthyr Tydfil, 1.5 in Bath, 1.6 in St. Helens, 2.0 in Aberdare, 2.1 in Bootle, and 2.2 in Ealing. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 81, or 1.2 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 16 were recorded in Liverpool, 13 in Birmingham, 5 in Preston, 4 each in Stoke-on-Trent and Darlington, and 3 each in St. Helens, Rochdale, and Blackpool. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,299, 3,165, and 3,041 at the end of the three preceding weeks, further fell to 2,943 on Saturday, March 6th; 298 new cases were admitted during the week, against 368, 295, and 302 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,188 births and 956 deaths were registered during the week ended Saturday, February 27th. The annual rate of mortality in these towns, which had been 24.1, 23.1, and 22.8 per 1,000 in the three preceding weeks, fell to 21.2 in the week under notice, but was 0.8 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 9.4 in Clydebank, 9.5 in Hamilton, and 11.3 in Motherwell, to 24.0 in Leith, 24.3 in Kirkcaldy, and 30.9 in Dundee. The mortality from the principal infective diseases averaged 2.9 per 1,000, and was highest in Kilmarnock and Dundee. The 441 deaths from all causes in Glasgow included 45 from whooping-cough, 6 from measles, 5 from scarlet fever, 4 from infantile diarrhoea, 3 from diphtheria, and 1 from enteric fever. Twenty deaths from whooping-cough were recorded in Dundee, 5 each in Edinburgh and Greenock, and 4 each in Paisley and Kilmarnock, and from diphtheria, 4 deaths in Dundee and 2 in Edinburgh.

In the sixteen largest Scottish towns 1,236 births and 1,043 deaths were registered during the week ended Saturday, March 6th. The annual rate of mortality in these towns, which had been 23.1, 22.8, and 21.2 per 1,000 in the three preceding weeks, rose to 23.2 in the week under notice, and was 3.0 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 12.9 in Clydebank, 14.7 in Perth, and 15.3 in Kirkcaldy, to 27.4 in Greenock, 33.4 in Falkirk, and 40.6 in Dundee. The mortality from the principal infective diseases averaged 3.2 per 1,000, and was highest in Clydebank and Dundee. The 450 deaths from all causes in Glasgow included 47 from whooping-cough, 10 from measles, 6 from diphtheria, 4 from scarlet fever, 2 from enteric fever, and 2 from infantile diarrhoea. Twenty-five deaths from whooping-cough were recorded in Dundee, 8 in Edinburgh, and 3 in Greenock; from measles, 9 deaths in Dundee; and from diphtheria, 5 deaths in Edinburgh, and 2 in Aberdeen.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, February 27th, 647 births and 642 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 639 births and 617 deaths in the preceding period. These deaths represent a mortality of 27.6 per 1,000 of the aggregate population in the districts in question, as against 26.5 per 1,000 in the previous period. The mortality in these Irish areas was therefore 7.2 per 1,000 higher than the corresponding rate in the ninety six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 27.6 per 1,000 of population. As for mortality of individual localities that in the Dublin registration area was 34.4 (as against an average of 29.9 for the previous four weeks), in Dublin city 37.3 (as against 31.7), in Belfast 22.8 (as against 23.4), in Cork 26.5 (as against 31.3), in Londonderry 21.5 (as against 26.5), in Limerick 21.7 (as against 21.5), and in Waterford 39.9 (as against 23.8). The zymotic death rate was 1.7, as against 1.5 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ARROCHAR PARISH COUNCIL.—Medical Officer. Salary, £75 per annum.

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Locumtenent House-Surgeon.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary, £280 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salaries, £120 and £100 per annum respectively.

BIRMINGHAM: CITY MENTAL HOSPITAL, Winson Green.—Assistant Medical Officer. Salary, £250 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Honorary Surgeon.

BIRMINGHAM: QUEEN'S HOSPITAL.—Two House-Physicians. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOLTON INFIRMARY AND DISPENSARY.—Senior and Second House-Surgeons. Salary, £230 and £200 per annum respectively.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—Two Resident Medical Officers. Salary, £150 per annum each.

BRISTOL EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—Resident Obstetric Officer. Salary, £120 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CAMBERWELL: PARISH OF ST. GILES.—Temporary Resident Medical Officer at the Constance Road Institution. Salary, £350 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—House-Physician (male).

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn Road, W.C.—Resident House-Surgeons. Salary, £50.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CHESTERFIELD BOROUGH.—Medical Officer of Health. Salary, £500 per annum.

CHESHIRE COUNTY ASYLUM, Parkside.—Junior Assistant Medical Officer. Salary, £250 per annum.

COLCHESTER: ROYAL EASTERN COUNTIES' INSTITUTION FOR IMBECILES AND THE FEEBLE-MINDED.—Medical Officer. Salary, £200 per annum.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer. Salary, £250 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer (lady). Salary, £200 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—House-Surgeon. Salary, £150 per annum.

DORSET COUNTY COUNCIL.—Temporary Assistant Medical Officer of Health. Salary, £250 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

DUNDEE ROYAL INFIRMARY.—Resident Medical Officers. Salary, £100.

EDMONTON UNION INFIRMARY.—Second Assistant Medical Officer. Salary, £200 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—House-Surgeon.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer (male). Salary, £250 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—(1) Physician; (2) Assistant Physician; (3) House-Physician; salary, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician. Salary, £30 for six months and £2 10s. washing allowance.

HOSPITAL FOR WOMEN, Soho Square, W.—Resident Medical Officer. Salary, £80 per annum.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Two House-Surgeons. (2) Assistant House-Surgeon. Salary for (1) £100 and £60 per annum respectively, and (2) £50 per annum.

INVERNESS: NORTHERN INFIRMARY.—House-Surgeon. Salary, £150 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

LEEDS: GENERAL INFIRMARY.—Resident Medical Officer at the Ida and Robert Arthington Hospitals. Salary, £60 per annum.

LEEDS UNIVERSITY.—Demonstrator of Bacteriology. Salary, £250 per annum, rising to £275.

LEICESTER ROYAL INFIRMARY.—Ophthalmic House-Surgeon, etc. Salary, £100 per annum, and monthly bonus of £3 during the war.

LONDON UNIVERSITY.—University Chair of Physiology, tenable at St. Bartholomew's Hospital Medical School. Salary, £600 per annum.

LIVERPOOL ROYAL INFIRMARY.—Two House-Physicians, three House-Surgeons, and one House-Surgeon to Gynaecological Department. Salary, £60 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Surgeons; (2) House-Physician. Salary, £60 per annum.

MANCHESTER: ANCOATS HOSPITAL.—House-Physician. Salary, £80 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Medical Officer at the Out-patient Department. Salary, £100 per annum.

MANCHESTER CORPORATION.—Second and Third Medical Assistants at the Monsall Fever Hospital. Salary, £175 and £150 per annum respectively.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and, upon promotion, to £450.

MERTHYR TYDFIL COUNTY BOROUGH.—Assistant School Medical Officer. Salary, £300 per annum, increasing to £400.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

MIDDLESEX COUNTY COUNCIL.—Visiting Medical Officer for Temporary Home for Mentally Defectives, Clay Hill.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NATIONAL SANATORIUM, Benenden.—Assistant Medical Officer. Salary, £120 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—House-Surgeon. Salary, £150 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

OCHILTREE PARISH COUNCIL.—Medical Officer. Salary, £40 per annum.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Medical Officer. Salary, £200 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £10 honorarium on completion of six months' service.

RAINHILL: COUNTY ASYLUM.—Temporary Assistant Medical Officer. Salary, £6 6s. per week.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Acting Assistant Physician; (2) Male and Female House-Physicians and House-Surgeons; (3) Senior and Junior Obstetric Assistants.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—(1) Third House-Surgeon; salary, £50 per annum. (2) Dental Surgeon.

SALFORD ROYAL HOSPITAL.—(1) House-Surgeon; (2) Junior House-Surgeon; (3) Casualty House-Surgeon. Salary, £100 per annum each, and monthly bonus of £5 during the war.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SHEFFIELD CITY HOSPITALS.—Second Assistant Medical Officer. Salary, £225 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Lady Assistant House-Surgeon. (2) Lady Assistant House-Physician. Salary, £85 and £80 per annum respectively.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon. Salary, £180 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) House-Physician; (2) House-Surgeon. Salary, £150 per annum, rising £10 annually.

SUNDERLAND: ROYAL INFIRMARY (CHILDREN'S HOSPITAL).—Resident Medical Officer (lady). Salary, £100 per annum.

TAUNTON.—Medical Officer of Health, etc., for combined appointments. Salary, £450 per annum.

TOWCESTER UNION.—Medical Officer and Public Vaccinator for the Silverstone District. Salary, £80 per annum and vaccination fees.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £120 per annum.

WANDSWORTH UNION.—Assistant Male Medical Officer. Salary, £5 5s. weekly.

WESTMINSTER UNION INFIRMARY.—Third Assistant Medical Officer. Salary, £140 per annum, rising to £160.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop.—First and Second Assistants to the Medical Superintendent. Salary, £250 and £200 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WEST HAM UNION INFIRMARY.—Second Assistant Resident Medical Officer (male). Salary, £250 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Lady House-Surgeon. Salary, £150 per annum.

WOMEN'S HOSPITAL FOR CHILDREN, Harrow Road, W.—Assistant Physician, Assistant Surgeon, and Anaesthetist. Honorarium, £10.

WORCESTER EDUCATION DEPARTMENT.—Assistant School Medical Officer (lady). Salary, £300 per annum.

YORK: WEST RIDING.—Assistant Medical Officer at the Scalebor Park Asylum, salary, £250 per annum; or Locumtenent, salary £5 5s. per week.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Carnforth (Lancashire).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

COONEY, W. P., L.R.C.P. and S.I., Assistant Medical Officer to the Dudley Road Infirmary of the Birmingham Union.

CUTTLE, Miss G. E., L.M.S.S.A., Assistant Medical Officer to the Infirmary, etc., of the Birkenhead Union.

DIARY FOR THE WEEK.

TUESDAY.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester Square, W.C., 4.30 p.m.—Cases and Demonstration. 5 p.m.—Paper: The Importance of Detail in the Treatment of Diseases of the Skin, by Dr. A. T. Bremner.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, 5 p.m.—Third Milroy Lecture by Dr. E. L. Collis: Industrial Pneumonoconioses, with Special Reference to Dust and Phthisis.

ROYAL SOCIETY OF MEDICINE:

SECTION OF THERAPEUTICS AND PHARMACOLOGY, 4.30 p.m.—Professor A. R. Cushny, M.D., F.R.S.: Notes on Diuresis and on the Antagonism of Drugs.

WEDNESDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, 5 p.m.—Professor Rupert Farrant: The Effect of Toxins on the Tissues.

ROYAL SOCIETY OF MEDICINE:

SECTION FOR THE HISTORY OF MEDICINE, 5 p.m.—Professor A. R. Cushny, M.D., F.R.S.: William Withering. Dr. J. A. Nixon: Thomas Baynton. Dr. George C. Peachey: William Bronfield.

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—First Lumleian Lecture by Dr. Sidney Martin: Non-ulcerative Infections of the Colon.

ROYAL SOCIETY OF MEDICINE:

SECTION OF DERMATOLOGY, 5 p.m.—Exhibition of Cases at 4.30 p.m.:—Dr. G. Pernet: (1) Erythema Induratum (Bazin); (2) Iodide Eruption and Syphilis. Dr. W. K. Sibley: Case for Diagnosis. Dr. S. E. Dore and Dr. Kinnier Wilson: Case for Diagnosis. Mr. H. G. Adamson: Macular Atrophy. Dr. H. C. Samuel (introduced): Linear Naevus.

FRIDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, 5 p.m.—Professor Rupert Farrant: The Effect of Toxins on the Tissues.

ROYAL SOCIETY OF MEDICINE:

SECTION OF ELECTRO-THERAPEUTICS, 8.30 p.m.—Clinical Meeting.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W., 8.30 p.m.—Paper: Some Drugs of Tropical Origin, by Frank Lee Pyman, D.Sc., Ph.D.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Course will be given next week:

MANCHESTER HOSPITALS' POST-GRADUATE CLINICS.—Ancoats Hospital.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

BROAD.—On March 4th, at 64, Rodney Street, Liverpool, the wife of W. H. Broad, M.D., B.S., of a son.

BROTHERSTON.—At 11, Merchiston Bank Gardens, Edinburgh, on March 9th, the wife of William Brotherston, W.S. (Margaret Merry Smith, M.B., Ch.B., D.P.H.), a son.

DEATH.

STUART.—On March 9th—the result of a motor accident—Francis Arthur Knox Stuart, B.A.Camb., L.S.A.Lond., Senior Assistant Medical Officer, Graylingwell Hospital, Chichester. Son of the late Major Burleigh Stuart of Omagh, and of Mrs. Stuart, Ranelly, Crowborough. Aged 39 years.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MARCH.
12	Fri.	London: Standing Ethical Subcommittee, 2.30 p.m.
		London: Medical Inspection and Treatment of School Children Subcommittee, 3.30 p.m.
16	Tues.	London: Medico-Political Contract Practice Subcommittee, 2 p.m.
17	Wed.	London: Committee of Chairmen of Standing Committees, 2 p.m.
18	Thur.	London: Insurance Act Drug Tariff Subcommittee, 11.30 a.m.
		Monmouthshire Division, Pontypool and District Hospital, 3.45 p.m.
		London: Drug Pricing Conference, 7 p.m.
23	Tues.	London: Hospitals Committee.
		London: Grants Subcommittee, 2.15 p.m.
26	Fri.	London: Central Ethical Committee, 2 p.m.
29	Mon.	London: Dominions Committee (*provisional*).
		London: Naval and Military Committee (*provisional*).
30	Tues.	London: Conference of Secretaries Subcommittee, 12.30 p.m.
		London: Organization Committee, 2 p.m.
		London: Public Health Committee.
31	Wed.	London: Medico-Political Committee.
		London: Journal Committee, 2 p.m.
		APRIL.
21	Wed.	London: Finance Committee, 2 p.m.
28	Wed.	London: Council.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 20TH, 1915.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs.

BY ORDER.

MATTERS REFERRED TO DIVISIONS.

DIVISIONS are requested to take an early opportunity of considering the following reports and

(i) To instruct their Representatives as to the way in which they should vote when the recommendations contained in the reports are submitted to the Annual Representative Meeting, 1915, and

(ii) To forward to the Head Office any observations, suggestions, or amendments for the consideration of the Council, prior to the presentation of the reports to the Annual Representative Meeting.

I.

REPORT ON THE QUESTION OF FEES FOR TREATMENT OF JUVENILE MEMBERS OF FRIENDLY SOCIETIES.

1. The Council at its meeting on January 27th, 1915, considered a report of the Medico-Political Committee on the question of the treatment of uninsured persons on contract terms, which gave special attention to the question of the fees for the medical attendance and treatment of juvenile members of Friendly Societies.

2. From this report the following facts emerged :—

(a) That, in all, there have been approved on behalf of the Council since February, 1913, schemes for the Contract treatment of uninsured persons from only 29 areas—23 in the early part of 1913, and 6 between October, 1913, and November, 1914—the last one in July, 1914;

(b) That the submission of these schemes seems to have ceased.

(c) That it is well known that there are many districts in which uninsured persons are being attended at contract rates mostly, if not always, at less rates than those laid down by the Representative Body; and that it is because it would be extremely difficult to get practitioners to fight for these latter terms that many Divisions have not formulated schemes;

(d) That in the schemes (some being duplicates, *i.e.*, both payment per attendance and capitation) approved between February, 1913, and October, 1913:

8 were payment per attendance schemes. Four of these seem never to have come into operation but the other four are all now insolvent.

20 were capitation systems. In 9 of these Juveniles were to pay 1d. per week or less. In 5, Juveniles were to pay 1½d. or less. In 5, Juveniles were to pay 2d. per week; of these it appears that in 2 cases the terms were afterwards reduced; the other 3 cases were either not actually started or are not now flourishing.

3. Minute 141 of the Annual Representative Meeting, 1913, is the present policy of the Association as regards fees for the treatment of uninsured persons :—

Minute 141.—Resolved: That the Representative Body adopt the following principles as essential to the formation of any schemes for the provision of medical attendance and treatment of uninsured persons :—

(1) That, in general, in considering the necessity for obtaining the approval of the Council for schemes for the treatment of uninsured persons upon contract terms, the following principles and conditions must be adhered to :—

(a) Free choice of doctor by patient and of patient by doctor;

(b) Remuneration to be not less than that which is deemed by the Council to be equivalent to that paid in respect of insured persons—that is, 9s. per annum including medicines;

(c) Persons with a total income from all sources of £104 per annum or upwards, or the dependents of any such person, not to be treated under contract terms at all.

(2) That the Representative Body realises that the conditions in certain areas will not allow of the above terms being obtained, and that in these circumstances the approval of the Council may be given provisionally to a scheme involving a less payment when the local profession can show that the economic conditions in the area demand it.

(3) That one of the conditions necessary for the approval of schemes containing lower rates of payment shall be the inclusion amongst the rules, in a prominent position, of a statement that approval by the Association has been given to the rates only because of special economic conditions.

It will be noted that the Minute makes no specific reference to Juveniles, but, as will be observed from the above figures, both the State Sickness Insurance Committee under the terms of Minute 122 (S.R.M., November, 1912),

Minute 122.—Resolved: That until some general scheme of contract or other form of medical service is approved by the Association, the members of the British Medical Association decline, after March 25th, 1914, to undertake or

conduct any form of contract practice for non-insured persons, except upon such terms as shall be approved in Great Britain by the Council of the Association and in Ireland by the Conjoint Committee,

and later, the Medico-Political Committee under the powers conferred on it by the Council in pursuance of the above-quoted Minute 141 (A.R.M., 1913), approved scales of charges for the treatment of uninsured persons in which fees lower than National Insurance rates have been charged for Juveniles. The State Sickness Insurance Committee did so because it was of opinion that it was necessary to arrange for special terms for juveniles. It reported to that effect to the Council, but that body cut out the specific reference to juveniles in transmitting the resolution to the Annual Representative Meeting which afterwards became Minute 141. The Medico-Political Committee being convinced of the necessity for modifying the terms in the case of juveniles by the representations made to it by those Divisions which submitted schemes for approval made use for this purpose of paragraph 2 of Minute 141, which allowed provisional approval to schemes involving a less payment than insurance rates where the local profession showed that the economic conditions of the area demanded it.

4. The Chairman of Representative Meetings and the members of the Committee generally agreed that in using the paragraph in this way the Medico-Political Committee was not acting strictly in accordance with Minute 141, because paragraph 2 had no specific reference to juveniles. But the Committee appreciated the fact that such action had been dictated by the force of circumstances. On careful consideration of the whole case the Committee decided to recommend to the Council that that body should recommend the Representative Body to modify its policy as to the treatment of uninsured persons so as to allow of lower fees being charged for the treatment of juveniles over 3 and under 16, and the Council agrees with the recommendation.

5. The reasons which have led the Council to this decision are chiefly (1) that experience has shown that whatever the theoretical arguments may be in favour of charging the same fees for juveniles as for adults, in practice such fees are rarely if ever obtainable, and that it would be well for members of the profession to have this fact brought home to them. (2) That to continue to uphold as the formal policy of the Association a standard which is proved to be unattainable, does not seem to be a sound policy. (3) That to enforce such a standard in every Division of the Association would be impossible, and knowing this, to retain it is to weaken the force of the resolutions of the Representative Body in general, as such action tends to promote the belief that those resolutions are mere pious opinions. There are three chief reasons why the Association has up to the present attempted to exact the same fee for juveniles as for adults :—

(a) Because juveniles are said to require just as much attendance as adults, and therefore there is no reason why they should pay less. The figures which have been collected on this head, and the experience of some members of the Council seem to show that this is not so; but that juveniles between the ages of 5 and 16 require less attendance than adults, and certainly less than women.

(b) Because if a less fee were accepted, it would afford a pretext for the Government to reduce the present Insurance rate for adults. But the Council is of opinion there is not much fear now of any attempt being made to lower the fee paid for Medical Benefit under the Insurance Act. Experience has shown that the inclusion of women introduced a factor which many had not fully appreciated, and which has added very considerably to the work which doctors working the Act were expected to have to do. This fact is known to the Government and appreciated by them. In addition, Parliament having once voted the present remuneration, is not likely to refuse to continue it unless recommended to do so by the Government. And finally, seeing the enormous difficulties the Government have had in getting the medical side of the Act to work with even comparative smoothness, they are not likely to wish to create for themselves the very awkward situation which would arise if any attempt were made to decrease medical remuneration. An attempt to increase the amount of responsibility imposed on the doctor for the same remuneration seems much more likely.

(c) Because if a less fee be accepted now for juveniles, it will be impossible for the profession to ask the present adult rate on behalf of the dependents if, and when, dependents are included under Medical Benefit. The Council would submit that it is highly improbable that any Government would think of offering 9s. for each child in every family.

It may be pointed out, moreover, that the conditions under which the Friendly Societies are asking for reduced terms for juveniles would not apply in the case of the extension of the Insurance Act to dependents. The Friendly Societies would, no doubt, be satisfied with the conditions as to certification which applied to their members before the introduction of the Insurance Act and, in many ways, which do not need elaboration, the conditions under which these juveniles would be attended would be less onerous than those under which dependents would be required to be attended if the Insurance Act were extended to include them.

6. It must not be forgotten that the Friendly Societies are fighting for reduced terms for juveniles because they fear that if they have to put up their subscriptions for juveniles their Juvenile Lodges—the feeders of their ordinary Lodges—will be killed. If this happened the tendency would undoubtedly be for the Collecting Societies, with their army of collectors and agents having access to the homes of the people, to gain at the expense of the Friendly Societies, thus gradually securing more and more power for bodies which are purely commercial ventures. It is not likely that the profession would gain by this, for at present the representatives of the medical profession on Insurance Committees undoubtedly find it to their advantage to utilize the differences which exist between the two sections of the Approved Societies.

7. The Medico-Political Committee had the special advantage of meeting a deputation from the Manchester Unity of Oddfellows consisting of its Grand Master (Rev. F. C. Davies), and Messrs. Wright and Warren (Past Grand Masters) and reported thereon as follows :

During the discussion it was agreed to ignore the question of a specific income limit, and to assume that the class of juveniles referred to consisted to a very great extent of children of insured persons and those eligible to become insured persons.

The Deputation stated (1) that they did not consider it possible for the Society to entertain any sliding scale of payment according to size of families, and desired a definite capitation fee; (2) that their position was one of a fight for existence with the Collecting Societies, and that unless they could successfully run Juvenile Lodges as recruiting agencies, they were bound to be beaten out of the field; (3) that the benefits they would like to give their juvenile members would be · medical benefit (which they admitted was the most important, and without which their juvenile lodges would break down) and possibly payment of a sum at death; (4) that they would like the Association to specify on what terms it would be prepared to recommend practitioners to accept juveniles entered as members (a) from birth, (b) from 3 years, (c) from 5 years, but expressed their opinion that entry at 5 years would be too late for their purpose. Any fee quoted to be inclusive of drugs; (5) that the maximum subscription they could collect from parents of children of the class they were catering for was 1½d. per week or 6s. 6d. per annum, of which they thought 4s. 4d. per annum should suffice for medical benefit, leaving the remainder for provision of a payment on death and for administrative purposes.

The Deputation said they felt they were voicing the opinion of their Society as a whole when they said they were quite in accordance with free choice of doctor; that as regards those areas in which the local profession had organised a Public Medical Service they did not think there would be any difficulty in their juvenile members receiving their medical treatment through such Service, provided no difference was made between them and the original members of the Service.

8. After careful consideration it appears to the Council that in view of the above facts and taking into account that it is only proposed to accept juveniles at a decreased rate when they are between the ages of 3 and 16--before which they require the most attention and after which most of them as insured persons will pay the 9s. rate—there is a clear case at any rate for the most careful consideration of the Association.

Recommendations.

The Council submits the following recommendations to the Divisions and Representative Body :—

(a) That juvenile contract rates apply only to the children of persons eligible for the benefits of the Insurance Acts;

(b) that there shall be free choice of doctor by patient and of patient by doctor;

(c) that the contract rates for medical attendance on the children of those persons eligible for the benefits of the Insurance Acts should be not less than 4s. 4d. per annum, from the age of 3 years up to the age of 16.

II.

REPORT TO DIVISIONS AND REPRESENTATIVE BODY ON QUESTION OF FEES FOR MEDICAL EXAMINATIONS FOR LIFE INSURANCE.

(i.) HISTORY OF PREVIOUS ACTION BY ASSOCIATION.

1. The following is a brief report of the action which has been taken in the matter since it first received consideration by the Representative Body.

2. In 1904, the Norwich Division made a preliminary inquiry, locally and generally, the results of which were communicated to the Representative Body that year. At the Annual Representative Meeting, 1905, the Medico-Political Committee submitted a further report from the Norwich Division upon the matter and recommended that the whole matter be remitted to the Divisions for consideration. The Representative Body accordingly passed the following Minutes 115 and 116:—

> A.R.M., 1905: *Minute* 115.—Resolved: That, with a view to giving effect to the principles adopted in the report of the Norwich Division, it is desirable that the Association, through the Medico-Political Committee, should ascertain from the Life and Sickness Insurance Societies throughout the country the proportion between the amount of work expected from the Medical Referee and the fee offered to him by the Insurance Company.
>
> *Minute* 116.—Resolved: That the report on Insurance Fees be approved, and that it be suggested to the Divisions that each Division should take the question into consideration.

These instructions were renewed by the Annual Representative Meeting, 1906, consequent upon no action being taken during the Session 1905-6.

3. Early in 1907 the Medico-Political Committee communicated with the various Insurance Companies in the Kingdom and the information thus collected was forwarded in February, 1908, to the Divisions for their information, certain questions of fact and opinion being put to the Divisions by the Committee. (*See* Report to Divisions, Supplement to JOURNAL, February 22nd, 1908.)

4. After consideration of the replies of the Divisions the Committee, through one of its members, interviewed the General Managers, or their representatives, of eight of the leading Life Insurance Companies representing different types of Insurance work, when the proposition was put to them that in the opinion of the Association the time had arrived when the application of the principle that the fees paid to each medical examiner should bear a proportionate relationship to the sum assured (which principle was even then carried out to a certain extent), should be extended, in contradistinction to the present general practice of paying fees varying from 2s. 6d. up to £2. 2s. and not beyond.

5. The gist of such interviews may be summed up as follows:—

> (i.) that the majority of the companies were apparently sympathetic to the views put forward, agreeing that in many instances the fees paid for medical examinations were totally inadequate, and appeared disposed to admit that there was much to be said for the adoption of a scale of fees to medical men for life insurance examinations bearing a direct relationship to the degree of responsibility measured in terms of the sum assured;
>
> (ii.) that one company had dispensed altogether with medical examinations, the results of which practice, however, were considered as unsatisfactory by other companies;
>
> (iii.) that two of the largest and most important industrial companies were entirely unsympathetic to the proposition put before them, and one went so far as to state that for some time they had been preparing in anticipation of such a demand by the medical examiners and would if pressed in the matter either (a) adopt a system of whole-time medical officers, or (b) dispense with medical examination altogether.

6. The Council in considering the question in 1914 found that difficulties arose owing to the lapse of time since the approval by the Representative Body of the principle that the amount of payment of practitioners for this class of examination should be based on the amount of evidence required by the insurance company, which principle it first approved in 1905. The Annual Representative Meeting, 1914, decided that fees for life insurance examinations should be based upon the amount of evidence required in confirmation of the examiner's professional opinion of the life.

(ii.) RECOMMENDATIONS.

7. To give effect to this principle, it is necessary that some indication of the kind of report or opinion which could fairly be given for a stated fee should be given, and the Council therefore submits a recommendation hereon with model forms of Report. The Council does not wish it to be understood that it considers that the fee of £1 1s. will be adequate remuneration for each and every case upon which a practitioner may be called upon to give a full report. But, taking an average of such cases, and especially having regard to the facts quoted above as to the views of the leading insurance companies, the Council is of opinion that the time has come when the profession should state definitely for what fee it is prepared to give a certain kind of report. In view of what has happened in connection with the fixing of minimum fees for similar work, *e.g.*, examinations by referees under the Insurance Acts, the Council trusts that every effort will be made to impress on the Divisions the necessity for placing this matter fully before their members and securing a discussion on it so that Representatives may be fully informed as to the opinion of their constituents on the proposed fees and the practicability of their being obtained from the Insurance Companies.

Recommendation.

The Council submits the following recommendation to the Divisions and Representative Body:—

> That the following fees for medical examinations for life assurance be adopted:
>
> £1 1s. for a formal full report*, such as that contained in Appendix A.
>
> 10s. 6d. for a formal short report*, such as that contained in Appendix B.
>
> 5s. for a simple form of certificate*, such as that contained in Appendix C.

APPENDIX A.

FORM OF "FULL" REPORT.

Confidential Medical Report to the Directors of the.....
.....Life Insurance Company.

I.—CONFORMATION AND APPEARANCE.

1.	(a) Is the Proposer well formed? (b) Does he appear to be healthy?	(a) (b)
2.	(a) Is there anything injurious to health in the Proposer's occupation, or ordinary manner of life? (b) Or any reason to suspect past or present intemperance?	(a) (b)
3.	What is the height and weight?	Height..... Weight.....

II.—RESPIRATION.

1.	Is the chest well developed?	
2.	After examination of the chest by percussion and auscultation, (a) state if the resonance on percussion and the movements of the walls of the chest are normal (b) Are the breath sounds healthy, particularly in the subclavian region? and (c) state if there are any, and, if so, what abnormal pulmonary sounds?	(a) (b) (c)

*The Council takes no responsibility for the details of the forms, which were taken from the reports of certain Life Insurance Companies for purposes of illustration.

3. What is the actual number of respirations per minute?	
4. Is there a tendency to cough, spitting of blood, or bronchitis?	
5. Does anything lead you to suspect any disposition to disease in the lungs? (Note.—As phthisis is the chief cause of loss in Life Assurance, this is important.)	

III.—Circulation.

1. (a) What is the number of beats of the pulse per minute? and (b) what is its character?	(a) (b)
2. Are the impulse and sounds of the heart distinct and normal? If not, describe the abnormal signs	
3. Is there, or has there been, palpitation or syncope?	
4. Are the large blood vessels in a healthy condition?	
5. Do you suspect any disposition to cardiac disease?	

IV.—Digestive System.

1. Are the stomach, liver and bowels sound, and their functions normally performed?	
2. Is there, or has there been, tumour or swelling of any kind? If hernia (a) of what kind? and (b) is a truss worn?	(a) (b)

V.—Urino-Genital System.

1. (a) What is the specific gravity of the urine? (b) Is it healthy in quantity and quality?	(a) (b)
2. Does it contain albumen or sugar?	
3. Is there any difficulty or pain in passing it?	

VI.—Nervous System.

1. Are the brain, spinal cord, and organs of sense normal?	
2. Is there any tendency to apoplexy, paralysis, insanity, or other nervous disease?	

VII.—Applicable to Females.

1. Whether married?	
2. (a) Whether had any children or miscarriages? (b) If now pregnant?	(a) (b)
3. Is there any indication of uterine or ovarian disease, and it so, what?	

General Summary.

1. As the result of your personal examination, do you consider the Proposer eligible as a first-class life?	
2. Do any of the facts connected with the Proposer's habits of life, occupation, or family history mentioned in the "Personal Statement" or otherwise known to you, render any, and what increased assessment advisable?	

Signature of Medical Examiner .....
Address.....
Qualifications .....Date.....

APPENDIX B.

FORM OF "SHORT" REPORT.

Medical Examiner's Certificate.

Questions to be answered by the Medical Examiner.

1. Have you personally made a medical examination of the Proposer?	
2. What is the height and weight?	Height..... Weight.....
3. Is there hernia, and if so, of what kind, and is a truss worn?	
4. Is there any disposition to phthisis?	
5. As the result of your personal examination, and taking into consideration the general state of health, the condition of the several organs, the constitution and habits, do you consider the Proposer eligible as a first-class life? (If a female, state whether married or single, and any circumstances as to pregnancy, or otherwise, which you consider the officers of the Company ought to know.)	
6. Are there any facts connected with Proposer's habits of life, occupation, antecedents, or family history, on account of which you consider any extra premium should be charged?	

Signature of Medical Examiner.....
Address..... Qualifications.....

APPENDIX C.

FORM OF CERTIFICATE.

I,.....hereby certify that I have this day examined A.B., and believe him to be in good health and fit to be accepted for life assurance upon ordinary terms.

III.

REPORT ON ELIGIBILITY FOR ELECTION AS A MEMBER OF THE ASSOCIATION.

(Minute 306, A.R.M. 1913.)

1. At the Annual Representative Meeting, 1913, the following motion was brought forward by the late Natal Branch:

> *Minute 306.*—Proposed: (1) That the Council of the Association be instructed to take the necessary steps to have Section 4 of the Articles of Association deleted, and the following substituted:
>
> Any medical practitioner registered in any portion of the British Empire shall, subject to the By-laws, be eligible for admission as an ordinary member of the Association.
>
> 2. That By-law 17 (2) (v) (now 18 (2) (v)), be deleted, and that any other By-law in conflict with the foregoing new Section of the Articles be deleted or so altered as to be in conformity therewith.
>
> 3. That in applications for membership a declaration should be made that the applicant is registered in a certain portion of the Empire.

The motion was referred to the Council, with a view to a report on the subject being prepared for the A.R.M., 1914.

2. The Council, on the ground that the question was an important and far-reaching one, primarily affecting the profession outside the United Kingdom, and believing many Oversea Branches would object to any such change, circularized all such Divisions and Branches to obtain their opinion, and so reported to the A.R.M., 1914.

3. The Council has now had an opportunity of considering the proposal with the help of the replies received from the Oversea bodies.

4. In dealing with the question of eligibility for election it should be remembered that, once elected, a member becomes automatically a member of any Division or Branch into whose area he may at any time remove, and he cannot be got rid of except for serious misconduct. Further, it should be noted that the electing body in the United Kingdom is the Branch Council. In the Oversea Branches the electing body is defined by local rules. In the case of a candidate whose address is outside the area of any Branch, election is by the Council of the Association.

I. PRESENT POSITION AS REGARDS ELIGIBILITY FOR MEMBERSHIP.

5. The eligibility of medical practitioners for ordinary membership of the Association is defined by Article 4 and By-laws 5, 6, 7, and 18 (2) (v). From them it will be seen that eligibility varies in different areas.

(a) Eligibility for Election by Branch Councils in United Kingdom.

6. The candidate must be registered in the United Kingdom and resident within the area of the Branch.

(b) Eligibility for Election by Oversea Branches.

7. Oversea Branches may elect two classes of practitioners resident in their areas, namely:

(*a*) Practitioners registered in the United Kingdom.
(*b*) Practitioners not registered in the United Kingdom, but possessing such qualifications as the Branch has by its rules decided to recognize.

8. Oversea Branches, therefore, have greater freedom than Branches in the United Kingdom as regards the election of members, their eligibility being largely left to each individual Branch to determine by its rules.

(c) Eligibility for Election by Council of Association.

9. The Council can only elect to membership of the Association practitioners who are registered in the United Kingdom but are not resident in the area of any Branch.

10. A point has been made of the fact that there are many practitioners resident outside the area of any Branch of the Association who possess qualifications registrable in the United Kingdom, and who would make good members, but cannot be elected because they are not registered, as British registration is of no use to them.

11. This point is already being partly met by the change in Art. 4, sanctioned by the A.R.M., 1914, which gives the Council power to elect such suitable persons, though not registered.

12. In the case which has been raised of practitioners resident in unorganized areas just outside the area of an Oversea Branch, whom these Branches consider suitable members and would like to elect, it is suggested that the simplest way of dealing with them would be for the Branch to extend its boundaries to include their residence, or if there is any objection to this procedure, for the Branch to promote the formation of a new Branch in the unorganized area.

II. POSITION WHICH WOULD RESULT IF PRACTITIONERS REGISTERED IN ANY PORTION OF THE BRITISH EMPIRE WERE MADE ELIGIBLE FOR MEMBERSHIP.

13. The Natal motion contemplates that while the basis of eligibility should be materially altered, the machinery for election should remain three-fold as at present.

(a) Election by Branch Councils in the United Kingdom under the Natal Proposal.

14. A Branch Council in the United Kingdom would be able to elect any practitioner resident within its area who was registered in any portion of the British Empire, though he might not be registrable, and therefore unqualified to practise, in the United Kingdom. The Council is of opinion that the Home Divisions and Branches would strongly oppose such a change, regarding it as undesirable, except in the rare cases that now occur, that practitioners not registered in the United Kingdom should be able to be members of the Home Branches, and would prefer them to be excluded by the regulations rather than by the unpleasant process of blackballing.

15. Even under the present regulations, it has occasionally happened that a Home Branch has elected to membership of the Association a person resident temporarily in the United Kingdom, who, when he has returned to his Oversea home, has been locally unacceptable, and, indeed, had previously been locally rejected. The Council is persuaded that, if the proposed change were made, this unpleasant position would arise much more frequently.

(b) Election by Oversea Branches under the Proposal.

16. If the proposal were carried out the powers of the Oversea Branches would be considerably curtailed, for whereas at present they can lay down in their rules who (other than those on the British Register) shall be eligible for election by them to membership of the Association, the proposal would enable any practitioner registered in any part of the Empire to be a candidate for election, and would force on the Branches the necessity of excluding by vote any whose qualifications they thought were not such as rendered them suitable for membership of the Branch, and this decision might have to be come to with insufficient knowledge at short notice. There are qualifications which entitle those who hold them to practise in certain areas, but which the Council knows are held by several Branches not to be of such a standard as should entitle those who hold them to be members of the Association. The present by-laws were framed to give the Oversea Branches the widest possible powers of settling whom they will consider eligible for election. If the proposed change were made this power would disappear, and the Branches would have to consider and vote on every candidate who can show he is entitled to practise in any dominion, colony, or distant island, and no matter what standard of medical knowledge is there accepted. Some Branches purposely exclude certain orders of native practitioners, and their difficulties would be increased if they had to vote on each case.

17. There is a further and most important point to keep in mind. In some few areas in the Empire there is as yet no registration at all, so if registration of some kind were an essential qualification for election, the British Medical Association might in these places cease to exist.

18. It is thus obvious that the autonomy of the Oversea Branches which at present exists would be restricted by the proposal, and not enlarged.

(c) Election by the Council of the Association under the Proposal.

19. The new situation which would be created in respect of districts outside the area of any Branch by the proposal under consideration, if made operative, also requires careful consideration. Though the eligibility of candidates would be widened, the individual Oversea Branch would retain, in its right of refusing to *elect* a given candidate, the power of limiting its membership to practitioners considered suitable. The Council of the Association, on the other hand, ordinarily has no personal knowledge of practitioners resident outside the area of any Branch whose applications for membership come before it. The Council, therefore, could not with the same facility with which this could be done by a Branch, refuse to elect a given candidate on the ground that he was deemed to be unsuitable. In other words, election of such distant practitioners by the Council, given the requisite certificate of suitability and due notice, is necessarily a more automatic procedure than is that of election by a Branch of a practitioner resident in its area.

20. It should be borne in mind that if the Council elected, as it might from want of local knowledge, candidates residing outside any Branch but near the area of a given Oversea Branch, difficulties as regards extension of the boundaries of the Branch might arise, owing to the extension involving the automatic inclusion in the Branch membership of practitioners whom it would not on its own initiative have elected.

Question of Evidence of Registration under the Proposal.

21. It would in many cases be practically impossible for the electing body to obtain evidence, other than his declaration to that effect, that a candidate was actually registered in some portion of the Empire. In practice this would mean that frequently a mere declaration by a practitioner that he was registered would have to be accepted as sufficient qualification for eligibility for election.

REPLIES OF OVERSEA BODIES UPON PROPOSAL.

22. Replies have been received by the Council on the subject of the proposal from 13 of the Oversea bodies. Of these, 2 (Natal Inland and Queensland Branches) approve, and 11 (Border, Cape of Good Hope Western, Ceylon, Hong Kong and China, New South Wales, New Zealand, Punjab, Tasmanian, and Western Australian Branches, and Auckland, and East Griqualand Divisions) disapprove the proposal.

23. In replying, the Natal Inland Branch (substantially representing the discontinued Natal Branch) has expressed the opinion that the Council in placing the subject before the Oversea bodies for their consideration has not stated the case completely. The Council has therefore drawn the attention of the Branch to the fact that the machinery of the Association provides facilities for the full and free discussion of all proposals for amendment of the Association's regulations or policy that may at any time be put forward by any member, Division, or Branch, and that it would be open to the Branch to bring the matter forward more fully by the Branch submitting to the Divisions and Representative Body, together with any further motion the Branch might think fit to bring forward on the subject, a memorandum, prepared by the Branch itself, stating all the arguments which the Branch might wish to advance in support of its views. The Council has also expressed to the Branch and to Dr. Campbell Watt, the Honorary Secretary of the South African Committee, the originator of the proposal, its appreciation of the trouble taken by them in bringing forward a proposal which they consider would benefit the Association and the profession.

Recommendation.

The Council submits the following recommendation to the Divisions and Representative Body:—

> That on the information in its possession, including the replies on the subject received from the Oversea bodies, the Representative Body is of opinion that no change such as was contemplated by the motion of the late Natal Branch contained in Minute 306 of the A.R.M., 1913, should be made in the Articles and By-laws of the Association as to eligibility for membership, other than the alteration of Article 4 already decided upon by Minute 68 of the A.R.M., 1914.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, April 28th, in the Council Room, 429, Strand, London, W.C. The Chairman is not yet in a position to name the hour, but it will be notified as soon as he is able to see the amount of business to be dealt with.

By order,

GUY ELLISTON,
Financial Secretary and Business Manager.

March 18th, 1915.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Meetings of Branches and Divisions.

SOUTH-EASTERN OF IRELAND BRANCH.

A MEETING of the South-Eastern of Ireland Branch was held at Carlow on March 3rd. Dr. GEORGE MACKESY was in the chair, and Dr. T. Hennessy, Irish Medical Secretary, attended.

Report.—The annual report was unanimously approved and adopted.

Amalgamation of the British Medical Association and Irish Medical Association.—The resolution unanimously passed by the medical practitioners of the co. Monaghan at a meeting held on December 11th, 1914, at Castleblaney, and approved by the Irish Committee of the British Medical Association at its meeting on January 12th, 1915, was read and adopted:

> That we consider it advisable in the interests of the medical profession in Ireland in view of the fact that the British Medical Association has established an office in Ireland and appointed a secretary for Irish business that the British Medical Association and the Irish Medical Association be amalgamated.
>
> That the inclusive fee for membership be £2, and that in arranging the amalgamation the salaries and appointments of the present officials of the Irish Medical Association be protected.

Approved Societies and Existing Arrangements for Medical Certification.—The following resolution received from Tipperary (S.R.) Insurance Society was considered:

> That this Committee having had before them several cases of severe hardships to the sick poor, owing to the present system of certification in country districts, are unanimously of opinion that the system must be radically altered. Pending satisfactory arrangements being made, this Committee suggest for the sake of the sick poor that the Irish and British Medical Associations may advise the Poor Law medical officers who are members of those associations that they shall be at liberty, if they wish to do so, to certify for patients on whom they are actually in attendance for a period not exceeding six months.

A Committee consisting of Drs. Power, C. E. Ryan, George Russell, T. O'Connell, R. R. O'Brien, and P. J. Stephenson (Secretary) was appointed to meet the South Tipperary Insurance Committee, to discuss the matter with a view to an amicable understanding.

Medical Certifiers.—At a meeting of the Council of the Branch the resolution unanimously adopted by the Irish Committee of the British Medical Association on January 12th was considered, and the Council resolved to recommend the Branch to adopt the resolution. The matter will be considered at a special meeting of the Branch to be held at an early date.

NON-PANEL PRACTITIONERS AND THE NEW INSURANCE CERTIFICATION SYSTEM.

NON-PANEL practitioners have doubtless followed with interest the efforts made by the Insurance Act Committee in pursuance of the instruction of the Council, to secure recognition by the Approved Societies of the certificate of any registered practitioner for National Insurance purposes. The experience of the Head Office of the Association seems to show that the protests made by non-panel practitioners and their patients, coupled with the action of the Commissioners, have materially improved the situation. The latest action of the Commissioners in issuing, at the request of the Association, to all approved societies the Circular A.S. 161 printed below, will no doubt still further facilitate matters. The Association is prepared to take legal action in cases in which Approved Societies still discriminate in an unjustifiable manner between the certificates of panel and non-panel practitioners. At the present moment the particulars in one such case are in the hands of the solicitor of the Association, whose advice in regard to the matter will be followed.

The Insurance Act Committee is, however, particularly anxious to enable non-panel doctors to save themselves and their patients the unnecessary trouble and delay the Committee feels is bound to arise so long as the patient of the non-panel doctor is not able to forward to his approved society a form which (like the official form) contains not only the doctor's certificate, but the declaration of the patient. It will have been noted that the Commissioners, in their letter to the Association of February 17th (SUPPLEMENT, February 20th, p. 66), made the suggestion that the Association might meet this difficulty by printing a form like the official form, but sufficiently distinct from it to show that it was not signed by a doctor under agreement with an Insurance Committee. Such a form could be sold at cost price, and its use would probably enable the practitioner to save himself and his patients much annoyance. Before proceeding further in the matter, the Insurance Act Committee desires to have the opinions of non-panel practitioners on this question, so that the extent of the demand for such forms, and therefore the desirability or otherwise of the Association undertaking their supply, could be estimated. Letters on the subject should be addressed at once to the Medical Secretary, 429, Strand, London, W.C.

This Circular is issued under the authority of the Insurance Commissioners for England, Scotland, and Wales. It does not apply to Ireland.

Circular A.S. 161.

NATIONAL HEALTH INSURANCE.

I.

CERTIFICATES FROM DOCTORS ATTENDING MEMBERS IN A PRIVATE CAPACITY.

1. The Commissioners have received numerous enquiries from Societies as to the arrangements they should make, in view of the new certification system described in Circular A.S. 156, for members who are attended by doctors in a private capacity at their own expense.

2. It should be clearly understood that the new forms, Med. 40, have been supplied not only to doctors on the panel and to medical officers of institutions approved under Section 15 (4) of the Act of 1911, but also to all doctors not on the panel who are attending persons "who have made their own arrangements for medical benefit" with the consent of the Insurance Committee under Section 15 (3) (*i.e.*, members who have arranged to receive a contribution towards the cost of attendance from a private doctor, instead of availing themselves of their right to attendance from a panel doctor). In all these cases, therefore, the ordinary forms Med. 40 will be produced to the Society by the member in the ordinary course.

3. There remains, however, the case of persons who, though they are entitled to receive medical attendance as one of their benefits under the National Insurance Act, voluntarily forego that right (whether generally or in a particular illness), and, at their own expense, obtain the services of a doctor who attends them in a private capacity and not under the Act. The forms Med. 40 have not been supplied to doctors for use in these cases. These official forms are a part only of the whole system of certification embodied in the Medical Certification Rules, to which indeed the wording of the forms makes explicit reference, and on which they depend for a part of their effect. The forms themselves would be misleading if used in the case of treatment in a purely private capacity in which the Rules did not apply. For example, the new certification system contemplates that a Society will be able to make a full weekly payment on its ordinary pay day, even though the last certificate received only certifies the man as incapable up to a few days before that pay day. This is because the Rules (which of course apply only to doctors who have entered into a contract under the Medical Benefit Regulations) provide for the doctor taking special steps to see that he gives a final certificate directly the man becomes capable of work. The Society can properly assume therefore in ordinary cases that where no such final certificate has been received the man is still incapable. No such obligation rests upon a doctor attending an insured person in a private capacity. To take one other instance: if a doctor who is acting under the Medical Certification Rules gives a certificate on Form Med. 40, in which he states "debility" as the cause of incapacity, without sending an explanatory letter under Rule 11, the Society is entitled to assume in accordance with that Rule that the practitioner's knowledge of the insured person's condition at the time of examination does not enable him to give a more precise description. But in the case of a doctor who is not acting under those Rules such an assumption cannot be made. If, however, the same forms Med. 40 were received from members being attended by doctors in a private capacity, it would be difficult, if not impossible, for the Society to distinguish their case from that of members receiving medical attendance in the ordinary way.

For the above reasons the ordinary certificates will not be available in respect of members receiving medical attendance in a private capacity.

4. At the same time the Commissioners desire to point out in the clearest terms that insured persons do not disqualify themselves from receiving Sickness Benefit by obtaining their certificates from doctors thus attending them in a private capacity. The introduction of the new system of certificates has not altered the rights of members in this respect. Societies will doubtless continue to receive letters or other forms of certificate signed by doctors attending some of their members in a private capacity. Some of these may be on a printed form with which such doctors provide themselves for their own use, and may no doubt in some cases be generally similar in wording to the official form Med. 40, including the same provisions for Notice of Sickness and for the other Declarations by the member. Societies will, of course, find it necessary, for the reasons above indicated, to distinguish these certificates from those on the official forms; and they will readily be able to do so if only because the words "Form Med. 40" (implying as they would that the form was official) must necessarily be omitted from the top right-hand corner. But though a Society must distinguish these certificates, it must give them due consideration. A Society is not entitled to refuse to receive and consider, in connection with a claim to benefit, certificates not given under the Medical Certification Rules. On the contrary, a Society is bound to take into due consideration any medical certificate put forward in support of a claim.

5. This obviously does not mean that benefit must be paid on every certificate. The Society has a responsibility which it is bound to discharge, and every certificate must be considered on its merits. Even where a certificate is on the official form and signed by a panel doctor in the ordinary way, the Society should, of course, not pay without consideration. It should consider the certificate and decide whether it affords sufficient evidence for payment or whether further information is desirable, arranging special sick visiting or referring the case to a medical referee as may be required. And where the certificate is not on form Med. 40 (and is therefore the certificate of a doctor who has attended the member in a private capacity), enquiries must often be needed which the understandings embodied in the Medical Certification Rules render unnecessary in cases certified under those Rules.

II.

FINAL CERTIFICATES.

(This applies to all members, whether attended by a Panel Doctor or not.)

1. Approved Societies are reminded of the importance of directing the attention of members claiming Sickness or Disablement Benefit to the necessity of obtaining the Final Certificates from the doctor on the last day on which they are unfit for work.

2. With a view to assisting Societies in this repect, the Commissioners have prepared a short leaflet (Form A.S. 167, copy enclosed) for issue to each member who "declares on" as soon as there is occasion to communicate with him. In general this will be when the sick visitor calls, but in

some cases it may be when the first payment of benefit is made, or where special inquiry is necessary. *Copies of the leaflet will be forwarded on application. Societies desiring a supply should write to the Commissioners stating the number required.*

March, 1915.

ALTERATIONS IN INSURANCE ACT REGULATIONS.

THE following letter has been received for publication by the Medical Secretary, who had drawn Sir Robert Morant's attention to certain statements made at a meeting of the Panel Medico-Political Union relative to revolutionary changes in the Regulations which it was alleged were going to be introduced in July next:

National Health Insurance Commission
(England),
Buckingham Gate, London, S.W.,
March 17th, 1915.

Dear Dr. Cox,—In reply to the questions you have asked me as to various statements contained in the *Medical World's* report of a meeting on March 4th, I may say at once that there is *no foundation whatever* for the idea that "in July next there will be revolutionary changes in the Commissioners' Regulations and in the profession's terms of service."

Normally, as you know, changes in the Medical Benefit Regulations are made only at the end of a calendar year, and are mooted and discussed some three or four months before the close of the year. Power was taken under the Regulations for 1915 to make changes *during the year* instead of waiting till the end of the year; but it was carefully explained in our Memorandum 201/I.C., issued in September last (and also noted in the BRITISH MEDICAL JOURNAL SUPPLEMENT of October 10th), that there was no intention of using this power during the war except in order to meet any entirely unforeseen contingency that might arise rendering "necessary or desirable in the view of all concerned" some immediate changes. (See paragraphs 5 and 6 of the Memorandum.) Nothing of this kind has arisen, and consequently no changes of any kind have been under consideration here for adoption during the currency of the present year. I cannot imagine what could be adduced as grounds for the alleged belief.

In this connexion I think I ought also to remind you that the speaker in question completely misrepresented the position in saying that this Commission "takes no notice of representations made by panel practitioners." Quite the contrary is the case, as has been shown by us on innumerable occasions. You will remember, for instance, the numerous conferences we had last year with panel doctors in regard to certification.

In the next place, I must ask you to note the wholly unjustifiable insinuation that money is withheld by the Commission from the profession in respect of temporary residents and travellers; for you know that this money is in fact distributed in full in the manner set out in the Regulations forming part of the practitioners' agreements.

I will not lengthen this letter by contradicting the numerous other grave misstatements of fact contained in the published report to which you have drawn my attention, but I cannot conclude without saying that there is *no justification whatever* for the statement made in regard to the new supplementary medical services described in Parliament last May—namely, that there is "a very reasonable probability" that "all these services, originally arranged to be paid for by special parliamentary grants, will now be charged to the Medical Benefit Fund, and will come out of the pockets of the panel doctors." No such proposal has been under contemplation. The grants provided for these purposes in the current Estimates will reappear in the forthcoming Estimates for 1915–16, and the situation in regard to them has so far remained quite unaltered except that, of course, while the war continues it will clearly be inexpedient (in the view of the profession as much as of ourselves) to proceed with the inauguration of some of these new services.

It is not the usual custom of this Commission, or of other Government departments, to contradict misstatements in the press like those here in question. But, since you have asked for the information, on the ground that the profession cannot but be perturbed if such categorical statements are not declared to be incorrect, and since the speaker referred to his various misstatements as "facts," and said that he was stating them "without any attempt at rhetoric," it seems incumbent upon me to assure you, in reply to your questions, that they are wholly without foundation.—I am, yours very truly,

ROBERT L. MORANT.

[We are informed that a copy of this letter has been sent by the Medical Secretary to the editor of the *Medical World*.]

LOCAL MEDICAL AND PANEL COMMITTEES.

HERTFORDSHIRE.

PANEL COMMITTEE.

A MEETING of the Hertfordshire Panel Committee was held at the Red Lion Hotel, Hatfield, on October 23rd, 1914.

Members of Committee.—The RETURNING OFFICER submitted the names of the elected members of the Panel Committee for the year ending July 15th, 1915.

Elections.—Dr. Sidney Bontor, of Berkhamsted, was elected Chairman, and Dr. H. D. Ledward, of Letchworth, Secretary of the Committee. Dr. A. J. Boyd, of Ware, was appointed a member to fill a casual vacancy in East Herts. In accordance with the provisions of the scheme for the constitution of the Panel Committee, the following six medical practitioners were appointed members: Dr. W. F. Clark (Cheshunt), Dr. Sidney Clarke (St. Albans), Dr. Claud Fothergill (Chorleywood), Dr. C. Herbert Hall (Watford), Dr. Robert Odell (Hertford), Dr. C. E. Shelly (Hertford).

Terms of Service for Year 1915.—The terms of service of practitioners on the panel for the medical year 1915, as set out in Memorandum 201/I.C., were considered and approved.

Supply of Drugs and Appliances.—It was resolved to inform the Insurance Committee that the Committee agreed with the method suggested in the proposed tariff for fixing the prices of drugs liable to fluctuation owing to the war, and proposed to prepare, in consultation with the Pharmaceutical Committee, a small county pharmacopoeia to assist economy in prescribing.

Finance.—An estimate of £63 3s. for expenses for the half year ending December 31st, 1914, submitted on behalf of the Pharmaceutical Committee, was approved. The Honorary Secretary reported that a balance of £26 7s. 7d. had been handed over by the preceding Committee, and that about 170 practitioners out of 180 had agreed to a further voluntary levy not exceeding ½ per cent. of the total amount received for medical attendance and treatment of insured persons. A letter from the Accountant of the Insurance Committee was received, stating that payments to practitioners for the quarter ending October 11th would be reduced by 5 per cent. owing to the large number of insured persons enlisting or called back to the colours.

Medical Attendance upon Dependants of those Serving with the Colours.—In connexion with the scheme for providing free medical attendance and treatment for dependants of those serving with the colours, Dr. F. C. Evill, of Barnet, was elected to represent practitioners on the Hertfordshire Relief Committee.

A meeting of the Committee was held at the offices of the British Medical Association, 429, Strand, W.C., on December 16th, 1914, when Dr. S. A. BONTOR was in the chair, and thirteen other members were present.

"*Stock Mixtures.*"—The report of a subcommittee appointed at the last meeting to prepare a list of ten "stock mixtures," in consultation with representatives of the Pharmaceutical Committee, was received, and it was decided that no county formulary with a view to a reduction in the dispensing fee should be adopted for the ensuing medical year; but a subcommittee was appointed to draw up a pharmacopoeia for the county for submission to the Panel Committee in order to encourage economy in prescribing.

Local Medical and Panel Subcommittee of the British Medical Association.—The Honorary Secretary was instructed to answer the schedule of questions asked by the Local Medical and Panel Subcommittee of the British Medical Association (Circular M. 2), and also to enter into the steady and close relationship with the head office of the Association as outlined in the letter received.

Railway Fares.—The payment of first class return railway fares to members attending meetings of the Panel Committee was approved.

LIVERPOOL.

PANEL COMMITTEE.

A MEETING of the Liverpool Panel Committee was held on February 23rd, when Mr. F. CHARLES LARKIN was in the chair.

Co-operation with the British Medical Association.—A communication from the British Medical Association in reference to co-operation between the Association and Local Medical and Panel Committees was read and approved. It was resolved that, as suggested in the paragraphs dealing with the drug tariff, a circular should be drawn up by the Panel Committee and sent to the Liverpool panel practitioners.

Alleged Excessive ordering of Drugs and Appliances.—A memorandum was received from the British Medical Association on procedure in inquiry into alleged excessive ordering of drugs and appliances. The discussion of this memorandum was adjourned to the next meeting.

GENERAL MEDICAL COUNCIL.

EXECUTIVE COMMITTEE.

IT was announced that Sir Bertram Windle had been appointed the representative on the Council of the National University of Ireland for three years from December 10th last, and Sir Arthur Chance the representative of the Royal College of Surgeons in Ireland for one year from February 5th, 1915.

Reciprocity with Ontario.

A communication was received from the Registrar of the College of Physicians and Surgeons of Ontario, stating that at a special meeting of the Medical Council for the province of Ontario the principle of British reciprocity was adopted. A reply had been sent by the Acting Registrar, pointing out the steps necessary to be taken by the College, and the Executive Committee passed a resolution welcoming the action taken by the College of Physicians and Surgeons of Ontario and expressing its readiness to receive further communications from it.

Apothecaries' Hall, Ireland.

A communication was received from the Irish Branch Council stating that Mr. William Taylor, M.B., Vice-President of the Royal College of Surgeons of Ireland, had been deputed to attend on behalf of the General Medical Council at the professional examinations by the Apothecaries' Hall.

University of Allahabad.

Communications were received from the Royal College of Physicians and Surgeons in Ireland expressing their extreme regret that the Medical Council had admitted bachelors of medicine and surgery of the University of Allahabad to the *Colonial Register*, on the ground that the action had lowered to an unwarrantable degree the minimum curriculum of those practitioners who seek registration. In consequence the two colleges expressed their regret that in future they would not be able to accept registration by the General Medical Council as a proof of the sufficiency of studies taken by those who seek the licences of the colleges. Having considered these communications, the following resolutions were adopted:

That the Royal College of Physicians (and of Surgeons) of Ireland be informed (1) that the Executive Committee, when considering the application of the University of Allahabad, took note of the fact that its requirements differed in some respects from those prescribed by licensing bodies in this country; but that, after making allowance for the difference in local conditions, the Committee was satisfied, in terms of the Medical Act, 1886, that the degrees of M.B., B.S. of the University of Allahabad might properly be recognized for the time being as furnishing a sufficient guarantee of the possession of the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery; and

(2) That the Royal College be further informed that the Executive Committee is of opinion that the College would be right in requiring of registered candidates for its qualifying examinations that they should present evidence of having pursued a course of study in each subject equivalent to that prescribed by the College itself for candidates not yet registered.

University of Madras.

A communication was received from the University of Madras requesting the recognition of its degree of licentiate in medicine and surgery (L.M.S.) on the ground that the course had been extended to five years, and was now in all respects similar to that for the degree of bachelor of medicine and surgery, except that a lower standard of attainment qualified for the former. The Executive Committee declined to accede to the request on the ground that the standard proposed for the professional examinations for the L.M.S. did not in the opinion of the Committee furnish the guarantee required by the Medical Act, 1886, Section 13.

Examination of Secondary Schools.

A circular addressed by the Board of Education to secondary schools proposing a scheme for improving the existing arrangements for the examination of such schools in England was referred to the Education Committee.

New Zealand Medical Act.

A copy received from the Colonial Office of the Medical Practitioners Act, 1914, of New Zealand was entered on the minutes.

Dental Degrees of the University of Melbourne.

The Committee resolved to recommend that the degrees of bachelor and doctor of dental science of the University of Melbourne, granted to candidates who have fulfilled the conditions for the licentiateship, should be recognized for registration in the colonial list of the *Dentists' Register*.

Belgian Diploma in Dentistry.

The Committee resumed the consideration adjourned from January 22nd of the question of the recognition of the Belgian diploma in dentistry, and adopted the following resolution:

(*a*) That a person who has attained the grade of Candidate in Medicine at one of the four Belgian universities of Brussels, Ghent, Liège, and Louvain, and has, after pursuing the further course of study prescribed for dental practitioners, passed the Diploma Examination held by a Belgian Provincial Medical Commission, shall be entitled to be registered in the foreign list of the *Dentists' Register*, provided he produces to the General Registrar satisfactory evidence in regard to the particulars set forth in Sections 9 and 10 of the Dentists Act, 1878.

(*b*) That, in view of the urgency of the matter, this resolution (*a*), adopted by the Committee on behalf of the Council, become at once operative as an instruction to the Acting Registrar; and that the resolution be reported to the General Council for confirmation at the June session.

Finance.

The Senior Treasurer presented a statement of receipts and expenditure, and the balance sheet of the General and Branch Councils for the year ending December 31st, 1914. The accounts will be published when signed by the auditor.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Staff Surgeon FREDERICK C. ROBINSON to the *Vivid*, additional, for disposal. Surgeons GILBERT F. SYMS to the *Vivid*, additional, for disposal; H. W. NICHOLLS to the *Faulkner*, vice Denny; F. H. STEPHENS to the *Pembroke*, additional. Temporary Surgeons: EVAN I. PARRY to the *Roxburgh*, vice Ronaldson; WILLIAM A. MILLS to the *Indus*, vice Parry; ALEXANDER SCOTT, M.B., to the *Pembroke*, additional, for disposal; HERBERT DANVERS, M.D., to the *President*, additional, for hospital yacht *Queen Alexandra*. KENNETH WOLFERSTON to the *President*, additional, for Eastchurch Air Station. THOMAS C. BLACKWELL, M.B., to the *Victory*, additional, for Royal Naval Division, Blandford Camp. D. A. HENDERSON, M.B., to the *Pembroke* for Royal Naval Barracks, vice Hughes. J. A. WATSON and G. F. STEBBING to the *Pembroke*, additional, for disposal. R. A HOBBS to the *Leviathan*, vice Stebbing. CHARLES D. HANAN to the *Victory*, additional, for Haslar Hospital. F. L. DUCKWORTH to the *President* for Kingsnorth Air Station. J. F. MCQUEEN to the *Victory*, additional, for Royal Naval Division Dépôt at Crystal Palace, vice Blackwell. D. SUTHERLAND to the *Vernon*, vice Bostock. M. B. HAY, D. R. BEDELL-SIVRIGHT, N. P. PRICE, J. BOSTOCK, F. H. REES, G. L. RITCHIE, E. M. LAUDERDALE, and L. S. FRY to the *Victory* for the Royal Naval Division. Granted temporary commissions as Surgeon: H. H. GELLERT, M.B., W. H. YELD, W. A. BAILEY.

The temporary commission of Surgeon J. WESTWOOD has been cancelled.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon H. S. REID, M.D., F R.C.S., to the *Victory* for Royal Naval Barracks, vice Bidwell. Surgeon Probationers: DAVID B. S. JONES to the *Anglia*, GEORGE PEARSON to the *Larne*, JAMES E. PURVES to the *Beaver*. Entered as Surgeon Probationers: CLIFFORD R. WATSON, NORMAN JENNINGS, JOHN H. EWEN, A. R. ORAN, J. B. D. GALBRAITH.

ARMY MEDICAL SERVICE.

COLONEL BRUCE M. SKINNER, M.V.O., is retained on the active list.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel HERBERT J. M. BUIST, D.S.O., M.B., to be local Colonel whilst serving in South Africa.

EDWARD A. HANLY, M.D., to be temporary Lieutenant-Colonel.

Captain DENNIS EMBLETON, Third London General Hospital (T.F.), to be temporary Major.

Supernumerary Major DUDLEY S. SKELTON is restored to the establishment.

HUGH W. MACNAMARA, late Fleet Surgeon, R.N., to be temporary Major.

HAROLD A. KISCH, M.B., F.R C.S., to be temporary Captain.

THOMAS G. M. HINE, M.D., is granted temporarily the honorary rank of Captain.

WILFRED J. PEARSON, M.B., is granted temporarily the honorary rank of Lieutenant.

Temporary Lieutenants CHARLES J. THOMPSON, THOMAS H. W. IDRIS, and HAROLD M. CORY relinquish their commissions.

Temporary Lieutenant ROBERT J. D'A. IRVINE, M.B., to be temporary Captain.

To be Temporary Lieutenants: BERNARD WALLACE, HAROLD E. GAMLEN, M.B., EDWARD L. HORSBURGH, M.D., THOMAS T. HIGGINS, M.B., F.R.C.S., GEORGE B. MACGREGOR, M.B., THOMAS LOVETT, M.B., SAMUEL C. WESTWOOD, M.D., ALFRED MERRIN, THOMAS F. GRIFFIN, M.D., MATTHEW A. SWAN, M.B., EDWARD S. B. EAMES, GEORGE A. BORTHWICK, M.B., HORACE L. MANN, WILKINSON OVEREND, M.B., HUBERT W. WARD, MAURICE J. MOTTRAM, DONALD F. SHEARER, M.B., F.R.C.S., ALEXANDER L. GRANT, M.B., JOHN F. STEVEN, M.B., AUSTIN C. GILES, M.B., WILLIAM H. ANDERSON, JOHN FERGUSON, M.B., LAWRENCE H. C. BIRKBECK, M.B., JOHN E. O'LOGHLEN, THOMAS J. S. MOFFETT, M.D., ROBERT C. MATSON, EDWIN C. HARDWICKE, HUGH A. BEAVER, M.B., CHARLES W. BREEKS, M.B., JOHN H. J. V. COATS, M.B., STEPHEN W. COFFIN, LEONARD G. BROWN, GEORGE H. FULLARTON GRAVES, GERALD SCHOFIELD, M.B., PERCY E. LONES.

To be temporary Lieutenants whilst serving with the Red Cross Hospital, Netley: ERIC L. K. SARGENT, ARTHUR R. C. DOORLY.

INDIAN MEDICAL SERVICE.

CAPTAINS to be Majors: C G. SEYMOUR, T. C. RUTHERFORD, M.D., E. C. TAYLOR, M.B., A. WHITMORE, M.D.

To be Temporary Lieutenants: CHARLES STIEBD, M.B., F.R.C.S.E., SHRIPST GOVINA RANADAY, SALYENDRA NATH MUKERJI, M.B., F.R.C.S.E., SUKRIA NATH CHAUDHURI, DEVARAYADRARY VENKATIA GIRI, JEHANGIR KAIKHUSRO NARIMAN, RICHARD C. P. BERRYMAN, GRAHAM C. RAMSAY, M.B., KAIKUSHRU BEZONJI KAGA, F R C S E., GIRDHARI LAL BATRA, M B, JOHN B DE W. MOLONEY, M B, F.R C S E, BEHRAMJI PRESTONJI SAHAWALA, F R C S, BINDASHWARI PRASAD, M.B, SATYENDRANATH ROY, M B, F R C S E, JOTINDRA MOHAN DAS GUPTA, M.B, MAUNG BA YIN, M B, PROBOCHANDRA BANERJEE, THOMAS H. BISHOP, SHIVAX SORABJI BANKER, IAN D. GRANT, M B., KAIKHOSRU XERSASPJI DADACHANJI, PHIROZESHAW JAMSHEDJI, KOLAPOREWALLA, AMBUJNATH ROSE, M.B., SOBBA RAM KAPOOR, DAVID P. OLIVER, M.B., CODANDA MADIAH GANAPATHY, M.B., MADAN GOPAL BHANDARI, M.B.

INDIAN SUBORDINATE MEDICAL DEPARTMENT.

Senior Assistant Surgeons with the honorary rank of Lieutenant to be Senior Assistant Surgeons with the honorary rank of Captain: MICHAEL GALVIN, ALFRED GREENWOOD.

To be Senior Assistant Surgeon with the honorary rank of Lieutenant: First Class Assistant Surgeon SAMUEL G. WOOD.

The retirement of Senior Assistant Surgeons and Honorary Rank of Captain CHARLES B. MONISSE, EDWIN A. BEDELL, and WALTER D. BARTLEY has been approved.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

LIEUTENANT HENRY G. FALKNER from attached to units other than medical units, to be Assistant Director of Medical Services, Northumbrian Reserve Division, with the rank of Colonel, temporary.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) Field Ambulance—Lieutenant M B H. STRATFORD, F.R.C S, from attached to units other than medical units, to be Lieutenant.

First London (City of London) General Hospital.—Lieutenant-Colonel WALTER A ATKINSON, M.D., resigns his commission owing to ill health, and is granted permission to retain his rank and to wear the prescribed uniform.

Third London (City of London) Field Ambulance.—To be Lieutenants: Lieutenant ROBERT W. A. SALMOND, M.D., from the First London (City of London) Field Ambulance; GEORGE W. GREENE, M.D.

Fourth London General Hospital.—To be Lieutenants: ARTHUR F. COMYN, M.B.; GEORGE A. EWART.

First Home Counties Field Ambulance.—RICHARD A. FREEMAN, to be Lieutenant.

Third Home Counties Field Ambulance.—Captain EDWIN A. HOUCHIN to be Major, temporary.

South-Eastern Mounted Brigade Field Ambulance.—EDGAR M. JENKINS, M.B., to be Lieutenant.

Third Southern General Hospital.—ROBERT G. LYNAM, M.B., to be Captain, whose services will be available on mobilization.

First Welsh Field Ambulance.—JOHN S. TOMB, M.B., to be Lieutenant.

First East Anglian Field Ambulance.—Lieutenant THOMAS V. OLDHAM, M.B., from Attached to Units other than Medical Units, to be Lieutenant.

Second East Anglian Field Ambulance.—Captain REES PHILLIPS, M.B., to be Major, temporary; FREDERICK G. SHARPE, to be Lieutenant.

Eastern Mounted Brigade Field Ambulance.—JAMES LAMBERTON, M.B., to be Lieutenant.

First Eastern General Hospital—To be Captains whose services will be available on mobilization: W. TYSON, M.D., WILLIAM B. MARSHALL, M.B.

Second South Midland Mounted Brigade Field Ambulance.—To be Lieutenants: JOHN C. S. DUNN, ALEXANDER RODGER, M.B.

Third North Midland Field Ambulance.—THOMAS LOVETT, M.B., to be Lieutenant.

Second West Riding Field Ambulance.—Major HAROLD COLLINSON, M B., F.R.C.S., to be Lieutenant-Colonel, temporary; BENJAMIN HOLROYD to be Lieutenant.

Third West Riding Field Ambulance.—JOHN S. HALL, M.B., to be Lieutenant.

Yorkshire Mounted Brigade Field Ambulance.—Captain JOHN HEPPLE to be Major, temporary.

First East Lancashire Field Ambulance.—JOHN BRUCE, M B., late Surgeon-Captain Third V.B, Lancashire Regiment, to be Lieutenant; WILLIAM L. COCKROFT to be Lieutenant.

Second East Lancashire Field Ambulance.—Lieutenant FREDERICK JEEVES to be Captain, temporary.

Second West Lancashire Field Ambulance—The announcement of the seconding of Captain OWEN H. WILLIAMS, M.B., published in the *London Gazette* of January 4th, is cancelled. SYDNEY SHARPLES, late Lieutenant Second Lancashire Brigade, Royal Field Artillery, to be Lieutenant.

Third West Lancashire Field Ambulance.—WALTER R. STEPHEN, M B, to be Lieutenant

First Northern General Hospital.—Major WILLIAM G. RICHARDSON, M.B., F.R.C.S., to be Lieutenant-Colonel; Captain DANIEL W. PATTERSON, M B, to be Major.

First Northumbrian Field Ambulance.—KIRTON J. S. SMITH, M.B, to be Lieutenant.

First Lowland Field Ambulance.—Captain WILLIAM C. MURRAY, M.B., to be Major, temporary.

First Scottish General Hospital.—To be Captains whose services will be available on mobilization: JOHN TAYLOR, M.D., and THOMAS H. W. ALEXANDER.

Sanitary Service.—Major PETER C. SMITH, M.D., to be Lieutenant-Colonel; Captain E. CORBIN to be Major; DAVID T. R. JONES, M.B., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—Major DAVID L. TODD to be seconded under paragraph 112, Territorial Force Regulations: Surgeon-Captain GEORGE D KETTLEWELL, from Devonshire R.G.A., to be Captain; Captain DAVID R. TAYLOR to be Major; Lieutenant ARTHUR E. RIDSDALE to be Captain; JOHN MURDOCH, M.B., F R.C.S.E., late Captain, Seventh Battalion Princess Louise's Argyll and Sutherland Highlanders, to be Captain; Captain ERNEST SOLLY, M.B., F.R.C S., to be Major; CHARLES R. HANDFIELD-JONES, M D. (late Surgeon-Captain, Twenty-fourth Middlesex V.R.C.), to be Captain. To be Lieutenants: Lieutenant ALFRED E. DELGADO, M.B., from the First Anglian Field Ambulance; CHARLES J. FOX, late Lieutenant, Thirteenth County of London, Princess Louise's Kensington Battalion, London Regiment; WILLIAM H. DATE, M.D., ALEXANDER F. WILSON, M.B., JAMES MC. G. DEUCHARS, M.B., HUGH B. CUNNINGHAM, JOHN R B. RUSSELL, M.B. The announcement of the seconding of Lieutenant GEORGE F. R SMITH, published in the *London Gazette* of February 1st, is cancelled.

TERRITORIAL FORCE RESERVES.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN WM. J. FOSTER, F.R.C.S., from the Third Southern General Hospital, to be Captain.

Major WILLIAM O. EVANS, attached to Units other than Medical Units, resigns his commission on account of ill health, and is granted permission to retain his rank and wear the prescribed uniform.

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE Registrar-General has just issued his return relating to the births and deaths in the fourth quarter of last year, and to the marriages registered during the three months ending September last. The marriage-rate during that period was equal to 17.4 per 1,000 annually of the population, and was 0.1 per 1,000 above the average rate in the corresponding period of the ten preceding years.

The 208,2 6 births registered in England and Wales last quarter were equal to an annual rate of 22.2 per 1.000 of the population, estimated at 37,302,983 persons in the middle of the year. This is the lowest birth-rate recorded in the fourth quarter of any year, and is 2.4 per 1,000 less than the average rate in the corresponding period of the ten preceding years. The birth-rates in the several counties last quarter ranged from 15.0 in Sussex, 16.0 in Carnarvonshire, 16.3 in Montgomeryshire, 16.5 in Cardiganshire, 16.6 in Somersetshire, and 16.9 in Huntingdonshire, to 25.5 in Northumberland, 25.7 in Carmarthenshire, 25.8 in Staffordshire, 26.8 in Monmouthshire, 27.5 in Glamorganshire, and 29.4 in Durham. In ninety-seven of the largest towns the birth-rate averaged 23.3 per 1,000, and ranged from 12.3 in Bournemouth, 12.8 in Eastbourne, 13.1 in Hastings, 13.9 in Bath, and 14 in Southport, to 29.5 in Liverpool, 29.6 in Gateshead and in Sunderland, 30.1 in South Shields, 30.3 in St. Helens, 30.4 in Stoke-on-Trent, and 30.9 in Rhondda; in London the birth-rate was 23 4 per 1,000.

The excess of births over deaths last quarter was 77,394, against 85,506, 87,995, and 88,874 in the corresponding quarters of the three preceding years. From a return issued by the Board of Trade, it appears that the passenger movement between the United Kingdom and places outside Europe resulted in a net balance outward of 1,605 British and of 9,046 alien passengers. The passenger movement between the United Kingdom and the Continent of Europe showed a balance inward of 78,351 persons, British and aliens.

The 130,882 deaths registered in England and Wales during the quarter under notice were equal to an annual rate of 13.9 per 1,000, against an average rate of 14.5 per 1,000 in the corresponding period of the ten preceding years. The death-rates in the several counties last quarter ranged from 10.4 in Middlesex, 11.0 in Radnorshire, 11.3 in Derbyshire and in Westmorland, and 11.6 in Essex and in Dorsetshire, to 15.8 in Brecknockshire, 16.0 in Lancashire, 16.2 in Cardiganshire, 16.6 in Northumberland, and 17.2 in Anglesey. In ninety-seven of the largest towns the death-rate averaged 14.9 per 1,000, and ranged from 8.0 in Hornsey, 8.1 in Ilford, 9.2 in Eastbourne, 9.7 in Lincoln, and 9.8 in Acton, in Enfield, and in Leyton, to 17 9 in Plymouth and in Rotherham, 18.3 in Birkenhead, 18.9 in Gateshead, 20.3 in Wigan, 20.9 in Liverpool, and 21.1 in Newcastle-on-Tyne; the death-rate in London was 15.3 per 1 000.

The deaths in England and Wales last quarter included 550 from enteric fever, 2,824 from measles, 784 from scarlet fever, 1,252 from whooping-cough, 1,816 from diphtheria, and 3,719 from diarrhoea and enteritis among children under 2 years of age. The mortality from measles and diphtheria was slightly above the average, and that from whooping-cough and diphtheria was slightly below the average; from enteric fever the mortality was only two-thirds of the average.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 105 per 1,000, and was 17 per 1,000 below the average rate in the ten preceding fourth quarters. Among the several counties the rates of infant mortality ranged from 44 in Radnorshire, 47 in Montgomeryshire, 53 in Rutlandshire, 61 in Dorsetshire, 63 in Oxfordshire and in

Westmorland, and 64 in Sussex, Berkshire, and Merionethshire, to 123 in Carmarthenshire, 125 in Nottinghamshire, 126 in Warwickshire, 130 in Carnarvonshire, 133 in Lancashire, and 134 in Northumberland. In the ninety-seven large towns the rate of infant mortality averaged 117 per 1,000, and ranged from 31 in Hastings, 38 in Oxford, 51 in Hornsey, 57 in Sunderland, 59 in Southend, and 60 in Ealing, to 155 in St. Helens, 156 in Rhondda, 157 in Blackburn, 160 in Rotherham, 164 in Nottingham, 170 in Newcastle-on-Tyne, and 172 in Oldham.

The death-rate among persons aged 1–65 years was 7.9 per 1,000 of the population at this group of ages; in the ninety-seven large towns the rate averaged 8.9 per 1,000, and ranged from 4.2 in Eastbourne, 4.3 in Hornsey and in Ilford, and 4.9 in Wimbledon and in Lincoln, to 11.5 in Merthyr Tydfil, 11.8 in Birkenhead, 12.4 in Gateshead, 13.1 in Liverpool and in Wigan, and 13.8 in Newcastle-on-Tyne.

Among persons aged 65 and upwards the death-rate was 82.3 per 1,000; in the ninety-seven large towns the death-rate at this age period was 88.3 per 1,000, and ranged from 57.8 in Cambridge, 59.1 in Acton, 62.3 in Hornsey, 64.0 in Edmonton, and 65.2 in Bournemouth, to 106.5 in Swindon, 106.6 in Bury, 107.4 in Oldham, 108.6 in Stockton-on-Tees, 113.2 in St. Helens, 114.5 in Preston, and 115.9 in Wigan.

The mean temperature of the air last quarter was above the average; the rainfall was much above the average, the excess amounting to 5 inches in the southern counties; the duration of bright sunshine was below the average in most districts, but was slightly above in the south-west.

HEALTH OF ENGLISH TOWNS.

In the ninety-six large English towns 9,033 births and 6,863 deaths were registered during the week ended Saturday, March 13th. The annual rate of mortality in these towns, which had been 20.7, 20 4, and 20.2 per 1,000 in the three preceding weeks, fell to 19.7 per 1,000 in the week under notice. In London the death-rate was equal to 20.7, against 20.8, 21.1, and 20 6 per 1,000 in the three preceding weeks. Among the ninety-five other large towns, the death-rate ranged from 8.0 in Ilford, 11.0 in Edmonton, 11.4 in Burnley, 11.7 in Croydon and in Hornsey, 11.8 in Coventry, and 12 5 in Leyton, to 29.3 in Tynemouth, 26.7 in Carlisle, 26.9 in Northampton, 27.3 in Stockton-on-Tees, 28.0 in Cambridge, and 30.4 in Bath. Measles caused a death-rate of 3.2 in West Hartlepool, 3.3 in Salford, 3.4 in Newcastle-on-Tyne, 3.5 in Tottenham and in Gateshead, 3 8 in West Bromwich, 4.1 in Smethwick, 4.3 in Merthyr Tydfil, 4 7 in Northampton, 4.9 in Wolverhampton, 5.3 in Grimby, 6.3 in Cambridge, and 7.9 in Darlington, and whooping-cough of 1.8 in Merthyr Tydfil, 1.9 in Eastbourne, 2.1 in Bootle, 2.3 in Wigan, and 2.8 in Gillingham. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 57, or 0.8 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 11 were recorded in Birmingham, 7 in Liverpool, 5 in Blackpool, 3 in Stoke-on-Trent, 3 in Preston, and 2 each in Gillingham, Reading, Bootle, St. Helens, Southport, and Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,165, 3,041, and 2,943 at the end of the three preceding weeks, further fell to 2,850 on Saturday, March 13th; 275 new cases were admitted during the week, against 295, 302, and 298 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,266 births and 940 deaths were registered during the week ended Saturday, March 13th. The annual rate of mortality in these towns, which had been 22.8, 21.2, and 23.2 per 1,000 in the three preceding weeks, fell to 20.9 in the week under notice, but was 1.2 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 10.2 in Kirkcaldy, 11.7 in Clydebank, and 15.5 in Kilmarnock, to 24.3 in Falkirk, 25.3 in Leith, and 31.8 in Dundee. The mortality from the principal infective diseases averaged 2.9 per 1,000, and was highest in Hamilton and Dundee. The 411 deaths from all causes in Glasgow included 39 from whooping-cough, 8 from scarlet fever, 5 from measles, 4 from infantile diarrhoea, 2 from diphtheria and 1 from enteric fever. Twenty-five deaths from whooping-cough were recorded in Dundee, 9 in Edinburgh, and 2 each in Perth, Motherwell, Hamilton, and Ayr; from measles, 9 deaths in Dundee; and from diphtheria, 5 deaths in Edinburgh.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, March 6th, 663 births and 636 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 647 births and 642 deaths in the preceding period. These deaths represent a mortality of 27.4 per 1,000 of the aggregate population in the districts in question, as against 27.6 per 1,000 in the previous period. The mortality in these Irish areas was therefore 7.2 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28.5 per 1 000 of population. As for mortality of individual localities, that in the Dublin registration area was 33.4 (as against an average of 31.1 for the previous four weeks), in Dublin city 35.5 (as against 32.6), in Belfast 26.9 (as against 24.0), in Cork 26.5 (as against 31.3), in Londonderry 20.2 (as against 26.6), in Limerick 20.3 (as against 21.7), and in Waterford 22.8 (as against 25.7). The zymotic death-rate was 1.6, as against 1.7 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salaries, £120 and £100 per annum respectively.

BIRMINGHAM CITY.—Assistant Medical Officer of Health (lady). Salary, £300 per annum.

BIRMINGHAM: CITY MENTAL HOSPITAL, Winson Green.—Assistant Medical Officer. Salary, £250 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—Two House-Physicians. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior and Second House-Surgeons. Salary, £230 and £200 per annum respectively.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Three House-Surgeons. Salary, £100 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—Two Resident Medical Officers. Salary, £150 per annum each.

BRISTOL GENERAL HOSPITAL.—(1) First House-Physician; (2) Second House-Physician; (3) House-Surgeon and Casualty House-Surgeon; (4) Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL GUARDIANS.—Assistant Medical Officer of the Stapleton and Eastville Institution and Receiving Homes for Children. Salary, £175 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Three House-Surgeons; (2) Two House-Physicians; (3) Obstetric and Ophthalmic House-Surgeon. Salary, £120 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—House-Physician (male).

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn Road, W.C.—Resident House-Surgeon. Salary, £50 per annum.

CHESTERFIELD BOROUGH.—Medical Officer of Health. Salary, £500 per annum.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer. Salary, £250 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer (lady). Salary, £200 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—House-Surgeon. Salary, £150 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Qualified Clinical Assistants in Out-Patient Departments.

GENERAL LYING-IN HOSPITAL, York Road, S.E.—Resident Medical Officer. Salary, £50 per annum.

GLASGOW: BARNHILL POORHOUSE AND HOSPITAL, Springburn.—Locumtenent. Salary, £8 8s. weekly.

GLASGOW FEVER HOSPITALS.—Junior Resident Medical Officers. Salary, £160 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—House-Surgeon.

HACKNEY UNION INFIRMARY.—Junior Assistant Medical Officer. Salary, £250 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HAMMERSMITH PARISH INFIRMARY.—First Assistant Medical Officer. Salary, £220 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House-Physician. Honorarium, £30 for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician. Salary, £30 for six months and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Two House-Surgeons. (2) Assistant House-Surgeon. Salary for (1) £100 and £60 per annum respectively, and (2) £50 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KENT COUNTY ASYLUM, Maidstone.—Assistant Medical Officer. Salary, £250 per annum.

LATHERON PARISH COUNCIL.—District Medical Officer. Salary, £90 per annum.

LEEDS: GENERAL INFIRMARY.—Resident Medical Officer at the Ida and Robert Arthington Hospitals. Salary, £60 per annum.

LIVERPOOL ROYAL INFIRMARY.—Two House-Physicians, three House-Surgeons, and one House-Surgeon to Gynaecological Department. Salary, £60 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Surgeons; (2) House-Physician. Salary, £60 per annum.

LONDON UNIVERSITY.—University Chair of Physiology, tenable at St. Bartholomew's Hospital Medical School. Salary, £600 per annum.

MANCHESTER: ANCOATS HOSPITAL.—House-Physician. Salary, £80 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Medical Officer. Salary, £100 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £230 per annum, increasing to £350, and, upon promotion, to £450.

MANCHESTER EDUCATION COMMITTEE.—Assistant School Medical Officer (female). Salary, £300 per annum, rising to £450.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORWICH CITY.—Assistant School Medical Officer. Salary, £30 per month.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

OLDHAM UNION.—Resident Medical Officer. Salary, £170 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £5 honorarium on completion of three months' service.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—House-Physician. Salary, £100 per annum.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROTHERHAM COUNTY BOROUGH.—Tuberculosis Officer and Assistant School Medical Officer. Salary, £350 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Acting Assistant Physician; (2) Male and Female House-Physicians and House-Surgeons; (3) Senior and Junior Obstetric Assistants.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—(1) Third House-Surgeon; salary, £50 per annum. (2) Dental Surgeon.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Assistant House-Surgeon (non-resident). Salary, £50 per annum.

SALFORD ROYAL HOSPITAL.—(1) Junior House-Surgeon; (2) Casualty House-Surgeon. Salary, £100 per annum each and bonus of £5 per month during the war.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SAMANA AND SANTIAGO RAILWAY.—Medical Officer for the Railway in San Domingo. Salary, £200 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Lady Assistant House-Surgeon. (2) Lady Assistant House Physician. Salary, £85 and £80 per annum respectively.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon. Salary, £180 per annum.

SUNDERLAND: ROYAL INFIRMARY (CHILDREN'S HOSPITAL).—Resident Medical Officer (lady). Salary, £100 per annum.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £120 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary, £100 per annum.

WOOLWICH INFIRMARY.—Assistant Medical Officer (male). Salary, £180 per annum, rising to £200.

WORCESTER COUNTY COUNCIL.—(1) Assistant Tuberculosis Officer; (2) Assistant School Medical Officer. Salary, £350 per annum each.

YORK DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Northleach (Gloucester).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

ALEXANDER, W. H. M., M.B., District Medical Officer of the Thorne Union.

BOWEN, G. J., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Hammersmith Parish.

BURLAND, G. A., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Paignton District, co. Devon.

COLLINGS, D. W., M.B., Certifying Factory Surgeon for the Southwold District, co. Suffolk, and Medical Officer of Health to the Southwold Town Council.

EDWARDS, Harford, L.R.C.P., M.R.C.S., Acting Medical Officer of the 2/2nd North Midland Brigade, R.F.A.

HARDIE, C. F., M.B.Camb., Medical Officer of the Children's Home of the Barnet Union.

HUNTER, R. H., L.R.C.P. and S.Edin., District Medical Officer of the Barnsley Union.

JEPHCOTT, C., M.A., M.B.Cantab., Honorary Medical Officer to the Chester and District Skin Dispensary.

JOHNSTONE, W. M. L., M.B., B.Ch.Dubl., Certifying Factory Surgeon for the Newent District, co. Gloucester.

LOW, V. Warren, M.D., B.S., F.R.C.S., External Examiner in Surgery at the University of London.

MACDONALD, D. M., M.D., F.R.C.P.E., Visiting Physician to Manchester and Salford Convalescent Home, Arnside, Westmorland.

MACKENZIE, W., L.R.C.P. and S.Edin., Medical Officer of the Children's Home of the Thrapston Union.

O'CALLAGHAN, T., L.R.C.P. and S.Edin., District Medical Officer of the South Shields Union.

O'KEEFE, C. E., L.R.C.P. and S.I., District Medical Officer of the Berkhamsted Union.

ROSS, R. H., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Clogher Distr ct, co. Tyrone.

STEEN, W. A., M.R.C.S., L.R.C.P., District Medical Officer of the Romford Union.

SMITH, R. Travers, M.D., F.R.C.P., Professor of Materia Medica and Pharmacy in the Royal College of Surgeons in Ireland.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

MCRAE.—On March 9th, the wife of G. Douglas McRae, Glengall House, Ayr, of a son.

WALBRUGH.—At Durban, on the 7th January, 1915 to Margaret Isabella (*née* Gray), the wife of Andrew Walbrugh, M.D.Edin., a son

MARRIAGE.

KAUFFMANN—CROMPTON.—On March 6th, at the Lickey Church, Worcestershire, Otto Jackson Kauffmann, M.D., F.R.C.P., Major R.A.M.C.(T.), of Edgbaston, Birmingham, to Rosalind, youngest daughter of Edward Crompton, of Newbie Annan, Dumfriesshire.

DEATHS.

BENNETT.—On February 24th, James Moore Bennett, M.D., D.P.H., of Ruddington, Notts, aged 52, eldest son of the late James Moore Bennett, M.D., of Prince's Road, Liverpool.

DOBIE.—On March 12th, at 4, Hunter-street, Chester, William Murray Dobie, M.D., aged 86 years.

KENT.—At Tong Shan North China, on February 19th, Anthony Lloyd (Tony), the second son of Dr. and Mrs. Hugh Kent, aged 1 year and 11 months.

ROBERTS.—David Foulkes Roberts, M.R.C.S.L., aged 52 (eldest son of late R. Roberts, Esq., "Ceidio," Llanerchymedd, Wales), formerly of Cedar Lodge, Old Charlton and Hove, surgeon at the Boer war.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, 5 p.m.—Dr. F. Wood Jones: The Influence of the Arboreal Habit in the Evolution of the Reproductive System.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, 5 p.m.—Second Lumleian Lecture, by Dr. Sidney Martin: Non-Ulcerative Infections of the Colon.

WEDNESDAY.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell Street, E.C., 9 p.m.—Discussion: Recent Developments in Psycho-Therapeutics. To be opened by Dr. T. B. Hyslop.

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, 5 p.m.—Third Lumleian Lecture, by Dr. Sidney Martin: Non-Ulcerative Infections of the Colon.

ROYAL SOCIETY OF MEDICINE:
SECTION OF NEUROLOGY, 8.30 p.m.—Mr. J. Herbert Parsons: The Psychology of Traumatic Amblyopia following Explosion of Shells.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION FOR THE STUDY OF DISEASE IN CHILDREN, 4.30 p.m.—Clinical Cases.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Courses will be given next week:

MANCHESTER HOSPITALS' POST-GRADUATE CLINICS.—Ancoats Hospital.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MARCH.
23	Tues.	London: Hospitals Committee, 2 p.m.
		London: Grants Subcommittee, 2.15 p.m.
26	Fri.	London: Central Ethical Committee, 2 p.m.
29	Mon.	London: Dominions Committee (*provisional*).
		London: Naval and Military Committee (*provisional*).
30	Tues.	London: Conference of Secretaries Subcommittee, 12.30 p.m.
		London: Organization Committee, 2 p.m.
		London: Public Health Committee.
31	Wed.	London: Medico-Political Committee.
		London: Journal Committee, 2 p.m.
		APRIL.
21	Wed.	London: Finance Committee, 2 p.m.
28	Wed.	London: Council.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 27TH, 1915.

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WAR EMERGENCIES.

SCOTLAND.

APPEAL BY THE SCOTTISH MEDICAL SERVICE EMERGENCY COMMITTEE.

THE Executive of the Scottish Medical Service Emergency Committee has issued the following memorandum, which supplements and extends that published in the SUPPLEMENT of January 16th (p. 17):—

The Director-General of the Army Medical Service, in his public letter of March 10th, makes the following statement: "The need for medical men, both for home and foreign service, is acute. We want every qualified man who is physically fit and willing to serve." This statement must convince everyone of the seriousness of the problem of medical supply—civil as well as military. As a contribution to its solution, the Emergency Committee, in the interest of the nation, desire to make through the press the following appeals:

1. *To the Public.*

It will materially help to relieve the great strain now imposed upon the medical practitioners remaining at their posts throughout the country—many of whom are at present working fifteen to sixteen hours a day—if patients and their friends will make a point of sending messages for the doctor as early as possible in the morning, so that the doctor may arrange his daily round in the way most economical of time. In many parts of the country this practice has already been partially adopted. We ask everyone to give effect to the suggestion. Where the case is not an urgent one, and a visit on the next day would suffice, this fact should always be stated in the message.

2. *To the Local Education Authorities.*

Regular medical inspection of school children is very important, but it is not nearly so urgent as attendance on patients who are dangerously ill. These have clearly the first claim for medical care. We appeal to school boards and other educational authorities to release entirely, or in part, those of their medical officers who are willing during this emergency to resume general medical work for the public. We have reason to anticipate that this proposal will not be received unsympathetically by the Scottish Education Department.

3. *To Retired Doctors of the Profession who are Still (in Sir Alfred Keogh's words) "Physically Fit and Willing."*

The Emergency Committee will be happy to hear from these, and will endeavour to give them opportunities for service, in circumstances that will not involve an excessive strain.

4. *To the Younger Lecturers and Assistants in the Medical Schools.*

At this time of the year, when the winter session closes, the teachers usually go for a week or ten days' well-earned holiday. We ask them this year to substitute a change of work for the customary holiday, and to offer their help to country colleagues in difficulty. Many practitioners, especially in rural districts, have been overworked for months, and some of them are breaking down under the strain. The temporary help of a professional brother from the schools would ease this strain, while the stimulus of his timely co-operation would act as a useful tonic for the trying days that are still to come.

The Emergency Committee is confident that their action in making these appeals will not be misunderstood. The times require the mobilization of all our professional forces. All are desirous to help if they knew how. The function of the Emergency Committee is to indicate how and where help may be most effectively afforded.

Communications should be addressed to the Convener, Emergency Committee, Royal College of Physicians, Edinburgh.

NEWCASTLE-ON-TYNE.

APPEAL BY THE BRITISH MEDICAL ASSOCIATION.

The Executive Committee of the Newcastle-on-Tyne Division of the British Medical Association, after fully discussing the question of the extra work thrown upon doctors in the district at the present time, and recognizing that it was highly desirable that the co-operation of the public should be obtained to minimize this extra work as far as possible, issued the following letter, which has been published in local newspapers:

Sir,—Many civilian doctors have now left homes and practices to serve their country in both the army and navy, and the medical profession is badly understaffed. Those who remain at home are endeavouring to the utmost of their power to cope with the additional work, more than ever onerous in Newcastle owing to an influx of workers for the necessary munitions of war, and to the free medical attendance rendered by civilian doctors to the families of soldiers and sailors whose total family income is such that they are totally unable to pay for the same.

This matter has been seriously and fully discussed from time to time during the course of the war by the Executive Committee of the British Medical Association, and it is felt that nothing less than the active co-operation of the civilian population is necessary for the proper accomplishment of medical work in Newcastle. We ask the public to restrict as far as possible their calls upon medical men at untimely hours. We ask them to make their requests for visits before their doctor leaves home on his morning rounds, in order that the latter may satisfactorily arrange his time during the day to cope with all requests.

We beg to remind the public that requests for visits after a doctor has left his surgery in the morning take often four times as long to accomplish as when communicated before 10 a.m., and we remind them that no doctor can do his best work when unduly fatigued. For this latter reason requests for evening or night visits should only be made when the case is one of extreme urgency, and Sunday visits naturally fall into the same category.

We feel that with the active co-operation of the public the work can be satisfactorily done, but that in its absence many unnecessary disappointments may and will arise. We ask for such co-operation with confidence, assuring the public that in the exercise of such courtesy to their doctors they will best be serving themselves and the members of their households.

DAVID RANKEN, M.S.Lond., F.R.C.S.Eng.,
Honorary Secretary to the Newcastle-upon-Tyne Division of the British Medical Association.

PAYMENT OF PANEL DOCTORS.

COMMISSIONERS, Insurance Committees, doctors, approved societies, and insured persons, however much they may differ as to the value of the Insurance Act, are absolutely at one as to its complexity. Recently a deputation from the British Medical Association had an interview with the Commissioners in the hope of getting more light on the apparently simple question of the payment of panel doctors. Sir Robert Morant told the deputation that the subject was one of "great complexity," and that "there was no one person who could be said to have complete knowledge of it in all its bearings." So the heads of the various departments concerned were present at the interview to consider the question of how to pay the doctors. The conclusion of the whole matter is set out at the end of two and a half pages of the SUPPLEMENT of January 30th in the following words:

"If therefore the medical profession were not satisfied with any system short of one which produced theoretically exact results, it would be necessary, in order to give them satisfaction, to adopt some other method of payment of doctors than the capitation basis."

The nature of the other method of payment was not indicated. The conclusion is rather a sad one for all concerned. One of our correspondents suggests that the other method may be a State Medical Service; the present method he characterizes as the shut-your-eyes-and-open-your-mouth method. Judging by the number of letters we receive complaining of the amount of money paid to the doctors for work done, the present method does not give satisfaction—very far from it. No one can read the letter of a "Panel Practitioner" in the JOURNAL of February 13th without feeling that any system which pays less than £400 instead of over £500 must be far from "theoretically exact," and is not likely to give satisfaction.

But the discontent with administration of the Insurance Act is not confined to the method of payment only, as is shown by the letter from a "Panel Doctor" at page 115. In it he gives an account of how the Act works out in his district, and expresses his dissatisfaction with the result. He points out that Form 50, which is, of course, necessary only for new members, acts as a deterrent to many people who find great difficulty in filling up much simpler forms than this. Doubtless some of the new members—but surely not "the majority"—do not take kindly to filling up Form 50, and put off doing it until they are ill, when they may find difficulty in getting doctors to accept them on their lists. To help the insured person in this plight, the London Insurance Committee has devised a form of agreement between the insured person and the doctor who is willing to give immediate treatment to a patient not on his list. This immediate treatment form, which has been found useful, is as follows:

Form M.B. 47.

INSURANCE COMMITTEE FOR THE COUNTY OF LONDON.

Form of Acceptance of Insured Person requiring Immediate Treatment.

PART I.—STATEMENT BY INSURED PERSON.

I, being the insured person referred to in the attached form Med. 50, require immediate treatment, and desire to be placed on the list of patients of Dr.....

Signed.....*Date*.....
Address .....

PART II.—ACCEPTANCE BY DOCTOR.

I have this day provided the immediate treatment which in my opinion was necessitated by the condition of the above-named insured person, whom I hereby accept for inclusion in my list of patients.

Doctor's Signature .....
Account No..... *Date*.....

N.B.—The insured person referred to above will, subject to confirmation by the Committee of his right to select a practitioner, be placed on the list of the practitioner by whom he is accepted as from the date of acceptance, provided that this notice is received by the Committee within seven days from such date.

The doctor when completing the undertaking should have regard to the patient's answer to question 7 on Form Med. 50.

This form should be used only in those cases where immediate treatment is required and the patient is not in possession of a medical card. When completed the form should be attached to the completed Med. 50.

Another ground of complaint urged by our correspondent is that a doctor who goes on attending a patient on his list may be mulcted of payment. He gives as an example the case of a patient removing from one house to another in the same area without giving notice to the Clerk of the Committee. The official method of putting right cases like these is to pay the doctor by way of the "unallocated clause" the amount being worked out, our correspondent states, "according to the proportion of the residuum left on his panel list." This is on the principle of "unto him that hath shall be given," which may be quite fair in some circumstances, but does not apply fairly under the Insurance Act. If, however, instead of the number on the panel, the number of new members added in the year be taken as the basis of distribution of the unallocated money the result would be more equitable. This method has been adopted by the London Insurance Committee. However, in spite of all these efforts to make the Act work smoothly it is generally felt that—

It's a long long way from satisfactory.

INSURANCE ACT COMMITTEE.

A MEETING of the Insurance Act Committee was held at the office of the Association on Thursday, March 11th. Dr. J. A. MACDONALD was in the chair, and the other members present were:—*England and Wales:* Dr. Olive Claydon (Oldham), Dr. E. R. Fothergill (Hove), Dr. Major Greenwood (London), Mr. R. Harding (New Radnor), Dr. W. A. Ainslie Hollis (Brighton), Dr. I. W. Johnson (Bury), Dr. G. K. Smiley (Derby), Dr. W. B. Crawford Treasure (Cardiff), Mr. E. B. Turner (London). *Scotland:* Dr. John Adams (Glasgow), Dr. John Hunter (Edinburgh). *Ex Officio:* Dr. T. Jenner Verrall (Chairman of Representative Meetings), Dr. Edwin Rayner (Treasurer).

VACANCY ON COMMITTEE.

The CHAIRMAN announced that, in view of the few meetings to be held during the remainder of the session, he had decided to take no action to fill the vacancy caused by the resignation of Dr. Doolin (Dublin).

ATTENDANCE ON SOLDIERS ON FURLOUGH.

The subject of the medical attendance on soldiers on furlough was again discussed (SUPPLEMENT, March 13th, p. 89), and it was decided to call the attention of the Commissioners to the fact that, according to paragraph 4 of the circular I.C. L 119, a soldier on furlough living more than two miles from a military hospital might call in a civilian doctor, whose fees would be paid by the military authorities; that, in accordance with Army Form C 1,667, a statement was required from the Deputy or Assistant Director of Medical Services of District or Command that there was no officer of the Army Medical Service, or any special reserve medical officer on full pay, nor any civilian practitioner engaged at contract rates within a radius of one mile; and that this created great difficulty and delay.

It was also decided to bring to the notice of the War Office the difficulties and delays experienced by civilian practitioners in obtaining payment for attendance upon soldiers on furlough.

DUPLICATE CERTIFICATES.

Attention having been called to the fact that an approved society had issued a card intimating that its members who were also members of other friendly societies could obtain an official duplicate copy of their doctor's note from the

approved society for 1d., and thus save 5d., as the doctors usually charged 6d. for a duplicate, it was decided to recommend the Panel Committee of the district to approach the friendly societies of the district on the matter, and point out the danger to their interests of the procedure, since it might lead to the issue of bogus or valueless certificates.

PARTNERSHIPS.

The Committee expressed the opinion that the action of a Local Insurance Committee in requiring to have insured persons attended by a firm or partnership placed on the list of an individual member of the firm or partnership was quite correct. The Committee further suggested that the local profession should take care, in framing any future partnership deeds, to have regard to the legal requirements in the matter.

PREVENTIVE SIDE OF THE INSURANCE ACT.

A subcommittee consisting of the chairman (*ex officio*), Dr. E. R. Fothergill, Dr. G. K. Smiley, Dr. T. Jenner Verrall, Mr. E. B. Turner, and Dr. John Adams, with power to co-opt, was appointed to consider what steps could be taken to exercise the preventive powers of the Insurance Act, which purported to provide "for insurance against loss of health and prevention and cure of sickness."

MEDICAL BENEFITS.

The Committee expressed the opinion that the present was not a suitable time for the appointment of a Royal Commission or Departmental Committee to consider the whole subject of the administration of medical benefit, as recommended in the report of the Departmental Committee on Sickness Benefit Claims. It was also decided to notify this opinion to the Insurance Commissioners, and to ask the Local Medical and Panel Subcommittee to consider and report on the whole question.

CENTRAL INSURANCE DEFENCE FUND.

A letter was read from a practitioner thanking the Association for the assistance granted him; an application from a Branch Secretary for a grant to the widow of a late member was postponed.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

PANEL COMMITTEE.

A MEETING of the London Panel Committee was held on March 23rd, Dr. H. J. CARDALE presiding.

Adjustment of Lists of Insured Persons.

The Committee agreed, in view of adjustments of lists rendered necessary by the enlistment of insured persons, to accept a proposal by the Insurance Committee to pay practitioners for the second quarter of 1915 at the reduced rate of 9d. instead of 1s. for each half quarter. The Panel Committee, however, declined to approve of such a method of payment "until further order," and decided to ask the Insurance Committee whether increased advances could not be made in the third and fourth quarters of the year, when, presumably, the necessary adjustments of the lists would have been made.

Approved Societies and Certification.

Resolutions were passed calling the attention of the Commissioners to the action of approved societies in unreasonably refusing to pay insured persons beyond the date of the last certificate submitted, in insisting upon the production of weekly certificates in cases of prolonged incapacity for work, and in requiring practitioners on the panel to supply weekly certificates in respect of insured persons attending as out-patients at public institutions. It was also decided to invite representatives of approved societies to a conference on the subject.

Procedure in Surcharging Practitioners.

In view of the ruling of the Commissioners in an appeal by a practitioner against a decision of the Sheffield Insurance Committee to the effect that a practitioner, before being surcharged for excessive prescribing, has the right of being heard by the whole Panel Committee, and not merely by the Pharmacy Subcommittee, the Committee agreed to suspend action in so far as it had recommended the Insurance Committee to surcharge practitioners, and to ask that Committee to postpone cases now before it until practitioners had been given an opportunity of exercising their right of appearing before the full Panel Committee.

Numbers on Practitioners' Lists.

The Panel Service Subcommittee presented a tabulated statement showing that at the end of the medical year 1913 60 per cent. of the practitioners on the panel had less than 1,000 insured persons on their lists, and 87 per cent. had less than 2,000 persons. Owing to the fact that the number of practitioners practising in partnership accepted insured persons in the name of the partnership instead of in their individual names, such partnerships had to be regarded for the purposes of the analysis as single doctor's practices, and the majority of the 176 lists containing over 2,000 persons were actually the lists of practitioners practising in partnership.

The Drug Tariff.

The Committee decided to accept an invitation by the Insurance Act Committee (Drug Tariff Subcommittee) of the British Medical Association to appoint two representatives to assist in preparing a memorandum for submission to the Departmental Committee, but at the same time to prepare its own memorandum for submission to the same body. The Committee passed a resolution supporting the view of the British Medical Association that at present support should not be given to the establishment of a central bureau for checking chemists' accounts.

Use of the Formula "Rep. Mist."

The Pharmacy Subcommittee reported that it had drawn the attention of the Insurance Commissioners to the action of the London Insurance Committee in informing a practitioner on the panel that he had infringed the Medical Benefit Regulations by ordering drugs in the formula "Rep. mist.," and in censuring him for instructing the patient to obtain medicine from a chemist whose name it was suggested he gave to the patient.

COUNTY OF SURREY.

PANEL COMMITTEE.

A MEETING of the Surrey Panel Committee was held on February 19th, when Dr. Owen (Kingston) was elected to fill a vacancy which had occurred in that area.

Drugs and Dressings for Insured Inmates of Hospitals.—A letter was read from the Insurance Commissioners stating that it was not competent for a practitioner to order drugs and dressings under the Insurance Act for insured persons who were inmates of hospitals unless the patient was being treated by his panel practitioner as such, and not as a member of the staff of the hospital. It was resolved to take no action.

Practitioners' Lists.—A letter was read from the County Committee stating that it had been unable to trace 6,160 insured persons on the register, and proposed, after giving a month's notice to the practitioner on whose list the patient was, to remove each name from the list on March 31st unless the practitioner could prove the persons were still residing in his area. It was decided to agree to this course being adopted.

Certificates during Disablement.—A communication was read from Dr. Walters with reference to the giving of weekly certificates during disablement benefit, and the Secretary was instructed to suggest to Dr. Walters that he should communicate with the National Deposit Friendly Society and ask if, under the circumstances, it would accept a certificate other than the official one, which did not involve seeing the patient each week.

Medical Cards of Persons who have Joined the Army.—It was resolved to bring up at the Medical Benefit Subcommittee the fact that men who had joined the army were still in possession of medical cards, which was no proof that they were entitled to medical benefit, and to suggest to the Committee that it should, if possible, recall the cards.

EAST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the East Suffolk Panel Committee was held on March 9th, when Dr. HELSHAM was in the chair.

Expenses of Committee.—It was resolved to forward an account of the expenses of the Panel Committee for the

year ending December 31st, 1914, to the Insurance Committee for payment.

Treatment of Soldiers.—A letter from the Clerk to the Insurance Committee, together with the communication from the Commissioners with reference to the medical treatment of soldiers by panel doctors (Supplement, March 13th, p. 89), was read, and it was resolved to request the Clerk to circularize the panel practitioners and to supply a stock of the requisite forms as suggested in his letter.

Special Mileage Grant.—A draft scheme for the distribution of the Special Mileage Fund for the year 1913, received from the Clerk to the Insurance Committee, was adopted for the year 1913, and with the necessary alterations for the year 1914, subject to the following alterations and to confirmation by the Insurance Committee:

1. The parish of Havergate Island to be included in Schedule I.
2. The value of a unit to be 4½d., or alternatively the rate of payment shall be a unit and a half for every mile or part of a mile.
3. The return by each practitioner giving particulars of all persons on his panel list who are patients in respect of whom special mileage can be claimed to be furnished within twenty-one days of request by Insurance Committee.
4. That the expression "branch surgery" shall mean any surgery where a medical practitioner is in permanent residence.

A circular letter drafted by the Clerk to the Insurance Committee, to send to the practitioners on the panel in order to obtain full information from each practitioner of the number of patients on his panel list in respect of whom special mileage could be claimed, was approved, and it was decided that the expression "not adjacent to a metalled road" should mean 50 yards or more distant from such metalled road.

Scrutiny of Prescriptions.—In reply to a letter from the Clerk to the Insurance Committee with reference to the checking of doctors' drugs and chemists' accounts, which he estimated would cost approximately £50 per annum, it was resolved to point out: (1) That the expression in "checking doctors' drugs and chemists' accounts" was inaccurate, and should read "checking chemists' accounts," since the work done consisted in correcting the prices charged by the chemists (2) That the work was the natural office work of the Insurance Committee, and should be paid for by it. (3) That the further business of checking and analysing the prescriptions of the doctors concerns the Panel and Pharmaceutical Committees, and should be paid for by them in equal proportions.

SOUTHPORT.

Local Medical and Panel Committees.

A meeting was held on March 18th, when Dr. Limont was in the chair.

Co-operation with Local Medical and Panel Committees.—Memo. M.4 of the British Medical Association, as to co-operation with the Local Medical and Panel Committees, was considered in detail. It was decided to support all the proposals generally. It was decided to request the Local Medical and Panel Subcommittee of the Insurance Act Committee to press for the inclusion of aqueous tinctures in any revision of the drug tariff.

Alleged Excessive Ordering of Drugs.—Memo. M.5 of the British Medical Association, as to procedure in inquiries into alleged excessive ordering of drugs, was ordered to be filed for use should any inquiry be entered into in the future.

Central Bureau for Checking Prescriptions.—Memo. M.6 of the British Medical Association, as to the proposed central bureau for checking prescriptions, was read and considered. It was decided to oppose the institution of a central bureau.

YORK.

Panel Committee.

A meeting of the York Panel Committee was held on March 12th.

Unallocated Insured Persons.—A draft scheme for dealing with unallocated insured persons, prepared by a subcommittee, was considered and approved.

Treatment of Soldiers.—It was resolved to draw the attention of all doctors on the panel to the letter from the Commissioners stating the circumstances which entitle a civilian doctor to be paid by the War Office for attendance on soldiers. (Supplement, March 13th, p. 89.)

Co-operation with British Medical Association.—It was decided to accept the offer of co-operation, and in particular to forward the agenda of all meetings, summary of minutes, important circulars, etc.

Finance.—It was decided to pay a fee of two guineas to the Clerk to the York Insurance Committee for his services as returning officer at the election of the Panel and Local Medical Committees. The Honorary Secretary reported that all the York panel doctors, with the exception of three, had authorized a farthing levy. It was agreed that these three practitioners should be personally interviewed.

DEVON COUNTY.

Medical Committee.

A meeting of the Devon County Medical Committee was held at Exeter on February 26th, when Mr. Russell Coombe was in the chair. It was decided to write to the Commissioners with reference to a further extension of the date to which the Committee had been recognized.

Scope of Medical Benefit.—In connexion with the consideration of a claim it was agreed that, owing to the necessity for strict antiseptic precautions in the operative treatment of a "wen," such operations cannot be considered to be within the benefits of the National Insurance Act.

Panel Committee.

A meeting of the Devon County Panel Committee was held on the same day and place, and with the same chairman.

Attendance on Unallotted Persons.—A memorandum from a practitioner recording the attendances, etc., he had given to a patient who was not on his panel at a time before mileage arrangements had been completed, was considered, and it was resolved that the attendances should be charged against the unallotted fund.

Doctors' Lists.—It was agreed to ask the County of Devon Insurance Committee to supply all practitioners on the panel with quarterly returns of the numbers of insured persons on their lists, as was done in other counties, and to explain what steps it was proposed to take in order to trace the addresses of insured persons.

Agreement with Insurance Committee.—A draft of the proposed agreement under Article 21 (4) *re* persons declined by a doctor, and Article 35 (1) *re* distribution of unallotted money, was approved, and the Chairman was authorized to sign it on behalf of the Committee if approved by the Commissioners.

Prescribing and the Drug Fund.—A list of proprietary articles prescribed by practitioners during 1914, contrary to the recommendations of the Panel Committee, was considered, and a number of practitioners were recommended to be surcharged for various items. It was resolved that pulverettes be allowed to be charged against the Drug Fund, as being similar to palatinoids and lower in cost. It was decided that explanations should be asked for from a number of practitioners whose prescriptions were found to contain expensive or abnormal quantities of drugs. The circular (M. 6) received from the British Medical Association, advising the maintenance of local bureaux for checking prescriptions, was approved.

PERTH.

Combined Meeting.

A special meeting of the Perth Branch of the British Medical Association was held in conjunction with a meeting of the Local Medical and Panel Committees of Perth and Perthshire on March 16th. In the case of a particular insured person who had been refused by all the doctors in the locality, the doctor on whose list he had been placed by the County Insurance Committee was recommended only to visit the insured person along with another independent doctor.

Weekly Certificates.—The Committee authorized the Secretaries to represent strongly to the various approved societies the desirability of dispensing with the troublesome weekly certificate in cases of chronic illness.

Treatment of Soldiers and Sailors and their Dependants.—Dr. Trotter called the attention of the meeting to the circulars recently issued by the Commissioners as to the treatment of soldiers and sailors, and pointed out that the free attendance on dependants had come to be a considerable tax on practitioners, owing to the fact that great laxity appeared to prevail in the granting of doctors' cards,

there being no proper guarantee that all the cases were by any means "necessitous." He urged that the strictest inquiry should be made as to the circumstances of all dependants requiring medical attendance, and that the cards should bear a statement of their income, a rule also being made that all messages should be sent to the doctor before 10 a.m. Drs. Trotter and Hume were requested to bring the matter before the Soldiers' and Sailors' Families Association without delay.

Absent Colleagues.—An informal discussion took place as to whether practitioners attending the patients of those doctors at present absent on military duty should render accounts to such patients for medical services. The SECRETARY pointed out that numerous Branches throughout the country had passed resolutions to the general effect that medical duties should be undertaken for the sole benefit of the absentees. The feeling of the meeting was that, while it should be the strenuous endeavour of all practitioners to preserve intact the practices of their absent colleagues and in no way to destroy the confidence of patients in their own doctor, it was necessary and right that such patients should be charged direct for medical treatment given them in the present juncture, the doctor actually in attendance taking full remuneration for his services, but resigning the patient on the return of his own doctor after the war.

Personnel of Local Medical and Panel Committees.—The Secretary intimated that Drs. Stirling and Paton had resigned their places on the Committees *pro tem.*, and Drs. Lyell and Bisset had accepted their positions in the meantime. A letter was read from the Secretary of the County Committee intimating the resignation of Dr. Tait, also absent on military duty, and Dr. Liddell agreed to take his place as one of the medical representatives on the Insurance Committee for the county.

Arrangement to Accept Responsibility for Unallocated Persons.—The SECRETARIES intimated that the County Committee had been pressing for a settlement on this matter, and it was agreed to issue the following circular letter to the members of the County Panel at an early date:

Copy Circular.

In connexion with the distribution amongst panel practitioners of capitation fees in respect of insured persons who have not chosen, or have not been assigned to, a doctor, it is necessary, according to Regulation 35 (1), for each panel practitioner wishing to participate in such distribution to accept responsibility for insured persons not included in his list at the commencement of each quarter. This implies that he must at the same time be willing to accept on his panel any insured person, entitled to select a practitioner on the panel, whom the Insurance Committee see fit to assign to him, such person having made application for that purpose to the Committee.* Unless the practitioner accepts this general responsibility he cannot participate in the distribution of the capitation fees above referred to.

At a meeting of the Panel Committee on March 16th, the above mentioned responsibility was accepted in the name of the panel practitioners of the county of Perth for each of the quarters of the current year. It will be assumed that you concur in the same, unless you notify the undersigned to the contrary within a week from this date.

Assignment of Unallocated Persons.—The following method of assignment was adopted:

The principle to be to assign the insured person to the nearest doctor, but if there be more than one doctor to choose from, then the first case to the doctor with the largest panel; the second case to the doctor with the next largest panel, and so on in proportion to size of panel.

RENFREW.

PANEL COMMITTEE.

A MEETING of the Renfrew County Panel Committee was held at Paisley on February 24th, when Dr. CORBETT presided. It was reported that the appointment of Mr. E. D. Anderson to be assistant secretary to the Panel Committee had been approved by the Insurance and Pharmaceutical Committees, that Dr. M. H. Taylor would act as a representative of the Committee on the Medical Services Subcommittee, and that the Pharmaceutical Committee had approved the Panel Committee's estimate of expenses for 1915. The Pharmaceutical Committee's estimate of expenses for 1915 was approved. The financial statement for 1914 showed a total administrative expenditure of £25 18s. 10½d., and that the Insurance Committee had paid £25 on account. It was agreed that the chairman and secretary should form an executive subcommittee with power to act on behalf of the committee in an emergency.

Assignment of Insured Persons.—A letter from the Clerk to the Insurance Committee was considered, pointing out the necessity for arrangements being made under Regulation 21 (4) of the current Medical Benefit Regulations for enabling any insured person entitled to select a practitioner on the panel, who makes application for that purpose in such manner as the Insurance Committee, with the approval of the Commissioners, may require, to be assigned to a practitioner on the panel. After discussion, it was unanimously agreed to submit to the Insurance Committee the following proposal: That any insured person making application for assignment be assigned by the Insurance Committee to the panel practitioner nearest the residence of the applicant.

Insured Persons Suspended from Benefit.—As an illustration of the fact that the registers of Insurance Committees are inflated and contain a large number of names of persons who have for a considerable time ceased to be entitled to medical benefit, Mr. ANDERSON submitted six orange slips recently received by the Insurance Committee from approved societies. In these six cases it was stated by the societies that the persons named ceased to be insured on January 12th, 1913; but, owing to the belated intimation of their suspension, these persons had remained upon the Committee's register and upon doctors' lists for the whole of 1913 and 1914 and for a portion of 1915.

Repeat Prescription.—The Committee agreed to a suggestion from the Pharmaceutical Committee that, in view of the monthly revision of drug prices now in force, the system with regard to repeat prescriptions, which was that chemists should keep prescriptions for six months and accept repeats for that time, should be altered, so that the directions for repeats should apply to prescriptions dispensed in the same calendar month.

New Certificates.—A discussion took place regarding the new certificates of incapacity, in which opinions were expressed that the system presented numerous difficulties through its efforts to attain uniformity, and that many cases arose in practice for which the system did not provide. Cases were instanced where an insured person recommences work—say on Monday—and is not seen by his practitioner until Tuesday; or the frequent case of an insured person who is not seen by his practitioner until he has been incapacitated for a day or two. Dr. Hill was instructed to write the Scottish Insurance Commissioners expressing the Committee's dissatisfaction with the present system of certification.

LOCAL MEDICAL COMMITTEE.

At a subsequent meeting of the Local Medical Committee Dr. Corbett was elected chairman, Dr. Hill secretary, and Mr. E. D. Anderson assistant secretary. It was resolved to ask the Commissioners to agree to the quorum of the general meeting being reduced from 10 to 5, and to apply for recognition of the committee for another year.

STIRLINGSHIRE.

PANEL COMMITTEE.

A MEETING of the Stirlingshire Panel Committee was held in the County Buildings, Stirling, on March 4th.

Card System for Keeping Medical Records.—It was arranged to effect the transfer from the medical day book to the card system as from April 1st, and the Secretary was instructed to notify the Insurance Commissioners accordingly.

Treatment of Soldiers.—The Clerk of the Insurance Committee was asked to supply claim forms for medical treatment of soldiers to the medical practitioners on the panel.

GALWAY.

MEDICAL COMMITTEE.

A MEETING of the County Galway Medical Committee was held on March 4th to consider what action the Committee should take regarding the offer made by the Irish Insurance Commissioners to five medical men to accept between them a salary of £225 for doing certification, each in an area nearly corresponding to his dispensary district and of about the same extent. It was unanimously resolved:

That we approve of the following resolution passed by the Irish Medical Committee on January 12th, 1915:

This Committee would again draw the attention of the Insurance Commissioners to the grave injustice which

* Reg. 21 (4).

the appointment of part-time medical certifiers is causing to insured sick persons and to the medical practitioners in attendance on them. An arrangement by which a medical practitioner who is in competition with the medical practitioner in attendance on the insured is made the arbiter of the insured person's capacity for work is not fair to any of the parties, and opens the door to very grave abuse. In the interests of professional ethics and goodwill, as well as in the interests of the insured, this Committee must protest against the continued appointment of part-time certifiers.

It was also resolved to consider this binding on the profession in Ireland, and to request all men in the county Galway to give it support until a general settlement is made with the profession in Ireland.

The Committee also reaffirmed its resolution binding its members not to meet medical advisers.

LIMERICK.

A MEETING of the Limerick Local Medical Committee was held in Limerick on February 17th, when Dr. W. HENNESSY, Galbally, was in the chair.

Votes of Sympathy.—Votes of sympathy with the members of their families on the deaths of Dr. and Mrs. McNamara, Kilmallock, and Major Fogarty, R.A.M.C., Limerick, were passed.

Election of Chairman.—Dr. William Hennessy, Galbally, was elected chairman of the County Limerick Local Medical Committee rendered vacant by the death of Dr. P. J. McNamara.

Medical Certification under the Insurance Act.—The existing arrangements made by the Irish Insurance Commissioners for the certification for sickness benefits were strongly condemned as unjust to the insured, who were thus compelled to take long and unnecessary journeys to meet the medical certifiers when requiring sick certificates, and insulting to the medical attendants who were not trusted to certify for their insured patients.

NORTH TIPPERARY.

A MEETING of the North Tipperary Local Medical Committee was held at Roscrea on March 10th, when Dr. WILLIAM COURTENAY was in the chair. Dr. T. Hennessy, Irish Medical Secretary, was also present.

Certification for Sickness Benefits by Medical Certifiers.—A resolution was passed strongly condemning the arrangements made by the Insurance Commissioners for the medical certification of sick insured persons by other doctors than their medical attendants. In this way sick insured persons, when in a delicate state of health, had to undertake long extra journeys to meet the convenience of the medical certifier who only saw insured persons once a week, this rendering it impossible, in the majority of the cases, for a doctor, under such conditions, to make an accurate diagnosis of their illness or a proper estimate of their fitness or otherwise for work.

INSURANCE COMMITTEES.

SALFORD.

AT the last meeting of the Salford Insurance Committee, held on March 18th, a report was presented by a special subcommittee appointed in March, 1914, to inquire into and report on the present method of administering medical benefit in Salford. It may be stated at once that the finding of the subcommittee is absolutely non-committal owing so the fact that the evidence obtained was insufficient to warrant any conclusions either in favour of or against the present system. The report contained a summary of the evidence, and stated that there are 97,000 insured persons on the committee's registers represented by over 300 approved societies, but only 6 societies, representing about 3,600 insured persons, tendered evidence. Such evidence as was given by the societies was almost entirely against the present system, the chief grounds being that though there were no complaints put forward of inadequate treatment by the panel practitioners the present system was not as effective as the panel system, that it was too expensive, and that it led to the giving of certificates too readily and for trivial complaints, so that an undue number of claims for sickness benefit arose. Evidence was also given by the chairman and another member of the Panel Committee, who spoke decidedly in favour of the present system, pointing out that its great advantage was that patients were at liberty under the Salford system to change their doctor whenever they thought fit, and, as a consequence of this, formal complaints were reduced to a minimum. The finding of the subcommittee was as follows:

> Your Subcommittee, after fully considering the evidence submitted and its bearing on the subject of the inquiry, passed the following resolution:
>
> That this Subcommittee regrets (1) that it has not been able to obtain a greater amount of evidence as to the administration of medical benefit in Salford, and (2) that the evidence which has been received is largely only personal opinions, unsupported, except in a few cases, by any proved facts, and however much respect may be due to such personal opinions, there is very little substantial evidence on which any decided opinion, either in favour of or against the present system, could be properly based, and that, in view of the above mentioned facts, this Subcommittee does not feel itself in a position to make any recommendation.
>
> Your Subcommittee would, however, take this opportunity of expressing the opinion that in the best interests of insured persons and the practitioners themselves it is desirable that some method of confining doctors' lists within reasonable dimensions should be adopted.

In the discussion that followed in the Insurance Committee on the motion that the report be received, some complaint was made that, though the subcommittee was appointed in March, 1914, it was not called together until well on in July, that even then it had to decide on its procedure, and before it really got to work the war had begun, and after that little interest was taken in the work of the committee.

STAFFORDSHIRE.

Dr. Ridley Bailey, Chairman of the Staffordshire Panel and Local Medical Committees, and senior representative of the profession on the Staffordshire Insurance Committee, was, at the meeting of the latter on March 6th, unanimously elected a member of the Medical Benefits Committee for the county. At the subsequent meeting of this committee, on the 16th inst., Dr. Bailey was further unanimously appointed Vice-Chairman.

DERBYSHIRE.

THE "GAG."

AT a meeting of the Derbyshire Insurance Committee, held on March 15th, one of the medical representatives, Dr. Court, had occasion to complain of the arbitrary action of the Chairman. A suggestion of the Panel Committee that some easier method should be provided for appealing, in cases of necessity, against the decision of a medical referee was at once ruled out of order. In the same way a motion, of which notice had been given, drawing the attention of the Insurance Commissioners to the great hardship involved to the insured persons owing to the extremely arbitrary and costly method defined in the rules of various approved societies, which are required to be followed to enable an insured person to re-establish his claim to benefit when once such benefit is suspended, was at first ruled out of order, but subsequently, whilst reiterating that the Committee had no jurisdiction over approved societies, and that for that reason he would have been justified in ruling the motion entirely out of order, the Chairman allowed the discussion of the motion to begin. Finally, when Dr. Court wished to continue the discussion, he was ruled out of order. Dr. Court thereupon resigned his position on the Committee as a protest against what he termed the "gag."

In view of the important functions discharged by Insurance Committees it is essential that their proceedings should be conducted with dignity, and that the Chairman should exercise his powers with the strictest impartiality. From the report of the proceedings in the *Derbyshire Times* it is evident that a considerable amount of friction has for some time existed in the Derbyshire Insurance Committee. The profession will sympathise heartily with Dr. Court, who has found himself compelled to resign a position the retention of which he felt to be incompatible with his self-respect.

INSURANCE ACT IN PARLIAMENT.

ACTUARIAL ESTIMATES—MANCHESTER UNITY.

MR. PARTINGTON asked the Chancellor of the Duchy of Lancaster whether the actual expenditure of the Manchester Unity on national insurance benefits had exceeded the actuarial estimates? Mr. Montagu said: I have seen a statement in the press on the matter referred to. The suggestion which it contains that the expenditure of the Manchester Unity Independent Order of Oddfellows is in excess of the actuarial estimates rests upon a fallacy. No account has been taken of the fact that since October 12th, 1913, the higher benefits provided by the Act of 1913 have been in operation. That Act provided increased benefits for all persons who had entered insurance over the age of 50, a provision which probably affected the Manchester Unity in a special degree, as the proportion of older members in the society appears to be above the general average. The reserve values credited to the societies have been increased accordingly, and the actuarial estimates taken for any such comparison as that made in the article should, of course, have been similarly increased. The figures there given cover a total period of eighteen months—half before and half after October 12th, 1913—and the expenditure for each of these periods is shown separately. It will be seen that the expenditure for the first nine months is on the whole below the actuarial estimates given, which are the appropriate estimates for a society of normal age distribution during that period. The expenditure shown for the next nine months, as explained above, is necessarily higher because of the additional benefits then coming into operation, but I am informed that if these extra benefits (which, as stated, carry correspondingly increased values) are allowed for, as of course they should be, the expenditure of the society as a whole, as stated in the article, would remain within the actuarial estimates for the whole period of eighteen months ending July 5th, 1914, as well as for the first period ending October 12th, 1913.

EXTRA NOURISHMENT.

Mr. Jowett asked a question as to a case in which the Insurance Committee of the West Riding of Yorkshire had declined to continue the provision of extra nourishment, on the ground that Poor Law relief was going into the home, although such relief did not include the extra nourishment which the patient needed on account of his illness, and for which he had paid his contributions. The Chancellor of the Duchy of Lancaster (Mr. Montagu) said that the case referred to had been fully considered both by a District Committee and by the Insurance Committee concerned. The administration of sanatorium benefit was entrusted by statute to Insurance Committees, whose duty it was to provide treatment and not to relieve destitution. In the circumstances in question insured persons were entitled, subject to the usual conditions, to sickness benefit of 10s. a week for twenty-six weeks, and disablement benefit of 5s. a week thereafter during the continuance of incapacity for work, in addition to sanatorium benefit in any form other than treatment in a residential institution.

GRANTS IN AID OF NURSING.

In reply to Sir Ryland Adkins, the Chancellor of the Exchequer said that some provision for grants in aid of nursing would be made in the estimates for the ensuing financial year. The principles which should govern the application of the grant were a matter for consideration by the Chancellor of the Duchy of Lancaster in the first instance, if and when circumstances admit.

GRANTS AND LOANS FOR SANATORIUMS AND INSTITUTIONS FOR MENTAL DEFICIENTS.

The Chancellor of the Exchequer informed Sir Ryland Adkins that capital grants for sanatoriums would continue to be made where necessary, and, subject to the same proviso, local authorities would not be prohibited from borrowing for the same purpose. He did not think that capital expenditure for institutional treatment under the Mental Deficiency Act was desirable at the present time in the absence of very special considerations.

CORRESPONDENCE.

UNDERPAYMENT OF PANEL DOCTORS.

Acceptances and Removals.

PANEL DOCTOR writes: I write in reference to the letter from "A Panel Practitioner," published on February 13th, and considered in relation with the official interview published in the JOURNAL of January 30th.

When the Insurance Act came into actual operation the issue of the red medical ticket as a means of entrance upon a practitioner's panel list was a very effective simple method. It was easily understood by the people, and equally easy for the practitioner. The reasons for its withdrawal are not public property, but the Commissioners instituted Form No. 50, with its corresponding complications. With what result? The general run of the people do not understand the new mechanism; further, they do not take the trouble to understand, and have little intention of trying to understand, up to a certain time, and that is, when the individual is ill, and in need of the services of a practitioner. The result is that the majority of insured persons who have come under the Act since the issue of the new regulations, are not to be found on the list of practitioners, and as time goes on with increasing numbers entering, the number of these non-panel insured are constantly and progressively increasing. It is useless to advise them of the complicated steps that are necessary, because in their opinion the matter is not very urgent, and can be put off till necessary, because there is the trouble of applying at the Post Office for Form 50, filling it up and sending it to the centre, and when the card arrives back, taking it to a doctor to sign, and then once more forwarding it again to the centre, where the clerk resides. Whoever devised this cumbersome method had little knowledge of the aptitude of the sixteen-year-old Insurance debutant for detail.

The difficulties of getting upon the panel are to be contrasted with the ease with which the relationship between the insured and their medical practitioner can be severed, not perhaps really, but officially, and consequently financially. For not only can the insured person be suspended, enter the Army or Navy, cease to be insured, or clear out of the area entirely, but removal from one house to another without notice to the clerk in the centre, is sufficient to dissolve the official partnership between the doctor and his patient. On this point I have received the following from the Clerk to the Insurance Committee:

> I have to inform you that it is my duty to remove from the doctor's register cards of all insured persons who remove from their residence without giving particulars of their new address, and, until I am notified of the new address of the insured person, the doctor is not entitled to be paid for that insured person.

If this was strictly acted upon, many a practitioner's panel list would be diminished by over 50 per cent. Fortunately, many of these removals are not known to the officials, for if they were, we would be working all day and every day for less than the cost of the conduct of the practice.

The official way out of the difficulty is to tell us that we would in the long run obtain financial payment for these patients by another path—namely, under the "Unallocated Clause"; but how can this be, when any one practitioner can only have unallocated money credited to him according to the proportion of the residuum left on his panel list, whilst the people changing their residences quarter by quarter vary very considerably in different districts in any given insurance area.

This policy of the Commissioners in making difficulties as to entrants and increasing the facilities of removals, with or without a real reason, tends to diminish very considerably the numbers on the individual panel, whilst drawing more and more into the unallocated portion over which the individual practitioner has no control and still less knowledge.

It is easy for the official to reply that the doctor need not attend any insured person who has been removed from his list on account of change of residence and who may not have notified the same, but for many and various reasons this is not practicable, and it ends in our giving attendance, etc., whether these people are officially known to be on our list or not. Whether this policy is a cool,

calculated plan to introduce a scheme of payment not based on capitation—for example, a State medical service—or to make payments on some other system, other than capitation, for work done, or whether it is one of those developments arising out of the utter ignorance of the official mind concerning the people (their capabilities, adaptabilities, etc.), and often tries to impress its opinions upon them without first realizing whether they will respond and play up to the demands laid upon them, I am not able to judge, being a practitioner in a rural area, and with little outside knowledge; but judging from my own experience, I know what is likely to happen—more work and less remuneration.

It is easy to destroy; but as a constructive plan, I might put forward the suggestion that more use should be made of the Local District Insurance Committees (I think that is the correct name), or that a small local committee of one or two insurance agents and one or two doctors, according to the size of the area, should be appointed to deal with these acceptances or removals, and thus to take it out of the happy-go-lucky disposition of the people and from a callous centre many miles away. Anything is better than this continual diminution of the panel list by officials, whilst work is increasing, and we, as practitioners, are asked to shut our eyes and open our mouths and find what the "unallocated money" will bring us in.

I have not worked out the exact details similar to those of "Panel Practitioner," but my figures correspond very closely to his, and I have had the same difficulty with the officials over my deficiencies in the issue of index slips.

The Finances of the Act.

Dr. F. L. POCHIN, M.D. (Oldham), writes: According to the report of a meeting of the London Insurance Committee which is given in the BRITISH MEDICAL JOURNAL of March 6th, Mr. Handel Booth, M.P., said that, "as the drug fund had been found sufficient in many areas, it ought to have been sufficient in all." And then he goes on to blame the doctors because it is not. If this is a sample of the reasoning power of members of Parliament, there is no wonder that certain things take place there which make us rub our eyes with astonishment, and there is no wonder either that the law, born in Parliament, is a "hass."

Of course, all this trouble is due to the ridiculous flat rate of payment and of drug provision, and to the utter failure of the actuaries to see that there is more illness among town populations than there is in the country. Our remuneration was based on the quite gratuitous assertion that we should be called upon to treat a certain small percentage of our patients each year. I do not know from experience what the percentage of cases actually treated in rural districts is, though I have reason to believe it is somewhere near the mark, but I do know from everyday experience that the percentage treated in the towns is very much greater than that calculated for. Here last year we treated between 59 per cent. and 60 per cent. of our panels, and our remuneration is hopelessly inadequate as compared with that of our friends in the rural areas, which, of course, is the same per capita.

The same argument holds good with regard to the drug fund. If the provision for drugs in the towns is adequate, it must be excessive in the rural areas and vice versa. Really it is about right for rural areas, and absurdly inadequate for the towns; it is based on a mistake in calculation just as is our remuneration, and I think it would be more sporting of the authorities to admit the fact, rather than try to blame the doctors who are trying to do the work they were forced into against their will conscientiously, and as economically as possible.

It is all very well for Mr. Handel Booth to say what "ought" to be, but, unfortunately for him, it is universally true that if you require more of any commodity you have to pay more for it. There is only one exception to this rule that I know of, and that applies to medical remuneration under this Insurance Act. Even if Mr. Booth's remark relates only to London, the same principles hold good, for surely he will not contend that the sickness rate, say in Hampstead, is the same as in Bermondsey.

The Defective Bases of the Act.

Dr. B. G. M. BASKETT (Rayleigh, Essex) writes: If Dr. Garratt had given more than glance at a letter which he set himself to answer, he would have gained in relevance what he lost in humour, for he could not but have seen that that part of my note which affords most scope for his humour was addressed to another man and to another point. If, to satisfy him, I must lay bare the obvious, let me suggest that it was the duty of the Commissioners (which unquestionably they saw) to find out, first of all, whether a grievance existed. If, on inquiry, it was found to exist, then special arrangements might easily have been made. I do not believe it does exist. Dr. Garratt knows as well as I do that the poor have far more reason to dread officials than doctors.

Alterations in Insurance Act Regulations.

Dr. MYER COHEN (Stamford Hill, N.) writes: As a panel practitioner I was very glad to read in the JOURNAL last week the excellent reply to the (alarmists) speakers of the Medico-Panel Political Union in their attacks on Insurance Commissioners through the medium of the *Medical World*.

Sir Robert Morant's reply to Dr. Cox is a clear answer to the speakers of the "union," who are not relying on facts they can prove. Surely it is a great scandal that they should be allowed to make such grave misstatements. I believe it shows to panel practitioners that their interests are better looked after by the British Medical Association than any other existing body, and they ought to show their gratitude by joining the British Medical Association as soon as possible, which through the medium of their excellent JOURNAL publishes what it can prove.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, April 28th, in the Council Room, 429, Strand, London, W.C. The Chairman is not yet in a position to name the hour, but it will be notified as soon as he is able to see the amount of business to be dealt with.

By order,

GUY ELLISTON,
Financial Secretary and Business Manager.

March 18th, 1915.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Books Needed to Complete Series.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6.
American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
American Journal of the Medical Sciences. New series, vols. 4, 5, 1842–3; vols. 14, 15, 1847–8; vols. 18–30, 1850; vol. 33, 1857; vol. 46, 1864–5; vol. 59; or any parts of these vols.
American Journal of Ophthalmology. Vols. 1–9.
American Laryngological Association. Transactions. Vols. 1–6, 8–9.
American Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*, up to 1903 inclusive.
American Medico-Psychological Association. Transactions. Vol. 13, 1906.
American Otological Society. Transactions. Vol. 3, part 2, 1883.
American Public Health Association. Transactions. Any vols.
Analyst. Vols. 1–24.
Annals of Surgery. Vols. 13, 14, 26.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Fleet Surgeons EDWARD T. P. EAMES to the *Victory*, additional for disposal; H. E. TOMLINSON to the *Vivid*, additional for disposal; Surgeon ALBERT V. J. RICHARDSON, M.B., to the *Victory*, additional for disposal. Temporary Surgeons H. H. GELLERT, W. A. BAILEY, and C. W. LEWIS to the *Victory*, additional for Haslar Hospital; H. G. SUTHERLAND to the *Vivid*, additional for disposal. To be temporary Surgeons: T. M. WOOD-ROBINSON, E. D. GRAINGER.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeons to be Staff Surgeons: REGINALD J. E. HANSON, M.B., EDWARD J. STEEGMANN, M.B., HARRY REAH, M.B., WILLIAM E. HARKER, M.D., RICHARD J. WILLAN, M.B., F.R.C.S. Surgeon to be Honorary Staff Surgeon: FRANCIS J. HANNAN, M.D. Surgeon Probationer JOHN H. EWAN to the *Hornet*, vice Inman. Surgeon Probationers for temporary service: A. O. ROSS, L. G. ALLAN, R. SANDILANDS, D. W. WARREN.

ARMY MEDICAL SERVICE.

LIEUTENANT-COLONEL ALBERT L. F. BATE, from R.A.M.C., to be Colonel.

ROYAL ARMY MEDICAL CORPS.

Temporary Captain PERCY SARGENT, M.B. F.R.C.S., to be granted temporarily the honorary rank of Lieutenant-Colonel.

Temporary Captain GORDON M. HOLMES, M.D., is granted temporarily the honorary rank of Major.

To be temporary Captains: WILLIAM W. C. TOPLEY, M.B., EDWARD L. GOWLLAND, M.B., late Major, R.G.A.(T.F.), NORMAN H. MUMMERY, late Staff Surgeon, R N.

Temporary Lieutenants to be temporary Captains: ISAAC JONES, M.D., FERGUS ARMSTRONG, WILLIAM P. MORGAN, M.B., CHARLES W. G. BRYAN, F.R.C.S., ARTHUR H. BINDLOSS, M.B., HENRY R. S. VAN RYCK DE GROOT.

To be temporary Lieutenants: WILLIAM G. MUMFORD, M.B., F.R.C.S., JOHN R. ASKEW, F.R.C.S., EDWARD B. GUNSON, M.D., STEPHEN J. HENRY, M.B., ROBERT J. McN. LOVE, M.B., PHILIP W. McKEAG, M.B., GEORGE J. BOWEN, ALEXANDER PATERSON, M.B., WILLIAM S. BAIRD, M.B., JOSEPH McCULLOCH, M.B., COLIN HUNTER, ERNEST W. H. CRUICKSHANK, M.B., FREDERICK D. ATKINS, M.B., JAMES T. GUNN, M.B., F.R.C.S.E., DAVID S. BROUGH, M.B., JAMES R. MURRAY, M.D., CLEMENT T. NEVE, M.B., F.R.C.S., VICTOR J. WOOLLEY, M.D., HAROLD G. OLIVER, JOHN J. CRAWFORD, M.D., ALEXANDER W. C. LINDSAY, JAMES McDONNELL, JOHN S. TAYLOR, M.B., RODERICK A. STEVEN, M.B., LIONEL PERN, FREDERICK J, STEPHENSON, M.D., LIONEL R. G. DE GLANVILLE, FELIX E. R. LABORDA, ALEXANDER FRASER, M.B., GEORGE D. CAIRNS, M.B., ARTHUR P. SAINT, BERNARD B. WESTLAKE, GEORGE M. JONES, SIDNEY K. VINES, HUGH T. L. ROBERTS, WILFRED PARSONS, ABRAHAM E. ELLIS, ANDREW T. CUNNINGHAM, M.B., SAMUEL A. MONTGOMERY, M.B., SAMUEL FLEMING, M.B., EDMUND S. HALL, M.B., GEORGE H. ALABASTER, M.B., WILLIAM J. LASCELLES, ANDREW F. READDIE, CHRISTOPHER SULLIVAN, F.R.C.S.I., ALEXANDER G. MacLEOD, M.B, ERNEST A. O. TRAVERS, ARTHUR C. TURNER, REGINALD H. TRIBE, JOHN R. MacNEILL, M.B., ROBERT M. JOHNSTON, M.B., EDWARD C. DUTTON, M.B., F.R.C.S.E., PHILIP CARNEY, M.B., EDGECUMBE W. MOORE. M.B., WILLIAM FLETCHER, M.D., ROYDEN McI. MUIR, M.B., FRANCIS C. MACAULAY, M.B., EDGAR W. SMERDON, M.D., F.R.C.S., GEORGE FOX, ALFRED H. CONDER, KENNETT ROBINSON, M B., JOHN H. ASKINS, M.B., FRANK W. WESLEY, M.D.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN MORTON W. RUTHVEN, M.B, from the half-pay list, is restored to the establishment.

Lieutenants confirmed in their rank: WILLIAM L. E. REYNOLDS, FRANK C. HARRISON, WILLIAM K. CAMPBELL.

JAMES T. CAMERON to be Lieutenant on probation.

INDIAN MEDICAL SERVICE.

MAJOR R. A. LLOYD, M.D., is appointed to be temporary Lieutenant-Colonel whilst in charge of No. 12 Indian General Hospital at Brockenhurst, dated November 25th.

Majors to be Lieutenant-Colonels, dated January 29th, 1915: A. F. STEVENS, C. H. BENSLEY, F. H. WATLING, M.B., F. WALL, C. M. MATHEW, J. STEPHENSON, M.B., F.R.C.S., F. N. WINDSOR, M B., E. E. WATERS, M.D., A. LEVENTON, F.R.C.S.I., A. F. W. KING, F.R.C.S.E., R. F. STANDAGE, A. A. GIBBS, E. M. ELLINGTON, F.R.C.S.E., C. G. WEBSTER, F.R.C.S.E.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

LIEUTENANT-COLONEL CHARLES AVERILL, M.D., from Sanitary Service, to be Deputy Assistant Director of Medical Services, Welsh Division.

Captain CHARLES S. WINK, from Attached to Units other than Medical Units, to be Deputy Assistant Director of Medical Services, East Anglian (Reserve) Division.

ROYAL ARMY MEDICAL CORPS.

1st Southern General Hospital.—The announcement of the appointment as Lieutenants of STEPHEN G. ASKEY, PERCIVAL C. COLE, and AMBROSE W. OWEN, M D., published in the *London Gazette* of December 18th, is cancelled.

2nd London (City of London) Field Ambulance.—Major WILLIAM V. SINCLAIR to be Lieutenant-Colonel, temporary.

3rd London (City of London) Field Ambulance.—CHARLES E. WILLIAMS to be Lieutenant.

Welsh Border Mounted Brigade Field Ambulance.—FRANK L. NEWTON, M.B., to be Lieutenant.

1st Eastern General Hospital.—PAUL N. B. ODGERS, M.B., F.R.C.S., to be Captain, whose services will be available on mobilization.

3rd North Midland Field Ambulance.—Lieutenant-Colonel LEWIS W. POCKETT, M.D., retired list, T.F., to be Lieutenant-Colonel, temporary.

West Riding Casualty Clearing Station.—Major ERNEST SOLLY, M.B., F.R.C.S., from attached to units other than medical units, to be Major, temporary.

Yorkshire Mounted Brigade Field Ambulance.—Surgeon-Captain ROBERT A. DRAPER, from East Riding of Yorkshire Yeomanry, to be Major, temporary.

3rd East Lancashire Field Ambulance.—Lieutenant CHARLES B. MARSHALL, M B., to be Captain, temporary.

2nd West Lancashire Field Ambulance.—Captain OWEN H. WILLIAMS to be Major, temporary.

1st Northern General Hospital.—Major FREDERICK C. PYBUS, M.B., F.R.C.S., to be seconded.

4th Northern General Hospital.—HENRY J. SMITH, M.B., to be Lieutenant.

Northumbrian Casualty Clearing Station.—CHARLES F. M. SAINT, M.D., F.R.C.S., to be Lieutenant.

Attached to Units other than Medical Units.—To be Majors: Captain MICHAEL J. MAHONEY, M.D., Captain PETER M. DEWAR. Captain JOHN ORTON, from the T.F. Reserve, to be Captain; DONALD P. M. FARQUHARSON, M.B., late 5th V.B. Argyll and Sutherland Highlanders, to be Captain, temporary. To be Lieutenants: THOMAS W. COLE, M.B., ISMAY D. STUBBS, Lieutenant DUNCAN F. MACRAE, M.B., from London Mounted Brigade Field Ambulance.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six large English towns 8,582 births and 6,714 deaths were registered during the week ended Saturday, March 20th. The annual rate of mortality in these towns, which had been 20.4, 20.2, and 19.7 per 1,000 in the three preceding weeks, further fell to 19.3 per 1,000 in the week under notice. In London the death-rate was equal to 21.1, against 21.1, 20.6, and 20.7 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 8.2 in Gloucester, 9.5 in Lincoln, 9.7 in Barnsley, 10.0 in Dudley, 10.3 in Ilford and in Gillingham, and 11.2 in Tottenham, to 24.9 in Gateshead, 25.3 in South Shields, 26.4 in Preston, 26.8 in Wigan, 27.6 in Merthyr Tydfil, and 28.0 in Darlington. Measles caused a death-rate of 3.3 in Salford, 3.4 in Northampton and in Newcastle-on-Tyne, 3.5 in Stockton-on-Tees, 3.8 in Wolverhampton, 4.1 in St. Helens, 5.1 in Enfield, 5.4 in Cambridge, 5.7 in West Hartlepool, 6.1 in Smethwick, 6.8 in West Bromwich, and 8.8 in Darlington; scarlet fever of 1.8 in Darlington and in Merthyr Tydfil; and whooping-cough of 1.7 in Southampton and in Reading, 2.0 in Swindon and in Aberdare, 2.5 in Merthyr Tydfil, and 2.8 in Wigan. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 48, or 0.7 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 10 were recorded in Birmingham, 4 each in Stoke-on-Trent, Liverpool, and St. Helens, 3 in Bootle, and 2 each in Coventry, Warrington, Hull, and South Shields. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,041, 2,943, and 2,850 at the end of the three preceding weeks, further fell to 2,730 on Saturday, March 20th; 289 new cases were admitted during the week, against 302, 298, and 275 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,149 births and 936 deaths were registered during the week ended Saturday, March 20th. The annual rate of mortality in these towns, which had been 21.2, 23.2, and 20.9 per 1,000 in the three preceding weeks, further fell to 20.8 for the week under notice, but was 1.5 per 1,000 above that recorded in the ninety-six large English towns. Among the several towns the death-rate ranged from 9.5 in Coatbridge, 13.7 in Falkirk, and 14.9 in Paisley, to 22.6 in Kilmarnock, 23 0 in Hamilton, and 30.0 in Dundee. The mortality from the principal infective diseases averaged 3.1 per 1,000, and was highest in Clydebank and Dundee. The 437 deaths from all causes in Glasgow included 44 from whooping-cough, 15 from measles, 5 from scarlet fever, 4 from diphtheria, and 1 from enteric fever. Twenty-six deaths from whooping-cough were recorded in Dundee, 7 in Edinburgh, and 3 in Greenock; from measles, 9 deaths in Dundee; from scarlet fever, 3 deaths in Aberdeen and 2 in Edinburgh; and from diphtheria, 2 deaths in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, March 13th, 692 births and 602 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 663 births and 636 deaths in the preceding period. These deaths represent a mortality of 25.9 per 1,000 of the aggregate population in the districts in question, as against 27.4 per 1,000 in the previous period. The mortality in these Irish areas was, therefore, 6.2 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 29.8 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 30.1 (as against an average of 31.8 for the previous four weeks), in Dublin city 31.7 (as against 33.7), in Belfast 25.2 (as against 24.4), in Cork 25.8 (as against 30.9), in Londonderry 15.2 (as against 24.3), in Limerick 14.9 (as against 21.0), and in Waterford 9 5 (as against 27.5). The zymotic death-rate was 1.6, or the same as in the previous period.

During the week ending Saturday, March 20th, 622 births and 558 deaths were registered in the twenty seven urban districts of Ireland, as against 692 births and 602 deaths in the preceding period. These deaths represent a mortality of 24.0 per 1,000 of the aggregate population in the districts in question, as against 25.9 per 1,000 in the previous period. The mortality in these Irish areas was therefore 4.7 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 26.8 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 23.8 (as against an average of 34.8 for the previous four weeks), in Dublin city 24.5 (as against 34.4), in Belfast 25.0 (as against 24.5), in Cork 25.8 (as against 27.4), in Londonderry 21.5 (as against 21.2), in Limerick 31.1 (as against 19.0), and in Waterford 32.3 (as against 26.6). The zymotic death-rate was 1.6, or the same as in the previous period.

ENGLISH URBAN MORTALITY IN THE YEAR 1914.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

IN the accompanying table will be found summarized the vital statistics of ninety-seven of the largest English towns, based upon the Registrar-General's weekly returns for last year. The 449,098 births registered in these towns during the fifty-two weeks ending January 2nd, 1915, were equal to a rate of 24.8 per 1,000 of the population, provisionally estimated at 18,120,059 persons in the middle of the year. In London the birth-rate was 24.6 per 1,000, while among the other large towns it ranged from 13.0 in Bournemouth, 14.0 in

Analysis of the Vital Statistics of Ninety-seven of the Largest English Towns during the Year 1914.

TOWNS.	Population estimated to the middle of Year 1914.	Births.	Deaths.	Annual rate per 1,000 Living.		Deaths from Principal Infectious Diseases.							Deaths under 1 year to 1,000 Births.	Uncertified Deaths per Cent. of Total.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (under 2 years.)		
97 Large Towns	18,120,059	449,098	263,656	24.8	13.1	780	2	6,226	1,620	4,551	2,939	11,684	113	0.8
London	4,516,612	110,982	64,994	24.6	14.4	147	—	1,385	316	918	706	3, 31	103	0.1
Croydon	181,956	4,001	1,971	22.0	10.8	6	—	11	5	23	17	65	80	—
Wimbledon	59,598	1,078	599	18.1	10.0	—	—	3	2	5	7	24	72	—
Ealing	71,030	1,197	667	16.9	9.4	1	—	8	2	5	1	13	65	0.4
Acton	64,369	1,463	687	22.8	10.7	1	—	9	1	6	9	27	98	—
Willesden	167,922	3,947	1,722	23.5	10.3	3	—	9	5	34	21	80	86	0.1
Hornsey	88,953	1,477	775	16.6	8.7	—	—	1	2	4	6	19	57	—
Tottenham	149,495	3,794	1,675	25.4	11.2	4	—	17	9	27	38	64	92	—
Edmonton	71,024	1,934	741	27.2	10.4	3	—	14	3	16	16	54	84	—
Enfield	61,069	1,301	595	21.3	9.7	2	—	8	4	8	14	30	81	—
West Ham	296,570	8,936	4,367	30.1	14.7	13	—	130	13	113	49	235	106	0.1
East Ham	146,526	3,411	1,466	23.3	10.0	4	—	16	7	21	28	45	78	—
Leyton	133,719	2,738	1,335	20.5	10.	4	—	17	2	22	29	46	80	—
Walthamstow	134,825	3,072	1,389	22.8	10.3	4	—	20	7	17	28	52	80	—
Ilford	91,041	1,485	702	16.3	7.7	—	—	2	—	6	4	9	61	—
Gillingham	55,559	1,266	614	22.8	11.6	5	—	6	1	13	12	10	89	2.5
Hastings	59,620	833	814	14.	13.7	1	—	—	—	4	—	7	65	0.2
Eastbourne	55,662	830	478	14.9	8.6	1	—	—	1	5	8	11	57	0 4
Brighton	133,936	2,346	1,771	17.5	13.2	1	—	15	8	10	12	32	83	0.1
Portsmouth	245,827	5,714	3,051	23.2	12.4	30	—	39	5	49	78	71	85	0.9
Bournemouth	85,254	1,107	865	13.0	10.1	—	—	11	—	3	14	6	72	0.1
Southampton	123,948	2,942	1,701	23.7	13.7	4	—	9	10	10	38	50	90	0.2
Reading	90,083	1,792	1,050	19.9	11.7	3	—	3	—	4	3	18	90	1.8
Oxford	54,339	908	646	16.7	11.9	—	—	5	—	8	2	11	68	—
Northampton	91,123	1,888	1,242	20.7	13.6	—	—	18	1	7	38	34	87	0.8
Cambridge	57,676	986	711	17.1	12.3	2	—	3	—	2	23	8	80	0.3
Southend-on-Sea	83,908	1,454	798	17.3	9.5	5	—	—	2	9	4	8	65	4.1
Ipswich	76,472	1,791	1,042	23.4	13.6	1	—	14	13	21	4	24	104	—
Great Yarmouth	57,502	1,319	918	22.9	16.0	2	—	10	2	17	28	31	115	—
Norwich	124,107	2,509	1,690	20.2	13.6	5	—	14	9	9	29	62	111	0.2
Swindon	52,750	1,180	599	22.4	11.4	1	—	—	—	2	7	10	75	0.2
Exeter	60,788	1,188	802	19.5	13.2	2	—	—	1	17	3	13	85	0.1
Plymouth	113,559	2,646	1,929	23.3	17.0	5	—	38	2	38	27	62	126	—
Devonport	85,589	2,027	938	23.7	10.9	12	—	14	5	9	23	31	80	—
Bath	70,292	1,078	890	15.3	12.7	3	—	2	2	1	7	4	58	0.2
Bristol	363,312	7,777	4,820	21.4	13.3	8	—	93	21	68	36	124	100	—
Gloucester	50,759	1,127	701	22.2	13.8	2	—	—	2	7	10	9	104	2.4
Stoke-on-Trent	241,430	7,647	4,208	31.7	17.4	17	—	84	1	85	8	330	144	1.6
Wolverhampton	95,725	2,585	1,484	27.0	15.5	2	—	11	5	17	18	77	114	0.1
Walsall	94,093	2,695	1,363	28.6	14.5	1	—	9	2	33	15	83	118	0 1
West Bromwich	69,430	2,191	1,069	31.6	15.4	1	—	23	16	23	18	58	108	2.6
Dudley	51,895	1,503	832	29.0	16.0	2	—	42	7	16	4	31	137	2.3
Birmingham	868,430	23,268	12,889	26.8	14.8	13	—	311	137	304	256	639	122	3.4
Smethwick	76,314	1,994	999	26.1	13.1	1	—	26	14	17	12	46	106	0.6
Coventry	119,003	3,133	1,378	26.3	11.6	2	—	23	6	13	13	34	86	2.3
Leicester	232,664	5,075	3,211	21.8	13.8	5	—	102	5	74	15	109	120	0.7
Lincoln	60,243	1,329	737	22.1	12.2	—	—	4	—	1	8	19	92	0.7
Grimsby	78,667	2,118	1,132	26.9	14.4	4	—	50	1	19	4	69	130	1.1
Nottingham	266,918	6,192	4,042	23.2	15.1	5	—	145	12	62	35	180	145	0.5
Derby	126,389	3,011	1,609	23.8	12.7	1	—	19	4	23	12	44	92	—
Stockport	113,040	2,716	1,726	21.5	13.7	6	—	24	6	5	10	77	124	0.6
Birkenhead	137,710	3,777	2,061	27.4	15.0	4	—	66	6	48	15	123	120	0.3
Wallasey	87,175	1,815	1,058	20.8	12.1	1	—	19	6	22	11	32	93	—
Liverpool	767,992	23,141	14,848	30.1	19.3	43	—	521	121	249	109	940	139	2.4
Bootle	73,230	2,257	1,177	30.8	16.1	1	—	40	3	13	8	87	122	4.6
St. Helens	100,775	3,319	1,675	33.2	16.7	4	—	29	5	25	8	93	138	3.5
Southport	71,747	1 016	986	14.2	13.7	1	—	10	1	7	4	4	96	2.1
Wigan	91,491	2,703	1,587	29.5	17.4	16	—	87	1	15	6	118	141	—
Warrington	74,923	2,227	1,184	29.7	15.8	8	—	32	24	28	12	57	113	3.3
Bolton	185,247	4,071	2,673	22.0	14.4	12	—	62	3	51	43	174	119	0.2
Bury	59,213	1,167	937	19.7	15.8	1	—	2	8	16	5	30	123	2.3
Manchester	738,538	18,917	12,222	25.6	16.6	38	—	298	157	281	101	508	127	0.2
Salford	234,975	6,236	3,864	26.5	16.4	19	—	111	78	77	38	165	125	0.1
Oldham	151,044	3,479	2,663	23.0	17.6	5	—	171	48	57	41	79	138	—
Rochdale	94,320	1,857	1,493	19.7	15.8	7	1	58	4	43	22	27	128	2.0
Burnley	110,040	2,599	1,762	23.6	16.0	4	—	125	9	46	15	84	157	0.5
Blackburn	134,387	2,803	1,957	20.9	14.6	7	—	21	11	11	7	49	115	1.6
Preston	118,514	2,817	1,849	23.8	15.6	10	—	47	42	26	26	94	142	2.5
Blackpool	62,206	945	901	15.2	14.5	2	—	8	1	6	2	9	114	3.3
Barrow-in-Furness	65,921	1,958	934	29.7	14.2	5	—	1	6	27	9	14	107	2.5
Huddersfield	112,265	2,031	1,633	18.1	14.5	6	—	49	3	22	3	18	112	0.9
Halifax	100,373	1,778	1,477	17.8	14.8	13	—	9	4	20	13	27	102	0.3
Bradford	291,482	5,704	4,524	19.6	15.5	20	—	115	6	94	34	83	123	0.2
Leeds	459,260	10,749	6,784	23.4	14.8	20	—	214	29	138	54	286	124	—
Dewsbury	54,083	1,296	829	24.0	15.5	3	1	9	2	7	6	30	113	—
Wakefield	52,643	1,196	736	22.7	14.0	7	—	15	5	4	17	31	103	0.4
Barnsley	53,929	1,641	935	30.4	17.3	4	—	55	5	30	2	53	155	0.3
Sheffield	476,971	12,962	7,717	27.2	16.2	25	—	370	86	229	66	4 9	132	0.6
Rotherham	65,313	1,969	996	30.1	15.3	3	—	29	12	23	7	41	119	1.6
York	83,802	1,884	1,107	22.5	13.2	6	—	21	2	17	16	41	117	—
Hull	291,118	7,928	4,403	27.2	15.1	43	—	98	7	53	50	256	121	0.5
Middlesbrough	126,452	4,080	2,389	32.3	18.9	5	—	59	35	58	53	157	150	0.6
Darlington	59,500	1,615	798	27.1	13.4	3	—	3	10	23	18	25	98	4.5
Stockton-on-Tees	59,311	1,795	1,030	30.3	17.4	2	—	27	10	20	10	50	123	0.7
West Hartlepool	64,374	1,892	995	29.4	15.5	4	—	8	9	23	4	34	106	0.8
Sunderland	152,927	4,941	2,575	32.3	16.8	7	—	18	24	61	26	197	134	1.7
South Shields	111,357	3,505	1,918	31.5	17.2	16	—	31	23	55	16	105	136	3.3
Gateshead	119,362	3,738	2,145	31.3	18.0	9	—	61	17	45	7	170	148	5.0
Newcastle-on-Tyne	273,415	7 564	4,623	27.7	16.9	17	—	215	44	75	25	238	136	0.4
Tynemouth	61,408	1,742	957	28.4	15.6	8	—	8	5	10	12	53	129	3.2
Carlisle	52,813	1,202	787	22.8	14.9	—	—	—	8	6	4	19	122	3.2
Newport (Mon.)	89,404	2,277	1,163	25.5	13.0	4	—	19	18	36	13	37	117	0.1
Cardiff	188,495	4,795	2,604	25.4	13.8	7	—	61	19	74	41	95	110	—
Rhondda	166,365	5,528	2,350	33.2	14.1	5	—	84	10	43	32	162	137	0.2
Merthyr Tydfil	85,082	2,355	1,300	27.7	15.3	3	—	42	3	19	22	52	119	0.3
Aberdare	53,427	1,580	701	29.6	13.1	2	—	—	1	3	14	28	96	0.6
Swansea	121,665	3,261	1,885	26.8	15.5	5	—	81	10	85	13	74	141	0.3

Hastings, 14.2 in Southport, 14.9 in Eastbourne, 15.2 in Blackpool, and 15.3 in Bath, to 31.3 in Gateshead, 31.5 in South Shields, 31.6 in West Bromwich, 31.7 in Stoke-on-Trent, 32.3 in Middlesbrough, and in Sunderland, and 33 2 in St. Helens and in Rhondda.

The 263,656 deaths registered in these towns were equal to a rate of 13.1 per 1,000; in London the death-rate was 14.4 per 1,002, while among the other towns it ranged from 7.7 in Ilford, 8.6 in Eastbourne, 8.7 in Hornsey, 9.4 in Ealing, 9.5 in Southend-on-Sea, and 9.7 in Enfield, to 17.3 in Barnsley, 17.4 in Stoke-on-Trent, in Wigan, and in Stockton-on-Tees, 17.6 in Oldham, 18.0 in Gateshead, 18.9 in Middlesbrough, and 19.3 in Liverpool.

The deaths from all causes included 780 from enteric fever, 2 from small-pox, 6,226 from measles, 1,620 from scarlet fever, 4,551 from whooping-cough, 2,939 from diphtheria, and 11,684 from diarrhoea and enteritis among children under 2 years of age. The fatal cases of small-pox belonged respectively to Rochdale and Dewsbury. The 780 deaths from enteric fever were equal to a rate of 0.04 per 1,000; in London this disease caused a death-rate of 0.03 per 1,000, while the highest rates were recorded in Portsmouth, Devonport, Wigan, Warrington, Halifax, Wakefield, Hull, and South Shields The 6,226 fatal cases of measles were equal to a rate of 0.35 per 1,000; in London the rate was 0.31 per 1,000, the highest rates being recorded in Dudley, Liverpool, Wigan, Oldham, Burnley, Barnsley, Sheffield, and Newcastle-on-Tyne. The 1,620 deaths from scarlet fever corresponded to a death-rate of 0.09 per 1,000, which was slightly in excess of the rate in London; this disease was proportionately most fatal in West Bromwich, Warrington, Manchester, Salford, Oldham, Preston, Middlesbrough, South Shields, and Newport (Mon.). The 4,551 fatal cases of whooping-cough were equal to a rate of 0.25 per 1,000, against 0.20 per 1,000 in London; the highest death-rates from this cause were recorded in Rochdale, Burnley, Barrow-in-Furness, Barnsley, Sheffield, Middlesbrough, South Shields, Newport (Mon.), and Swansea. The 2,939 deaths from diphtheria were equal to a rate of 0.16 per 1,000; in London the rate was 0 15 per 1,000, the highest rates being recorded in Portsmouth, Southampton, Northampton, Cambridge, Great Yarmouth, Stoke-on-Trent, Birmingham, Wakefield, and Middlesbrough. The mortality from diarrhoea and enteritis, measured in proportion to the births registered during the year, was slightly greater in London than in the ninety-seven towns as a whole; the highest proportions were recorded in Stoke-on-Trent, Liverpool, Wigan, Bolton, Sunderland, and Gateshead.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 113 per 1,000; in London the proportion was 103 per 1,000, while among the other towns it ranged from 57 in Hornsey and in Eastbourne, 58 in Bath, 65 in Ealing, in Ilford, and in Hastings, and in Southend-on-Sea, and 68 in Oxford, to 141 in Wigan and in Swansea, 142 in Preston, 144 in Stoke-on-Trent, 145 in Nottingham, 148 in Gateshead, 150 in Middlesbrough, 155 in Barnsley, and 157 in Burnley.

The causes of 2,123, or 0.8 per cent. of the deaths registered in these towns last year were not certified, either by a registered medical practitioner or by a coroner. In twenty-four of the towns the causes of all the deaths were duly certified; among the other towns the highest proportions of uncertified deaths recorded were 3.2 per cent. in Tynemouth and in Carlisle, 3.3 in Warrington, in Blackpool, and in South Shields, 3.4 in Birmingham, 3.5 in St. Helens, 4.1 in Southend-on-Sea, 4.5 in Darlington, 4.6 in Bootle, and 5.0 in Gateshead.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION. — Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon (male). Salary, £150 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salaries, £120 and £100 per annum respectively.

BIRMINGHAM CITY.—Assistant Medical Officer of Health (lady). Salary, £300 per annum.

BIRMINGHAM: CITY MENTAL HOSPITAL, Winson Green.—Assistant Medical Officer. Salary, £250 per annum.

BIRMINGHAM GENERAL DISPENSARY. — Resident Medical Officer. Salary, £250 per annum.

BOOTLE BOROUGH HOSPITAL. — Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Three House-Surgeons. Salary, £100 per annum.

BRADFORD EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £350 per annum, rising to £400.

BRISTOL GENERAL HOSPITAL. — (1) First House-Physician; (2) Second House-Physician; (3) House-Surgeon and Casualty House-Surgeon; (4) Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY. — (1) Three House-Surgeons; (2) Two House-Physicians; (3) Obstetric and Ophthalmic House-Surgeon. Salary, £120 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £150 per annum.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer (male). Salary, £250 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL. — Second House-Surgeon. Salary, £150 per annum.

COLONSAY PARISH.—Medical Officer. Salary, £200 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN. — Resident Medical Officer (lady). Salary, £200 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

DUMFRIES: CRICHTON ROYAL MENTAL HOSPITAL.—Temporary Assistant Physician. Salary, £5 5s. per week.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

GLASGOW CORPORATION.—Assistant Tuberculosis Officer. Salary, £350 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY. — Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HAMPSHIRE COUNTY COUNCIL, Winchester.—Assistant County Medical Officer of Health. Salary, £300 per annum, rising to £400.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Physician. Salary, £30 for six months and £2 10s. washing allowance.

HOSPITAL FOR WOMEN, Soho Square, W. — Resident Medical Officer. Salary, £80 per annum.

HULL: VICTORIA CHILDREN'S HOSPITAL. — (1) Two House-Surgeons. (2) Assistant House-Surgeon. Salary for (1) £100 and £60 per annum respectively, and (2) £50 per annum.

INVERNESS: NORTHERN INFIRMARY.—House-Surgeon. Salary, £150 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

KENT COUNTY ASYLUM, Chartham.—Junior Assistant (Third) Medical Officer (male). Salary, £250 per annum.

KENT COUNTY ASYLUM, Maidstone.—Assistant Medical Officer. Salary, £250 per annum.

KENT COUNTY COUNCIL, Maidstone. — Tuberculosis Officer. Salary, £500 per annum.

LANCASHIRE COUNTY COUNCIL.—Medical Superintendent at the Elswick Sanatorium. Salary, £300 per annum, rising to £350.

LEEDS GENERAL INFIRMARY.—(1) Ophthalmic House-Surgeon. (2) Resident Medical Officer at the Ida and Robert Arthington Hospitals. Salary, £50 and £60 per annum respectively.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Surgeons. (2) House-Physician. Salary, £60 per annum.

LONDON UNIVERSITY.—University Chair of Physiology, tenable at St. Bartholomew's Hospital Medical School. Salary, £600 per annum.

MANCHESTER: ANCOATS HOSPITAL.—House-Physician. Salary, £80 per annum

MANCHESTER CHILDREN'S HOSPITAL.—(1) Resident Medical Officer. (2) Assistant Medical Officer. Salary, £100 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £450.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.— House-Surgeon. Salary, £150 per annum.

MILE END OLD TOWN INFIRMARY.—Two Assistant Medical Officers. Salary, £275 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NEWCASTLE-UPON-TYNE POOR LAW INSTITUTION AND INFIRMARY.—Assistant Resident Medical Officer. Salary, £250 per annum, rising to £300.

NEWPORT: ROYAL GWENT HOSPITAL. — Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORTHAMPTON EDUCATION COMMITTEE. — Dental Surgeon. Salary, £250 per annum, rising to £300.

NORWICH CITY.—Assistant School Medical Officer. Salary, £30 per month.

PADDINGTON GREEN CHILDREN'S HOSPITAL. — House-Physician (lady). Salary, £80 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £5 honorarium on completion of three months' service.

ROCHDALE INFIRMARY AND DISPENSARY. — Second House-Surgeon. Salary, £125 per annum.

ROTHERHAM COUNTY BOROUGH. — Tuberculosis Officer and Assistant School Medical Officer. Salary, £350 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician. Salary, £75 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident House-Surgeon. Salary, £100 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Senior and Junior Resident Medical Officers. Salary, £150 and £100 per annum respectively.

SALFORD ROYAL HOSPITAL. — Junior and Casualty House-Surgeons. Salary, £100 per annum each.

SALISBURY GENERAL INFIRMARY. — (1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SCARBOROUGH EDUCATION COMMITTEE.—Lady School Medical Inspector.

SCARBOROUGH HOSPITAL AND DISPENSARY. — Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

SURREY COUNTY ASYLUM, Netherne. — Temporary Assistant Medical Officer. Salary, £6 6s. per week.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—(1) House-Physician. (2) House-Surgeon. Honorarium, £100 per annum each.

WAKEFIELD: CLAYTON HOSPITAL. — Lady Junior House-Surgeon. Salary, £120 per annum.

WAKEFIELD: WEST RIDING OF YORKSHIRE COUNTY COUNCIL.—Temporary Dispensary Tuberculosis Officer. Salary, £400 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WELSH HOSPITAL, Netley.—Two Medical Officers. Salary, £400 per annum.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, ETC., Welbeck Street, W.—Honorary Registrar.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop.—Second Assistant to the Medical Superintendent. Salary, £200 per annum.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £120 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Lady House-Surgeon. Salary, £150 per annum.

WILLESDEN URBAN DISTRICT COUNCIL.—(1) Assistant Medical Officer of Health and Assistant School Medical Officer; (2) Resident Medical Officer at the Infectious Diseases Hospital. Salary, £6 6s. and £8 8s. per week respectively.

WOOLWICH INFIRMARY.—Assistant Medical Officer (male). Salary, £180 per annum, rising to £200.

WORCESTER COUNTY COUNCIL.—(1) Assistant Tuberculosis Officer; (2) Assistant School Medical Officer. Salary, £350 per annum each.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Northleach (Gloucester), Dripsey (co. Cork), Staplehurst (Kent).

MEDICAL REFEREE.—Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 47, and attached more particularly to the Greenwich and Woolwich County Courts.

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

EDINBURGH ROYAL INFIRMARY.—The following appointments have been made:

LAIRD, A. H., M.B.Dub., Honorary Anaesthetist to Coventry and Warwickshire Hospital.

MCVITTIE, A. C., M.B., B.Ch.Dub., Certifying Surgeon for the Lerwick District, co. Shetland.

MITCHELL, J. M., M.D.Aberd., D.P.H.Camb., District Medical Officer of the Glanford Brigg Union.

NICHOLSON, Balfour S., M.B., C.M.Glasg., Tuberculosis Officer for the County of Derby.

RITSON, Miss E., M.B., B.S.Durh., Resident Medical Officer of the Newcastle-upon-Tyne Parish Workhouse.

SEYMOUR, E. A., M.B., B.S.Lond., District Medical Officer of the Hampstead Parish.

SPENCE, R. J., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Stewartstown District, co. Tyrone.

SPENCER, E. M., M.D.Toronto, L.R.C.P. and S.Edin., District Medical Officer of the Builth Union.

STEWART, W. P. A., M.B., Ch.B.Glasg., Certifying Factory Surgeon for the Tarbert District, co. Argyll.

STOWERS, J. H., M.D., Honorary Consulting Dermatologist to the Foundling Hospital.

WRIGHT, F. R. E., M.B.Lond., Certifying Factory Surgeon for the Braunston District, co. Devon.

Physician.—Harry Rainy, M.D., F.R.C.P.Edin.

Temporary Assistant Physicians.—G. D. Mathewson, M.B., F.R.C.P.Edin., A. Fergus Hewat, M.B., F.R.C.P.Edin.

Temporary Assistant Surgeons.—R. C. Alexander, F.R.C.S.E., W. W. Carlow, F.R.C.S.E., J. M. Graham, F.R.C.S.E., F. E. Jardine, F.R.C.S.E., W. Q. Wood, F.R.C.S.E.

Resident Physicians.—J. Roderick Bulman, M.B., Ch.B., to Dr. Graham Brown; R. C. Rogers, M.B., Ch.B., to Dr. F. D. Boyd.

Resident Surgeons.—Henry J. C. Gibson, M.A., M.B., Ch.B., to Professor Caird; C. M. G. Elliott, L.R.C.P.and S.Edin.and Glasg., to Mr. Cathcart; I. F. Longley, M.D., to Mr. Wallace; I. K. F. MacLeod, M.B., Ch.B., to Professor Thomson; James B. Hogarth, M.B., Ch.B., to Mr. Miles; W. Douglas Yuille, L.R.C.P.and S.Edin., to Mr. Brewis.

Non-resident House-Physician.—Maurice G. Hannay, M.R.C.S., L.R.C.P., to Dr Norman Walker.

Clinical Assistant.—B. S. Raj, L.R.C.P.and S.Edin., to Dr. Sym.

PUBLISHER'S ANNOUNCEMENTS.

THE Cambridge University Press will shortly publish *A Campaign against Consumption: A Collection of Papers relating to Tuberculosis*, by Dr. Arthur Ransome, consulting physician to the Manchester Hospital for Consumption and to the Bournemouth Hospital. Some of the papers were originally read before the Royal Society and other learned bodies; others are reprinted from various medical and scientific journals.

Messrs. Cassell have in preparation a *Manual of Bacteriology*, in which Dr. Georges Dreyer, Professor of Pathology at Oxford, has collaborated with Dr. E. W. Ainley Walker, University Lecturer in Pathology in the same university. The same publishers announce a revised and enlarged edition of Dr. H. Campbell Thomson's *Diseases of the Nervous System*. Messrs. Nisbet will shortly issue a third edition of Sir W. Arbuthnot Lane's work, *The Operative Treatment of Chronic Intestinal Stasis*, with additional chapters by Drs. James Mackenzie, Jordan, and Mutch, who have written on the medical, radiological, and bacterio-chemical aspects of the subject. Mr. Heinemann announces a work entitled *Fibrositis*, dealing with the many clinical entities classed under what is known as chronic rheumatism. The authors are Dr. Ll. Jones Llewellyn, senior physician at the Royal Mineral Water Hospital, Bath, and Dr. A. Bassett Jones, late senior surgeon at the Cardiganshire General Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

SWANN.—At Eddlehurst, Eastwood Avenue, Giffnock, near Glasgow, on March 21st, Effie J. Swann, L.R.C.P. and S.Edin., wife of A. J. T. Swann, M.B., Ch.M., D.P.H., Medical Officer, West African Medical Staff, Northern Nigeria, a son.

MARRIAGE.

POOLE—MARCHBANK.—On Wednesday, March 17th, at the Westgate Road Baptist Church, Newcastle-on-Tyne, by the Rev. J. T. Whitman, assisted by the Rev. S. V. Marchbank (brother of bride), Stuart Kingsley Poole, of Thanet House, Creswell, only son of M. J. Poole, J.P., and Mrs. Poole, of Ramsgate, to Elizabeth Viccars, fifth daughter of the late J. Marchbank and Mrs. Marchbank, of 31, Grove Street, Newcastle-on-Tyne.

DEATH.

GLOSTER.—Lieutenant Henry Colpoys Gloster, 6th Gordon Highlanders, killed in action by a shell bursting over him, on March 12th, 1915, at Neuve Chapelle, aged 20. He was an undergraduate medical student of Caius College, Cambridge, having entered in June, 1913, passing his first M.B. Examination in the following October. He received his commission (sub-lieutenant) on August 15th, 1914, joined his regiment in Scotland, then to Bedford, proceeding to the front on November 9th, 1914. He was the only son of Dr. and Mrs. Gloster, of Upper Phillimore Place, Kensington.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Dr. David Waterston: Further Recent Investigations in the Development of the Human Body.

WEDNESDAY.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Dr. David Waterston: Further Recent Investigations in the Development of the Human Body.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Discussion, The Value of Tuberculin Treatment; to be opened by Dr. R. Murray Leslie (medical), Mr. E. Gillespie (surgical).

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Course will be given next week:

MANCHESTER HOSPITALS' POST-GRADUATE CLINICS.—Ancoats Hospital.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MARCH.
26	Fri.	London: Central Ethical Committee, 2 p.m.
29	Mon.	London: Dominions Committee, 2 p.m.
		London: Naval and Military Committee, 3.30 p.m.
30	Tues.	London: Conference of Secretaries Sub-committee, 12.30 p.m.
		London: Organization Committee, 2 p.m.
		London: Public Health Committee, 3.30 p.m.
31	Wed.	London: Medico-Political Committee, 2 p.m.
		London: Journal Committee, 2 p.m.
		APRIL.
1	Thur.	London: Committee of Chairmen of Standing Committees, 2 p.m.
21	Wed.	London: Finance Committee, 2 p.m.
28	Wed.	London: Council.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 3RD, 1915.

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PAYMENTS TO PANEL PRACTITIONERS.

BRISTOL.

A MEETING of practitioners practising in the insurance area of Bristol was held on March 17th, at 9 p.m., at the Central Y.M.C.A. Hall. Forty-two medical men were present, and the Chairman of the Panel Committee, Mr. H. F. DEVIS, was in the chair.

SURCHARGES.

In his opening remarks, the CHAIRMAN stated that the deficiency for 1913 was £2,200, and that, owing to representations made by the Pharmaceutical Committee, the Panel Committee had investigated the circumstances of the case. After a minute and careful scrutiny, the Panel Committee reported that it found no evidence of extravagance in prescribing on the part of practitioners in the area; that the excess of cost was not owing to orders given by practitioners which were extravagant either in character or quantity; that the Panel Committee, therefore, advised the Insurance Committee that no action should be taken. In spite of this report, however, there was reason to believe that the Insurance Committee would endeavour to impose a surcharge upon certain practitioners. The Chairman defined the attitude of the Panel Committee, saying that it considered it a matter of honour to condemn and recommend surcharge in any case of wilful extravagance or culpable negligence, but that it was equally a matter of honour to do its utmost to protect practitioners in discharge of their duty to their patients. He asked practitioners to co-operate with the Committee by keeping a careful watch to prevent extravagance, but strongly deprecated the attitude of mind in which a prescriber balances cost against efficiency.

After a long discussion, in which Drs. NEWMAN NEILD, G. PARKER, LLEWELLYN, COLLINSON, BARBER, PAGE, LINDSAY, MOORE, and others took part, the following resolution was proposed by Dr. F. E. PEAKE, seconded by Dr. J. W. WALLACE, and unanimously carried:

> That this meeting of panel practitioners practising in the insurance area of Bristol approves of the action of the Panel Committee with regard to surcharge for the year 1913.

Further action was left to the Committee with instructions to summon a meeting of practitioners if thought advisable.

Deductions from Quarterly Cheques.—After a short statement by the CHAIRMAN, the meeting was adjourned till March 24th.

DEDUCTIONS FROM QUARTERLY CHEQUES.

A meeting of panel practitioners, adjourned from March 17th, was held on March 24th. Forty-five medical men were present, Mr. H. F. DEVIS being in the chair.

The CHAIRMAN laid before the meeting correspondence with the Bristol Insurance Committee and the Commissioners regarding deductions made in October, 1914, and January, 1915.

A full discussion showed that the general feeling of the meeting was that the letter from the Commissioners amounted to a pronouncement that payment to practitioners was on an annual basis, not quarterly; that the payments, both as regards the amount and time of payment, depend entirely upon the will or the whim of Insurance Committees; that there is no obligation on Insurance Committees to respect the Regulations; and that there is no hope of redress in action taken by the Commissioners.

It was unanimously agreed to forward the correspondence to the Editor of the BRITISH MEDICAL JOURNAL, and to the Medical Secretary to the British Medical Association, to be laid before the Local Medical and Panel Subcommittee, together with the following resolution, which has been forwarded also to the Commissioners and the Bristol Insurance Committee:

> That this meeting of medical practitioners, practising in the insurance area of Bristol, enters a strong protest against the action of the Bristol Insurance Committee in regard to the deductions from the quarterly cheques paid to practitioners for the year 1914, on the following grounds:
>
> 1. That these deductions have been imposed in a manner contrary to the Regulations, the Panel Committee not having been in any way consulted.
>
> 2. That in regard to deductions made on account of insured persons serving with His Majesty's Forces the Insurance Committee has committed a breach of contract, not having paid practitioners for the whole number of persons on their panel lists.
>
> 3. That this action, taken at a time of great stress, shows an indefensible lack of consideration for a body of citizens with whom the Insurance Committee is in close contractual relationship.

CORRESPONDENCE BETWEEN THE COMMISSIONERS, THE BRISTOL INSURANCE COMMITTEE, AND THE CHAIRMAN OF THE BRISTOL PANEL COMMITTEE.

1. *Clerk to Insurance Committee to Chairman, Panel Committee.*

December 28th, 1914 (Extract).

Owing to the medical year closing eleven days short of a calendar year and to the very large number of insured persons who are now serving with His Majesty's Forces, the next payment will not exceed the rate of 1s. 1d. per insured person on your list.

2. *Chairman, Panel Committee, to Clerk, Insurance Committee.*

December 31st, 1914 (Extract).

The last paragraph (of your letter) states that the next payment will not exceed the rate of 1s. 1d. per insured person. As I shall be asked about this I shall be glad if you will be good enough to explain this matter still further than your letter. The quarter being shortened by eleven days accounts for, say, 2½d. of the 8d. Are we to assume that 5½d. is deducted to cover those insured persons who are serving with His Majesty's Forces and who have already been taken off the medical lists—in other words, that there is a double deduction on account of these persons? I should be grateful for a word in explanation.

3. *Clerk, Insurance Committee, to Chairman, Panel Committee.*

January 1st, 1915 (Extract).

With reference to the next payment, at the rate of 1s. 1d. per insured person, the Insurance Commissioners state that in making advances the amount paid for any quarter should not exceed 90 per cent. of the practitioners' fund on the basis of last year's amount. On this basis the amount available for the first three quarters was £24,601 0s. 3d., and the amount paid was £24,601 8s. 3d. For the period ending yesterday the amount that would have been available is about £7,280, but from this must be deducted £250 for the Panel Committee expenses and about £1,200 on account of insured persons serving with His Majesty's Forces. This leaves £5,839 to be distributed. The total number of insured persons, as per signed statements for 12/10/04, was 106,704, which, at 1s. 1d. per insured person, amounts to £5,779 16s. 0d.

4. *Clerk, Insurance Committee, to Chairman, Panel Committee.*

January 18th, 1915 (Extract).

I am directed by the Insurance Committee for the Borough of Bristol to advert to their letter of the 28th ultimo, and to inform you that they have now received permission from the Insurance Commissioners to make you a further payment on account of the medical year ending the 31st ultimo, on the distinct understanding that it is made and accepted as subject to adjustment should occasion arise.

5. *Chairman, Panel Committee, to Insurance Commissioners.*

February 12th, 1915.

I beg to draw your attention to the financial position of the panel practitioners in the area of Bristol, and to ask that some steps may be taken to remedy a state of affairs which is regarded by them as unsatisfactory. For the first and second quarters of the year 1914 payment was made at the rate of 1s. 9d. per insured person on the lists, for the third quarter at the rate of 1s. 3d., and for the fourth at the rate of 1s. 1d. Thus a reduction of 16 per cent. on the whole year was made during the last half—a period when the majority of panel practitioners have been working at high pressure, with greatly increased expenses, part of which are due to the loyalty of the profession in undertaking the work of those of their colleagues who are serving with His Majesty's Forces. The Insurance Committee adopts a *non possumus* attitude, but it has been suggested that those of us who have been hit the hardest should apply to the Committee for sums of money to help us out of our immediate difficulties. Such an application, presumably *in forma pauperis*, for moneys which we believe are due to us, would be repugnant.

Our chief complaints are :

1. That the sudden deduction of 28 per cent. of our quarterly income for the third quarter placed many practitioners in a very difficult financial position.

2. That the further deduction of 38 per cent. from the fourth quarter's income has made an already serious position well nigh intolerable in many cases.

3. That the Insurance Committee, in estimating the sum to be deducted on account of insured persons serving with His Majesty's Forces, has not distributed the loss amongst the practitioners as it has been actually borne by them, but has deducted a sum estimated to cover the whole loss from the total sum available for the quarter, thus apportioning the loss *pro rata* to the panel lists. This haphazard arrangement might possibly be defended were the insured persons in question fairly evenly distributed amongst the panel lists, but, as a matter of fact, they are most unevenly distributed, and therefore a considerable number of practitioners are mulcted of large sums to which they are fairly entitled.

I should be grateful, gentlemen, if you would be good enough to advise (*a*) as to whether in this particular instance any relief can be obtained; and (*b*) with regard to the general question, whether an Insurance Committee has power to pay just so much or so little to the panel practitioner as may seem advisable.

6. *Chairman, Panel Committee, to the Insurance Commissioners.*

March 1st, 1915.

May I ask for a reply to my letter of the 12th ult.? I regret the necessity for appearing importunate, but there has been for some time past a considerable amount of dissatisfaction amongst panel practitioners in this area on several counts, one of the chief of which is their treatment by the Bristol Insurance Committee in the matter of deductions from the quarterly cheques. I am now being urged to summon a meeting of panel practitioners at an early date, and it is most desirable that I should be in a position to put before them some definite pronouncement on the following points :

(*a*) Was the Insurance Committee justified in making a deduction of 6d. per insured person for the third quarter, followed by one of 8d. for the last quarter?

(*b*) Was the Insurance Committee justified in making deductions *pro rata* to the panel lists on account of persons serving with His Majesty's Forces?

Has the Insurance Committee the power of making any deductions from the quarterly cheques that may seem advisable? and, if the answer to this question be in the negative,

In what way can the Insurance Committee be restrained from following this procedure?

7. *The Secretary to the Commissioners to the Chairman, Panel Committee.*

March 19th, 1915.

In reply to your letters of the 12th ult. and the 1st inst., I am directed by the National Health Insurance Commission (England) to state that insured persons who have transferred from civil to military life become, in virtue of the provisions of Section 46 of the National Insurance Act, 1911, disentitled to medical benefit. Accordingly no responsibility devolves upon an Insurance Committee or the practitioners on their panel to provide medical attendance and treatment in such cases. Consequently, no capitation fees can be credited to practitioners in respect of such persons.

In this connexion I am to state that as soon as the necessary information is sufficiently available to approved societies for the notifications of the persons disentitled to medical benefit by reason of their transfer from civil to military life to be issued, steps will be taken with a view to the removal of such persons from the lists of doctors.

I am also to point out that the settlement of accounts between Insurance Committees and doctors is effected after the end of the year, and payments made by Insurance Committees to doctors in the course of the year are only in the nature of advances made on account of the total remuneration expected to become due to each doctor in respect of the whole year.

The rate at which these advances are made is in each case a matter for consideration by the Insurance Committee and should, of course, be such as to leave a margin for any adjustments which it may be necessary to make in connexion with the final settlement of accounts for the year and to prevent overpayment in individual cases.

The Commissioners are, however, communicating with the Clerk to the Bristol Insurance Committee in the matter.

I am to express regret at the delay in replying to your communications.

8. *Chairman, Bristol Panel Committee, to the Commissioners.*

March 13th, 1915.

I beg to acknowledge your communication dated the 12th inst., which I will lay before the medical practitioners on the panel in this area. I regret, however, that you have not given specific answers to the questions I addressed you.

THE DRUG FUND.

CONFERENCE OF LANCASHIRE INSURANCE COMMITTEES.

AN important conference of Lancashire Insurance Committees was held at Blackburn on March 19th, the chief business being to consider the state of the Drug Fund under the National Insurance, with special reference to the deficiencies that occurred in 1913. Representatives of sixteen out of the nineteen Insurance Committees of the county were present, and Alderman WATSON of Blackburn was elected Chairman, with Mr. W. DAVIES Vice-Chairman. It was resolved not to admit the press to the sittings of the conference, it being left to the Chairman to prepare a report.

At a previous conference, held last year, a resolution was passed, urging on Insurance Committees and Pharma-

Drug Fund: Lancashire Insurance Committee, 1913 and 1914.

	Insured Persons (Mean Count).		Total Prescriptions.		Average Cost per Prescription.		Average Number of Prescriptions per Insured Person.		Cost of Drugs per Insured Person if Paid in Full.		Deficit in Drug Fund.	
	1913.	1914.	1913.	1914.	1913.	1914.	1913.	1914.	1913.	1914.	1913.	1914.
					pence.	pence.			s. d.	s. d.	£	£
Barrow	24,701	27,119	62,447	69,675	7.75	9.25	2.52	2.57	1 7.9	1 11	nil	307
Blackburn	56,854	65,394	213,263	203,530	7.92	8.51	3.75	3.11	2 5.7	2 2.5	999	1,507
Blackpool	15,802	17,686	40,259	43,976	7.4	8.2	2.55	2 48	1 7	1 8	nil	87
Bolton	72,020	77,110	279,198	261,511	7.75	7.93	3.87	3.39	2 6	2 2.9	2,?51	2,063
Bootle	23,394	26,542	50,790	57,037	8.7	9.3	2.2	2.1	1 7	1 8	nil	104
Burnley	50,784	54,567	177,391	155,114	8.9	8.3	3.49	2.84	2 7.2	1 11.7	1,833	85)
Bury	26,166	28,075	73,496	74,682	8.5	9.5	2.81	2.65	2 0.1	2 1.?	274	680
Lancashire (county) ...	656,961	701,051	1,861,050	1,721,852	7.1	7.8	2.8	2.4	1 8.2	1 7.4	nil	nil
Liverpool	248,187	274,329	632,798	667,286	8.16	9.25	2.56	2.44	1 8 9	1 10.6	nil	4,546
Manchester	262,699	290,012	1,286,124	1,207,816	7.89	6.17	4.9	4.17	3 2.6	2 1.7	17,648	7,476
Oldham	65,368	66,116	220,000	176,000	7 8	9	3.36	2.66	2 4	2 3	980	709
Preston	47,405	51,049	166,108	158,325	9.5	8.88	3.64	3.22	2 9.3	2 3 5	2,249	1,586
Rochdale	40,129	42,850	118,5?2	116,536	8.3	8.64	2.95	2.72	2 0.5	1 11.5	?38	415
St. Helens	33,905	34,346	74,932	88,442	6 77	6.93	2.2	2.4	1 3	1 4. 5	nil	nil
Salford	88,359	94,702	405,748	344,554	7.1	5.1	4.6	3.6	2 8.8	1 6.4	3,686	nil
Southport	17,710	20,759	44,447	43,892	8.08	8.35	2.51	2.11	1 8.3	1 5.5	nil	nil
Stockport	42,538	50,352	163,757	168,305	8.46	8.09	3.85	3.34	2 8.6	2 3.08	1,587	1,395
Warrington	26,325	28,516	65,709	66,995	7.73	8.32	2.80	2.62	1 9.73	1 9.84	nil	?87
Wigan	33,146	35,640	116,416	111,904	7.03	7.19	3.56	3.18	2 1.07	1 10.87	310	314
Total	1,789,915	1,937,863	5,888,698	5,569,127	7.06	7.64	3.3	2.83	2 1.4	1 10.14	20,980	17,393

ceutical Committees the necessity of seeing that Regulation 40 of the old Medical Regulations was put into operation. This has been done in some of the areas, and, as the result of the investigations made by Panel Committees, surcharges have been made on panel practitioners to the extent of £866 in Burnley and £308 in Stockport. Investigations have also been undertaken at Blackburn, Blackpool, Bolton, Bury, Manchester, Preston, Rochdale, Salford, and Wigan. In some of these cases no report has yet been sent in by the Panel Committees, while in others the reports received have not been accepted by the Pharmaceutical or Insurance Committees, and negotiations with the Insurance Commissioners have been undertaken with a view to the settlement of disputes. From numerous places complaints came that Regulation 40 is extremely obnoxious, that it entirely ignores the interests of the chemists, and that the labour and cost of putting it into operation is almost prohibitive. After considerable discussion the conference passed a resolution calling on the Commissioners to appoint a departmental committee to inquire into the whole question of the Drug Fund, and to amend the regulations that set forth the procedure for investigation as to excessive prescribing.

A special report has been prepared by the clerk of the Blackburn Insurance Committee, the chief points of which are given in the table. In the year 1913 the total credits to the Drug Fund for the whole of the county of Lancashire amounted to £167,534 and the chemists' bills to £188,515, leaving a deficit of £20,980, while in the year 1914 the total credits to the fund amounted to £160,557, and the chemists' bill to £177,921, leaving a deficit of £17,363. The figures show at once that the greatest deficiencies have occurred in those towns where there is a large proportion of female labour—notably Blackburn, Bolton, Burnley, Bury, Manchester, Oldham, Preston, Rochdale, and Stockport. The case of Liverpool is peculiar, and was not fully explained, for, while in 1913 a surplus of £1,053 was handed over to the Panel Fund, in 1914 there was a deficiency of £4,546 in the Drug Fund, which is apparently due to a large extent to the increase in the average cost per prescription from 8.16d. in 1913 to 9.25d. in 1914. The cases of Manchester and Salford are as remarkable in 1914 as they were in 1913. The deficiency in Manchester, amounting to £7,476 in 1914, is still relatively very high, though it is over £10,000 less than it was in 1913. The cause of the deficiency is clearly the unusual number of prescriptions given to the insured—namely, 4.17 for every insured person, while the average for the whole county is only 2.83 per insured person. Salford comes second in the average number of prescriptions, which is 3.6 per insured person, and the fact that Salford, after having a deficiency of £3,686 in 1913, shows no deficiency at all in 1914, but such a surplus that the panel practitioners will probably receive about 5d. of the floating 6d. is to be attributed to the low average cost per prescription, which is only 5.1d. Some doubt was expressed whether it was possible to provide satisfactory medicines at such a low average cost, especially as the average cost for the county as a whole is 7.64d. per prescription. It is believed that the low cost per prescription in Manchester and Salford is due very largely to the special arrangement in those two towns under which the doctors are each debited with the cost of their own prescriptions.

After considerable discussion, the conference proceeded to consider the desirability of establishing a central office for the checking and scrutiny of prescriptions, and it was resolved to circularize the Insurance Committees and to call another meeting if a sufficient number of the Committees were willing to join a central bureau for this purpose.

NATIONAL INSURANCE.

EXEMPT PERSONS CONSOLIDATED REGULATIONS, 1915.

THE Insurance Commissioners have issued draft regulations, dated March 16th, proposed to be made dealing with the benefits of exempt persons under Sect. 2 and Sect. 4 (4) of the National Insurance Act, 1911, as amended by Sects. 5 and 9 of the Act of 1913. The benefits to which exempt persons are entitled are medical and sanatorium benefits, and a large part of the regulations is concerned with the payments of contributions and somewhat intricate arrangements about "periods of deficiency" in contributions made in respect of exempt persons. Provision is also made for the establishment of a special fund, to be called the "Exempt Persons Fund," to which all contributions paid in respect of exempt persons will be carried, and from which payments will be made to the General Medical Benefit Fund and the Administration Fund and the General Sanatorium Benefit Fund. Special arrangements are also made for exempt persons serving temporarily in the navy or army, or as police officers, during the war. Schedules are appended giving the official form of exemption certificate and the forms which are to be filled up by persons claiming exemption.

INSURANCE COMMITTEES.

LONDON.

Expenses of Panel and Pharmaceutical Committees.

IT was reported at a meeting of the Committee on March 25th that the Panel and Pharmaceutical Committees had applied for £3,360 and £2,800 respectively for the administrative expenses of each Committee for the year 1915. In view of the existing uncertainty as to the number of persons entitled to medical benefit after deduction of those who have joined the colours, the Insurance Committee decided to make provisional payments of £2,500 and £2,000 in each case.

Medical Service Investigations in 1914.

The Medical Service Subcommittee reported that it had held 38 meetings during 1914, had considered 126

complaints, and had found 60 to have been substantiated. These were principally allegations of negligence on the part of practitioners, but 14 related to alleged carelessness in certification. In 42 cases practitioners were required to reimburse expenditure incurred by insured persons in obtaining treatment elsewhere. Only two practitioners appealed to the Commissioners against this decision. During the year representations were made to the Commissioners that the continuance of three practitioners on the panel would be prejudial to the efficiency of the medical service. In two instances the Commissioners, after inquiry, removed the names of the practitioners from the list; in the third case the decision had not yet been announced. In respect of five practitioners the conclusion had been reached that their conduct in particular cases justified the insured persons on their lists in desiring to be removed therefrom. In these cases any insured person who applied was removed from the list of the practitioner without further inquiry, action being taken under Article 45 (11) of the Regulations. Only four cases of complaints by practitioners against insured persons were considered during the year, and arrangements were made in each case for transfer to another list.

CORRESPONDENCE.

Alterations in Insurance Act Regulations.

Dr. Alfred Salter (London, S.E.) writes: A letter appeared in the medical press of last week [Supplement to the British Medical Journal of March 20th, p. 104], under the signature of Sir Robert Morant purporting to reply to certain statements made in my speech at Caxton Hall on March 4th, and reported in the *Medical World* of March 11th. The document is of such an amazing character that I must ask permission to deal with it at some length in your columns.

I am sorry to be obliged to use strong language or hard words in referring to the action of a distinguished civil servant like Sir Robert, but I can only describe his letter as a *suggestio falsi* and *suppressio veri*. I write these words fully realizing the seriousness of their import.

In my speech I said (vide *Medical World*, March 11th, p. 300):

> They had one penny per head deducted . . . from the money due to each practitioner and put into a general fund, which was supposed to be redistributed at some future date. So far it has been deducted but not redistributed. Another penny was deducted from "travellers," but this sum also had never been redistributed.

Sir Robert Morant replies:

> I must ask you to note the wholly unjustifiable insinuation that money is withheld by the Commission from the profession in respect of temporary residents and travellers, for you know that this money is in fact distributed in full in the manner set out in the Regulations forming part of the practitioners' agreements.

The money has never been distributed to practitioners, and Sir Robert Morant knows it; or, if he does not know it, what is to be said of him?

In my speech I said (ibid.):

> But what was the proposal now, coming from responsible political quarters and receiving the endorsement of various Insurance Committees? The argument was, You want consultants; they will be of great use to the doctors. Very well, have them, and let the doctors pay for them. It will be part of medical benefit; so let it come out of the Medical Benefit Fund. . . . The proposal seriously put forward at the present time, and having a very reasonable probability of being carried into effect, was that these services, originally arranged to be paid for by special parliamentary grants, should now be charged to the Medical Benefit Fund, and should come out of the pockets of the panel doctors.

Sir Robert Morant replies:

> I cannot conclude without saying that there is no justification whatever for the statement in regard to the new supplementary medical] service [s] described in Parliament last May—namely, that there is "a very reasonable probability" that these services will now be charged to the Medical Benefit Fund, and will come out of the pockets of the panel doctors. No such proposal has been under contemplation.

Will it be believed that this very proposal has been officially put forward by a Government Commission?

> It would be equitable that practitioners should also contribute to the cost of medical referees, in so far as the medical referee may (*sic*) remove . . . those duties which . . . he (the practitioner) has undertaken to perform.—*Report of the Departmental Committee on Sickness Benefit Claims.*

Yet Sir Robert coolly says "no such proposal has ever been under contemplation." He further says "no changes of any kind" in the Regulations with respect to practitioners' agreements are, or have been, under consideration, although the Committee advises that

> The whole question . . . should be considered at an early date by a Departmental Committee or Commission . . . and any action taken upon the report of such a body will probably necessitate a revision of the arrangements made with the medical practitioners on the panel.

What is the value to be attached to Sir Robert Morant's denials after that?

Sir Robert is not as careful as he might be in his reference to my remarks. I did not say that "the Commissioners" had made the suggestion that the cost of medical referees, laboratories, and a nursing service should come out of the pockets of panel doctors. What I said was that the proposal had emanated from "responsible political quarters." I repeat it. It is possible that Sir Robert lives in the rarefied atmosphere of the higher Civil Service, remote from the sordid struggles of the political arena, and that he keeps himself loftily ignorant of the intentions of politicians. I don't. It has been my fortune, or misfortune, as an adopted parliamentary candidate, to mix a good deal in certain political circles, and to keep myself in vital touch with the movements of thought and opinion in the political world. I say definitely that there is a powerful parliamentary group (not confined to one party) which regards the doctors as overpaid and too well treated, and the members of that group are using and will use every endeavour to reduce our remuneration and degrade our status. I have every reason to know, because the very words I quoted in my speech, "You doctors each have to pay individually for your clinical thermometers and your stethoscope, why should you not pay collectively for *x*-ray apparatus?" were addressed to me in the smoking-room of the House of Commons by a well-known politician in the presence of at least half a dozen of the House, all of whom agreed with him. If this point of view should command a majority in the House, what will become of Sir Robert's "assurances" about my statement being "wholly without foundation"? Sir Robert and his colleagues on the Commission will simply be ordered to carry out the policy and frame the necessary schemes. The business of the P.M.P.U. is to see that this view does *not* command a majority in Parliament, and that was my argument at the Caxton Hall meeting.

I hope that it will not be thought that I am out to make a personal attack on the Chairman of the Commission. On the contrary, Sir Robert Morant made a gratuitous attack on myself and impugned my accuracy and veracity. I was bound to reply, and I have shown that his assertions are either deliberately untrue or that he is culpably ignorant of his subject.

The Commissioners and the Government pay the utmost respect to representations from approved societies, because the latter are politically organized and can command votes in the constituencies and in the House of Commons. The Chancellor of the Duchy of Lancaster, speaking in Parliament on March 9th, 1915, said: "It would be very much resented by the (approved) societies, who are very proud, and rightly so, of their powers and liberties, if we attempted to dictate to them." The Commissioners "dictate" daily to the doctors, because panel practitioners have hitherto been unorganized or disorganized, and are politically incompetent. That Sir Robert Morant had been "drawn" to the extent of making such a reply as is contained in the letter to Dr. Cox shows that the P.M.P.U. will make things "move some," as the Americans say, if only the panel men will join up and stick together. Great and far-reaching changes are coming in the future. Mr. Healy pointed out in the House of Commons on March 9th that "There has not been a Session since this Insurance Act was passed in which there has not been some amending Act. . . . I believe . . . we shall have to overhaul the entire system." What are we going to say and what are we going to do when the overhauling takes place?

Let us who have to work the Act, and upon whom falls the main burden, be at least as well organized as the manual workers, and as well equipped for the defence of our livelihood and the improvement of our conditions of service.

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(JUNE 29TH, 1914, TO JANUARY 28TH, 1915).

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Payne, P. H., Esq., Thangomindah
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Levi, K. M., Esq., St Kilda
Lind, E. F., Esq., Williamstown
Lister, C. R., Esq., Melbourne
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McCarthy, C. L., Esq., Footscray
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Mitchell, Mary W., Queenscliff
O'Sullivan, R. F., Esq., 70, Collins Street, Melbourne
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Reed, J. S., Esq., Wangaratta
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Scantlebury, Vera, The Hospital, Melbourne
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Stewart, C. A., Esq., Melbourne
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MacLaren, Jessie A., M.B., Jessop Hospital, Sheffield
Milton, N. V., M.B., 10, Lord Street, Halifax
Raffan, James, M.D., The Oakes, Huddersfield

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH:
ST. HELENS DIVISION.

A MEETING of the St. Helens Division was held on March 26th at St. Helens, when the Chairman, Dr. J. UNSWORTH, presided.

Matters Referred to Divisions.—The meeting was called mainly to consider the matters referred to Divisions in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of March 20th. It was ultimately decided to instruct the Divisional Representative to take the following action:

(*a*) To oppose firmly any scheme or schemes for the treatment of juvenile members of friendly societies until such times as the Government may take action in this direction.

(*b*) On the question of fees for medical examination for life insurance, the Representative of this Division was instructed to act, when necessary, as circumstances suggested.

(*c*) To support on all occasions the recommendation of the Council to Divisions and Representative Body as to eligibility for election as a member of the Association (Min. 306, A.R.M., 1913).

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, April 28th, in the Council Room, 429, Strand, London, W.C. The Chairman is not yet in a position to name the hour, but it will be notified as soon as he is able to see the amount of business to be dealt with.

By order,

GUY ELLISTON,

Financial Secretary and Business Manager.

March 18th, 1915.

SUGGESTED CHANGES OF BOUNDARIES.

PROPOSED RE-ESTABLISHMENT TEMPORARILY OF EAST ANGLIAN BRANCH, TO TAKE THE PLACE OF THE ESSEX, NORFOLK AND SUFFOLK BRANCHES.

ON account of difficulties that have arisen in the organization of the new Essex, Norfolk and Suffolk Branches constituted on December 19th last, representations have been made to the Council that the work of the Association in East Anglia has suffered seriously. It is therefore proposed that the late East Anglian Branch shall be reconstituted and shall continue to exist until such time as suitable arrangements can be made for the organization of the aforementioned Branches.

Notice is accordingly hereby given under Article 13 and By-law 73 to all concerned of a proposal made by the members of the Council of the late East Anglian Branch that the Essex, Norfolk and Suffolk Branches be temporarily discontinued, and the East Anglian Branch reconstituted in their place.

The matter will be determined in due course by or on behalf of the Council. Any member affected by the proposed change and objecting thereto is requested to notify the fact, and the reason therefor, to the Medical Secretary, 429, Strand, W.C., not later than May 3rd, 1915.

April 3rd, 1915.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Temporary Surgeons M. FAWKES, M.B., and W. G. WYLLIE, M.B., G. MURRAY HEIRON, M.B., to the *Victory*, additional, for Haslar Hospital; H. B. GERMAN to the *Pembroke*, additional.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationers: G. E. MULLINS to the *Ruby*; G. B. LOWE to the *Defender*, vice L. S. Fry; W. F. R. CASTLE to the *Panther*, vice S. E. G. Elliott; T. C. WAKEFIELD to the *Owl*, vice R. B. Silcock; J. T. WYLIE to the *Shark*, vice A. F. G. Guinness; F. A. V. DENNING to the *Garland*, vice A. J. Bee; A. McA. SCOTT to the *Lennox*, vice R. G. Morgan; C. SUFFERN to the *Contest*, vice J. P. Johnson; H. W. L. MOLESWORTH to the *Moorsom*; L. G. ALLAN to the *Duke of Cornwall*; R. E. BATSON to the *Lawford*. To be Surgeon Probationers: J. M. S. NICHOL, F. M. FERGUSON, F. G. E. HILL, P. WARD, H. K. DENHAM, E. O. MORRISON.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

To be temporary Majors: WILLIAM THOMAS PROUT, M.B., C.M.G., JAMES A. DEVINE, M.D., D.S.O.

To be temporary Captains: CHARLES E. WALKER, ROBERT FIELDING-OULD, M.D.

Lieutenants to be Captains: ALEXANDER G. BIGGAM, M.B., ROY K. MALLAM, M.B., WILLIAM MCNAUGHTAN, M.B., DAVID T. M. LARGE, M.B., WALTER W. PRATT, M.B., WILLIAM F. CHRISTIE, M.B., MAURICE BURNETT, ALEXANDER HOOD, M.B., EDWARD A. STRACHAN, M.B., CUTHBERT J. BLAIKIE, JAMES H. M. FROBISHER, M.B., WALTER B. STEVENSON, M.B., JOHN L. RITCHIE, M.B., DAVID T. RICHARDTON, M.B., OWEN W. J. WYNNE, CHRISTOPHER M. INGOLDBY, SYDNEY J. HIGGINS, GILBERT A. BLAKE, M.B., PERCY A. WITH, CUTHBERT J. H. LITTLE, M.B., STEPHEN J. BARRY, ROBERT W. VINT, M.B., HENRY R. L'ESTRANGE, HAROLD W. L. ALLOTT, EDWARD P. A. SMITH, M.B., ROBERT B. PRICE, M.B., JAMES B. A. WIGMORE, JOHN HARE, M.B., ROBERT A. FLOOD, M.B., ERIC C. LANG, M.B., WILLIAM V. CORBETT, LEOPOLD T. POOLE, M.B., THOMAS H. BALFOUR, M.B., FRANK C. COWTAN, CHARLES C. JONES, M.B., EDWARD V. WHITBY, M.B., EDMUND U. RUSSELL, ROBERT G. SHAW, M.B., NORMAN W. STEVENS, M.B., RICHARD B. PHILLIPPS, ALEXANDER L. URQUHART, M.B., NOEL T. WHITEHEAD, M.B., JAMES C. SPROULE, AVENELL F. C. MARTYN, GEORGE F. ALLISON, ROBERT C. CARLYLE, M.B., JOHN E. HEPPER, ARTHUR A. M. DAVIES, LESLIE DUNBAR, M.B., HENRY F. PANTON, M.B., HENRY BEDDINGFIELD, D.S.O., M.B., FREDERICK C. DAVIDSON, M.B., STANLEY D. LARGE, CYRIL HELM, HUMFREY N. SEALEY, ALBERT JACKSON, EDWARD C. BEDDOWS, GEORGE E. DYAS, CONYNGHAM V. THORNTON, M.B., JOHN ROWE, M.B., WILLIAM P. CROCKER, M.B., ARTHUR B. H. BRIDGES, AUBREY G. BROWN, M.B., PERCIVAL D. WARBURTON, ROBERT HEMPHILL, M.B., SUMMER H. SMITH, ERNEST W. WADE, M.B., BERNARD WOODHOUSE, WILLIAM K. MORRISON, M.B., EDGAR PERCIVAL, M.B., HENRY C. D. RANKIN, M.B., TREFFRY O. THOMPSON, M.B., STANLEY J. LINZELL, M.B., LEWIS R. SHORE, ALLAN WATSON, M.B., NORMAN V. LOTHIAN, M.B., JOHN G. GILL, M.B., SIDNEY M. HATTERSLEY, M.B., JOHN W. C. STUBBS, M.B., ARTHUR J. A. MENZIES, M.B., JOHN FITZG. GWYNNE, M.B., THOMAS F. P. BREEN, M.B., DAVID C. G. BALLINGALL, M.B., HERBERT G. WINTER, JAMES M. EVATT, FRANCIS G. THATCHER, M.B., WILLIAM P. MULLIGAN, M.B., GERARD P. SELBY, JOHN G. BUTT, M.B., NEIL CANTLIE, M.B., EDWARD A. P. BROCK, PERCIVAL T. PRIESTLEY, M.B., EDWARD PHILLIPS, M.B., SPENCE D. REID, M.B., PETER J. RYAN, M.B., BARCROFT J. L. FAYLE, EVELYN A. SUTTON.

Temporary Lieutenants to be temporary Captains: CHARLES S. CATO, WILLIAM P. YETTS.

To be temporary Lieutenants: ARTHUR W. MATTHEW, GEORGE J. ADAMS, M.B., F.R.C.S., FREDERIC P. JOSCELYNE, M.D., GEORGE S. DEANE, HENRY H. ELLIOT, M.B., ROY H. ROLLINSON-WHITAKER, F.R.C.S., ALAN F. ROOK, JOHN SULLIVAN, M.B., HAROLD S. SUGARS, M.B., FRANCIS G. BELL, M.D., F.R.C.S., FREDERIC O. CLARKE, M.B., JAMES KEENAN, F.R.C.S.I., SYDNEY G. TIBBITTS, JOHN H. TOMLINSON, ROBERT L. KITCHING, M.B., ALEXANDER S. SEABROOKE, M.B., JOHN T. HEFFERNAN, HORACE F. BLOOD, ERIC M. TOWNSEND, ARTHUR BLOOM, M.B., HUBERT M. C. NOEL, OSWALD H. EDWARDS, FRANCIS IRVINE, M.B., WALTER SMITHIES, HENRY H. DAVIS, F.R.C.S.E., WALTER C. C. KIRKWOOD, M.B., CHARLES E. SUNDELL, M.D., JOHN D. MACEWEN, M.B., F.R.C.S.E., JOHN R. SLACK, M.B., ALFRED W. HARVEY, TIMOTHY SHEEHAN, ALAN WILEY, FRANCIS S. HAWKS, JAMES A. HUTCHINSON, JOHN H. WILKINSON, FREDERICK H. RUDGE, NORMAN G. HORNER, M.B., DOUGLAS C. TAYLOR, M.B., F.R.C.S.

SPECIAL RESERVE OF OFFICERS.

LIEUTENANT OWEN G. PARRY-JONES is confirmed in his rank.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

1st London Casualty Clearing Station.—ALEXANDER URQUHART, M.D., to be Lieutenant.

2nd London (City of London) Field Ambulance.—Lieutenant HORACE G. L. HAYNES to be Captain.

3rd London (City of London) Field Ambulance.—ALFRED N. G. JEANS to be Lieutenant.

3rd London General Hospital.—Captain SIDNEY M. SMITH, M.B., is seconded.

1st Home Counties Field Ambulance.—Lieutenant CHARLES KILLICK, M.D., F.R.C.S., to be Captain, temporary. FRANCIS S. JACKSON to be Lieutenant.

2nd Home Counties Field Ambulance.—Captain ANTHONY A. MARTIN, M.D., to be Major, temporary.

3rd Home Counties Field Ambulance.—WILLIAM CUMMINGS, M.B., to be Lieutenant.

South Wales Mounted Brigade Field Ambulance.—Major JAMES MACK. HARRISON, M.B., to be Lieutenant-Colonel. Lieutenant JOSIAH BROWNE to be Captain, temporary.

2nd East Anglian Field Ambulance.—Captain ALISTER C. YOUNG is seconded.

2nd Eastern General Hospital.—CYRIL C. MESSITER to be Lieutenant.

2nd East Anglian Field Ambulance.—Lieutenant JAMES ARTHUR, M.D., from Attached to Units other than Medical Units, to be Lieutenant.

3rd East Anglian Field Ambulance.—Captain JOHN R. POOLER, M.B., to be Major, temporary.

3rd Southern General Hospital.—Captain ROBERT L. GAMLEN resigns his commission on account of ill-health.

South Midland Casualty Clearing Station.—ALEXANDER W. NUTHALL, F.R.C.S., late Captain, 5th Battalion, Royal Warwickshire Regiment, to be Captain.

2nd South Midland Mounted Brigade Field Ambulance.—Captain HENRY G. MAGRATH to be Major, temporary.

1st North Midland Field Ambulance.—FRANK P. STURM, M.B., to be Lieutenant.

1st West Lancashire Field Ambulance.—Surgeon-Captain JAMES WOOD, from the 5th Battalion, the Loyal North Lancashire Regiment, to be Captain.

2nd Lowland Field Ambulance.—Major WILLIAM BRYCE, M.D., from the 1st Lowland Field Ambulance, to be Major.

3rd Lowland Field Ambulance.—Captain JAMES W. KEAY, M.D., to be Major, temporary.

Attached to Units other than Medical Units.—Captain JOHN HOBBS, F.R.C.S., is seconded. Lieutenant ALFRED J. GIBSON, M.B., to be Captain. JOHN A. DAVIES, late Captain, 7th Merioneth and Montgomery Battalion, Royal Welsh Fusiliers, to be Captain. To be Lieutenants: Lieutenant LIONEL G. PEARSON, M.B., from the

4th London Field Ambulance, LORTON A. WILSON, FRANK JEFFREE, M.D., Lieutenant ALFRED H. BELL, from the 5th London Field Ambulance. GERALD W. C. HOLLIST, late Surgeon R.N., to be Lieutenant.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN JAMES C. MCCLURE, M B., from the 3rd Scottish General Hospital, to be Captain.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhou e. Salary, £150 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon (male). Salary, £150 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salaries, £120 and £100 per annum respectively.

BIRMINGHAM: CITY MENTAL HOSPITAL, Winson Green.—Assistant Medical Officer. Salary, £250 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM: ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer. Salary, £250 per annum.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRECONSHIRE COUNTY COUNCIL.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRISTOL EDUCATION COMMITTEE.—Assistant School Medical Officer (lady). Salary, £300 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Three House-Surgeons; (2) Two House-Physicians; (3) Obstetric and Ophthalmic House-Surgeon. Salary, £120 per annum.

BURNLEY COUNTY BOROUGH.—Temporary Assistant Medical Officer of Health. Salary, £400 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

CHESHIRE COUNTY ASYLUM, Parkside.—Second Assistant Medical Officer. Salary, £300 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House-Surgeon. Salary, £150 per annum.

COLONSAY PARISH.—Medical Officer. Salary, £200 per annum.

CROYDON BOROUGH HOSPITAL.—Assistant Resident Medical Officer. Salary, £150 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer (lady). Salary, £200 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

EDINBURGH: ROYAL EDINBURGH ASYLUM, Morningside.—Assistant Medical Officer. Salary, £175 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. (Males.) Salary, £120 and £100 per annum respectively.

HAMPSHIRE COUNTY COUNCIL, Winchester.—Assistant County Medical Officer of Health. Salary, £300 per annum, rising to £400.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Two House-Surgeons. (2) Assistant House-Surgeon. Salary for (1) £100 and £60 per annum respectively, and (2) £50 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon.

KENT COUNTY ASYLUM, Chartham.—Locumtent Assistant Medical Officer. Salary, £7 7s. per week.

KENT COUNTY ASYLUM, Maidstone.—Assistant Medical Officer. Salary, £250 per annum.

KENT COUNTY COUNCIL, Maidstone.—Tuberculosis Officer. Salary, £500 per annum.

LANCASHIRE COUNTY COUNCIL.—Medical Superintendent at the Elswick Sanatorium. Salary, £200 per annum, rising to £350.

LUTON BOROUGH.—Acting Medical Officer of Health, etc. Salary, £500 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—(1) Resident Medical Officer; (2) Assistant Medical Officer (non-resident). Salary, £100 per annum each.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £350

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary, £60 per annum.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

MILE END OLD TOWN INFIRMARY.—Two Assistant Medical Officers. Salary, £275 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NEWPORT: ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for the first six months at the rate of £100 per annum, rising to £150.

NORTHAMPTON EDUCATION COMMITTEE.—Dental Surgeon. Salary, £250 per annum, rising to £300.

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

NORWICH: JENNY LIND HOSPITAL FOR SICK CHILDREN.—Lady Resident Medical Officer. Salary, £150 per annum.

OLDHAM UNION.—Resident Medical Officer for the Poor Law Institution. Salary, £170 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—House-Physician (lady). Salary, £80 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £5 honorarium on completion of three months' service.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident House-Surgeon. Salary, £100.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Senior and Junior Resident Medical Officers. Salary, £150 and £100 per annum respectively.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—( ) Assistant House-Surgeon. (2) Assistant House-Physician.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHOREDITCH PARISH INFIRMARY.—Senior Assistant Medical Officer. Salary, £280 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Junior House-Surgeon (male). Salary, £115 per annum.

STOCKPORT UNION.—Resident Assistant Medical Officer for the Stepping Hill Hospital. Salary, £250 per annum.

TOXTETH PARK TOWNSHIP.—District Medical Officer and Public Vaccinator. Salary, £250 per annum and fees; guardians guarantee £50 for combined office.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £110 per annum.

WAKEFIELD: WEST RIDING OF YORKSHIRE COUNTY COUNCIL.—Temporary Dispensary Tuberculosis Officer. Salary, £400 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS System, Welbeck Street, W.—(1) Honorary Registrar; (2) Clinical Assistants.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House-Surgeon. Salary, £100 per annum.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £120 per annum.

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

HAWKSHAW, M. J., L.R.C.P. and S., Certifying Factory Surgeon for the Ballinrobe District, co. Mayo.

JONES, Dr. D. T. G., Certifying Factory Surgeon for the Llansawel District, co. Carmarthen.

SCOTT, W. Macargur, L.A.H.I., L.M., L.P.S., District Medical Officer for 3, West Division of Liverpool.

SMITH, J. A. M., M.B, District Medical Officer of the Nottingham Parish.

A CORRECTION.—In announcing appointments at the Edinburgh Royal Infirmary (SUPPLEMENT, March 27th, p. 120) the introductory lines were printed apart from the list of those appointed to positions at the Infirmary. This list appeared at the end of the appointments while the introductory lines are immediately under the heading.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

SUCKLING.—On March 28th, at 5, Marine Terrace, Margate, the wife of John Jerome Suckling, M.B., B.S.Lond., of a son.

MARRIAGE.

SOMERVILLE—MACLEAN.—At Sherbrooke Church, Glasgow, on March 20th, William Somerville, M.D., Brighouse, Yorkshire, to Alice Wesley Maclean, M.B., daughter of Hugh Maclean, Armadale, Dumbreck, Glasgow.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		APRIL.
9	Fri.	London: Insurance Act Local Medical and Panel Subcommittee, 11.15 a.m.
21	Wed.	London: Finance Committee, 2 p.m.
28	Wed.	London: Council.

Printed and Published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 10TH, 1915.

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Meetings of Branches and Divisions.

NORTH OF ENGLAND BRANCH:
NEWCASTLE-ON-TYNE DIVISION.

A MEETING of the Newcastle-on-Tyne Division was held on March 30th under the chairmanship of Dr. J. HUDSON.

The late Dr. Hindhaugh.—The Secretary was instructed to send a letter of condolence to Mrs. Hindhaugh on the recent death of her husband, a member of the Division.

Patients of Practitioners serving with the Colours.—The question of the remuneration of practitioners carrying on the practices of doctors who are serving in the army and navy was considered. The following resolution was agreed upon:

> That in the opinion of the Newcastle-on-Tyne Division of the British Medical Association practitioners joining the Army or Navy Medical Services should make proper business arrangements with one or more practitioners as regards the carrying on of their practices during their absence, and that the remuneration should be at the rate of half the net proceeds of all private practice and midwifery. As regards panel practitioners, the doctor doing the work should be entitled to the capitation fee per quarter for each patient seen, with the proviso that the takings should not exceed 50 per cent. of the total panel income. In all cases certain legitimate expenses such as motor-car expenses, drugs, etc., should be paid before sharing the proceeds.

Treatment of Dependants.—The question of raising the 25s. a week limit in the scheme for the free medical attendance of the dependants of soldiers and sailors was considered, and it was resolved to maintain the scheme as at present constituted. It was, however, suggested that due attention should be paid, in the administration of the scheme, to the number of children in particular families and to the income of any particular family before the war. Comment was also made on the fact that owing to this scheme patients were not consulting dispensary doctors to the same extent as before the origination of the scheme.

Recommendations from the Central Council.—Recommendations by the Council of the British Medical Association to the Divisions were then considered:

(*a*) The question of fees for treatment of juvenile members of Friendly Societies. (The Division considered it undesirable to enter into any form of contract practice for juveniles.)

(*b*) The question of fees for medical examination for Life Insurance. (It was agreed that if any examination of the urine were included the fee should not be less than 10s. 6d.)

(*c*) Eligibility for election as a member of the Association. (The Division considered that the matter should remain *in statu quo*.)

Restrictions on School Medical Officials.—It was unanimously agreed that the Secretary should write to the Education Authorities for the City urging them to relax their regulations during the period of the war, so that medical officials in their service may be allowed, outside the hours of their employment, to assist their professional brethren under the difficult circumstances and scarcity of doctors produced by the war.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, April 28th, in the Council Room, 429, Strand, London, W.C. The Chairman is not yet in a position to name the hour, but it will be notified as soon as he is able to see the amount of business to be dealt with.

By order,

GUY ELLISTON,
Financial Secretary and Business Manager.

March 18th, 1915.

LOCAL MEDICAL AND PANEL COMMITTEES.

LIVERPOOL.
PANEL COMMITTEE.

A MEETING was held on March 16th at the Medical Institution, when Mr. F. C. LARKIN was in the chair.

Drugs and Appliances.—The memorandum from the British Medical Association on procedure in inquiries into alleged excessive ordering of drugs and appliances was considered and approved.

Attendance on Soldiers and Sailors on Furlough.—A letter from the Administrative Officer, enclosing circular from the Commissioners with regard to the question of attendance on soldiers and sailors whilst on furlough, was read. It was agreed that a communication on this matter to panel practitioners could best be made by the Insurance Committee, and the Honorary Secretary was directed to forward to the Administrative Officer a copy of the circular with regard to this subject which has already been issued by the Lancashire Insurance Committee.

Doctors' Lists.—An arrangement suggested by the Administrative Officer for the reinstatement upon the several doctors' lists of the names of insured persons who have withdrawn from civil to military life and upon discharge are again entitled to medical benefit was approved.

OXFORDSHIRE.
PRACTITIONERS' MEETING.

A MEETING of all the practitioners resident in the county of Oxford was held at the Radcliffe Infirmary on March 20th, when Dr. SUSMANN was in the chair.

The SECRETARY of the Panel Committee said the object of the meeting was to consider the scheme for the formation of a Local Medical Committee submitted by the Insurance Commission. The Panel Committee, to whom four schemes

had been submitted, had chosen Scheme A, but it was necessary that every practitioner resident in the county should have the opportunity to make any objection. It was decided to insert "$\frac{1}{3}$" in the blank space left in Paragraph 4, Section 1, and the scheme was then unanimously adopted.

MEETING OF PANEL PRACTITIONERS.

A meeting of all the panel practitioners on the county of Oxford Panel was held on the same day and place, and with the same chairman.

Election of Panel Committees.—A letter was read from the Gloucestershire Panel Committee asking co-operation in an appeal to make the election of the Panel Committees triennial instead of annual. It was agreed to amend Rule 28 accordingly.

Certificates.—Several members stated that they were experiencing considerable difficulty owing to societies demanding certificates on special days, and refusing to pay beyond the day on which the certificate was signed if this was prior to the next pay day. This was being made a grievance against the doctors by the insured person. It was decided to request the Commissioners to require the societies to carry out their part of the undertaking respecting the reception of certificates.

PANEL COMMITTEE.

The fourth meeting of the Panel Committee was held on the same day and place, and with the same Chairman.

Scope of Medical Benefit.—The SECRETARY read a letter from the Clerk, asking the opinion of Local Medical Committee in the case of a doctor who had charged a fee for an operation. Owing to illness, the doctor was unable to attend, and offered to return the fees in consequence. The Committee, however, decided to consider the case, and came to the conclusion that the operation in question was not of a kind which could consistently, with the best interest of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill.

Chemists' Report.—The chemists' report for the quarter ending December 31st, 1914, showing a further improvement as regards the cost of each prescription was approved. The SECRETARY said that two prescription forms were altered "Kent" forms, and the doctors, who certainly were not on the Oxford panel, could not be traced. It was decided to draw the attention of the Insurance Committee to the matter, and ask that the Drug Fund be debited with the amount.

Mileage.—The SECRETARY reported that the Sub-committee of the Insurance Committee appointed to deal with this question had decided to grant mileage for those persons who lived more than three miles from the doctor's house, and whose residence was in an inaccessible place (inaccessible to mean "to which there is no hard road").

Checking of Prescriptions.—The SECRETARY read a letter from the Secretary for Buckinghamshire, inquiring as to the feasibility of establishing a joint system for the checking of prescriptions, and was instructed to inquire into the matter.

IRELAND.

WEXFORD.

Medical Advisers.

A MEETING of the medical practitioners of co. Wexford was held at Enniscorthy on March 15th, when resolutions were unanimously adopted condemning the acceptance of medical adviserships by medical practitioners contrary to the wishes of the Irish medical profession, and expressing the opinion that the appointment of medical certifiers under the conditions made by the Irish Insurance Commissioners, apart from their wanton offensiveness to the Irish medical profession, was most inconvenient and unjust to the insured, as it is physically impossible for any one doctor to certify for a number of dispensary districts and to discharge efficiently his Poor Law duties at the same time. The meeting further unanimously resolved in this matter to act in accord with the profession throughout Ireland.

CORRESPONDENCE.

THE DEFECTIVE BASES OF THE ACT.

DR. GARRATT (Chichester) writes: I hope I may yet enlist Dr. Baskett in a campaign against the serious grievance to which I have drawn attention. He must, however, excuse me if I point out again that the duty of distributing rejected insured persons among panel doctors, to which he so strongly objects, was imposed upon Insurance Committees, not recently by the Commissioners, as he supposes, but by Act of Parliament in 1911. The Commissioners did not then exist, and therefore his letter of February 13th, and not mine, is lacking in "relevance."

Further, is it not "obvious" to him that, were this duty deleted, a hostile medical profession could wreck the Act in six months, and does he suppose that so astute a person as the Chancellor of the Exchequer will place such a weapon in our hands?

I would earnestly beg him not to waste his powers in combating a grievance which he can never remove, nor, as suggested in his letter of January 2nd, enter, after the war, the dusty arena of party politics—a course that has already done us much damage—but to attack the most vulnerable point now, at once, and by simple methods.

The suggestion I would put forward, and, if he can better it, I shall be grateful, is this: Let us all agree to write boldly upon the certificates we give to chronic cases suitable for the purpose, "This patient does not require weekly visits, and I will not give them." I believe that if this were done universally—isolated action is no use—no Commissioners or Committees would dare to take action against us, nor would societies brave the wrath of their members by illegally withholding their money, for, if they did, the members could recover damages at law.

I still maintain that no court would uphold the absurdity that we are bound by our contracts—at the bidding of a mere club official, on whom the Act confers no authority whatever in this respect—to give more attention to insured persons than it is usual to give to paying patients of a class above them, nor yet support a contention that societies, who needed no weekly visits before the Act in order to pay their sick members, are now unable to continue to do so without them, so long as the doctor can certify continued disability. Moreover, I am, as I have said, prepared to back my opinion to the sum of £5 if a suitable case is brought into court. It is simply astounding to me, and, I know, to others also, that our Association, which is even now sending us circulars to assure us of its value and protection, has allowed such pernicious regulations, which promise to give away what most we have fought for, to pass, not only without vehement opposition, but apparently with positive approval. The unwieldy size of the new certificate, the requirement to repeatedly fill in weekly the name of the disease, and above all, the granting to all societies of power to decide whether weekly visits are required, are innovations patently detrimental to us. Is it surprising that a rival "union" is set up under such circumstances?

TREATMENT OF JUVENILE MEMBERS OF FRIENDLY SOCIETIES.

Dr. T. CUMING ASKIN (Woodbridge, Suffolk) writes: I am extremely sorry to read the recommendations of the Council with regard to the question of fees for treatment of juvenile members of friendly societies which appeared in the SUPPLEMENT of March 20th, and I hope they will be rejected.

Personally I loathe contract practice, but recognize that we must now try and make the best of a bad job, and this is what the following agreement endeavours to do.

Regulations for Non-insured Patients of Sub-area 2 (South Suffolk Division).

1. Free choice of doctor.
2. Income limit: 30s. for country, 40s. for town.
3. State insured between 65–70, and who are friendly society members, to be treated at old rates for three months; and strong representations should be made to the Government to pay the doctor at the ordinary rates for insured people.
4. State insured between 65–70, and who did not belong to a friendly society, 8s. 6d. per annum.
5. Friendly society members over 70 at the present rates, except where it is evident to the medical man that the patient is able to pay more.
6. Disabled and chronics at the old rates, except where it is evident to the medical man that the patient is able to pay more.

7. Members of friendly societies who are not insured under the State, 8s. 6d. without tuberculosis, 9s. with tuberculosis.
8. Juveniles only, from 4–16, at 4s. each (male and female).
9. Women at same rate as men.
10. Charges for examinations, 1s. each (new members).

If the Government in the future make any allowance for any of the above mentioned classes of patients, the above scales to be revised.

These terms are subject to alteration at three months' notice, by either side.

Mileage over three miles to be charged at the option of the doctor and paid to him by the patient.

Extras for fractures, anaesthetics, consultations, confinements, and miscarriages, etc., as usual.

P. L. GIUSEPPI, F.R.C.S.,
Secretary.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Staff Surgeon G. S. DAVIDGE to the *Sirius;* Surgeon A. V. J. RICHARDSON to the *Brilliant.* Temporary Surgeons: F. C. ENDEAN to the *Vivid,* additional, for Plymouth Hospital; G. C. MORT, M.B., to the *Cochrane;* H. G. MOSER, to the Crystal Palace R.N. Division; J. C. WALKER, M.B., to the *Pembroke,* additional J. S. FARRIER to the *Marmora;* G. N ASPINALL, lent to the Crystal Palace R.N. Division; C. E. RECKITT, W. WHITFIELD, J. G. NICHOLSON, M.B., T. M. WOOD-ROBIN, and E. D. GRANGER to the *Victory,* additional, for Haslar Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

To be Surgeon Probationer: J. McR. S. NICHOL.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned are granted temporary rank whilst serving with the Field Ambulance of the Welsh Division: As Lieutenant-Colonel: J. E. H. DAVIES, Major ROBERT J R. C. SIMONS, T.F., Captain THOMAS P. THOMAS, T.F. As Major: WILLIAM B. EDWARDS. As Captain: ANDREW W. ANDERSON, M.B., EDWARD L. PARRY-EDWARDS. As Lieutenant: FREDERIC S. ROWLAND.

Captain A. S. WINDER appointed to the medical charge of the Brigade Laboratory, Fyzabad.

Temporary Lieutenant CLAUDE W. S. SABERTON, M.D., relinquishes his temporary commission on account of ill health.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

1st London (City of London) Sanitary Company.—HENRY HOLROYD, M.B., to be Lieutenant.

1st London (City of London) General Hospital.—The Christian names of Captain HENRY E. G. BOYLE are as now stated, and not as announced in the *London Gazette* of September 4th, 1914.

2nd London (City of London) Field Ambulance.—WILLIAM T. HOMAN to be Lieutenant.

3rd London (City of London) Field Ambulance.—Major GEORGE L. L. LAWSON to be Lieutenant-Colonel, temporary.

6th London Field Ambulance.—WILLIAM H. DICKINSON to be Lieutenant.

1st Southern General Hospital.—ERIC W. ASSINDER, M B., to be Captain, temporary

2nd Wessex Field Ambulance.—Lieutenant HENRY W. SPAIGHT resigns his commission on account of ill health.

3rd East Anglian Field Ambulance.—To be Lieutenants: ALEXANDER CUFFE, M.D., F.R.C.S., EDWARD K. GOODWIN.

South Midland Casualty Clearing Station.—WILLIAM A. HIGGINS, M.D., to be Lieutenant.

3rd South Midland Field Ambulance.—Captain CHARLES CORFIELD, from Attached to Units other than Medical Units, to be Captain.

1st North Midland Field Ambulance.—Major HENRY G. W. DAWSON, M.B, to be Lieutenant-Colonel, temporary.

1st East Lancashire Field Ambulance.—Lieutenant HENRY E. FOX, M.B., from Attached to Units other than Medical Units, to be Lieutenant.

West Riding Divisional Sanitary Section.—Surgeon-Captain HAROLD F. HORNE, M.D., from 5th Battalion York and Lancaster Regiment, to be Captain.

3rd West Riding Field Ambulance.—The announcement of the appointment of CHARLES W. SMITH, M.B., as Lieutenant, published in the *London Gazette* of November 30th, 1914, is cancelled.

2nd Northumbrian Field Ambulance.—CLIFFORD C. PICKLES to be Captain, temporary.

Scottish Horse Mounted Brigade Field Ambulance.—FREDERICK G. HARPER, M D., late Lieutenant, R.A.M.C.(T.F.), to be Lieutenant.

Attached to Units other than Medical Units.—Captain CHARLES J. L. KRUMBHOLZ resigns his commission on account of ill health. Lieutenant OSKAR TEICHMANN to be Captain. To be Lieutenants: BERKELEY N. ASH, CHARLES NYHAN (late 3rd Battalion Monmouthshire Regiment).

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six large English towns 8,917 births and 6,879 deaths were registered during the week ended Saturday, March 27th. The annual rate of mortality in these towns, which had been 20.2, 19,7, and 19.3 per 1,000 in the three preceding weeks, rose to 19 8 per 1,000 in the week under notice In London the death-rate was equal to 22.3, against 20.6, 20.7, and 21.0 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 6.1 in Lincoln, 9.7 in Leyton, 9.9 in Grimsby, 10.5 in Stockton-on-Tees, 10.6 in Barnsley, and 11.4 in Coventry, to 26.1 in Barrow, 26.4 in Salford, 27.5 in West Hartlepool, 28.1 in Northampton, 30.0 in Wolverhampton, and 34.2 in Aberdare. Measles caused a death-rate of 3.4 in Croydon, 3.7 in Merthyr Tydfil, 4.1 in Smethwick, 4.4 in Darlington, 5.3 in West Bromwich, 6.0 in Wolverhampton, 7.4 in Northampton, and 9.7 in West Hartlepool, and whooping-cough of 1.7 in Wigan and in Tynemouth, 1.9 in Brighton, 2.5 in Merthyr Tydfil, and 3.9 in Aberdare. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 51, or 0.7 per cent, of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 10 were recorded in Birmingham, 4 in Liverpool. 4 in Preston, 3 in Southend and 2 each in London, Reading, Stoke-on-Trent, Southport, Darlington, Sunderland. South Shields, and Gateshead The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,943, 2,850, and 2,730 at the end of the three preceding weeks, further fell to 2,672 on Saturday, March 27th; 301 new cases were admitted during the week, against 298, 275, and 289 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,290 births and 948 deaths were registered during the week ended Saturday, March 27th. The annual rate of mortality in these towns, which had been 3.2, 20.9, and 0.8 per 1,000 in the three preceding weeks, rose to 21.1 in the week under notice, and was 1.3 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 13.0 in Coatbridge, 13.7 in Falkirk, and 14.0 in Ayr, to 23.1 in Aberdeen, 25.4 in Kilmarnock, and 29.1 in Dundee. The mortality from the principal infective diseases averaged 2.9 per 1,000, and was highest in Kilmarnock and Dundee. The 450 deaths from all causes in Glasgow included 46 from whooping cough, 14 from measles, 6 from scarlet fever, 5 from infantile diarrhoea, and 4 from diphtheria. Thirteen deaths from whooping-cough were recorded in Dundee, 1 in Edinburgh, and 4 in Kilmarnock; from measles, 7 deaths in Dundee; from scarlet fever, 2 deaths in Aberdeen and 2 in Paisley; and from typhus, 1 death in Dundee.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon (male). Salary, £150 per annum.

BATH: ROYAL UNITED HOSPITAL.—Resident Medical Officer.

BERKS COUNTY ASYLUM, Wallingford.—Junior Assistant Medical Officer male). Salary, £250 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salaries, £120 and £100 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM: YARDLEY ROAD SANATORIUM.—Third Assistant Medical Officer. Salary, £200 per annum

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRISTOL EDUCATION COMMITTEE.—Assistant School Medical Officer (lady). Salary, £300 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Three House Surgeons; (2) Two House-Physicians: (3) Obstetric and Ophthalmic House-Surgeon Salary, £120 per annum.

BRISTOL UNIVERSITY.—Demonstrator of Anatomy. Salary, £180 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CAMBERWELL, PARISH OF ST. GILES.—Temporary Assistant Medical Officer to the Infirmary, etc. Salary, £500 per annum.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer (male). Salary, £250 per annum.

CARLISLE: CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer. Salary, £250 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £200 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer Salary, £200 per annum, rising to £230.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Senior and Second House-Surgeons. Salary, £200 and £150 per annum respectively

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Salary, £75 per annum.

CROOKSBURY SANATORIUM, Farnham.—Resident Medical Officer, for period of war.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer (lady). Salary, £200 per annum

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £150 per annum.

EDINBURGH: ROYAL EDINBURGH ASYLUM, Morningside.—Assistant Medical Officer. Salary, £175 per annum.

ECCLESALL BIERLOW UNION.—Male Resident Assistant Medical Officer of the Ecclesall Institution. Salary, £250 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons. (Males.) Salary, £120 and £100 per annum respectively.

HAMMERSMITH PARISH.—First Assistant Medical Officer of Infirmary and Workhouse. Salary, £220 per annum.

HULL: VICTORIA CHILDREN'S HOSPITAL.—(1) Two House-Surgeons. (2) Assistant House-Surgeon. Salary for (1) £100 and £60 per annum respectively, and (2) £50 per annum.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon.

KENT COUNTY ASYLUM, Chartham.—Locumtenent Assistant Medical Officer. Salary, £7 7s. per week.

LANCASHIRE COUNTY COUNCIL.—Medical Superintendent at the Elswick Sanatorium. Salary, £300 per annum, rising to £350.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon or Locumtenent.

LEEDS GENERAL INFIRMARY.—(1) Ophthalmic House-Surgeon. (2) Resident Medical Officer at the Ida and Robert Arthington Hospitals. Salary £50 and £60 per annum respectively.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salaries, £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—(1) Assistant Medical Officer. (2) Resident Medical Officer. Salaries, £100 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £450.

MANCHESTER EDUCATION COMMITTEE.—Assistant School Medical Officer (female). Salary, £300 per annum, rising to £450.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £250 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

MIDDLESEX HOSPITAL.—Two House-Physicians.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Senior House-Surgeon. Salary, £100 per annum.

NATIONAL SANATORIUM, Benenden.—(1) Locumtenent Medical Superintendent. Salary, £5 5s. weekly. (2) Assistant Medical Officer. Salary, £120 per annum.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—(1) House-Surgeon. (2) House-Physician. (3) Resident Medical Officer at House of Recovery, New Barnet. Salary for (3), £60 per annum.

NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £300 per annum, rising to £350.

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

NORTHERN HOSPITAL, Winchmore Hill.—Locumtenent Assistant Medical Officer. Salary, £7 7s. per week.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—House-Physician (lady) Salary, £80 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Junior Resident Medical Officer. Salary, £90 per annum, and £5 honorarium on completion of three months' service.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary, £50 per annum.

QUEEN MARY'S HOSPITAL FOR CHILDREN, Carshalton.—Assistant Medical Officers. Salary, £6 6s. per week.

ROCHDALE INFIRMARY AND DISPENSARY.—Second House-Surgeon. Salary, £125 per annum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—(1) Examiners in Anatomy and Physiology for the Fellowship. (2) Examiners under the Conjoint Examining Board.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Senior Resident Medical Officer. (2) Assistant Anaesthetist. Salary, £200 and £50 per annum respectively.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Senior and Junior Resident Medical Officers. Salary, £150 and £100 per annum respectively.

SALFORD ROYAL HOSPITAL.—(1) Junior House-Surgeon. (2) Casualty House-Surgeon. Salaries, £100 per annum and £5 monthly bonus during the war.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Senior House-Surgeon. Salary, £150 per annum.

STAFFORD: COUNTY MENTAL HOSPITAL.—Temporary Assistant Medical Officer (female). Salary, £250 per annum.

STOKE-ON-TRENT BOROUGH.—Lady Medical Officer for Child-welfare Work. Salary, £300, rising to £400 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) House-Physician. (2) House-Surgeon, Salaries, £150 per annum, rising £10 annually.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £150 per annum.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon. Salary, £120 per annum.

WANDSWORTH UNION INFIRMARY.—Assistant Medical Officer (male). Salary, £5 5s. weekly.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Clinical Assistants.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—House-Physicians. Salary, £120 and £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Irlam (Lancaster); Liverpool, Garston (Lancaster).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

FRASER, Robert, M.B.Edin., Medical Officer of Health for Chesterfield, vice F. A. Sharpe, M.D.

GLENDENNING, A. V., M.B., Ch.B.Liverp, Assistant Medical Officer of the Alder Hey Hospital of West Derby Union.

MACDIARMID, P., M.D.Edin., Visiting Medical Officer of the Alder Hey Hospital of the West Derby Union.

RYLAND, Archer, F.R.C.S.Edin., Lieutenant, R.A.M.C., Otologist to the Military Hospital, Frensham Hill.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

BARKER.—On March 30th, at Vale House, Greenwich, S.E., the wife of R. S. Barker, M.B., B.S.Lond., of a daughter.

MARRIAGES.

JONES-GRAHAM.—April 8th, at St. Mary Abbots, Kensington, London, Hugh Richard Jones, M.D., Abercromby Square, Liverpool, to Margaret, second daughter of the late George Graham, Lockerbie, Dumfriesshire.

SMITH-O'NEILL.—On April 6th, at Shrewsbury, by the Rev. Canon Moriarty, Walter Richard Hugh Smith, M.D., fourth son of the late Travers Blackley Smith and of Mrs. Travers Smith, of Dalkey, co. Dublin, to Elizabeth Patricia, third daughter of the late Sinon O'Neill and of Mrs. Sinon O'Neill, of Stonepark, Coolmeen, co. Clare.

DEATHS.

DALBY.—On Good Friday, April 2nd, at 14, Royal Terrace, Weymouth, Augustus William Dalby, L.R.C.S., L.R.C.P.Edin., aged 55, of Argyll House, Frome, Somerset, second son of the late William Bennett Dalby, M.D., R.N., of Torquay. Funeral service at Frome Parish Church on Tuesday, at 2.30.

HANNAH.—April 6th, at Rock House, Ashton-in-Makerfield, Lancashire, from pneumonia, Nathan Hannah, L.R.C.P.Edin., L.F.P.S.Glasg., M.O.H. Ashton Urban District.

HILL.—On March 17th, at Church Fields, Old Basford, Nottingham, from pneumonia, William Henry Hill, M.B., C.M., aged 52.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Demonstration by Mr. Shattock: Specimens of syphilis.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W., 5 p.m.—First Oliver-Sharpey Lecture by Mr. Joseph Barcroft, F.R.S.: A comparison between some physiological and pathological conditions.

SOCIETY FOR THE STUDY OF INEBRIETY, 11, Chandos Street, Cavendish Square, W.—Annual meeting, 4 p.m.: Discussion on Dual Personality and Intemperance, to be opened by Dr. H. Crichton Miller.

WEDNESDAY.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell Street, E.C., 9 p.m.—Papers: Captain F. Rowland Humphreys, R.A.M.C.(T.): The Work of a Field Ambulance. Mr. E. Maynard, F.R.C.S.: Experiences of a Temporary Naval Surgeon on board H.M.S. *Carmania*.

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W., 5 p.m.—Second Oliver-Sharpey Lecture by Mr. Joseph Barcroft, F.R.S.: A comparison between some physiological and pathological conditions.

ROYAL SOCIETY OF MEDICINE:

SECTION OF DERMATOLOGY, 4.30 p.m.—Demonstration of cases.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF ELECTRO-THERAPEUTICS, 8.30 p.m.—Discussion of the report of the subcommittee on the standardization of the opaque meal, presented by Dr. R. Morton.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		APRIL.
9	Fri.	London: Insurance Act Local Medical and Panel Subcommittee, 11.15 a.m.
10	Sat.	London: Therapeutic Subcommittee, 10 a.m.
		London: Science Committee, 11 a.m.
21	Wed.	London: Finance Committee, 2 p.m.
28	Wed.	London: Council.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 17TH, 1915.

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Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

SOUTHERN BRANCH:

CHANNEL ISLANDS DIVISION.

THE first meeting of this recently-constituted Division was held in Guernsey on April 1st, when Dr. H. D. BISHOP, M.O.H. of Guernsey, was voted to the chair, and Dr. J. F. Carruthers, Honorary Secretary of the late Guernsey and Alderney Division and for several years Representative of the two Divisions of the Channel Islands, was deputed to act as Secretary. Eleven members were present. Dr. CARRUTHERS said that he had convened the meeting in accordance with instructions from the Medical and Branch Secretaries. The Jersey Division had suffered a number of resignations last year, and it had not been deemed advisable to continue the surviving fourteen members as a separate Division. He had suggested amalgamation as a Channel Islands Division, which had the merit, at least, of leaving voting power in the hands of whichever island had the greater number of members. Dr. H. C. Major had come to represent Jersey, and he asked him to speak for his island. Dr. MAJOR thanked the Guernsey members for their welcome, and said that in Jersey interest in the British Medical Association had been dwindling for some years. Men preferred their old-established Jersey Medical Society, and the proposed raising of the subscription was a sort of last straw. He thought that Guernsey ought in the meantime to work the Division, but hoped that a loophole could be left to allow Jersey a say in the management if the number of members in Jersey increased. On the motion of Dr. CARRUTHERS, seconded by Dr. MAJOR, it was unanimously resolved that the Organization and Ethical Rules as hitherto in force in the Guernsey and Alderney Division should be adopted.

Election of Officers.—The following officers were elected:

President: Dr. J. F. Carruthers.
Honorary Secretary and Treasurer: Dr. H. D. Bishop.
Branch Representative: Dr. H. C. Major.
Ethical-Executive Committee: Drs. Major and Bentlif (Jersey), Drs. Collings and C. Carey (Guernsey).
Representative at Annual Representative Meeting: Dr. J. F. Carruthers.

The Library.—It was also unanimously resolved that the library hitherto belonging to the Guernsey and Alderney Division should continue to be the sole property of the Guernsey and Alderney members; and that the capitation fees received from the Branch Council on account of the Jersey members should, in the meantime, be accepted as their full contribution to the funds of the Division.

Service with the Colours.—The members agreed that they would safeguard among themselves the practice of any member of the Division offering his services to the War Office, and would return him half the fees collected from his patients during his absence.

Belgian Doctors' and Pharmacists' Fund.—A collection was made on behalf of the Belgian Doctors' Fund, and realized £2 15s.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, April 28th, in the Council Room, 429, Strand, London, W.C., **at 2 o'clock in the afternoon.**

By order,

GUY ELLISTON.
Financial Secretary and Business Manager.

March 18th, 1915.

PANEL COMMITTEE REGULATIONS (ENGLAND AND WALES).

THE following regulations[1] (Statutory Rules and Orders, 1915, No. 230), dated March 10th–12th, have been issued.

The National Health Insurance Joint Committee, acting jointly with the Insurance Commissioners and the Welsh Insurance Commissioners, in pursuance of the powers conferred on them by Section 32 of the National Insurance Act, 1913, and by Section 83 of the National Insurance Act, 1911, hereby make the following Regulations:

1. *Short Title.*

These Regulations may be cited as the National Health Insurance (Panel Committee) Regulations (England and Wales), 1915.

2. *Interpretation.*

(1) In these Regulations, unless the context otherwise requires, the following expressions have the respective meanings hereby assigned to them—

"The Act" means the National Insurance Act, 1913.

"The Commissioners" means the Insurance Commissioners, or in the application of these Regulations to Wales, the Welsh Insurance Commissioners.

"Practitioner on the panel" means a duly qualified medical practitioner who is under agreement with an Insurance Committee to undertake the medical attendance and treatment of insured persons.

"Panel Committee" means the committee appointed or to be appointed under the provisions of Section 32 of the Act by practitioners on the panel.

"County" includes County Borough.

[1] *Statutory Rules and Orders.* To be obtained either directly or through any bookseller from Messrs. Eyre and Spottiswoode (London), Messrs. Wyman and Sons, Limited (London and Cardiff), H.M. Stationery Office (Edinburgh), or E. Ponsonby, Limited (Dublin). (Price 1d. each.)

(2) The Interpretation Act, 1889, applies to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament.

3. *Framing of Schemes.*

(1) In the case of any county for which no scheme has been submitted to the Commissioners under the provisions of the National Health Insurance (Panel and Pharmaceutical Committees) Regulations, 1913, before the 31st day of March, 1914, or for which no scheme has been framed by the Commissioners under the provisions of the National Health Insurance (Panel Committee) Regulations, 1914, the Commissioners shall frame a scheme for the appointment of the Panel Committee, and the Panel Committee shall be appointed in accordance with the provisions of that scheme:

Provided that in framing the scheme the Commissioners shall take into consideration any scheme submitted or representations made by the existing Panel Committee for the County, or by any practitioner or practitioners on the panel for the County, or, in a case where a new Insurance Committee has been constituted in consequence of the formation of a new County, by the Panel Committees of the County or Counties contributing to the area of the new County or by any practitioner or practitioners on the panel or panels for any part of such area.

(2) Every scheme framed under these Regulations shall provide:

(*a*) that all the members of the Committee shall be duly qualified medical practitioners, and not less than three-fourths of the members shall be practitioners on the panel;
(*b*) for the term of office of the members of the Committee;
(*c*) for the quorum of the Committee;
(*d*) for the method of filling casual vacancies;
(*e*) for the manner in which the scheme may, subject to the approval of the Commissioners, be amended.

(3) Every scheme framed under these Regulations, which provides for the appointment of the Panel Committee by means of an election, shall secure that the persons entitled to elect shall be the practitioners on the panel, and shall make provision for defraying all expenses properly incurred by the returning officer in the conduct of the election, including such fee, if any, for his personal services as may be agreed between him and the Panel Committee.

(4) Any scheme framed under these Regulations may provide for the appointment by the Panel Committee of Subcommittees and for the delegation to any Subcommittee so appointed of such of the powers and duties of the Panel Committee as may be specified in the scheme.

4.

A Panel Committee when constituted shall perform all the duties and may exercise all the rights and powers and shall be subject to all the liabilities and obligations theretofore performed or exercised by, or imposed upon, any Panel Committee to which it succeeds or any Panel Committee previously representing, whether wholly or in part, the same area; and any matter then pending, which would otherwise have fallen to be dealt with by such other Committee, shall proceed for all purposes as if the Panel Committee then constituted were substituted for such other Panel Committee, and as if acts done in relation to such matter by such other Panel Committee were the acts of the Panel Committee then constituted.

5. *Duration of Schemes.*

Any scheme approved or framed by the Commissioners shall continue to have effect, subject to any amendments duly made therein, until the Commissioners give notice to the contrary to the Committee, but such notice shall not be given in any year later than the 1st day of May.

6. *Provision in Case of Delay in Election.*

(1) If in any year the election of the Panel Committee for any County has not been completed within the period appointed by the scheme, the Commissioners may, if they think fit, extend that period, and if the period is not so extended, or the election is not completed within the period as extended, the Commissioners may dispense with the necessity of holding an election, and may appoint the Committee in such manner as they may determine.

(2) Where the period has been extended as aforesaid or the Commissioners have dispensed with the necessity of holding an election, they may extend the term of office of the existing members of the Committee for any period not exceeding four weeks, and the new members of the Committee shall thereupon come into office at the expiration of the term as so extended.

7. *Misdescription, etc., not to Invalidate Election.*

If by reason of any misdescription or miscount, or for any other reason an election has not complied with the provisions of the scheme under which it is held, and the Commissioners are satisfied that such non-compliance did not substantially affect the result of the election, they may, if they think fit, declare the election to be valid.

8. *Revocation of Previous Regulations.*

The National Health Insurance (Panel and Pharmaceutical Committees) Regulations, 1913, in so far as they relate to Panel Committees are hereby revoked, but without prejudice to the validity of any election held or appointment made, or to any right, privilege, obligation, or liability acquired, accrued, or incurred thereunder.

PHARMACEUTICAL COMMITTEE REGULATIONS.

"National Health Insurance (Pharmaceutical Committee) Regulations (England and Wales)," 1915 (No. 231), have also been issued,[1] and revoke previous regulations. The regulations follow the general lines of those of Panel Committees. The persons entitled to vote are those supplying drugs or appliances, and not less than two-thirds of the members of the Committee must be registered pharmacists.

THE DRUG TARIFF.

DEPUTATION OF PHARMACISTS TO THE CHAIRMAN OF THE JOINT COMMITTEE.

ON April 6th the Right Hon. E. S. MONTAGU, M.P., received a deputation from the Pharmaceutical Society of Great Britain consisting of: The president, Mr. Edmund White; the vice-president, Mr. E. T. Neathercoat; the parliamentary secretary, Mr. W. S. Glyn-Jones, M.P.; and other representatives of the interests of pharmacists.

Mr. GLYN-JONES, in introducing the deputation, said that it was thoroughly representative of the chemists who were doing work under the Insurance Acts. The society had carried out to the best of its powers the suggestions made to them by Mr. Masterman. The society and the chemists generally were anxious so far as possible to make the system under the Acts work smoothly and successfully.

Mr. WHITE, the president of the society, stated that on July 15th, 1914, he had the opportunity of pointing out to Mr. Masterman that in some forty-six areas in Great Britain a deficiency had been experienced in the Drug Fund, ranging from 5 to 40 per cent. and that a serious situation had resulted from this discounting of the Chemists' Accounts. Mr. Masterman, whilst fully appreciating the facts, made it clear that no relief could even be considered until the machinery provided by the Medical Benefit Regulations, and more particularly Article 40 of those Regulations, had been put into operation. This had been done as far as the Pharmaceutical Committees were concerned. A memorandum of the results was submitted to the Commissioners in January last, and the society asked that some measure of relief should now be granted. It felt that Article 40 of the Medical Benefit Regulations was not strong enough to carry out what was contemplated. The difficulties, the enormous labour and expense entailed on Pharmaceutical Committees in preparing statements for the various Panel Committees, should also be borne in mind. The pharmacists realized the abnormal difficulties with which the Government was faced at the present moment, but they had fully borne their share of the sacrifices imposed upon every section of the community by the present conditions, and felt that they could look for some relief of their difficulties in connexion with the National Insurance Acts.

In reply, Mr. MONTAGU expressed his pleasure at meeting the deputation. The agreement into which the chemists had entered was, he said, a voluntary one, and

the Drug Tariff had been voluntarily adopted by the society and the chemists concerned. Since July the position had altered in certain respects. It was clear that the aggregate discounts for 1914 would be considerably larger than those for 1913, in spite of the fact that the Pharmaceutical Committees had exerted themselves to secure a scrutiny of prescriptions with a view to surcharging any doctor who had been responsible for extravagance. In addition, he understood that considerable uneasiness was felt at the delay that had occurred in making a final settlement of the accounts for 1913, and a provisional settlement for 1914. Lastly, the Departmental Committee on the Drug Tariff would, he hoped, report at an early date. As regards 1914, a special difficulty in ascertaining the number of persons entitled to medical benefit in any particular area had arisen in consequence of the number of insured persons who had joined His Majesty's Forces. He suggested, therefore, that if it were desired that an emergency settlement for 1914 should be made at an early date, it would be necessary to proceed on assumptions based on the general rate of enlistment over the country as a whole. In order to safeguard the interests of chemists he would propose, in making this assumption, to take a figure slightly below the real average enlistment rate, and also to provide that where there was less enlistment in any Insurance Committee area than this assumed average rate (for example, in armament-producing areas) the excess of the actual sums due to the chemists, when ascertained, over the sums resulting from the application of the average, should be credited to that area's Drug Fund for 1915. It would be open to any individual chemist either to choose an emergency settlement of his account on these lines or to await a settlement in the ordinary course. In the event of his accepting the emergency settlement the following conditions would operate:

1. If the amount accepted ultimately proved to be less than he would have got in the ordinary course, the difference would not go to him personally, but would be carried forward to the credit of the 1915 Drug Fund for his area.

2. If the amount accepted ultimately proved to be more than he would have got in the ordinary course, he would not be asked to refund.

3. He would be required in signing his acceptance of the scheme to give a formal discharge of all claims in respect of 1914.

As regards the discount on the bills for 1913 and 1914, Mr. Montagu stated that it must not be assumed that in every case where the bills of a chemist were subject to any discount the chemist would necessarily have suffered loss. But he had come to the conclusion that a case had been made out for some relief to be given to chemists whose bills had suffered a heavy discount, and he was therefore proposing to make available, for the purpose of *ex gratia* payments on this account, the Special Drug Fund, for which a sum of £60,000 had been granted by Parliament in the two years in question. The details of the proposed scheme would be communicated to the society, but these payments must not be regarded as a precedent. The present payments were intended solely to meet the abnormal conditions which had arisen in the first two years. In areas where grants were made for the relief of discounts, the provision to which he had alluded for carrying money forward to the credit of the Drug Fund for 1915 would not apply. He hoped that the deputation would agree that these proposals constituted a substantial attempt to mitigate the difficulties that had arisen. It might well be that on consideration of the report of the Drug Tariff Committee, a system of payment to the chemists would be devised which was preferable to the existing system with its provision for discounting.

Mr. WHITE and Mr. GLYN-JONES thanked Mr. Montagu, and the deputation withdrew.

[The Insurance Act Committee of the Association has decided to protest to Mr. Montagu that the fund in question was not intended to be used for such a purpose.]

IRELAND.

APPROVED SOCIETIES AND PART-TIME MEDICAL CERTIFIERS.

AN important conference took place at Clonmel between the Committee of the South Tipperary Insurance Society and a deputation from the South Tipperary Local Medical Committee, which included Drs. R. O'Brien, J. Power, C. E. Ryan, and P. Stephenson.

The Chairman, the Very Reverend DEAN OF CASHEL, on behalf of the South Riding Insurance Committee, thanked the doctors for attending the meeting, and was pleased that so important a body had taken notice of the resolution the Insurance Committee had considered it necessary to pass. It approached the question, he said, with a perfectly open and unbiassed mind. Any system that worked out well for the administration of the Insurance Act and the good of the insured would have met with a loyal reception from the Insurance Committee. It had given the present system of whole and part time medical certifiers a fair trial and found it a failure—a decided failure. No one man could satisfactorily look after and give trustworthy certificates to the insured sick within a radius of 10 or 12 miles, including both the crowded lanes of towns and inaccessible spots on mountain sides. As a matter of fact, the result was what had been expected—confusion and inconvenience, gross and frequent, to poor sick insured members. The society, having had two years' experience of the present system of medical certifiers, felt compelled to call for a remedy, a radical remedy.

Dr. J. POWER described at length the negotiations which took place between the Irish Commissioners and the representatives of the doctors in Ireland in connexion with medical certification of the insured. He showed that the medical profession was not responsible for the grievous hardships inflicted on the insured by the maladministration of the Insurance Act in Ireland. It was all due to the hostility of one or two society officials, who adopted the insulting attitude that the members of the Irish medical profession were not worthy to be trusted to certify for sickness benefits for the insured, even when supported by a system of medical referees. When the Chancellor, in August, 1913, admitted that his original grant of £50,000 was inadequate, and that he was prepared to increase it to 2s. 6d. a head, the profession in Ireland accepted the offer on the condition that the medical attendant should certify in the first instance, and agreed to a system of medical referees to provide second opinions for the approved societies in the event of their desiring to question any certificate of the medical attendant. He emphasized the anomalous position of the medical attendant at present under the Insurance Act in Ireland; four-fifths of the insured were treated under the Medical Charities Act in Ireland. Prior to the passing of the Insurance Act there were funds from which, under the Medical Charities Act, the Poor Law medical attendant could forthwith order grants to provide food and comforts for his sick patients. Now the medical attendant could only prescribe medicines for these insured patients, and not being allowed to certify for sickness benefit, had to wait for the weekly or fortnightly visit of the medical certifier—appointed by the Insurance Commissioners—to order them the ordinary necessities of life. The result was that the medical attendant could prescribe for his insured patients the most expensive drugs and surgical appliances, but was powerless to provide them with the necessary food. It was his experience that his insured patients were fortunate if they got their sickness benefits at the end of five or six weeks from the onset of their illness, and in the meantime had to depend on charity or credit to provide themselves and their families with ordinary food. For an Insurance Act that was worked in this manner a poor country like Ireland had to pay close on £1,000,000 a year.

The CHAIRMAN thanked the doctors for attending and accepted their offer of assistance with gratitude.

TEMPORARY RESIDENTS AND TRAVELLERS.

WE are requested to publish the following correspondence:

March 22nd, 1915.

Dear Sir,—With regard to your refusal to supply me with triplicate prescription forms, I wish to point out that I am compelled to use what you consider to be the objectionable "Rep. mist.," and I think it is extremely unreasonable for you to expect me to remember exactly what was prescribed for my patient a week previous. I might add that these duplicate forms cause not only myself, but also my patient, great inconvenience.

At the same time I wish to refer you to Sir Robert Morant's statement in last week's BRITISH MEDICAL JOURNAL, namely:

I must ask you to note the wholly unjustifiable insinuation that money is being withheld by the Commission from the profession in

respect of temporary residents and travellers, for you know that this money is in fact distributed in full in the manner set out in the regulations forming part of the practitioners' agreements.

Regarding this, why is it that I have not yet been paid for travellers' accounts presented to you for payment in March and July last year?

Your prompt attention, together with an early reply, will much oblige.—Yours, truly.

(Signed) T. H. Parkes Peers.

T. Batey, Esq.,
London Insurance Committee,
5, Chancery Lane.

Insurance Committee for the County of London,
5, Chancery Lane, W.C.,
23rd March, 1915.

Dear Sir,—In reply to your letter of 22nd March, 1915, I am directed to inform you that the accounts submitted by you in respect of services rendered to travellers resident in the area of the Committee for a period of the past medical year have been received at this office, and that the Committee will effect payment in respect thereof so soon as they are furnished by the Insurance Commissioners with the necessary particulars so to do.

It should be understood, however, that before the Insurance Commissioners can be in a position to compute the Central Medical Fund (the fund appropriate to payments in this connection) for the period concerned, they must first be supplied by the various Committees with complete particulars of the services rendered to "temporary residents" and "travellers," and this, of course, can only be furnished after all accounts have been submitted by the practitioners concerned.—I am, dear Sir, yours faithfully,

(Signed) Thomas Batey,
Clerk of the Committee.

Dr. T. H. Parkes Peers,
20, Surrey Square,
Old Kent Road, S.E.

LOCAL MEDICAL AND PANEL COMMITTEES.

ESSEX.

Local Medical and Panel Committees.

Since the last printed report (Supplement, January 23rd) three regular meetings and several Subcommittee and Joint Drug Committee meetings have been held, and personal interviews have taken place between the Secretary and Insurance Committee and Commissioners.

Payments.—Correspondence as to the payment to practitioners and of Rail Fares for committee members has taken place without any definite result. The question of reductions in payments has been raised both with the Insurance Committee and the Commissioners, and it has been suggested that as interest has been arranged for upon moneys which approved societies have prepaid to the Commissioners, so interest upon moneys withheld from practitioners—for example, £3,000 not paid for 1913—should also be paid.

Drug Fund.—It is hoped that the letters written by the panel secretary, pointing out to practitioners how certain prescriptions had unnecessarily loaded the Drug Fund, may avoid the unpleasantness of statutory inquiry and surcharge, and at the same time result in preventing a deficit in the Drug Fund, and consequent expenditure of large sums in analyses of prescriptions next year. In order to assist doctors to realize the anomalies of the pricing of drugs under the tariff, it has been decided (though originally the Panel Committee objected to the procedure) to introduce an Insurance Pharmacopoeia for Essex, containing formulae likely to be wanted most commonly. These are arranged for 12-oz., 8-oz., and 6-oz. mixtures (½-oz. doses), each ingredient priced by the March tariff prices as a guide to the relative prices of different quantities of drugs, and showing the additional proportionate cost for smaller quantities plainly. It is not suggested that the prescribing be restricted to these formulae, which are merely a practical demonstration of the fact that even the addition of ♏j or gr. 1 may add ½d. to the price, and it is not intended that they shall be kept as stock mixtures, to which the Committee strongly objects. It is, however, expected that they may remove the difficulty of "Rep. mist." Suggestions have been made to the British Medical Association as to altering the anomalies of pricing in future, and will be shortly brought before the Departmental Committee, now sitting, by the representatives (British Medical Association) appointed to represent the profession.

Annual Report.—In the annual report issued to all practitioners on the panel attention is drawn to avoidance of proprietary and patent articles, private formulae, formulae by firms, and small local pharmacopoeias. Also it is pointed out that ½d. saved on each prescription in 1,000,000 (the average yearly in Essex) represents £2,083.

Unallotted Persons.—As the Regulations and Act provide for attendance upon all insured persons it was felt that a collective acceptance of responsibility for treatment of all insured persons would be less offensive than compulsory allotment by a lay committee to individual practitioners, especially as it secured the payment of the funds, and it was unlikely that in many cases the nearest doctor would be compelled to attend (for more than a short time) a patient to whom he objected.

SOUTHAMPTON.

Panel Committee.

A meeting of the Committee was held on March 12th.

Payments to Doctors.—The payment by the Insurance Committee of 80 per cent. of doctors' accounts for the quarter ending December 31st, the reduced payment on account being due to insured persons having enlisted, was approved.

Attendance on Soldiers on Furlough.—A letter from the Commissioners was read on the circumstances in which soldiers may be attended by civilian doctors. It was decided to ask the Insurance Commissioners to issue Army Form O. 1667 to panel doctors.

Supply of Drugs and Appliances.—It was reported that the Insurance Committee approves the list prepared by the Panel Committee of food preparations, etc., not allowed to be prescribed. Formularies for six stock mixtures for use in the area were agreed upon and submitted to the pharmacists for approval.

Prescriptions.—It was reported that a checker of the prescriptions had been appointed at a salary of £5 10s. per 10,000 prescriptions, the Panel Committee paying one-third of the cost. The Insurance Committee was recommended by the Subcommittee concerning this to instruct the checker to allow the charge when aq. font. had been altered to aq. dest., and the latter charged for. It was agreed to protest strongly against this, and to send a protest to the Commissioners against a charge being made on the Drug Fund for something inserted in the prescription by the chemist and not ordered by the doctor.

GLASGOW BURGH.

Panel Committee.

A meeting of the Glasgow Burgh Panel Committee was held on February 26th, when Dr. Campbell was in the chair.

Extravagant Prescribing.—The explanations offered by the practitioners named in the report of the Joint Committee of the Panel and Pharmaceutical Committees on checking prescriptions were considered, and it was decided to report twenty-six practitioners to the Insurance Committee in respect of extravagant prescribing, but to ask the Insurance Committee not to publish the names of the practitioners reported. The previous decision of the Committee to recommend the Insurance Committee that a surcharge be made against the practitioners named to the extent of 50 per cent. of the amount by which the cost of their prescriptions exceeds 10½d. per insured person was rescinded.

Allocation of Credits.—Consideration of a scheme suggested by the Commissioners for the allocation of credits under Regulation 35 was deferred until the next meeting.

COUNTY OF AYR.

Panel Committee.

A meeting of the Panel Committee of the County of Ayr was held at Kilmarnock on February 12th, when Dr. Beveridge was in the chair.

Certificates.—In reply to a letter received from the Scottish Miners' Federation Friendly Society, inquiring if doctors will fix a special day for issuing certificates to members of the society, it was decided that no such arrangement could be made.

Records.—It was reported that the Commissioners had sanctioned the replacement of the day book system of keeping medical records by the card system, and it was agreed that the card system should be instituted as from March 1st.

Co-operation with the British Medical Association.—It was agreed to co-operate with the Local Medical and Panel Subcommittee of the British Medical Association, and to furnish the information and assistance desired.

Domiciliary Treatment of Dependants.—The Committee approved of the remuneration for the domiciliary treatment of tuberculosis of dependants of insured persons being fixed at 5s. a week for patients within a radius of two miles from the practitioner's place of residence, and beyond that radius a mileage rate of 1s. a mile.

A meeting of the Panel Committee of the County of Ayr was held in Kilmarnock on March 30th, when Dr. BEVERIDGE was in the chair.

Domiciliary Treatment of Dependants.—A letter from the Clerk to the Insurance Committee with regard to the mileage rate to be allowed for the domiciliary treatment of tuberculosis of dependants of insured persons was read, explaining that while the Panel Committee agreed at its last meeting to a rate of 1s. a mile a visit to patients outside a two-mile radius from the practitioner's place of residence, the Insurance Committee desired to pay a flat weekly rate, and proposed to pay 1s. a mile a week, based on the assumption that the visits would average two a week—that is, in addition to the payment of 5s. a week, mileage at the rate of 2s. a mile a week for each mile the patient's residence is beyond the two-mile radius. It was agreed to accept the terms offered.

Supply of Drugs and Appliances.—It was decided that linseed meal should not be supplied to insured persons.

Payments to Doctors.—A communication from the Insurance Committee was read, stating that the amount paid towards the Medical Benefit Fund was much less than that requisitioned for, due to the Commissioners estimating a much reduced income for the current year, owing to insured persons joining the army and navy. It was accordingly proposed to pay practitioners 80 per cent. only to account for the quarter ending March 31st on names on lists. It was decided to acquiesce, but to intimate a protest against the reduction made by the Commissioners in the remittance for the Medical Benefit Fund as being in the circumstances excessive.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Surgeon H. E. SCARGILL to the *Euryalus*. M. P. FITZGERALD, M.B., to the *Blake*, vice Cock. Temporary Surgeons S. WORTHINGTON, M.B., to the *Lancaster*, HARRY A. HEWAT, JOHN B. CRAWFORD, R. H. H. NEWTON, M.B., and P. N. BUTTON to the *Victory*, additional, for Haslar Hospital, S. N. HAWKE to the *Chatham*, J. G. WATKINS to the *Impregnable*, vice Harke. To be temporary Surgeons: WILLIAM F. BOWEN, WILLIAM E. BOYD, M.B. To be Dental Surgeons with temporary commissions: STANLEY M. GARDNER, CLEMENTSON GLOVER, ALAN B. HACKING. ROY W. LIST, FREDERICK W. PAUL, EDWIN J. HANDFORD, HERBERT J. CORIN.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationer ALAN O. CURTIS to the *Victory*, additional. To be Surgeon Probationers: J. G. GRIFFITH, J. W. DUNCAN, F. R. CRIPPS.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

TEMPORARY LIEUTENANT-COLONEL WILLIAM A. TURNER relinquishes his temporary commission.

The following are granted temporary rank whilst serving with the Liverpool Merchants Mobile Hospital:—As Lieutenant-Colonel: NATHAN RAW, M.D., late Lieutenant-Colonel, R.A.M.C.(T.F.). As Major: THOMAS C. L. JONES, F.R.C.S., Major ARTHUR A. MUSSEN, M.D., R.A.M.C.(T.F.). As Captain: JOHN HAYWARD, M.D., STANLEY RAW, M.D. As Lieutenant: HAROLD BOWRING, JOHN M. W. MORISON, M.B., HENRY W. JONES, M.B.

Granted honorary rank as stated whilst serving with the Queen Mary's Convalescent Home:—To be Major: SAMUEL MACKEN, M.D. To be Captain: HENRY S. C. STARKEY, M.B., FREDERICK P. NUNNELEY, M.D.

Captains to be Majors: ARTHUR C. H. GRAY, M.B., DOUGLAS P. WATSON, M.B., THOMAS S. DUDDING, JOHN E POWELL, OSBURNE IEVERS, M.B., ROBERT H. MACNICOL, M.B., HUGH H. J. FAWCETT, SANTIAGO L. PALLANT, CHARLES R. SYLVESTER-BRADLEY, STANLEY E. LEWIS, M.B., GERARD A. KEMPTHORNE, JAMES T. MCENTIRE, M.B., NORMAN E. DUNKERTON, PATRICK J. HANAFIN, JOHN D. RICHMOND, M.B., MARMADUKE C. WETHERELL, M.D., HAROLD C. HILDRETH, WILLIAM MACD. MACDOWALL, REGINALD T. COLLINS, THOMAS J. WRIGHT, ARTHUR C. OSBURN.

HERBERT C. BARCLAY, M.D., F.R.C.S.E., to be temporary Major.

Temporary Captain F. ARMSTRONG having ceased to serve with the Welsh Hospital relinquishes his commission.

DAVID L. WILLIAMS to be temporary Captain whilst serving with the Sanitary Section of the Welsh Division.

Captain ROBERT J. B. BUCHANAN from the half-pay list is restored to the establishment.

EMRYS ROBERTS to be temporary Captain whilst serving with the Field Ambulance of the Welsh Division.

ARTHUR M. PRYCE to be temporary Lieutenant whilst serving with the Field Ambulance of the Welsh Division.

Temporary Lieutenant MALCOLM C. R. GRAHAME, M.B., to be temporary Captain.

BERNARD C. MAYBURY, F.R.C.S., to be temporary Captain whilst serving with the British Red Cross Hospital, Netley.

Temporary Lieutenants EDWARD M. WOODMAN and JOHN KELLY have relinquished their commissions.

To be temporary Lieutenants: STEPHEN G. ASKEY, M.B., PERCIVAL C. COLE, AMBROSE W. OWEN, M.D., JAMES L. O. TILLEY, GEORGE S. PHILLIPS, MARTIN A. KIRTON, WILLIAM M. O'CONNOR, M.B., WILLIAM W. TURNER, M.B., HORACE B. BINKS, M.B., ALEXANDER H. DAVIDSON, M.B., SAMUEL K. MCKEE, M.B., ROBERT N. THOMSON, M.B., ARTHUR C. FREETH, M.B., JOHN V. BUCHANAN, M.B., MICHAEL L. NEYLON, EDWARD H. RAINEY, F.R.C.S., NORMAN W. STEINBERG, M.B., HENRY H. R. BAYLEY, LIONEL W. R. SCARGILL, M.B., EDWARD C. WILLIAMS, M.D., F.R.C.S.E., JAMES HUTCHISON, M.D., JOHN A. D. RADCLIFFE, M.B., GEORGE RIDDOCH, M.B., VICTOR J. MCALLISTER, M.B., F.R.C.S.I., WILLIAM W. THOMSON, M.B., LAWRENCE D. SHAW, M.B., ARTHUR T. PATERSON, M.D., F.R.C.S.E., RUSSELL V. STEELE, SIDNEY E. ELPHICK, EDWARD J. EEDLE, RICHARD B. HUNT, CHARLES STUART, M.D., EVAN GREENE, M.D., GEORGE R. LAWLESS, F.R.C.S.I., MONTAGUE A. FARR, NORMAN D. MACKAY, M.D., ERNEST H. KENNY, HAMILTON MATHEWSON, M.B., JOHN W. WOOD, JOHN S. CALDWELL, M.B., WILLIAM MORRISON, M.B., ROWLAND H. SCOVELL, M.B., OWEN H. BOWEN, J. C. LORRAINE, M.B., F.R.C.S.I., WILLIAM W. SCOTT, M.B., ALFRED J. A. PETERS, THOMAS G. BROWN, M.D., ROBERT SLANEY.

The commission as temporary Lieutenant granted to PAUL BENÉ LOUBET under the name of Percy Webber Black in the *London Gazette* of September 15th, 1914, is cancelled.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

DONALD C. MACDONALD, M.B., to be Lieutenant on probation.

Lieutenants confirmed in their rank: SYDNEY W. LUND, WILLIAM B. JEPSON, NOEL H. W. SAW; PERCY B. CORBETT to be Lieutenant.

PETER MACCALLUM, Cadet of the O.T.C., to be Lieutenant on probation.

INDIAN MEDICAL SERVICE.

THE services of Major A. C. MACGILCHRIST, M.D., are replaced at the disposal of the Government of Bengal with effect from February 22nd, 1915.

Major N. E. H. SCOTT, an Agency Surgeon of the 2nd Class, is placed on special duty as Civil Surgeon, Basrah, with effect from December 31st, 1914.

The promotion to his present rank of Major W. R. J. SCROGGIE, M.B., is antedated from January 29th, 1914, to July 29th, 1913.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

MAJOR G. ST. C. THOM, M.B., R.A.M.C., vacates the appointment of Deputy Assistant-Director of Medical Services, Lowland Division.

Major ALEXANDER M. MCINTOSH, M.B., from the 3rd Lowland Division, to be Deputy Assistant-Director of Medical Services, Lowland Division.

ROYAL ARMY MEDICAL CORPS.

1st Southern General Hospital.—ARTHUR C. TIBBITS to be Lieutenant.

2nd Southern General Hospital.—Captain FRANCIS H. EDGEWORTH, M.B., to be Major.

3rd Southern General Hospital.—Officers seconded under paragraph 112, Territorial Force Regulations:—Lieutenant-Colonels: WILLIAM T. FREEMAN, M.D., WILLIAM J. MAURICE, M.B. Majors: GEORGE S. ABRAM, M.B., LANSDOWN M. GUILDING, M.B., JOHN A. P. PRICE, M.D., ROBERT RITSON. Captains: NORTON B. CLOWES, GEORGE H. R. HOLDEN, GEORGE F. MURRELL, M.B., WILLIAM B. SECRETAN, M.B., F.R.C.S., and FIELDING CLARKE.

5th Southern General Hospital.—Major WILLIAM P. PURVIS, M.D., F.R.C.S., is seconded.

1st London (City of London) Sanitary Company.—LIONEL W. HIGNETT, M.B., to be Lieutenant.

1st London Casualty Clearing Station.—CECIL A. ROBINSON to be Lieutenant.

2nd London Sanitary Company.—Captain REGINALD O. SIBLEY, M.D., from the 4th London General Hospital, to be Captain.

2nd London (City of London) General Hospital.—Captain EDWARD H. FENWICK to be Lieutenant-Colonel, temporary, and is seconded.

3rd London General Hospital.—Major ARTHUR W. MAYO ROBSON, C.V.O., F.R.C.S., is seconded.

1st Eastern General Hospital.—To be Captains, whose services will be available on mobilization: JAMES C. SIMPSON, M.D., ROBERTSON C. CANNEY, late Cadet Corporal, London University Contingent, Senior Division, O.T.C.

3rd East Anglian Field Ambulance.—Captain SAMUEL HUGHES, M.B., from the 5th Southern General Hospital, to be Captain, temporary.

South Midland Casualty Clearing Station.—Lieutenant-Colonel W. H. STEPHEN, M.B., from the 1st South Midland Mounted Brigade Field Ambulance, to be Lieutenant-Colonel.

1st South Midland Field Ambulance.—WILLIAM J. HIRST, M.B., to be Lieutenant.

1st North Midland Field Ambulance.—Lieutenant GEOFFREY HOLMES, M.B., to be Captain, temporary.

1st South-Western Brigade Field Ambulance.—WILLIAM A. MILNER, to be Lieutenant.

2nd Welsh Field Ambulance.—JOHN P. H. DAVIES to be Lieutenant.

1st West Lancashire Field Ambulance.—LEONARD B. STOTT, M.B., to be Lieutenant.

Northumbrian Divisional Sanitary Section.—Lieutenant SYDNEY J. CLEGG, M.B., from Attached to Units other than Medical Units, to be Lieutenant.

2nd Northumbrian Field Ambulance.—HERBERT B. LOW, M.D., late Captain 7th Battalion, Durham Light Infantry, to be Captain.

Sanitary Service.—HENRY L. P. HULBERT, M.B., to be Captain and to be appointed Sanitary Officer, South Midland Reserve Division.

Attached to Units other than Medical Units.—Major ROBERT W. FORREST, M.B., is placed on the half-pay list on account of ill-health; THOMAS FRANKISH, M.B., late Lieutenant-Colonel 1st East Lancashire Brigade, Royal Field Artillery, to be Major; Lieutenant-Colonel and Honorary Surgeon-Colonel CHARLES DOWNING resigns his commission on account of ill health, and is granted permission to retain his rank and wear the prescribed uniform. To be Lieutenants: JAMES M. HERON, HENRY W. LANCE, M.B.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

MAJOR JAMES B. SIMPSON, M.D., from Attached to Units other than Medical Units, to be Major.

COLONIAL MEDICAL SERVICES.

THE following changes are notified by the Colonial Office:

WEST AFRICAN MEDICAL STAFF.

Transfers and Promotions.—H. B. S. Montgomery, L.R.C.S. and P., Provincial Medical Officer, Gold Coast, transferred on promotion to Nigeria as Deputy Principal Medical Officer. J. W. Collett, M.D., L.R.C.P. and S.Edin., L.F.P.S.Glasg., Senior Medical Officer, Sierra Leone, transferred on promotion to Nigeria as Provincial Medical Officer. D. Burrows, L.R.C.P. and S.Edin., L.F.P.S.Glasg., Senior Medical Officer, Nigeria, transferred on promotion to Sierra Leone as Provincial Medical Officer. E. C. Adams, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond., Medical Officer, Nigeria, transferred on promotion to the Gold Coast as Senior Medical Officer. T. F. G. Mayer, M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer, Gambia, transferred on promotion to Sierra Leone as Senior Medical Officer. F. J. A. Beringer, M.R.C.S. Eng., L.R.C.P.Lond., D.P.H.Irel., Medical Officer, Gold Coast, transferred on promotion to Sierra Leone as Sanitary Officer. E. W. Graham, M.B., C.M.Glasg., Senior Medical Officer, Gold Coast, promoted to be Provincial Medical Officer. T. B. Adam, L.R.C.P.and S. Edin., L.F.P.S.Glasg., D.P.H.Irel.; Captain J. B. Bate, R.A.M.C.(T.F.), M.D.Durh., L.S.A.Lond., D.T.M.Liverpool; G. Hungerford, L.R.C.S. and P.Irel.; G. R. Twomey, M.D., C.M.Edin.; R. W. Gray, M.B., C.M.Edin., D.P.H.Camb.; E. H. Tipper, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond., and H. G. McKinney, M.R.C.S.Eng., L.R.C.P.Lond., Medical Officers, Nigeria, promoted to be Senior Medical Officers. F. S. Harper, M.B., C.M.Edin.; C. D. Ralph, M.R.C.S.Eng., L.R.C.P. Lond., and C. V. Le Fanu, M.B., Ch.B.Aberd., D.T.M.Liverpool, Medical Officers, Gold Coast, promoted to be Senior Medical Officers. C. H. Allan, L.S.A.Lond., Medical Officer, Sierra Leone, promoted to be Senior Medical Officer. A. C. Lorena, L.R.C.P. and S.Edin., L.F.P.S.Glasg., D.P.H.Irel., Medical Officer, Gold Coast, promoted to be Sanitary Officer.

Retirements.—M. F. Ellis, M.A.Camb., L.R.C.S. and P.Edin., L.F.P.S.Glasg., retires on pension; B. Knowles, M.B., Ch.B.Aberd., D.T.M.Liverpool.

New Appointment.—E. B. Bate, M.B., B.Ch Dubl., Gambia. The services of the following officers of the West African Medical Staff have been placed at the disposal of the War Office: J. B. Bate, M.D.Durh., L.S.A.Lond., D.T.M.Liverp., Captain R.A.M.C.(T.F.); D. T. Pirt, M.B., B.S.Durh., temporary Lieutenant, R.A.M.C.; G. J. W. Keigwin, L.R.C.S.and P.Edin., L.F.P.S.Glasg., L.S.A.Lond., temporary Lieutenant, R.A.M.C. The services of the following officers of the West African Medical Staff have been placed at the disposal of the Admiralty: M. B. Hay, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H Lond., temporary Surgeon, R.N.; J. C. Watt, M.B., Ch.B.Glasg., temporary Surgeon, R.N.

Death.—J. Atkinson, M.B., Ch.B.Glasg.

OTHER COLONIES AND PROTECTORATES.

C. M. Rolston, M.D.Manitoba, L.R.C.P.and S.Camb., L.R.C.P.and S. Glasg., selected for appointment as a Supernumerary Medical Officer in the Leeward Islands. J. H. Rankin, B.M., M.S Glasg., D.P.H.Camb., selected for appointment as temporary Medical Officer in St. Lucia. A. MacDonald, M.D., C.M.Edin., D.P.H.Manch.(Vict.), Medical Officer of Health, Kingston, Jamaica, selected for appointment as Medical Officer in Charge of Ankylostomiasis work in Grenada. F. T. Auden, M.D., C.M.Edin., selected for appointment as District Commissioner and Medical Officer at Caicos in the Turks and Caicos Islands. J. G. Lessey, L.R.C.S.and P.Edin., L.R.F.P.S.Glasg., selected for appointment as Resident Surgeon of the Colony Hospital, Grenada. N. H. Bolton, M.D., B.Ch.Edin., F.R.C.S.Edin., D.T.M.and H.Edin., selected for appointment as a Medical Officer, Zanzibar.

Vital Statistics.

VITAL STATISTICS OF LONDON DURING 1914.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

IN the accompanying table will be found summarized the vital statistics of the City of London and of the metropolitan boroughs based upon the Registrar-General's returns. The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided.

The 109,657 births registered during the fifty-two weeks ending January 2nd, 1915, were equal to a rate of 24.3 per 1,000 of the population, estimated at 4,518,021 persons in the middle of the year; in the three preceding years the rates were 24.8, 24.5, and 24.5 per 1 000 respectively. The birth-rates last year, after distribution of the births in the principal maternity institutions to the boroughs in which the mothers resided, ranged from 10.2 in the City of London, 14.0 in the City of Westminster, 14.8 in Hampstead, 16.4 in Holborn, 18.7 in St. Marylebone, and 18.8 in Kensington, to 29.4 in Stepney, 29.7 in Bethnal Green, 29.8 in Southwark, 30.1 in Finsbury, 31.0 in Bermondsey, 31.6 in Poplar, and 32.1 in Shoreditch.

The deaths of London residents registered during the period under notice numbered 64,994, and were equal to a rate of 14.4 per 1,000; in the three preceding years the rates were 15.8, 13.6, and 14.2 per 1,000 respectively. Among the several boroughs the lowest death-rates, after correction for differences of sex and age-constitution of the respective populations, were 10.7 in Lewisham, 11.0 in Hampstead and in Wandsworth, 12.5 in Stoke Newington, and 12.9 in Paddington and in Chelsea; while the highest rates were 17.3 in Stepney, 17.4 in Bermondsey, 17.9 in Southwark, 19.4 in Finsbury, and 19.6 in Shoreditch.

The 64,994 deaths from all causes included 147 from enteric fever, 1,385 from measles, 316 from scarlet fever, 918 from whooping-cough, 706 from diphtheria, and 3,031 from diarrhoea and enteritis among children under 2 years of age. The mortality from measles was considerably below the average; that from enteric fever and from whooping-cough was slightly below it; while that from scarlet fever and diphtheria showed a marked excess. Enteric fever was proportionally most fatal in Fulham, the City of Westminster, Holborn, and the City of London; measles in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey; scarlet fever in Kensington, Fulham, Stepney, Southwark, and Camberwell; whooping-cough in Fulham, Islington, Finsbury, Shoreditch, Bethnal Green, Stepney, and Southwark; and diphtheria in Bethnal Green, Stepney, Poplar, Southwark, Deptford, and Woolwich. The mortality from diarrhoea and enteritis among children under 2 in proportion to the births registered during the year was greatest in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey.

The deaths from phthisis among London residents last year numbered 6,281, and were equal to an annual rate of 1.39 per 1,000, against 1.35, 1.35, and 1.30 per 1,000 in the three preceding years. The death-rates from this disease last year ranged from 0.64 in Hampstead, 0.75 in Lewisham, 0.90 in Wandsworth, 1.02 in Paddington and 1.10 in Kensington, to 1.70 in Stepney, 1.76 in Southwark, 1.77 in St. Pancras, 1.97 in Holborn, 1.98 in Finsbury, and 2.14 in Shoreditch.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births was equal to 104 per 1,000 last year, against 129, 91, and 105 per 1,000 in the three

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during 1914.

BOROUGHS.	Estimated Population middle of 1914.	Births.	Deaths.	Annual Rate per 1,000 Living.		Deaths from								Deaths of Children Under 1 Year of Age to 1,000 Registered Births.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (Under 2 Years).	Phthisis.	
COUNTY OF LONDON	4,518,021	109,667	64,994	24.3	14.4	147	—	1,385	316	918	706	3,031	6,281	104
Paddington	142,193	2,965	1,846	20.9	12.9	3	—	4	8	25	20	79	145	95
Kensington	171,234	3,210	2,242	18.8	13.1	1	—	15	17	7	13	63	187	94
Hammersmith	123,853	2,935	1,717	23.8	13.7	5	—	41	5	21	16	67	170	94
Fulham	157,303	4,154	2,101	26.5	13.8	9	—	31	21	42	22	126	205	113
Chelsea	64,511	1,299	870	20.2	12.9	3	—	3	5	6	8	21	87	67
City of Westminster ...	154,544	2,155	1,936	14.0	13.2	9	—	6	10	21	15	35	205	80
St. Marylebone	114,355	2,132	1,577	18.7	14.1	6	—	2	9	20	18	59	146	98
Hampstead	86,388	1,273	893	14.8	11.0	4	—	2	2	16	10	11	55	80
St. Pancras	214,133	5,223	3,334	24.5	15.6	4	—	56	18	51	30	121	379	92
Islington	325,496	8,171	4,923	25.2	14.8	15	—	97	24	84	43	228	470	105
Stoke Newington ...	50,511	1,045	661	20.7	12.5	—	—	1	3	6	4	16	58	78
Hackney	223,393	5,460	3,099	24.5	14.0	8	—	106	9	53	39	127	303	92
Holborn	46,832	764	754	16.4	16.2	6	—	11	2	9	4	13	92	90
Finsbury	84,521	2,541	1,652	30.1	19.4	2	—	76	6	45	9	88	167	123
City of London	17,831	181	239	10.2	14.0	1	—	1	1	3	2	1	20	94
Shoreditch	109,569	3,511	2,075	32.1	19.6	2	—	112	5	55	20	148	234	141
Bethnal Green	127,867	3,786	2,034	29.7	16.6	4	—	68	7	48	28	174	210	137
Stepney	275,081	8,058	4,539	29.4	17.3	8	—	182	28	72	70	268	465	124
Poplar	160,839	5,073	2,743	31.6	16.9	6	—	66	10	31	34	195	268	116
Southwark	188,321	5,604	3,350	29.8	17.9	2	—	95	22	59	37	207	330	124
Bermondsey	124,683	3,849	2,165	31.0	17.4	3	—	81	8	14	18	140	203	125
Lambeth	297,094	7,022	4,319	23.7	14.3	16	—	58	16	40	50	202	422	104
Battersea	167,451	4,303	2,220	25.8	13.4	3	—	50	11	26	17	122	210	93
Wandsworth	331,321	6,675	3,617	20.2	11.0	5	—	26	13	56	41	148	298	89
Camberwell	261,823	6,580	3,589	25.2	13.6	5	—	65	23	47	39	143	373	99
Deptford	109,269	3,115	1,572	28.6	14.3	3	—	51	9	9	25	91	150	99
Greenwich	96,018	2,408	1,412	25.1	14.5	5	—	47	7	6	16	53	132	98
Lewisham	169,211	3,336	1,836	19.8	10.7	6	—	7	8	19	24	55	126	74
Woolwich	122,431	2,833	1,679	23.3	14.1	3	—	25	9	27	34	30	171	85

preceding years. The rates ranged among the several boroughs from 67 in Chelsea, 74 in Lewisham, 78 in Stoke Newington, 80 in the City of Westminster and in Hampstead, 85 in Woolwich, 89 in Wandsworth, and 90 in Holborn, to 113 in Fulham, 116 in Poplar, 123 in Finsbury, 124 in Stepney and in Southwark, 125 in Bermondsey, 137 in Bethnal Green, and 141 in Shoreditch.

HEALTH OF ENGLISH TOWNS.

In ninety-six of the largest English towns 8,048 births and 6,885 deaths were registered during the week ended Saturday, April 3rd. The annual rate of mortality in these towns, which had been 19.7, 19.3, and 19.8 per 1,000 in the three preceding weeks, was again 19.8 per 1,000 in week under notice. In London the death-rate was equal to 21.3, against 20 7, 21.0, and 22.3 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 8.2 in Gloucester, 8.0 in Bath, 9.6 in Wimbledon, 10.5 in Darlington, 10.6 in York, and 10.9 in Swindon, to 26.9 in Barrow, 27.2 in Middlesbrough, 28.0 in Gateshead, 31.1 in Dudley, 32.4 in West Hartlepool, and 36.1 in Northampton. Measles caused a death-rate of 4.1 in Acton, 4.3 in Merthyr Tydfil, 5.2 in St. Helens, 6.5 in Wolverhampton, 8.6 in Northampton and 11.3 in West Hartlepool; whooping-cough of 2.1 in Bootle, 2.5 in Merthyr Tydfil, and 4.0 in Wigan; and diphtheria of 2.4 in Rotherham. The mortality from scarlet fever and enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 64, or 0.9 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 14 were recorded in Birmingham, 9 in Liverpool, 8 in Gateshead, 5 in Stoke-on-Trent, 4 in Warrington, and 3 in Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,850, 2,730, and 2,672 at the end of the three preceding weeks, further fell to 2,543 on Saturday, April 3rd; 253 new cases were admitted during the week, against 275, 289, and 301 in the three preceding weeks.

In the ninety-six large English towns 8,710 births and 6,922 deaths were registered during the week ended Saturday, April 10th. The annual rate of mortality in these towns, which had been 19.3, 19.8, and 19.8 per 1,000 in the three preceding weeks, rose to 19.9 per 1,000 in the week under notice. In London the death-rate was equal to 21.1, against 21.0, 22.3, and 21.3 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 8.7 in Lincoln, 8.9 in East Ham, 9.2 in Ilford, 10.3 in Gloucester, 1 .9 in Swindon, and 11.2 in Eastbourne and in Exeter, to 27.3 in Aberdare, 27.6 in Rochdale, 28.6 in Carlisle, 29 3in West Bromwich, 30.1 in Dudley, and 36.0 in Wolverhampton. Measles caused a death rate of 4.0 in Croydon, 4.1 in Smethwick, 4.4 in Sheffield and in Stockton-on-Tees, 5.5 in Walsall, 5.7 in West Hartlepool, 5.9 in Carlisle, 6.0 in West Bromwich, 6.9 in Northampton, and 8.7 in Wolverhampton; whooping-cough of 2.1 in Bootle, 3.1 in Merthyr Tydfil, and 6.3 in Wigan; and diphtheria of 1.7 in Northampton. The mortality from scarlet fever and enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 66, or 1.0 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 11 were recorded in Birmingham, 10 in Liverpool, 5 in Stoke-on-Trent, 4 in Dudley, 3 in Coventry, and 3 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,730, 2,672, and 2,543 at the end of the three preceding weeks, further fell to 2,505 on Saturday, April 10th; 275 new cases were admitted during the week, against 289, 303, and 253 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,144 births and 995 deaths were registered during the week ended Saturday, April 3rd. The annual rate of mortality in these towns, which had been 20.9, 20.8, and 21.1 per 1,000 in the three preceding weeks, rose to 22.1 in the week under notice, and was 2.3 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 11.3 in Motherwell, 15.3 in Kirkcaldy, and 16.2 in Leith, to 23.3 in Edinburgh, 27.1 in Dundee, and 31.1 in Hamilton. The mortality from the principal infective diseases averaged 4.0 per 1,000, and was highest in Hamilton and Dundee. The 477 deaths from all causes in Glasgow included 60 from whooping-cough, 31 from measles, 5 from enteric fever, from scarlet fever, and from infantile diarrhoea, and 2 from diphtheria. Nineteen deaths from whooping-cough were recorded in Dundee, 5 in Edinburgh, 4 in Hamilton, and 3 in Leith, in Clydebank, and in Ayr; from measles, 8 in Dundee, 3 in Aberdeen, and 2 in Edinburgh; from scarlet fever, 2 in Aberdeen and 2 in Paisley; and from diphtheria, 3 in Edinburgh.

In the sixteen largest Scottish towns 1,291 births and 934 deaths were registered during the week ended Saturday, April 10th. The annual rate of mortality in these towns, which had been 20.8, 21.1, and 22.1 per 1,000 in the three preceding weeks, fell to 20.8 in the week under notice, but was 0.9 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 7.6 in Falkirk, 11.8 in Coatbridge, and 12.9 in Clydebank, to 22.6 in Glasgow, 23.8 in Dundee, and 34.7 in Greenock. The mortality from the principal infective diseases averaged 3.4 per 1,000, and was highest in Kilmarnock and Dundee. The 468 deaths from all causes in Glasgow included 37 from whooping-cough, 30 from measles, 7 from infantile diarrhoea, 5 from diphtheria, 4 from scarlet fever, and 2 from enteric fever. Eleven deaths from whooping-cough were recorded in Dundee, 9 in Edinburgh, 6 in Greenock, and 5 in Leith; from measles 8 deaths in Dundee and 3 in Aberdeen; and from diphtheria 3 deaths in Edinburgh.

HEALTH OF IRISH TOWNS.

During the week ended Saturday, March 27th, 651 births and 555 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 622 births and 558 deaths in the preceding period. These deaths represent a mortality of 23.9 per 1,000 of the aggregate population in the districts in question, as against 24.0 per 1,000 in the previous period. The mortality in these Irish areas was therefore 4.1 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28.0 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 25.8 (as against an average of 30.4 for the previous four weeks), in Dublin city 28.0 (as against 32.2), in Belfast 21.3 (as against 25.0), in Cork 26.5 (as against 26.2), in Londonderry 34.2 (as against 19.6), in Limerick 20.3 (as against 22.0), and in Waterford 11.4 (as against 26.1). The zymotic death-rate was 2.2, as against 1.6 in the previous period.

During the week ending Saturday, April 3rd, 579 births and 533 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 651 births and 555 deaths in the preceding period. These deaths represent a mortality of 22.9 per 1,000 of the aggregate population in the districts in question, as against 23 9 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.1 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 24.9 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 22.9 (as against an average of 28 5 for the previous four weeks), in Dublin City 24.0 (as against 29.9), in Belfast 23.3 (as against 24.6), in Cork 28.6 (as against 26.1), in Londonderry 10.1 (as against 22.8), in Limerick 13.5 (as against 21.7), and in Waterford 26.6 (as against 19.0). The zymotic death-rate was 1.7, as against 2 2 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon (male). Salary, £150 per annum.

BATH: ROYAL UNITED HOSPITAL.—Resident Medical Officer.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—Resident Medical Officer. Salary, £100 per annum.

BERKS COUNTY ASYLUM, Wallingford.—Junior Assistant Medical Officer (male). Salary, £250 per annum.

BETHLEM HOSPITAL, S.E.—Temporary Assistant Medical Officer. Salary, £300 per annum.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary, £280 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—(1) Honorary Assistant Physician. (2) House-Surgeon, salary, £100 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRADFORD POOR-LAW UNION.—Assistant Resident Medical Officer. Salary, £250 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BRISTOL EDUCATION COMMITTEE.—Assistant School Medical Officer (lady). Salary, £300 per annum.

BRISTOL GENERAL HOSPITAL.—Second House-Physician, House-Surgeon, and Casualty House-Surgeon; also Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Three House-Surgeons; (2) Two House-Physicians; (3) Obstetric and Ophthalmic House-Surgeon. Salary, £120 per annum.

BRISTOL UNIVERSITY.—Demonstrator of Anatomy. Salary, £180 per annum.

BURNLEY UNION.—Resident Assistant Medical Officer. Salary, £200 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CAMBERWELL: PARISH OF ST. GILES.—Temporary Assistant Medical Officer at the Infirmary, etc. Salary, £500 per annum.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer (male). Salary, £250 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician. Salary, £75 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—Resident Medical Officer. Salary, £160 per annum.

DERBY COUNTY BOROUGH.—Tuberculosis Officer (temporary). Salary, £400 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer (lady). Salary, £200 per annum.

ECCLESALL BIERLOW UNION.—Male Resident Assistant Medical Officer of the Ecclesall Institution. Salary, £250 per annum.

EDMONTON MILITARY HOSPITAL.—(1) Assistant Surgeons. (2) Radiographer.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—House-Physician. Salary, £60 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HARROGATE INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR WOMEN, Soho Square, W.—Resident Medical Officer. Salary, £80 per annum.

HULL: ROYAL INFIRMARY.—(1) House-Physician. (2) Assistant House-Surgeon. (3) Casualty House Surgeon. Salary, £105, £100, and £80 per annum respectively.

HULL: VICTORIA CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £100 per annum.

INVERNESS DISTRICT ASYLUM.—Assistant Medical Officer. Salary, £200 per annum, rising to £250.

INVERNESS: NORTHERN INFIRMARY.—House Surgeon. Salary, £150 per annum.

KENT AND CANTERBURY HOSPITAL.—House-Surgeon.

LANCASTER COUNTY ASYLUM.—Temporary Assistant Medical Officer. Salary £6 6s. per week.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salaries, £100 per annum.

LIVERPOOL PARISH.—Resident Assistant Medical Officer at the Brownlow Hill Institution. Salary, £300 per annum.

LIVERPOOL: WEST DERBY UNION.—Temporary Assistant Resident Medical Officer at the Walton Institution. Salary, £300 per annum.

LONDON HOSPITAL, E.—House-Surgeon in the Dental School.

LONDON LOCK HOSPITAL.—House-Surgeon at the Female Hospital, Harrow Road. Salary, £130 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Medical Registrar. Honorarium, 40 guineas a year.

LONDON THROAT HOSPITAL, Great Portland Street, W.—Registrar.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £450.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician. (2) House-Surgeon. (3) Assistant House-Physician. (4) Two Assistant House-Surgeons. Salary, for (1) and (2) £60 per annum, and for (3) and (4) £40 per annum.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

NATIONAL SANATORIUM, Benenden.—(1) Locumtenent Medical Superintendent. Salary, £5 5s. weekly. (2) Assistant Medical Officer. Salary, £120 per annum.

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—(1) Four House-Physicians; (2) Four House-Surgeons; (3) House-Surgeons for (*a*) Accident Room, (*b*) Aural and Ophthalmic Department, (*c*) Skin and Gynaecological Department, (*d*) Out-patient Dressing Department.

NEWPORT MENTAL HOSPITAL, Caerleon, Mon.—Temporary Assistant Medical Officer. Salary, £5 5s. per week.

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

NORWICH: JENNY LIND HOSPITAL FOR SICK CHILDREN.—Lady Resident Medical Officer. Salary, £150 per annum.

OLDHAM COUNTY BOROUGH.—Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—House-Physician (lady). Salary, £30 per annum.

PORTPATRICK PARISH.—Medical Officer and Public Vaccinator. Salary, £60 per annum, and vaccination fees.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Physician. (2) House-Surgeon. Salary, £100 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House-Surgeon. Salary, £200 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Senior Resident Medical Officer. (2) Assistant Anaesthetist. (3) Senior Obstetric Assistant. (4) Junior Obstetric Assistant. Salary for (1) £200, for (2) and (4), £50, and (3) £75 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Out-patient Surgical Officer. Salary, £50 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Senior House-Surgeon. Salary, £150 per annum.

STAFFORD: COUNTY MENTAL HOSPITAL.—Temporary Assistant Medical Officer (female). Salary, £250 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) Resident Surgical Officer. (2) Two House-Surgeons. (3) House Physician. Salary for (1) £300 per annum, and for (2) and (3), £150 per annum.

WAKEFIELD: CLAYTON HOSPITAL.—Lady Junior House-Surgeon Salary, 120 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WESTERN OPHTHALMIC HOSPITAL, Marylebone Road, N.W.—House-Surgeon (non-resident). Salary, £100 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—House-Physicians. Salary, £120 and £100 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £150 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Ashton-in-Makerfield (Lancashire), Abergele (Denbighshire).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

GREAVES, F. W. M., M.B., Ch.B Vict. Manch., District Medical Officer of the Leeds Union.

PERCIVAL, H. F., M.R.C.S., L.R.C.P., District Medical Officer of the Hardingstone Union.

WHARTON, John, M.A., M.D.Cantab., Medical Referee for the Manchester County Courts (Circuit No. 8), and the Salford County Court (Circuit No 7).

WHEELER, Mrs. Dora E., M.B., Ch.B.Edin., Anaesthetist to the Eye and Ear Infirmary, Liverpool.

ROYAL EYE HOSPITAL, Southwark, S.E.—The following have been appointed temporary honorary assistant surgeons for the period of the war:

F. D Bennett, M.R.C.S.; A. E. A. Loosely, M.B., B.Ch., F.R.C.S.; T. W. Letchworth, M.B., B.Ch., F.R.C.S.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

DONALDSON.—At Merchiston, Reading, on March 31st, the wife of Dr. R. Donaldson, Pathologist, of a daughter.

SCOTT.—On April 10th, at 1, Lord Street, West Southport, the wife of Gerald Claude Scott, M.D., of a son.

MARRIAGES.

STUART—SHELDON.—On April 10th, at St. Luke's Church, Kingston-on-Thames, by the Rev. H. Stanley Tibbs, Francis Wilson Stuart, M.D., M.Ch., eldest son of the Rev. F. W. and Mrs. Stuart, of Gantly, Aberdeenshire, to Constance Fanny, only daughter of Mr. and Mrs. A. Sheldon, Birchfields, Birmingham.

WEAR—ROSS.—At Glasgow, on April 6th, by the Rev. Hamilton Campbell, Arthur Hyde Wear, M.B., D.P.H., Surgeon R.N., eldest son of Dr. A. T. Wear, Newcastle, to Isabel Ross, youngest daughter of the late Andrew Ross, Mount Florida, Glasgow.

DEATHS.

ADAMS.—On April 9th, at Friarsfield, Lanark, Surgeon-Lieutenant-Colonel Alexander Maxwell Adams, F.R.C.S. Edin., 3rd Scottish Rifles, aged 78.

EDWARDS.—On April 11th, at Springfield House, Queen Street, Cardiff, William Thomas Edwards, M.D., F.R.C.S., LL.D., J.P., aged 93 years.

HARRISON.—On April 12th, at Bankfield, Haslingden, the residence of his mother, William Sandilands Harrison, Lieutenant-Colonel, Royal Army Medical Corps, age 43 years. Interment, Thursday, April 15th, at 12 noon, Haslingden Parish Church. Will friends kindly accept this—the only intimation.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration by Mr. Shattock: Specimens of Spina Bifida.

TUESDAY.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester Square, W.C., 4.30 p.m.—Cases. Paper: Dr. C. M. Kempster: The Inhibitive Action of *X* Rays upon Malignant Growths.

MEDICO-LEGAL SOCIETY, 11, Chandos Street, W., 8.30 p.m.—Exhibition of Specimens. Papers:—J. H. C. Sproule: Medico-Legal Experiences in Ceylon. Roland Burrows, M.A., LL.D.: The British Medical Association Report on Crime and Punishment.

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C., 8.15 p.m.—Papers:—Dr. N. S. Finzi: Late Radium and *X*-ray Burns. Mr. F. H. Glew: A New Alpha Ray Effect. Mr. A. O. Forder will exhibit a new plate holder.

ROYAL SOCIETY OF MEDICINE:

SECTION OF THERAPEUTICS AND PHARMACOLOGY, 4.30 p.m.—Annual General Meeting: Discussion on the Treatment of Phthisis by the Induction of Pneumothorax, to be opened by Dr. T. D. Lister. Dr. Jane Walker, Dr. S. Vere Pearson, Dr. Lillingston, Dr. de Carle Woodcock will take part in the discussion.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Discussion: Epidemic Cerebro-spinal Meningitis, to be opened by Dr. F. E. Batten, followed by Dr. D. N. Nabarro, Dr. J. A. Arkwright, and Dr. Leonard Colebrook. Members of the services are especially invited.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE, 8.30 p.m.—Annual General Meeting:—Papers: Dr. H. E. Corbin: Small-pox among Cotton Operatives. Dr. E. L. Collis: The Occurrence of an Unusual Cough among Weavers of Cotton Cloth.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		APRIL.
21	Wed.	London: Finance Committee, 2 p.m.
28	Wed.	London: Council, 2 p.m.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 24TH, 1915.

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British Medical Association.

THE WAR EMERGENCY.

OFFERS OF PART-TIME SERVICE.

ANY offer of part-time services for military duties should be made, not to the War Office, but to the Deputy Director of Medical Services of the Command in which the medical man desiring to make the offer resides, and should preferably be made through the local Division of the British Medical Association where it has taken steps to assist the D.D.M.S. to organize civilian assistance. This was made plain by Sir Alfred Keogh in his remarks at the Conference with the special committee of the British Medical Association as reported in the JOURNAL of April 10th, p. 646, and was also expressed in the circular letter of the Medical Secretary to Divisions and Branches published in the JOURNAL of April 17th, p. 683.

A list of the Commands showing the counties included in each was printed in the JOURNAL of April 10th, p. 647.

By reference to the same page it will be seen that the D.D.M.S. may be able to entertain offers of part-time service under any of the following circumstances:

1. An offer to give so many hours a day to military work at a certain fixed time on each day. The services of medical men making such offers may be of great assistance in military hospitals in seeing men in combatant units reporting sick and in looking after the sanitation of camps, barracks, and billets.

2. Offers from those who could not devote a specific time to military work, but who, as part of their general practice, would be willing to attend, at the rates of pay authorized, the wives and children of officers and soldiers at certain stations. In peace a military medical officer at each such station is appointed to look after the women and children whose husbands are in the station, in addition to his ordinary duty. It must be clearly understood that the request in this paragraph does not apply to the provision of medical attendance, medicines, etc., at places other than military stations. It does not, therefore, affect the scheme of the Duke of Devonshire's Committee, framed in response to the offer by the profession last September (SUPPLEMENT, September 19th, 1914, p. 173) to give free medical attendance to those dependants of men serving with the colours who are recommended for such attendance under certain conditions. Under this scheme, which applies to all parts of the country, towns and villages alike, the Executive Committee of the Prince of Wales's Fund defrays the cost of medicines and appliances.

3. Offers from medical men who can arrange to help the neighbouring practitioners who have undertaken military duties on such terms as may be settled by mutual agreement.

As was stated last week, the remuneration for part-time service at hospitals is a matter for arrangement between the medical men engaged and the Deputy Director of Medical Services of the Command concerned. The rate will vary according to the particular duty performed, and the time occupied.

OFFERS OF WHOLE-TIME SERVICE.

OFFERS of service as whole-time medical officers should be made to the Director-General, Army Medical Services, War Office, London, S.W.

The Director-General urges all those under 40 years of age who are fit for active service to apply for temporary commissions in the R.A.M.C. if their civil obligations will allow them to do so. The army is especially in need of young general practitioners who are willing to go anywhere and do anything in the way of duty, with troops or medical units. They would have an opportunity of seeing active service on the Continent or elsewhere where British armies are fighting.

There are vacancies also for men who have specialized in surgery, medicine, ophthalmic surgery, bacteriology, and *x*-ray work. After doing a certain amount of work in a military hospital in this country first, so as to become familiar with the routine, they would probably eventually be appointed to the large hospitals, of 1,040 beds each, which are being fitted out for service with the Expeditionary Force.

Further, the whole-time services of men over 40 years of age would be of the greatest value to the military authorities in this country, and many of them would probably go overseas for hospital work later on.

Conditions of Service.

Medical men offering their whole-time services must be registered practitioners, and will be granted the temporary rank of lieutenant R.A.M.C. They must engage for a period of twelve calendar months, or until their services are no longer required. The pay of officers holding temporary commissions as Lieutenant R.A.M.C. is 24s. a day, and they receive rations, or an allowance of 1s. 9d. a day in lieu, but are not provided with fire, light, etc., the allowances in respect of these being included in the daily rate of pay. They must devote their whole time to military service, and they will receive an allowance of £30 in respect of the provision of outfit, and a gratuity of £60 at the termination of their engagement if they have rendered satisfactory service. Full information as to the particulars to accompany the application was printed at page 648 of the JOURNAL of April 10th, 1915.

Pensions and Gratuities.

A medical practitioner serving with the Royal Army Medical Corps with a temporary commission is entitled to a pension for wounds at the same rate and under the same conditions as officers holding permanent commissions, and, in the event of his death, his wife and orphans would be

entitled to a pension at the rates and conditions set out in the Pay Warrant.[1]

Pensions and gratuities are allowable to the families of officers of the Regular Army, the Special Reserve of Officers, and the Territorial Force, and to the families of officers holding temporary commissions for the purposes of the present war.

The rates and conditions of Wounds, Pensions, and Gratuities and Pensions to the Families of Officers were reproduced in the JOURNAL of February 13th, p. 319, and we are informed by the Deputy Director-General, in response to an inquiry, that the statement in the JOURNAL at that page is perfectly correct, and can be referred to as an official statement.

Expenses on Service.

We are asked how much a medical officer on service is likely to be able to assign out of his pay for his wife or other dependants he leaves at home. Since men's ideas of personal expenditure vary so much it is not possible to give any more definite answer than to say that, as a rule, a medical officer spends less on field service than at home. He can arrange with his agent to pay any portion of his pay he may wish to his wife or other member of his family.

The army agents for the R.A.M.C. are Messrs. Holt and Co., 3, Whitehall Place, S.W.

TRAINING.

Requests for information as to facilities for training in ambulance work, or gaining special experience in other directions should be addressed to the D.D.M.S. of the Command.

METROPOLITAN COUNTIES BRANCH.

IN response to the urgent appeal for additional medical officers for the army, recently made by Sir Alfred Keogh, the council of the Metropolitan Counties Branch of the British Medical Association has appointed a committee, under the chairmanship of Dr. James Galloway, to endeavour to further the matter in the area of Greater London.

It is believed that this committee, working with the Divisions of the Branch, can serve a very useful and important purpose by collating the local information obtained by the Divisions and by tabulating lists of those members of the profession who are able and willing to give either whole- or part-time services, together with a statement of the particular services that they are able to render.

The committee is prepared to arrange for the attendance of speakers at the various meetings of the profession that will shortly be called, and, whenever it is possible to do so, to arrange for the attendance of a representative of the Army Medical Service. The committee will gladly welcome suggestions from the Divisions or from any one interested in the matter.

All communications should be addressed to the Honorary Secretaries of the Metropolitan Counties Branch, Messrs. R. E. Crosse and N. Bishop Harman, at the offices of the Association, 429, Strand, W.C.

CAMBERWELL.

AT a meeting of the Camberwell Division on April 20th, with Dr. W. T. Partridge presiding, the following resolutions were carried:

1. That the meeting pledges itself, as far as possible, not to continue to attend the patients of medical men serving with the Forces after their return. This pledge applies also to public appointments and to National Insurance work.
2. That the meeting is willing to organize the local profession so as to provide for the military needs of the locality so far as is possible by part-time service.
3. That a committee be empowered, after circulating the local profession, to draw up the following lists for sending to the Deputy Director of Medical Services of the London district:
   (*a*) A list of all who are willing to take 500 additional panel patients, receiving 50 per cent. of the money earned.
   (*b*) A list of those willing to see and visit private patients for absent practitioners on whole-time service, receiving 50 per cent. of the fees earned.
   (*c*) A list of those willing to give three hours' daily service, at fixed times every day, for work in military hospitals or elsewhere, at the rate of £1 per day.
   (*d*) A list of those willing to attend the wives and children of officers and soldiers at good rates of pay.
4. That a committee be appointed to formulate a local scheme, and that this committee be composed of the present executive of the Camberwell Division with the addition of six members of the local profession.

SOUTH-WEST ESSEX.

A MEETING of the members of the medical profession resident in South-west Essex was held at Leyton on April 14th, when Dr. Pottinger Eldred was in the chair. After Dr. Lord, Assistant Medical Secretary of the British Medical Association, had given a brief outline of the Association's conference with Sir Alfred Keogh, Colonel Hamilton, A.D.M.S., for the Eastern Command, who attended on behalf of the War Office, outlined the arrangements which had been made in the district for dealing with wounded soldiers. Part-time civil surgeons giving three or four hours a day would receive £250 a year, and whole-time £365. Mr. Todd-White observed that the pay of a Captain in the R.A.M.C. compared unfavourably with the amount a locumtenent or assistant would earn, and suggested that more recruits might be obtained if the salary and allowances were increased.

In reply to Dr. Hogg, the Assistant Medical Secretary stated that the Association had not drawn up any general scheme, but it had recommended the scheme of the Scottish Committee, and that of Southampton Division had been published in the JOURNAL. In reply to Dr. Muir, Colonel Hamilton said that the age limit for foreign service would be relaxed in the future. In reply to further questions, he said that the War Office was not in favour of small hospitals, in fact of any hospital of less than 1,000 beds, as it multiplied the executive staffs. Colonel Hamilton was informed that the Essex Insurance Committee would not allow a panel doctor to leave his practice unless he provided a locumtenent, and would not allow a panel doctor to divide his panel patients temporarily among his neighbours, and Colonel Hamilton undertook to bring the matter to the notice of the War Office. The meeting, which was well attended, then elected the following committee to deal further with the subjects discussed: Dr. Pottinger Eldred (Chairman); Drs. Bonnefin, F. Collins, Berrill, and Panting; and Drs. Roland Jones and Todd-White, honorary secretaries.

BARNSLEY.

A VERY well attended meeting of medical men resident in the Barnsley area was held on April 16th. Of those present two offered themselves for whole-time service, one of them under and the other over military age. In addition six men were prepared to devote their afternoons to military duty. We understand that several men in the area are already doing a good deal of military work. The meeting unanimously approved of the three following suggestions:

1. That the medical inspectors of school children should be relieved of their duties during the war, with the option of resuming their posts when peace is declared. (This would liberate many doctors and nurses who would be eligible for military service.)
2. That, in the event of any man of military age doing full time tuberculosis work and desiring to join the R.A.M.C., his work could be temporarily taken over by local men who could arrange to do it by giving part-time services.
3. That, as many doctors are taking over the work of panel doctors on active service, it will greatly assist them in their extra work if the duty of keeping panel records is remitted for the time of the war. Further, that if the duty of keeping the panel records is remitted temporarily for *all* panel practitioners, they would have much more time to devote to the needs of the country at the present time of stress.

NEWCASTLE-UPON-TYNE.

A MEETING of all doctors in the area of the Newcastle-upon-Tyne Division of the British Medical Association was held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on April 18th, to consider the appeal made by the War Office through the Association, and by the Association through the Divisions for an increased number of doctors for both whole-time and part-time service.

Over 100 doctors resident in the district were present, and the meeting was fully representative of practitioners

[1] Royal Warrant for the Pay, Appointment, Promotion, and Non-Effective Pay of the Army, 1913. To be purchased, either directly or through any bookseller, from Messrs. Wyman and Sons, Fetter Lane; H.M. Stationery Office (Scottish Branch), 23, Forth Street, Edinburgh; E. Ponsonby, Ltd., 116, Grafton Street, Dublin, or from the Agencies in the British Colonies and Dependencies, the United States of America, the Continent of Europe and Abroad, of T. Fisher Unwin, London, W.C. (1s.)

only engaged in private practice, of panel practitioners, and of doctors who are now serving with the colours but who still happen to remain in the district. The Deputy Director of Medical Services, Northern Command (York), was represented by Colonel Charlesworth and Colonel Mackenzie.

Dr. Hudson, Chairman of the Division, made a few introductory remarks on the aims and purposes of the meeting, and Mr. David Rankin, Honorary Secretary to the Division, read the letter on the War Emergency addressed to all Divisions of the British Medical Association (BRITISH MEDICAL JOURNAL, April 17th, p. 683). On the motion of Sir Thomas Oliver, seconded by Professor Rutherford Morison, it was unanimously resolved:

> That, in the opinion of this meeting of doctors, who are both members and non-members of the Newcastle-upon-Tyne Division of the British Medical Association, medical men who are under 40 years of age and who are fitted for active service should apply for temporary commissions in the Royal Army Medical Corps, if their civil obligations will allow them to do so. That means should be devised to set free such doctors and to preserve their obligations and general interests while they are absent. That arrangements should be made with the local military authorities whereby the remaining local practitioners may be able to undertake as much as possible of the local medical military service.

In the discussion that followed Colonel Prestcott and Colonel Faulkner addressed the meeting, and dwelt on the urgent need for both whole-time and part-time doctors to do medical military work in the present crisis.

On the motion of Dr. Drummond, seconded by Dr. A. Campbell, it was unanimously resolved:

> That a committee be formed to promote and carry through a scheme whereby the services of medical men of suitable age may be secured for the present military needs of the country, and that the committee be instructed to act in conjunction with the military authorities.

Dr. H. Rutter proposed:

> That the committee consist of the executive of the Newcastle-upon-Tyne Division of the British Medical Association, with power to co-opt others if necessary.

This was seconded by Dr. Burnell, and after the names of Colonel Prescott, Sir Thomas Oliver, Dr. Drummond, Dr. R. P. Ranken Lyle, Dr. Nattrass, and Dr. Hodgson had been added to the list, the motion was carried unanimously.

BURY, LANCASHIRE.

THE medical practitioners residing in Bury, Lancashire, have decided to allow two of their number to apply for commissions, and Dr. J. C. Turnbull, the secretary of the Bury Division and of the Panel Committee, and Dr. Rothwell have volunteered. They were prepared to hand over a proportion of the fees to their colleagues, but it was decided that for the first six months at any rate the absent doctors should receive all the bookings.

AYRSHIRE.

AT the annual meeting of the Ayrshire Division, held in the Ayr County Hospital on April 15th, the following office-bearers were elected for the year:

President: Dr. Robertson (Patna).
Vice-President: Dr. W. F. Brown (Ayr).
Representative for Representative Meeting: The President.
Deputy Representative for Representative Meeting: Dr. W. F. Brown.
Representatives on Branch Council: Dr. Carruthers (Muirkirk), and the President.
Members of Committee: Dr. Boyd (Tarbolton), Dr. Prentice (Kilmarnock), Dr. McGeoch (Girvan), Dr. White (Ayr), Dr. Paterson (Irvine).

A general meeting was thereafter held to deal with the war emergency, and it was resolved to express the opinion that the military needs of the county, as far as they could ascertain, could be provided for by part-time service on the part of the local practitioners, and there was no need to employ whole-time men for this purpose.

The meeting further resolved to do all in its power to assist the military authorities by inducing medical men willing to take commissions to do so, and offering to arrange and agreeing to help with the carrying on of their work during their absence. A committee was formed to take all the necessary steps to have their views given effect to and to co-operate with the military authorities.

The meeting was also of opinion that at the present crises the Local Government Board, education authorities, and Insurance Commissioners should all be asked to lessen the work thrown upon their medical officers, and to free them as far as possible for war purposes. In particular it was considered that the Insurance Commissioners might dispense with clerical and other work which at the present moment is pressing unduly upon medical practitioners.

PERTH.

A SPECIAL meeting of the Perth Branch of the British Medical Association and of the practitioners of the City and County, was held at Perth on April 16th, when Dr. Burnet was in the chair.

The Chairman said that the objects of the meeting were to discuss the means by which practitioners could be set free to volunteer for military services, and to make arrangements for the carrying out of the local military medical work. The circular letter from the Medical Secretary of the Association (BRITISH MEDICAL JOURNAL, April 17th, p. 683) was read and gave rise to a long and interesting discussion.

The meeting unanimously expressed its sense of the urgency of the situation, and its sympathy with the aims and objects of the appeal which had been addressed to the profession. The local civil requirements in connexion with private and insurance practice, and with hospital work, were fully discussed, and a committee to take up the whole question of organization, so that the military needs of the district could be properly met when the occasion arrived, was appointed, consisting of Drs. Burnet, Lyell (convener), Trotter, Menzies, Robertson.

The Secretary intimated that he had already communicated with the D.D.M.S. with reference to the possible military requirements of the area, and he was instructed to call a meeting of the committee when the reply of the D.D.M.S. was received. The following resolution was unanimously adopted:

> That the practitioners of Perth and Perthshire honourably pledge themselves to safeguard to the utmost the interests of their colleagues on military duty at home or abroad, and in regard to remuneration suggest that all fees be divided in the following proportions, namely:
>
> In the City, five-eighths to the doctor in attendance, and three-eighths to the absentee.
> In the County, three-quarters to the doctor in attendance, and one-quarter to the absentee.
>
> All patients should be resigned on the return of the absentee. These arrangements not to prejudice any special agreement entered into by a practitioner with another doctor or doctors to act as his substitute. No appointment to be taken over, only temporarily filled.

THE EXPLOITATION OF THE MEDICAL PROFESSION IN RESPECT TO MEDICAL CERTIFICATES.*

By Sir JOHN MOORE, M.A., M.D., M.Ch., D.P.H.Dubl., D.Sc. (*Hon. Causâ*) Oxon., F.R.C.P.I.;

Honorary Physician to H.M. the King in Ireland; Senior Physician to the Meath Hospital and County Dublin Infirmary; Professor of Practice of Medicine in the Schools of Surgery, Royal College of Surgeons in Ireland.

AMONG the meanings of the verb "to exploit" set down in one of our standard modern word-books (Webster's International Dictionary) is this—"to get the value or usefulness out of," and—in a bad sense—"to draw an illegitimate profit from." In the same way the substantive "exploitation" comes to signify a selfish, or unfair, utilization of something. It is exactly in this sense that I employ the word in the title of this paper.

My object is to draw attention to what I regard as a serious professional grievance—namely, the demand made upon the time, patience, and responsibility of registered medical practitioners in respect of medical certification for State or personal purposes at a nominal fee, or, as in the case of the medical certificate of the cause of death, for no fee at all.

The grievance may have existed for an indefinite period, but it crystallized when death certification became compulsory by law. In England the Acts of Parliament in which the law is written are the Registration Act, 1836 (6 and 7 Will. IV, cap. 86), and the amending Act, the Births and Deaths Registration Act, 1874 (37 and 38 Vict., cap. 88). In Ireland the law is embodied in the Registration of Births and Deaths (Ireland) Act, 1863

* Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland on Friday, April 16th, 1915.

(26 Vict., cap 11), and the amending Act, the Births and Deaths Registration Act (Ireland), 1880 (43 and 44 Vict., cap. 13). In Scotland, the Registration Acts (which must be read together) at present in operation are: (1) The original Registration Act of 1854 (17 and 18 Vict., cap. 80); (2) the first amending Act, 1855 (18 Vict., cap. 29); and (3) the second amending Act of 1860 (23 and 24 Vict., cap. 85).

Dr. John Glaister, from whose excellent work on *Medical Jurisprudence and Toxicology*[1] I have culled the foregoing list of statutes, writes: "Certification of death is one of those duties which the Legislature has imposed upon the medical profession and which must be performed without fee or reward. Failure to comply is followed by a penalty"—namely, a fine not exceeding 40s. Furthermore, the giving of a false certificate makes a medical practitioner liable, on summary conviction, to a fine of £10, or, on indictment, to seven years' imprisonment.

By Section 20 of the Births and Deaths Registration Act (Ireland), 1880, (43 and 44 Vict., cap. 13), it is enacted that—

In case of the death of any person who has been attended during his last illness by a registered medical practitioner, that practitioner shall sign and give to some person required by this Act to give information concerning the death, a certificate stating to the best of his knowledge and belief the cause of death, and such person shall deliver or cause to be delivered that certificate to the Registrar; and the cause of death as stated in that certificate shall be entered in the Register.

Now come the questions:—For whom is this gratuitous medical certificate intended, and with what end in view? The answers will be found on the form of certificate itself—they are:

N.B.—This certificate is intended solely for the use of the Registrar, [and]—

In order that the Causes of Death as certified by Registered Medical Practitioners may be satisfactorily classified in the Statistical Department of the General Register Office, for publication in his Weekly, Quarterly, and Annual Reports, the Registrar-General requests:

(1) That Registered Medical Practitioners in filling up their certificates will adopt as far as possible the suggestions prefixed to each Book of Certificate forms; and

(2) That the names of diseases in the certificates be written as legibly as possible in order that Registrars may be enabled to copy them accurately into the Death Register.

So, then, this medical certificate, for which no fee is paid, is for State purposes, and is demanded under the threat of a penalty. Who, after this, will not say that the registered medical practitioner at all events serves his country, and that, too, without fee or reward?

If I remember aright, an attempt was made to insert in the amending bills when passing through Parliament a clause providing for payment of a fee to a medical practitioner certifying to the cause of death. The only concession to the profession, however, was permission to insert in the form of certificate the words "as I am informed," should the medical attendant on the deceased not feel justified in taking upon himself the reponsibility of certifying the fact of death. This amendment was adopted at the instance of Sir Dominic Corrigan, Bart., then member of Parliament for the city of Dublin.

The necessity for this amendment is illustrated by the following quotation from Dr. Glaister's account of the law as to death certification[2]:

In the evidence given before the Select Committee of the House of Commons on Death Certification, Dr. Grimshaw, Registrar-General for Ireland, told the Committee the following facts. Dr. Lyons—who was at one time a member of Parliament—when in practice in Dublin, was attending a man who was very ill from paroxysmal asthma, complicating bronchitis. He saw the man one day in a very bad attack. Next morning friends of the patient called at the house of Dr. Lyons, stated the patient was dead, and asked that a certificate of the cause of death be sent to them. It happened, however, that Dr. Lyons had gone out on his round of visits, and, calling upon this patient early, because of his serious condition, found the man not only alive, but sitting up in bed. It was clear that the informants wanted the certificate from Dr. Lyons so that they could register the death and obtain the insurance money.

The efforts made to obtain redress for the medical profession in the matter of certification fees, although for the time abortive, seem to have borne fruit, such as it was, at a later date. For in the Infectious Disease (Notification) Act, 1889 (52 and 53 Vict., c. 72), Section 4, Subsection (2), runs thus:

The local authority shall gratuitously supply forms of certificate to any medical practitioner residing or practising in their district who applies for the same; and shall pay to every medical practitioner for each certificate duly sent by him in accordance with this Act a fee of two shillings and sixpence if the case occurs in his private practice, and of one shilling if the case occurs in his practice as medical officer of any public body or institution.

The supplemental Infectious Disease (Prevention) Act, 1890 (53 and 54 Vict., cap. 34), and the Public Health (Ireland) Act, 1878 (41 and 42 Vict., cap. 52), as also the Public Health Acts Amendment Act, 1907 (7 Edw. VII, cap. 53), are almost silent on the subject of fees for medical certificates under the Act in question. In the first-named, Section 20 allows a local authority to pay "the reasonable remuneration of any veterinary inspector or surgeon employed under Section four" for the inspection of dairies. Part of the duty of such "veterinary inspector or veterinary surgeon" shall be to report to the medical officer of health of the district. But the "inspector" or "surgeon" is not in this case a *medical practitioner*.

Section 57 of the Public Health Acts Amendment Act, 1907, which deals with the case of a child "who is or has been suffering from infectious disease or has been exposed to infection," enacts that the parent or guardian shall not "permit" such child to attend school without having procured from the medical officer [that is, the M.O.H. of the district] a certificate (*which shall be granted free of charge on application*) that in his opinion such child may attend without undue risk of communicating such disease to others.

The last Act of Parliament bearing on the subject of this paper to which I will draw attention is the Tuberculosis Prevention (Ireland) Act, 1908 (8 Edw. VII, cap. 56).

Section 1 deals with notification and disinfection. It is divided into eight subsections. Of these I quote the fourth and fifth word for word. Please note the order—penalty, first; reward, second.

(4) If any medical practitioner required by this section to send a certificate fails to send the certificate within the period specified in this section, he shall be liable on summary conviction to a penalty not exceeding forty shillings.

(5) The sanitary authority shall pay to every medical practitioner for the certificate duly sent by him in relation to a patient in their district a fee of one shilling if the case occurs in an infirmary, public hospital, or workhouse, and a fee of two shillings and sixpence if the case occurs elsewhere, but only one notification fee shall be paid by the sanitary authority in respect of the same patient.

Where the medical practitioner required by this section to send a certificate is himself the medical officer of health of the district he shall be entitled to the fee to which he would be entitled if he were not such medical officer.

This last sentence, I admit, shows some signs of grace.

With regard to medical certification under the National Insurance scheme, it has been as unsatisfactory as it is possible to imagine. This may be gathered from the Report of the Departmental Committee on Sickness Benefit Claims under the National Insurance Act, dated July 24th, 1914, and presented to both Houses of Parliament by command of His Majesty. Suffice it to say here that the Committee expressed the "opinion that, in view of the difficulties with regard to certification, it is necessary that there should be established as soon as possible a system of medical referees."[3]

The Committee were further "of opinion that it would be equitable that practitioners should also contribute towards the cost of medical referees, in so far as the medical referee may remove from the panel practitioner the necessity of discharging certain of those duties which, by his agreement with the Insurance Committee, he has undertaken to perform"—that is, no doubt, an allusion to a clause in the contract entered into by the medical practitioner on the panel with the Insurance Committee, under which he agrees in effect to give, without charge, the initial certificates, the continuation certificates and the declaring-off certificates required by the rules of the society of which the insured person is a member.

Is it not perfectly obvious that the Chancellor of the Exchequer in his Bill for National Insurance should have provided for proper remuneration out of State funds for the medical profession who would be called upon to certify under the bill? He made provision for the approved societies and for the insured—only the medical profession was left out in the cold.

Now, I think I may claim so far to have proved that the State through the Legislature places but a small, an in-

significant, financial value on medical certificates—that, in fact, it "exploits" the medical profession in the matter of certification. I proceed to show from recent personal experiences how this attitude of the State has influenced the public into believing that medical certificates are to be had for the asking, and actually should be so obtainable as a matter of course, if not of right.

On January 19th of the present year, I received from the Advisory Committee (of which, by the way, I am myself a member) a very complimentary letter asking if I would be willing to act as Honorary Medical Officer for the Irish Branch of Queen Victoria's Jubilee Institute for Nurses. With the letter, this form was enclosed:

QUEEN VICTORIA'S JUBILEE INSTITUTE FOR NURSES.
Medical Certificate.

1. Name.
2. General Health?
3. Hearing and Sight?
4. Teeth?
5. If any tendency to Varicose Veins?
6. If any tendency to Flat Feet?
7. If any illness of importance?
   What?
   When?
8. If any tendency to Pulmonary or Scrofulous Disease?
9. If any tendency to Rheumatism?
10. If any Heart Disease?
11. If subject to Anaemia?
12. If physically fit to cycle?
13. If vaccinated?
14. If revaccinated? Date?

I have this day, , 191 , examined and hereby certify that she is in good health, that she is not labouring under any defect or deformity, and that she is in my opinion both physically any mentally competent to undertake the duties of a district nurse.

Signed
Address

My reply was to the effect that my professional services were freely and without fee at the disposal of any Queen's nurse who was ill, but that I could not undertake to fill up a medical certificate as suggested unless a fee of one guinea was paid for every such certificate. A professional brother, to whom a similar request was made, adopted a similar course—so I understand. At the next meeting of the Advisory Committee it was agreed to leave the necessary medical certificate as heretofore in the hands of the individual nurses, to have it filled by their usual medical attendants, with the addition of a new question—namely, "If physically fit to cycle?"

To take another instance: For some thirty years I have been honorary physician to a large girls' school in Dublin. It seems that the school is now under the scheme whereby grants are made by the Department of Agriculture and Technical Instruction for Ireland to Technical Schools and Science and Art Classes. In February of this year three of the pupils in the school were invalided and unable to present themselves at the inspection of their work by a representative of the Department. I was asked to give the necessary medical certificate, but declined unless a fee of a guinea was paid. This request on my part was based on the fact that the object of the certificate was not personal, but to secure for the school a grant from a public body. My request was at once acceded to, and a few days later I received a cheque with a very courteous letter from the secretary on behalf of the School Committee.

This case shows that perhaps the public need only to be placed in possession of the facts to act justly and more generously in regard to medical certificates. There is considerable misunderstanding on the subject, and people are too apt to look to the interests of one of the two parties to a transaction, forgetful of the fact that the other party also has interests at stake and rights. Some time ago, at a meeting in support of a nursing institution which does splendid work among the Dublin sick poor, a clergyman, in bearing testimony to that work, naïvely mentioned that an approved society under the National Insurance Act very kindly saved its poor clients expense by accepting the nurse's report as to the progress of a patient in lieu of a medical certificate. At the close of the meeting, I asked the speaker whether he realized that the action of the society deprived some medical practitioners of the small fees to which they were entitled under the Act for granting medical certificates. I also told him that, while I knew the district nurses were innocent, the action of the society was calculated to imperil district nursing in Dublin, for its success depended on a complete understanding between doctors and nurses, and loyalty to the medical profession on the part of the nursing calling. My statements opened the speaker's eyes, and I am bound to say that he made every effort to prevent the mischief which his speech was certainly calculated to cause.

In conclusion, I venture to state that the medical profession is itself not altogether free from blame in this exploitation. Its proverbial generosity and — *horresco referens*—its lack of worldly wisdom have contributed to establish a false estimate in the mind of the public as to the value of a medical certificate, and what it costs to give an accurate one.

REFERENCES.

[1] Third edition. Edinburgh: E. and S. Livingstone. 1915. P. 164. [2] Loc. cit., chapter vi, p. 169. [3] Report, paragraph 67, p. 75.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

PANEL COMMITTEE.

Adjustment of Lists of Insured Persons.

AT a meeting of the London Panel Committee on April 20th the Panel Service Subcommittee recommended that the proposal of the London Insurance Committee to pay practitioners on the panel 1s., instead of 1s. 9d., on account of capitation fees for the third quarter, should not be accepted.

Dr. MAJOR GREENWOOD, in moving the recommendation, said practitioners realized that the total amount of the medical benefit fund must be reduced owing to the withdrawal of insured persons who had enlisted, but the proposal only to pay 1s. a quarter reduced the remuneration of individual practitioners to the old club rate of 4s. a year. To reduce the amounts received by all practitioners, whether their lists had suffered much or little by reason of enlistments, was unreasonable. If, however, the Panel Committee did not concur in the reduced payment proposed by the Insurance Committee, practitioners' cheques might be withheld until after the end of 1915, and practitioners would have no legal remedy, because all payments before the end of the year were regarded as advances, and legal rights only matured when the year had ended. He felt, however, that practitioners should refuse at all costs to concur in the proposed reduction, but thought members of the Panel Committee should ascertain the feelings of constituents.

Letters were read from the Lambeth and Southwark Insurance Practitioners' Associations protesting against the reduction of the quarterly capitation payments, urging that such a method was unfair in its incidence, and was only necessary because the register of insured persons maintained by the Insurance Committee was not in proper order.

Dr. C. W. HOGARTH moved an amendment that the Panel Committee also address a protest to the Insurance Commissioners urging them to consider the heavy burdens that would be cast upon panel practitioners as men returned from the war disabled and broken in health.

Dr. R. J. FARMAN, who seconded, urged that practitioners should make a general protest against their conditions of service. No practitioner would object to being told that his credits would be reduced by the number of those who had enlisted, but he would object to reductions being made which had no relation to the number on the list.

Dr. H. H. MILLS, Chairman of the Medical Benefit Subcommittee of the Insurance Committeee, said that a letter had been received by the Committee from the Commissioners advising that only 64 per cent. of the sums due to practitioners should be expended. Payment having been made for the first quarter at the rate of 1s. 6d., it was felt that it would not be safe now to pay more than 1s. for the quarter. It could not be too strongly stated that there was no desire on the part of the profession to shirk any duty thrown upon it by the war, but the occasion might very well be used to impress on the Commissioners the need for better organization of the index registers.

The Chairman (Dr. H. J. CARDALE) remarked that under their agreements practitioners had an absolute right to be paid for every insured person on their lists. It was not the reduction, but the unfair method of making it, to which objection was made.

The amendment was lost by 24 votes to 6.

Dr. CARDALE moved, and Dr. BERNSTEIN seconded, that the following be substituted for the recommendation of the Subcommittee:

> That the Panel Committee recognizes that a reduction in the medical benefit fund on account of insured persons who have enlisted is inevitable, and cheerfully accepts such reduction. The Panel Committee, however, does not concur in a general reduction being made in respect of all practitioners alike, but considers that the reduction should be made strictly in accordance with the reduction of each individual list.

This was carried.

Responsibility for Correcting Lists.

The Insurance Committee having asked practitioners to state whether certain insured persons, whose claims to receive benefit were in doubt, had been accepted by the practitioners, the Panel Committee passed a resolution declaring that the onus lay upon the Insurance Committee, and not upon individual practitioners, of showing whether or not a name should remain on a particular list.

OLDHAM.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Oldham Local Medical and Panel Committees was held at the Oldham Royal Infirmary on March 23rd.

Treatment of Tuberculous Dependants.—A letter was read from the Insurance Committee suggesting that dependants of insured people to whom domiciliary sanatorium benefit was granted should all be treated at the public dispensary. It was resolved that such treatment should, whenever possible, be in the hands of the general practitioner, in accordance with the Astor report.

Excessive Prescribing.—Letters were read from the Pharmaceutical Committee, requesting the Panel Committee to investigate all cases in which during 1913 the total for each doctor had exceeded 2s. per insured person on his panel for drugs and appliances. It was resolved to point out, in reply, that the letters were not in order, in that the Pharmaceutical Committee was required by the Regulations and by Circular 199/I.C. to present "reasoned representations" sufficient to establish a *prima facie* case for investigation. And, moreover, that the Panel Committee could not agree that the fact that any individual practitioner has during any period exceeded any given amount for drugs and appliances was necessarily evidence that he had prescribed extravagantly either in quantity or quality.

At an adjourned meeting on March 26th Dr. Olive Claydon was unanimously appointed Honorary Secretary *vice* Dr. Frank Radcliffe, resigned.

INSURANCE ACT IN PARLIAMENT.

MEDICAL BENEFIT (IRELAND).

MR. GINNELL asked the Chancellor of the Exchequer on what scale doctors are paid for certifying sickness under the National Insurance Act in England; what sum that is estimated to amount to annually; what the payments for this service amount to annually; the Irish branch of the British Medical Association having consented to accept that scale of payment, will he say why it has not been paid; what independent medical approval, if any, the Irish Insurance Commissioners have for the treatment of the sick which their different system of certification involves; and, seeing that out of £97,100, Ireland's equivalent for this purpose, only £44,000 is spent on it, will he say whether the balance of £53,100 goes into the Irish National Health Insurance Fund or is wholly lost to Ireland? Mr. Montagu said: There is no separate payment for the provision of certificates of incapacity for work under the National Insurance Acts in England. The Exchequer Grant of 2s. 6d. per insured person (equal to about £1,300,000) is a grant in aid of medical benefit generally, and this grant secures not only the provision of certificates but also other services in connexion with medical treatment and attendance. Any such comparison as that suggested by the hon. member is, therefore, misleading. As regards the fourth and fifth part of the question, I would refer the hon. member to the full reply which I gave to similar questions on March 3rd.

Mr. Ginnell: Will the right. hon. gentleman answer that part of the question that was in the previous question and left unanswered—namely, what independent medical approval, if any, the Irish Insurance Commissioners have for their treatment of the sick in this matter? Mr. Montagu: If the hon. member will look at the answer I gave him on March 1st, he will find I have answered that. Mr. Ginnell: It has not been answered. I beg to give notice that I will put down a further question.

Meetings of Branches and Divisions.

MIDLAND BRANCH:

HOLLAND DIVISION.

A MEETING of the Holland Division was held at the Johnson Hospital, Spalding, on April 16th, when Dr. PILCHER was in the chair.

Matters Referred to Divisions.—The recommendations of the Council regarding fees for the treatment of juvenile members of friendly societies were adopted. On the question of fees for medical examinations for life insurance, it was resolved, on the motion of Dr. MASON, seconded by Dr. WALKER:

> That this meeting is in favour of the efforts of the British Medical Association to obtain a certain uniformity in the fees for life insurance reports, but considers the existing defects too great to warrant a resolution in favour of the Council's recommendation.

The Council's recommendation with reference to eligibility to membership was adopted.

War Emergency.—Subsequently a meeting was held with non-members to consider the war emergency, and, after considerable discussion, the following resolution, proposed by Dr. PERRY, and seconded by Dr. RENDALL, was adopted:

> We suggest that the War Office should utilize the civilian medical practitioners to a greater extent in their own districts than has hitherto been done, both as regards troops quartered in those districts, and for the treatment of the sick and wounded in existing hospitals or those that have been lately extemporised.

Association Notices.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, April 28th, in the Council Room, 429, Strand, London, W.C., **at 2 o'clock in the afternoon.**

By order,

GUY ELLISTON,
Financial Secretary and Business Manager.

March 18th, 1915.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—Mr. G. Percival Mills (61, Newhall Street, Birmingham) gives notice that the annual meeting of the Central Division will be held at the Medical Institute, Edmund Street, on Wednesday, May 19th, at 3.30 p.m. Business: To elect a Chairman, Vice-Chairman, two Honorary Secretaries, and four Representatives, and to consider the business of the Annual Representative Meeting. Nominations for officers, which must be signed by three members of the Division, must be in the hands of the Honorary Secretaries not later than Friday, April 30th.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.—Mr. N. Bishop Harman, Chairman (108, Harley Street, W.), gives notice that the annual meeting for the election of officers for the ensuing year will be held on Friday, May 14th, at 5.30, at 108, Harley Street. Nominations for the offices must reach him not later than May 1st.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—Dr. Stephen E. Baxter (Wollaston, Wellingborough) gives notice that a meeting of the Division, to which all medical men resident in the county are invited, will be held in the Board Room of the Northampton General Hospital, on Tuesday, May 4th, at 3 o'clock. Agenda: Consideration of appeal of Director-General Army Medical Service (BRITISH MEDICAL JOURNAL, April 10th). Report on question of fees for treatment of juvenile members of friendly societies (SUPPLEMENT, BRITISH MEDICAL JOURNAL, March 20th). Report on question of fees for medical examination for life insurance (SUPPLEMENT, BRITISH MEDICAL JOURNAL, March 20th). Colonel H. W. Murray, Assistant Director of Medical Services, Bedford District, will be present, and will furnish information as to the local military medical requirements.

STAFFORDSHIRE BRANCH.—Dr. Harold Hartley, Honorary General Secretary (Basford, Stoke-on-Trent), gives notice that the third general meeting of the session will be held at the Victoria Hotel, Wolverhampton, on Thursday, April 29th, when the President, Dr. John Russell, will take the chair at 4.30 p.m. Exhibition of living cases. Papers:—(1) J. A. Codd: The interpretation of opaque meal shadows (illustrated by the epidiascope; the Coolidge tube will be demonstrated). (2) Frederick Edge: Some remarks on post-operative mental disturbance. Exhibition of pathological specimens, etc. Dinner at 7 p.m.; charge 5s.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In the ninety-six largest English towns 9,540 births and 6,618 deaths were registered during the week ended Saturday, April 17th. The annual rate of mortality in these towns, which had been 19.8, 19.8, and 19.9 per 1,000 in the three preceding weeks, fell to 19.0 per 1,000 in the week under notice. In London the death-rate was equal to 20.3, against 22.3, 21.3, and 21.1 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 9.0 in Wallasey, 9.5 in Edmonton, 10 2 in Enfield, 10.4 in Walthamstow, 10.5 in Darlington, and 10.9 in Southport, to 25.3 in Stoke-on-Trent, 26.2 in Wigan, 26.7 in Carlisle, 26 8 in Middlesbrough, 29.5 in South Shields, and 30.8 in West Hartlepool. Measles caused a death-rate of 3.3 in Wolverhampton, 3.6 in Salford, 3.9 in Walsall, 4.0 in West Hartlepool, 4.3 in Merthyr Tydfil, 4.6 in Northampton, 5.3 in Coventry, 5.9 in Hornsey and in Carlisle, and 8.3 in West Bromwich, and whooping-cough of 1 2 in Blackburn, 1.7 in Southampton, 1.8 in Merthyr Tydfil, 2.1 in Bootle, 2 4 in West Hartlepool, 2.5 in Tynemouth, 2 9 in Barnsley, 3.0 in Carlisle, and 6 8 in Wigan. The mortality from enteric fever diphtheria, and scarlet fever showed no marked excess in any of the large towns. Two fatal cases of small-pox were recorded in Bristol. The causes of 51, or 0.8 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 9 were registered in Birmingham, 8 in Liverpool, 3 in Manchester, 3 in Gateshead, and 2 each in Bury, Hull, Sunderland, Newcastle-on-Tyne, Tynemouth, and Carlisle. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,672, 2,543, and 2,505 at the end of the three preceding weeks, further fell to 2,422 on Saturday, April 17th; 263 new cases were admitted during the week, against 301, 253, and 275 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, April 10th, 633 births and 553 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 579 births and 533 deaths in the preceding period. These deaths represent a mortality of 23.8 per 1,000 of the aggregate population in the districts in question, as against 22.9 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.9 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 27.2 per 1,000 of population. As for morta ity of individual localities, that in the Dublin registration area was 26.1 (as against an average of 25.9 for the previous four weeks), in Dublin city 26.0 (as against 27.0), in Belfast 21.1 (as against 23.7), in Cork 19.7 (as against 26.7), in Londonderry 15.2 (as against 20.3), in Limerick 36.6 (as against 20.0), and in Waterford 41.8 (as against 20.0). The zymotic death-rate was 1.7, or the same as in the previous period.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Staff Surgeon C. H. DAWE to the *Pembroke*, additional, for disposal. To be temporary Staff Surgeon: ARTHUR EDMUNDS, M B., F.R.C.S. Temporary Surgeons: WILLIAM BELL, M.B, to the *Talbot;* WILLIAM F. BOWEN to the *Pembroke*, additional; H. G. SUTHERLAND to the *Vivid*, additional, for R.N. Hospital at Pembroke Dock; E. F. THOMAS to the *Pembroke*, additional; WILLIAM M. COULLIE, G. R. STRATHERS, and C. H. SAVORY to the *Victory*, additional, for Haslar Hospital; C. R. T THOMSON, M.B., and J. G. DOBSON, M.B., to the *Pembroke*, additional, for Chatham Hospital; R. B. BOSTON, M.B., and C. J. THOMPSON to the *Vivid*, additional, for Plymouth Hospital. The commission and appointment of Temporary Surgeon HUGH B. GERMAN has been cancelled at his own request.

ROYAL NAVAL VOLUNTEER RESERVE.

To be Surgeon Probationers for temporary service: THOMAS J. JOHNSTON, JOSEPH C. COLLINS, K. L. G. WARD.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

HAROLD A. KIDD to be temporary Lieutenant-Colonel.

Temporary Lieutenants to be Temporary Captains: AUGUSTUS W. ADDINSELL, M.D., late Captain R.A.M.C.(T.F.), LEONARD B. CANE, M.D., late Captain R.A.M.C.(T.F.) Reserve.

Temporary Lieutenant FREDERICK J. STEPHENSON, M.D., relinquishes his commission.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

MAJOR FREDERICK R. MILLER, from 3rd London General Hospital, to be Deputy Assistant Director of Medical Services, 2nd London Reserve Division.

ROYAL ARMY MEDICAL CORPS.

East Anglian Casualty Clearing Station.—Major FRANCIS J. WARWICK, M.B., from Attached to Units other than Medical Units, to be Major, with precedence as in the Territorial Force.

Eastern Mounted Brigade Field Ambulance.—Captain CLAUDIUS G. K. SHARP, M.B., to be temporary Major.

1st Eastern General Hospital.—Major LAURENCE HUMPHRY, M.D., to be temporary Lieutenant-Colonel.

1st London (City of London) General Hospital.—WILLIAM F. THOMPSON to be Lieutenant.

2nd London Sanitary Company.—SIDNEY H. DAUKES, M.B., to be Lieutenant.

3rd London General Hospital.—To be Captains, whose services will be available on mobilization: WILFRED B. L. TROTTER, M.D., HUGH M. DAVIES, F.R.C.S., GWYNNE E. O. WILLIAMS, M.D., CHARLES A. PANNETT, M.B.

4th London Field Ambulance.—Major MOWBRAY TAYLOR, M.B., from the 5th London Field Ambulance, to be Lieutenant-Colonel.

2nd Southern General Hospital.—To be Captains, whose services will be available on mobilization: JOHN A. NIXON, M.B., F.R C.P. (late Captain of Unit), JOHN R CHARLES, M.D., F R.C.P. (late Lieutenant, 1st South Midland Brigade, R.F.A.), CHARLES F. WALTERS, F.R.C S., late Lieutenant, 3rd South Midland Field Ambulance), CLIFFORD A. MOORE, M.B., ARTHUR R. SHORT, M.D., ARTHUR L. FLEMMING (late Major of Unit).

1st South Midland Field Ambulance.—EDMUND WHICHELLO, M.B., to be Lieutenant.

3rd South Midland Field Ambulance.—DAVID M. FLECK, M.B., to be Lieutenant.

North Midland Casualty Clearing Station.—HENRY C. BEVAN to be Lieutenant.

West Riding Casualty Clearing Station.—Lieutenants from the 2nd West Riding Field Ambulance to be Lieutenants: ROBERT G. DIXON, M.B., HUBERT W. SYMONS, M.B.

3rd West Riding Field Ambulance.—Captain WILLIAM S. KERR, M.B., F.R.C S., to be temporary Major.

1st Northern General Hospital. To be Lieutenants: NORMAN HODGSON, M.B., FREDERICK J. NATTRASS, M.B., SYDNEY THOMPSON, M B., THOMAS WHITELAW, M.B.

2nd Northumbrian Field Ambulance.—WILLIAM A. BENSON, late Captain, 8th Battalion Durham Light Infantry, to be Lieutenant-Colonel, temporary. JOHN P. RACE to be Lieutenant.

3rd Northumbrian Field Ambulance.—Captain ARTHUR T. SISSONS, M.B., from the Territorial Force Reserve, R.A.M.C., to be Captain, temporary.

3rd Lowland Field Ambulance.—GEORGE J. LINKLATER, M.B., to be Lieutenant.

Highland Mounted Brigade Field Ambulance.—DAVID D. MACKAY, M B., to be Lieutenant

Sanitary Service.—Captain ROBERT PROUDFOOT, M.D., from the Attached to Units other than Medical Units, to be Sanitary Officer, Welsh Territorial Division; FREDERICK T. C. LINTON, M.B., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—To be Lieutenants: ROBERT L. WOOD, M.D.; Lieutenant JOHN S. HALL, M.B, from 3rd West Riding Field Ambulance; SIDNEY HUGHES.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ANGLO-SERBIAN HOSPITAL, Urnjatchka, Banja, Serbia.—Surgeon.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BATH: ROYAL UNITED HOSPITAL.—Resident Medical Officer.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—Resident Medical Officer. Salary, £100 per annum.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary, £280 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House-Surgeons. Salary, £150 and £130 per annum respectively.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRADFORD POOR-LAW UNION.—Assistant Resident Medical Officer. Salary, £250 per annum.

BRISTOL GENERAL HOSPITAL.—Second House-Physician, House-Surgeon, and Casualty House-Surgeon; also Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Three House-Surgeons; (2) Two House-Physicians; (3) Obstetric and Ophthalmic House-Surgeon. Salary, £1 0 per annum.

BRISTOL UNIVERSITY.—Demonstrator of Anatomy. Salary, £180 per annum.

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £135 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £ 50 per annum respectively.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £1 0 per annum.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer (male). Salary, £250 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—Resident Surgical Officer. Salary, £160 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CHESHIRE COUNTY ASYLUM, Parkside.—Junior Assistant Medical Officer. Salary, £ 50 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—Resident Medical Officer. Salary, £50 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—Resident Medical Officer. Salary, £160 per annum.

DERBY COUNTY BOROUGH.—Tuberculosis Officer (temporary). Salary, £400 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer (lady). Salary, £200 per annum.

DERBYSHIRE ROYAL INFIRMARY.—House-Physician and Casualty Officer. Salary, £250 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—(1) House-Physician. (2) House-Surgeon. Salary, £75 per annum.

GRAVESEND HOSPITAL.—House-Surgeon.

GREENHITHE: INGRESS ABBEY MILITARY HOSPITAL.—House Surgeon. Salary, £350 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £120 and £100 per annum respectively.

HAMMERSMITH PARISH INFIRMARY.—Second Assistant Medical Officer. Salary, £170 per annum, rising to £190.

HARROGATE INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

HULL: ROYAL INFIRMARY.—(1) House-Physician. (2) Assistant House-Surgeon. (3) Casualty House-Surgeon. Salary, £105, £100, and £80 per annum respectively.

INVERNESS DISTRICT ASYLUM.—Assistant Medical Officer. Salary, £200 per annum, rising to £250.

INVERNESS: NORTHERN INFIRMARY.—House-Surgeon. Salary, £150 per annum.

LEYTON EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Medical Registrar. Honorarium, 40 guineas a year.

LONDON THROAT HOSPITAL, Great Portland Street, W.—Registrar.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £450.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician. (2) House Surgeon. (3) Assistant House-Physician. (4) Two Assistant House Surgeons. Salary, for (1) and (2) £60 per annum, and for (3) and (4) £40 per annum.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

NATIONAL SANATORIUM, Benenden.—Assistant Medical Officer. Salary, £120 per annum.

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—(1) Four House-Physicians; (2) Four House-Surgeons; (3) House-Surgeons for (*a*) Accident Room, (*b*) Aural and Ophthalmic Department, (*c*) Skin and Gynaecological Department, (*d*) Out patient Dressing Department

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

NORTHUMBERLAND LOCAL EDUCATION COMMITTEE.—Assistant School Medical Inspector. Salary, £300 per annum, rising to £350.

OLDHAM COUNTY BOROUGH. Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) Honorary Dermatologist. (2) Deputy Laryngologist.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Physician (2) House-Surgeon. Salary, £100 per annum.

ROTHERHAM HOSPITAL.—Senior and Junior House-Surgeons. Salary, £200 and £125 per annum respectively.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Senior Obstetric Assistant. (2) Junior Obstetric Assistant. Salary, £75 and £50 respectively.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Out patient Surgical Officer. Salary, £50 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Anaesthetist. Honorarium, £15 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOMERSET COUNTY COUNCIL, Weston-super-Mare.—Assistant Tuberculosis Officer. Salary, £350 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Senior House-Surgeon. Salary, £150 per annum.

STAFFORD: COUNTY MENTAL HOSPITAL.—Temporary Assistant Medical Officer (female). Salary, £250 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House-Surgeon. Salary, £200 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) Resident Surgical Officer. (2) Two House-Surgeons. (3) House-Physician. Salary, for (1) £300 per annum, and for (2) and (3) £150 per annum.

SUFFOLK HOSPITAL, Ampton Hall.—House-Surgeon. Salary, £200 per annum.

SUNDERLAND: DURHAM COUNTY AND SUNDERLAND EYE INFIRMARY.—House-Surgeon. Salary, £300 per annum.

WARRINGTON: LORD DERBY WAR HOSPITAL.—(1) Chief Resident Physician; salary, £1 3s. 6d. per day, with rank of Major. (2) Resident Physician and Surgeon.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WELSH METROPOLITAN MILITARY HOSPITAL, Whitchurch.—Chief Resident Surgeon and Physician. Rank and pay of Major (£1 3s. 6d. a day) and allowance of £30 for military outfit each.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—House-Physicians. Salary, £120 and £100 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £150 per annum.

YORK DISPENSARY.—Resident Medical Officer (lady). Salary, £240 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Staindrop (co. Durham).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

CLARK, Miss L. M. S., M.B., Ch.B.Edin., Assistant Medical Officer of the Fulham Parish Infirmary.

JOHNSTONE, W. M. L., M.B., B.Ch.Dub., District Medical Officer of the Newent Union.

PRICE, J. T., M.D., District Medical Officer of the Ecclesall Bierlow Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

APPLEYARD.—On April 14th, at 2, Marlborough Road, Bradford, the wife of Wm. Appleyard, F.R.C.S. (Captain 2nd/6th West Yorkshire Regiment), of a son.

MARRIAGES.

HALL—MCCALLUM.—On Thursday, April 15th, at All Saints', Margaret Street, W., Edward Wilson Hall, M.R.C.S.Eng., L.R.C.P. Lond., younger son of the late Henry Hall, of "Crowhurst," Ealing, W., to Annie Maud, younger daughter of the late Colin McCallum, M.B., C.M.Edin., of Anstruther, Fife, N.B., and of Mrs. McCallum, of 12, Lascelles Terrace, Eastbourne.

WILLIAMS—CHADWICK.—On April 14th, 1915, at St. George's Church, Stockport, by the Rev. John H. Thorpe, B.D., Owen E. Williams, M.R.C.S., L.R.C.P., son of Owen Williams, Tre Morfa, Tal-y-Cafn, N. Wales, to Beatrice Maud, youngest daughter of the late Enoch Chadwick, of Tunstall, Staffs.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration by Mr. Shattock: Specimens of Diseases of Arteries.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ODONTOLOGY, 8 p.m.—Adjourned discussion on Dr Ewan Waller's paper, The Influence of the Thyroid Gland on Dental Caries. Paper:—Dr. J. Sim Wallace: The Principles of Dietetics.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF MEDICINE, 5.30 p.m.—Annual General Meeting. Cases of Leukaemia, Dr. Arthur J. Hall, Dr. F. Parkes Weber. To be followed by a discussion on the treatment.

WEDNESDAY.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell Street, E.C., 9 p.m.—Demonstration by Dr. Purves Stewart of Injuries to the Brain sustained during the War (illustrated by lantern slides). Dr. C. J. Thomas: Experiences in Germany during the War.

ROYAL SOCIETY OF MEDICINE:
SECTION OF PSYCHIATRY.—Clinico-Anatomical Meeting, Pathological Laboratory, Claybury Asylum, 3.0 p.m. Hypothyroidism, Dr. Armstrong Jones, Dr. F. W. Mott, F.R.S., Dr. Kojima. Dr. F. W. Mott, F.R.S.: Microscopical demonstration of the Choroid Plexus in Relation to Lipoid Constituents of the Epithelial Cells. Dr. Sano: Speech Functions.

[Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		APRIL.
28	Wed.	London: Council, 2 p.m.
		MAY.
4	Tues.	Northamptonshire Division, Northampton General Hospital, 3 p.m.
14	Fri.	Marylebone Division, Annual Meeting, 103, Harley Street, W., 5.30 p.m.
19	Wed.	Central Division, Annual Meeting, Medical Institute, Birmingham, 3.30 p.m.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 1ST, 1915.

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British Medical Association.

THE WAR EMERGENCY.

THE need of the army for more medical men under 40 years of age to leave their civil work and to give the whole of their time to military medical work—that is to say, to take temporary commissions in the R.A.M.C.—is very urgent.

This was very clearly put by the Director-General in the memorandum he handed in at the conference with the committee of the British Medical Association. He said:

"I would urge all those who are under 40 years of age and who are fit for active service to apply for temporary commissions in the R.A.M.C. if their civil obligations will allow them to do so. . . . We are especially in need of young general practitioners who are willing to go anywhere and do anything in the way of duty with troops or with medical units."

A correspondent who attended a meeting recently on the subject thought that not sufficient stress was laid on the need for whole-time men under 40, and that that need was clouded by the appeal for part-time medical men.

We do not quite know what words could be used to express the need more strongly.

In an introductory article to the report of the conference, published on April 10th, we said:

> The Committee [of the British Medical Association] is thoroughly convinced that the appeal of the army for more whole-time medical officers to serve anywhere, and for more part-time service at home, is justified up to the hilt. It recognizes that the need is very real and very urgent, and appeals to the Divisions and Branches to act without delay. The Committee is convinced that every man under 30 who is physically fit and can be set free from his existing engagements should offer his whole-time services, and take a temporary commission in the R.A.M.C. for the duration of the war. Further, the Committee realizes fully that the number of men free to make this offer at once would not nearly suffice, and that arrangements must be made to liberate others. Among them are those who at present hold appointments under public authorities and as residents in civil hospitals.

Mr. Lloyd George on April 21st stated, with Lord Kitchener's permission, that there were at that time six times as many men "out there" fighting for this country as constituted the largest expeditionary force contemplated as possible five years ago. The maximum was then considered to be six divisions, and six times six divisions would be about three-quarters of a million men; this is the number fully equipped in the fighting forces. It is probable, therefore, that there are at least 3,000 or 4,000 whole-time medical officers serving with the British forces abroad. How many more men are under arms in this country and elsewhere we do not know, but the fact that the number abroad is so large is sufficient to make evident the immense extent of the demand for whole-time medical officers. The response to the demand has been very good, but it is clear that still further efforts and sacrifices are necessary.

PUBLIC HEALTH OFFICERS.

Women Substitutes.

As was stated in the JOURNAL a fortnight ago, the Local Government Board has notified that it is its practice to assent to leave of absence being granted to medical officers of health, assistant medical officers of health, medical officers of isolation hospitals, and tuberculosis officers who have obtained the permission of their councils to accept temporary appointments in the army. The Board also stated (JOURNAL, April 17th, p. 685) that 100 whole-time medical officers out of a total of 314 have, with the consent of their councils and of the Board, taken temporary commissions in the Royal Army Medical Corps, and that about the same number of part-time medical officers of health, and many medical men holding other posts under county councils and sanitary authorities, have also given their services to the army.

The same correspondent to whose letter we have referred above considers that greater use should be made of this willingness of the Local Government Board to allow medical officers of health to take whole-time military duties if their work can be properly carried on. Our correspondent goes on to observe that such men are difficult to replace just now by men, but there are still some carrying on this work who are under 40 and whose knowledge of infectious diseases and sanitation would be of great value to the armies in the field. There are a score, if not more, of women doctors who are not only qualified to act as medical officers of health, but who have had actual experience in such work, having had the entire responsibility of public health work while acting as medical officers of health during the absence of that officer from his district. It is most necessary that public health work should be carried on as efficiently as ever, and such women could do this and thus set free men under 40, whose value to the nation would be even greater with the armies in the field than it has been hitherto at home.

Our correspondent expresses some fear that officers in the R.A.M.C. would object to work with a woman medical officer of health, but we believe it to be altogether unfounded; even if there were any trace of such a feeling it would be set aside if it were found that a woman medical officer of health could liberate a medical man under 40 to do service with the forces in the field.

NORTH MIDDLESEX.

AT a meeting called by the North Middlesex Division, held at Wortley Hall, Finsbury Park, on April 23rd, sixty members and non-members were present. Dr. Reginald Fuller was in the chair, and Colonel Murray, A.D.M.S., Bedford District, attended as representative of the D.D.M.S. Eastern Command.

Colonel Murray explained the need of more whole-time medical officers and gave a short sketch of their work. He also showed how, in certain districts, civil practitioners were employed, but emphasized the need of whole-time men. As the meeting felt that in this particular district, containing no large numbers of soldiers, organized part-time service would not be of a great deal of use, no scheme was drawn up.

The meeting, however, thought that if the War Office would accept whole-time service for a period of six months or less many men from the district would join for that time and the Honorary Secretary was instructed to ask the War Office whether this service would be acceptable.

CANTERBURY.

A MEETING of the Canterbury and Faversham Division was held at the Kent and Canterbury Hospital, Canterbury, on April 22nd to consider the Director-General's appeal.

Lieutenant-Colonel Winter, R.A.M C., A.D.M.S., who was present to represent the D.D.M.S., Eastern Command, said that the situation was well explained by the Director-General's statement (BRITISH MEDICAL JOURNAL, April 10th, p. 646), from which extracts were read. He answered several questions and explained the local requirements.

In the discussion which followed it was suggested that there might be greater co-operation between the military and civilian medical authorities. It was explained that in the area of the Division generally medical men had been and were working at great pressure for their colleagues absent on military service and doing much voluntary work for the military authorities. It was unanimously agreed to do everything possible to meet the needs of the situation, and a Committee was appointed to deal with questions relating to war service in the Canterbury area, including Whitstable. It was thought best that the other localities in the district should have their own organization for a similar purpose.

ROCHESTER.

A MEETING summoned by the Rochester, Chatham, and Gillingham Division of the British Medical Association was held on April 21st at St. Bartholomew's Hospital, Rochester, to which non-members were invited. Dr. Godfrey Taunton was in the chair. Colonel Bond, A.D.M.S., informed the meeting that the medical men who gave whole-time service would be paid at the rate of £365 per annum,* and that they could direct and superintend their own practices, but that military services must be first. Those who volunteered for part time might count on having to put in three and a half hours' work daily, receiving £250 per annum.* A considerable number of medical men in the district were already on the roll, but undoubtedly more would be required to take (1) medical charge of units or groups of units (about two medical officers to each brigade), (2) to attend to families of soldiers on the strength, hospital and outside visiting; (3) about fourteen at Fort Pitt Hospital; (4) for camps.

Those who can serve should communicate direct with the A.D.M.S., Eastern Command, Horse Guards, S.W.

WEST SUFFOLK.

A MEETING of medical men resident in West Suffolk, summoned by the West Suffolk Division of the British Medical Association, was held at the Guildhall, Bury St. Edmunds, on April 20th, when Dr. Wilkin was in the chair.

Lieutenant Sweeten, R.A.M.C., representing Lieutenant-Colonel Hamilton, A.D.M.S., Eastern Command, apologized for the absence of Colonel Hamilton, who was prevented from coming through the illness of his son. He then addressed the meeting on the medical requirements of the army. He pointed out that:

1. The most urgent need at present is for men under 40, willing and physically fit to take service abroad, holding temporary commissions in the R.A.M.C.

2. That temporary commissions would also be granted to men over 40, who would probably be called upon for home service, but who might be asked to take appointments at base hospitals abroad. The rate of pay in both these classes was 24s. a day with a kit allowance of £30 and a bonus of £60 at the termination of their engagement if their services had been satisfactory. Men taking temporary commissions would sign an agreement to serve for twelve months, or such shorter period as might be necessary. He also stated that:

3. There would be opportunities for men over 40 to give whole-time service without joining the R.A.M.C. at a rate of £365 per annum.*

4. In certain districts the part-time service of civilian practitioners would be required at the rate of £250 per annum.* Such service would involve probably three or four hours' work daily, and each practitioner would state in what area he was willing to act.

Applications for commissions under headings 1 and 2 should be made to the Secretary, War Office, and offers of service under headings 3 and 4 to the A.D.M.S., Eastern Command, Colchester. Lieutenant Sweeten concluded his remarks by impressing upon the meeting the very urgent need for men willing to take temporary commissions.

Major Davoren, R.A.M.C., endorsed the remarks made by Lieutenant Sweeten.

In reply to a question as to the apparent wastage of medical officers in the Territorial R.A.M.C., Lieutenant Sweeten admitted that there were undoubtedly men at present in this branch of the service with very little to do, but he pointed out that they would eventually be wanted in their present positions, and that to transfer them would only postpone the problem for a very short time.

On the motion of the Chairman, a subcommittee, consisting of Drs. Batt, Stiff, Rix, Wilkin, and Wood, was appointed to circularize practitioners in the area on the subject and to deal with any other matters that may arise in connexion therewith.

SALISBURY.

AT a meeting of the Salisbury Division of the Wiltshire Branch of the British Medical Association, held at the Salisbury Infirmary on April 16th, Surgeon-General Bedford, C.M.G., M.B., D.D.M.S. of the Southern Command, made a statement with regard to the needs of the army, with special reference to the districts about Salisbury. In addition to large military hospitals at Tidworth and Bulford and smaller military hospitals at Devizes and Trowbridge, and in addition also to the large hospitals, convalescent homes, and dépôts in the New Forest and in the neighbourhood of Bournemouth for the Indian soldiers, hutted hospitals, he said, were being erected at various places to accommodate over two thousand men. Altogether these hospitals would require a large number of medical officers to staff them. As the bulk, if not practically all, the permanent R.A.M.C. officers were being taken for service overseas the problem was how to make arrangements for the medical work in the camps and in the hospitals to be performed, or at any rate supplemented, by the civil profession in the neighbourhood. In the Salisbury district the distance from any town of importance of the camps and their hospitals was a source of difficulty, inasmuch as the time taken up in getting to and from the places would be considerable; arrangements have been made for mileage at the rate of 6d. a mile in addition to remuneration for the professional work itself. The work which would have to be done fell into two categories—regimental and hospital:

1. *Regimental.*

(*a*) Seeing the morning sick; in every body of men there will be a certain number reporting sick every morning; this number varies in different regiments and corps. It will be the duty of the medical officer to examine these, and to determine what is the matter with each one; whether he merely requires a dose of medicine and be returned to his duty; whether he should be detained for the day and receive treatment in the "detained room"; whether he should be formally admitted to hospital for treatment and nursing; or should he be sent back to his commanding officer, with the word "duty" on his sick report, signifying that there is nothing the matter with the man, and that he has reported sick without a cause.

(*b*) The various sanitary duties in connexion with the regimental lines; the huts; the cook-houses; the latrines, etc., to attend to; the men's food; the dis-

* We understand, on inquiry at the War Office, that the statements as to the rates of pay in the two cases must be taken as general indications only, and that no definite scale of pay for medical men offering whole or part-time service locally has been sanctioned. Medical men over 40, we are informed, wishing to take either whole or part-time service in the town in which they reside should communicate with the Deputy Director of Medical Services of the Command, who will arrange with them the terms under which they will be employed if local service is required in the neighbourhood.

posal of refuse, and many other matters of importance if the men and their camps are to be kept healthy.

(*c*) The vaccination and revaccination of those requiring it; the inoculation for protection against enteric fever. Lectures to the men with a view to encouraging this very valuable safeguard against this disease.

2. *Hospital.*

(*a*) The duties here will be much the same as those in civil hospitals, and include seeing, examining, and prescribing for the men who have been admitted. Keeping brief records of the more serious cases for future reference. Inspecting that portion of the hospital premises, the baths and latrines, etc., for which the medical officer is responsible, to see that these are kept clean and tidy.

(*b*) Arranging for, and performing, the necessary operations. Certain days in each week might be set apart for this, and the necessary arrangement made for the attendance of the anaesthetist, and the required assistants. Operations of emergency would have to be arranged for as the necessity arose. There should not be an undue number of operations, seeing that the community to be dealt with is a young and picked one.

(*c*) Accidents must always be prepared for.

With regard to remuneration for this work, he recognized that the conditions laid down for the remuneration of civil practitioners in ordinary times would not apply to such a time as this, and he invited suggestions. In reply to a question as to how far the Red Cross work would be affected, Surgeon-General Bedford said that Red Cross hospitals were being used at Hindon, Devizes, and Pewsey, but there would be a great strain on the ladies working in these hospitals later, as it was proposed to take away one-third of the trained nurses and to fill their places by partially-trained ladies from the Voluntary Aid Detachments, drawn from the various detachments throughout the kingdom. It was not easy to forecast exactly what the requirements of the army would be in regard to hospitals. The War Office would not take men of 45 or over for foreign service, but many were joining for home service and would probably be given temporary commissions. The skeleton thus left would help to solve the hospital question. In reply to a question as to the clerical work which was required from civil medical officers, Surgeon-General Bedford said that records would have to be kept, but not necessarily by the medical officer. On the point whether it would not be possible to bring the serious cases to a central hospital near the town and so save time in travelling, Surgeon-General Bedford said that this should be done as much as possible; all the hospitals were being well fitted up with instruments and surgical requirements for operating, and *x*-ray apparatus was being provided in all hospitals of 200 beds and over. Dr. J. E. Gordon, who was in the chair, thanked Surgeon-General Bedford for his attendance and explanations, and the Executive Committee of the Division was appointed, with power to add to its numbers, to make a report and suggestions to the next general meeting.

REIGATE.

A MEETING of the Reigate Division of the British Medical Association was held at the Reigate and Redhill Hospital on April 17th, when Mr. A. R. Walters was in the chair and thirty-two medical men were present.

A committee, consisting of Drs. Hewetson, Bligh, and Baker, with the Chairman and Secretary *ex officio*, was elected to safeguard the interests of members who volunteered for active service.

On the recommendation of the Executive Committee, it was agreed that the subcommittee should work on the lines indicated by the following resolutions:

1. They should confer with any practitioner who is willing to go on active service.
2. That the arrangements as regards distribution of the remuneration between the absentee and the man who does the work should be 50 per cent. to each—the man who does the work bearing the expenses.
3. That they might circularize the profession in the Division that the obtaining of any financial or professional benefit from the absence of a brother practitioner on active service would be a violation of a well-known ethical rule of the profession.

The members present unanimously agreed that they would subscribe to an indemnity or insurance fund to indemnify as far as possible absentee members against death, permanent disablement, or pecuniary loss, and it was left to the subcommittee to ascertain on what terms insurance against these risks from war service was obtainable.

The conditions of part-time service were then discussed and a subcommittee was appointed to deal with the question.

PORTSMOUTH.

A SPECIAL meeting of the Portsmouth Division, to which all members of the medical profession residing in the area were invited, was held at the Medical Library, Pembroke Road, on April 20th, when Dr. L. Cole-Baker presided, and over fifty practitioners attended.

Colonel R. Jennings, A.D.M.S., who attended by invitation, explained the needs of the military medical service in a fortress, and expressed his great appreciation of the help he had received from the local civilian practitioners; all the available posts were filled, and he had a good "waiting list" for eventualities; therefore the question of part-time civilian officers need not be considered there, but he made a strong and earnest appeal for men to come forward, where possible, to take temporary commissions in the R.A.M.C. to be ready and willing "to go anywhere and do anything." He especially explained the necessity of medical officers in charge of troops in camp living in the camp wherever it might be.

A discussion followed on the question of safeguarding the practices of those who went away on military duty and a strong committee was appointed to draw up a scheme and report to another meeting to be held at an early date.

SOUTH-WESTERN BRANCH.

MR. J. M. ACKLAND, Acting Secretary of the South-Western Branch, informs us that the Branch Council decided to invite the help of the Lord Lieutenant of Devon and the medical officer of health for the county. The Lord Lieutenant attended a meeting of the Devon members of the Branch Council, and it was resolved to form a mixed lay and medical committee to assist the work of the British Medical Association. The lay members of the committee are the Lord Lieutenant, Sir Henry Hepburn, Mr. W. B. Heirn, Sir John Shelley, Sir Robert Newman, Mr. Young, Mr. Davis, Mr. P. F. Rowsell, and, as military members, Colonel Mackay, Colonel Jones, and the Chief Medical Officer, R.A.M.C., Exeter.

The medical members are the four medical men on the county council—Mr. Linnington Ash, Dr. Clay, Mr. L. Mackenzie, and Dr. Slade King; the medical officer of health, Mr. George Adkins, the President and officers of the South-Western Branch, and the chairman and secretaries of the Devonshire Divisions of the Branch.

The committee will meet on Thursday, May 6th, at the Royal Devon and Exeter Hospital.

CHESTERFIELD.

AT a meeting summoned by the Chesterfield Division on April 23rd a discussion took place with regard to the help which could be given in the district. While all present expressed their willingness to do what was possible, it was found extremely difficult to arrange to set any medical men free owing to the fact that the district was almost entirely rural, the practices covering long distances, so that it was almost impossible to get help from neighbours. The matter was referred to the Executive Committee to take any action that might prove possible.

HUDDERSFIELD.

A WELL-ATTENDED meeting of the medical men in the Huddersfield district was held on April 20th, when Dr. Braithwaite, the Chairman of the Huddersfield Division of the British Medical Association, presided. The meeting expressed its full sympathy with the request of the Association that everything should be done to encourage men to volunteer for whole or part-time service, and to make such arrangements for carrying on the practice of volunteers for whole-time service as to make it as easy as possible for them to leave.

It was recommended that the following scheme should be adopted to deal with such cases:

1. That the doctor doing the work should give an undertaking not to attend the patients of an absentee for at least one year after his return.

2. That in the town the fees for work done should be divided equally between the two men.
3. That in the country the absentee should receive three-eighths of the fees and the man doing the work five-eighths.
4. That in the case of panel patients the absentee should receive half the fees and that the other half should be divided amongst the doctors doing the work in proportion to the amount of work each one does.

A small committee was formed to organize the profession and to give such assistance as might be possible to men willing to volunteer for service.

WAKEFIELD.

A SPECIAL meeting of the medical profession in the area of the Wakefield, Pontefract, and Castleford Division of the British Medical Association, convened by Dr. Eardley (Goole), was held at the County Hall, Wakefield, on April 23rd; there was a large attendance. Dr. G. B. Hillman (Castleford) chairman of the Division, who presided, said that the difficulties that confronted a medical man who left his practice to assist the army were realized, but at the present moment the needs of the army must come first.

Lieutenant-Colonel J. F. Dobson, R.A.M.C., Administrator of the Second Northern General Hospital, Leeds, observed that by dropping the work of school medical inspection a number of young medical men would be set at liberty; and there were others doing work not important as compared with the greater issues at stake. For a medical man in practice who wished to go, arrangements ought to be made by neighbours to carry on his work during his absence. A man who went must be convinced that those who remained behind were going to play the game, and the public would have to realize the great strain on the medical profession at present so as to avoid all unreasonable calls upon the time of the doctor.

Dr. Castle (Barnsley), after referring to the need to liberate school medical officers and tuberculosis officers, expressed the opinion that in existing circumstances the keeping of panel records was a waste of time.

Dr. Gibson (Wakefield) stated that 250 medical officers were in the school service, and, while many of them had probably gone, many remained. Dr. H. J. Campbell (Bradford) said that he gathered that the War Office was not prepared to give rank to part-time civilian surgeons. The maximum pay at present suggested was £1 a day, and it might go down as low as 5s. a day. The actual amount to be paid was a matter of arrangement between the D.D.M.S. of the Command and the part-time surgeon. The War Office would endeavour to deal generously with anybody who applied up to the limit of £1 per day. Pressure should be brought to bear upon hospital boards and similar bodies to release all available men, but, in doing so, those who remained at home should make a point of undertaking some of the work that those men were doing. Lieutenant-Colonel Dobson said that men with special qualifications should place themselves in touch with the D.D.M.S. at York; trained bacteriologists, for instance, were badly wanted. With regard to rank, he realized that difficulties had arisen owing to men in established practice finding themselves placed in junior positions to men who had only recently qualified. There would always be such difficulties between civil surgeons who joined the colours and the regular R.A.M.C.

The organization of such service as the Division could render was referred to the Executive Committee.

WIGAN.

A MEETING of the Wigan Division, to which non-members were invited, was held in the old council chamber on April 23rd, to consider Sir Alfred Keogh's appeal to the medical profession. Dr. Ferdinand Rees presided, and twenty-one medical men were present. A letter was read from the D.D.M.S., Western Command, as to the requirements of the Wigan area, and a committee consisting of the Chairman and four other members was appointed to make arrangements with him. The following resolution was unanimously carried:

> This meeting recommends that the General Medical Council be approached with a view to the services of fifth-year students being utilized under the direct supervision of qualified practitioners for the purpose of freeing for military service during the war qualified men who were willing to offer themselves.

The names of three medical men were given in as volunteering for service if proper arrangements could be made for their work being done whilst absent on service.

SHROPSHIRE AND MID-WALES.

A MEETING of medical men, called by the Shropshire and Mid-Wales Branch, was held in Shrewsbury on April 20th. Major Kynaston, R.A.M.C., representing the D.D.M.S., Western Command, was present. It was decided to send the following form to all practitioners in this area, in view of the present national emergency, with the request that those who may be in any way in a position to respond, should fill it in according to the services they are prepared to perform if required, and return it as soon as possible to Dr. A. G. Mackenzie, The Cedars, Shrewsbury.

	Service.	Overseas or at Home.	Rank.	Pay.	Answers.*
1	Whole-time service, age under 40.	Anywhere.	Temporary Commission in R.A.M.C.	24s. per day, inclusive of allowances.	
2	Whole-time service, any age.	Anywhere.	As above.	As above.	
2A	Whole-time service, any age.	In Western Command.	As above.	As above.	
3	Part-time service.	At home.	Civil medical practitioner, not commissioned.	20s. per day, or pro rata.	

* In case of part-time service, state what time available, and any other conditions qualifying the offer.

Signature.....
Address.....
Professional qualifications .....

In a covering letter it was stated, with regard to part-time service, that work would probably be found for whatever time the medical man was prepared to give, varying from regular attendance every morning, to two or three hours, say, twice a week. Those giving such service would not be commissioned, and would be paid according to the work they undertake. It was suggested that in certain cases two or three practitioners in a district might form a group, of which one could be liberated in turn, say, for a period of three months. These would not be commissioned.

WESTMORLAND.

A MEETING of Westmorland practitioners was held on April 16th under the auspices of the Kendal Division of the British Medical Association. A resolution was adopted approving of the Newcastle scheme (SUPPLEMENT, April 10th, 1915) as a suitable basis for carrying on the practice of doctors going on active service. With reference to the Post Office circular regarding treatment of national reservists a resolution was adopted strongly recommending Post Office medical men not to accept the terms offered. The local practitioners expressed their willingness to give as far as possible part-time service necessary for the military needs of the district, and a committee was appointed.

GLASGOW.

A WAR emergency meeting of the Glasgow Eastern Division, to which the whole profession in the district had been invited, was held on April 20th to consider the appeal of Sir Alfred Keogh, through the British Medical Association, for whole-time and part-time men for the military needs of the country. Dr. W. L. Muir presided, and there was a large attendance.

Dr. Drever, Secretary of the Local Medical and Panel Committees, explained the scheme of the Glasgow Local Medical Committee for dealing with the practice of any practitioner who had gone on active service.

Dr. Dunlop (Shettleston) thought it would greatly facilitate the work of doctors at the present time if the public were made to understand that requests for visits must be sent in by 11 a.m., and it was resolved to issue a printed notice to this effect for exhibition in doctors' surgeries.

Regret was expressed that the D.D.M.S., Scottish Command, Edinburgh, had not replied to a communication asking for information as to the military needs of the district and the terms of employment, but all present signified their willingness for part-time service whenever such should be required of them.

stating that the Commissioners would not be prepared to make any alteration in the existing regulations.

INSURANCE COMMITTEES.

LONDON.

Resignation of the Chairman.

THE London Insurance Committee has been considering, at a number of private sittings, the reorganization of its office administration. At the monthly meeting on April 22nd, the Chairman (Mr. F. Coysh) announced that he regarded a recent decision of the Committee as tantamount to a vote of want of confidence, and he had resigned the chairmanship. He adhered to statements he had made regarding certain officers of the Committee, and he would not continue to be tacitly responsible for conditions he had reprobated. Neither did he care to be responsible for the reputation the Insurance Committee now possessed as an administrative body.

Adjustment of Lists of Insured Persons.

The proposal already discussed by the Panel Committee (SUPPLEMENT, April 24th, p. 145), to pay practitioners 1s. instead of 1s. 9d. in advance in respect of the quarter beginning April 1st, 1915, was reported by the Medical Benefit Subcommittee. The non-concurrence of the Panel Committee being notified, it was agreed that a conference should take place, in the hope that an agreement might be reached. Medical representatives again emphasized the point that practitioners did not complain of the reduction in payments rendered necessary by the enlistment of insured persons, but that they objected to the position brought about by the fact that the state of the Insurance Committee's register made it impossible for the reduction to be based strictly on the actual withdrawals from individual practitioners' lists.

SALFORD.

The Reduction in Advances to Panel Doctors.

At the monthly meeting of the Salford Insurance Committee a letter from the Commissioners was read stating that in view of the abnormal circumstances obtaining during this year it would be necessary to exercise care in making advances to doctors, chemists, etc., and suggesting that advances might be safely made for all purposes of medical benefit to a total amount in each quarter not exceeding a sum calculated at the rate of £72 per 1,000 of the count of the register at the beginning of that quarter, unless there is reason to believe that the enlistment in the area is considerably above the average. When this communication was laid before the Finance Subcommittee the clerk stated that, taking into account the number of patients that require attendance each month, if the suggestions of the Commissioners were carried out, it would only be possible to pay the doctors about 2s. 6d. a month per patient actually attended. The Commissioners' letter was then forwarded to the Panel and Pharmaceutical Committees and the Panel Committee thereupon passed the following resolution:

> Resolved: That the Committee views with alarm the proposed reduction in the payment on account to the practitioners on the Salford list in respect of the medical attendance and treatment of insured persons, and having in mind the resolution of the Committee forwarded to the Insurance Committee on December 17th, 1914, begs emphatically to reiterate the opinion expressed therein. The resolution referred to was as follows:
>
> > That the attention of the Salford Insurance Committee be drawn to the injustice of reducing the amount provided in the area for medical benefit whilst there is no likelihood of a material reduction in the sickness-rate, and that the withdrawal for military purposes of approximately one-fourteenth of the healthiest section of the insured population is responsible for this, and destroys the expectancy of the sickness-rate upon which was based the agreement between the Government and the medical profession.

It may be pointed out that, according to the scale of fees per attendance adopted in Salford, 2s. should be paid for each consultation at the surgery, 2s. 6d. for each visit, and higher fees for operations, etc. On an average each patient actually attended receives rather over two attendances a month, so that the payments to the doctors will not exceed about 1s. 2d. per attendance on the average—that is, only about half of what the doctors have a right to expect—and they may have to wait a year or eighteen months for any balance, if, indeed, any balance will ever be available. Since the war began there has been hardly any difference in the average number of persons requiring treatment each month, in spite of the fact that some thousands of the insured have joined the army or navy. This fact fully confirms the anticipations expressed by the Insurance Committee in a resolution which it sent to the Commissioners some months ago, and also in the above-quoted resolution of the Panel Committee.

On every hand throughout Salford the panel practitioners and chemists are expressing the greatest dissatisfaction with this action of the Commissioners. In order to support the protest of the Panel Committee the Insurance Committee unanimously resolved to endorse the above resolution of the Panel Committee and to send it to the Commissioners with a request for a reply to the previous resolution of the Insurance Committee, which pointed out the unfairness of reducing the amount payable on behalf of medical benefit at the commencement of the war.

INSURANCE NOTES.

PROTEST AGAINST THE REDUCTION OF CAPITATION PAYMENTS.

A PROTEST meeting, called by the Panel Medico-Political Union, was held at the Connaught Rooms, London, on April 22nd, to consider the notification sent to Insurance Committees, by the Commissioners, that, in the abnormal circumstances of the present time, advances to practitioners should be reduced in proportion to the number of enlistments, as far as known, in each area. The Commissioners in their letter stated that advances might safely be made for all purposes of medical benefit to a total amount in each quarter not exceeding £72 per 1,000 insured persons on the register, unless, in the opinion of a particular Insurance Committee, the rate of enlistment in that area had been much in excess of the normal.

Dr. W. COODE ADAMS presided, and the meeting was largely attended.

Dr. H. J. CARDALE (Chairman of the London Panel Committee) moved:

> That this meeting of panel practitioners, whilst recognizing the inevitable reduction in practitioners' incomes owing to insured persons having joined His Majesty's forces, demands that individual lists be forthwith corrected, and that payment be made in full for the insured persons still remaining on doctors' lists.

Dr. Cardale desired to make it clear that practitioners on the panel did not complain of having to bear their share of losses involved by the war, but, so far as London was concerned, they objected to a condition of administration which made it impossible, apparently, for the reduction of income to be adjusted to the actual shrinkage of doctors' lists through enlistment of persons accepted by them. Referring to the methods of the London Insurance Committee, Dr. Cardale stated that no final settlement had yet been made for 1913, and that £12,000 or £15,000 was still due to practitioners.

Dr. J. A. ANGUS (Paddington), who seconded the resolution, referred to the difficulty practitioners experienced at the present time in obtaining settlement of accounts with private patients, and mentioned that, although insured persons who had enlisted were supposed to receive treatment through the military medical service, his own experience was that his surgery often contained more soldiers than civilians waiting for treatment. The London Insurance Committee appeared to be in doubt, at the present time, as to the claims to benefit of 200,000 insured persons. This represented £80,000, which should be in the medical benefit fund and available for the remuneration of practitioners. Dr. Angus urged that practitioners on the panel should combine to secure adequate representation on Insurance Committees, and the rendering of complete statements of account to individual practitioners at the end of each year.

Dr. DILLON thought practitioners should take a strong line of action before the position was modified by the return from the war of a large number of young practitioners who would be seeking appointments. He moved an amendment—

> That the whole of the doctors on the panel do resign if their grievances are not redressed forthwith.

Dr. C. H. PRING seconded.

DR. ALFRED SALTER (Bermondsey) opposed the amendment, pointing out that it would be useless to take drastic action until there was some prospect of success, and until practitioners were thoroughly organized. Moreover, peaceful methods had not yet been exhausted; they had, in fact, hardly been commenced.

The amendment was lost, only two votes being recorded in its favour. The resolution was then carried unanimously.

A resolution, moved by DR. BATTEN (Camberwell) and seconded by DR. R. J. FARMAN, was carried unanimously, asking the Chancellor of the Duchy of Lancaster to receive a deputation to place before him the disabilities under which panel practitioners laboured, and the unsatisfactory character of their terms and conditions of service.

The following were chosen to form the deputation: Dr. H. J. Cardale, Dr. W. Coode Adams, Dr. G. B. Batten, Dr. Alfred Salter, and Dr. A. Welply.

CENTRAL BUREAU FOR CHECKING PRESCRIPTIONS.

The Insurance Commission of Scotland has taken a lease of offices at 20, Renfrew Street, Glasgow, for the purposes of the Central Bureau for checking prescriptions. The superintendent and assistant, and some members of the staff, have already been appointed. The superintendent, Mr. Gilmour, is to receive an annual salary of £300 a year, and the assistant, Mr. C. F. Henry, an Edinburgh chemist, £150. The clerical assistants will receive salaries from £2 10s. a week downwards. According to the *Scotsman* the total number of prescriptions is over 3 million a year, and it is proposed that all prescriptions, together with orders for appliances, shall pass through the Central Bureau, where they will be checked, priced, and filed. It is stated to be the expectation that the information as to price, tabulated by the bureau, will place Insurance Committees, Panel Committees, and Pharmaceutical Committees in a position to bring about uniformity in all insurance areas in Scotland in the charges for drugs and appliances.

CORRESPONDENCE.

THE EXPLOITATION OF THE MEDICAL PROFESSION IN RESPECT TO MEDICAL CERTIFICATES.

DR. C. J. COOKE (Plymouth) writes: The paper read by Sir John Moore at the Royal Academy of Medicine in Ireland (which appears in the SUPPLEMENT of April 24th, p. 143) will be welcomed by many of us who are suffering under the plague of certification and record keeping which has been let loose by various public bodies.

Under the latest Poor Law Act or Order the amount of writing is well nigh intolerable; there is an old saying about not being able to see the wood for the trees, and the Poor Law doctor is scarcely able to see the patient for the records and certificates referring to his illness.

One provision of that Order imposes on the workhouse doctor the duty of supplying all medical certificates required by patients under the National Health Insurance Act, which I consider a distinct injustice; the panel doctor accepts the duty of certification, and is paid for it after a fashion, but the workhouse doctor who does not happen to be on the panel has one more extra duty thrust on him without any payment.

INSURANCE ACT IN PARLIAMENT.

Patients of Practitioners on Military Duty.

MR. CHARLES DUNCAN asked the Secretary to the Treasury what, if any, arrangements were being made to secure the administration of medical benefit under the National Insurance Act in cases where panel practitioners had engaged themselves for military duties? The Financial Secretary to the Treasury (Mr. Acland) said that in the circumstances referred to in the question the Insurance Committees had to be satisfied that as satisfactory arrangements as were possible, having regard to the heavy pressure on the medical profession, were made to provide for the continued discharge of the panel duties of absent doctors by means of locumtenents or through their colleagues acting as deputies.

Sickness Benefit (Ireland).

Mr. Ginnell asked the Chancellor of the Duchy of Lancaster what independent medical approval, if any, the Irish Insurance Commissioners had for the treatment of the sick which their different system of certification involved; and to what cause. except inability to get such approval, their failure was due in a matter of which both the sick and the medical profession complained. Mr. Acland said that Mr. Montagu was unable to add anything to the full replies already given on this subject; but the question of revising the present arrangements was under consideration, and he would be happy to inform the hon. member of the progress of the negotiations.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six largest English towns 8,809 births and 6,063 deaths were registered during the week ended Saturday, April 24th. The annual rate of mortality in these towns, which had been 19.8, 19.9, and 19.0 per 1,000 in the three preceding weeks, fell to 17.4 per 1,000 in the week under notice. In London the death-rate was equal to 18.7, against 21.3, 21.4, and 20.3 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the rate ranged from 6.8 in Barnsley, 7.0 in Darlington, 7.8 in Wallasey, 8.6 in Ilford, 9.5 in Ealing, and 10.3 in Eastbourne, to 23.3 in St. Helens, 23.9 in Middlesbrough, 24.0 in Northampton, 24.5 in Hastings, 25.2 in Sunderland, and 28.1 in Dudley. Measles caused a death-rate of 3.4 in Sheffield, 4.4 in Stockton-on-Tees, 4.5 in Middlesbrough, 4.9 in West Hartlepool, 5.3 in West Bromwich, 6.6 in Coventry, 8.9 in Walsall, and 9.2 in Northampton; whooping-cough of 1.6 in St. Helens, 1.8 in Merthyr Tydfil, 2.0 in Wakefield, and 3.4 in Wigan; and diphtheria of 1.7 in Northampton. The mortality from enteric fever or from scarlet fever showed no excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 46, or 0.8 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 9 were recorded in Birmingham, 3 each in Stoke-on-Trent, Dudley, and South Shields, and 2 each in London, Lincoln, Liverpool, and Southport. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,543, 2,505, and 2,422 at the end of the three preceding weeks, further fell to 2,369 on Saturday, April 24th; 259 new cases were admitted during the week, against 253, 275, and 263 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,303 births and 938 deaths were registered during the week ended Saturday, April 17th. The annual rate of mortality in these towns, which had been 21.1, 22.1, and 20.8 per 1,000 in the three preceding weeks, rose to 20.9 in the week under notice, but was 1.9 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 6.1 in Falkirk, 11.3 in Motherwell, and 14.7 in Perth, to 22.1 in Glasgow, 23.4 in Greenock, and 24.3 in Edinburgh. The mortality from the principal infective diseases averaged 3.0 per 1,000, and was highest in Hamilton and Dundee. The 458 deaths from all causes in Glasgow included 47 from whooping-cough, 16 from measles, 7 from infantile diarrhoea, 5 from diphtheria, and 3 from scarlet fever. Sixteen deaths from whooping-cough were recorded in Edinburgh, 13 in Dundee, 4 in Greenock, and 3 in Aberdeen; and from measles, 2 deaths in Aberdeen.

In the sixteen largest Scottish towns 1,314 births and 834 deaths were registered during the week ended Saturday, April 24th. The annual rate of mortality in these towns, which had been 22.1, 20.8, and 20.9 per 1,000 in the three preceding weeks, fell to 1 .5 in the week under notice, but was 1.1 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 10.2 in Kirkcaldy, 10.8 in Hamilton, and 11.7 in Clydebank, to 21.2 in Kilmarnock, 22.5 in Coatbridge, and 30.4 in Falkirk. The mortality from the principal infective diseases averaged 2.8 per 1,000, and was highest in Hamilton and Dundee. The 415 deaths from all causes in Glasgow included 44 from whooping cough, 20 from measles, 6 from infantile diarrhoea, 5 from scarlet fever, 2 from enteric fever, and 1 from diphtheria. Thirteen deaths from whooping-cough were recorded in Dundee, and 7 in Edinburgh from measles, 2 deaths in Dundee; and from diphtheria, 2 deaths in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, April 17th, 701 births and 515 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 633 births and 553 deaths in the preceding period. These deaths represent a mortality of 22.1 per 1,000 of the aggregate population in the districts in question, as against 23.8 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.1 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 30.1 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 24.1 (as against an average of 24.9 for the previous four weeks), in Dublin city 23.8 (as against 25.6), in Belfast 21.5 (as against 22.7), in Cork 25.8 (as against 25.1), in Londonderry 12.7 (as against 20.3), in Limerick 13.5 (as against 25.4), and in Waterford 22.8 (as against 28.0). The zymotic death-rate was 1.4 (as against 1.7 in the previous period).

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Fleet Surgeon ROBERT S. BERNARD to the *Victory*, additional. Staff Surgeons J. G. WALLIS, M.B., to the *Cyclops*; D. V. LOWNDES to the *Ark Royal*; WILLIAM P. HINGSTON to the *Vivid*, additional. Surgeons ROGER A. RANKINE to the *Pembroke*, additional; HORACE E. R. STEPHENS, M.B., to the *Lion*. Surgeon THOMAS TURNER (R.N.V.R.) to the *President*, additional for Armoured Car Division, Royal Naval Air Service. Temporary Surgeons T. D. POWER, M.B., to the *Zealandia*; E. W. TODD to the *St. George*; N. N. WADE, M.D., to the *Ganges*, additional for Shotley R.N. Sick Quarters; A. G. HOLMAN to the *Collingwood*, vice Quine; JAMES A. RUSSELL-CARGILL,

M.B., to the *Victory*, additional for R.N. Division, Crystal Palace. To be temporary Surgeons: W. E. GOSS, M.B., W. S. LYND, M.B., J. S. KENNEDY, DALLAS S. FALCONER, M.B.

ROYAL NAVAL VOLUNTEER RESERVE.

To be temporary Surgeon Probationers: J. M. REDPATH, G. W. M. FINDLAY. The appointment of JAMES G. R. SCARFF as Surgeon Probationer is cancelled.

ARMY MEDICAL SERVICE.

COLONELS (now Surgeon-Generals) to be temporary Surgeon-Generals: ROBERT PORTER, THOMAS J. O'DONNELL.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonels (now Colonels) to be temporary Colonels: GEORGE H. BAREFOOT, CHARLES H. BURTCHAELL.

To be temporary Majors: JOHN F. CUNNINGHAM, F.R.C.S.; Temporary Captain ARTHUR H. BINDLOSS, M.B., late Lieutenant-Colonel, 9th Battalion Middlesex Regiment (T.F.).

The appointments of Captain THOMAS P. THOMAS, Territorial Force, to be temporary Lieutenant-Colonel, and of EDWARD L. P. EDWARDS, to be temporary Captain, are cancelled.

To be temporary Captains: HEDLEY V. DREW, F.R.C.S., EWEN C. STABB, F.R.C.S., TOWNSEND W. SHAW, M.B., NORMAN G. HARRY, M.B., WILLIAM P. NOALL, F.R.C.S., SHEFFIELD H. M. NEAVE, JOHN P. CAMPBELL, M.B., late Captain, 10th Battalion Royal Scots (Lothian Regiment) (T.F.), THOMAS H. R. CROWLE, GORDON TAYLOR, M.B., F.R.C.S.

To be temporary Lieutenants: WILLIAM THOMAS, FRANCIS W. HARROWELL, M.B., SAMUEL CAPLAN, WILLIAM T. SMITH, M.B., ARTHUR MACKINTOSH, M.B., THOMAS FERGUSON, M.B., PHILIP A. M. GREEN, M.D., CLAUDE J. SCHOLTZ, THOMAS M. M. HORSFALL, M.B., JOSEPH DUNBAR, M.B., BERTRAM W. GONIN, ARTHUR J. SMITH, M.B., ORME S. KELLETT, WILLIAM E. P. PHILLIPS, WILLIAM A. KENNEDY, M.D., FREDERIC S. TURNER, RICHARD D. DAVY, M.B., HAROLD J. MOON, JOHN M. FRASER, M.D., HERBERT OWEN, M.B., COURTENAY C. WEEKS, DAVID L. TATE, M.B., JAMES R. MITCHELL, M.B., HAROLD DYER, F.R.C.S.E., ALEXANDER W. ROBERTSON, WILLIAM H. ALLEN, M.D., THOMAS J. J. CURRAN, M.D., FRANCIS A. L'ESTRANGE, M.B., CHARLES MATHEWS, HARRY DUDLEY, JOHN M. MCLACHLAN, JAMES H. JOHNSTON, HUGH R. SOUPER, M.B., CECIL BURNHAM, M.B., ROBERT E. F. PEARSE, BRIAN D. CRICHTON, M.B., HERBERT T. DU HEAUME, WILFRED N. SODEN, M.D., HARRY FULHAM-TURNER, JOHN W. ROBERTSON, M.D., JOHN MCG. H. REID, PERCIVAL WOOD, OSCAR G. MAGINNESS, GEORGE B. BARTLETT, ANDREW R. GUNN, M.B., ALLAN R. FINN, M.D., F.R.C.S., JOHN L. DAVIES, M.D., ERNEST WEATHERHEAD, M.B., VERNON C. PENNELL, REGINALD S. MORSHEAD, M.B., RICHARD G. BROWN, M.B., GEORGE M. C. POWELL, ARTHUR E. GRAVELLE, CHARLES P. M. JOUBERT, M.B., THOMAS F. WYSE, ALFRED J. ANDREW, GWILYM R. PENNANT, THOMAS W. DAVID, GUY W. PARRY, HAROLD V. LAMB, ARTHUR J. W. COMPTON, M.D., NEWMAN SMITH, JOHN B. HUNTER, ARNOLD RENSHAW, M.B., GEORGE W. FITZ-HENRY, MEILOR BRIDGMAN, M.D., PERCY W. L. CAMPS, M.B., F.R.C.S., IAN M. GRANT, M.D., JOHN O. THOMAS, BENJAMIN T. SAUNDERS, M.B., GUY B. NICHOLSON, ARTHUR R. RENDLE, M.D., GEORGE D. FAIRLEY, M.B., THOMAS B. CARLYON, EDWARD M. HIME, M.B., WILLIAM H. SHEFFIELD, M.B., DUNCAN WOOD, F.R.C.S., FREDERICK W. WOODS, JOHN KEAY, KENNETH H. A. KELLIE, M.B., WILLIAM GILBERTSON, M.D., ERNEST C. BOURDAS, M.D., F.R.C.S.E., ERNEST P. SATCHELL, M.B., HENRY ST. A. AGATE, HOWELL W. BARNES, M.B., JOHN H. J. DAVYS, JOHN PATON, M.D., JOHN M. LOGIE, M.B., JAMES N. WHEELER, M.B., KARL F. SOUNTAG, M.D., HANS A. C. SWERTZ, M.B., JOHN B. WALKER, HAROLD J. DE BRENT, ARTHUR D. HOWARD, M.D., PERCY KITCHEN, PHILIP H. HADFIELD, JOHN C. GLEN, DAVID GILLIES, ARTHUR EMERY, M.B., JAMES B. ALEXANDER, M.B., REGINALD WILLIAMS, CHARLES E. BASHALL, CHARLES A. ROBINSON, M.B., JOHN P. HOWE, HERBERT H. FOLKER, LESLIE H. WALSH, M.D., FRANK BRYAN, M.B., CHARLES C. DE B. DALY, M.B., BENJAMIN H. LEIGH, SIDNEY C. DYKE, WILLIAM N. PARKER, M.D., THOMAS W. KELLY, M.D., WILLIAM B. HEYWOOD, M.D., ROBERT A. FLYNN, WILLIAM BECK, ERIC R. D. MACONOCHIE, M.B., F.R.C.S.E., CHARLES J. GIBSON, M.D., EDWARD F. GREENE, ERNEST SAXTON, SIDNEY H. HALL, M.B., FREDERICK G. BULLMORE, HUBERT R. SEDGWICK, M.B., ERNEST ALLAN, M.B., JOHN D. GUNN, M.D., F.R.C.S.E., DAVID C. GRAHAM, M.B., ROBERT L. RITCHIE, M.B., EMANUEL M. J. O'FARRELL, F.R.C.S.I., WILLIAM C. W. GLENNY, JAMES A. GENTLE, M.B., JOHN M. FRY, JOHN C. RIX, GEORGE W. DEEPING, M.B., WILLIAM HUTCHISON, M.B., JOHN WYLIE, M.B., ROBERT MACC. PATERSON, WALTER HAWARD, M.B., BERNARD S. BROWNE, M.B., CHARLES BUTLER, M.D., ROBERT MOORE, M.D., ANDREW F. HORN, M.B., ROBERT DENMAN, JOHN D. GIMLETTE, ERNEST R. STONE, CHARLES E. DASHWOOD, WILLIAM D. WILKINS, M.B., WILLIAM HARVEY, M.B., HAROLD B. TAYLOR, HENRY B. SHEPHERD, WILLIAM B. LAWRENCE, JAMES CRAIG, M.D., ANDREW H. MACKENZIE, M.B., PHILIP A. MCCARTHY, M.D., WILLIAM A. SLATER, HARRY GREY, M.D., EDWIN W. S. MARTIN, M.B., DONALD FISHER, M.B., WILLIAM J. F. SYMONS, M.B., RICHARD A. BANBURY, JOHN CONNELL, M.B., JAMES B. H. DAVSON, THOMAS JOHNSTON, ANDREW P. YONGE, M.B., WILLIAM J. HILL, M.B., ARTHUR G. SOUTHCOMBE, M.D., WILFRED V. ROBINSON, JAMES H. SHELDON, M.B., EVAN J. G. JONES, M.D.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

1st Southern General Hospital.—Captain FRANK D. MARSH is seconded. BERTRAM A. LLOYD, to be Captain, whose services will be available on mobilization.

2nd Southern General Hospital.—Major JAMES SWAIN, M.D., F.R.C.S., is seconded.

1st London (City of London) Field Ambulance.—Captain ANDREW ELLIOT, M.D., to be temporary Major; Lieutenant ARTHUR D. J. B. WILLIAMS, to be Captain and to remain seconded.

2nd London Sanitary Company.—To be Lieutenants: HERBERT BEENEY, FREDERICK J. J. NEY.

2nd London (City of London) General Hospital.—Officers seconded: Major Sir FREDERIC EVE, F.R.C.S., Captain Sir WILLIAM A. LANE, Bt., M.A., F.R.C.S., Captain Sir BERTRAND DAWSON, K.C.V.O., M.D.

2nd London Casualty Clearing Station.—ATHELSTAN J. BLAXLAND, F.R.C.S., to be Captain, temporary.

2nd London (City of London) Field Ambulance.—ARTHUR H. PLATT to be Lieutenant.

3rd London General Hospital.—Major Sir JOHN R. BRADFORD, K.C.M.G., C.B., F.R.S., M.D., is seconded. ERNEST N. KEYS-WELLS, M.B., to be Captain whose services will be available on mobilization.

4th London General Hospital.—Captain WILLIAM HUNTER, M.D., is seconded. The following announcement is substituted for that which appeared in the *London Gazette* of March 8th, 1915: GEORGE A. EWART to be Captain, whose services will be available on mobilization.

East Anglian Casualty Clearing Station.—FREDERICK W. LEWIS to be Lieutenant.

1st Eastern General Hospital.—Lieutenant FFRANGCON ROBERTS, from the 1st East Anglian Field Ambulance, to be Lieutenant.

2nd Western General Hospital.—CHARLES P. LAPAGE, M.D., late Captain Unattached List for the Territorial Force, to be Captain.

3rd Western General Hospital.—To be Lieutenants: Lieutenant IVOR J. DAVIES, M.D., from 2nd Welsh Field Ambulance; THOMAS R. BOWEN.

Welsh Border Mounted Brigade Field Ambulance.—JOHN A. EYTON-JONES, late Surgeon-Lieutenant, 1st V.B. Royal Welsh Fusiliers, to be Captain, temporary.

3rd Welsh Field Ambulance.—JOHN EVANS, M.D., late Captain 6th Battalion, Royal Welsh Fusiliers, to be Major, temporary; JOHN W. DALE, M.B., to be Lieutenant.

2nd North Midland Field Ambulance.—Major JOHN C. S. BURKITT, M.D., from Attached to Units other than Medical Units, to be Major, temporary.

2nd East Lancashire Field Ambulance.—WILLIAM CLEGG-NEWTON to be Lieutenant.

3rd East Lancashire Field Ambulance.—WILLIAM CALVERLEY, M.B., to be Lieutenant.

1st Northern General Hospital.—Major ROBERT A. BOLAM, M.D., to be temporary Lieutenant-Colonel; Captain GEORGE HALL, M.D., to be Major, and to be seconded; STUART MCDONALD, M.D., F.R.C.P., late Captain, Unattached List, for the Territorial Force, to be Captain whose services will be available on mobilization.

2nd Northern General Hospital.—Sir BERKELEY G. A. MOYNIHAN, M.B., F.R.C.S., is seconded. JAMES CLARK, M.D., to be Captain, whose services will be available on mobilization.

Northumbrian Casualty Clearing Station.—WILLIAM A. WETWAN, late Major, 5th Battalion, Alexandra Princess of Wales's Own, Yorkshire Regiment, to be Major temporary. To be Lieutenants: ROBERT W. SMITH, FREDERICK S. WALKER, M.D., FRED. PHILLIPS, M.B., STANLEY MCCOULL, M.B.

2nd Northumbrian Field Ambulance.—JOHN M. NICOLL, M.B., late Major, 7th Battalion Durham Light Infantry, to be Major temporary.

1st Scottish General Hospital.—Captain MIDDLETON CONNON, M.D., from Sanitary Service, to be Captain, whose services will be available on mobilization. Major HENRY MCI. W. GRAY, M.B., F.R.C.S.E., is seconded.

2nd Highland Field Ambulance.—BENJAMIN J. ALCOCK, M.B., to be Lieutenant.

Supernumerary for Service with the Officers' Training Corps.—WYNFRID L. H. DUCKWORTH, M.D., to be Lieutenant, for service with the Field Ambulance Section, Cambridge University Contingent, Senior Division, O.T.C.

Attached to Units other than Medical Units.—To be Majors: Captain HENRY W. WILLIAMS, M.D., Captain JOHN O. SUMMERHAYES, Surgeon-Captain GEORGE S. MILL, M.D., from 4th Battalion King's Own Yorkshire Light Infantry. To be Captains: RICHARD T. TURNER, M.D., late Captain, 7th Battalion Cheshire Regiment, Lieutenant HORSLEY DRUMMOND, M.B., ARTHUR L. YATES, M.D. To be Lieutenants: Lieutenant A. R. GRANT, M.B., from 2nd Highland Field Ambulance, Lieutenant MAURICE U. WILSON, from 5th London Field Ambulance, JOHN MACQUARRIE, M.B., EDWARD S. JOHNSON.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ANGLO-SERBIAN HOSPITAL, Urnjatchka Banja, Serbia.—Surgeon.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £170 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £100 per annum and extras.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRENTWOOD ASYLUM.—Locumtenant Assistant Medical Officer. Salary, £6 6s. per week.

BRISTOL: BEAUFORT WAR HOSPITAL.—(1) Chief Resident Surgeon. (2) Resident Physician and Surgeon.

BRISTOL GENERAL HOSPITAL. Second House-Physician, House-Surgeon, and Casualty House-Surgeon; also Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Three House-Surgeons; (2) Two House-Physicians; (3) Obstetric and Ophthalmic House-Surgeon. Salary, £120 per annum

BURNLEY: VICTORIA HOSPITAL.—House-Surgeon. Salary, £125 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—Resident Surgical Officer. Salary, £160 per annum.

CARDIFF: WELSH METROPOLITAN MILITARY HOSPITAL, Whitchurch.—Chief Resident Surgeon and Chief Resident Physician. Pay, £1 3s 6d. a day.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—Resident Medical Officer. Salary, £50 per annum.

DERBYSHIRE ROYAL INFIRMARY. — House-Physician and Casualty Officer. Salary, £250 per annum.

ECCLESALL BIERLOW UNION.—Male Resident Assistant Medical Officer of the Ecclesall Institution. Salary, £300 per annum.

EPSOM: COUNTY OF LONDON WAR HOSPITAL.—(1) Chief Resident Physician. (2) Resident Radiographer. (3) Resident Dental Surgeon. (4) Physicians and Surgeons to take charge of wards. (5) Operating Surgeons. (6) Ophthalmologist. (7) Aural Surgeon. (8) Dermatologist. (9) Radiographer.

FIFE DISTRICT ASYLUM.—Senior Assistant Medical Officer (male). Salary, £220 per annum.

GRAVESEND HOSPITAL.—House-Surgeon.

GREENWICH UNION.—Junior Assistant Medical Officer of the Infirmary and Workhouse. Salary, £175 per annum.

HARROGATE INFIRMARY. — Resident House-Surgeon. Salary, £100 per annum.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House-Physician. Honorarium, 30 guineas for six months.

HULL: ROYAL INFIRMARY.—(1) House-Physician. (2) Assistant House-Surgeon (3) Casualty House-Surgeon. Salary, £105, £100, and £80 per annum respectively.

LEYTON EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum

LIVERPOOL PARISH.—Resident Assistant Medical Officer for the Brownlow Hill Institution. Salary, £300 per annum.

LONDON FEVER HOSPITAL, Liverpool Road, N.—Assistant Resident Medical Officer. Salary, £250 per annum.

LONDON HOSPITAL DENTAL SCHOOL.—House-Surgeon.

MANCHESTER CHILDREN'S HOSPITAL. — Resident Medical Officer. Salary, £100 per annum and £5 a month bonus during the war.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £450.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Northwood. — House-Physician. Salary, £150 per annum.

MIDDLESBROUGH: NORTH ORMESBY HOSPITAL. — House-Surgeon. Salary, £150 per annum.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—(1) House-Physician. (2) Two House-Surgeons. (3) Obstetric Assistant. (4) Assistant Pathologist. (5) Resident Medical Officer for House of Recovery, New Barnet; salary, £60 per annum. (6) Clinical Assistants.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Temporary Surgeon in charge of Out-patients.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—(1) Resident Medical Officer. (2) Assistant Resident Medical Officer. Salary, £110 and £90 per annum respectively.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) Honorary Dermatologist. (2) Deputy Laryngologist.

ROTHERHAM HOSPITAL.—Senior and Junior House-Surgeons. Salary, £200 and £125 per annum respectively.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Assistant Dental Surgeon.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Two Resident Medical Officers in the Military Block (males).

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident Medical Officer.

SALISBURY GENERAL INFIRMARY. — (1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Anaesthetist. Honorarium, £15 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOMERSET COUNTY COUNCIL, Weston-super-Mare.—Assistant Tuberculosis Officer. Salary, £350 per annum.

SOMERSET COUNTY EDUCATION COMMITTEE, Weston-super-Mare.—School Oculist and Medical Inspector. Salary, £350 per annum, rising to £400.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Lady House Surgeon. Salary, £150 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford. — House-Surgeon. Salary, £200 per annum.

STOCKTON-ON-TEES: STOCKTON AND THORNABY HOSPITAL. —House-Surgeon. Salary, £200 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) Resident Surgeon Officer. (2) Two House-Surgeons. (3) House-Physician. Salary for (1), £300, and (2) and (3), £150 per annum.

SUNDERLAND: DURHAM COUNTY AND SUNDERLAND EYE INFIRMARY.—House-Surgeon. Salary, £300 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Senior House-Surgeon. Salary, £250 per annum.

TIVERTON HOSPITAL.—House-Surgeon and Dispenser. Salary, £80 per annum.

TOXTETH PARK TOWNSHIP.—Assistant Resident Male Medical Officer for the Poor-Law Institution and Infirmary. Salary, £200 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £150 per annum.

WAKEFIELD: WEST RIDING ASYLUM. — Locumtenent or Assistant Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WARRINGTON: LORD DERBY WAR HOSPITAL.—(1) Chief Resident Physician. (2) Resident Physician and Surgeon.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—House Physicians. Salary, £120 and £100 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House-Surgeon. Salary, £150 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—(1) Resident Medical Officer. (2) House-Surgeon. Salary, £150 per annum.

YORK DISPENSARY.—Resident Medical Officer (lady). Salary, £240 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Cardenden (co. Fife), Kirkwall (co. Orkney).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

KIRKHAM, A. H. B., F.R.C.S.Edin., Certifying Factory Surgeon for the Staplehurst District, co. Kent.

PATTON, A., M.B., Certifying Factory Surgeon for the Saintfield District, co. Down.

SIMPSON, W. F. V., M.R.C.S., L.R.C.P., District Medical Officer of the Whitchurch Union, Hants.

SMITH, Miss C. L., M.B., Ch.B.Glasg., District Medical Officer of the Newark Union.

STANLEY, Douglas, M.D., Professor of Therapeutics in the University of Birmingham.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

DICKSON.—At the Chestnuts, Longlevens, Gloucester, on April 28th, the wife of W. Arnott Dickson, M.D., F.R.C.S.Edin., a son.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF SURGERY, SUBSECTION OF ORTHOPAEDICS, 5 p.m.—Annual General Meeting.

SECTION OF PATHOLOGY, 8.30 p.m. — Annual General Meeting. Papers:—Dr. Charlton Bastian: Tyrosine as an aid in the Demonstration of *de novo* Origin of Living Organisms. Dr. Hingston Fox: Aneurysm of Left Ventricle.

WEDNESDAY.

ASSURANCE MEDICAL SOCIETY, 1, Wimpole Street, W., 5.30 p.m.—Paper by Sir Thomas Oliver, M.D., F.R.C.P., on Traumatism in Disease calling for Compensation.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Clinical Meeting.

ROYAL SOCIETY OF MEDICINE:

SECTION OF OBSTETRICS AND GYNAECOLOGY, 8 p.m.—Annual General Meeting. Specimens. Short Communications. Papers:—Dr. W. Blair Bell: So-called True Hermaphroditism. Dr. T. G. Stevens: Adenomyoma of the Recto-vaginal Septum.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF LARYNGOLOGY, 5 p.m.—Annual General Meeting. Cases and Specimens: War Injuries and Neuroses, 4 p.m.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MAY.
4	Tues.	Northamptonshire Division, Northampton General Hospital, 3 p.m.
6	Thur.	London: Insurance Act Local Medical and Panel Subcommittee.
14	Fri.	Marylebone Division, Annual Meeting, 108, Harley Street, W., 5.30 p.m.
19	Wed.	Central Division, Annual Meeting, Medical Institute, Birmingham, 3.30 p.m.
		JUNE.
2	Wed.	Kent Branch, Tunbridge Wells, 4.30 p.m. Tea, 4 p.m.; Dinner, 7.30 p.m.
		JULY.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 8TH, 1915.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs.

BY ORDER.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

Annual Representative Meeting, London, 1915.

THE Annual Representative Meeting of the British Medical Association will be held in London on Friday, July 23rd, 1915, and following days as may be necessary.

PROVISIONAL AGENDA.

I.—RECEPTION OF RETURN OF REPRESENTATIVES.

1. **Motion:** That the return of election of Representatives of Constituencies for the year 1915–16 be received and entered on the Minutes.

2. **Motion:** That the notices (if any) of appointment of Substitutes for Representatives under By-law 37 be received and entered on the Minutes.

II.—STANDING ORDERS.

3. **Motion:** That the Standing Orders submitted by the Chairman be adopted as Standing Orders of the Meeting.

The Chairman will submit the Standing Orders adopted at Aberdeen, 1914, subject to such additions and alterations as may hereafter be notified to the Representatives.

III.—REPORT OF AGENDA COMMITTEE.

IV.—ANNUAL REPORT OF COUNCIL.

(For Annual Report of Council, 1914–15, *see* page 166 of this SUPPLEMENT.)

4. **Motion:** That the Annual Report of Council for the year 1914–15, Balance Sheet and Financial Statement for the year 1914, and Estimate of Income and Expenditure for the year 1915, be received.

5. **Motion** (by the CHAIRMAN): That all Motions by Divisions and Branches which relate to matters dealt with in the Annual Report of Council be considered as amendments or riders to the Recommendations, if any, to which they are relevant or to the motion: "That the remainder of the Report under heading . . . . be approved."

(A) Preliminary.

Officers for 1915–16.

6. **Motion:** That the following Recommendation of Council be adopted (paragraph 3 of Annual Report of Council, page 166 of this SUPPLEMENT):

> That Sir Alexander Ogston, K.C.V.O., M.D., be re-elected as President of the Association for 1915–16, and Sir Thomas Clifford Allbutt, K.C.B., LL.D., as President-elect.

Remainder of Annual Report under heading "(A) Preliminary."

7. **Motion:** That the remainder of the Annual Report of Council under heading "(A) Preliminary" (paragraphs 1–9, pages 166–168 of this SUPPLEMENT) be approved.

(B) Finance.

8. **Motion:** That the Annual Report of Council under heading "(B) Finance" (paragraphs 10–25, pages 168–178 of this SUPPLEMENT) be approved.

(C) The Association and the War.

9. **Motion:** That the Annual Report of Council under heading "(C) The Association and the War" (paragraphs 26–33, pages 178–180 of this SUPPLEMENT) be approved.

(D) Organization.

Eligibility for Membership.

10. **Motion:** That the Special Report of Council on Minute 306 of the Annual Representative Meeting, 1913, as to the question of Eligibility for Election as a Member of the Association (Appendix I to Annual Report of Council, pages 197-193 of this Supplement) be received.

11. **Motion:** That the following Recommendation A of Council be adopted (paragraph 36 of Annual Report of Council, page 180, of this Supplement):

> That on the information in its possession, including the replies on the subject received from the Oversea bodies, the Representative Body is of opinion that no change such as was contemplated by the motion of the late Natal Branch contained in Minute 306 of the Annual Representative Meeting, 1913, should be made in the Articles and By-laws of the Association as to eligibility for membership, other than the alteration of Article 4 already decided upon by Minute 68 of the Annual Representative Meeting, 1914.

12. **Motion:** That the remainder of the Special Report of Council as to the question of Eligibility for Election as a Member of the Association (pages 197–198 of this Supplement) be approved.

Question of Association becoming also a Federation for Other Medical Bodies.

13. **Motion:** That the Special Report of Council on Minute 81 of the Annual Representative Meeting, 1914, as to the question of the Association becoming also a Federation for other Medical Bodies (Appendix II to Annual Report of Council, pages 198–200) be received.

14. **Motion:** That the following Recommendation B of Council be adopted (paragraph 37 of Annual Report of Council, page 180 of this Supplement):

> That the Representative Body is of opinion, on the legal advice the Association has formerly received, that it is impossible for the Association so to extend its objects as to become in any legal manner a federation of Medical Societies.

15. **Motion.** That the following Recommendation C of Council be adopted (paragraph 37 of Annual Report, page 180):

> That the Representative Body would welcome any constitutional method whereby the Association, without interference with its own self-government, could come into closer relationship with other societies formed to safeguard the interests of any sections of the medical profession.

16. **Motion:** That the following Recommendation D of Council be adopted (paragraph 37 of Annual Report of Council, page 180):

> That the Representative Body approves the principle of the Council adding to any Standing Committee of the Association a Member of the Association nominated by any Society, formed to safeguard the interests of any section of the profession, which desires to become more closely associated with the Association and to work in co-operation with it, and instructs the Council to prepare drafts of the necessary alterations in the By-laws to carry this into effect.

17. **Motion:** That the following Recommendation E of Council be adopted (paragraph 37 of Annual Report, page 180):

> That the Council be instructed to call into conference with itself certain other Societies referred to in Recommendation C of Council, with a view to determining how it might be possible to come into closer relationship with such other Societies, and to report to the next Annual Representative Meeting, with drafts of the necessary alterations in the Articles and By-laws, if any.

18. **Motion:** That the remainder of the Special Report of Council as to the question of the Association becoming also a Federation for other Medical Bodies (pages 198–200) be approved.

Grouping of Branches for Election of Council, 1916–17.

(a) Home Branches.

19. **Motion:** That the following Recommendation F of Council be adopted (paragraph 38 of Annual Report of Council, page 180 of this Supplement):

> That the Home Branches be grouped for election of 24 members of Council for 1916–17, under By-law 46 (*a*), in the same way as for 1915–16, except that the new Wiltshire Branch be grouped with the Dorset and West Hants and South-Western Branches.
>
> (For the 1915–16 grouping of the Home Branches, see Appendix III, page 201.)

(b) Oversea Branches.

20. **Motion:** That the following Recommendation G of Council be adopted (paragraph 39 of Annual Report of Council, page 180):

> That the Oversea Branches be grouped for election of 7 members of Council for 1916–17, under By-law 46 (*b*), in the same way as for 1915–16, except that the new Hyderabad and Central Provinces Branch be included in the Indian group of Branches.
>
> (For the 1915–16 grouping of the Oversea Branches, *see* Appendix IV, page 202.)

Bound Volumes of Supplements.

21. **Motion:** That the following Recommendation H of Council be adopted (paragraph 42 of Annual Report of Council, page 181):

> That the Representative Body rescind Minute 20 of the Annual Representative Meeting, 1913, and that Honorary Secretaries of Divisions be again supplied with half-yearly bound volumes of Supplements.

[*Minute 20 of A.R.M., 1913, referred to:*

That the Representative Body rescind Resolution No. 187, passed at Leicester, 1905, which authorizes the sending of a bound volume of the Supplement to the Secretaries of all Divisions, namely: That the Supplements be bound and sent down twice annually to Secretaries and Representatives of Divisions, and that such volumes remain the property of Divisions.]

Status and Authority of Decisions of Association.

22. **Motion:** That the Special Report of Council on the Status and Authority of Decisions of the Association (Appendix VII to Annual Report of Council, pages 207) be received.

23. **Motion:** That the Special Report of Council on the Status and Authority of Decisions of the Association be approved.

Remainder of Annual Report of Council under heading "(D) Organization."

24. **Motion:** That the remainder of the Annual Report of Council under heading "(D) Organization" (paragraphs 34–56, pages 180–182) be approved.

(E) Journal.

Salaries of Editorial Staff.

25. **Motion:** That the following Recommendation of Council be adopted (paragraph 57 of Annual Report, page 182):

> That the existing arrangements concerning the remuneration of the Editorial Staff be continued for the present.

Remainder of Annual Report of Council under heading "(E) Journal."

26. **Motion:** That the remainder of the Annual Report of Council, under heading "(E) Journal" (paragraphs 57–68, pages 182–183) be approved.

(F) Science.

27. **Motion:** That the Annual Report of Council under heading "(F) Science" (paragraphs 69–76, page 183) be approved.

(G) Medical Ethics.

Ethical Appeals.

28. **Motion:** That the following Recommendation A of Council be adopted (paragraph 77 of Annual Report of Council, page 183):

That the Annual Representative Meeting, 1915, adopt the following amended Schedule to the By-laws as to the duties and powers of the Central Ethical Committee, to take the place of the existing Schedule relating to that Committee:

To advise the Council on questions connected with Rules of Divisions and Branches relating to professional conduct, to investigate and report to the Council upon the cases of members whose conduct is to be considered by the Council on the representation of Divisions or Branches pursuant to Article 11 and to advise the Council, and if and so far as empowered by the Council (either generally or in any particular case) to act for the Council on and deal with and adjudicate upon all questions of professional conduct, and so that the decision of the Committee (where so empowered) upon any such questions shall be deemed to be the decision of the Council, and shall be binding upon the parties concerned and upon all members of the Association, and final unless new facts are produced which in the opinion of the Committee warrant the reconsideration of the case.

Provided that, notwithstanding the foregoing provisions, the Committee shall not adjudicate upon or entertain any such question as aforesaid which has arisen in a Branch not in the United Kingdom having a membership of not less than thirty, except upon the request of the Council of that Branch.

Revision of Model Ethical Rules.

29. **Motion:** That the following Recommendation B of Council be adopted (paragraph 79 of Annual Report, page 184):

(*a*) That the Revised Rules governing procedure in ethical matters of (i) a Division not itself a Branch, (ii) a Branch composed of one Division, and (iii) a Branch composed of several Divisions (Appendix VIII, pages 208–218), be approved.

(*b*) That all Divisions and Branches in the British Islands be urged to adopt the Revised Rules governing procedure in ethical matters as approved by the Representative Body, 1915, without modification and in substitution for any ethical rules now in use by the Divisions and Branches respectively, which will not be recognized after December 31st, 1915.

Remainder of Annual Report of Council under heading "(G) Medical Ethics."

30. **Motion:** That the remainder of the Annual Report of Council under heading "(G) Medical Ethics" (paragraphs 77–83, pages 183–184) be approved.

(H) Medico-Political.

Payment of Medical Practitioners Called in on Advice of Midwives.

31. **Motion:** That the following Recommendation A of Council be adopted (paragraph 84 of Annual Report, page 184):

That the Representative Body approve the following amended form of paragraph (*c*) of Minute 132 of the Annual Representative Meeting, 1914, in substitution for that paragraph:

(*c*) That the following should be the minimum scale of fees for the payment of medical practitioners called in on the advice of midwives, but power should be obtained to pay special fees in special cases:

	£	s.	d.
(i) Attendance at cases (of) *requiring or necessitating* operative assistance, and subsequent necessary visits during the first ten days	2	2	0
(ii) Attendance at cases without operative assistance, and subsequent necessary visits during first ten days	1	1	0
(iii) Assistance for administration of an anaesthetic	1	1	0
(iv) *Any* visit *not covered by* (*i*), (*ii*), *or* (*iii*), including any necessary prescription:			
Day (8 a.m. to 8 p.m.)	0	3	6
Night (8 p.m. to 8 a.m.)	0	7	6

NOTE.—*Words in italics are additions suggested.* ( ) *in paragraph* (*i*) *denotes suggested deletion.*

Contract Fees for Medical Attendance and Treatment of Juvenile Members of Friendly Societies.

32. **Motion:** That the Special Report of Council on the question of Fees for Treatment of Juvenile Members of Friendly Societies (Appendix IX to Annual Report of Council, page 219) be received.

33. **Motion:** That the following Recommendation B of Council be adopted (paragraph 85 of Annual Report, page 185):

That juvenile contract rates apply only to the children of persons eligible for the benefits of the Insurance Acts.

34. **Motion:** That the following Recommendation C of Council be adopted (paragraph 85 of Annual Report, page 185):

That there shall be free choice of patient by doctor and of doctor by patient.

35. **Motion:** That the following Recommendation D of Council be adopted (paragraph 85 of Annual Report, page 185):

That the contract rates for medical attendance on the children of those persons eligible for the benefits of the Insurance Acts should be not less than 4s. 4d. per annum, from the age of three years up to the age of sixteen.

36. **Motion** (if Recommendation D be carried): That the following Recommendation E of Council be adopted (paragraph 85 of Annual Report, page 185):

That Minute 141 of the Annual Representative Meeting, 1913, be modified in accordance with Recommendation D.

37. **Motion:** That the remainder of the Special Report of Council on the question of Fees for Treatment of Juvenile Members of Friendly Societies be approved.

Select Committee on Patent Medicines.

38. **Motion:** That the following Recommendation F of Council be adopted (paragraph 88 of Annual Report, page 185):

That the Representative Body place on record its satisfaction with the recommendations of the Select Committee on Patent Medicines and instruct the Council, as soon as it considers the time opportune, to take all necessary steps in pressing for legislation on the lines of the Report.

Practice of Dentistry by Unqualified Persons.

39. **Motion:** That the following Recommendation G of Council be adopted (paragraph 94 of Annual Report, page 186):

That the Representative Body approve the draft Bill of the British Dental Association concerning the practice of dentistry by unqualified persons.

Fees for Medical Attendance on Cases Receiving Ambulance Treatment through Municipal Services.

40. **Motion:** That the following Recommendation H of Council be adopted (paragraph 95 of Annual Report, page 186):

That the Representative Body approve the establishment of local ambulance services for emergency cases of sickness or accident on the following conditions:

(*a*) The responsibility to be undertaken by some local authority.

(*b*) The cases to be referred to the nearest available practitioner.

(*c*) The fees to be paid by the local authority on the following scale:

For a day call between 8 a.m. and 8 p.m., 3s. 6d.; for a night call between 8 p.m. and 8 a.m., 7s. 6d. Mileage beyond first mile at the rate of 1s. per mile one way.

Crime and Punishment Subcommittee.

41. **Motion:** That the Report of the Crime and Punishment Subcommittee on the question of the Present State of the Law with regard to Legal Responsibility for Crime (Appendix X to Annual Report of Council, pages 220–224) be received.

42. **Motion:** That the following Recommendation I of Council be adopted (paragraph 97 of Annual Report, page 186):

That the Report on the question of the Present State of the Law with regard to the Legal Responsibility for Crime, be approved by the Representative Body.

Assistant Asylum Medical Officers.

43. **Motion:** That the Special Report on the Conditions of Employment and Remuneration of Assistant Asylum Medical Officers (Appendix XII to Annual Report of Council, page 226) be received.

44. **Motion:** That the following Recommendation J of Council be adopted (paragraph 103 of Annual Report, page 187):

That the following recommendations contained in the Report on the Conditions of Employment and Remuneration of Assistant Asylum Medical Officers be approved:

Salaries and Emoluments.

(*a*) That the minimum commencing salary of Assistant Asylum Medical Officers be £220, rising after one year of probation to £250, and then by £25 per annum to £350 per annum irrespective of promotion, and that the salaries of officers who are not promoted should then rise automatically by £10 per annum for ten years.

(*b*) That in addition to the operation of the above scale, an officer on being promoted to Second Assistant should receive an additional £50 per annum, and on being promoted to Senior Assistant an additional £50 per annum.

(*c*) That Assistant Asylum Medical Officers who have received promotion should also participate in the automatic increase of £10 per annum for ten years, which commences after five years' service.

(*d*) That emoluments should be valued at least at £100 per annum, and made commutable for full value at the end of five years.

House Accommodation.

(*e*) That every Asylum should contain a separate house suitable for a married Assistant Officer, and that where an Asylum contains four or more Assistants, two such houses for Assistant Officers should be provided.

45. **Motion:** That the remainder of the Report on the Conditions of Employment and Remuneration of Assistant Asylum Medical Officers be approved.

Medical Inspection and Treatment of School Children.

46. **Motion:** That the Memorandum on the Policy of the Association as to Medical Inspection and Treatment of School Children (Appendix XIII to Annual Report of Council, page 227) be received.

47. **Motion:** That the following Recommendation K (i) o Council be adopted (paragraph 104 of Annual Report, page 187):

That the Annual Representative Meeting, 1915, approve the Memorandum on Medical Inspection and Treatment of School Children, as a statement of the policy of the Association in regard to these matters.

48. **Motion:** That the Memorandum on Treatment at Voluntary Hospitals of School Children found defective on Medical Inspection (Appendix XIV to Annual Repo.. of Council, page 229) be received.

49. **Motion:** That the following Recommendation K (ii) of Council be adopted (paragraph 100 of Annual Report, page 187):

That the Annual Representative Meeting, 1915, approve the Memorandum on the Treatment at Voluntary Hospitals of School Children found defective on Medical Inspection, as the policy of the Association in regard to these matters.

Medical Aid Institutions.

50. **Motion:** That the following Recommendation L of Council be adopted (paragraph 109 of Annual Report, page 188):

That it is inadvisable to take objection to the acceptance by Members of the Association of appointments at those existing Institutions recognized under Section 15 (4) of the Insurance Act which will conform to the following conditions:

(*a*) Salaries or other forms of payment to be satisfactory to the Association.

(*b*) Free choice of doctor by patient and of patient by doctor to be allowed.

(*c*) The Institution doctor to be placed as nearly as possible in the same conditions as the panel doctor as regards complaints by patients.

(*d*) The rules of the Institution, so far as they affect the doctor, to be approved by the Association, before any member is allowed to accept or retain appointment.

(*e*) Some guarantee to be obtained that the Institution is not using the Insurance Funds to finance the medical attendance on the dependants, thereby lowering the rate which the outside profession would be able to secure for the same work.

51. **Motion:** That the following Recommendation M of Council be adopted (paragraph 109 of Annual Report, page 188):

That the strongest opposition be offered to any extension of similar Institutions or Schemes, and especially to those Schemes formed in South Wales under Section 15 (3) of the Insurance Act.

Maternity and Child Welfare.

52. **Motion:** That the Special Report of Council on Maternity and Child Welfare Schemes (Appendix XV (III) to Annual Report of Council, page 230) be received.

53. **Motion:** That the following Recommendation N of Council be adopted (paragraph 111 of Annual Report, page 188):

That the Representative Body approve the Special Report submitted by the Council on Maternity and Child Welfare Schemes. (*See* Appendix XV (III) to Annual Report of Council, page 230.)

Salaries of Medical Officers to Committees for the Care of the Mentally Defective.

54. **Motion:** That the following Recommendation O of Council be adopted (paragraph 113 of Annual Report, page 188):

That the minimum salary of a whole-time medical officer to a Committee for the Care of the Mentally Defective, appointed under the Mental Deficiency Act, 1913, should be £500 per annum.

Remainder of Annual Report under heading "(H) Medico-Political."

55. **Motion:** That the remainder of the Annual Report of Council under heading "(H) Medico-Political" (paragraphs 84–115, pages 184–188) be approved.

(I) National Insurance.

Standing Insurance Acts Committee.

56. **Motion:** That the following Recommendation of Council be adopted (paragraph 117 of Annual Report, page 189):

That the Annual Representative Meeting, 1915, add to the Schedule to the By-laws, as to Standing Committees, the following new paragraph, to come immediately after the existing paragraph as to the Public Health Committee:

Name of Committee.	Appointed Members.				Duties, Powers, etc.
	Additional Members *ex officio*.	Appointed by the Representative Body.	Appointed by the Council.	Otherwise Appointed.	
Insurance Acts				Members of the Association appointed as follows: 12 elected by the elected Representatives of the Constituencies comprised in the groups of Branches and Divisions formed for the purpose mentioned in By-law 46 (*c*), the Representatives of all the Constituencies in each such group being entitled together to elect one member of the Committee in the same manner as they elect one member of the Council in pursuance of that By-law. 11 elected by the four *ex officio* members and the above-mentioned 12 elected members of the Committee acting together, such 11 members to be nominated or qualified as under—namely: 6 selected so far as possible on a territorial basis from among members nominated by the Local Medical Committees and Panel Committees formed in Great Britain under the Insurance Acts; 2 non-panel practitioners; 1 representative nominated by each of the following bodies—namely: (*a*) The Association of Registered Medical Women, together with the Northern Association of Registered Medical Women; (*b*) The Society of Medical Officers of Health; (*c*) The Poor Law Medical Officers' Association of England and Wales.	To deal with all matters arising under the National Insurance Acts, 1911 to 1914, and any Act amending or consolidating the same, and to watch the interests of the profession in relation to those Acts.

Legal Position of Medical Aid Institutions in relation to the Insurance Acts.

57. **Motion:** That the Memorandum on the Legal Position of Medical Aid Institutions in relation to the Insurance Acts (Appendix XVI to Annual Report of Council, page 233) be received.

58. **Motion:** That the Memorandum on the Legal Position of Medical Aid Institutions in relation to the Insurance Acts be approved.

Remainder of Annual Report of Council under heading "(I) National Insurance."

59. **Motion:** That the remainder of the Annual Report of Council under heading "(I) National Insurance" (paragraphs 116–149, pages 189–193) be approved.

(J) Public Health and Poor Law.

60. **Motion:** That the Annual Report of Council under heading "(J) Public Health and Poor Law" (paragraphs 150–156, page 193) be approved.

(K) Hospitals.

Model Scheme for Treatment of Tuberculosis.

61. **Motion:** That the following Recommendation of Council be adopted (paragraph 157 of Annual Report, page 193):

That the Representative Body express the opinion that it is necessary for the training of medical students in the diagnosis and treatment of tuberculosis that any tuberculosis dispensary situate in the area of a voluntary hospital to which a medical school is attached, should, so far as possible, be worked in co-operation with the hospital for teaching purposes.

Remainder of Annual Report of Council under heading "(K) Hospitals."

62. **Motion:** That the remainder of the Annual Report of Council under heading "(K) Hospitals" (paragraphs 157–160 page 193) be approved.

(L) Naval and Military.

63. **Motion:** That the Annual Report of Council under heading "(L) Naval and Military" (paragraphs 161–164, page 194) be approved.

(M) Scotland.

64. **Motion:** That the Annual Report of Council under heading "(M) Scotland" (paragraphs 165–175, pages 194–195) be approved.

(N) Ireland.

65. **Motion:** That the Annual Report of Council under heading "(N) Ireland" (paragraphs 176–182, pages 195–196) be approved.

(O) Oversea Branches.

66. **Motion:** That the Annual Report of Council under heading "(O) Oversea Branches" (paragraphs 183–186, page 196) be approved.

GENERAL APPROVAL OF ANNUAL REPORT OF COUNCIL.

67. **Motion:** That, subject to the amendments and other resolutions adopted by the Meeting with reference thereto, the Annual Report of Council be approved as a whole.

By Order,

ALFRED COX,
Medical Secretary.

May 5th, 1915.

ANNUAL REPORT OF COUNCIL, 1914-15.

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NOTE.—*This is not a complete index, but an indication of some of the more important paragraphs in the respective sections.*

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(A) Preliminary.

1. The Representative Body had hardly concluded its consideration of the last Report of Council when with dramatic suddenness the World was involved in general War. One of the minor consequences arising from this was serious dislocation for a time of the activities of the Association.

THE ANNUAL MEETING, 1915.

2. In January representations were made that it would be impossible to organise successfully a Meeting at Cambridge this year, and the Council with much reluctance decided to abandon the holding of the ordinary Scientific Meeting. Thus for the first time in the history of the Association the annual sequence of Meetings in various parts of the Empire is interrupted. It is the earnest hope of the Council, as it will be of every Member, that matters will have so improved by the year 1916, that the Association then will have the pleasure of Meeting at Cambridge under the distinguished Presidency of Sir Clifford Allbutt.

OFFICERS FOR 1915-16.

3. In view of the exceptional circumstances referred to in the foregoing paragraph,

The Council recommends:

Recommendation.—That Sir Alexander Ogston, K.C.V.O., M.D., be re-elected as President of the Association for 1915-16, and Sir Thomas Clifford Allbutt, K.C.B., LL.D., as President-Elect.

THE ANNUAL MEETING, 1914.

4. In the stress of events following the last annual Meeting, members are apt to forget the very successful Meeting at Aberdeen. The thanks of the Association are due to Sir Alexander Ogston, and all the local members who so ably co-operated with him, in providing for the comfort and enjoyment of those who were fortunate enough to attend. The work of the Sections was particularly interesting and discussions of considerable value took place.

OBITUARY.

Roll of Honour.

5. Lieutenant A. K. Armstrong, R.A.M.C., Captain R. S. Ranken, V.C., R.A.M.C.

Dr. Alexander William Harvey Grant was lost in the liner *Falaba*, torpedoed by a German submarine.

The Association also has to deplore the loss of the following members:—

Name.	Offices held in the Association.
Mr. Frank Broadbent... ...	Chairman of the Nottingham Division.
Mr. Thomas Bryant	Ex-President of the Royal College of Surgeons; Vice-President of the Section Surgery, 1895.
Surgeon-General William Maxwell Craig, C.B., R.N.	President of the Naval and Military Section at Aberdeen.
Dr. Thomas Hobbs Crampton	Chairman of the City Division, 1913–14.
Prof. George Dean	Vice-President of Section Pathology, 1912.
Dr. W. F. Dearden	Secretary of the Section Industrial Hygiene at Leicester, 1905.
Mr. Edgar John Donbavand...	Formerly Secretary of the Plymouth Division.
Dr. Alexander W. Woodman Dowding	A former Vice-President of the Gibraltar Branch.
Dr. William Thomas Edwards	President of Association at Cardiff Meeting 1885.
Dr. Wm. Frew	Past-President of the Glasgow and West of Scotland Branch.
Dr. Thomas Druslyn Griffiths	President of the Association at the Swansea Meeting in 1903.
Dr. H. Lewis Jones	A President and Vice-President of Section Radiology and Medical Electricity.
Dr. Joseph Hay Keay... ...	A former Member of Council; a Representative and Member of many Central Committees, as well as of the Council of the Metropolitan Counties Branch.
Mr. Hugh Richard Ker ...	For many years a Member of Council, and a former President of the Metropolitan Counties Branch.
Mr. Charles Barrett Lockwood	Secretary of Section Anatomy and Physiology, 1888; Secretary of Section Anatomy and Histology, 1895.
Dr. Charles Macfie	President of the Lancashire and Cheshire Branch, formerly a Member of Council and of some of its Committees.
Dr. George Ryding Marsh ...	Late Chairman Brighton Division.
Dr. Basil Gordon Morison ...	Representative of the St. Pancras and Islington Division on the Council of the Metropolian Counties Branch.
Dr. Bonner Harris Mumby ...	Member of Council; Secretary of Section Public Health at Bristol in 1894; Secretary of Section Psychology at Portsmouth 1899; Secretary and Representative of the Portsmouth Division; President of the Southern Branch; and Chairman of the Public Health Committee of the Association at the time of his death.
Dr. James Neil...	Vice-President of Section Neurology and Psychological Medicine, 1914.
Dr. Henry O'Neill	A former President of the North of Ireland Branch.
Dr. H. Cooper Rose	A Member of the Council, 1870-77.
Dr. Edward C. Seaton ...	Delivered the Address in Public Medicine at the Bournemouth Meeting, 1891.
Sir Robert Michael Simon ...	President of the Birmingham Branch.
Dr. Herbert Taylor	Representative of the Lambeth Division on the Council of the Metropolitan Counties Branch.
Dr. Charles Vachell	Formerly President of the South Wales and Monmouthshire Branch and of the Cardiff Division.
Prof. C. S. Myers-Ward ...	Secretary of Section Physiology, 1908.
Mr. Percy Warner	A former President of the Walthamstow Division.

Dr. David Moore Alexander, Dr. Robert Reid Alexander, Professor Richard John Anderson, Mr. Samuel Bingham, Dr. David Bradley, Inspector-General William Edward Breton, R.N. Dr. Robert Burnet, Honorable Gamaliel Henry Butler, William Reginald Cazenove, Dr. Auguste Elisée Cordès, Mr. Henry Scott Cribbes, Dr. Hugh Dewar, Dr. William Gilbert Dickinson, Mr. Harry Dingle, Mr. William Cape Doughty, Lieutenant-Colonel Sydney Edward Duncan, R.A.M.C., Lieutenant-Colonel Henry Percival George Elkington, R.A.M.C., Dr. J. D. Farquharson, Mr. Oliver Humphrey Fowler, Lieutenant-Colonel Edalji Palanji Frenchman, I.M.S., C.I.E., Mr. Colin Garner, Dr. John Renwick Gill, Dr. Kenneth C. C. Gray, Dr. Samuel Herbert Habershon, Dr. William Haldane, Dr. Charles A. Hill, Dr. Charles Alexander Hill, Dr. William Henry Hill, Dr. J. Hindhaugh, Dr. Francis Hollinshead, Dr. Henry Irvine-Jones, Mr. Richard Istance, Dr. Charles Jackson, Dr. Oscar Jennings, Colonel William Johnstone, C.B., A.M.S., Lt.-Col. Malcolm Albert Ker, I.M.S., Dr. H. J. Johnstone-Lavis, Mr. Frederick Pryce Jones, Sir Francis Laking, Bart., G.C.V.O., K.C.B., Physician-in-Ordinary to H.M. The King, Mr. Abraham Leach, Dr. James Leslie, Dr. John Fletcher Little, Dr. William Lockerbie, Mr. James F. Lovegrove, Dr. George Lyon, Dr. Richard Burns Macpherson, Dr. Edward Hooper May, Dr. Donald C. A. McAllum, Dr. Oscar S. McGowan, Dr. Archibald Mitchell, Dr. Dugald Mitchell, Mr. James Earl Moreton, Dr. H. Boyes Mugliston, Dr. Robert Douglas Muir, Dr, Charles David Musgrove, Sir Henry William Newton, Dr. Joseph William Noble, Dr. Frederick Laing Norres, Mr. Frederick N. Ozanne, Dr. Thomas Frederick Pearse, Mr. Thomas Henry Pinder, Surgeon-General Sir Annesley Charles Castriot De Renzy, K.C.B., I.M.S., Dr. Elizabeth Ness MacBean Ross, Dr. Edward Irwin Scott, Professor John Halliday Scott, Dr. Robert Burns Scott, Dr. Hugh Thomas Shaw, Dr. John Power Shine, Dr. James Wilkie Smith, Junr., Dr. John Tanner, Lieutenant-Colonel Thomas Thompson, Sir Alfred Edward Thomson, Dr. Walter Lewis Thomson, Sir George Turner, Dr. James W. Wallace, Dr. Richard Unthank Wallace, Dr. Mark Joseph Wakefield, Deputy-Surgeon-General George Alder Watson, Dr. Edward Dennis Whittle, Dr. Alfred Edward Wigg, Dr. George Wilkinson, Captain Augustus Scott Williams, R.A.M.C., Dr. George Wilson, Dr. J. W. Winterburn, Dr. Charles Grey Wotherspoon.

THE MARQUESS OF LONDONDERRY.

6. The Council regrets to report the death of Lord Londonderry, an Honorary Member of the British Medical Association. Lord Londonderry was elected in 1893 at Newcastle-on-Tyne in recognition of the interest he showed in that Meeting and in the Dublin Meeting in 1887 during his office as Viceroy of Ireland.

MEDICAL BENEVOLENCE.

7. During the year 1914 amounts were collected through the Head Office for Medical Benevolence, as follows:—

The Royal Medical Benevolent Fund ...	£549
Epsom College Royal Medical Foundation	£362
Royal Medical Benevolent Fund Society of Ireland	£28

As a result of the War the resources of these Funds are being seriously taxed. The Council realises that heavy demands also are being made on the purse of the individual, but it hopes that even in the present time of stress these deserving charities may receive the generous support of members of the medical profession.

THE CENTRAL STAFF AND THE WAR.

8. Since the outbreak of war twelve members of the staff at headquarters have enlisted :—From the Editorial Department, Mr. Peart ; the Medical Department, Messrs. Leaman (promoted Sergeant) and Scrivener (promoted Corporal) ; the Finance Department, Messrs. Main, Fish, Codner, Pearson, Bishop, Aldridge, Cox (promoted Sergeant-Major A.S.C.), and Griffiths (promoted Corporal) ; and from the Composing Room, Mr. Duke and Mr. Waller. In each case during absence they are allowed half their salaries. Members of the Association will appreciate this evidence of patriotism on the part of their staff, and will join in wishing them a safe and speedy return. The removal of so many hands has thrown additional work on those who have remained behind, but one and all have loyally responded to make good and overcome the difficulties consequent upon the reduction of the staff.

In addition, Dr. Guy Stephen, Sub-Editor of the JOURNAL, has received a temporary commission as Lieutenant-Colonel, R.A.M.C.

BEQUEST TO THE ASSOCIATION.

9. Under the will of the late Dr. Henry Isaac Fotherby, of Reigate, who died in December, 1905, was bequeathed a legacy of £50 payable at the death of his widow. Mrs. Fotherby died in April, 1914, and the Executors have since forwarded a cheque for the £50 less legacy duty. This bequest has been put to a separate fund, and it is hoped other Members of the Association when disposing of their property will bear the Association in mind, so that the fund may in course of time reach substantial proportions.

(B) Finance.

THE FINANCIAL STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1914.

10. The Financial Statement for the year ending 31st December, 1914, includes five months of the War, a time of great anxiety in the administration of the business of the British Medical Association. Notwithstanding the many difficulties encountered, the present Statement shows that the Association has so far come through a period of stress and storm in a manner that calls for congratulation. After making the usual provision for depreciation, and after writing off £1,000 of the amount at which the Premises stood in the Balance Sheet last year there is a surplus of £15,296 on the year's working.

THE BALANCE SHEET.

11. In looking at the Balance Sheet the most satisfactory features are that the outstanding liabilities on the 31st December, 1914, were considerably less than in the previous year, and that the Loan Accounts have been reduced by £14,000. In examining the Assets it will be seen that the amount in respect of Subscriptions in arrear is rather larger than in 1913, but in making the comparison, the influence of the fact that the individual subscription due is £2 2s. as against 25s. must be borne in mind. Members will have noticed that there have been fewer advertisements in the BRITISH MEDICAL JOURNAL throughout the year 1914 ; to this more particular reference will be made later. The amount outstanding on Advertisements is less by some £260. The value of the stock of Paper in hand for printing is £1,100 more ; this increase is due to the policy adopted on the outbreak of War of buying and storing a substantial reserve in anticipation of difficulty in obtaining supplies later, and of the contingency of enhanced prices. The value of the Freehold premises has been written down by £1,000, a prudent provision approved by the last Representative Meeting. The liquid Assets, or Investments, stand in the Balance Sheet as at the close of 1913, but a note is added showing the actual amounts these securities might have fetched if sold on 4th January, 1915, the date of the re-opening of the Stock Exchange.

REVENUE, OR PROFIT AND LOSS ACCOUNT.

12. The total outgoings for the year were £10,000 less than in 1913. The total Revenue from all sources is £9,000 more. That derived from Subscriptions, £43,946, is £10,000 more, a result of the increase of the subscription paid by Members within the United Kingdom from 25s. to £2 2s. The total Receipts from the JOURNAL are £28,106, or just £1,000 less than in 1913, which, in view of the condition of the commercial world during the last five months of 1914, must be considered a satisfactory result.

13. Details of the income and expenditure are set out in the series of abstracts arranged under the customary headings, but Members may be glad to have their attention directed to certain points.

GENERAL ASSOCIATION EXPENSES.

(Abstract A.)

14. The General Association expenses are less by nearly £1,000. Owing to the outbreak of War it was necessary to contribute towards the expenses of the Aberdeen Meeting. The Council also voted one hundred guineas to the Belgian Doctors and Pharmacists' Fund. These are new items of expenditure and should not recur. Members will welcome the substantial decrease in the amount of interest on loans notwithstanding the higher rate prevailing during the last months of the year, and it is justifiable to look forward to a time when this item will disappear altogether from the Balance Sheet. In Legal expenses there is a substantial decrease ; fortunately the Association has not been involved in so much litigation during the past twelve months. A new item in the Schedule is the cost of stamps for subscription receipt books. Previous to 1914, the amount of subscription being under £2, no stamp was necessary, but now each receipt must bear a penny stamp. The total decrease in General Association expenses is £964.

CENTRAL MEETINGS EXPENSES.

(Abstract B.)

15. There is a decline in the amount of railway fares for the Representative Body, as there was only one Meeting in 1914 ; similarly there is a reduction in the expenses charged to the Council, as fewer Meetings were held during the year.

16. From the statement of expenditure incurred by each Committee it will be noticed there is a marked diminution due to decrease in railway fares and printings. The net decrease of Committee expenditure is £665.

CENTRAL PREMISES EXPENSES.

(Abstract C.)

17. These are less by £150. The outlay on general repairs and upkeep has been approximately the same, but fewer alterations in furniture and fittings have been required.

CENTRAL PRINTINGS, POSTAGES AND STATIONERY.

(Abstract D.)

18. The expenditure under these heads has been higher during 1914. The principal increase is in general printing. This is due to the cost of printing the altered By-laws, of circulars to the Divisions and Branches and profession in connection with the Medical Care of Dependants of men serving with the Forces, of lists of non-members, and of rules of Divisions and Branches.

CENTRAL STAFF EXPENSES.

(Abstract E.)

19. In the Finance Department there is a decrease of £386. Other heads of expenditure remain much as in 1913, with the net result of a decrease of £225.

LIBRARY ACCOUNT.

(Abstract F.)

20. The usual provision of £200 for depreciation has been made ; the other expenses correspond closely with former years.

JOURNAL ACCOUNT.

(Abstract G.)

21. On the outbreak of War the production of the JOURNAL caused the Council great anxiety. Up to the end of July the cost of production showed a substantial reduction while the revenue from advertisements up to this date was fully

British Medical Association.

Balance Sheet 31st December, 1914.

Dr. Cr.

LIABILITIES.

1913 £		1914 £ s. d.	£ s. d.
392	To Subscriptions paid in advance	349 13 10	
1,188	,, Advertisements ditto	1,055 18 11	
			1,405 12 9
682	,, Contributions	481 19 5	
67	,, Reporting	14 14 0	
71	,, Engraving	93 14 4	
524	,, Printing Journal	355 9 2	
1,270	,, Paper for Journal	610 17 2	
628	,, Miscellaneous Printing	318 19 6	
106	,, Stationery	85 2 11	
85	,, Repairs	31 16 6	
756	,, Legal Charges	113 10 4	
481	,, Rates and Taxes, Insurance and Electricity	484 11 8	
30	,, Plant and Type...	12 3 3	
7	,, Sundries	8 7 5	
91	,, Library Books	54 3 3	
	,, Cleaning Offices	5 5 0	
			2,670 13 11
	,, Fotherby Bequest Fund		45 0 0
	,, Loans—		
	From Bank—Amount of Loan at December 31st, 1914, on Account of New Building, secured by Deposit		
45,000	of Deeds of Freehold Property	31,500 0 0	
	Central Insurance Defence Fund—Secured by charge on £3,200 Bank of England Stock and £6,400 Midland Railway Consolidated 2½% Perpetual Guaranteed		
10,000	Preferential Stock	9,500 0 0	
600	Central Emergency Fund	600 0 0	
			41,600 0 0
56	,, Exhibition Account Reserve per contra		56 19 7
	,, Total Liabilities		45,778 6 3
	,, Surplus Account –		
93,667	Balance on January 1st, 1914	93,590 15 2	
4,076 Deficit	Balance of Income over Expenditure for 1914 brought from Revenue or Profit and Loss Account ...	15,296 9 9	
93,590	**Balance being total of Excess of Assets over Liabilities** ...		**108,887 4 11**
			£154,665 11 2

ASSETS.

1913 £		1914 £ s. d.	£ s. d.
3,622	By Subscriptions in arrear	4,810 13 10	
3,064	,, Advertisements ,, ...	2,801 12 7	
525	,, Sundry Sales	395 18 7	
202	,, Furniture and Fittings	207 8 2	
2,020	,, Library	1,949 8 10	
1,660	,, Plant and Type	1,229 9 6	
318	,, Paper Stock	1,419 6 8	
439	,, Accrued Rent, &c.	477 12 10	
70	,, Cash at Office	85 10 10	
1,662	,, Cash at Bank	198 3 0	
	,, Fotherby Bequest Fund—Cash at Bank	45 0 0	
	,, Investments—		
130,516	,, Freehold—429, Strand, Agar Street, and Harvey's Buildings ...	130,516 6 9	
	,, Less amount written off	1,000 0 0	
	As at 31st December, 1913.		129,516 6 9
7,504	,, £3,200 Bank of England Stock @ 234½	7,504 0 0	
3,963	,, £6,400 Midland Railway Consolidated 2½% Perpetual Guaranteed Preferential Stock @ 62	3,968 0 0	
	(The Market Value or Minimum Price of the above Investments at January 4th, 1915, was £11,488).		11,472 0 0
49	,, Exhibition Account—Cash at Bank	56 12 2	
7	,, ,, ,, Cash in hand	0 7 5	
			56 19 7
	(The above Assets do not include the unexpended Balances of Capitation Grants held by the various Branches.)		
			£154,665 11 2

Revenue or Profit and Loss Account for the Year ending 31st December, 1914.

		1913.		1914.	
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
General Association Expenses	*Abstract A* ...	6,268 9 0		5,304 7 3	
Central Meeting Expenses	,, *B* ...	6,587 12 11		5,036 6 4	
Central Premises Expenses	,, *C* ...	1,695 8 5		1,555 1 4	
Printing, Stationery, and Postage Expenses ...	,, *D* ...	1,638 18 11		1,729 6 3	
Central Staff Expenses	,, *E* ...	6,250 4 6		6,021 2 5	
Library Account	,, *F* ...	340 17 5		391 1 1	
Journal Account Expenses	,, *G* ...	39,966 0 0		30,979 5 10	
Grant to Irish Committee	,, *H* ...	—		800 0 0	
Capitation Grants to Branches	... ...	4,199 9 11		4,010 4 4	
Subscriptions Written off for Deaths	... ...	113 16 3		112 3 1	
Arrears Written off	... ...	1,480 10 3		1,859 10 6	
		£68,541 7 7		£57,848 8 5	
Written off for Depreciation of Premises ...	—		1,000 0 0		
Library—Written off towards Depreciation ...	200 0 0		200 0 0		
Plant and Type—Ditto ...	500 0 0		500 0 0		
Investments—Ditto	480 0 0		—		
		1,180 0 0		1,700 0 0	
Balance of Income over Expenditure—Carried to Balance Sheet ...		—		15,296 9 9	
		£69,721 7 7		£74,844 18 2	

	1913.	1914.
	£ s. d.	£ s. d.
Subscriptions	33,770 12 0	43,946 11 7
Journal Account, Total Receipts ... ... See *Abstract G* ...	28,932 2 2	28,106 4 6
Interest on Investments	438 13 4	451 3 4
Rent received and accrued	2,497 9 6	2,317 2 4
Returned Scientific Grants	5 19 0	23 16 5
	£65,644 16 0	£74,844 18 2
Excess of Expenditure over Income drawn from Surplus Account ...	4,076 11 7	—
	£69,721 7 7	£74 844 18 2

Abstract H.]

Irish Committee.

Financial Statement for the Year ending 31st December, 1914.

	£ s. d.
By Contribution from Central Funds of the British Medical Association	800 0 0
	£800 0 0

	£ s. d.	£. s. d.
To Rent, Rates, Taxes, Light, Water, &c.	41 16 8	
,, Furniture	66 15 5	
,, Printing and Stationery	9 7 2	
,, Postages	10 18 9	
,, Sundries	1 8 1	
		130 6 1
,, Salary,—Irish Secretary	350 0 0	
,, Clerk	18 0 0	
		368 0 0
,, Travelling Expenses	—	40 15 0
,, Balance	—	260 18 11
		£800 0 0

Dublin, 20th March, 1915.

THOMAS HENNESSY, *Irish Medical Secretary.*

Abstract A.

General Association Expenses.

	1913. £ s. d.	1914. £ s. d.
Auditors' Fee	157 10 0	157 10 0
Award of Gold Medal and Engraving President's Badge	36 14 0	62 15 6
Bank Charges	82 15 4	73 8 0
Donation to Charing Cross Hospital	10 10 0	10 10 0
Contribution to Aberdeen Meeting Expenses	—	178 19 9
Subscription to State Registration of Nurses	—	3 3 0
Subscription to Belgian Doctors' and Pharmacists' Fund	—	105 0 0
Contribution to Heard and Pickthorne Case	—	10 0 0
Grant to Chairman of Council for Expenses attending Australasian Medical Congress	400 0 0	—
Interest on Loans	2.244 9 2	1.835 1 0
Legal Expenses	2,278 16 5	1,795 7 7
New Typewriter Machines, Repairs and Hire	18 8 9	10 15 0
Office—Petty Cash	164 1 7	129 14 11
Parliamentary Papers	20 15 10	10 16 3
Research Scholarships	537 10 0	487 10 0
Scientific Grants	249 0 0	325 0 0
Stamping Subscription Receipt Books	—	61 13 4
Sundries	67 17 11	47 2 11
	£6,268 9 0	£5,304 7 3

Abstract B.

Central Meetings Expenses.

	1913. £ s. d.	£ s. d.	1914. £ s. d.	£ s. d.
ANNUAL MEETING—*Daily Journal*	151 3 0		152 15 0	
" " Section Expenses	66 4 10		29 0 4	
		217 7 10		181 15 4
REPRESENTATIVE MEETINGS—				
Railway Fares	1,149 18 11		864 0 8	
Printing	587 1 11		496 12 4	
Sundries	163 17 4		30 19 6	
		1,900 18 2		1,391 12 6
COUNCIL—				
Railway Fares	644 16 10		347 11 3	
Printings	503 9 8		499 19 6	
Reporting	40 18 6		—	
Sundries	25 7 0		30 7 1	
		1,214 12 0		877 17 10
Railway Fares, Secretaries' Conference		96 17 11		142 0 9
		3,429 15 11		2,893 6 5

Committees.

Arrangements Committee—			
Railway Fares	58 12 2		—
Printings	10 9 0		
		69 1 2	8 2 0
Central Ethical Committee—			
Railway Fares	146 17 1		169 5 8
Printings	119 1 6		71 5 6
Fee in General Medical Council Case	—		16 5 0
		265 18 7	256 16 2
Dominions Committee—			
Railway Fares	9 12 2		3 19 0
Printings	7 18 0		2 17 6
		17 10 2	6 16 6
Election Returns Committee—			
Printings	—	2 16 0	—	16 2 0
Emergency Committee—			
Railway Fares	—		—	1 11 3
Finance Committee—			
Railway Fares	82 17 8		74 3 4
Printings	74 12 0		71 2 3
		157 9 8	145 5 7
Fractures Committee—			
Fees to Townrow and Bromley	—	10 10 0	—	—
Future Developments Committee—			
Railway Fares	—		67 1 7
Printings	—		14 14 6
			81 16 1
Carried forward		£3,953 1 6		£3,109 16 0

Committees—*continued.*

	1913. £ s. d.	£ s. d.	1914. £ s. d.	£ s. d.
Brought forward		3,953 1 6		3,109 16 0
Hospitals Committee—				
Railway Fares	6 3 7		44 9 7	
Printings	2 10 0		3 17 6	
		8 13 7		48 7 1
Insurance Act Committee—				
Copying and Assistance	55 4 11		—	
Printings	694 13 3		200 16 1	
Postages	68 19 9		—	
Railway Fares	639 3 6		505 19 3	
Sundries	—		6 15 0	
		1,458 1 5		713 10 4
Irish Committee—				
Railway Fares	208 5 4		60 16 4	
Printings	7 10 0		7 1 6	
		215 15 4		67 17 10
Journal Committee—				
Railway Fares	31 3 10		27 0 5	
Printings	37 14 5		17 13 6	
		68 18 3		44 13 11
Medico-Political Committee—				
Report *re* Patent Medicines, &c.	11 17 0		—	
Railway Fares	83 1 9		211 9 1	
Printings	52 16 6		103 9 0	
		147 15 3		317 13 1
Naval and Military Committee—				
Railway Fares	5 0 0		10 17 8	
Printings	9 2 0		17 18 0	
		14 2 0		28 15 8
Non-Panel Committee—				
Railway Fares	6 13 6		77 4 9	
Printings	8 3 6		11 6 6	
		14 17 0		88 11 3
Organisation Committee—				
Railway Fares	95 8 11		92 13 3	
Printings	198 13 3		158 6 3	
		294 2 2		250 19 6
Public Health Committee—				
Railway Fares	46 13 8		53 4 9	
Printings	18 14 6		21 11 0	
		65 8 2		74 15 9
Science Committee—				
Railway Fares	21 13 0		32 11 10	
Printings	30 0 4		14 12 6	
		51 13 4		47 4 4
Scottish Committee—				
Railway Fares	11 0 3		—	
Printings	12 11 6		16 13 6	
Special Grant *re* Insurance Work	200 0 0		200 0 0	
		223 11 9		216 13 6
Special Enquiry Committee—				
Railway Fares	24 18 9		12 19 9	
Printings	2 15 0		6 17 6	
Reporting	5 17 6		—	
		33 11 3		19 17 3
Special Fund Committee—				
Railway Fares	—	—	38 8 4	
Printings	—	—	6 13 6	
				45 6 10
Therapeutic Committee—				
Railway Fares	8 1 11		5 10 3	
Special Report, &c.	30 0 0		—	
		38 1 11		5 10 3
Welsh Committee—				
Railway Fares	—		5 4 9	
Printing	—		1 4 0	
				6 8 9
		£6,587 12 11		£5,036 6 4

Abstract C.]

Central Premises Expenses.

	1913.	1914.
	£ s. d.	£ s. d.
Cleaning Offices	336 7 4	334 8 3
Coals, Coke and Wood	108 6 7	88 3 0
General Repairs and Upkeep	223 3 2	117 18 2
Rates, Taxes, Insurance, and Electricity	1,027 11 4	1,014 11 11
	£1,695 8 5	£1,555 1 4

Abstract D.]

Central Printing, Stationery and Postage Expenses.

	1913.	1914.
	£ s. d.	£ s. d.
General Printing	433 6 8	688 14 1
Office—General Postage :—		
Finance Department	420 0 4	355 3 0
Medical Department	219 10 6	181 0 0
Stationery	566 1 5	501 9 2
	£1,638 18 11	£1,729 6 3

Abstract E.]

Central Staff Expenses.

	1913.		1914.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Financial Secretary and Business Manager	900 0 0		900 0 0	
Assistant Secretary (Late)	300 0 0		—	
Clerical Staff, General Association, Journal, Subscription and Advertisement Departments	3,105 13 6		3,019 0 4	
		4,305 13 6		3,919 0 4
Less Proportion of Salaries debited to Journal Account		2,107 8 0		1,944 1 5
		2,198 5 6		1,974 18 11
Medical Secretary	850 0 0		900 0 0	
Deputy Medical Secretary	600 0 0		625 0 0	
Assistant Medical Secretary	350 0 0		350 0 0	
Clerical Staff, Medical Department	1,614 15 3		1,539 8 1	
		3,414 15 3		3,414 8 1
TRAVELLING EXPENSES :—				
Finance Department		75 8 3		88 16 4
Medical Department		184 15 7		176 12 10
Contribution to Office Staff Superannuation Fund		300 0 0		300 0 0
Insurance (Fidelity Guarantee)		76 19 11		66 6 3
		£6,250 4 6		£6,021 2 5

Abstract F.]

Library Account.

1914.		£ s. d.
Jan. 1.	To Balance	2,020 3 2
Dec. 31.	„ Purchase of Books	91 1 11
	„ Binding Books	38 3 9
	„ Librarian's Salary	300 0 0
	„ Librarian's Clerk's Salary	84 18 0
	„ Printing and Postage of Circulars, &c.	6 3 1
		£2,540 9 11

1914.		£ s. d.	£ s. d.
Dec. 31.	By Librarian's Salary	300 0 0	
	„ Librarian's Clerk's Salary	84 18 0	
	„ Printing and Posting of Circulars, &c.	6 3 1	
			391 1 1
	Amount written off for Depreciation		200 0 0
	Balance carried to Balance Sheet		1,949 8 10
			£2,540 9 11

Abstract G.]

JOURNAL ACCOUNT.

Income and Expenditure Account for the year ending 31st December, 1914.

		1913. £ s. d.	1913. £ s. d.	1914. £ s. d.	1914. £ s. d.
	EDITORIAL.				
Salaries:—	Editor	1,000 0 0		1 000 0 0	
„	Assistant Editor	750 0 0		750 0 0	
„	„ „ Temporary Assistance	20 9 0		—	
„	Sub-Editor	400 0 0		400 0 0	
„	Clerical Staff	698 10 9		724 15 6	
Contributions:—	Editor	332 18 0		191 13 6	
„	Assistant Editor	261 0 6		152 15 0	
„	Sub-Editor	178 17 0		242 14 0	
„	Editor's Clerk	52 15 0		51 11 6	
„	Medical Secretary	39 16 0		14 11 0	
„	(General) and Reporting	2,716 3 11		2,066 7 8	
Engraving		199 12 3		151 7 3	
Legal Charges		48 16 0		12 18 2	
Postage		65 0 0		61 5 0	
Analyses		14 3 6		16 13 0	
Travelling, Telephone, Parliamentary Papers, and Sundries		137 15 10		132 16 6	
Advance Slips circulated to the Press		10 14 5		7 17 3	
Compiling Indices for JOURNAL and SUPPLEMENT		126 1 0		68 3 6	
Editorial Petty Cash		30 18 5		25 1 1	
			7,093 11 7		6 070 14 11
	MANAGERIAL.				
JOURNAL—Compositors' Wages, Machining, &c.		9,434 1 9		7,664 13 9	
„ Paper		10,816 18 8		7,343 9 11	
SUPPLEMENT—Compositors' Wages, Machining, &c.		1,638 0 0		774 17 6	
„ Paper		1,687 14 0		956 9 6	
Postage for Dispatch of JOURNAL		5,725 14 1		4,641 9 5	
Address Bands for JOURNAL		605 13 7		822 16 3	
Proportion of Manager's and Clerks' Salaries		2,107 8 0		1,944 1 5	
General Postage		172 5 2		167 15 7	
Printings		107 7 9		125 1 1	
Reprints		163 4 5		153 1 1	
"Secret Remedies"		156 0 0		96 4 5	
"More Secret Remedies"		20 3 6		—	
Stationery (Ledgers, Letter Books, &c.)		136 10 6		101 6 3	
Travelling		12 2 0		22 6 1	
Insurance (Workman's Compensation, &c.)		27 9 7		24 17 6	
Sundries		61 15 5		70 1 2	
			32,872 8 5		21,903 10 11
			£39,966 0 0		£30,979 5 10

	1913. £ s. d.	1913. £ s. d.	1914. £ s. d.	1914. £ s. d.
Advertisements	24,169 4 6		23,581 10 11	
Sundry Sales—Journals	2,893 3 11		2,908 2 4	
„ Reading and Binding Covers, &c.	73 14 5		60 16 7	
„ Reprints	244 18 0		233 0 5	
„ "Secret Remedies"	156 16 10		135 9 9	
"More Secret Remedies"	162 2 0		239 5 10	
Sale of Waste, &c.	11 15 8		10 5 7	
Discounts on Machining, Paper, &c.	1,220 6 10		937 13 1	
		28,932 2 2		23,103 4 6
Balance from Subscriptions for the cost of production and issue of the JOURNAL		11,033 17 10		2,873 1 4
		£39,966 0 0		£30,979 5 10

TRUST FUNDS FOR WHICH THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION ACT AS TRUSTEES.

Office Staff Superannuation Fund.

Account for the Year ending December 31st, 1914.

	£ s. d.	£ s. d.
To Balance brought over from 1913		4,918 11 1
,, Payments by Members of Staff	112 17 8	
,, Amounts Refunded	8 1 8	
		104 16 0
,, Contribution from General Funds		300 0 0
,, Interest on Investments and Deposit Account		178 12 8
		£5,501 19 9

		£ s. d.
	INVESTMENTS—As at 31st December, 1913, or cost—	
By	£600 Cape of Good Hope 3 per cent. Stock @ 79	471 0 0
,,	£100 Bristol Corporation 3½ per cent. Redeemable Stock @ 89½	89 10 0
,,	£1,150 Midland Railway Consolidated 2½ per cent. Perpetual Guaranteed Preferential Stock @ 62	713 0 0
,,	£100 Midland Railway 2½ per cent. Debenture Stock @ 62½	62 10 0
,,	£200 New Zealand 4 per cent. 1929 Stock @ 99	198 0 0
,,	£400 New Zealand 3 per cent. Inscribed Stock @ 78	312 0 0
,,	£200 Furness Railway Consolidated 4 per cent. Preferential Stock 1881 @ 84 ...	168 0 0
,,	£250 Bank of England Stock @ 234½	586 5 0
,,	£400 India Stock 3 per cent. @ 72	288 0 0
,,	£450 Stockton-on-Tees Corporation 3 per cent. Redeemable Stock @ 82 ...	369 0 0
,,	£900 North Eastern Railway Company 3 per cent. Debenture Stock @ 74¼ ...	668 5 0
,,	£600 Lancashire and Yorkshire Railway 3 per cent. Consolidated Preferential Stock @ 71¾	430 10 0
,,	£700 London and North Western Railway 3 per cent. Perpetual Debenture Stock @ 78½	555 4 6
,,	£100 Furness Railway 4 per cent. Preferential Stock 1881 @ 80	80 0 0
,,	£700 War Loan @ 95	661 0 2
		£5,655 4 8
	Less amount due to Bank	153 4 11
		£5,501 19 9

(The Market Value or Minimum Price of the above Investments at January 4th, 1915, was £5,585 13 9.)

Francis Fowke Bequest.

£700 Midland Railway Consolidated 2½% Perpetual Guaranteed Preferential Stock.

1914.		£ s. d.
Jan. 1.	To Balance brought over from 1913	80 5 5
	,, Interest	17 19 6
		£98 4 11

1914.		£ s. d.
Dec. 31.	By Balance, Cash at Bank, Current and Deposit Accounts	98 4 11
		£98 4 11

Stewart Fund.

£579 Caledonian Railway 4 per cent. Debenture Stock.

		£ s. d.			£ s. d.
1914. Jan. 1.	To Balance brought over from 1913	36 15 6	1914. Dec. 31.	By Balance, Cash at Bank, Current and Deposit Accounts	58 18 9
Dec. 31.	,, Interest	22 3 3			
		£58 18 9			£58 18 9

Middlemore Fund.

£666 13s. 4d. North British Railway 3 per cent. Debenture Stock.

		£ s. d.			£ s. d.
1914. Jan. 1.	To Balance brought over from 1913	80 6 1	1914. Dec. 31.	By Advertising	1 15 6
Dec. 31.	,, Interest	20 2 3		,, Adjudicators' Fees	10 10 0
				,, Balance, Cash at Bank, Current and Deposit Accounts	88 2 10
		£100 8 4			£100 8 4

Having examined the Balance Sheet, dated 31st December, 1914, and Accounts with the books and vouchers of the Association, except as regards the Irish Committee Account, and having received all the information and explanations we have required, we report that the Balance Sheet is, in our opinion, properly drawn up so as to exhibit a true and correct view of the state of the affairs of the Association according to the best of our information and the explanations given to us and as shown by the books of the Association.

We have verified the Investments of the Association on General Account and on account of the Trust Funds shown and of the Office Staff Superannuation Fund, and we have verified the possession by the Bankers of the Association of the Deeds of the Freehold Property.

EDWIN RAYNER,
Treasurer.

GUY ELLISTON,
Financial Secretary and Business Manager.

PRICE, WATERHOUSE & CO.,
3, Frederick's Place, Old Jewry, London, E.C.,
7th April, 1915.

Central Emergency Fund.

FOR WHICH THE MEDICO-POLITICAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION ACT AS TRUSTEES.

Receipts and Payments for the Year ending 31st December, 1914.

1914.		£ s. d.	£ s. d.	£ s. d.
Jan. 1.	To Balance—			
	,, Cash at Bank	16 17 3		
	,, Deposit Account	100 0 0		
			116 17 3	
	Loan to British Medical Association		600 0 0	
				716 17 3
Dec. 31.	,, Subscriptions and Donations from 1st January to 31st December		101 14 6	
	,, Interest...		27 0 2	
				128 14 8
				£845 11 11

1914.		£ s. d.	£ s. d.	£ s. d.
Dec. 31.	By Dr. M. G. McElligott, Wigan			22 1 6
	,, Balance Cash with Bankers—Current Account		23 10 5	
	,, ,, ,, Deposit ,, ...		200 0 0	
			223 10 5	
	,, British Medical Association Loan Account		600 0 0	
				823 10 5
				£845 11 11

Remittances received on behalf of Medical Benevolent Funds for the Year ending 31st December, 1914.

Royal Medical Benevolent Fund.

1914.		£ s. d.	£ s. d.
Jan. 1.	To Balance Cash at Bank	0 15 0	
Dec. 31.	,, Subscriptions and Donations	550 3 0	
			550 18 0
			£550 18 0

1914.		£ s. d.	£ s. d.
Dec. 31.	By Cheques sent to Treasurer	549 8 0	
			549 8 0
	,, Balance Cash at Bank—Current Account		1 10 0
			£550 18 0

Royal Medical Foundation of Epsom College.

1914.		£ s. d.
Dec. 31.	To Subscriptions and Donations	365 4 6

1914.		£ s. d.	£ s. d.
Dec. 31.	By Cheques sent to Treasurer	362 12 6	
	,, Balance Cash at Bank—Current Account	2 12 0	
			£365 4 6

Royal Medical Benevolent Fund Society of Ireland.

1914.		£ s. d.	£ s. d.
Jan. 1.	To Balance Cash at Bank	0 15 0	
Dec. 31.	,, Subscriptions and Donations	28 1 0	
			28 16 0
			£28 16 0

1914.		£ s. d.	£ s. d.
Dec. 31.	By Cheques sent to Treasurer	28 16 0	
			28 16 0
			£28 16 0

We have compared the above four accounts of Receipts and Payments with the Books and Vouchers of the Association relating thereto and find them correct. We have verified the Balances held at the 31st December, 1914.

PRICE, WATERHOUSE & CO.,
3, Frederick's Place, Old Jewry, London, E.C.,
7th April, 1915.

EDWIN RAYNER,
Treasurer.

GUY ELLISTON,
Financial Secretary and Business Manager.

Central Insurance Defence Fund.

FOR WHICH THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION ACT AS TRUSTEES.

Account of Receipts and Payments for year ending 31st December, 1914.

ADMINISTRATION ACCOUNT.

RECEIPTS.	£ s. d.	£ s. d.	PAYMENTS.	£ s. d.	£ s. d.
To Balance from 1913 ...	...	687 19 2	By Provisional and Local Medical Committee's Expenses ...	142 14 9	
,, Subscriptions ...	30 0 6		,, Sundry Grants ...	134 2 10	
,, Interest ...	0 13 0		,, Legal Expenses ...	161 5 10	
		30 13 6	,, Travelling Expenses, &c.	12 6 0	
			,, Cheque Book ...	0 2 1	
					450 11 6
			,, Balance, being amount unexpended on Administration Account ...	...	268 1 2
		£718 12 8			£718 12 8

COMPENSATION ACCOUNT.

RECEIPTS.	£ s. d.	£ s. d.	PAYMENTS.	£ s. d.	£ s. d.
To Balance from 1913 ...	...	12,001 5 2	By Grant to Members	2,418 0 0	
,, Repayment of Loans	125 0 0		,, Loans to Members	630 0 0	
,, Subscriptions ...	358 6 8				3,048 0 0
,, Interest ...	397 14 10		,, Balance, being money unexpended on Compensation Account ...	...	9,844 6 8
		891 1 6			
		£12,892 6 8			£12,892 6 8

STATEMENT OF AVAILABLE FUNDS.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Unexpended Balances, 31st December, 1914—			By Cash with Bankers—		
,, Administration Account	268 1 2		,, Current Account	212 7 10	
,, Compensation Account	9,844 6 8		,, Deposit Account	400 0 0	
		10,112 7 10			612 7 10
			British Medical Association Loan Account (secured by Deposit of Investments) ...	...	9,500 0 0
		£10,112 7 10			£10,112 7 10

We have compared the above account of receipts and payments with the books and vouchers of the Fund and find it correct. We have verified the Bank Balances at the 31st December, 1914, but we have not audited the accounts of the Local Committees who have collected contributions for the Fund.

3, FREDERICK'S PLACE, OLD JEWRY, LONDON, E.C., *7th April, 1915.*

PRICE, WATERHOUSE & CO.

maintained though 400 fewer pages of advertisements were printed. On the commencement of hostilities the Association had to face the contingency of serious loss of revenue from advertisements, combined with an immediate advance in the price of paper and the probability of further advances. All advertisements from alien enemies were turned out, and other traders generally restricted their commitments. It thus became apparent immediately that the Association would have to curtail the amount of reading matter; this was done without, it is believed, any serious diminution in the interest of the weekly issues. The actual figures are best illustrated in the following table:—

22. COMPARISON OF PAGES 1913 AND 1914.

	Literary.	Supplement.	Advertisements.
Year 1913 ...	3356	1296	3956
Year 1914 ...	2780	900	3036
Decrease 1914 ...	576 or 17 %	396 or 23 %	920 or 23 %
	972—20 %		920—23 %

This substantial curtailment has resulted in a saving as compared with 1913 of £8,760 in printing, paper, postages and contributions. The total expenses debited against the Journal Account are practically £9,000 down.

Turning to the Revenue, it is to be noted that from January, 1914, the rates for advertising were raised from £8 to £10 a page. This alteration was proving a striking financial success up to the end of July; the revenue was fully maintained, and the fact that 400 fewer pages were printed meant considerable economy in cost of production. On the whole year—a period which includes five months of the War—the receipts from advertisements show a decline of rather under £800, but as 920 fewer pages were printed, the shrinkage in receipts was more than made good by the saving on paper and printing. But for the increase in the advertisement rates, the decrease in revenue from this source must have been very serious. When other newspaper proprietors are having to deplore serious shrinkage of revenue, combined with increased working expenses, the figures now presented should be a cause of congratulation to Members of the Association.

The sundry sales of JOURNALS show a slight increase; though the amount is small, the continued advance in these outside sales makes them a substantial asset and source of revenue.

The books, *Secret Remedies* and *More Secret Remedies*, still find a steady market, but while the War occupies so much attention it has not been deemed wise to attempt to push the sales.

Discounts on machining, paper, etc., naturally show a decline as less money has been spent on these items.

Owing to the reduction in the size of the JOURNAL and Supplement, and in the number of advertisement pages, the revenue from advertisements, sales, etc., has been such that it has been necessary to take only £2,873 from the subscription revenue of £43,946 to meet the whole cost of production.

CONCLUSION.

23. In 1913 there was a deficit on the year of £4,076. In 1914 this deficit is converted into a surplus of £15,309, and in addition £1,000 has been written off for depreciation of the Premises. It will be remembered that in 1912, owing to the Insurance Act campaign, the Association had to draw upon its reserve to the extent of £8,834, and again in 1913 to the extent of £4,076, that is to say, in the two years it encroached upon its resources to the extent of £13,000 to meet the burdens placed upon it in connection with the controversy as to the Insurance Act. As a result of the working of 1914, this sum has been recouped and nearly £3,300 in addition is added to the surplus, which now stands at £108,900.

The Association has therefore materially strengthened its financial position, and this must prove a valuable source of strength to it should it have to engage in any controversy on anything like the scale of that due to the passing into law of the National Insurance Act.

Apportionment of Member's Subscription.

24. The following table shows how a Member's subscription has been apportioned towards defraying the expenses of the Association during the year ending December 31st, 1914:—

	£	£ s. d.
General Association Expenses ...	5,304	0 5 3
Central Meeting Expenses	5,086	0 5 0
Central Premises Expenses ...	1,555	0 1 8
Printing, Stationery, and Postages	1,729	0 1 8
Central Staff Expenses	6,021	0 5 7
Library Account	391	0 0 3
"Journal" and Supplement ...	2,873	0 2 7
Subscriptions Written off	1,971	0 1 10
Written off Premises, Investments, Plant, and Type ...	1,700	0 1 6
Capitation Grants	4,010	0 3 6
Grant to Irish Committee	800	0 0 9
Balance to Reserve	15,296	0 15 0
		2 4 7
Less amount per Member derived from Investments, Rents, &c.		0 2 7
		£2 2 0

Estimate of Expenditure and Receipts for 1915.

25. To attempt to estimate the probable Expenditure and Receipts for the current year presents extraordinary difficulties owing to the extreme uncertainty of the general outlook.

EXPENDITURE.

	£
General Association Expenses	4,200
Central Meeting Expenses	4,400
Central Premises Expenses	1,600
Printing, Stationery and Postages Expenses	1,600
Central Staff Expenses	7,600
Library	400
"Journal" Account	28,000
Capitation Grants	3,500
Arrears of Subscriptions	1,800
Reduction of Premises Account	1,000
Depreciation	700
Estimated total expenditure, 1915	£54,800
Estimated surplus, 1915	8,850
	£63,650

RECEIPTS.

	£
Subscriptions	37,000
Investments and Rents	2,650
Advertisements	20,000
Sundry Sales of "Journals," etc.	3,300
Discounts on Paper, &c.	700
	£63,650

(C) The Association and the War.

26. The Council took prompt steps to convey to the Prime Minister, immediately after the Declaration of War, the desire of the Association to place its machinery and its JOURNAL at the disposal of the authorities for any useful purpose the Government could suggest, and the Council is glad to know that its offers of service, and what it has been able to do, have been found useful and are thoroughly appreciated by the Government.

At the request of the Government the Chairman of Council nominated Dr. F. J. Smith and Prof. A. Cushny (representing physicians with special knowledge of therapeutic matters), and Drs. E. R. Fothergill and B. A. Richmond (members of the Drug Tariff Sub-Committee of the Association) and the Medical Secretary, to act on a Committee to assist the Government in advising practitioners how to deal with the shortage of drugs caused by the War.

The rest of the services the Association has been able to render in special connection with the War may be described under three heads, namely:—

(i.) the organisation of medical attendance upon dependants of men serving with the colours;

(ii.) organising the medical profession to meet the medical needs of the Forces in addition to those of the civil population;

(iii.) assisting the members of the Belgian medical profession, whether remaining in their own country or as refugees in the United Kingdom.

In addition the Association was glad to have the opportunity of offering the services of a number of its clerical staff in assisting in the first stages of the organisation of the Prince of Wales's Fund.

(i.) Organisation of Medical Attendance upon Dependants of Men serving with the Colours.

27. Within a few weeks of the outbreak of the War, the Council noted with gratification that the profession in many parts of the country were generously offering to give their services gratuitously to dependants of men serving with the colours. The Pharmaceutical Society of Great Britain having noted this fact, and their members having expressed a desire to assist in the work, approached the Association on the subject. It was seen that the conditions under which gratuitous attendance were being given varied to a considerable extent in different parts of the country, and that much trouble might be saved eventually if the matter were placed on a properly organised and national basis. The Association, together with the Pharmaceutical Society, therefore approached the Government and offered their services jointly in bringing a national scheme into operation. The Government gratefully accepted the offer and appointed a Committee to deal with the whole subject, acting under the Central Cabinet Committee for the Prevention and Relief of Distress. Both the Association and the Pharmaceutical Society were given representation on the Committee, of which the Duke of Devonshire was appointed Chairman. As a result, arrangements were made throughout the Kingdom for the provision of medical attendance, medicines, etc., gratuitously to those dependants of men serving with the colours whose circumstances, in the opinion of the Local Representative Committees, or some body deputed by them, justified such provision. As the doctors and pharmacists gave their services free, the only expense to be met was the net cost of drugs and appliances, which the Prince of Wales's Fund promised to defray. The scheme included as an essential condition that representatives of both doctors and chemists should be placed on the local Committees administering the scheme. The Council is glad to report that, generally speaking, the arrangements have worked well and the call on the services of doctors and pharmacists and on the Prince of Wales's Fund has been much less than was anticipated. The Council desires to place on record its thanks to the Pharmaceutical Society of Great Britain and its members, to the Honorary Secretaries of Divisions, but for whose efforts the scheme could not have been put into operation, and to the members of the profession generally who most willingly volunteered to add to their ordinary duties an uncertain amount of gratuitous work.

(ii.) Organising the Medical Profession to meet the Medical Needs of the Forces in addition to those of the Civil Population.

28. On August 7th a circular was issued to the Divisions calling attention to a leading article in the JOURNAL of August 8th, headed "The War: Some Immediate Duties," and asking that the Divisions should at once take the lead in making arrangements in their areas to deal with the work of those practitioners who were called away on military duties, and the Council was glad to find that action of the kind was promptly taken in a large number of areas.

29. In Scotland, largely on the initiative of the Scottish Committee, the problem, which was a more manageable one as it dealt with a much smaller population, was undertaken by the Scottish Medical Service Emergency Committee, and that Committee issued a very valuable statement which laid down the lines on which the difficulties might be overcome with as little dislocation of ordinary work as possible. Owing to the increasing demand of the War Office for medical officers the problem grew more acute and more complicated, and the Council therefore, in January last, instituted a Special Committee consisting of the Chairmen of the Standing Committees of the Association, to consider how best to increase the efficiency of the medical service of the community, and to economise the resources of the profession. That Committee at once (Supplement, February 13th) asked the Divisions and Branches to give immediate attention to the question of the difficulties caused, or likely to arise, owing to the shortage of doctors for the treatment of civilians, and how to make arrangements locally for the treatment of patients of doctors absent on naval or military duty, where this had not already been done. The special notice of Divisions and Branches was drawn to the scheme, above referred to, of the Scottish Medical Service Emergency Committee.

30. Throughout the whole period of the War the Head Office and the Editor have been in close touch with the medical authorities at the War Office, and this has enabled the Association to be of considerable use to many individual members in clearing up difficulties and in getting and transmitting information which only the War Office could supply.

31. In the BRITISH MEDICAL JOURNAL of March 13th, the Director-General of the Army Medical Service made an urgent appeal for more medical men to take up temporary commissions in the R.A.M.C. and this aroused so much attention and elicited so much correspondence from members of the profession that the Special Committee arranged for a conference on April 1st with Sir Alfred Keogh. A full report of the conference appeared in the JOURNAL of April 10th, 1915 (page 646). At that conference Sir Alfred Keogh asked for the co-operation of the Association in providing for the needs of the Army, in the way of both whole-time and part-time officers. As a result the Special Committee issued on April 8th to Divisions and Branches an urgent request that each Division should hold a meeting at the earliest possible date (i.) to devise means by which those local men who were willing to apply for commissions might be set free for medical duty and their practices and general interests taken care of in their absence, and (ii.) to make arrangements, after consultation with the local military authorities, whereby the other local practitioners might be able to undertake on a part-time basis as much as possible of the local military medical service. The Council is glad to report that the response on the part of most of the Divisions was immediate, and already there is evidence that as a result of the meetings which have been held a considerable number of practitioners have been or will be enabled to offer themselves for commissions, and arrangements are well in hand for the carrying out of some of the military medical work by the local doctors. The Council would urge most strongly that every Division which has not yet taken action will do so at once, as in its opinion the medical requirements of the Forces are paramount.

(iii.) Assisting the Members of the Belgian Medical Profession.

32. Early in November, 1914, at the instance of a medical representative sent from Belgium for the purpose (Professor Jacobs), a movement was made to assist, in any way found possible, the Belgian doctors and pharmacists, whether in Belgium or refugees in this country, the plight of many of whom and of their wives and families, was deplorable. A preliminary meeting was called by the Editors of the *Lancet* and the BRITISH MEDICAL JOURNAL, and as a result the Belgian Doctors and Pharmacists' Relief Fund was formed and a strong Committee appointed, including representatives of the Medical Faculties of the Universities, the Medical and Pharmaceutical Corporations, the General Medical Council, and the British Medical Association.

The objects of the Fund were (i.) to distribute what immediate present help it could, (ii.) to collect funds for the assistance of Belgian medical practitioners and pharmacists in the future. Appeals for financial assistance were made to the members of the two professions in this country, and the representatives of the Association on the Committee undertook to urge the Divisions to take what steps they could to collect subscriptions from the local profession. A similar appeal was made by the Pharmaceutical Society through its local branches to the members of that profession. At the present time (April 14th) the Fund amounts to just over £10,000, and the Council is glad to note that a considerable amount has been collected by some 40 Divisions and Branches of the Association. The activities of the Divisions and Branches have not been so marked as they doubtless would have been had there not been a certain amount of overlapping, due to the fact that a general appeal was issued and that certain local Committees were established. But of course the great object is to raise the money, the means being quite a secondary matter. The Council would most earnestly ask those Divisions and Branches in which no organised attempt has been made to collect for the Fund, to do what they can for an object which should appeal with great force to every British medical practitioner.

33. The Council is also glad to state that in various ways it has been able to give assistance to individual Belgian medical refugees, in the way of putting them into touch with members of the Association and profession who generously offered hospitality, and also in assisting Belgian doctors to obtain work.

(D) Organisation.

34. MEMBERSHIP.

1913.		1914.	
New Members	1,058	New Members	794
Resigned	2,675	Resigned	2,318
Died	255	Died	238
Removed in arrears	315	Removed in arrears	407
Expelled	5	Expelled	6
	3,250		2,969
Decrease	2,192	Decrease	2,175

Membership, December 31st, 1913	...	24,376
Membership, December 31st, 1914	...	22,201

ALTERATIONS OF ARTICLES.

35. Having considered the instructions of the Annual Representative Meeting, 1914, for alteration of certain Articles of the Association, the Council has arranged that the first Extraordinary General Meeting necessary to carry out these alterations shall be held immediately after the Annual General Meeting in London on July 24th, and the second in London on Wednesday, August 11th, at 2 p.m.

ELIGIBILITY FOR MEMBERSHIP.

36. The Council submits a Special Report (*see* Appendix I, page 197) on the question of eligibility for membership raised by the late Natal Branch and referred to the Council by the Annual Representative Meeting, 1913.

The Council recommends :—

Recommendation A.—That on the information in its possession, including the replies on the subject received from the Oversea bodies, the Representative Body is of opinion that no change such as was contemplated by the motion of the late Natal Branch contained in Minute 306 of the A.R.M., 1913, should be made in the Articles and By laws of the Association as to eligibility for membership, other than the alteration of Article 4 already decided upon by Minute 68 of the A.R.M,, 1914.

QUESTION OF ASSOCIATION BECOMING ALSO A FEDERATION FOR OTHER MEDICAL BODIES.

37. The Council has considered Minute 81 of the Annual Representative Meeting, 1914, and submits a Special Report on the subject (*see* Appendix II., page 198).

The Council recommends :—

Recommendation B.—That the Representative Body is of opinion, on the legal advice the Association has formerly received, that it is impossible for the Association so to extend its objects as to become in any legal manner a federation of Medical Societies.

Recommendation C.—That the Representative Body would welcome any constitutional method whereby the Association, without interference with its own self-government, could come into closer relationship with other societies formed to safeguard the interests of any sections of the medical profession.

Recommendation D.—That the Representative Body approves the principle of the Council adding to any Standing Committee of the Association a member of the Association nominated by any Society, formed to safeguard the interests of any section of the profession, which desires to become more closely associated with the Association and to work in co-operation with it, and instructs the Council to prepare drafts of the necessary alterations in the By-laws to carry this into effect.

Recommendation E.—That the Council be instructed to call into conference with itself certain other societies referred to in Recommendation C, with a view to determining how it might be possible to come into closer relationship with such societies, and to report to the next Annual Representative Meeting with drafts of the necessary alterations in the Articles and By-laws, if any.

GROUPING OF BRANCHES FOR ELECTION OF COUNCIL, 1916-17.

(a) *Home Branches.*

38. The Council recommends :—

Recommendation F.—That the Home Branches be grouped for election of 24 members of Council for 1916-17, under By-law 46 (a), in the same way as for 1915-16, except that the new Wiltshire Branch be grouped with the Dorset and West Hants and South-Western Branches.

(For the 1915-16 grouping of the Home Branches *see* Appendix III., page 201).

(b) *Oversea Branches.*

39. The Council recommends :—

Recommendation G.—That the Oversea Branches be grouped for election of 7 members of Council for 1916-17, under By-law 46 (b), in the same way as for 1915-16, except that the new Hyderabad and Central Provinces Branch be included in the Indian group of Branches.

(For the 1915-16 grouping of the Oversea Branches, *see* Appendix IV., page 202).

REPRESENTATION IN REPRESENTATIVE BODY, 1915-16.

(a) *Of Home Divisions.*

40. In compliance with the decision of the Representative Body at Aberdeen, the Council in forming Constituencies under By-law 33 has refrained, in other than exceptional cases, from giving independent representation to Divisions of membership of less than 50. Generally speaking, the scheme of representation of the Home Divisions provisionally adopted by the Council is similar to that for 1914-15. The following changes, necessitated by substantial changes of Division and Branch areas, have, however, been made :

Dundee Division-Branch forms one Constituency ; Isle of Thanet and Canterbury and Faversham have been grouped together, as have also Sevenoaks and Tunbridge Wells ; Chester has been grouped with Crewe, and Hyde with Stockport, Macclesfield and East Cheshire ; East Norfolk and Great Yarmouth have been grouped together, and Norwich and West Norfolk made independent Constituencies ; North Carnarvon and Anglesea and South Carnarvon and Merioneth now form one Constituency ; the Channel Islands Division has been made independent ; North Suffolk and South Suffolk have been grouped together, and West Suffolk has been made independent ; and the three Divisions, viz., Salisbury, Swindon and Trowbridge, of the new Wiltshire Branch, form one Constituency.

The Council has authorised the Organisation Committee finally to settle on its behalf the 1915-16 Constituencies on consideration of the membership figures made up to April 30th, contained in the Annual List of Members published early in May. The Council will submit the final list of Constituencies in its Supplementary Report.

(b) *Of Oversea Divisions.*

41. In accordance with precedent the Council has given each Division and Division-Branch outside the United Kingdom having an Honorary Secretary and the necessary organisation separate representation for 1915-16.

BOUND VOLUMES OF SUPPLEMENTS.

42. The Council has considered the following resolution of the Conference of Secretaries, 1914 :—

Minute 9.—Resolved : That the Council be asked to consider whether it would not be possible to send, as from January 1st, 1915, half-yearly volumes of the Supplements of the BRITISH MEDICAL JOURNAL to the Honorary Secretaries of Divisions and Branches, as the bound volumes are practically essential in the work of Honorary Secretaries.

The Council considers this is a reasonable request which should be conceded.

The Council recommends :

Recommendation H.—That the Representative Body rescind Minute 20 of the Annual Representative Meeting, 1913, and that Honorary Secretaries of Divisions be again supplied with half-yearly bound volumes of Supplements.

Minute 20 of A.R M., 1913, referred to.

That the Representative Body rescind Resolution No. 187, passed at Leicester, 1905, which authorises the sending of a bound volume of the Supplement to the Secretaries of all Divisions, namely : That the Supplements be bound and sent down twice annually to Secretaries and Representatives of Divisions, and that such volumes remain the property of Divisions.

Reports of Divisions and Branches for 1914.

43. In spite of the prevailing unfavourable conditions the Council is glad to report that reports for 1914 have been received from the large majority of the Divisions and Branches.

The Council desires to place on record its warm appreciation of the specially arduous work done during the Session by Honorary Secretaries and Acting Honorary Secretaries of Divisions and Branches who have devoted so much time and labour to the local work of the Association, notwithstanding the special difficulties of the present time.

A gratifying feature of the reports received is that they on the whole show much better financial co-ordination than in previous years between Branches and Divisions. In this connection the Council would again urgently draw the attention of all concerned to the importance of Branches adopting the rule of paying to each Division as early in each year as practicable, such sum as the Branch Council considers necessary to enable the Division to pay its way and settle its own accounts, provided a satisfactory report for the previous year has been received from the Division and that the Division has not already a sufficient surplus in hand. Non-compliance with the By-laws in this respect has in a certain number of cases resulted in Divisions becoming inactive and even unorganized.

(a) *Reports of Home Divisions.*

44. Satisfactory reports for 1914 have been received from most of these. The following have not, however, up to the present reported :—

Argyllshire, Ballymoney, Banff, Elgin and Nairn, Barnsley, Birkenhead, Blackpool, Blyth, Bradford, Brighton, Bristol, Crewe, Croydon, Dartford, Denbigh and Flint, Derry, Dover, Dublin, Dudley, Durham, East Herts, East York, Finchley and Hendon, Folkestone, Hampstead, Hastings, Hexham, Hyde, Kilkenny, Lanarkshire, Lothians, Maidstone, Monaghan and Cavan, North Carnarvon and Anglesey, North Northumberland, North-West Essex, Orkney, Reading, Rotherham, South Carnarvon and Merioneth, South Connaught, South Shields, South-West Essex, Torquay, Tower Hamlets, Waterford, Westminster, Wigan, York.

In addition, the following Divisions are unorganised :—

Carlow, Consett, Ealing, Enniskillen, Isle of Man, Lewisham, Manchester, Mid Connaught, Mid Leinster, North Connaught, North-East Essex, North Leinster, North Munster, North-West Leinster, Omagh, Richmond, Sevenoaks, Shetland, South-East Leinster, South Munster, West Munster.

(b) *Reports of Home Branches.*

45. Reports for 1914, due March 15th, have been received from all the Home Branches except the following :—

Bath and Bristol, Connaught, East York and North Lincoln, Essex, Leinster, Norfolk, Stirling, Suffolk, Sussex, West Somerset.

The attention of Branches is specially drawn to the fact that delay in receipt of a report for 1914 renders it difficult or impossible for the Council to make an early grant to the Branch concerned.

An analysis of the reports of the Branches will be found in Appendix V., page 203.

(c) *Reports of Oversea Divisions and Branches.*

46. The Council is glad to report that a larger number of reports have been received from the Oversea bodies than in previous years, nearly all of which show increasing activity. Steps are being taken by the Council with a view to development of the work of the Association in certain Oversea Branch areas at present unorganised.

Grants to Branches.

(a) *Home Branches.*

47. Grants for 1915 varying from 6d. to 4s. per member are being made to those Branches in the United Kingdom which require grants and have furnished satisfactory reports for 1914.

(b) *Oversea Branches.*

48. As in previous years grants for 1915 have been made to these Branches at the rate of 4s. per member who has paid the full subscription for the year, and 2s. per member, elected after July 1st, who has paid half the ordinary subscription.

(c) *Supplementary Grant for 1914.*

49. A supplementary grant for 1914 was made by the Council to the South Wales and Monmouthshire Branch, for the purpose of helping to finance action taken locally to safeguard the position of the profession in respect of certain medical institutes and schemes which the Branch considered to be objectionable from the professional point of view.

Rules.

50. Eight Divisions and three Branches have adopted Rules of Organisation since the last report of Council. The Home Divisions and Branches mentioned in Appendix VI. (page 206) are still without such Rules, although these are absolutely necessary for effective working.

The Model Rules of Organisation for Home Divisions and Branches have been adjusted to give effect to the alterations of By-laws effected at Aberdeen. Copies sufficient for circulation to all members of a Division or Branch will be sent on application to the Medical Secretary.

Division and Branch Areas.

51. The Cheshire area has been re-organised into Birkenhead, Chester, Crewe, Hyde, Mid-Cheshire, and Stockport, Macclesfield and East Cheshire Divisions ; the Manchester Divisions have been amalgamated to form one Manchester Division ; a Sevenoaks Division has been formed ; the Guernsey and Alderney and Jersey Divisions have been amalgamated to form one Channel Islands Division ; the Dundee and Forfarshire Divisions have been amalgamated ; a Wiltshire Branch has been formed, with Salisbury, Swindon and Trowbridge Divisions ; and a Hyderabad and Central Provinces Branch has been created. Other less important changes have also been made. In each case the proposal originated locally. Particulars of all changes made have been duly published in the Supplement.

Conferences of Secretaries.

52. Experience has shown the great value of the Conferences of Honorary Secretaries of Divisions and Branches, which up to the present have been arranged from year to year. The Council has decided that the Conference shall in future be a fixed Annual Conference, to be held in connection with each Annual Meeting. The detailed arrangements for the Conferences are made by the Organisation Committee through the medium of a special Sub-Committee, consisting in equal proportions of members of the Organisation Committee and of members nominated by the Secretaries' Conference of the previous year.

Conference of Secretaries, 1915.

53. It having been found necessary in view of difficulties caused by the War to abandon the Annual Meeting in July, 1915, at Cambridge, and simply to hold the Annual Representative Meeting and statutory General Meeting in London.

the Council has been in some doubt as to whether in the exceptional circumstances an Annual Conference of Honorary Secretaries should be held in 1915, or if held would have a reasonable prospect of being successful. Having regard to the fact that many Secretaries are absent on military service, and that others would probably be prevented from attending the Conference by abnormal stress of work, the Council polled the Home Honorary Secretaries by letter asking those who could attend a Conference, if held in London on Wednesday, July 28th, in connection with the Annual Representative Meeting, to reply. The Council has decided to postpone for the present its decision as to the holding of a Conference this year.

STATUS AND AUTHORITY OF DECISIONS OF THE ASSOCIATION.

54. The Council submits a Special Report on this subject (*see* Appendix VII., page 207). As the matter dealt with is of considerable importance to every member who wishes to understand the constitution and powers of the Association the Council trusts the Report will be closely studied.

REPRESENTATION OF OVERSEA BODIES IN THE CENTRAL ASSOCIATION.

55. A certain amount of misapprehension having existed in the minds of some Oversea Divisions and Branches as to the exact nature of the duties of Representative, Member of Council and Delegate to the Annual Meeting, the Council has drawn the attention of the Oversea bodies to the scope of these respective offices.

56. UNDER CONSIDERATION.

Organisation of Canadian Branches.

Question of a Secretaries' handbook.

Questions in connection with By-law 21, as to Sub-Divisions and Joint Committees of Divisions.

(E) Journal.

SALARIES OF STAFF OF ASSOCIATION.

57. The Annual Representative Meeting, 1914, passed the following Resolution :—

> *Minute* 104.—That the following Rider by Dr. Fothergill (Brighton) be referred to the Council for consideration and report :—
>
> > That in the opinion of this meeting, the whole-time staff of the Association should receive an inclusive salary, which should include all contributions to the JOURNAL.

On consideration of the foregoing Minute, and having heard the views of the Editor as to the advantages to be derived by maintaining the present system of payment for certain editorial work,

The Council recommends :

> **Recommendation.**—That the existing arrangements concerning the remuneration of the Editorial Staff be continued for the present.

THE OUTBREAK OF WAR.

58. Immediately on the outbreak of War the Association was confronted with problems that never previously had occurred in the history of the JOURNAL. These difficulties were represented by the Editor and Mr. Elliston, and the Council came to the conclusion that they must be dealt with as they arose by the permanent officials to the best of their judgment.

59. The Council has since taken the opportunity of placing on record its appreciation of the steps taken to conserve the interests of the JOURNAL, and the manner in which the Editor, and Financial Secretary and Business Manager had surmounted the many difficulties consequent on the outbreak of the War.

ADVERTISEMENT REVENUE.

60. The first effect on the outbreak of War was an immediate shrinkage in the number of advertisements tendered for insertion, while all advertisements from alien enemies were excluded. The difference amounted to something like twenty pages per week. There was consequently a substantial decrease in the revenue to be faced, which was partially counterbalanced by the rates prevailing of £10 per page as against £8 in the corresponding period of 1913.

REDUCTION IN SIZE OF THE JOURNAL.

61. A curtailment in the amount of literary matter published each week was a natural corollary. Members will have noticed that the number of literary pages was reduced by about one-third. Such a curtailment during the fall of the year presented many difficulties, as at that time there would ordinarily have been published the Proceedings of the Sections at the Annual Meetings. These reports were therefore considerably reduced in volume. Since, the matter published has been concerned largely with the War, it being felt that for the time being this is really the question specially appealing to our readers.

REDUCTION IN COST OF PRODUCTION.

62. As a result of the shrinkage in the pages of the JOURNAL, both literary and advertisement, there has been a considerable saving in the cost of production under all heads, Composition, Paper, Machining, Postages and Contributions. So far as the advertisements are concerned, the Council hopes that the worst effects of the War have now been experienced. There is however an increased difficulty in getting advertisements, and there is a distinct tendency for advertisers to take a longer time in the settlement of their accounts. Such a position seems inevitable and will require careful watching.

THE PAPER SUPPLY.

63. In deciding to curtail the size of the JOURNAL the Council was influenced not only by the fact that the revenue would be considerably affected, but by the difficulty of being sure of a supply of paper. This was particularly acute in the earlier stages when transport was seriously interrupted. It is however a matter for congratulation that the Association has so far been able to obtain an adequate supply to tide over the period of the War, or the return of the summer months, when more favourable conditions should prevail.

THE SUPPLEMENT.

64. The Supplement has been considerably reduced in size. and has been "stitched in" with the JOURNAL proper and not insetted separately as before. This was decided upon on the grounds of economy and mechanical convenience in the handling of a smaller JOURNAL.

THE EPITOME.

65. In the early stages of the War owing to the difficulty of getting material the *Epitome* was dropped for a time. The supply however is now in part resumed from neutral and friendly countries, and commencing with the first issue of the year the Epitome was reinstated.

NEWS FROM THE FRONT.

66. As soon as it was practicable, it was arranged that the JOURNAL should have a correspondent actually at the front. It is believed that the arrangements have been satisfactory, and it is hoped that the articles which have appeared from the JOURNAL's Special Correspondent at the Front have been a matter of general interest to Members.

GENERAL.

67. During the months of the War, the Council has watched with close attention the matter published in the JOURNAL, and many favourable comments on the reduction in its bulk have been received.

The time is not yet ripe to review this fresh position, but it is possible that one of the most instructive lessons learned will be a sense of proportion, with the conviction that for some years there has been a tendency to overload the JOURNAL, and that it is possible to reduce it materially and effect a substantial saving without interfering with its general interest or the efficiency and progress of the Association.

STEVENS *v* B.M.A.

68. When the last Report was considered the second hearing of the case of Stevens against the Association for libel contained in the book "Secret Remedies" had just been concluded and a verdict with costs in favour of the Association had been awarded. The costs on being taxed amounted to £1,853. On the conclusion of the second hearing the plaintiff gave notice of appeal, but at the time of drafting this report the hearing had not been reached.

(F) Science.

PETITION OF SIR RONALD ROSS.

69. Pursuant to the instructions of the Annual Representative Meeting, 1914, a copy of the following resolution was forwarded to the Chancellor of the Exchequer:—

> *Minute* 108.—Resolved: That in the opinion of the Representative Body of the British Medical Association the petition of Sir Ronald Ross, K.C.B., F.R.S., to the House of Commons for remuneration for his services to the Empire in having discovered how malarial fever can be prevented, should be granted.

Only a formal acknowledgment was received, but owing to the attention of the Government being so largely occupied with matters connected with the War, the Council has deemed it inopportune to press the Government further in the matter at present.

MIDDLEMORE PRIZE.

70. The Middlemore Prize, consisting of an illuminated certificate and a cheque for £50, will be awarded during the current year to the writer of the best essay of sufficient merit on "The Pathology of the Affections of the Retina met with in connection with Diseases of the Kidneys."

STEWART PRIZE.

71. The Stewart Prize will be awarded in 1916, for work in connection with the origin, spread and prevention of epidemic disease, and will consist of an illuminated certificate and a cheque for £50.

RESEARCH SCHOLARSHIPS AND SCIENCE GRANTS.

72. The Council has considered the position of Research Scholars and Grantees who owing to the War are at present unable to continue the researches for which they were awarded Scholarships and Grants in July, 1914, and has decided to suspend the Regulations as to Research Scholarships and Science Grants until those researches can be resumed.

73. In view of the fact that several applications for grants for 1915-16 have already been received, and especially as many practitioners who do research work are not eligible for Military Service, the Council has decided to announce the award of a limited number of grants for 1915-16, and will consider any applications at its meeting in July, 1915. The Council has, however, decided not to appoint Research Scholars for 1915-16.

CONFERENCE WITH REPRESENTATIVES OF BRITISH PHARMACEUTICAL CONFERENCE.

74. In response to a request from the British Pharmaceutical Conference, the Council has appointed Professors A. R. Cushny and R. Stockman as representatives of the Association to confer with representatives of that Conference on the question of a suggested code of rules in regard to uniformity in dispensing abnormal prescriptions.

QUESTION OF PURCHASE OF GERMAN AND AUSTRIAN PERIODICALS FOR THE LIBRARY.

75. The Council has decided that no German or Austrian periodicals shall be purchased for the Library during the present War.

76. UNDER CONSIDERATION.

Sight tests imposed by the Board of Trade.

Relation of the Association to Proprietary Preparations.

Advertisements of Foods and Drugs in the BRITISH MEDICAL JOURNAL.

(G) Medical Ethics.

ETHICAL APPEALS.

77. The Council has considered the present procedure with regard to Ethical Appeals. At present an appeal against the decision of a Branch Council is heard by the Central Ethical Committee, but any party to an ethical dispute may carry his case to the Council, which is the final Court of Appeal. The Council is convinced that every party to an ethical dispute is assured of an impartial decision so long as an appeal from the decision of a Branch Council is allowed to one higher Court, and that this Court should be technically the Council. Experience has shown, however, that a body as large as the whole Council is quite unfitted to sit as a Court and try cases. The Council therefore proposes to empower the Central Ethical Committee to act for it in Appeals as in other ethical matters. The Council considers:—

(1) That an appeal against the decision of a Branch Council should be allowed only to the Council;

(2) That such appeal should be allowed only on the following grounds, either:—

(i.) That an ethical principle has been wrongly interpreted or applied, or

(ii.) that the decision given is against the weight of evidence.

(3) That in all such cases the Central Ethical Committee should be empowered to act for the Council;

(4) That the decision of the Central Ethical Committee in such cases should be (i.) the decision of the Council, (ii.) binding on all parties concerned, and (iii.) final, unless new facts are produced which warrant the reconsideration of the case by the Central Ethical Committee.

The Council is advised that to give effect to the above principles it is necessary to modify the existing Schedule to the By-laws as to the duties, powers, &c., of the Central Ethical Committee, and for the Council to adopt a new Standing Order.

Counsel is of opinion that the present Schedule relating to the Central Ethical Committee is too long, and has drafted a shorter Schedule, which, it is believed, includes all that is necessary.

The Council recommends:—

Recommendation A.—That the A.R.M., 1915, adopt the following amended Schedule to the By-laws as to the duties and powers of the Central Ethical Committee, to take the place of the existing Schedule relating to that Committee:—

To advise the Council on questions connected with Rules of Divisions and Branches relating to professional conduct, to investigate and report to the Council upon the cases of members whose conduct is to be considered by the Council on the representation of Divisions or Branches pursuant to Article 11 and to advise the Council, and if and so far as empowered by the Council (either generally or in any particular case) to act for the Council on and deal with and adjudicate upon all questions of professional conduct, and so that the decision of the Committee (where so empowered) upon any such questions shall be deemed to be the decision of the Council and shall be binding upon the parties concerned and upon all members of the Association, and final unless new facts are produced which in the opinion of the Committee warrant the reconsideration of the case.

Provided that notwithstanding the foregoing provisions the Committee shall not adjudicate upon or entertain any such question as aforesaid which has arisen in a Branch not in the United Kingdom having a membership of not less than thirty, except upon the request of the Council of that Branch.

If the Representative Body should approve of the principle enunciated above, the Council has arranged that the following Standing Order shall come into force so as to complete the procedure :—

> That until further order of the Council the Central Ethical Committee be and it is hereby empowered to act for the Council on and deal with and adjudicate upon all questions of professional conduct but not so as to exercise the power of expulsion given to the Council by the 11th Article of Association and so that the said Committee shall not adjudicate upon or entertain any question of professional conduct which shall have arisen in a Branch not in the United Kingdom having a membership of not less than thirty except upon the request of the Council of that Branch.

Position regarding Libel Actions which arise out of Ethical Matters.

78. The Council has considered the following Minute of the Annual Representative Meeting, 1914 :—

> *Minute* 113.—Resolved: That it be referred to the Council to consider and report as to what steps can be taken to avoid incurring any financial loss for any libel action which may be brought against the Association owing to the conduct of any Member, Division, or Branch acting in opposition to the advice and instructions of the Council.

The Council recognises that all ethical investigations are subject to a certain risk of actions for libel, but considers that experience has shown that the risk is considerably lessened when the proceedings are governed by and dealt with strictly under the Model Ethical Rules. In view of this consideration the Council now refuses to sanction any ethical proceedings by a Division or Branch that is not in effective possession of these rules, but the peculiar difficulties and dangers associated with ethical investigations are so great that the Council is satisfied that such proceedings should only be carried out under the supervision and guidance of the Head Office, and arrangements are being made accordingly to supervise the local conduct of such investigations step by step.

Revision of the Model Ethical Rules.

79. The Council has considered the revisions in the Model Ethical Rules necessary to carry out the decisions of the Council, if approved by the Representative Body, on the question of Appeals (*see* par. 77) and with regard to Libel Actions arising out of Ethical matters (*see* par. 78), and has also considered other revisions which experience has shown to be desirable, and the incorporation of which in the revised Rules will, it is hoped, obviate the necessity for any further revision of the Rules for many years to come.

The Council submits herewith (*see* Appendix VIII., page 208) revised Rules governing procedure in ethical matters of (i.) a Division not itself a Branch, (ii.) a Branch composed of one Division, and (iii.) a Branch composed of several Divisions.

The alterations incorporated in the revised Rules can be ascertained by comparison with the existing Model Ethical Rules, but, for convenience, the Council desires to draw attention to the chief modifications that have been made:—

> (i.) The right of appeal is restricted.
>
> (ii.) The Association and its Honorary Officers are protected as far as possible from the danger of libel actions by placing the ethical procedure of Divisions and Branches more directly under the supervision of the Head Office.
>
> (iii.) The procedure for the adoption of binding resolutions by Branches composed of several Divisions is simplified.
>
> (iv.) Certain difficulties and dangers, which experience has shown the present rules are apt to give rise to, are avoided.

The Council recommends :

Recommendation B:

(a) That the Revised Rules governing procedure in ethical matters of (i.) a Division not itself a Branch, (ii.) a Branch composed of one Division, and (iii.) a Branch composed of several Divisions, be approved.

(b) That all Divisions and Branches in the British Islands be urged to adopt the Revised Rules governing procedure in ethical matters as approved by the Representative Body, 1915, without modification and in substitution for any ethical rules now in use by the Divisions and Branches respectively, which will not be recognised after December 31st, 1915.

Professional Secrecy.

80. The Council has considered the observations made by Mr. Justice Avory at the Birmingham Assizes on December 1st, 1914, concerning the case of a woman who had been committed on the Coroner's warrant to stand her trial on a charge of manslaughter in consequence of the death of a woman upon whom she was alleged to have performed an illegal operation. Three medical men at least had attended the deceased, and to one at least she had confided the name of the person who performed the act, but no information was given to the police and the patient died without any deposition being taken or without any statement being made by her on her death-bed which could be used in a Court of Law.

The Council forwarded to the Home Secretary and the Lord Chief Justice its opinion as to the position of a medical practitioner respecting information which he has obtained from a patient in the exercise of his professional duties, and has received a reply from the Home Office that the Lord Chief Justice has consented to receive a deputation on the subject on May 3rd.

The Council hopes to deal more fully with this important subject in its Supplementary Report.

Action against the Association and Others.

81. An action for conspiracy, libel and slander has been brought against the Association and five Members of the Coventry Division by the four medical officers of the Coventry Dispensary. The matter has been placed in the hands of the Solicitor.

Cases submitted to the General Medical Council.

82. Last year in its report the Council referred to a case presented on behalf of the Association to the May, 1914, Sessions of the General Medical Council, when that Council suspended judgment until the November Sessions. The Council ascertained that there was no further evidence to be brought against the practitioner and that the local profession had no wish to press the matter further, and therefore no objection was raised in November to the practitioner's name being retained on the Register.

Ethical Rules of Divisions and Branches.

83. The Council has continued to urge the adoption of the Model Ethical Rules by Divisions and Branches which have hitherto failed to adopt them. At the present time 53 Divisions and 14 Branches have not yet reported that they have adopted these rules, and they are consequently not in a position to deal with any ethical matters. It is hoped that when the Revised Ethical Rules are approved, every Division and Branch will at once adopt them. The Council, after December 31st, 1915, will refuse to recognise any Ethical Rules other than the Revised Ethical Rules approved by the Representative Body.

(H) Medico-Political.

Payment of Medical Practitioners called in on the advice of Midwives.

84. The Council has been in communication with the Association for Promoting the Training and Supply of Midwives, to which body the policy of the Association as regards the payment of practitioners called in on the advice of midwives as passed at Aberdeen had been communicated. As the result of suggestions made by that Association the Council is of opinion that certain slight verbal alterations should be made in the statement of the Association's policy.

The Council recommends :

Recommendation A.—That the Representative Body approve the following amended form of paragraph (c) of Minute 132 of the Annual Representative Meeting, 1914, in substitution for that paragraph :—

> (c.) That the following should be the minimum scale of fees for the payment of medical practitioners called in on the advice of midwives, but power should be obtained to pay special fees in special cases :—

	£	s.	d.
(i.) Attendance at cases (of) *requiring or necessitating* operative assistance, and subsequent necessary visits during the first ten days	2	2	0
(ii.) Attendance at cases without operative assistance, and subsequent necessary visits during first ten days	1	1	0
(iii.) Assistance for administration of an anæsthetic	1	1	0
(iv.) *Any* visit *not covered by* (*i.*) (*ii.*) *or* (*iii.*), including any necessary prescription :			
Day (8 a.m. to 8 p.m.)		3	6
Night (8 p.m. to 8 a.m.)		7	6

NOTE.—*Words in italics are additions suggested.*
( ) *in par.* (i.) *denotes suggested deletion.*

CONTRACT FEES FOR MEDICAL ATTENDANCE AND TREATMENT ON JUVENILE MEMBERS OF FRIENDLY SOCIETIES.

85. The Council published in the Supplement of March 20th, 1915, for the consideration of the Divisions and Representative Body the appended Report (*see* Appendix IX., page 219) on the question of the contract fees for medical attendance on juvenile members of friendly societies, and it is hoped that it will receive the attention which the importance of the subject deserves.

The Council recommends :

Recommendation B.—That juvenile contract rates apply only to the children of persons eligible for the benefits of the Insurance Acts.

Recommendation C.—That there shall be free choice of patient by doctor and of doctor by patient.

Recommendation D.—That the contract rates for medical attendance on the children of those persons eligible for the benefits of the Insurance Acts should be not less than 4s. 4d. per annum, from the age of three years up to the age of sixteen.

Recommendation E (if Recommendation D be carried).—That Minute 141 of the Annual Representative Meeting 1913 be modified in accordance with Recommendation D.

SELECT COMMITTEE ON PATENT MEDICINES.

86. The Council reported in 1912 to the Annual Representative Meeting 1912, that the Government had appointed a Select Committee to consider and enquire into the question of the sale of patent and proprietary medicines and medical preparations and appliances and advertisements relating thereto, and that the Association had forwarded to the Select Committee a Memorandum of Evidence. The Association submitted in support of that evidence the following witnesses :—

Sir Malcolm Morris, K.C.V.O., F.R.C.S., London.
Professor W. E. Dixon, F.R.S., Cambridge.
Mr. P. McLeod Yearsley, F.R.C.S., London.
Dr. Arthur Whitfield, F.R.C.P., London.
Miss Mary Sturge, M.D., Birmingham.
Dr. R. E. Crosse, London.
Mr. Henry Sewill, M.R.C.S., L.D.S., Red Hill.
Mr. E. F. Harrison, B.Sc., F.I.C., London, and the Medical Secretary.

87. The Select Committee issued its report in August, 1914, together with certain recommendations which are of the most far reaching and satisfactory kind. They include :—

(i.) the putting of the administration of the law governing the advertisement and sale of patent, secret and proprietary medicines and appliances under one Department of State, the Ministry of Public Health, when such a department is created, and in the meantime the Local Government Board ;

(ii.) the establishment of a register of manufacturers, proprietors and importers of such remedies ;

(iii.) the supply to the Department by the manufacturers or proprietors, of an exact and complete statement of the ingredients and proportions of the same of every patent, secret and proprietary remedy, and a full statement of the therapeutic claims made for it, such information not to be disclosed unless under certain specified circumstances, the Department to control the statement, at their discretion, by analyses made confidentially by the Government Chemist ;

(iv.) the constitution of a special Court, with power to permit or prohibit the sale and advertisement of the remedies and appliances in question ;

(v.) the Minister in charge of the Department to have power to institute proceedings to enforce compliance with the law ;

(vi.) the Department to have power to require the name and preparation of any poisonous or potent drug forming an ingredient of any remedy to be exhibited on the label ;

(vii.) the provision of Inspectors to examine advertisements and observe the sale of proprietary remedies and appliances ;

(viii.) the amendment of the Indecent Advertisements Act on the lines suggested by the Association ;

(ix.) the statement on the label, of the proportion of alcohol contained in every medicated wine and every proprietary remedy containing more alcohol than that required for pharmacological purposes ;

(x.) the prohibition of the advertisement and sale (except the sale by doctor's order) of medicines purporting to cure the following diseases :—

cancer	diabetes	locomotor ataxy
consumption	paralysis	Bright's disease
lupus	fits	rupture (without operation or appliance).
deafness	epilepsy	

(xi.) prohibition of all advertisements of remedies for sexual diseases and of medicines which suggest that they might be used as abortifacients ;

(xii.) the prohibition of (a) enclosing with one remedy printed matter recommending another remedy, (b) the invitation to sufferers from any ailment to correspond with the vendor of a remedy, (c) the making use of the name of a fictitious person in connection with a remedy, (d) the making use of fictitious testimonials, (e) the publication of a recommendation of a secret remedy by a medical practitioner unless his full name, qualifications and address be given, (f) promising to return money paid if a cure is not effected.

The Select Committee expresses its strong desire that there should be early and effectual legislative measures taken to bring into operation the foregoing recommendations.

88. The Council considers that a report so radical in its scope and so satisfactory in its nature coming from such a source thoroughly justifies the action the Association has taken in regard to secret remedies. The present moment is obviously not a time at which the Government can be pressed in regard to this matter, but the first favourable opportunity will be taken and the Council is glad to know that it may count on the support of the Chairman of the Select Committee, Sir Henry Norman, M.P. and his colleagues.

The Council recommends :—

Recommendation F.—That the Representative Body place on record its satisfaction with the recommendations of the Select Committee on Patent Medicines and instruct the Council, as soon as it considers the time opportune, to take all necessary steps in pressing for legislation on the lines of the Report.

INSUFFICIENTLY TRAINED NURSES.

89. Careful consideration has been given by the Council to the following Minute 125 of the A.R.M., 1914 :—

Minute 125.—Resolved : That this meeting views with concern the increasing number of insufficiently trained nurses and instructs the Council to call upon the Government and the other authorities concerned to take steps to remedy this evil.

The Council has drawn the attention of the Chancellor of the Exchequer and the late Chairman of the Joint Committee of the National Health Insurance Commission to the opinion expressed in the above Minute, in connection with the proposed provision of a nursing service which was projected by the Government in connection with the Insurance Acts previous to the outbreak of War. The Council is of opinion that the number of untrained nurses who are able to obtain employment is due partly to to there being an insufficient supply of trained nurses, and that this deficiency would be remedied by anything which improved the status and increased the attractions of the nursing profession. In the opinion of the Council, therefore, the restriction

of the number of insufficiently trained nurses will be best brought about by the Association and other bodies interested continuing their efforts to obtain State Registration of Nurses.

PRACTICE OF DENTISTRY BY UNQUALIFIED PERSONS.

90. In connection with the following Minute 134 of the Representative Meeting, 1914, a conference has been held between representatives of the Association and representatives of the British Dental Association concerning the question of practice of dentistry by unqualified persons :—

> *Minute* 134.—Resolved : That this Representative Meeting, being alarmed at the continued rapid increase in unqualified persons practising "Dentistry," to the very great damage of the public health, and considering that from the standpoint of the general health the profession should endeavour to safeguard the nation from these dangers, instructs the Council to confer with the British Dental Association as to the best means of combating this particular evil.

91. The representatives of the British Dental Association stated that their Association was in entire sympathy with the above Minute and submitted for the consideration and approval of the British Medical Association their draft Bill, which was the outcome of many years' consideration of the question and was a compromise which had only been arrived at after lengthy discussions. They pointed out that they had endeavoured to frame a Bill that would meet with the approval of both the dental and medical professions, and would be glad to have the support of the British Medical Association for the Bill or suggestions as to its amendment. It is understood that their plan of campaign is to obtain if possible the approval of the General Medical Council, the British Medical Association, and the various licensing bodies, and then to endeavour to get the Government to take up the Bill as a Government measure.

92. The Draft Bill :—

(i.) Increases greatly in stringency the penalties on persons practising as dentists when not registered.

(ii.) Makes the principal and amending Acts apply to Companies.

(iii.) Enables the General Medical Council to give a certificate of exemption (a) to persons who by Statutory Declaration show that they have been *bonâ fide* engaged in the practice of dentistry for not less than 15 years before the passing of the new Act, and are not less than 35 years of age ; and (b) to persons who satisfy the General Medical Council that at the commencement of the new Act they have been *bonâ fide* engaged in the practice of dentistry (such practice not being combined with any other occupation or calling) for not less than 5 years, are at least 25 years of age, and have passed an examination, to be instituted in accordance with the new Act, for the purpose of testing their knowledge of dentistry. No certificates of exemption can be given unless application be made within one year of the commencement of the new Act.

(iv.) Entitles persons holding certificates of exemption to practise dentistry and to use the title "dental practitioner," and entitles such persons to recover fees or charges, but, with these exceptions, such persons are not entitled to any of the rights or privileges of registered dentists.

(v.) Provides for a register kept by the General Medical Council of persons to whom certificates of exemption have been granted.

(vi.) Provides that exempted persons may be removed from the Register under the provisions of the present Act.

(vii.) Provides that no person shall practise dentistry for gain without obtaining an annual certificate.

(viii.) Provides that there shall be four direct representatives of registered dentists on the General Medical Council.

93. It will thus be seen that the Draft Bill proposes, under certain conditions, to legalise the practice of certain persons who are at present practising dentistry though unqualified, and, after their inclusion, to attempt to make it impossible in the future for persons who are neither registered nor have certificates of exemption, to practise dentistry for gain. If the Bill were enacted there would be two classes of qualified dentists :—

i.) Registered dentists ; and

(ii.) Persons who have received a certificate of exemption and are entitled to use the title "dental practitioner."

94. The Council, after carefully considering the draft Bill in question, recommends :—

Recommendation G.—That the Representative Body approve the draft Bill of the British Dental Association concerning the practice of dentistry by unqualified persons.

FEES FOR MEDICAL ATTENDANCE ON CASES RECEIVING AMBULANCE TREATMENT THROUGH MUNICIPAL SERVICES.

95. The advice of the Council was recently sought and given to a Division with respect to suitable fees for proposal to the local Borough Council, which had applied to the Division for information as to the terms on which local practitioners would be prepared to give attendance on cases receiving ambulance treatment through a municipal service. As it is quite possible that similar proposals may be made by other Councils, and with a view to giving a lead to the profession in other areas,

The Council recommends :—

Recommendation H.—That the Representative Body approve the establishment of local ambulance services for emergency cases of sickness or accident on the following conditions :—

(a) The responsibility to be undertaken by some local authority ;

(b) The cases to be referred to the nearest available practitioner ;

(c) The fees to be paid by the local authority on the following scale :—

For a day call between 8 a.m. and 8 p.m., 3s. 6d. ; for a night call between 8 p.m. and 8 a.m., 7s. 6d. Mileage beyond first mile, at the rate of 1s. per mile one way.

CRIME AND PUNISHMENT SUB-COMMITTEE.

96. The Council desires to draw attention to the interesting new development which is reported in the appended Report of the Crime and Punishment Sub-Committee. (*See* Appendix X., page 220.)

The work of that Sub-Committee arose from a recommendation made by the Section of Medical Sociology at the Annual Meeting at Brighton, 1913, and has resulted in bringing together representatives of the Medico-Legal Society, the Medico-Psychological Association, the Bar Council, and the Incorporated Law Society, with representatives of the Association, to discuss a matter which was eminently one for such joint consideraton.

97. The Council recommends :—

Recommendation I.—That the Report on the question of the present state of the law with regard to the legal responsibility for crime, be approved by the Representative Body.

Strictly speaking there are no recommendations in the Report. If the Report is approved by the Representative Body it will stand as an expression of opinion of the joint Sub-Committee which has received the approval of the Representative Body.

98. The Council has placed on record its appreciation of the services of Mr. E. J. Domville, the Chairman of the Sub-Committee, and is glad to report that as a result of this experiment there is every prospect of the permanent institution of a joint Sub-Committee of the kind to discuss medico-legal questions.

FEES FOR MEDICAL EXAMINATIONS FOR LIFE INSURANCE.

99. The Council has carefully considered the following Minutes 310 and 311 of the A.R.M., 1914 :—

> *Minute* 310.—Resolved : That fees for life insurance examinations should be based on the amount of evidence required in confirmation of the examiner's professional opinion of the life.
>
> *Minute* 311.—Resolved : That the following proposed Rider by Worcester be referred to the Council with foregoing Resolution (Minute 310) :—
>
> That the question of fees for medical examinations and reports for life insurance be considered by the Annual Representative Meeting, 1914, with a view to the Council approaching the insurance companies in order to obtain the adoption of a universal rate all over the country.

The report of the Council on this subject has already been submitted to the Divisions (Supplement, B.M.J., March 20th, 1915), with a request for their opinion on the proposals contained therein. The Council hopes to be able to submit a further report on this question after it has received the replies of those Divisions which have considered the Report.

ROYAL COMMISSION ON VENEREAL DISEASES.

100. The Association having been asked by the Royal Commission on Venereal Diseases to present evidence on the question of the organisation of treatment of venereal diseases, particularly from the point of view of the general practitioner, the appended Memorandum of Evidence (see Appendix XI. page 224) was forwarded to the Royal Commission and supplemented by oral evidence given by Dr. Adam Fulton and the Medical Secretary on December 21st, 1914.

ASSISTANCE TO NON-MEMBERS IN MEDICO-POLITICAL MATTERS.

101. The A.R.M. 1914 referred the following resolution to the Council :—

> *Minute* 89. Resolved: That it be referred to the Council to consider and report on what terms and conditions, if any, the assistance, if asked for, of the British Medical Association in medico-political subjects, shall be placed at the disposal of any registered medical practitioner who has resigned his membership or has never become a member.

The Council is of opinion that it is not advisable in present circumstances for any terms and conditions to be laid down by the Association for the giving of advice to non-members, as the cases are such that it seems preferable to treat each case on its own merits, and the number of them is such as does not seem to necessitate the laying down of any hard and fast rule.

ADJUDICATION ON QUESTIONS OF PROFESSIONAL CHARGES.

102. The Council some time ago resolved that it was desirable that the Association should be in a position to give an opinion as to the suitability of professional charges where both sides were prepared to accept the decision of the Association, and empowered the Medico-Political Committee to act in such cases. The first case of the kind has been dealt with this Session, and the Council mentions the matter now in order to remind members that such a provision has been made, as cases occasionally happen in which the ability to obtain an independent opinion of this kind may save friction or possibly even legal proceedings.

ASSISTANT ASYLUM MEDICAL OFFICERS.

103. The Council reported in its Annual Report last year that in co-operation with the newly-formed Association of Assistant Asylum Medical Officers of England and Wales a standing Sub-Committee containing representatives of the latter Association had been set up to consider all questions affecting the interests of this class of practitioners. Duringthe present Session attention has been given by this Sub-Committee to the question of the pay and conditions of work of Assistant Asylum Medical Officers, and the appended Memorandum (Appendix XII. page 226) has been drawn up. It has received the approval of the Assistant Asylum Medical Officers Association and is now submitted to the Divisions and Representative Body as embodying the considered opinion of those chiefly concerned.

The Council recommends :

Recommendation J.—That the following Recommendations contained in the Report on the conditions of employment and remuneration of Assistant Asylum Medical Officers be approved :—

Salaries and Emoluments.

(a) That the minimum commencing salary of Assistant Asylum Medical Officers be £220, rising after one year of probation to £250, and then by £25 per annum to £350 per annum irrespective of promotion, and that the salaries of officers who are not promoted should then rise automatically by £10 per annum for ten years.

(b) That in addition to the operation of the above scale, an officer, on being promoted to Second Assistant should receive an additional £50 per annum, and on being promoted to Senior Assistant an additional £50 per annum.

(c) That Assistant Asylum Medical Officers who have received promotion should also participate in the automatic increase of £10 per annum for ten years, which commences after five years' service.

(d) That emoluments should be valued at least at £100 per annum, and made commutable for full value at the end of five years.

House Accommodation.

(e) That every Asylum should contain a separate house suitable for a married Assistant Officer, and that where an Asylum contains four or more Assistants, two such houses for Assistant Officers should be provided.

MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN.

104. In accordance with the instructions of the Representative Body, the Council has amended the Memorandums on the policy of the Association as to medical inspection and treatment of school children and on treatment at voluntary hospitals of school children found defective on medical inspection, in accordance with the amendments made at the A.R.M. 1914. (See Appendices XIII. and XIV., pages 227 and 229.) Copies of these Memorandums will be issued to the various Education Authorities in England, Scotland and Wales.

The Council recommends :

Recommendation K.—That the Representative Body approve the Memorandums on Medical Inspection and Treatment of School Children and Treatment at Voluntary Hospitals of School Children found defective on Medical Inspection, as statements of the policy of the Association in regard to these matters.

105. In dealing with the memorandum on Medical Inspection and Treatment of School Children, the Council carefully considered Minute 289 of the A.R.M. 1914, containing suggestions by the Bromley Division for the amendment of the memorandum. It was there suggested that Organisation Committees for the purpose of dealing with this question should be set up in each Branch and should report to the Branch Council. The proposed duties of these Committees were to formulate a simple scheme and conduct all business with local Education Authorities where the local practitioners were desirous of treating school children found on inspection to be defective; to issue an appeal to all medical practitioners in the area to deal directly through the Committee with the local Education Authority; and to appeal to medical staffs of voluntary hospitals not to treat gratuitously school children found defective on examination. The Council is however of opinion that more suitable machinery for dealing with Education Authorities was already provided for in the memorandum. The amendments proposed by the Bromley Division have therefore not been included in the memorandum now submitted for adoption.

MINIMUM SALARIES FOR ASSISTANT SCHOOL MEDICAL OFFICERS, MEDICAL OFFICERS OF HEALTH, AND TUBERCULOSIS MEDICAL OFFICERS.

106. Difficulties have arisen as regards advertisements for composite public appointments which have been offered for insertion in the JOURNAL and in which the salaries, while up to the Association's minimum for one of the appointments, fell below it for the other. It will be remembered that these minimum salaries differ. That for Assistant M.O.H. is £250 per annum, for Assistant S.M.O. is £300 per annum, while that for Assistant Tuberculosis Officer is £350 per annum. The Council has decided that no advertisement for any composite appointment as Assistant Medical Officer of Health, Assistant School Medical Officer, or Assistant Tuberculosis Officer, shall be published in the JOURNAL where the title of, or duties attaching to, the vacant post indicate that the officer appointed will be expected to perform duties attaching to more than one office, unless the salary offered be at least equal to that laid down by the Association as the minimum for the highest paid of the appointments in question.

CONFERENCE BETWEEN REPRESENTATIVES OF THE ASSOCIATION AND THE NATIONAL UNION OF TEACHERS.

107. In March, 1914, the National Union of Teachers approached the Association suggesting a conference for the purpose of coming to some agreement as to the respective duties of School Medical Officers and Teachers in connection with work arising out of the medical inspection of school children. It was stated that in a few cases friction had arisen and the hope was expressed that such a conference might lead to the adoption of some agreement which would serve as a guide to both parties. Two conferences have been held between members of the National Union of Teachers appointed for the purpose and members of the Committee, amongst whom was a member of the School Medical Officers Group of the Society of Medical Officers of Health.

MEDICAL AID INSTITUTIONS.

108. The Council has considered a report drawn up by the Medical Secretary at the request of the South Wales and Monmouthshire Branch after several visits of investigation into the conditions of work and remuneration of colliery and works' doctors in South Wales, especially in regard to certain Institutions and Schemes. The document will be circulated to Secretaries of Divisions and Representatives, but is not suitable for general publication.

109. The report shows that many loyal Members of the British Medical Association are, and have been for years, employed by those Institutions which are now recognised under Section 15 (4) of the National Insurance Act, and are in some cases fairly well satisfied with the conditions. The opinion of the Council was, that it would be futile for the Association to attempt to ban all these appointments indiscriminately. Some of them have been tacitly recognised by the profession for years, and are not only approved under the Insurance Act, but are moreover in a strong financial position. The best course to adopt appears to the Council therefore to be to recognise such *existing* institutions as can be persuaded to conform to the conditions named below, while continuing active opposition to any extension of such Institutes and especially to those Schemes recognised (only in Wales) under Section 15 (3) of the Insurance Act.

The Council recommends :—

Recommendation L.—That it is inadvisable to take objection to the acceptance by Members of the Association of appointments at those existing Intitutions recognised under Section 15 (4) of the Insurance Act which will conform to the following conditions :—

(a) Salaries or other forms of payment to be satisfactory to the Association.

(b) Free choice of doctor by patient and of patient by doctor to be allowed.

(c) The Institution doctor to be placed as nearly as possible in the same conditions as the panel doctor as regards complaints by patients.

(d) The rules of the Institution, so far as they affect the doctor, to be approved by the Association, before any member is allowed to accept or retain appointment.

(e) Some guarantee to be obtained that the Institution is not using the Insurance Funds to finance the medical attendance on the dependants, thereby lowering the rate which the outside profession would be able to secure for the same work.

Recommendation M.—That the strongest opposition be offered to any extension of similar Institutions or Schemes, and especially to those Schemes formed in South Wales under Section 15 (3) of the Insurance Act.

MATERNITY AND CHILD WELFARE.

110. The Council has given careful consideration to the Local Government Board's Circular and Memorandum, issued in July, 1914, on a Maternity and Child Welfare Scheme (*see* Appendix XV. (i.) and (ii.), pages 229, 230), which aims at establishing centres for instruction combined with continuous and systematic treatment for all mothers and for infants until they are placed upon a school register.

111. The Council recognises the great encroachment which such a scheme might make on the sphere of work of the general practitioner, and has attempted to devise some scheme which would enable the work to be carried out by private doctors instead of by whole time officers, as is undoubtedly contemplated by the Memorandum of the Local Government Board. In a Special Report (*see* Appendix XV. (iii.), page 230), the Council draws the attention of the Divisions and Representative Body to the subject, which it considers to be of vital importance to the future of general practitioners as a class.

The Council recommends :

Recommendation N.—That the Representative Body approve the Special Report submitted by the Council on Maternity and Child Welfare Schemes.

SALARIES OF MEDICAL OFFICERS TO COMMITTEES FOR THE CARE OF THE MENTALLY DEFECTIVE.

112. At the A.R.M. 1914, it was decided that the fees for medical certificates under the Mental Deficiency Acts, signed by the usual medical attendant, should not be less than £1. 1s. During the present Session representations have been made that some of the larger statutory Committees for the Care of the Mentally Defective were appointing whole-time certifying Officers, and the question was raised as to what the salaries of such Officers should be.

113. The Council considers that such an Officer would have to be a practitioner with considerable special experience, and his salary should therefore be commensurate with his experience and responsibility.

The Council recommends :

Recommendation O.—That the minimum salary of a whole time medical officer to a Committee for the Care of the Mentally Defective, appointed under the Mental Deficiency Act, 1913, should be £500 per annum.

TREATMENT OF INCIPIENT INSANITY.

114. As reported in the Annual Report of Council last year, the Council appointed members of the Association to act upon a Joint Committee with the Medico-Legal Society on the question of treatment of incipient insanity without certification. That Committee reported to the Council that it had drafted a Bill called the Voluntary Treatment Bill and the terms of the Bill were approved by the Council. The Bill is intended to secure that persons whose mental condition is uncertain, but requires medical treatment to prevent their becoming lunatics, may receive such treatment in a manner which is at present impracticable owing to the present state of the law. The Bill provides for the voluntary detention of patients of the kind mentioned and for the re-statement of the Law so that patients suffering from mental disorder of a kind which merely demands observation and treatment may be dealt with in a different way from those who are definitely insane.

ACTION TAKEN WITH REGARD TO CONTRACT PRACTICE APPOINTMENTS.

115. Advice has been given and action taken in a very large number of contract appointments of various kinds, and the Council is glad to report that such advice is sought with increasing frequency by Members of the Association, and that the action taken has in a large number of cases been successful. It is impossible to go into details in a report of this kind.

MATTERS UNDER CONSIDERATION.

State Registration of Nurses. (Minute 124 A.R.M. 1914).

Death Certification and Registration, and Coroner's Law.

(I) National Insurance.

PRESENT CONSTITUTION OF INSURANCE ACT COMMITTEE.

116. In accordance with the terms of reference of the Committee, Dr. Olive Claydon of Oldham has been appointed as a member of the Committee on the nomination of the Association of Registered Medical Women and the Northern Association of Registered Medical Women, Mr. Herbert Jones, on the nomination of the Society of Medical Officers of Health, and Dr. Major Greenwood on the nomination of the Poor Law Medical Officers' Association of England and Wales.

Mr. W. Doolin, elected to the Committee by the Central and Southern Group of Divisions of Ireland found himself unable to attend and resigned his membership. The vacancy has not been filled seeing that at the time of his resignation the Session was well advanced.

Sir Alexander Ogston, President of the Association, Mr. W. McAdam Eccles, Dr. A. C. Farquharson, Mr. Herbert Jones, Dr. G. K. Smiley and Mr. D. F. Todd have found it necessary to absent themselves from several of the meetings owing to military duties.

FUTURE CONSTITUTION OF COMMITTEE.

117. The Council has considered with the advice of the Organisation and Insurance Act Committees the following Minutes of the A.R.M., 1914 :—

Minute 223.—Resolved : That the following motions be referred to the Council for consideration . . . . :—

(i.) That steps be taken for the constitution of an Insurance Acts Committee as a Standing Committee of the Association, and that it be so named.

(ii.) That the Insurance Acts Committee consist of the "*ex officio*" members, the Chairmen of the Hospitals, Medico-Political, Organisation and Public Health Standing Committees, together with twelve members to be nominated by the Panel Committees of the United Kingdom on a similar territorial basis, as adopted under By-law 43 (c) for the election of twelve Members of Council, and elected by the Representative Body.

Minute 225.—Resolved: That the reference to the Insurance Act Committee read as follows:

To deal with all matters arising under the National Insurance Acts; to watch the interests of the profession in relation to the National Insurance Acts; and report to the Council.

Recent experience gained through the establishment of the Local Medical and Panel Sub-Committee of the Insurance Act Committee has convinced the Council that there is a strong demand on the part of Local Medical and Panel Committees for a more direct relationship with the Insurance Act Committee than at present exists. The Council considers such a demand to be reasonable and believes that the proposals outlined in the Recommendation which follows will go far to meet it. It will be seen that it is proposed that the Committee shall be increased from 21 members to 27. This seems a large number, but in the opinion of the Council the various interests which should be represented on such a Committee cannot be adequately accommodated on a smaller body. In both the present and the proposed Committees there are the four "ex-officio" members, 12 members elected on a territorial basis by the grouped Representatives, and one representative each of the Association of Registered Medical Women together with the Northern Association of Registered Medical Women, the Society of Medical Officers of Health, and the Poor Law Medical Officers' Association of England and Wales. The proposed changes are that instead of there being as at present two members elected by the Council, there shall be two non-panel practitioners elected by the Committee, itself so far as complete, and six other members similarly elected on a territorial basis from among members nominated by the Local Medical and Panel Committees of Great Britain.

The Council recommends:—

Recommendation.—That the A.R.M., 1915, add to the Schedule to the By-laws, as to Standing Committees, the following new paragraph, to come immediately after the existing paragraph as to the Public Health Committee:—

Name of Committee.	Appointed Members.				Duties, Powers, etc
	Additional Members *ex-officio*.	Appointed by the Representative Body.	Appointed by the Council.	Otherwise appointed.	
Insurance Acts				Members of the Association appointed as follows:— 12 elected by the elected Representatives of the Constituencies comprised in the groups of Branches and Divisions formed for the purpose mentioned in By-law 46 (c), the Representatives of all the Constituencies in each such group being entitled together to elect one member of the Committee in the same manner as they elect one member of the Council in pursuance of that By-law. 11 elected by the four *ex-officio* members and the above-mentioned 12 elected members of the Committee acting together, such 11 members to be nominated or qualified as under, viz.:— 6 selected so far as possible on a territorial basis from among members nominated by the Local Medical Committees and Panel Committees formed in Great Britain under the Insurance Acts; 2 Non-panel practitioners; 1 representative nominated by each of the following bodies, viz.:— (a) the Association of Registered Medical Women together with the Northern Association of Registered Medical Women; (b) the Society of Medical Officers of Health; (c) The Poor Law Medical Officers' Association of England and Wales.	To deal with all matters arising under the National Insurance Acts, 1911 to 1914 and any Act amending or consolidating the same and to watch the interests of the Profession in relation to those Acts.

ESTABLISHMENT AND WORK OF LOCAL MEDICAL AND PANEL SUB-COMMITTEE.

118. A Local Medical and Panel Sub-Committee of the Insurance Act Committee has been appointed, consisting of Members of the Association, who, except as regards three Members who may be co-opted, must be members of either Local Medical or Panel Committees. The reference to the Sub-Committee is to consider all subjects referred to it by the Insurance Act Committee and to take action when authorised; to keep in touch with and assist in the co-ordination of all Local Medical and Panel Committees, advising them on all circulars, memorandums and documents issued locally or centrally having reference to the medical service under the Insurance Acts; and generally to advise the Insurance Act Committee. The Sub-Committee is a strong and representative one, and the Council is glad to report that its establishment has been of great value to the Association, and has been very much appreciated by insurance practitioners throughout the country.

119. The Sub-Committee began by issuing to Local Medical and Panel Committees in the country, and to Divisions and Branches, a statement of its constitution, powers, and desire to make itself as useful as possible to practitioners on the panel. It therefore asked a series of questions designed to obtain information as to what is being done in the various Insurance areas. The response to the letter was extremely gratifying, and a very large majority of Local Medical and Panel Committees throughout the country (over 90 per cent.) not only intimated their desire to associate themselves with the Sub-Committee, but have been in close touch with it since that time, sending much valuable information and frequently asking for advice. Further circular letters have since been issued to Local Medical and Panel Committees giving advice on questions of general interest raised by the correspondence which is constantly being received.

120. On the advice of the Sub-Committee, a letter was issued to individual panel practitioners, bringing directly to their notice the work which had been and is being done by the Association on their behalf, as well as a statement of its relationship to the Local Medical and Panel Committees. This letter was sent to 14,164 practitioners in England, Scotland and Wales, and a form of application was enclosed to those practitioners who are not members of the Association. The replies which have been received show that the objects which the Association had in view in issuing the letter are likely to be achieved.

CONFERENCE OF REPRESENTATIVES OF LOCAL MEDICAL AND PANEL COMMITTEES.

121. It will be remembered that the Council last year summoned a Conference of representatives of Local Medical and Panel Committees throughout the country, and that the opportunity thus given for the consideration of the special interests of those Committees was greatly appreciated by them. The Conference appointed a Provisional Committee to consider the question of the institution of a Federation of Local Medical and Panel Committees, but owing to the outbreak of the war the scheme drawn up by that Committee has not received proper consideration at the hands of the Local Medical and Panel Committees through the country, and is in abeyance. It is quite clear to the Council, however, that it is necessary in the interests of panel practitioners that some such Conference should again be held, and that it should be called by the Association. Without prejudice in any way to the suspended scheme for the federation of Local Medical and Panel Committees, the Council has decided to call a Conference of representatives of all Local Medical and Panel Committees in the United Kingdom on a date some time prior to the A.R.M. of the Association. The place of meeting, necessary printing and postage, and clerical assistance, will be provided by the Association.

LEGAL POSITION OF MEDICAL AID INSTITUTIONS IN RELATION TO THE INSURANCE ACTS.

122. The Council has given careful consideration to the following Minute of the A.R.M., 1914:—

Minute 248.—Resolved: That this Representative Body protests strongly against the immunity from control by the Local Insurance Committee enjoyed by Medical Aid Institutes, and calls on the Council to take action with a view to having this amended, as being unfair both to ordinary medical practitioners on the panel and to those insured persons who are members of such Institutes.

Legal opinion has been taken and the Council submits for the information of members a report of the Insurance Act Committee discussing the whole matter. (*See* Appendix XVI., page 233).

CERTIFICATION UNDER INSURANCE ACTS.

123. On January 1st, 1915, a new system of Insurance Act certification was brought into force. Both Approved Societies and panel practitioners urged certain reforms of the certification system on the attention of the Commissioners and the Association in particular pressed for the establishment of a

uniform form of certificate. Before introducing the system the Commissioners discussed the matter exhaustively at meetings of the members of the Advisory Committee, and at Conferences between the Commissioners and panel practitioners in various parts of the country, and an informal discussion also took place between representatives of the Association and representatives of the English Commissioners.

124. The Insurance Act Committee in its circular letter (M 1) to Local Medical and Panel Committees, and Divisions and Branches, expressed the view that the advantages of the proposed scheme would probably outweigh any possible disadvantages to the profession, though it was realised that the system entailed more clerical work as well as greater responsibility.

125. The Association raised with the Commissioners the question of a phrase in the first Schedule to the 1915 Agreement, namely, that the form, occasions and manner of the furnishing of certificates by practitioners shall be determined by the Commissioners, and asked whether such matters could not be settled by regulations, inasmuch as if settled in that way no alteration in the system can take place without proper notice to practitioners. The Commissioners replied that the rules governing the procedure of panel practitioners in the matter of certification could not, for technical reasons, be embodied in formal Regulations, but they gave an explicit assurance that should it be contemplated hereafter to make any changes of substance in the obligations of practitioners as to certification, the profession could rely on receiving at least as good an opportunity for discussion and criticism as if the changes were to be made by way of amendment of Regulations.

126. Difficulties as regards the new system have already arisen, and the Council is taking steps to collect examples which seem to show the necessity for some amendment of the certification rules. Some of these difficulties apparently arise from a misunderstanding by some of the Approved Societies of the extent to which they are involved in the general understanding between Societies and panel practitioners which underlies the new system. One of the difficulties to which attention has most often been directed arises from certain Approved Societies making demands which practically amount to a requirement of a certificate on a particular day of the week. This was a grievance in the old system, strong protests were made against it to the Commissioners, and it was believed that the new system would get rid of it. Representations have been made to some of the principal Approved Societies, and if it is not found possible to eliminate the grievance in this way the Commissioners will be approached on the subject at an early date.

Certification in Chronic Cases.

127. With a view to minimising as far as possible all work done by medical practitioners which is not absolutely necessary, and thus economising the medical service of the community during the War, a letter was issued to some 300 Approved Societies calling attention to the suggestion of the Insurance Commissioners that where Societies were satisfied that it was not necessary to require an insured person to obtain medical certificates every week they might arrange for these to be furnished at less frequent intervals. It was suggested to the Societies that if this course were adopted as regards chronic cases it would prove a great boon to practitioners and indirectly be of service to the community. The Council is glad to report that this appeal has been met most sympathetically by nearly all the Societies.

Non-Panel Practitioners and New Certification Forms.

128. An unforeseen development of the new Certification system aroused a great deal of resentment at the beginning of the year. The official form of certificate is not now in the hands of the Secretaries of Approved Societies but has been supplied directly to practitioners on the panel. Accordingly if an insured person is under the care of a practitioner who is not on the panel the patient is not able to obtain and supply to his Approved Society the certificate on the official form. In many cases certificates, not on the official form but otherwise quite satisfactory, were refused by Approved Societies, and it was obvious that if this were allowed to continue the result would be that insured persons, in order to obtain their sickness benefit, would be driven to consult panel practitioners whether they liked it or not. Strong representations were made to the Commissioners as to the resentment which this position was causing among practitioners, both panel and non-panel. The Council moreover gave instructions that if a suitable case could be found in which an Approved Society was deliberately refusing to accept the certificate of a non-panel practitioner as legitimate evidence as to the inability of an insured person to work, prompt legal action should be taken.

129. A lengthy correspondence on the subject then ensued with the Commissioners, which was published in the Supplements of February 13th and 20th, 1915. In this correspondence the Association specified the difficulties which were being experienced by non-panel practitioners and their patients and urged that arrangements should be made whereby books of forms of the new certificates should be available on request to non-panel practitioners. The Commissioners replied that there were certain technical difficulties in the way of the actual forms being issued to any but a panel practitioner, or a practitioner with whom an insured person had made his "own arrangements," and that misleading and unsatisfactory results would be liable to arise if official forms containing explicit reference to certain certification rules which are embodied in the Agreements of those practitioners, were issued for insured persons attended in a purely private capacity by a doctor to whom the rules would not be applicable.

130. The Commissioners however expressed their willingness to meet the difficulty as far as possible, and issued to the Approved Societies a circular stating plainly that those Societies which refused to consider the certificate of any practitioner, whether on the panel or not, as evidence of the claim of the patient to medical benefit, were exceeding their rights. The explicit statement was made that a Society is bound to accept for consideration the certificate of any doctor, and is not entitled to refuse to admit as evidence the certificate of any particular class of doctors.

131. In a Conference which representatives of the Association had with the Commissioners the latter stated that there was no reason why arrangements should not be made by the Association to supply private doctors with a suitable form for their own use, provided that the form made available for those practitioners was clearly distinguishable from the official form issued to panel practitioners. Thereupon the Association drew attention through the JOURNAL to the fact that the Association was very anxious to bring this question to a conclusion in a way which would be most helpful to non-panel practitioners, and asked their opinions on the suggestion that the Association should itself print and place on sale at cost price a form of certificate which would be as nearly as possible like the official form, and containing on it the declaration of the patient would therefore reduce to the smallest possible dimensions the difficulties of insured persons who present certificates from private practitioners to their Approved Societies. The response to the invitation was by no means as great as had been hoped, but all those practitioners who wrote approved the proposal that the Association should print and place on sale forms of the kind mentioned, and it was pointed out that the forms might also be used by Insurance practioners who are attending in a private capacity insured persons who are on the lists of other panel practitioners. The Council has therefore decided to print such books of forms of certificates as above described and place them on sale at cost price.

132. The result of the action of the Commissioners in dealing with Approved Societies had a very good effect, for the number of cases about which complaints were being made very rapidly diminished. Though several cases were brought to the attention of the Association in the early part of the year where the officials of Approved Societies had made things as awkward as possible for their members who presented certificates by non-panel practitioners, no suitable case for legal action presented itself, though the desirability of taking such action was considered by the Solicitor of the Association in connection with one case.

DRUG TARIFF.

Departmental Committee on Drug Tariff.

133. The Chairman of the Joint Committee of the National Health Insurance Commission, the Rt. Hon. E. S. Montagu, M.P., has appointed a Departmental Committee with the following reference :—

> To consider and report what margin of profit (apart from discounting) is yielded by the present Drug Tariff; what reduction, if any, of prices is required to place that tariff on a commercial basis, and whether any extension or rearrangement of the list of priced drugs and mixtures is desirable ; to make such investigations as they may think necessary for this purpose either generally or in particular areas, and to submit a tariff in accordance with their recommendations.

The personnel of the Committee is :—

Sir Rowland Bailey, M.V.O., Chairman, Dr. John Adams, and Dr. Alfred Cox (appointed on the nomination of the British Medical Association), Mr. James P. Gilmour and

Mr. W. J. Uglow Woolcock (appointed on the nomination of the British Pharmaceutical Society of Great Britain,) Dr. J. F. Tocher (Lecturer on Statistics, Aberdeen University), Mr. R. V. Vernon (of the Treasury) and Mr. S. P. Vivian (of the National Health Insurance Commission).

134. The Association has for some time been collecting evidence from the various Panel Committees as regards the anomalies of the present Insurance Drug Tariff and has submitted a Memorandum on behalf of the Association which has been supplemented by oral evidence given by Dr. E. L. Lilley of Leicester, and Dr. P. V. Fry, of Sowerby Bridge, Nr. Halifax. It is also proposed to put forward as a witness, on the suggestion of the Scottish Committee, Dr. John Orr of Edinburgh, to give evidence as to the differences in methods of prescribing between the Scottish and English professions. It is hoped to publish the Memorandum of Evidence of the Association at an early date.

Procedure in Enquiries into Alleged Excessive Ordering of Drugs.

135. As a result of the large number of enquiries from Panel Committees as to the proper way of dealing with complaints under Regulation 40, as to alleged excessive ordering of drugs and appliances, a Memorandum of procedure in these enquiries was prepared and issued to all Panel Committees. The Memorandum was previously submitted to the Insurance Commissioners, not for their approval but to ascertain whether they considered that any of the advice given in it was unsound from a technical point of view, as it would of course be unfortunate if any advice given by the Association as to procedure were upset by some decision of the Commissioners on legal grounds. The Commissioners informed the Association that they took no exception to the document and considered that it contained sound and useful advice. The Council has reason to believe that the Memorandum will be found of considerable service to Panel Committees.

Conferences with Representatives of the Pharmaceutical Society.

136. Conferences between representatives of the Association and representatives of the Pharmaceutical Society were held in October, 1914, and January, 1915, when many matters of interest to both bodies were discussed and agreement was arrived at concerning the advice to be given to Panel and Pharmaceutical Committees respectively on certain points connected with the Tariff. In particular, the Pharmaceutical Society agreed to recommend the Pharmaceutical Committees throughout the country to agree to the insertion in the Tariff of words which would provide that where the term "aqua" was used in an Insurance prescription it would be taken to mean tap water, except where incompatibility would result from the use of tap water. This agreement has been endorsed by most of the Pharmaceutical Committees and has been the means of a considerable saving to the Drug Fund.

137. Monthly Conferences have been held between representatives of the two bodies for the purpose of settling the prices of those drugs unpriced in the Tariff as being liable to great fluctuations owing to the War. These Conferences have been found by both sides to be a very useful method of dealing with a question which if left to local negotiations would have entailed a good deal of work on every Panel and Pharmaceutical Committee in the country. It has not been found possible yet to induce the Scottish Branch of the Pharmaceutical Society to fall in with these arrangements as they wish to have the prices of these unpriced drugs settled between themselves and the Scottish Committee. Representations have been made to the Commissioners to the effect that the Association and its Scottish Committee consider such a duplication of work to be entirely unnecessary, as there is no suggestion that the prices of drugs in Scotland differ from those in England.

Proposed Central Bureau for Checking of Prescriptions, etc.

138. A Central Bureau for the checking of chemists' accounts, prescriptions, etc., has been established in Scotland by the Commissioners in spite of the protests of some of the Insurance Committees and Panel Committees. The Association has expressed the opinion that it considers such a central arrangement to be unnecessary, on the ground that it is highly improbable that the present arrangements for the checking of prescriptions and payment of chemists' accounts will be permanent, and that therefore it is dangerous to set up a central body which may hereafter be found to be unnecessary, but may by that time have developed into a vested interest which it would be difficult to get rid of. The English and Welsh Panel Committees were circularised to this effect, and a project for a central bureau in Wales seems to have been dropped; a large number of the English Panel Committees have expressed an opinion against the establishment of a central bureau, preferring a local arrangement

Special Grant to Pharmacists.

139. The Insurance Commissioners forwarded for the information of the Association a report of a deputation from the Pharmaceutical Society of Great Britain on April 16th, 1915 (reported in the Supplement of April 17th) from which it appears that the Pharmaceutical Society had applied on behalf of the pharmacists for a special grant to be made to chemists in those areas in which their bills had been heavily discounted during the past two years and that Mr. Montagu had promised assistance from the Special Drug Fund. Representations have been made to Mr. Montagu objecting to the use of the Special Drug Fund for this purpose, as, according to the information given by the Chancellor of the Exchequer at the time of the establishment of this fund, it was never intended to be used for such a purpose, but was to accumulate so that it would be ready to meet any sudden demands on the Drug Fund caused by epidemics.

REDUCTION OF AMOUNTS CREDITED TO INSURANCE PRACTITIONERS AND REDUCTION IN AMOUNTS ADVANCED TO THOSE PRACTITIONERS.

140. A great deal of dissatisfaction has been shown during the year by practitioners in almost every area concerning the reduction of the amounts due to them in respect of treatment of insured persons owing to the duplication of names in Insurance Committees' Registers. An interview was therefore arranged with the Commissioners and the whole circumstances placed before them, with the result that a most important statement was made on the whole subject, which was printed in the Supplement of January 30th, 1915, page 333. This statement has gone far to assure practitioners that while the whole subject is one of great complexity and difficulty every attempt is being made by the Commissioners to amend and simplify the present methods of dealing with it.

141. Assurances were given by the Commissioners that steps were being taken by them which, together with the introduction of the medical card, which they stated was doing a great deal to clear up the duplication of insured persons' names, would greatly simplify the position. It was clearly pointed out by Sir Robert Morant that no system which deals with such a large part of the population, numbers of whom are continually changing their addresses, can provide accurately for the crediting to each individual doctor of the fractional sums due to him for every day on which he may be liable to attend an insured person. It is so important that practitioners should have before them the exact words used by the Commissioners that the report of the interview is appended. (*See* Appendix XVII., page 234).

142. Recently great dissatisfaction has been shown by many Panel Committees at the large reductions that have been made by Insurance Committees generally in the amount of the monthly or quarterly advances made to those practitioners on account of the yearly capitation payment. The profession of course realised that deductions would have to be made on account of those insured persons who have enlisted, but the deductions have been so much in some cases, have varied so much in different areas, and explanations by Insurance Committees have been so inconsistent and inadequate that the Council has decided to obtain the opinion of the Solicitor on the question, and if necessary that of Counsel. The matter will again be dealt with in the Supplementary Report of Council.

PRACTITIONERS SUPPLYING DRUGS AND APPLIANCES TO THEIR INSURED PATIENTS.

143. The attention of the Association having been drawn by practitioners in various rural areas who dispense drugs for their insured patients, to the difficulty they were likely to experience in the matter of increased prices of certain drugs owing to the War, representations were made to the Insurance Commissioners that the equivalent of the special concessions which have already been granted to chemists in respect of these increased prices, should be given to practitioners who dispense drugs for their panel patients. The Commissioners replied (a) that the position of doctors with whom arrangements had been made to supply drugs, etc., on a capitation basis was before them when they were considering the possibility of the concessions to chemists referred to; (b) that after careful consideration they came to the conclusion that they would not be justified in approaching the Treasury with a view to the concessions being extended to those doctors; and (c) that they were not prepared to recognise that the position of a doctor supplying drugs on a capitation basis is, from the point of view in question, identical with that of a chemist under agreement with an Insurance Committee.

The Council has noted the reply, without prejudice to any further action it may choose to take in the matter.

PROPOSED FEDERATION OF LOCAL MEDICAL AND PANEL COMMITTEES.

144. The Council has considered the following Minutes 216, 217 and 221 of the A.R.M. 1914, but as no information has reached the Council as to the views of the Local Medical and Panel Committees throughout the Kingdom with respect to the draft constitution of the proposed Federation which was before the A.R.M. 1914, it has been found impossible to take any action :—

Minute 216.—Resolved: That the Council be instructed to submit to the Divisions a Memorandum on the constitution of the proposed Federation of Local Medical and Panel Committees after that constitution has been approved by the constituent bodies, calling a Special Representative Meeting, if necessary, after the replies of the Divisions have been received.

Minute 217.—Resolved: That the Hon. Secretaries of Divisions be informed of the foregoing Resolution, and of the intention of the Council to issue a Memorandum to the Divisions.

Minute 221.—Resolved: That paragraph (b) of the foregoing motion (Minute 220) be referred to the Council with an instruction to consider, and, if thought desirable, to include a reference to it in the Memorandum to be issued in connection with the proposed Federation.

Paragraph (b) (above referred to): That in the event of terms of co-operation being agreed to as between the proposed Federation and the Association, permission be given to the Council to co-opt, on the nomination of the proposed Federation, seven additional Members, who must be Members of the Association.

DEPARTMENTAL COMMITTEE ON EXCESSIVE SICKNESS BENEFIT CLAIMS.

145. As reported in the Annual Report of Council, 1914, the Association presented a Memorandum of Evidence and witnesses to the Departmental Committee appointed to inquire into and report upon the "alleged excessive claims upon, and allowance "by, Approved Societies in England in respect of Sickness "Benefit, and any special circumstances which may cause any "such claims or allowance."

146. The Report of the Departmental Committee was issued in July, 1914, and the Council is pleased to state that while the Report contained much criticism of the action of practitioners as regards certification, it made many suggestions which will it is believed tend to improvement in the general situation. In view of the general charges which have been so freely made against Insurance practitioners as a whole, it is satisfactory to note that the Departmental Committee expressed the opinion that the machinery for the administration of benefits is on the whole working as smoothly as could reasonably have been expected, and stated that the Committee was satisfied, speaking generally, that medical practitioners who have entered into agreements with Insurance Committees have brought to their work a desire to do their best for their patients.

147. The Council noted Minute 277 of the A.R.M., 1914, in connection with the above question, but did not see its way to take any action in the matter, inasmuch as evidence of the kind mentioned had already been collected by the Association, and was incorporated in the Memorandum of Evidence submitted to the Departmental Committee by the Association :—

Minute 277.—Resolved: That the following amendment by Willesden, in connection with paras. 265-6 (page 479) of Supplementary Report of Council, as to Future Develoments of Insurance Acts, be referred to the Council :—

That in order that the full medical view of the causes of the excessive claims for sickness benefit and medical benefit revealed by the experience of the National Insurance Act should be stated and the suggestions of the Medical Profession for checking abuse of sickness and medical benefits should be offered, ample evidence should be collected and considered.

That it be an instruction to the Council to obtain this evidence from the Divisions and from medical practitioners and report thereon.

FUTURE DEVELOPMENTS OF THE INSURANCE ACTS.

148. In pursuance of the instructions of the Annual Representative Meeting, 1914, a letter was addressed to the Chancellor of the Exchequer and the Right Hon. C. F. G. Masterman, containing the decisions of the Representative Body in regard to the developments of the Insurance Acts which were then understood to be pending. War had broken out before the letter could be sent, and the Ministers addressed were told that the Association approached the Government on a matter of this kind with considerable diffidence at that time, knowing the urgent claims upon their time and attention. The letter went on to say that, as it was understood that the policy of the Government on the subjects dealt with in the resolutions was on the point of being settled at the time of the declaration of War, and a favourable turn of affairs for the nation might lead the Government to proceed to take action, it was thought to be on the whole advisable to bring the resolutions to the attention of the Government, so that they would be in possession of the views of the Association when the subject again came under consideration.

Minutes 262 to 273 of the Annual Representative Meeting, 1914, were then quoted, as follows:

PROVISION FOR INSTITUTIONAL TREATMENT.

Minute 262.—Resolved: That in order to carry out the promise made in the National Health Insurance Act, 1911, that insured persons should have "adequate medical treatment," it is the duty of the Government to make provision for the necessary institutional treatment.

TREATMENT BY STAFFS OF VOLUNTARY HOSPITALS.

Minute 263.—Resolved: That the staffs of voluntary hospitals receiving persons for whose treatment a payment is made by or on behalf of the State cannot be expected to treat such persons as charitable cases.

CLINICAL ARRANGEMENTS UNDER INSURANCE ACTS.

Minute 267.—Resolved: That in any future development of the medical service under the Insurance Acts, the clinical arrangements should not be placed under the Public Health Authority, but either (i.) under a new Clinical Authority, composed of representatives of the Insurance, Public Health, and Education Local Authorities, with representatives of the Local Medical and Panel Committees and of the Local Hospitals, or (ii.) under the Insurance Committee, strengthened for this purpose by the addition of representatives of the above-named bodies.

CLINICAL LABORATORIES.

Minute 268. — Resolved; That the proposed clinical laboratories should be linked up as far as possible with the local hospitals and the nearest University laboratories.

PROPOSED NURSING SERVICE.

Minute 269.—Resolved: That the Representative Body welcomes the proposal of the Government to establish a nursing service to be utilised for the whole working-class population and is of opinion that when established it should be under the control of the proposed new Joint Clinical Authority, or, failing that, of the Insurance Committee, strengthened as suggested in Minute 267, para. (ii.).

Minute 270.—Resolved: That a copy of foregoing Minute 269 be sent to the proper authority, together with a copy of the Resolution of the Meeting as to Registration of Nurses.

MEDICAL REFEREES.

Minute 271.—Resolved: That the medical referees under the Insurance Acts should be the advisers on all medical questions to the Clinical Authority referred to in Minute 267.

CONSULTANTS AND SPECIALISTS.

Minute 272. — Resolved: That the consultants and specialists who are to be placed at the disposal of the referees should not be whole-time officers.

TREATMENT CENTRES.

Minute 273.—Resolved: That the Representative Body welcomes the proposal to institute Treatment Centres or Clinics in connection with the Medical Service under the Insurance Acts, and is of opinion that they should be under the control of the Clinical Authority referred to in Minute 267.

ATTENDANCE ON SOLDIERS ON FURLOUGH.

149. A large number of communications were received from panel practitioners throughout the country inquiring what were their liabilities as regards insured persons who had joined the Colours, and in consequence the Commissioners were approached with a request that they should issue a Memorandum for the information of practitioners. This was done in November, 1914. Complaints were still received that in spite of the arrangements which the Commissioners had announced difficulties were being experienced. Further representations were therefore made to the Commissioners, who then forwarded a copy of the circular letter they had recently addressed to Insurance Committees, which was quoted in full in the Supplement to the JOURNAL of March 13th, 1915.

(J) Public Health and Poor Law.

PUBLIC HEALTH OFFICERS (SECURITY OF TENURE) AND MEDICAL OFFICERS (SUPERANNUATION) BILLS OF THE ASSOCIATION.

150. The deputation to Ministers on this important question which was reported in the Supplementary Report of Council last year has been followed by results which are as satisfactory as can be expected considering the slowness with which social reforms demanding Parliamentary or Ministerial action are dealt with.

151. The President of the Local Government Board, Mr. Herbert Samuel, has addressed the following letter to Sir Philip Magnus who, along with Dr. Addison, introduced the deputation above alluded to—

> "I have given very careful consideration to the question of the tenure of office of Medical Officers of Health and sanitary inspectors, which the deputation which you introduced some months ago brought before my colleagues and myself at the House of Commons.
>
> "Without fresh legislation I could only deal with the case of officers whose appointments are subject to regulations made by the Local Government Board. These regulations at present allow a Local Authority the option of making appointments terminable by three months' notice, or making permanent appointments. I am willing to alter these Regulations so that, in the case of future appointments of whole time officers, the officer shall continue to hold office until he is removed by the local authority with the Board's consent, or is removed by the Board.
>
> "I am advised that no Order could be issued which would, of itself, transform present temporary appointments into permanent appointments, but I should be quite prepared to suggest to local authorities that all officers holding temporary whole time appointments should be reappointed under the new terms.
>
> "The question of part time appointments seem to me to be in a different category, and I am inclined to think that it is desirable that some enquiry should be undertaken into the general question of these appointments before any change is made in regard to the tenure of office of part-time officers.
>
> "But such an investigation must, I fear, be postponed until more normal times."

152. The Council has expressed to the President of the Local Government Board its satisfaction with the terms of his letter and its hope that the intentions expressed therein will be carried out at an early date. As regards Superannuation of Medical Officers of Health and School Medical Officers, steps are being taken to redraft the Association's Bill, in accordance with advice given to the Association at the Local Government Board, on the lines of the Civil Service Superannuation Act. In such a form, it will, it is believed, be more likely to receive favourable consideration at the hands of the Department.

FORMS OF REPORT ON CASES OF TUBERCULOSIS RECEIVING DOMICILIARY TREATMENT.

153. The Council carefully considered the question referred to it by the Annual Representative Meeting, 1914 (Min. 210), of possible improvement and simplification of the present forms of report on cases of tuberculosis receiving domiciliary treatment, and forwarded to the Local Government Board suggested simplified forms. The Board stated that the matter was already receiving consideration, and that the forms will have due attention.

MODEL SCHEME FOR THE TREATMENT OF TUBERCULOSIS.

154. The Council has considered various suggestions for the amendment of the Association's Model Scheme for the treatment of Tuberculosis, and in accordance with the instructions of the Annual Representative Meeting, 1914 (Mins. 186-209 and Min. 212), has issued copies of the Scheme to all Divisions and Branches, and, with a covering letter, to the Clerks of Insurance Committees and all Sanitary Authorities. A considerable number of local authorities have applied for additional copies of the Scheme and covering letters for detailed consideration by their members. Some of these bodies have expressed their appreciation of the Association's action in issuing this statement of its views on the subject. This experience is valuable as showing that much good may be done in public questions in which the Association is interested by bringing the views of the Association directly to the notice of the public bodies concerned.

CONFERENCE OF REPRESENTATIVES OF THE ASSOCIATION AND THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

155. In accordance with the custom adopted for some years of holding conferences from time to time with representatives of the Society of Medical Officers of Health, it had been the intention to arrange such a conference this session. There have been many difficulties in the way of securing a suitable date and still more in obtaining the attendance of members whose special knowledge it is most desirable to utilise, and the conference has had to be abandoned temporarily.

ACTION TAKEN WITH RESPECT TO PUBLIC HEALTH AND POOR LAW APPOINTMENTS.

156. Action has been taken by the Association in respect of a large number of appointments, and the proportion of cases in which the action is successful is steadily growing.

(K) Hospitals.

MODEL SCHEME FOR THE TREATMENT OF TUBERCULOSIS.

157. Careful consideration has been given by the Council to the following Minute 213 of the Annual Representative Meeting, 1914:—

> *Minute* 213.—Resolved: That the following Motion by St. Pancras and Islington be referred to the Council for consideration and report:—
>
> That the voluntary hospitals to which medical schools are attached should have the opportunity of having all clinical material they need for teaching purposes.

The Council recommends:—

> **Recommendation.**—That the Representative Body express the opinion that it is necessary for the training of medical students in the diagnosis and treatment of tuberculosis that any tuberculosis dispensary situate in the area of a voluntary hospital to which a medical school is attached, should, so far as possible, be worked in co-operation with the hospital for teaching purposes.

VOLUNTARY HOSPITALS AND TREATMENT OF CASES IN RECEIPT OF MATERNITY BENEFIT.

158. The Council has considered the following Minutes 227-231 of the Annual Representative Meeting, 1914:—

> *Minute* 227.—Resolved: That as it is necessary for the training in midwifery of medical students and pupil midwives that there should be an adequate supply of clinical material available for that purpose, no parturient woman should be refused treatment in the obstetric department of a voluntary hospital or similar institution* on the ground that she is eligible for a maternity benefit.

* By "similar institution" is meant "places of study admitting medical students and recognised by Universities and examining bodies whose diplomas are accepted by the General Medical Council, or admitting pupil midwives and recognised by the Central Midwives' Board."

Minute 228.—Resolved: That women entitled to a maternity benefit under the National Insurance Acts should not be regarded as eligible for free treatment except on the recommendation of a medical practitioner.

Minute 229.—Resolved: That all women receiving treatment through the obstetric department of a voluntary hospital or similar institution who are entitled to a maternity benefit shall be required to pay such sum to the hospital or institution as shall be determined upon by the governing body.

Minute 230.—Resolved: That from each such sum an amount, to be agreed upon between the governing body and medical staff, shall be placed to a special fund which shall belong to the medical staff.

Minute 231.—Resolved: That the Representative Body approve the Report of Council on the question of voluntary hospitals and their treatment of cases in receipt of maternity benefit. (Appendix VIII. to Annual Report of Council, Supp., May 2nd, 1914, pages 317-8),

and has given instructions that copies be forwarded to all hospitals used for the training of medical students in midwifery together with the proposals which are contained in the Association's Model Scheme for the treatment of tuberculosis, as to the mode of disposal of moneys due to members of honorary medical staffs of the hospitals, in conformity with the suggestion contained in Minute 230.

PAYMENT OF MEMBERS OF HONORARY MEDICAL STAFFS OF HOSPITALS FOR OPERATIONS ON TUBERCULOUS CASES.

159. The Council is pleased to be able to report that as a result of conferences between the North of England Branch and the Durham County Council the proposals for the payment of members of the honorary medical staffs of hospitals for operations on tuberculous cases, contained in the Association's Model Tuberculosis Scheme, have been agreed to tentatively for one year. The arrangement is that the County Council makes a fixed payment to certain hospitals of three guineas per case operated upon (in addition to a 30s. maintenance allowance per week to the hospital authorities), the disposal of the money so accruing being left absolutely to the discretion of the medical staff. The experiment, which is the first fruits of the suggestions made by the Association, will be watched with great interest.

POSITION OF VOLUNTARY HOSPITALS UNDER THE INSURANCE ACT.

160. A considerable amount of attention has been given to the question of the position of Voluntary Hospitals under the Insurance Act, and, as the present policy of the Association in regard to the subject is dual, namely, a desire to perpetuate and support the voluntary system, and, at the same time, to establish and support the principle that the State should pay for the medical attendance of those patients for whose maintenance it is responsible, a report is being prepared showing how far these two policies have been carried out and what is the result on the position of the medical staffs of voluntary hospitals.

(L) Naval and Military.

SHORTAGE OF MEDICAL OFFICERS IN THE ROYAL NAVY.

161. The Report of the Association on the Shortage of Medical Officers in the Royal Navy which, as reported in the last Annual Report of Council, was forwarded to the Admiralty, was simply acknowledged, but in view of the breaking out of War the Council has deemed it inadvisable to press the matter further for the time being. It will be revived at the first favourable opportunity.

ADVICE TO OFFICERS IN THE R.A.M.C. (T.F.).

162. The Council during the early months of the War kept in close touch with the Assistant Director-General of the Army Medical Service at the War Office, and advised many practitioners on questions relating to the Service.

DIFFERENCE OF PAY OF SURGEONS CALLED OUT BY THE TERRITORIAL FORCE AND THOSE COMMISSIONED ON EMERGENCY TO THE R.A.M.C.

163. In consequence of numerous complaints received from practitioners in all parts of the country, chiefly those who had been in the Territorial Force for some time, as to the difference between their pay and that given to practitioners temporarily commissioned in the emergency created by the present War, the Council made representations to the War Office, urging that those Medical Officers in the Territorial Force who are serving outside the British Isles, and who are consequently going beyond the scope of their original agreement, should receive no less remuneration than the Officers with temporary commissions in the R.A.M.C. particularly as they are carrying out identical duties. No answer has yet been received beyond a formal acknowledgement.

ROYAL COMMISSION ON PUBLIC SERVICES IN INDIA.

164. The Council has taken no further action with regard to the position and prospects of the Indian Medical Service, pending the publication of the report of the Royal Commission on Public Services in India. Although the Council is anxious that the question shall not be shelved, it believes that, even if the Report of the Commission were published at an early date, it is improbable that any immediate action would be taken during the present unsettled state of the country.

(M) Scotland.

THE WAR.

Formation of Scottish Medical Service Emergency Committee.

165. The Scottish Committee carefully considered the situation resulting from the withdrawal of a large number of practitioners from civil practice to serve with the forces, and arranged a conference of the Committee with representatives of the Medical Faculties of the Universities and the Presidents of the Royal Colleges on the subject. As a result a Scottish Medical Service Emergency Committee was appointed. A valuable statement in respect of the national emergency, prepared and issued by this Committee, appeared in the Supplement of January 16th, 1915 (*see* also paragraph of this report). School Medical Officers, Assistant Medical Officers of Health and retired practitioners were invited to offer their services for the supply of vacant practices, and it was decided to invite fifth year medical students to act as assistants in the event of their services being required. The Committee has been empowered to take whatever steps it may consider necessary in emergency. The Scottish Committee also circularised the Local Medical Committees throughout Scotland as to the necessity for their assuming corporate responsibility for the practices of panel practitioners called up for military service.

166. The Scottish Committee has offered the Government every assistance in its power in connection with the making of supplementary provision for the medical care of the Forces in Scotland.

Saving of Doctors' Time.

167. The Scottish Committee has published in the lay press a notice drawing the attention of the public to the special need during the present crisis that patients should notify their doctors early in the day as to visits required that day, and that members of the public should also in every other possible way assist doctors to cope with the extra work at present required of them.

BELGIAN DOCTORS AND PHARMACISTS' RELIEF FUND.

168. Active steps have been taken by the Scottish Committee to bring this Fund to the notice of the profession in Scotland.

NATIONAL INSURANCE ACT.

Central Bureau for Checking Prescriptions and Chemists' Accounts.

169. The Scottish Committee conferred with the Scottish Insurance Commissioners as to the proposed establishment of a Central Bureau to check prescriptions and chemists' accounts. The Commissioners having intimated their intention of nominating a Board of Management of the Central Bureau, to

consist of 14 members, and that they desired the Panel and Local Medical Committees to nominate two representatives to that Board, one to be nominated by the County and the other by the Borough Committees, the Scottish Committee suggested the names of Dr. G. C. Anderson, Methil, and Dr. James R. Drever, Glasgow, to the Committees and is glad to report that as a result these two nominees have been elected.

Non-Delivery of Medical Cards and Reduction of Provisional Credit to Practitioners.

170. The Scottish Committee approached the Commissioners by deputation as to the situation arising out of instructions given by the Commissioners to Insurance Committees reducing the provisional credits to doctors and ordering the withdrawal from doctors' lists of all persons whose cards have not been delivered. The Commissioners discussed the question, but stated that meantime they could issue no definite statement as to their position.

Use of Term "Aqua."

171. The Scottish Committee conferred with the Commissioners with regard to difficulties which have arisen in consequence of the recommendation by the Insurance Act Committee that when *aqua* was ordered in an Insurance prescription without any qualifying word the term was to be interpreted as meaning ordinary tap water, except in cases where dangerous incompatibility would occur. The Commissioners agreed to issue for publication a minute expressing their views, which, however, is not yet available.

"Starred" Drugs.

172. The Scottish Committee has been in communication with the Scottish Insurance Commissioners as to the question of the periodical revision of the prices of "starred" drugs, including a proposal made by the Scottish Commissioners that the Committee should meet at frequent intervals to revise the prices submitted by the Standing Pharmaceutical Committee for Scotland. The Committee expressed the opinion that the prices of "starred" drugs for Scotland should be fixed by the Joint Conference in London. The Committee also informed the Commissioners that in the event of a Conference being desired to consider the grounds of this decision, a deputation representative of the Committee would wait upon the Commissioners.

Question of Overlapping of work of Insurance Act and Scottish Committees.

173. As a result of conference between the Scottish and Insurance Act Committees, arrangements have been approved by the Council with the object of avoiding as far as possible overlapping of the work of the two Committees. These include exchange of Committee documents and draft circulars.

Accounting between the Commissioners and Insurance Practitioners.

174. The Scottish Committee has considered the question of the deductions made from doctors' credits by the Commissioners to meet over-statement of lists and for other reasons, and with the approval of the Council is recommending the Commissioners to the following effect :—

(1) That the Commissioners should submit to the Committee on behalf of the profession in Scotland a half-yearly or yearly statement of the funds allocated to the profession under the Act, the statement to be audited by the Commissioners' accountants and certified as correct.

(2) That the Commissioners should also submit a statement of the surplus left after paying the accounts of the doctors who attended temporary residents for the year 1914, and should now repay in each Insurance area the money deducted for this purpose.

APPOINTMENT OF SCOTTISH MEDICAL SECRETARY.

175. The Council has deferred for the present appointing a Medical Secretary for Scotland, and temporary arrangements have been made for coping with the extra work which has been thrown on the Committee.

(N) Ireland.

MEDICAL SECRETARY FOR IRELAND.

176. The most outstanding event in the past year has been the appointment of an Irish Medical Secretary with the establishment of an Irish Office. At the time of this change in the administration, fully 25 per cent. of the members of the Association in Ireland had already resigned on account of the increase in the subscription, and that the many more resignations which were threatened and pending have been to a large extent withdrawn is mainly due to the exertions of the Irish Medical Secretary, whose duties have been fulfilled with zeal and discretion and wholly to the satisfaction of the Irish Committee. At the request of the Irish Committee he has also acted as Secretary of the Irish Medical Committee, a directly elected body which is universally recognised as representative of the whole Irish profession in regard to matters arising under the National Insurance Act. In thus lending his services, the Irish Committee considers that it has made use of him to the greatest advantage for the benefit of the profession at large, and hopes that by doing so both the present status and future prospects of the Association in Ireland will be improved, and that many adherents to it will be gained.

CERTIFICATION UNDER INSURANCE ACT.

177. The outbreak of war has more or less hung up the great controversy of Irish medical politics at present—the question of certification; but a considerable amount of quiet work has been done towards a settlement, though the unfriendly attitude of the Irish Commissioners, backed by a strong section of the Friendly Societies, still stands in the way.

POSITION OF MEDICAL ADVISERS.

178. The Irish Committee has passed a resolution that it is of opinion that no member of the British Medical Association in Ireland should accept or continue to hold an appointment as medical adviser or certifier under the National Insurance Act, and directed that it should be brought to the notice of each Division and Branch of the Association in Ireland.

QUESTION OF AMALGAMATION OF IRISH MEDICAL ASSOCIATION WITH THE BRITISH MEDICAL ASSOCIATION.

179. Signs are not wanting that an amalgamation of the Irish Medical Association with the British Medical Association is coming more and more within the range of practical politics, and the Council is endeavouring to further this very desirable end in every way.

PROPOSED DEPUTATION TO LOCAL GOVERNMENT BOARD *re* POOR LAW MEDICAL PRACTICE.

180. The Irish Committee requested the Local Government Board (Ireland) to receive a deputation from that Committee in regard to the following questions :—

(1) The admission, contrary to Statute and regulations, of well-to-do patients to workhouse hospitals.

(2) The adoption of graded scales of salaries for Poor Law Medical Officers and the action of certain Boards of Guardians in making it a condition of appointment of Dispensary medical officers that they shall attend private patients at certain fixed fees.

The Local Government Board replied (*see* letter, Supplement to B.M.J., November 7th, 1914, page 229) to the following effect :—

(1) That workhouse hospitals are not general hospitals but are primarily hospitals for the use of the destitute poor, though poor persons and members of the Constabulary force are declared to be admissible thereto, but there can be no private patients in such institutions and, if such were irregularly admitted, the medical officer was debarred from accepting or demanding fees for their treatment.

(2) That the L.G.B. always urged Boards of Guardians to adopt graded scales of salaries, and would continue to do so, but that the present time, owing to the War, would not be opportune for pressing the matter on Boards of Guardians.

181. The Irish Committee subsequently considered Solicitor's opinion relative to workhouse medical officers receiving fees for medical treatment of well-to-do patients in workhouse hospitals. The opinion dealt at length with the Statutes and regulations governing the admission of inmates to workhouses and patients to workhouse hospitals. The Solicitor advised that the only persons admissible to workhouse hospitals in Ireland were the destitute and such poor persons as could only pay a portion of or the entire average cost of weekly maintenance. By a special arrangement members of the Royal Irish Constabulary are admissible for treatment to workhouse hospitals. The Solicitor further gave it as his opinion that workhouse doctors could not accept fees for the medical treatment of well-to-do patients who were irregularly admitted to workhouse hospitals, but that such admissions should be brought before the notice of the auditor at the half-yearly audit and he would be bound to deal with them. Action will be taken to bring the subject to the attention of the Auditors.

THE WAR AND DEPENDANTS OF MEN SERVING WITH THE COLOURS.

182. The practitioners of Ireland responded very freely to a request made of them through the Irish Committee for free attendance on necessitous soldiers' and sailors' wives and dependants, and efficient arrangements for organising this assistance were carried out accordingly.

(O) Oversea Branches.

MEDICAL REGISTRATION IN NORTH BORNEO.

183. As reported in the last Annual Report, the Council made representations to the British North Borneo Company in reference to certain provisions in a Draft Medical Ordinance which it was proposed to bring into force in that State, and pointed out the desirability (i.) of the Medical Council being less under Government control, and (ii.) of providing for adequate medical supervision of unqualified assistants in the Government and State Hospitals. The Council is pleased to be able to report that the Company has intimated that the proclamation to provide for the registration of medical practitioners has been amended in accordance with the representations of the Association, namely, so as to provide for the election of non-Government members of the Medical Council by ballot, and that qualified men must visit the Hospitals under their supervision at least once in fourteen days.

MEDICAL RECIPROCITY.

184. The Council has taken no further action at present with regard to the question of medical reciprocity, but, in cases where Medical Ordinances are under consideration for any British Dominion or Dependency, intends to make use of every opportunity of persuading the Government Department concerned to insert a provision that only the medical qualifications of those foreign countries which grant reciprocity to practitioners holding the qualifications of Great Britain or any of her Dominions shall be registrable. It is very satisfactory to note that the exigencies of the War have caused a considerable acceleration in the progress of medical reciprocity between this country and Canada.

MEDICAL REGISTRATION IN THE FALKLAND ISLANDS.

185. The attention of the Council having been drawn to the Falkland Islands' Ordinance No. 3 of 1913, for the registration of medical practitioners, midwives, and dentists, the Council has intimated to the Secretary of State for the Colonies that, whilst admitting that the Ordinance is preferable to no medical registration at all, the Council hoped that he will take the earliest possible opportunity of bringing it into line with the conditions as regards medical registration prevailing in other British Dominions and Dependencies.

MEDICAL REGISTRATION IN NYASALAND PROTECTORATE.

186. In response to a request for the observations of the Association upon a Bill providing for the amendment of the Medical Registration Ordinance in the Nyasaland Protectorate, the Council has informed the Under Secretary of State for the Colonies that the Association views with regret the establishment of a Sub-Register of persons other than fully qualified medical practitioners and cannot but consider the step as being of a retrograde nature, and one which it trusts will be regarded as being a temporary expedient to be repealed at the earliest possible opportunity.

J. A. MACDONALD,

May 3rd, 1915. *Chairman of Council.*

APPENDICES

TO ANNUAL REPORT OF COUNCIL.

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APPENDIX I.

SPECIAL REPORT OF COUNCIL ON MINUTE 306 OF A.R.M. 1913, AS TO QUESTION OF ELIGIBILITY FOR ELECTION AS A MEMBER OF THE ASSOCIATION.

(See para. 36 of Annual Report of Council.)

1. At the Annual Representative Meeting, 1913, the following motion was brought forward by the late Natal Branch :—

Minute 306.—Proposed: (1) That the Council of the Association be instructed to take the necessary steps to have Section 4 of the Articles of Association deleted, and the following substituted :—

Any medical practitioner registered in any portion of the British Empire shall, subject to the By-laws, be eligible for admission as an ordinary Member of the Association.

(2) That By-law 17 (2) (v) (now 18 (2) (v)), be deleted, and that any other By-law in conflict with the foregoing new Section of the Articles be deleted or so altered as to be in confirmity therewith.

(3) That in applications for membership a declaration should be made that the applicant is registered in a certain portion of the Empire.

The motion was referred to the Council, with a view to a report on the subject being prepared for the A.R.M., 1914.

2. The Council, on the ground that the question was an important and far-reaching one, primarily affecting the profession outside the United Kingdom, and believing many Oversea Branches would object to any such change, circularised all such Divisions and Branches to obtain their opinion, and so reported to the A.R.M., 1914.

3. The Council has now had an opportunity of considering the proposal with the help of the replies received from the Oversea bodies.

4. In dealing with the question of eligibility for election it should be remembered that, once elected, a member becomes automatically a member of any Division or Branch into whose area he may at any time remove, and he cannot be got rid of except for serious misconduct. Further, it should be noted that the electing body in the United Kingdom is the Branch Council. In the Oversea Branches the electing body is defined by local rules. In the case of a candidate whose address is outside the area of any Branch, election is by the Council of the Association.

I. PRESENT POSITION AS REGARDS ELIGIBILITY FOR MEMBERSHIP.

5. The eligibility of medical practitioners for ordinary membership of the Association is defined by Article 4 and By-laws 5, 6, 7, and 18 (2) (v). From them it will be seen that eligibility varies in different areas.

(a) *Eligibility for Election by Branch Councils in United Kingdom.*

6. The candidate must be registered in the United Kingdom and resident within the area of the Branch.

(b) *Eligibility for Election by Oversea Branches.*

7. Oversea Branches may elect two classes of practitioners resident in their areas, namely :—

(a) Practitioners registered in the United Kingdom.

(b) Practitioners not registered in the United Kingdom, but possessing such qualifications as the Branch has by its rules decided to recognise.

8. Oversea Branches, therefore, have greater freedom than Branches in the United Kingdom as regards the election of members, their eligibility being largely left to each individual Branch to determine by its rules.

(c) *Eligibility for Election by Council of Association.*

9. The Council can only elect to membership of the Association practitioners who are registered in the United Kingdom but are not resident in the area of any Branch.

10. A point has been made of the fact that there are many practitioners resident outside the area of any Branch of the Association who possess qualifications registrable in the United Kingdom, and who would make good members, but cannot be elected because they are not registered, as British registration is of no use to them.

11. This point is already being partly met by the change in Art. 4, sanctioned by the A.R.M., 1914, which gives the Council power to elect such suitable persons though not registered.

12. In the case which has been raised of practitioners resident in unorganised areas just outside the area of an Oversea Branch, whom these Branches consider suitable members and would like to elect, it is suggested that the simplest way of dealing with them would be for the Branch to extend its boundaries to include their residence, or if there is any objection to this procedure, for the Branch to promote the formation of a new Branch in the unorganised area.

II. POSITION WHICH WOULD RESULT IF PRACTITIONERS REGISTERED IN ANY PORTION OF THE BRITISH EMPIRE WERE MADE ELIGIBLE FOR MEMBERSHIP.

13. The Natal motion contemplates that while the basis of eligibility should be materially altered, the machinery for election should remain three-fold as at present.

(a) *Election by Branch Councils in the United Kingdom under the Natal Proposal.*

14. A Branch Council in the United Kingdom would be able to elect any practitioner resident within its area who was registered in any portion of the British Empire, though he might not be registrable, and therefore unqualified to practice, in the United Kingdom. The Council is of opinion that the Home Divisions and Branches would strongly oppose such a change, regarding it as undesirable, except in the rare cases that now occur, that practitioners not registered in the United Kingdom should be able to be members of the Home Branches, and would prefer them to be excluded by the regulations rather than by the unpleasant process of blackballing.

15. Even under the present regulations, it has occasionally happened that a Home Branch has elected to membership of the Association a person resident temporarily in the United Kingdom, who, when he has returned to his Oversea home, has been locally unacceptable, and, indeed, had been previously locally rejected. The Council is persuaded that, if the proposed change were made, this unpleasant position would arise much more frequently.

(b) *Election by Oversea Branches under the Proposal.*

16. If the proposal were carried out the powers of the Oversea Branches would be considerably curtailed, for whereas at present they can lay down in their rules who (other than those on the British Register) shall be eligible for election by them to membership of the Association, the proposal would enable any practitioner registered in any part of the Empire to be a candidate for election, and would force on the Branches the necessity of excluding by vote any whose qualifications they thought were not such as rendered them suitable for membership of the Branch, and this decision might have to be come to with insufficient knowledge at short notice. There are qualifications which entitle those who hold them to practise in certain areas, but which the Council knows are held by several Branches not to be of such a standard as should entitle those who hold them to be members of the Association. The present by-laws were framed to give the Oversea Branches the widest possible powers of settling whom they will consider eligible for election. If the proposed change were made this power would disappear, and the Branches would have to consider and vote on every candidate who can show he is entitled to practise in any dominion, colony, or distant island, and no matter what standard of medical knowledge is there accepted. Some Branches purposely exclude certain orders of native practitioners, and their difficulties would be increased if they had to vote on each case.

17. There is a further and most important point to keep in mind. In some few areas in the Empire there is as yet no registration at all, so if registration of some kind were an essential qualification for election, the British Medical Association might in these places cease to exist.

18. It is thus obvious that the autonomy of the Oversea Branches which at present exists would be restricted by the proposal, and not enlarged.

(c) *Election by the Council of the Association under the Proposal.*

19. The new situation which would be created in respect of districts outside the area of any Branch by the proposal under consideration, if made operative, also requires careful consideration. Though the eligibility of candidates would be widened, the individual Oversea Branch would retain, in its right of refusing to *elect* a given candidate, the power of limiting its membership to practitioners considered suitable. The Council of the Association, on the other hand, ordinarily has no personal knowledge of practitioners resident outside the area of any Branch whose applications for membership come before it. The Council, therefore, could not with the same facility with which this could be done by a Branch, refuse to elect a given candidate on the ground that he was deemed to be unsuitable. In other words, election of such distant practitioners by the Council, given the requisite certificate of suitability and due notice, is necessarily a more automatic procedure than is that of election by a Branch of a practitioner resident in its area.

20. It should be borne in mind that if the Council elected, as it might from want of local knowledge, candidates residing outside any Branch but near the area of a given Oversea Branch, difficulties as regards extension of the boundaries of the Branch might arise, owing to the extension involving the automatic inclusion in the Branch membership of practitioners whom it would not on its own initiative have elected.

Question of Evidence of Registration under the Proposal.

21. It would in many cases be practically impossible for the electing body to obtain evidence, other than his declaration to that effect, that a candidate was actually registered in some portion of the Empire. In practice this would mean that frequently a mere declaration by a practitioner that he was registered would have to be accepted as sufficient qualification for eligibility for election.

REPLIES OF OVERSEA BODIES UPON PROPOSAL.

22. Replies have been received by the Council on the subject of the proposal from 13 of the Oversea bodies. Of these, 2 (Natal Inland and Queensland Branches) approve, and 11 (Border, Cape of Good Hope Western, Ceylon, Hong Kong and China, New South Wales, New Zealand, Punjab, Tasmanian, and Western Australian Branches, and Auckland, and East Griqualand Divisions) disapprove the proposal.

23. In replying, the Natal Inland Branch (substantially representing the discontinued Natal Branch) has expressed the opinion that the Council in placing the subject before the Oversea bodies for their consideration has not stated the case completely. The Council has therefore drawn the attention of the Branch to the fact that the machinery of the Association provides facilities for the full and free discussion of all proposals for amendment of the Association's regulations or policy that may at any time be put forward by any member, Division, or Branch, and that it would be open to the Branch to bring the matter forward more fully by the Branch submitting to the Divisions and Representative Body, together with any further motion the Branch might think fit to bring forward on the subject, a memorandum, prepared by the Branch itself, stating all the arguments which the Branch might wish to advance in support of its views. The Council has also expressed to the Branch and to Dr. Campbell Watt, the Honorary Secretary of the South African Committee, the originator of the proposal, its appreciation of the trouble taken by them in bringing forward a proposal which they consider would benefit the Association and the profession.

Recommendation.

The Council submits the following recommendation to the Divisions and Representative Body :—

> That on the information in its possession, including the replies on the subject received from the Oversea bodies, the Representative Body is of opinion that no change such as was contemplated by the motion of the late Natal Branch contained in Minute 306 of the A.R.M., 1913, should be made in the Articles and By-laws of the Association as to eligibility for membership, other than the alteration of Article 4 already decided upon by Minute 68 of the A.R.M., 1914.

APPENDIX II.

SPECIAL REPORT OF COUNCIL ON MINUTE 81 OF A.R.M., 1914, AS TO QUESTION OF ASSOCIATION BECOMING ALSO A FEDERATION FOR OTHER MEDICAL BODIES.

(See para. 37 of Annual Report of Council.)

1. The Council has considered the following Minute 81 of the A.R.M., 1914 :—

> 81. That it be referred to the Council to consider what alterations and additions to the Articles and By-laws and in the organisation of the British Medical Association in the United Kingdom would be necessary to allow of it becoming also a Federation for other medical bodies formed to safeguard the interests of one or more sections of the medical profession, while allowing all such bodies to continue their separate existence, and to issue a Report on the whole matter to the Representative Body,

and in connection therewith the report of the proceedings of the Representative Meeting (Supp. August 1st, 1914, p. 108). It invited and received and considered a report (printed as a Sub-Appendix to this report), by Dr. Fothergill, the Representative of the Division (Brighton) which proposed the resolution in the Representative Meeting. Dr. Fothergill was also present by invitation at a meeting of the Organisation Committee at which the matter was first discussed.

2. The Council notes that the A.R.M. did not in any way signify its approval or disapproval of the proposal for formation of a "Federation," and a first reading of the minute suggests that all the Council is required to do is to find certain machinery whereby something could be done if at some future time the Representative Body desired to do it.

3. A little consideration, however, convinced the Council that the machinery would vary greatly according to the meaning to be attached to the word "Federation." The Council has, therefore, been compelled to consider the general question, and it feels that liberty is given for this procedure by the final part of the minute, which asks for a report "on the whole matter."

4. The word "Federation" is used with very varied meanings, and it is not clear in exactly what sense it is used in Minute 81 and in the report received from the Brighton Division.

5. Up to the present the Council has not taken legal advice in connection with the proposal contained in Minute 81, experience having shown that until it can be determined what exactly is wanted, it is useless for the Association to consult lawyers to see if it can be obtained.

6. The proposal of the Brighton Division suggests the possibility of the Association, while remaining what it is, becoming in addition "a Federation."

7. This appears to the Council to be a desire to add to the objects and powers of the Association, and as such it cannot be accomplished by "alterations and additions to the Articles and By-laws." It could only be accomplished by alteration of the objects clause of the Memorandum. Members need not be reminded how difficult, almost bordering on the impossible, it has been found to widen this clause. It has always been held that the property of the Association has been accumulated under the present Memorandum, and is ear-marked and in trust for the objects of that Memorandum, and can never be used for any other objects, in other words, if the objects are widened there is a risk of the property being forfeited. So far no method has been suggested which will enable this difficulty to be evaded.

8. As regards the word "Federation," it will be helpful to consider it in the varied significances it has in ordinary use. In its strict sense it of course connotes the existence of a *foedus*, or treaty, by which the parties or states are bound together, and by which their duties and obligations to each other are defined. Such is the meaning when we speak of Federated or Confederated States.

9. More recently it has come into use for certain forms of business and trade combinations. Its significance then seems

usually to imply a sort of compound company—a company in which the shareholders are companies. For example, a number of Steamship Companies (composed of individual shareholders) unite to form for certain purposes the Shipping Federation. In the same way there are trade federations—the Iron Trades Employers' Federation, and federations of Trade Unions and labour societies—*e.g.*, the Miners' Federation. In these cases the federation is a separate society or company having much the same relation to the federating societies or companies as they in turn have to their individual members.

10. A scheme of federation of this latter kind for the medical profession was worked out in 1911 by Drs. Devis and Scott Williamson and other members of the Bristol Division, and was brought before the Representative Body in 1912, when it was found that it was legally impossible for the Association, even if it desired it, to become a body with such a constitution and carry its property with it.

11. So far, however, as the Council can judge, the Brighton Division does not desire any such legal federation, the Division apparently using the word "federation" in the sense of a sort of friendly relationship of a loose kind with no legal or binding obligations. It appears to be desired that the Association and the other medical bodies should know one another better, be intimate with one another's aims and objects, and it is assumed that they would be able usually to sympathise with each other and to adopt a common policy and work together to carry it into effect.

12. The Council, while appreciating the desire for sympathy, union and co-ordinated action, thinks it to be its duty to point out that even in the medical profession there are class interests, which indeed some of the societies are called into being to voice and support, and that it is hardly likely that the policy of the Association will always be in agreement with the views of every organised section of class interests inside the profession.

13. It is urged, and with much reason, that the Association in forming its policy would be much helped if representatives of the various special interests could be present at the meetings of the Representative Body to lay down authoritatively the views of societies representing their section of the profession.

14. It is extremely difficult to judge whether such societies would be able to get members to attend these meetings regularly. It seems more likely that they would only attend when there was something being dealt with on which they had a special desire to influence opinion, or when it was desired to get into the counsels of the Association and learn what it was doing. Such a member could hardly vote, as he would own no allegiance to any Constituency in the Association, and even Members of the Council of the Association find their position as non-voters at Representative Meetings anomalous enough.

15. Even if it could be done legally, which is open to doubt, the Council can hardly imagine the Association giving such representatives voting power. The Society they represented might consist largely of non-members of the Association or, if all its members belonged to the Association, they would thereby be given a double voice in Association affairs. The result might easily be that the views of the ordinary member would be over-ridden by the non-member or plural voter, and this, be it remembered, without the Association having any voice in the affairs of the so-called "federating" society. For it is laid down in the memorandum received from the Brighton Division that "each society is to retain its autonomy intact."

16. It seems to the Council that such a procedure would give to bodies in whose counsels the Association had no influence, a possibly determining voice in the Association's affairs.

17. For these reasons the Council thinks it would be inadvisable, even if it should be constitutionally possible, to admit representatives of other bodies to vote in either the Representative Body or Council.

18. On the other hand the Council thinks it might be possible and useful to allow such representatives to serve on the Committees of the Association.

19. Already this is done to some extent, as for example the presence of a representative of the societies of women doctors on the Insurance Act Committee. Another means of effecting the same end is already in operation, as for example the Joint Conferences held between representatives of the Association and of the Society of Medical Officers of Health.

20. The Council makes the following comments on paragraphs 6 and 7 of the report received from the Brighton Division :—

6. (a) & (b).—The Council considers that the self-government of the Association would be interfered with if representatives of other societies sat and voted in the Representative Body and Council.

6. (c) & (d).—The Council approves of the principle of admitting to the Committees of the Association representatives of other bodies wishing to act with the Association.

6. (e).—The Council thinks it would be inadvisable, and at times unacceptable to the recipient, to make a rule of electing to honorary membership of the Association persons eligible for ordinary membership. It further points out that Honorary Members cannot vote or take part in the government of the Association. The Council believes that this is not a matter that can be altered in the Regulations of the Association, but one which is laid down in Company law.

6. (f).—The Council is of opinion that there is no bar to the Association accepting money from outside sources, but once received it would have to be expended within the objects of the Association, unless, of course, put into trust for a special purpose.

6. (g)—A good deal is already done voluntarily as regards interchange of reports, opinions, &c., and unless autonomy is interfered with matters would have to remain as at present in this respect.

6. (h)—The Council is of opinion that space in the JOURNAL placed at the disposal of the societies might be a valuable means of *rapprochement*. In view, however, of the fact that the JOURNAL space is costly, that reports from societies when received are already admitted, and that reports of any co-ordinated action between the Association and a Society appear in due course in the published proceedings of the Association, the Council would suggest some such method as the following as the method which while effecting the purpose aimed at is most economical in respect of space and time :

That the Editor of the JOURNAL should place a column or two of the JOURNAL regularly at the disposal of a special correspondent appointed by himself, in conjunction with the Societies concerned, whose duty it should be to keep readers of the JOURNAL acquainted with the doings of any or each of these several Societies.

The Council considers that serious difficulties would arise if the JOURNAL were allowed to become the official organ of other societies whose policy might at times be directly opposed to that of the Association. Moreover, such a procedure might give to non-members greater facilities for expressing their views than it is possible to give to members, and so might produce discord.

It must also be remembered that the more influential societies with whom co-operation is most desired have their own publications.

6. (i.)—The Council appreciates the suggestion that the Association should provide accommodation for the meetings of other societies, but is of opinion that the present premises are insufficient for the purpose. The best societies already have their own rooms and would not be likely to desire to change.

7. The Council doubts the wisdom of placing the advantages of the Association at the disposal of non-members, feeling that the inducement to become a member would thereby become much lessened.

21. As already indicated, the Council disagrees with the view that the changes in the Regulations of the Association to produce the desired end would be small. This, however, can only be decided on legal advice, and the Council cannot recommend the expenditure of money in this way until the Association has made up its mind whether it is in favour of "federation" and if so of what kind of "federation."

22. Finally, there was prepared in connection with the reference contained in Minute 81 of the Representative Body, a list of sectional medical societies, and the Council considers that there are about twelve that might come under the category alluded to in the proposal of the Brighton Division.

23. No evidence came before the Council of there being a desire on the part of any such society to enter into closer union with the Association.

RECOMMENDATIONS.

(1) That the Representative Body is of opinion, on the legal advice the Association has formerly received, that it is impossible for the Association so to extend its objects as to become in any legal manner a Federation of Medical Societies.

(2) That the Representative Body would welcome any constitutional method whereby the Association, without interference with its own self-government, could come into closer relationship with other societies formed to safeguard the interests of any sections of the medical profession.

(3) That the Representative Body approves the principle of the Council adding to any Standing Committee of the Association a Member of the Association nominated by any Society, formed to safeguard the interests of any section of the profession, which desires to become more closely associated with the Association and to work in co-operation with it, and instructs the Council to prepare drafts of the necessary alterations in the By-laws to carry this into effect.

(4) That the Council be instructed to call into conference with itself certain other societies referred to in Recommendation (2), with a view to determining how it might be possible to come into closer relationship with such societies, and to report to the next Annual Representative Meeting with drafts of the necessary alterations in the Articles and By-laws, if any.

SUB-APPENDIX.

REPORT FROM REPRESENTATIVE OF BRIGHTON DIVISION.

QUESTION OF ASSOCIATION BECOMING ALSO A FEDERATION FOR OTHER MEDICAL BODIES.

1. In your letter of 9th December, 1914, you enclose a copy of a resolution passed by the Representative Meeting held in Aberdeen in July, 1914, as follows:—

(Minute 81 was here quoted.)

You ask me as Representative of the Brighton Division, who brought the proposal forward, to formulate in writing its views on the subject. This memorandum has been submitted to the Chairman and Honorary Secretary of the Division, as it is not possible just now to call a meeting only for the purpose of approving it. The views now tabulated I briefly referred to at the Division meeting when my resolution was adopted, and instructions were given to send it in to be placed on the Agenda for the Representative Meeting. I shall be pleased to accept the invitation to attend on January 12th in order to discuss the resolution with the members of the Organisation Committee.

2. The views now expressed do not pretend to be exhaustive of all the questions involved, but I am convinced that if the British Medical Association desires to continue to be recognised as the supreme body in the medical profession for medico-political work, it will be necessary for it to appreciate that specializing in the various branches of such work will come to pass however much anyone may hope for the contrary, and that, unless it does appreciate this and proceeds to federate to itself all societies of any importance formed to safeguard the interests of one or more sections of the medical profession, then these societies will tend to drift farther and farther away, and to become eventually rival and opposing bodies, and so lead to division in the profession with discordant notes outside. Without pretending to define all the societies I have in view, I would now mention only those formed to look after the interests of Medical Women, Medical Officers of Health, Poor Law practitioners, Asylum practitioners, Hospital practitioners. The members of such Societies as these are, no doubt, a small percentage only of the profession and of the members of the Association, but they do good work, and federation would often widen their outlook, whilst assisting the Association.

3. The reference to the Council is limited to the consideration of possible federation with Societies formed solely of medical practitioners and with such of them as deal with medico-political subjects. Such federating must not mean the absorption of such Societies when they would lose their entity. Each Society is to retain its autonomy intact.

4. Every federation brought about would be consequent on a mutually expressed desire for it. But there would be seemingly no objection to the Association, did it adopt the proposal, advising various Societies of the existence of the scheme.

5. That some kind of federation is desirable seems almost obvious. It would allow of co-operation in any propaganda undertaken, co-ordination of policy and in carrying any policy into effect; and would permit of an exchange of information that would prove educational to both parties concerned.

6. Some of the ways in which such a federation could be brought about on the part of the Association would be these:

(a) Representation could be given on the Council by the election of a practitioner who is a member of both Societies and has been nominated by the federating Society.

(b) A similar representation could be given in the Representative Body, the Parliament of the British Medical profession.

(c) On suitable Standing Committees the Council and/or the Representative Body could elect a member similarly nominated by the federating Society.

(d) Should any *ad hoc* Committee be formed to deal with a question that affected the interests of the federating Society its representative could be given a seat on it, or be called into consultation.

(e) The Presidents of the federating Societies could be elected by the Representative Body as Honorary members of the Association during their term of office. Probably they would be also on the B.M.A. Council by nomination.

(f) There could be paid an annual subscription from each federating Society, the amount possibly having some relation to the membership of the Society.

(g) Arrangements could be made for an exchange of Agendas, Minutes, Reports, and generally advice given and received in the Medical Department of the Association before any important conclusions are arrived at or action taken.

(h) Space could be provided in the JOURNAL for a federating Society, if the JOURNAL had been recognised as the official publication for that Society.

(i) Accommodation might be provided by the Association for meetings of federating Societies, the name plate of the Society appearing at the entrance. When the Association secures offices large enough to meet the needs of the medical profession it could sublet a room or rooms to each of the federating Societies. Economy in time and labour would often result if all these Societies were under one roof.

7. Other benefits that might be granted to a federating Society could be

(a) the use of the Library.

(b) the right to attend and assist at Section meetings at the Annual Meeting.

(c) a certain number of copies of the JOURNAL gratis for office use.

(d) the attendance and assistance, if desired, of one of the medical staff at a Council or Committee meeting.

(e) the use of any rooms for social purpose that have been provided by the Association for its members.

8. In order to bring about a federation there need not be any great alteration or addition made to the Articles or By-laws of the Association. A paragraph could be inserted in general terms in those By-laws which refer to the formation of the Council and the Representative Body by which each would be given power to include as one of itself, members of the Association nominated as representative of those Societies which the Representative Body had by special resolution decided to allow to federate with it. The annual subscription to be charged might be stated to be such amount as the Representative Body by resolution determined. All this power would probably be used on the recommendation of the Council, which would formulate for its guidance the various conditions necessary for fulfilment before federation could be recommended to the Representative Body.

9. The question of the expulsion of a member from a federating Society who happened to be a member of the Association or *vice versa* would not affect the situation any more than his election would. Neither Body would have any direct relations with the members of the other as individuals.

APPENDIX III.

(See para. 38 of Annual Report of Council.)

re GROUPING:—

(a) OF HOME DIVISIONS AND BRANCHES FOR ELECTION OF 24 MEMBERS OF COUNCIL, 1916-17, UNDER BY-LAW 46 (a) (*see cols. 1 and 2*).

(b) OF HOME CONSTITUENCIES FOR ELECTION OF 12 MEMBERS OF COUNCIL, 1915-16 AND 1916-17, UNDER BY-LAW 46 (c) (*see cols. 1 and 3*).

(NOTE.—*The table shows the Grouping for Election of 24 Members of Council, 1915-16, as determined by the A.R.M., 1914. The list of Branches and the membership figures are brought up to March 22nd, 1915.*)

COLUMN 1.	GROUPS SHOWN BY BRACKETS.								
	COLUMN 2.				COLUMN 3.				
BRANCHES IN THE GROUPS, AND MEMBERSHIPS.	24 Members of Council elected by Grouped Branches by voting paper.				12 Members of Council elected by grouped Representatives.				Members in the Groups
England and Wales.									
North of England Branch, 743	861	...	1	...	...	1	...	...	1,784
North Lancashire and South Westmorland Branch, 118									
Yorkshire Branch	923	...	1						
Lancashire and Cheshire Branch	1,723	...	2	...	...	1	...	...	1,723
East York and North Lincoln Branch, 184	783	...	1	...	...	1	...	...	1,572
Midland Branch, 599									
Cambridge and Huntingdon Branch, 119									
Essex Branch (1), 153	789	...	1						
Norfolk Branch (1), 162									
Suffolk Branch (1), 128									
South Midland Branch, 227									
Birmingham Branch, 576	826	...	1	...	...	1	...	...	1,721
Staffordshire Branch, 250									
North Wales Branch, 176	895	...	1						
Shropshire and Mid-Wales Branch, 118									
South Wales and Monmouthshire Branch, 601									
Metropolitan Counties Branch, 2,537:									
No. 1 Metropolitan Group:									
City (158), East Hertfordshire (44), Finchley and Hendon (55), Hampstead (72), Harrow (47), Marylebone (524), North Middlesex (128), South West Essex (69), St. Pancras and Islington (124), Stratford (114), Tower Hamlets (66), and Willesden (54) Constituencies	1,455	...	...	...	...	1	...	...	1,455
No. 2 Metropolitan Group:									
Camberwell (77), Chelsea (77), Ealing (66), Greenwich and Deptford (47), Kensington (214), Lambeth (106), Lewisham (30) with Woolwich (33), South Middlesex (48), Wandsworth (132), West Hertfordshire (69) and Westminster (183) Constituencies	1,082	...	4	...	...	1	...	...	1,082
Bath and Bristol Branch, 319	647	...	1	...	...	1	...	...	1,347
Gloucestershire Branch, 127									
West Somerset Branch, 71									
Worcestershire and Herefordshire Branch, 130									
Dorset and West Hants Branch, 196	700	...	1						
South-Western Branch, 416									
Wiltshire (2), 88									

(1) Branches into which the East Anglian Branch was sub-divided December, 1914.
(2) New Branch, formed August, 1914. The grouping shown is that proposed for 1916-17 by the Council.

APPENDIX III *(continued)*,

GROUPS SHOWN BY BRACKETS.

BRANCHES IN THE GROUPS, AND MEMBERSHIPS.	COLUMN 1.	COLUMN 2. 24 Members of Council elected by Grouped Branches by voting paper.		COLUMN 3. 12 Members of Council elected by grouped Representatives.			Members in the Groups.
ENGLAND AND WALES *(continued)*.							
Oxford and Reading Branch, 208	538	...	1	...	1	...	1,637
Southern Branch, 330							
Kent Branch, 354	1,099	...	1				
Surrey Branch, 390							
Sussex Branch, 355							
Scotland.							
Aberdeen, Northern Counties, Dundee, and Perth Branches	476	...	1	...	1	...	926
Edinburgh and Fife Branches	450	...	1				
Glasgow and West of Scotland Branch (4 City Divisions)	392	...	1		1	...	864
Glasgow and West of Scotland Branch (5 County Divisions)	472	...	1				
Border Counties and Stirling Branches		...					
Ireland.							
Connaught and South-Eastern of Ireland Branches	77	...	1	...	1	...	235
Leinster Branch	158	...	1				
Munster Branch	67	...	1	...	1	...	385
Ulster Branch	318	...	1				

APPENDIX IV.

RE GROUPING OF OVERSEA BRANCHES FOR ELECTION OF 7 MEMBERS OF COUNCIL, 1916-17.

(See para. 39 of Annual Report of Council.)

(Subject as stated in the footnote, the brackets show the grouping adopted by the Representative Body for 1915-16.)

Branch.	Membership *(March 25th, 1915)*.	Member of Council.	Branch.	Membership *(March 25th, 1915.)*	Member of Council.
South Australian	242	1	Assam	26	1
Tasmanian	76		Baluchistan	6	
Victoria	815		Bombay	210	
Western Australian	136		Burma	63	
New South Wales	94	1	Ceylon	192	
Queensland	269		Hyderabad & Central Provinces (1)	24	
New Zealand	586	1	Punjab	63	
Barbados	22	1	South Indian and Madras	136	
Bermuda	9		Border, South Africa	98	1
British Guiana	47		Cape of Good Hope (Eastern)	31	
Halifax, Nova Scotia	46		Cape of Good Hope (Western)	123	
Jamaica	36		East Africa and Uganda	29	
Leeward Islands	18		Egyptian	31	
Montreal	51		Gibraltar	13	
St. John, New Brunswick	22		Griqualand West	23	
Saskatchewan	32		Malta and Mediterranean	20	
Toronto	249		Natal Coastal	68	
Trinidad and Tobago	20		Natal Inland	56	
Hong Kong and China	142	1	Orange Free State	72	
Malaya	103		Pretoria	58	
			Rhodesian	35	
			Witwatersrand	139	

(1) New Branch. Grouping is that suggested for 1916-17 by the Council.

APPENDIX V.

ANALYSIS OF BRANCH REPORTS FOR 1914.

(*See* paras. 45-6 of Annual Report of Council.)

Branch.	Membership.		Financial Statement.							Meetings.					
	On December 31st, 1913.	On December 31st, 1914.	Balance (if any) from 1913.	Deficit (if any) from 1913.	Receipts (if any) 1914.	Payments, 1914.	Balance (if any) to 1915.	Deficit (if any) to 1915.	Outstanding Unpaid Accounts as at December 31st, 1914.	Branch.	Scientific.	Medico-Political, Ethical, &c.	Social Functions.	Average Attendance.	Branch Council.
(A) HOME BRANCHES.			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.						
(1) Aberdeen...	207	190	13 15 0½		38 16 0	28 2 10	24 8 2½			3	0	2	1	0	2
(2) Bath and Bristol	467	346													
(3) Birmingham	674	612	57 6 6		121 16 0	116 4 7	62 17 11		53 0 0	6	5	0	0	32·5	6
(4) Border Counties	154	135		4 19 8	27 4 0	20 13 8	1 10 8		9 16 3						
(5) Cambridge and Huntingdon...	129	126	11 19 9½		25 0 0	25 19 1½	11 0 8			7	4	2	1	30	3
(6) Connaught	60	38													
(7) Dorset and West Hants ...	250	199	47 8 2		42 16 0	39 14 2	50 10 0		16 9	3	3	0	3	37	3
(8) Dundee	112	105	4 14 2		20 16 0	1 16 3	23 13 11			1	0	1	0	8	3
(9) East Anglian	554	495		63 6 0	98 8 0	64 13 2		29 11 2		2	2	0	2	18	4
(10) East York and North Lincoln	203	187													
(11) Edinburgh	496	387	81 1 3½		78 8 0	53 4 9½	106 4 6			2	1	1	1	35	2
(12) Essex		174													
(13) Fife	103	96	3 5 10		19 5 9	7 4 6	15 7 1			1	0	0	0	20	2
(14) Glasgow and West of Scotland	862	783	28 3 1		290 12 10½	145 19 4½	172 16 7			1	0	0	0	0	8
(15) Gloucestershire	151	135	1 4 2½		27 4 0	22 2 11½	6 5 3			9	8	1	8	22	6
(16) Kent	520	410	36 10 3		84 9 0	57 11 8	63 7 7								
(17) Lancashire and Cheshire ...	2,171	1,750	457 8 2		286 13 0	136 5 2	607 16 0			2	2	1	1	90	5

Branch.	Membership.		Financial Statement.							Meetings.					
	On December 31st, 1913.	On December 31st, 1914.	Balance (if any) from 1913.	Deficit (if any) from 1913.	Receipts (if any), 1914.	Payments, 1914.	Balance (if any) to 1915.	Deficit (if any) to 1915.	Outstanding Unpaid Accounts as at December 31st, 1914.	Branch	Scientific.	Medico-Political, Ethical, &c.	Social Functions.	Average Attendance.	Branch Council.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.						
(18) Leinster	284	193													
(19) Metropolitan Counties ...	3,788	2,926	267 16 2		713 12 8	552 0 1	429 8 9			1	0	35	2	15	9
(20) Midland	734	653	109 0 11		97 4 0	113 17 10	92 7 1		5 11	1	0	0	0	0	2
(21) Munster	120	81	31 18 0			6 5 0	25 13 0			2	0	2	0	6	0
(22) Norfolk		176													
(23) North of England	839	783		29 13 0½	157 8 0	40 1 11	87 13 0½		97 0 9½	1	0	1	0	90	6
(24) Northern Counties of Scotland	147	135		6 13 5	29 4 0	26 2 0		3 11 5		2	2	2	0	30	2
(25) N. Lancashire and S. Westmorland	141	121	26 2 1		12 13 1	14 1 0	24 14 2		8 4 0	0	1	0	0	28	1
(26) North Wales	224	189	35 16 9		29 11 11	21 13 0	43 15 8			2	2	2	2	28	3
(27) Oxford and Reading	305	235	49 9 8		23 18 0	32 10 3	40 17 5			1	1	0	1	25	1
(28) Perth	61	57	0 10 0		10 8 0	9 9 3	1 8 9			4	1	3	1	17	7
(29) Shropshire and Mid-Wales ...	147	130	21 6 0		13 4 9	10 3 5	24 7 4			2	2	1	0	17	3
(30) South-Eastern of Ireland ...	67	54	5 11 8		10 8 0	12 14 5	3 5 3			8	0	5	6	9	5
(31) Southern	499	407	40 0 2		90 10 4	71 12 11	58 17 7			2	2	2	1	37	6
(32) South Midland	266	237	9 3 1		49 4 0		58 7 1		26 14 6	1	0	1	1	32	2
(33) South Wales and Monmouthshire	683	618	74 13 3		126 4 0	168 19 3	31 18 0		2 0 0	4	3	4	1	26	6
(34) South-Western	563	473	16 12 8		95 16 0	56 11 6	55 17 2			3	2	1	1	29	5
(35) Staffordshire	281	256	9 17 2		53 4 0	41 4 7	21 16 7			4	3	1	4	29	5

Branch.	Membership.		Financial Statement.							Meetings.					
	On December 31st, 1913.	On December 31st, 1914.	Balance (if any) from 1913.	Deficit (if any) from 1913.	Receipts (if any), 1914.	Payments, 1914.	Balance (if any) to 1915.	Deficit (if any) to 1915.	Outstanding Unpaid Accounts as at December 31st, 1914.	Branch.	Scientific.	Medico-Political, Ethical, &c.	Social Functions.	Average Attendance.	Branch Council.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.						
(36) Stirling	86	73													
(37) Suffolk		145													
(38) Surrey	524	393	25 7 6		86 16 0	54 12 5	57 11 1		1 0 0	1	0	1	1	30	4
(39) Sussex	520	391													
(40) Ulster	441	354	8 15 6		72 12 0	58 14 11	22 12 7			4	4	2	0	45	4
(41) West Somerset	90	77													
(42) Wiltshire		86				1 11 9		1 11 9		1	0	1	0	14	0
(43) Worcestershire & Herefordshire	149	136	26 0 5		20 11 0	17 3 7	29 7 10			3	3	0	0	23·3	3
(44) Yorkshire	1,140	992	76 16 4		197 17 9	96 7 8	178 6 5			2	2	0	2	25	3
Totals (*Home Branches*)			1,577 13 10	104 12 1½	3,051 16 1½	2,124 19 0	2,434 3 2	34 14 4	198 18 2½						
(B) OVERSEA BRANCHES.															
(1) Assam	18	24	14 18 10		12 0	3 8 11	12 1 11			3				10	2
			Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.								
(2) Bombay	230	226	855 8 10		583 0 0	626 4 0	812 4 10			7	7		5	26	3
			£ s. d.		£ s. d.	£ s. d.	£ s. d.								
(3) Border Branch (S. Africa) ...	111	104	25 13 9		51 0 9	49 6 8	27 7 0		5 3	2				10·5	6
(4) British Guiana	40	43	15 7 0		15 5 0½	15 15 8½	14 16 4			4	4	0	0	18	3
(5) Burma	68	67	53 5 1		85 2 6	104 5 9	34 1 10			7	7	0	0	7	0
(6) Cape of Good Hope (Wn. Prov.)	140	134	2 17 9		185 15 6	186 18 11	1 14 4		27 12 6	8	8	4	1	17·5	9
(7) Ceylon	177	201	65 13 3		234 6 4	234 7 6	65 12 1			8				16	2
			$ c.		$ c.	$ c.	$ c.								
(8) Hong Kong & China	150	153	256 31		246 61	248 94	253 98			0	4	3	0	15	9
			£ s. d.		£ s. d.	£ s. d.	£ s. d.								
(9) New South Wales	930	968	384 18 1		2,976 10 10	2,807 5 11	554 3 0		16 4 6	12	9	3	1	42	25
(10) New Zealand	516	608	43 18 11(1)		1,821 19 8	1,807 12 4	58 6 3(1)			1	1	1	1	90	4

(1) Exclusive of moneys on deposit account, &c.

Branch.	Membership.		Financial Statement.						Meetings.						
	On December 31st, 1913.	On December 31st, 1914.	Balance (if any) from 1913.	Deficit (if any) from 1913.	Receipts (if any) 1914.	Payments, 1914.	Balance (if any) to 1915.	Deficit (if any) to 1915.	Outstanding Unpaid Accounts as at December 31st, 1914.	Branch.	Scientific.	Medico-Political, Ethical, &c.	Social Functions.	Average Attendance.	Branch Council.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.						
(11) Orange Free State	79	78	67 11 7		87 11 3	110 17 1	44 5 9			5	1	5		10	5
(12) Queensland	254	276	61 14 5		793 10 3	797 16 1	57 8 7			16	10	6	2	18	19
(13) Tasmanian	74	77	97 0 7½		125 17 4	109 2 10	113 15 1½			6	5			11	10
(14) Victorian	776	824	139 12 0		1,034 7 3	1,027 3 3	146 16 0	.		3	10	1	2	40	23
(15) West Australian	151	126	39 13 8		443 15 6	276 15 6	206 13 8			9	8	8		19·2	7
(16) Witwatersrand	112	121	245 19 0		299 3 4	401 8 5	143 13 11		151 6 0	12	12	3		19·9	19
Totals (*Oversea Branches*) ...			1,340 17 3½		8,218 8 2½	7,998 17 10½	1,560 6 9½(2)		195 8 3						

(2) Subject as stated in note (1).

OVERSEA BRANCHES WHICH HAVE NOT REPORTED, AND MEMBERSHIPS.

Baluchistan (6), Barbados (22), Bermuda (9) Cape of Good Hope (Eastern Prov.) (31), E. Africa and Uganda (29), Egyptian (31), Gibraltar (13), Griqualand West (23), Halifax, Nova Scotia (46), Hyderabad and Central Provinces (24), Jamaica (36), Leeward Isles (18), Malaya (103), Malta and Mediterranean (20), Montreal (51), Natal Coastal (68), Natal Inland (56), Pretoria (58), Punjab (63), Rhodesian (35), St. John, New Brunswick (22), Saskatchewan (32), S. Australian (242), S. Indian and Madras (136), Toronto (249), Trinidad and Tobago (20).

APPENDIX VI.

(See para. 50 of Annual Report of Council.)

HOME BRANCHES AND DIVISIONS WHICH ARE NOT, ACCORDING TO THE REGISTER AT THE HEAD OFFICE, IN EFFECTIVE POSSESSION OF RULES OF ORGANISATION UNDER ARTICLE 17.

(*Note.*—Branches whose names are included in brackets are mentioned merely for purposes of reference, being already in possession of effective Rules.)

Branches and Divisions.

(Aberdeen Branch)
- Aberdeen
- Orkney
- Shetland

(Birmingham Branch)
- Bromsgrove
- Dudley
- Warwick and Leamington
- West Bromwich

(Cambridge and Huntingdon Branch)
- Cambridge and Huntingdon
- Isle of Ely

(Connaught Branch)
- Mid-Connaught
- North Connaught
- South Connaught

Dundee Branch

(East York and North Lincoln Branch)
- North Lincoln

(Edinburgh Branch)
- Lothians

Essex Branch
- North West Essex

(Glasgow and West of Scotland Branch)
- Argyllshire
- Ayrshire
- Glasgow Central
- Renfrewshire

(Kent Branch)
- Rochester, Chatham, and Gillingham
- Sevenoaks

(Lancashire and Cheshire Branch)
- Birkenhead
- Chester
- Crewe
- Glossop
- Hyde
- Isle of Man
- Leigh
- Manchester
- Preston
- Wigan

(Leinster Branch)
- Mid Leinster
- North Leinster
- North West Leinster
- South East Leinster

(Metropolitan Counties Branch)
- Chelsea
- South Middlesex

Branches and Divisions.

(Midland Branch)
- Chesterfield

Munster Branch
- North Munster
- South Munster
- West Munster

Norfolk Branch
- Great Yarmouth

(North of England Branch)
- Hexham

Northern Counties of Scotland Branch
- Banff, Elgin and Nairn
- Caithness and Sutherland
- Inverness
- Islands

Oxford and Reading Branch
- Oxford
- Reading

(South Eastern of Ireland Branch)
- Carlow
- Kilkenny
- Waterford

(Southern Branch)
- Channel Islands

South Wales and Monmouthshire Branch
- Cardiff
- Monmouthshire
- North Glamorgan and Brecknock

(South Western Branch)
- East Cornwall
- Exeter
- West Cornwall

Suffolk Branch

(Surrey Branch)
- Wimbledon

(Ulster Branch)
- Ballymoney, N. Antrim, and S. Derry
- Belfast
- Derry
- Enniskillen
- Monaghan and Cavan
- Omagh
- Portadown and W. Down

West Somerset Branch

(Yorkshire Branch)
- Harrogate
- Huddersfield
- Rotherham
- Scarborough

APPENDIX VII.

SPECIAL REPORT OF COUNCIL ON THE STATUS AND AUTHORITY OF DECISIONS OF THE ASSOCIATION.

(See para. 54 of Annual Report of Council.)

1. At its meeting of January 27th, the Council had before it a Memorial by the Mid-Cheshire Division, requesting the Council to take into consideration the question of the status and authority of a "Decision of the Association." The Division was led to raise the question by its experience in connection with a resolution of the Representative Body on the subject of a minimum fee for the work of a medical referee under the Insurance Act. In attempting to put this resolution into operation in the area of the Division, the Division was faced with the fact that no other Division in the area of the Lancashire and Cheshire Branch was taking steps to enforce the resolution. It appeared therefore to the Division that to persevere in its attempts to enforce the resolution would only mean that its members would be penalised.

2. "Decisions of the Association" are defined in the following Article of the Association:

> Art. 31 (1). Subject as provided by the Regulations, a resolution of the Representative Body (not being a resolution inconsistent with the provisions of any statute or of the Memorandum of Association) which affects the funds of the Association, or relates to the Regulations or By-laws, or to the policy of the Association in matters affecting the honour or interests of the medical profession and is carried by a majority of not less than two-thirds of the votes given thereon in the manner prescribed by the By-laws, or which relates to any other business within the powers of the Representative Body, and is carried by a simple majority, shall be deemed to be a decision of the Association.
>
> (2) Provided that no resolution of the Representative Body to make any addition to or any amendment, alteration or repeal of any Regulation or By-law, or to make any new Regulation or By-law, shall have any operation unless a proposal to make the same shall have been previously approved and submitted to the Representative Body, either by the Council, or by a Branch, or by a Division, and shall have been published in the JOURNAL, not less than two months before the Annual Representative Meeting, or one month before the Special Representative Meeting at which such resolution is passed.

3. Altogether apart from the dissatisfaction which has been caused to the Mid-Cheshire and other Divisions by the want of uniformity in the action of the Divisions in regard to the resolution of the Representative Body now under discussion, the Council is of opinion that it is desirable that there should be a clear understanding as to what is meant by a "Decision of the Association" and what can be expected to be the result of the passing of resolutions by the Representative Body.

EFFECT OF A "DECISION OF THE ASSOCIATION" ON THE ASSOCIATION AS A CORPORATE BODY.

4. The British Medical Association is a company recognised in law as a corporate body which can "sue or be sued."

5. Such companies or corporate bodies are enabled to perform acts which otherwise only individual persons could legally perform.

6. The acts that a company can legally perform and the method of performing them are defined by the instrument constituting the company, which in the case of the Association consists of the Memorandum, Articles, and By-laws.

7. The particular things that shall be done, within these limitations, are decided in most companies by a general meeting of shareholders, and some acts cannot be decided on in any other way.

8. In the case of the B.M.A. the general meeting of shareholders or members has voluntarily handed over to the Representative Body all such powers as it legally can hand over, so that the Representative Body now has in many respects the powers of a shareholders' meeting. Consequently a competent decision of the Representative Body is tantamount to a decision of a shareholders' meeting and is binding on the company. Therefore the company, acting as a corporate body, must act in accordance with the resolutions of the Representative Body, subject to the powers of the Association to take a referendum. The funds of the Association are the funds of the company and cannot be spent except in accordance with the will of the company and the will of the company is decided by resolutions of the Representative Body, or in some few matters with which the Representative Meeting cannot legally deal, and which need not enter into the present discussion, by the General Meeting.

9. A "Decision of the Association" therefore is a resolution of the Representative Body or of the General Meeting legally arrived at, and as such is binding on the Association as a corporate body.

EFFECT OF A "DECISION OF THE ASSOCIATION" ON THE COUNCIL AND THROUGH IT ON THE EXECUTIVE OFFICERS.

10. The Council, as a group of individuals appointed to act for the Association, has to see that all its acts are legal, for, if they are not acts which the Association could legally perform, they will not be acts for the Association at all, but acts of the individuals performing them and for which in law they may be held personally responsible.

11. This duty and responsibility make it always necessary that the Council should exercise vigilance with regard to the resolutions of the Representative Body in order to ensure that they are within the objects of the Association as laid down in the Memorandum, not contrary to the Articles and By-laws, and not inconsistent with the law of the land. Further, if the Council decides, by the requisite majority, that a certain resolution does not properly represent the wishes of the Association, it is bound to take a referendum.

12. Subject to these limitations a resolution of the Representative Body is a "Decision of the Association"; the Council and its Officers must act in accordance therewith; and no money of the Association could be spent in carrying out a contrary policy.

EFFECT OF A "DECISION OF THE ASSOCIATION" ON BRANCHES AND DIVISIONS.

13. The position of Divisions and Branches is that of bodies which are to a great extent autonomous. In laying down the present constitution of the Association the question of centralised government versus local autonomy received the fullest consideration and the Association made its deliberate choice in favour of local autonomy and elasticity as against central government and rigidity. The position is stated in the following Article of the Association:—

> Subject to the Regulations and the By-laws each Division and each Branch shall be free to govern itself in such manner as it shall think fit, and for that purpose to make from time to time such Rules as it may think fit, and to repeal or alter the same, as and when it shall consider it expedient.

It will thus be seen that the degree of freedom of self-government thus conferred on the local units of the Association allows them to take their own line irrespective of the ideal which is laid down by the Representative Body. But experience shows that departures from the "decisions of the Association" are the exception and that in the great majority of cases the Divisions and Branches loyally follow the lead given by the Representative Body.

EFFECT ON THE INDIVIDUAL MEMBER.

14. The individual member pledges himself when he joins the Association "to abide by the Regulations (*i. e.* the Articles of Association) and By-laws, and the Rules of the Division and Branch to which he may at any time belong." As his membership of the Association is of course voluntary he can at any time terminate it if he is not willing to continue to obey these Regulations and Rules, or if he fails to obey them the Association can expel him. It will be noted that he does not promise in specific terms to obey all decisions of the Association. They are only morally binding on him until steps are taken to bring them within one of the categories he has promised to obey. In practice it is found usually most convenient for a Division or Branch to bring these decisions within its rules by passing resolutions adopting them, because this method offers greater local elasticity, and so adapts the machinery of the Association to the diverse conditions of local practice.

15. Although a member has not promised to comply with the decisions of the Association he might be expelled for failing to do so, even though the decision which he contravened had not been supported by a resolution of the Division of which he was a member. He could be dealt with by an ethical enquiry

originating in the Division or Branch, and the Council could, after due enquiry, expel him if it came to the conclusion that his failure to comply with the decision was detrimental to the honour and interests of the medical profession or of the Association.

16. To those who may be inclined to demand some coercive powers, and may even imagine that such coercive powers, if they were put into operation, would strengthen the position, the Council would suggest that this view is based on a misapprehension of the position. The medical profession is a difficult one to lead; it would be an impossible one to drive. The result of the adoption of an Article or By-law to the effect that all decisions of the Association shall be binding on every Member would be either (a) that many Members would at once leave rather than run the risk of being expelled for declining to obey a resolution with which they were not in agreement; or (b) many practitioners would be prevented from joining the Association; or (c) it would paralyse the functions of the Representative Body, which would refrain from passing resolutions on any matters where there was difference of opinion. The Council would point to the great success of the deliberately chosen constitutional practice of the Association which consists in the building up, by a gradual process of education and discussion, of a great body of medical opinion on questions of professional interest. Since the present constitution of the Association was laid down in 1903 there has been an enormous improvement in medical organisation, and great progress towards the solidarity of the profession. Minimum scales of remuneration have been laid down, improvements in conditions of medical employment have been obtained, and there has been a steady growth of interest in medico-political matters in every part of the Association. All this has been done not by coercion, but by the slow but sure method of moral suasion, and the steady pressure of the stronger Divisions and Branches on the weaker.

17. It must not be thought that the position of the Association thus described is peculiar to it. *All* voluntary associations are subject to the same limitations. Trade Unions, which are voluntary associations making use of peculiar conditions of employment and out of work and strike pay for coercive purposes, find that whenever they take action which goes further than many of their members think wise or safe the latter leave them. Even Parliament does not atttempt to make all its Acts binding on all parts of the country. Some Acts are permissive and have to be adopted locally (*e.g.* Notification of Births Act); some are afterwards put into general operation after an experimental period; many others depend on local activity for their successful carrying out; and many fall into desuetude because they are in advance of public opinion, or are contrary to it, or are found by experience to be useless.

18. Reviewing all the circumstances, the Council is of opinion that the Divisions and members should clearly understand that the aim of the Association is to formulate ideals, within the reach of practical politics, and gradually to establish such ideals as standards. There have always been and always will be differences in the extent to which Divisions will try to carry out the decisions of the Association, but the history of the past twelve years gives ample reason for hope and satisfaction to those who are content to build up steadily from the foundations. The most important lesson to be drawn from this review of the present situation is that Divisions should be exceedingly careful how they instruct their Representatives to vote and of what motions they put on the Representative Meeting Agenda paper. Divisions should instruct their Representatives to vote against any and every resolution they are not prepared to carry into effect in their own area. To instruct a Representative to vote for a measure should be considered to be a pledge to carry it out in that area at all costs, if passed. Decisions of the Association which have not behind them a large volume of medical opinion are at best useless, and may be very injurious.

19. As a practical suggestion for future improvement the Council proposes to call the attention of the Divisions at an early date after each Representative Meeting to those decisions which necessitate local action and to ask all Divisions to pass binding resolutions under the provisions of their Rules, and to report within a given time whether they have done so. The Council intends also to make use of its central staff to stimulate Divisions which are lax in regard to these matters by attending meetings of the Divisions at which Divisions will be kept informed of what is being done elsewhere and of the importance which is attached to their own co-operation. Reports will then be made by the Council to the Divisions and Representative Body showing to what extent the decisions of the Association are being made operative.

APPENDIX VIII.

REVISED RULES GOVERNING PROCEDURE IN ETHICAL MATTERS.

(See para. 79 of Annual Report of Council.)

(I.) REVISED RULES GOVERNING PROCEDURE IN ETHICAL MATTERS OF A DIVISION NOT ITSELF A BRANCH.

RULE 1.

For the better attainment, within the area of the..... Division, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be deemed to be part of the business of the Division to consider questions of professional conduct, and to pass, in accordance with its Rules, Resolutions upon such questions, which shall be binding upon the Members of the Division.

PROCEDURE IN PASSING RESOLUTIONS AS TO PROFESSIONAL CONDUCT.

RULE 2.

Ethical proceedings in respect of the contravention of a Resolution of a Division shall only be instituted where the Division concerned is in effective possession of these Rules, and when the Resolution in question has been passed by the Division in strict accordance with the following procedure:—

(A) *In the case of a Resolution to apply throughout the area of the Division.*

(i.) Fourteen days' notice of the terms of the proposed Resolution shall be given to every Member of the Division prior to the Meeting of the Division at which such Resolution is to be considered.

(ii.) At the Meeting the Resolution shall be deemed to be carried if approved without amendment by a three-fourths majority of those present and voting, and not otherwise.

(iii.) Notice of the adoption of such a Resolution by the Division shall forthwith be sent to every Member of the Division with a statement of the number of the Members present and voting for and against the Resolution.

(iv.) If less than one-third of the Members of the Division are present when the Resolution is put to the vote, and if within seven days from the circulation of a notice of the adoption of such a Resolution by a Meeting of the Division as above provided, not less than five per cent. of the Members of the Division shall request, by notice in writing to the Honorary Secretary of the Division, that a poll of the Members of the Division be taken by post, a poll shall be so taken forthwith, and in such cases the Resolution shall be deemed to be carried if approved by two-thirds of those voting at such poll and not otherwise.

(B) *In the case of a Resolution to apply within part only of the area of the Division.*

(i.) Upon receipt of a requisition signed by not less than five-sixths of the Members of the Division residing and practising within any part, defined in such requisition, of the area of the Division, expressing the desire of the signatories for the adoption by the Division of a Resolution to be binding upon every Member of the Division practising within the said area, the Honorary Secretary shall give seven days' notice to every Member of the Division prior to a Meeting of the Division, of the consideration of such proposed Resolution at such Meeting.

(ii.) It shall be competent for the Division in such Meeting to adopt the proposed Resolution by a simple majority of those present and voting thereon, and the Resolution, if so adopted without amendment, shall be notified to every Member of the Division and shall thereupon become binding upon every Member of the Division practising within the area specified.

RULE 3.

(*a*) It shall be the duty of the Honorary Secretary of the Division to notify every Member of the Division of every Resolution as to professional conduct duly adopted by the Division in accordance with these Rules; and, subject to such instructions as may be received from the Division in General Meeting, it shall rest in the discretion of the Executive Committee to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession residing within the area of the Division who is not a Member of the Association.

(*b*) It shall be the duty of the Honorary Secretary of the Division to notify every Member of the Association coming to reside within the area of the Division, and every newly-elected Member of the Division, of every Resolution as to professional conduct duly adopted by the Division in accordance with these Rules, and further it shall rest in the discretion of the Executive Committee to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession who comes to reside within the area of the Division who is not a Member of the Association.

RULE 4.

Subject to instructions of a Meeting of the Division, the Executive Committee may—

(i.) cause to be brought to the notice of any other Division or of any Branch of the Association a Resolution of the Division as to professional conduct, and may request support from such Division or Branch with a view to making the operation of such Resolution more effective;

(ii.) cause to be brought to the notice of every Member of the Division and, if thought fit, to the notice of every member of the profession residing within the area of the Division, any Resolution as to professional conduct adopted by any other Division or Branch, of which the Division shall have received official notice. This Rule shall not apply to Resolutions relating to the professional conduct of individual practitioners.

RULE 5.

If a Resolution of the Division shall have reference to the terms or conditions upon which practitioners should accept or hold Appointments of any kind, it shall be the duty of the Honorary Secretary of the Division when notifying Members of the Division of the adoption of such Resolution, or when bringing such Resolution to the notice of any member of the profession residing within the area of the Division who is not a Member of the Association, in pursuance of these Rules, to request those practitioners who then hold Appointments of the kind in question, upon terms or under conditions inconsistent with the Resolution, to take the necessary steps within a period of one calendar month to terminate such Appointments in accordance with the terms of their engagement, or to secure such modifications of the terms or conditions of such Appointments as shall be necessary for compliance with the Resolution, and no further action shall be taken upon the Resolution under these Rules with respect to such practitioner until the expiration of a period of one calendar month from the time when such request was made.

If any practitioner shall within such period satisfy the Honorary Secretary of the Division that he has given such notice as is required under the terms of his engagement to terminate such Appointment, no further action shall be taken under these Rules with respect to such practitioner until the expiration of such notice.

PROCEDURE OF ENQUIRY INTO COMPLAINTS REGARDING PROFESSIONAL CONDUCT.

RULE 6.

Complaints regarding the professional conduct of individual members of the profession residing within the area of the Division shall be sent in writing to the Honorary Secretary of the Division.

RULE 7.

It shall be the duty of the Honorary Secretary of the Division, on receipt of a complaint regarding professional conduct, whether concerning a Member of the Association or one who is not a Member, immediately to refer the matter to the Head Office for advice and instructions, and to take no other action whatever in connection with such complaint except on and in accordance with such advice and instructions as he may thus obtain from the Head Office, any provision otherwise contained in these Rules notwithstanding.

NOTE.—*The Association will accept no responsibility whatever in connection with any ethical matters not so referred or when the advice and instructions received from the Head Office are not carried out, or in connection with which any action has been taken except under such advice and instructions.*

RULE 8.

In a case submitted by a Member of the Association, who considers that he has been (or is) directly affected by what he alleges to be the unprofessional conduct of another Member, it shall be the duty of the Honorary Secretary of the Division to ascertain forthwith whether the applicant has either personally, or by letter, afforded the Member against whom he makes complaint a reasonable opportunity of explanation, and if this has not been done to call upon him to do so. If the applicant fails to take this step within a week, the propriety of his action in having made the complaint may itself be made a matter for consideration.

RULE 9.

For the assistance of the Division in investigating complaints regarding professional conduct, a Committee called the Ethical Committee may be appointed annually by the Division in General Meeting, consisting of the Chairman and Honorary Secretary for the time being, *ex officio*, with not less than five nor more than seven other Members of the Division. If such Committee be not appointed, the Executive Committee shall be deemed to be and shall act as the Ethical Committee of the Division.

RULE 10.

A Meeting of the Ethical Committee may be convened at any time by the Chairman or Honorary Secretary of such Committee (or by the Honorary Secretary of the Division, if the Committee has not appointed an Honorary Secretary), for the investigation, under the instructions of the Head Office, of complaints regarding the professional conduct of individual members of the profession residing within the area of the Division. Seven days' notice of any such Meeting shall be given to every Member of the Committee, and to all parties concerned.

RULE 11.

If any Member of the Ethical Committee be personally concerned in a case as complainant or otherwise, or be partner or assistant or principal of any person so concerned, or have otherwise such personal interest in the case as, in the opinion of the Committee, to render it undesirable that he should take part in any investigation of that case, he shall retire from the Committee during the investigation of the case, and the Committee may appoint some other Member of the Division, who is not so interested, to act in his stead. If the Member of the Committee affected by this Rule be the Chairman or Secretary, the Committee shall appoint a Chairman or Secretary to act in his stead for the purpose of the case.

RULE 12.

When the local investigation of a complaint regarding professional conduct has been sanctioned by the Central Ethical Committee, the Ethical Committee of the Division shall investigate the facts of the case, and shall take such evidence, whether written or oral, as shall be deemed necessary for this purpose. Copies of documents furnished by any party to a case for the consideration of the Committee shall be supplied by the Honorary Secretary of the Committee to the other parties concerned. All parties to a dispute shall be invited to attend the Meeting of the Committee at which the case is to be investigated, and it shall be the duty of the Committee, whenever practicable, to bring the parties into personal conference in its presence. It shall be the duty of the Ethical Committee and its Officers to act in accordance with the instructions received from the Head Office.

RULE 13.

In any case in which the Ethical Committee is of opinion that it would be undesirable, in the interests of the profession, that the complaint should be investigated locally, the Committee shall have power to refer the investigation to the Branch Council and all documents bearing on the case shall be sent to the Honorary Secretary of the Branch.

RULE 14.

If the case appears to be one only affecting the parties personally, the Ethical Committee of the Division shall have power to decide the case, provided that all parties have, *prior* to the investigation of the case, given their written consent to accept such decision as final.

RULE 15.

In all other cases the Ethical Committee of the Division shall, after due investigation, present to a Special Meeting of the Division, or to the next Ordinary Meeting, at its discretion :—

(1) A Report of the facts as found by the Committee from the evidence placed before it, and

(2) a Recommendation to the Division in one of the following forms :—

(i.) That the Division express the opinion that the complaint has not been established.

(ii.) That the Division express the opinion that no offence has been committed against the Rules (or Resolutions) of the Division, or (the decisions of the Association), or (the generally accepted principles of professional conduct), and that no action be taken.

(iii.) That the Division express the opinion that the complaint is frivolous, and that the case be dismissed.

(iv.) That the Division express the opinion that .....has committed an indiscretion and error of judgment, but that his conduct does not call for censure.

(v.) That the Division express no opinion upon the case, and refer the whole of the facts for the consideration of the Branch Council.

(vi.) That the Division express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Division, or (the decisions of the Association), *and*

(*b*) the generally accepted principles of professional conduct.

but that, in consideration of faults on the part of others concerned, the case be dismissed.

(vii.) That the Division express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Division, or (the decisions of the Association), *and*

(*b*) the generally accepted principles of professional conduct,

and resolve that he be, and hereby is, censured.

(viii.) That the Division express the opinion that the conduct of.....has been (or is)

(*a*) in contravention of the Rules (or Resolutions) of the Division, or (the decisions of the Association), *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the medical profession, *and (if a Member)*

(*d*) resolve that he be informed of this finding of the Division and allowed until..... to reconsider his position ; that the Ethical Committee of the Division be instructed to report in due course to the Division upon his reply, if any, and that, if upon such further report the Division shall consider his reply unsatisfactory, or if no reply be received within the time specified, the matter shall forthwith be reported to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

(ix.) That the Division express the opinion that the conduct of.....has been (or is)

(*a*) in contravention of the Rules (or Resolutions) of the Division, or (the decisions of the Association), *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the medical profession, *and (if a Member)*

(*d*) resolve that the Report of the Ethical Committee and the findings of the Division be reported forthwith to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

RULE 16.

All parties to a dispute shall be invited to attend the General Meeting of the Division at which the case is to be considered.

RULE 17.

The Report and the Recommendation of the Ethical Committee of the Division shall be circulated to all Members of the Division, and to each party concerned, not less than seven days before the General Meeting of the Division at which it is to be considered, and shall be issued in sealed envelopes marked "Private and Confidential."

RULE 18.

Members who have taken part as Members of the Ethical Committee of the Division in the investigation of a case shall be entitled to take part in the consideration by the General Meeting of the Division of the Report of the Ethical Committee on such case, and to speak and vote thereon as individual Members of the Division.

RULE 19.

On the reception of the Report and Recommendation of the Ethical Committee by the Division, there shall be no discussion on the Report of the facts as found by the Committee, and no other than the following motions shall be in order on the Report or the Recommendation :—

(*a*) That the Report of the Ethical Committee be approved, and that the Recommendation be adopted as follows:—

....

(*b*) That the Report of the Ethical Committee be approved, but that the Recommendation be amended as follows :—

That the Division express the opinion that .....

(One of the alternative forms of Recommendation which it would have been permissible for the Committee to make may be inserted, and no other.)

(*c*) That the Report and the Recommendation of the Ethical Committee be referred back for further consideration.

RULE 20.

A copy of the Resolution of the Division shall be sent by the Honorary Secretary of the Division to each of the parties concerned.

RULE 21.

If a medical practitioner shall make amends or express regret to the satisfaction of the Division, it shall be competent for the Division, after due notice, to rescind the Resolution of censure passed under Rule 15 (2) (vii.).

RULE 22.

The finding of the Division upon a case shall be final so far as the Division is concerned, unless new facts shall subsequently be brought forward which, in the opinion of the Central Ethical Committee, justify the case being re-opened.

RULE 23.

Any medical practitioner feeling himself aggrieved by a decision of the Division shall have a right of appeal to the Branch Council, and from the Branch Council to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Division or the Branch Council, as the case may be. Written notice of such appeal shall be sent to the Honorary Secretary of the Body against whose decision the appeal is lodged, and to the Head Office. In the event of an appeal being lodged, no action shall be taken to give effect to the finding appealed against, pending the decision of such appeal.

RULE 24.

An appeal against the decision of a Branch Council shall be allowed only on the ground either :

(*a*) that an ethical principle has been wrongly interpreted or applied ; or

(*b*) that the decision given is against the weight of evidence.

RULE 25.

After a case has been referred to the Ethical Committee of the Division for investigation, no person concerned shall appeal to any other professional authority until such case has been disposed of by the Division, or in a case of appeal in accordance with the Rules of the Division or Branch, or the By-laws of the Association, until such appeal has been disposed of by the Branch Council, or the Council of the Association, as the case may be.

RULE 26.

It shall be the duty of every Member of the Division to afford all reasonable assistance to the Ethical Committee of any Division of the Association, to the Council of any Branch, to the Central Ethical Committee, and to the Council of the Association, in the investigation of complaints regarding the professional conduct of individual members of the profession, and any party to a case shall be required to furnish for such purposes such number of copies (not exceeding ten) as may reasonably be required of any documents submitted by him for the consideration of any such Committee or Council.

RULE 27.

Any Member of the Division who is a Member also of the Ethical Committee or of the Council of the Branch, or of any other body whose duty it might be to consider on behalf of the Association a case in respect of which an appeal is made from the finding of the Division, shall be debarred from taking part in the consideration of such case upon appeal, if he has already taken part in the consideration thereof by the Ethical Committee or Meeting of the Division, but he shall not be debarred from giving evidence as to facts, if called upon.

A Member of the Ethical Committee of the Division holding such other office, may give notice to the Honorary Secretary of the Division that, in order to retain his freedom to consider a case in the event of an appeal, he will not take part in the consideration of the case by the Ethical Committee of the Division, and the Committee, upon receipt of such notice, may appoint another Member of the Division to act in his stead.

RULE 28.

Subject to the provisions herein contained, no Member of the Division shall meet in consultation or accord any professional recognition to a medical practitioner who shall have been declared by Resolution of the Division to have acted in contravention of any Rule or Resolution of the Division as to professional conduct, of which such practitioner shall be proved to have had notice in accordance with these Rules, or who shall have been declared by Resolution of the Division to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour and interests of the medical profession,

provided that,

(*a*) this Rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such Officer;

(*b*) in circumstances of great urgency, affecting the life of a patient, a Member of the Division may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Division, who shall transmit them to the Ethical Committee of the Division, and it shall rest with the Ethical Committee to consider and report to the Division if in its opinion the circumstances were not such as to justify such action;

(*c*) any member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal, as provided in these Rules, to the Branch Council, and from the Branch Council to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Division or Branch Council, as the case may be, and pending the decision of such appeal (if any) the operation of this Rule in the case shall be suspended;

(*d*) If the Division shall, after the adoption of a Resolution of the kind defined in the first part of this Rule, subsequently resolve that in the opinion of the Division the conduct of the practitioner referred to in such Resolution is no longer deserving of censure, or that professional recognition should no longer be withheld from him, this Rule shall cease to apply to such practitioner, and the decision of the Division shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original Resolution of censure.

RULE 29 (RULE "Z").

(*a*) In every case in which the Division shall, after due inquiry in accordance with these Rules, have passed a Resolution declaring that in the opinion of the Division the conduct of any medical practitioner, whether by contravention of the Rules or Resolutions of the Division, or of the decisions of the Association, or otherwise, has been (or is) detrimental to the honour and interests of the medical profession, it shall be the duty of the Honorary Secretary of the Division to submit the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Central Ethical Committee, to cause such Resolution to be brought directly to the knowledge of every Member of the Division by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Division to authenticate by his signature.

(*b*) In any case in which the Division shall, at the time of, or subsequently to, the adoption of a Resolution of the nature contemplated by paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Division, it is desirable that such Resolution shall be brought officially to the notice of any specified Divisions or Branches of the Association, it shall be the duty of the Executive Committee of the Division to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said Resolution to be transmitted by the Honorary Secretary of the Division to the Honorary Secretary of the Divisions or Branches so specified.

FORM OF NOTICE REFERRED TO IN PARAGRAPH (*a*):—

BRITISH MEDICAL ASSOCIATION.

.....*Division.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule 29 of the.....Division, Notice is hereby given that at a General Meeting of the Division, held at..... .....on the..... day of....., a Resolution in the following terms was duly passed:—

"*That in the opinion of this Division the conduct of*..... .....*of*.....*has been (or is) detrimental to the honour and interests of the medical profession.*"

Signed in pursuance of the Rules of the..... Division of the British Medical Association.

.....

Honorary Secretary.

(NOTE.—The Central Ethical Committee desires to draw the attention of Divisions to the necessity of Notices such as the above being circulated *in sealed envelopes*, and marked "Private and Confidential, for the use of Members of the.....Division exclusively.")

(II.) REVISED RULES GOVERNING PROCEDURE IN ETHICAL MATTERS OF A BRANCH COMPOSED OF ONE DIVISION,

RULE 1.

For the better attainment, within the area of the..... Branch, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be deemed to be part of the business of the Branch to consider questions of professional conduct, and to pass, in accordance with its Rules, Resolutions upon such questions, which shall be binding upon the Members of the Branch.

RULE 2.

Every question of professional conduct referred to the Branch shall be deemed to be referred to the Branch Council, and the decision of the Branch Council upon such questions shall be deemed to be the decision of the Branch.

No question of the conduct of an individual member of the profession shall in any circumstances be considered by a General Meeting of the Branch.

PROCEDURE IN PASSING RESOLUTIONS AS TO PROFESSIONAL CONDUCT.

RULE 3.

Ethical proceedings in respect of the contravention of a Resolution of a Branch composed of one Division shall only be instituted where the Branch concerned is in effective possession of these Rules, and when the Resolution in question has been passed by the Branch in strict accordance with the following procedure:—

(A) *In the case of a Resolution to apply throughout the area of the Branch.*

(i.) Fourteen days' notice of the terms of the proposed Resolution shall be given to every Member of the Branch prior to the Meeting of the Branch at which such Resolution is to be considered.

(ii.) At the Meeting the Resolution shall be deemed to be carried if approved without amendment by a three-fourths majority of those present and voting, and not otherwise.

(iii.) Notice of the adoption of such a Resolution by the Branch shall forthwith be sent to every Member of the Branch with a statement of the number of the Members present and voting for and against the Resolution.

(iv.) If less than one-third of the Members of the Branch are present when the Resolution is put to the vote, and if within seven days from the circulation of a notice of the adoption of such a Resolution by a Meeting of the Branch as above provided, not less than five per cent. of the Members of the Branch shall request, by notice in writing to the Honorary Secretary of the Branch, that a poll of the Members of the Branch be taken by post, a poll shall be so taken forthwith, and in such cases the Resolution shall be deemed to be carried if approved by two-thirds of those voting at such poll, and not otherwise.

(B) *In the case of a Resolution to apply within part only of the area of the Branch.*

(i.) Upon receipt of a requisition signed by not less than five-sixths of the Members of the Branch residing and practising within any part, defined in such requisition, of the area of the Branch, expressing the desire of the signatories for the adoption by the Branch of a Resolution to be binding upon every Member of the Branch practising within the said area, the Honorary Secretary shall give seven days' notice to every Member of the Branch prior to a Meeting of the Branch, of the consideration of such proposed Resolution at such Meeting.

(ii.) It shall be competent for the Branch in such Meeting to adopt the proposed Resolution by a simple majority of those present and voting thereon, and the Resolution, if so adopted without amendment, shall be notified to every Member of the Branch and shall thereupon become binding upon every Member of the Branch practising within the area specified.

RULE 4.

(*a*) It shall be the duty of the Honorary Secretary of the Branch to notify every Member of the Branch of every Resolution as to professional conduct duly adopted by the Branch in accordance with these Rules; and it shall rest in the discretion of the Branch Council to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession residing within the area of the Branch who is not a Member of the Association.

(*b*) It shall be the duty of the Honorary Secretary of the Branch to notify every Member of the Association coming to reside within the area of the Branch, and every newly elected Member of the Branch, of every Resolution as to professional conduct duly adopted by the Branch in accordance with these Rules, and further it shall rest in the discretion of the Branch Council to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession who comes to reside within the area of the Branch who is not a Member of the Association.

RULE 5.

The Branch Council may:—

(i.) cause to be brought to the notice of any Division or of any other Branch of the Association a Resolution of the Branch as to professional conduct, and may request support from such Division or Branch with a view to making the operation of such Resolution more effective;

(ii.) cause to be brought to the notice of every Member of the Branch and, if thought fit, to the notice of every member of the profession residing within the area of the Branch, any Resolution as to professional conduct adopted by any other Branch, or any Division, of which the Branch shall have received official notice. This Rule shall not apply to Resolutions relating to the professional conduct of individual practitioners.

RULE 6.

If a Resolution of the Branch shall have reference to the terms or conditions upon which practitioners should accept or hold Appointments of any kind, it shall be the duty of the Honorary Secretary of the Branch when notifying Members of the Branch of the adoption of such Resolution, or when bringing such Resolution to the notice of any member of the profession residing within the area of the Branch who is not a Member of the Association, in pursuance of these Rules, to request those practitioners who then hold Appointments of the kind in question, upon terms or under conditions inconsistent with the Resolution, to take the necessary steps within a period of one calendar month to terminate such Appointments in accordance with the terms of their engagement, or to secure such modifications of the terms or conditions of such Appointments as shall be necessary for compliance with the Resolution, and no further action shall be taken upon the Resolution under these Rules with respect to such practitioner until the expiration of a period of one calendar month from the time when such request was made.

If any practitioner shall within such period satisfy the Honorary Secretary of the Branch that he has given such notice as is required under the terms of his engagement to terminate such Appointment, no further action shall be taken under these Rules with respect to such practitioner until the expiration of such notice.

PROCEDURE OF ENQUIRY INTO COMPLAINTS REGARDING PROFESSIONAL CONDUCT.

RULE 7.

Complaints regarding the professional conduct of individual members of the profession residing within the area of the Branch shall be sent in writing to the Honorary Secretary of the Branch.

RULE 8.

It shall be the duty of the Honorary Secretary of the Branch, on receipt of a complaint regarding professional conduct, whether concerning a Member of the Association or one who is not a Member, immediately to refer the matter to the Head Office for advice and instructions, and to take no other action whatever in connection with such complaint except on and in accordance with such advice and instructions as he may thus obtain from the Head Office, any provision otherwise contained in these Rules notwithstanding.

NOTE.—*The Association will accept no responsibility whatever in connection with any ethical matters not so referred or when the advice and instructions received from the Head Office are not carried out, or in connection with which any action has been taken except under such advice and instructions.*

RULE 9.

In a case submitted by a Member of the Association, who considers that he has been (or is) directly affected by what he alleges to be the unprofessional conduct of another Member, it shall be the duty of the Honorary Secretary of the Branch to ascertain forthwith whether the applicant has either personally, or by letter, afforded the Member against whom he makes complaint a reasonable opportunity of explanation, and if this has not been done to call upon him to do so. If the applicant fails to take this step within a week, the propriety of his action in having made the complaint may itself be made a matter for consideration.

RULE 10.

For the assistance of the Branch in investigating complaints regarding professional conduct, a Committee called the Ethical Committee shall be appointed by the Branch Council at the first meeting after the Annual General Meeting of the Branch, consisting of the President and Honorary Secretary for the time being, *ex-officio*, with not less than five nor more than seven other Members of the Branch. The Ethical Committee of the Branch of each year shall remain in office until the succeeding Committee is appointed.

RULE 11.

A Meeting of the Ethical Committee may be convened at any time by the Chairman or Honorary Secretary of such Committee, (or by the Honorary Secretary of the Branch, if the Committee has not appointed an Honorary Secretary), for the investigation under the instructions of the Head Office of complaints regarding the professional conduct of individual members of the profession residing within the area of the Branch. Seven days' notice of any such Meeting shall be given to every Member of the Committee, and to all parties concerned.

RULE 12.

If any Member of the Ethical Committee be personally concerned in a case as complainant or otherwise, or be partner or assistant or principal of any person so concerned, or have otherwise such personal interest in the case as, in the opinion of the Committee, to render it undesirable that he should take part in any investigation of that case, he shall retire from the Committee during the investigation of the case, and the Committee may appoint some other Member of the Branch who is not so interested, to act in his stead. If the Member of the Committee affected by this Rule be the Chairman or Secretary, the Committee shall appoint a Chairman or Secretary to act in his stead for the purpose of the case.

RULE 13.

When the local investigation of a complaint regarding professional conduct has been sanctioned by the Central Ethical Committee, the Ethical Committee of the Branch shall investigate the facts of the case, and shall take such evidence, whether written or oral, as shall be deemed necessary for this purpose. Copies of documents furnished by any party to a case for the consideration of the Committee shall be supplied by the Honorary Secretary of the Committee to the other parties concerned. All parties to a dispute shall be invited to attend the Meeting of the Committee at which the case is to be investigated, and it shall be the duty of the Committee, whenever practicable, to bring the parties into personal conference in its presence. It shall be the duty of the Ethical Committee and its Officers to act in accordance with the instructions received from the Head Office.

RULE 14.

In any case in which the Ethical Committee is of opinion that it would be undesirable, in the interests of the profession, that the complaint should be investigated locally, the Committee shall have power to refer the investigation to the Central Ethical Committee, and all documents bearing on the case shall be sent to the Head Office.

RULE 15.

If the case appears to be one only affecting the parties personally, the Ethical Committee of the Branch shall have power to decide the case, provided that all parties have, *prior* to the investigation of the case, given their written consent to accept such decision as final.

RULE 16.

In all other cases the Ethical Committee of the Branch shall, after due investigation, present to a Special Meeting of the Branch Council, or to the next Ordinary Meeting, at its discretion :—

(1) A Report of the facts as found by the Committee from the evidence placed before it, and

(2) a Recommendation to the Branch Council in one of the following forms :—

(i.) That the Branch Council express the opinion that the complaint has not been established.

(ii.) That the Branch Council express the opinion that no offence has been committed against the Rules (or Resolutions) of the Branch, or (the decisions of the Association), or (the generally accepted principles of professional conduct), and that no action be taken.

(iii.) That the Branch Council express the opinion that the complaint is frivolous, and that the case be dismissed.

(iv.) That the Branch Council express the opinion that .....has committed an indiscretion and error of judgment, but that his conduct does not call for censure.

(v.) That the Branch Council express no opinion upon the case, and refer the whole of the facts for the consideration of the Central Ethical Committee.

(vi.) That the Branch Council express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Branch, or (the decisions of the Association), *and*

(*b*) the generally accepted principles of professional conduct,

but that, in consideration of faults on the part of others concerned, the case be dismissed.

(vii.) That the Branch Council express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Branch, or (the decisions of the Association), *and*

(*b*) the generally accepted principles of professional conduct,

and resolve that he be, and hereby is, censured.

(viii.) That the Branch Council express the opinion that the conduct of.....has been (or is)

(*a*) in contravention of the Rules (or Resolutions) of the Branch, or (the decisions of the Association), *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the medical profession, *and (if a Member)*

(*d*) resolve that he be informed of this finding of the Branch Council and allowed until..... .....to reconsider his position ; that the Ethical Committee of the Branch be instructed to report in due course to the Branch Council upon his reply, if any, and that, if upon such further report the Branch Council shall consider his reply unsatisfactory, or if no reply be received within the time specified, the matter shall forthwith be reported to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

(ix.) That the Branch Council express the opinion that the conduct of.....has been (or is)

(*a*) in contravention of the Rules (or Resolutions) of the Branch, or the decisions of the Association, *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the medical profession, *and (if a Member)*

(*d*) resolve that the Report of the Ethical Committee and the findings of the Branch Council be reported forthwith to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

RULE 17.

All parties to a dispute shall be invited to attend the Meeting of the Branch Council at which the case is to be considered.

RULE 18.

The Report and the Recommendation of the Ethical Committee of the Branch shall be circulated to all Members of the Branch Council, and to each party concerned, not less than seven days before the Meeting of the Branch Council at which it is to be considered, and shall be issued in sealed envelopes marked "Private and Confidential."

RULE 19.

Members who have taken part as Members of the Ethical Committee of the Branch in the investigation of a case shall be entitled to take part in the consideration by the Meeting of the Branch Council of the Report of the Ethical Committee on such case, and to speak and vote thereon as individual Members of the Branch Council.

RULE 20.

On the reception of the Report and Recommendation of the Ethical Committee by the Branch Council there shall be no discussion on the Report of the facts as found by the Committee, and no other than the following motions shall be in order on the Report or the Recommendation :—

(*a*) That the Report of the Ethical Committee be approved, and that the Recommendation be adopted as follows :—

.....

(*b*) That the Report of the Ethical Committee be approved, but that the Recommendation be amended as follows :—

That the Branch Council express the opinion that.....

(One of the alternative forms of Recommendation which it would have been permissible for the Committee to make may be inserted, and no other.)

(*c*) That the Report and the Recommendation of the Ethical Committee be referred back for further consideration.

RULE 21.

A copy of the Resolution of the Branch Council shall be sent by the Honorary Secretary of the Branch to each of the parties concerned.

RULE 22.

If a medical practitioner shall make amends or express regret to the satisfaction of the Branch Council, it shall be competent for the Branch Council, after due notice, to rescind the Resolution of censure passed under Rule 16 (2) (vii.).

RULE 23.

The finding of the Branch Council upon a case shall be final so far as the Branch is concerned, unless new facts shall subsequently be brought forward which, in the opinion of the Central Ethical Committee, justify the case being re-opened.

RULE 24.

Any medical practitioner feeling himself aggrieved by a decision of the Branch Council shall have a right of appeal to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council. Written notice of such appeal shall be sent to the Honorary Secretary of the Branch and to the Head Office. In the event of an appeal being lodged, no action shall be taken to give effect to the finding appealed against, pending the decision of such appeal.

RULE 25.

An appeal against the decision of a Branch Council shall be allowed only on the ground either :

(*a*) That an ethical principle has been wrongly interpreted or applied ; or

(*b*) That the decision given is against the weight of evidence.

RULE 26.

After a case has been referred to the Ethical Committee of the Branch for investigation, no person concerned shall appeal to any other professional authority until such case has been disposed of by the Branch Council, or in a case of appeal in accordance with the Rules of the Branch, or the By-laws of the Association, until such appeal has been disposed of by the Council of the Association.

RULE 27.

It shall be the duty of every Member of the Branch to afford all reasonable assistance to the Ethical Committee of any Division of the Association, to the Council of any Branch, to the Central Ethical Committee, and to the Council of the Association, in the investigation of complaints regarding the professional conduct of individual members of the profession, and any party to a case shall be required to furnish for such purposes such number of copies (not exceeding ten) as may reasonably be required of any documents submitted by him for the consideration of any such Committee or Council.

RULE 28.

Any Member of the Ethical Committee of the Branch, or of the Branch Council, who is a Member also of any other body whose duty it might be to consider on behalf of the Association a case in respect of which an appeal is made from the finding of the Branch Council, shall be debarred from taking part in the consideration of such case upon appeal, if he has already taken part in the consideration thereof by the Ethical Committee of the Branch or Meeting of the Branch Council, but he shall not be debarred from giving evidence as to facts, if called upon.

A Member of the Ethical Committee of the Branch holding such other office, may give notice to the Honorary Secretary of the Branch that, in order to retain his freedom to consider a case in the event of an appeal, he will not take part in the consideration of the case by the Ethical Committee of the Branch, and the Committee, upon receipt of such notice, may appoint another member of the Branch to act in his stead.

RULE 29.

Subject to the provisions herein contained, no Member of the Branch shall meet in consultation or accord any professional recognition to a medical practitioner, who shall have been declared by Resolution of the Branch Council to have acted in contravention of any Rule or Resolution of the Branch as to professional conduct, of which such practitioner shall be proved to have had notice in accordance with these Rules, or who shall have been declared by Resolution of the Branch Council to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour and interests of the medical profession,

provided that,

(*a*) This Rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such Officer ;

(*b*) in circumstances of great urgency, affecting the life of a patient, a Member of the Branch may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Branch, who shall transmit them to the Ethical Committee of the Branch, and it shall rest with the Ethical Committee to consider and report to the Branch Council if in its opinion the circumstances were not such as to justify such action ;

(*c*) any member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal, as provided in these Rules, to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council, and pending the decision of such appeal (if any) the operation of this Rule in the case shall be suspended ;

(*d*) if the Branch Council shall, after the adoption of a Resolution of the kind defined in the first part of this Rule, subsequently resolve that in the opinion of the Branch Council the conduct of the practitioner referred to in such Resolution is no longer deserving of censure, or that professional recognition should no longer be withheld from him, this Rule shall cease to apply to such practitioner, and the decision of the Branch Council shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original Resolution of censure.

RULE 30 (RULE "Z").

(a) In every case in which the Branch Council shall, after due inquiry in accordance with these Rules, have passed a Resolution declaring that in the opinion of the Branch Council the conduct of any medical practitioner, whether by contravention of the Rules or Resolutions of the Branch, or of the decisions of the Association, or otherwise, has been (or is) detrimental to the honour and interests of the medical profession, it shall be the duty of the Honorary Secretary of the Branch to submit the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Central Ethical Committee, to cause such Resolution to be brought directly to the knowledge of every Member of the Branch by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Branch to authenticate by his signature.

(b) In any case in which the Branch Council shall, at the time of, or subsequently to, the adoption of a Resolution of the nature contemplated by paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Branch Council, it is desirable that such Resolution shall be brought officially to the notice of any specified Divisions or Branches of the Association, it shall be the duty of the Ethical Committee of the Branch to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said Resolution to be transmitted by the Honorary Secretary of the Branch to the Honorary Secretary of the Divisions or Branches so specified.

FORM OF NOTICE REFERRED TO IN PARAGRAPH (*a*):—

BRITISH MEDICAL ASSOCIATION.

.....*Branch.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule 30 of the.....Branch, Notice is hereby given that at a Meeting of the Branch Council held at.....on the.....day of ....., a Resolution in the following terms was duly passed:—

"That in the opinion of this Branch Council the conduct of.....of.....has been (or is) detrimental to the honour and interests of the medical profession."

Signed in pursuance of the Rules of the..... Branch of the British Medical Association.

.....
Honorary Secretary.

(NOTE.—The Central Ethical Committee desires to draw the attention of Branches to the necessity of Notices such as the above being circulated *in sealed envelopes*, and marked "Private and Confidential, for the use of members of the.....Branch exclusively.")

(III.) REVISED RULES GOVERNING PROCEDURE IN ETHICAL MATTERS OF A BRANCH COMPOSED OF SEVERAL DIVISIONS.

RULE 1.

For the better attainment, within the area of the .... Branch, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be deemed to be part of the business of the Branch to consider questions of professional conduct, and to pass, in accordance with its Rules, Resolutions upon such questions which shall be binding upon the Members of the Branch.

RULE 2.

Every question of professional conduct referred to the Branch shall be deemed to be referred to the Branch Council, and the decision of the Branch Council upon such questions shall be deemed to be the decision of the Branch.

No question of the conduct of an individual member of the profession shall in any circumstances be considered by a General Meeting of the Branch.

PROCEDURE IN PASSING RESOLUTIONS AS TO PROFESSIONAL CONDUCT.

RULE 3.

Ethical proceedings in respect of the contravention of a Resolution of a Branch composed of several Divisions, shall only be instituted where the Branch concerned is in effective possession of these Rules and when the Resolution in question has been passed by the Branch in strict accordance with the following procedure:—

(a) On the recommendation of any Division of the Branch the Branch Council shall consider the advisability of the adoption of a Resolution regulating the conduct of Members of the Branch in respect of the matters referred to in such Recommendation, and shall, if it think advisable, draft a Resolution or Resolutions in suitable form.

(b) The Branch Council shall take the opinion of the Members of the Branch by voting papers circulated to every Member and, subject to appeal to the Council of the Association, the Resolution shall be deemed to be carried if approved by two-thirds of the Members of the Branch voting thereon.

(c) Notice of the adoption of such a Resolution by the Branch shall forthwith be sent to every Member of the Branch with a statement of the number of Members voting for and against the Resolution.

(d) If within one month from the circulation of a notice of the adoption of such a Resolution by the Branch as above provided, any Division of the Branch shall appeal to the Council of the Association, written notice of such appeal being given to the Head Office and to the Honorary Secretary of the Branch, such Resolution shall not be confirmed as binding on the Members of the Division appealing until it be approved by the Council of the Association.

RULE 4.

(*a*) It shall be the duty of the Honorary Secretary of the Branch to notify every Member of the Branch, and the Honorary Secretary (as such) of every Division of the Branch, of every Resolution as to professional conduct duly adopted by the Branch in accordance with these Rules; and it shall rest in the discretion of the Branch Council to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession residing within the area of the Branch who is not a Member of the Association.

(*b*) It shall be the duty of the Honorary Secretary of the Branch to notify every Member of the Association coming to reside within the area of the Branch, and every newly elected Member of the Branch, of every Resolution as to professional conduct duly adopted by the Branch in accordance with these Rules, and further it shall rest in the discretion of the Branch Council to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession who comes to reside within the area of the Branch who is not a Member of the Association.

RULE 5.

The Branch Council may—

(i.) cause to be brought to the notice of any Division or of any other Branch of the Association a Resolution of the Branch as to professional conduct, and may request support from such Division or Branch with a view to making the operation of such Resolution more effective;

(ii.) cause to be brought to the notice of every Member of the Branch and, if thought fit, to the notice of every member of the profession residing within the area of the Branch, any Resolution as to professional conduct adopted by any other Branch, or any Division, of which the Branch shall have received official notice. This Rule shall not apply to Resolutions relating to the professional conduct of individual practitioners.

RULE 6.

If a Resolution of the Branch shall have reference to the terms or conditions upon which practitioners should accept or hold Appointments of any kind, it shall be the duty of the Honorary Secretary of the Branch when notifying Members of the Branch of the adoption of such Resolution, or when bringing such Resolution to the notice of any member of the profession residing within the area of the Branch who is not a Member of the Association, in pursuance of these Rules, to request those practitioners who then hold Appointments of the kind in question, upon terms or under conditions inconsistent with the Resolution, to take the necessary steps within a period of one calendar month to terminate such Appointments in accordance with the terms of their engagement, or to secure such modifications of the terms or conditions of such Appointments as shall be necessary for compliance with the Resolution, and no further action shall be taken upon the Resolution under these Rules with respect to such practitioner until the expiration of a period of one calendar month from the time when such request was made.

If any practitioner shall within such period satisfy the Honorary Secretary of the Branch that he has given such notice as is required under the terms of his engagement to terminate such Appointment, no further action shall be taken under these Rules with respect to such practitioner until the expiration of such notice.

PROCEDURE OF ENQUIRY INTO COMPLAINTS REGARDING PROFESSIONAL CONDUCT.

RULE 7.

Complaints regarding the professional conduct of individual members of the profession residing within the area of the Branch shall be sent in writing to the Honorary Secretary of the Branch and shall be considered by the Branch Council in the following circumstances only, namely:—

(*a*) Upon a reference from a Division of the Branch or the Ethical Committee of any such Division;

(*b*) Upon an appeal by a member of the profession from a decision of such a Division;

(*c*) Upon a complaint by a Member of the Association that a matter brought by him to the notice of the Division has, through the inactivity of the Division or other cause, received no consideration;

(*d*) Upon a reference from the Central Ethical Committee or Council of the Association.

RULE 8.

It shall be the duty of the Honorary Secretary of the Branch, on receipt of a complaint regarding professional conduct, whether concerning a Member of the Association or one who is not a Member, immediately to refer the matter to the Head Office for advice and instructions, and to take no other action whatever in connection with such complaint except on and in accordance with such advice and instructions as he may thus obtain from the Head Office, any provision otherwise contained in these Rules notwithstanding.

NOTE.—*The Association will accept no responsibility whatever in connection with any ethical matters not so referred or when the advice and instructions received from the Head Office are not carried out, or in connection with which any action has been taken except under such advice and instructions.*

RULE 9.

In a case submitted by a Member of the Association, who considers that he has been (or is) directly affected by what he alleges to be the unprofessional conduct of another Member, it shall be the duty of the Honorary Secretary of the Branch to ascertain forthwith whether the applicant has either personally, or by letter, afforded the Member against whom he makes complaint a reasonable opportunity of explanation, and if this has not been done to call upon him to do so. If the applicant fails to take this step within a week, the propriety of his action in having made the complaint may itself be made a matter for consideration.

RULE 10.

For the assistance of the Branch in investigating complaints regarding professional conduct, a Committee called the Ethical Committee shall be appointed by the Branch Council at its first meeting after the Annual General Meeting of the Branch, consisting of the President and Honorary Secretary for the time being, *ex-officio*, with not less than five nor more than seven other Members of the Branch. The Ethical Committee of the Branch of each year shall remain in office until the succeeding Committee is appointed.

RULE 11.

A Meeting of the Ethical Committee may be convened at any time by the Chairman or Honorary Secretary of such Committee (or by the Honorary Secretary of the Branch, if the Committee has not appointed an Honorary Secretary), for the investigation under the instructions of the Head Office of complaints regarding the professional conduct of individual members of the profession residing within the area of the Branch. Seven days' notice of any such Meeting shall be given to every Member of the Committee, and to all parties concerned.

RULE 12.

If any Member of the Ethical Committee be personally concerned in a case as complainant or otherwise, or be partner or assistant or principal of any person so concerned, or have otherwise such personal interest in the case as, in the opinion of the Committee, to render it undesirable that he should take part in any investigation of that case, he shall retire from the Committee during the investigation of the case, and the Committee may appoint some other Member of the Branch, who is not so interested, to act in his stead. If the Member of the Committee affected by this Rule be the Chairman or Secretary, the Committee shall appoint a Chairman or Secretary to act in his stead for the purpose of the case.

RULE 13.

When the local investigation of a complaint regarding professional conduct has been sanctioned by the Central Ethical Committee, the Ethical Committee of the Branch shall investigate the facts of the case, and shall take such evidence, whether written or oral, as shall be deemed necessary for this purpose. Copies of documents furnished by any party to a case for the consideration of the Committee shall be supplied by the Honorary Secretary of the Committee to the other parties concerned. All parties to a dispute shall be invited to attend the Meeting of the Committee at which the case is to be investigated, and it shall be the duty of the Committee, whenever practicable, to bring the parties into personal conference in its presence. It shall be the duty of the Ethical Committee and its Officers to act in accordance with the instructions received from the Head Office.

RULE 14.

In any case in which the Ethical Committee is of opinion that it would be undesirable, in the interests of the profession, that the complaint should be investigated locally, the Committee shall have power to refer the investigation to the Central Ethical Committee, and all documents bearing on the case shall be sent to the Head Office.

RULE 15.

If the case appears to be one only affecting the parties personally, the Ethical Committee of the Branch shall have power to decide the case, provided that all parties have, *prior* to the investigation of the case, given their written consent to accept such decision as final.

RULE 16.

In all other cases the Ethical Committee of the Branch shall, after due investigation, present to a Special Meeting of the Branch Council, or to the next Ordinary Meeting, at its discretion :—

(1) A Report of the facts as found by the Committee from the evidence placed before it, and

(2) a Recommendation to the Branch Council in one of the following forms :—

(i.) That the Branch Council express the opinion that the complaint has not been established.

(ii.) That the Branch Council express the opinion that no offence has been committed against the Rules (or Resolutions) of the Branch (or .. .. Division), or (the decisions of the Association), or (the generally accepted principles of professional conduct), and that no action be taken.

(iii.) That the Branch Council express the opinion that the complaint is frivolous, and that the case be dismissed.

(iv.) That the Branch Council express the opinion that .....has committed an indiscretion and error of judgment, but that his conduct does not call for censure.

(v.) That the Branch Council express no opinion upon the case, and refer the whole of the facts for the consideration of the Central Ethical Committee.

(vi.) That the Branch Council express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Branch (or ..... Division), or (the decisions of the Association), *and*

(*b*) the generally accepted principles of professional conduct,

but that, in consideration of faults on the part of others concerned, the case be dismissed.

(vii.) That the Branch Council express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Branch (or ..... Division), or (the decisions of the Association), *and*

(*b*) the generally accepted principles of professional conduct,

and resolve that he be, and hereby is, censured.

(viii.) That the Branch Council express the opinion that the conduct of.....has been (or is)

(*a*) in contravention of the Rules (or Resolutions) of the Branch (or ..... Division), or (the decisions of the Association), *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the medical profession, *and (if a Member)*

(*d*) resolve that he be informed of this finding of the Branch Council and allowed until..... .....to reconsider his position; that the Ethical Committee of the Branch be instructed to report in due course to the Branch Council upon his reply, if any, and that, if upon such further report the Branch Council shall consider his reply unsatisfactory, or if no reply be received within the time specified, the matter shall forthwith be reported to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

(ix.) That the Branch Council express the opinion that the conduct of.....has been (or is)

(*a*) in contravention of the Rules (or Resolutions) of the Branch (or .....Division), or (the decisions of the Association), *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the medical profession, *and (if a Member)*

(*d*) resolve that the Report of the Ethical Committee and the findings of the Branch Council be reported forthwith to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

RULE 17.

All parties to a dispute shall be invited to attend the Meeting of the Branch Council at which the case is to be considered.

RULE 18.

The Report and the Recommendation of the Ethical Committee of the Branch shall be circulated to all Members of the Branch Council, and to each party concerned, not less than seven days before the Meeting of the Branch Council at which it is to be considered, and shall be issued in sealed envelopes marked "Private and Confidential."

RULE 19.

Members who have taken part as Members of the Ethical Committee of the Branch in the investigation of a case shall be entitled to take part in the consideration by the Meeting of the Branch Council of the Report of the Ethical Committee on such case, and to speak and vote thereon as individual Members of the Branch Council.

RULE 20.

On the reception of the Report and Recommendation of the Ethical Committee by the Branch Council, there shall be no discussion on the Report of the facts as found by the Committee, and no other than the following motions shall be in order on the Report or the Recommendation :—

(*a*) That the Report of the Ethical Committee be approved, and that the Recommendation be adopted as follows :—

.....

(*b*) That the Report of the Ethical Committee be approved, but that the Recommendation be amended as follows :—

That the Branch Council express the opinion that.....

(One of the alternative forms of Recommendation which it would have been permissible for the Committee to make may be inserted, and no other.)

(*c*) That the Report and the Recommendation of the Ethical Committee be referred back for further consideration.

RULE 21.

A copy of the Resolution of the Branch Council shall be sent by the Honorary Secretary of the Branch to each of the parties concerned.

RULE 22.

If a medical practitioner shall make amends or express regret to the satisfaction of the Branch Council, it shall be competent for the Branch Council, after due notice, to rescind the Resolution of censure passed under Rule 16 (2) (vii.).

RULE 23.

The finding of the Branch Council upon a case shall be final so far as the Branch is concerned, unless new facts shall subsequently be brought forward which, in the opinion of the Central Ethical Committee, justify the case being reopened.

RULE 24.

Any medical practitioner feeling himself aggrieved by a decision of the Branch Council shall have a right of appeal to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council. Written notice of such appeal shall be sent to the Honorary Secretary of the Branch and to the Head Office. In the event of an appeal being lodged, no action shall be taken to give effect to the finding appealed against, pending the decision of such appeal.

RULE 25.

An appeal against the decision of a Branch Council shall be allowed only on the ground either :

(*a*) that an ethical principle has been wrongly interpreted or applied ; or

(*b*) that the decision given is against the weight of evidence.

RULE 26.

After a case has been referred to the Ethical Committee of the Branch for investigation, no person concerned shall appeal to any other professional authority until such case has been disposed of by the Branch Council, or in a case of appeal in accordance with the Rules of the Branch, or the By-laws of the Association, until such appeal has been disposed of by the Council of the Association.

RULE 27.

It shall be the duty of every Member of the Branch to afford all reasonable assistance to the Ethical Committee of any Division of the Association, to the Council of any Branch, to the Central Ethical Committee, and to the Council of the Association, in the investigation of complaints regarding the professional conduct of individual members of the profession, and any party to a case shall be required to furnish for such purposes such number of copies (not exceeding ten) as may reasonably be required of any documents submitted by him for the consideration of any such Committee or Council.

RULE 28.

Any Member of the Ethical Committee or Branch Council who shall have taken part as a Member of a Division in the previous consideration of any case referred to the Branch, shall be debarred from taking part in the consideration of such case in the Ethical Committee of the Branch or in the Branch Council, and if any member of the Ethical Committee or Branch Council be a member of any higher authority of the Association whose duty it may be to consider the case upon appeal, he shall be debarred from taking part in the hearing of such appeal if he shall have considered the case as a Member of the Ethical Committee or Branch Council, but he shall not be debarred from giving evidence as to facts, if called upon.

A Member of the Ethical Committee of the Branch holding such other office, may give notice to the Honorary Secretary of the Branch that in order to retain his freedom to consider the case, if necessary upon appeal, he will not take part in the consideration of the case by the Ethical Committee of the Branch, and the Committee, upon receipt of such notice, may appoint some other Member of the Branch to act in his stead.

RULE 29.

Subject to the provisions herein contained, no Member of the Branch shall meet in consultation or accord any professional recognition to a medical practitioner who shall have been declared by Resolution of the Branch Council to have acted in contravention of any Rule or Resolution of the Branch, or of the Division in the area of which he resides, as to professional conduct, of which Rule or Resolution such practitioner shall be proved to have had notice in accordance with the Rules of that Branch or Division, or who shall have been declared by Resolution of the Branch Council to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour and interests of the medical profession,

provided that,

(*a*) this Rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such Officer :

(*b*) in circumstances of great urgency, affecting the life of a patient, a Member of the Branch may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Division of which he is a Member, and it shall rest with the Division to consider and report to the Branch Council if in its opinion the circumstances were not such as to justify such action ;

(*c*) any member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal, as provided in these Rules, to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council, and pending the decision of such appeal (if any) the operation of this Rule in the case shall be suspended ;

(*d*) If the Branch Council shall, after the adoption of a Resolution of the kind defined in the first part of this Rule, subsequently resolve that in the opinion of the Branch Council the conduct of the practitioner referred to in such Resolution is no longer deserving of censure, or that professional recognition should no longer be withheld from him, this Rule shall cease to apply to such practitioner, and the decision of the Branch Council shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original Resolution of censure.

RULE 30 (RULE "Z").

(*a*) In every case in which the Branch Council shall, after due inquiry in accordance with these Rules, have passed a Resolution declaring that in the opinion of the Branch Council the conduct of any medical practitioner, whether by contravention of the Rules or Resolutions of the Branch, or of the Rules or Resolutions of a Division, or of the decisions of the Association, or otherwise, has been (or is) detrimental to the honour and interests of the medical profession, it shall be the duty of the Honorary Secretary of the Branch to submit the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Central Ethical Committee, to cause such Resolution to be brought directly to the knowledge of every Member of the Branch by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Branch to authenticate by his signature.

(*b*) In any case in which the Branch Council shall, at the time of, or subsequently to, the adoption of a Resolution of the nature contemplated by paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Branch Council, it is desirable that such Resolution shall be brought officially to the notice of any specified Divisions or Branches of the Association, it shall be the duty of the Ethical Committee of the Branch to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said Resolution to be transmitted by the Honorary Secretary of the Branch to the Honorary Secretary of the Divisions or Branches so specified.

FORM OF NOTICE REFERRED TO IN PARAGRAPH (*a*) :—

BRITISH MEDICAL ASSOCIATION.

.....*Branch.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule 30 of the..... ..... Branch, Notice is hereby given that at a Meeting of the Branch Council held at.....on the..... day of.....a Resolution in the following terms was duly passed :—

"*That in the opinion of this Branch Council the conduct of .....of.....has been (or is) detrimental to the honour and interests of the medical profession.*"

Signed in pursuance of the Rules of the..... Branch of the British Medical Association.

....

Honorary Secretary.

NOTE.—(The Central Ethical Committee desires to draw the attention of Branches to the necessity of Notices such as the above being circulated *in sealed envelopes*, and marked "Private and Confidential, for the use of Members of the.....Branch exclusively.")

APPENDIX IX.

SPECIAL REPORT OF COUNCIL ON THE QUESTION OF FEES FOR TREATMENT OF JUVENILE MEMBERS OF FRIENDLY SOCIETIES.

(See para. 85 of Annual Report of Council.)

1. The Council at its meeting on January 27th, 1915, considered a report of the Medico-Political Committee on the question of the treatment of uninsured persons on contract terms, which gave special attention to the question of the fees for the medical attendance and treatment of juvenile members of Friendly Societies.

2. From this report the following facts emerged :—

(a) That, in all, there have been approved on behalf of the Council since February, 1913, schemes for the Contract treatment of uninsured persons from only 29 areas—23 in the early part of 1913, and 6 between October, 1913, and November, 1914—the last one in July, 1914;

(b) That the submission of these schemes seems to have ceased.

(c) That it is well known that there are many districts in which uninsured persons are being attended at contract rates mostly, if not always, at less rates than those laid down by the Representative Body; and that it is because it would be extremely difficult to get practitioners to fight for these latter terms that many Divisions have not formulated schemes;

(d) That in the schemes (some being duplicates, *i.e.*, both payment per attendance and capitation) approved between February, 1913, and October, 1913:

8 were payment per attendance schemes. Four of these seem never to have come into operation but the other four are all now insolvent.

20 were capitation systems. In 9 of these Juveniles were to pay 1d. per week or less. In 5, Juveniles were to pay 1½d. or less. In 5, Juveniles were to pay 2d. per week; of these it appears that in 2 cases the terms were afterwards reduced; the other 3 cases were either not actually started or are not now flourishing.

3. Minute 141 of the Annual Representative Meeting, 1913, is the present policy of the Association as regards fees for the treatment of uninsured persons :—

Minute 141.—Resolved: That the Representative Body adopt the following principles as essential to the formation of any schemes for the provision of medical attendance and treatment of uninsured persons :—

(1) That, in general, in considering the necessity for obtaining the approval of the Council for schemes for the treatment of uninsured persons upon contract terms, the following principles and conditions must be adhered to :—

(a) Free choice of doctor by patient and of patient by doctor;

(b) Remuneration to be not less than that which is deemed by the Council to be equivalent to that paid in respect of insured persons—that is, 9s. per annum including medicines;

(c) Persons with a total income from all sources of £104 per annum or upwards, or the dependents of any such person, not to be treated under contract terms at all.

(2) That the Representative Body realises that the conditions in certain areas will not allow of the above terms being obtained, and that in these circumstances the approval of the Council may be given provisionally to a scheme involving a less payment when the local profession can show that the economic conditions in the area demand it.

(3) That one of the conditions necessary for the approval of schemes containing lower rates of payment shall be the inclusion amongst the rules, in a prominent position, of a statement that approval by the Association has been given to the rates only because of special economic conditions.

It will be noted that the Minute makes no specific reference to Juveniles, but, as will be observed from the above figures, both the State Sickness Insurance Committee under the terms of Minute 122 (S.R.M., November, 1912),

Minute 122.—Resolved: That until some general scheme of contract or other form of medical service is approved by the Association, the members of the British Medical Association decline, after March 25th, 1914, to undertake or conduct any form of contract practice for non-insured persons, except upon such terms as shall be approved in Great Britain by the Council of the Association and in Ireland by the Conjoint Committee,

and later, the Medico-Political Committee under the powers conferred on it by the Council in pursuance of the above-quoted Minute 141 (A.R.M., 1913), approved scales of charges for the treatment of uninsured persons in which fees lower than National Insurance rates have been charged for Juveniles. The State Sickness Insurance Committee did so because it was of opinion that it was necessary to arrange for special terms for juveniles. It reported to that effect to the Council, but that body cut out the specific reference to juveniles in transmitting the resolution to the Annual Representative Meeting which afterwards became Minute 141. The Medico-Political Committee being convinced of the necessity for modifying the terms in the case of juveniles by the representations made to it by those Divisions which submitted schemes for approval, made use for this purpose of paragraph 2 of Minute 141, which allowed provisional approval to schemes involving a less payment than insurance rates where the local profession showed that the economic conditions of the area demanded it.

4. The Chairman of Representative Meetings and the members of the Committee generally agreed that in using the paragraph in this way the Medico-Political Committee was not acting strictly in accordance with Minute 141, because paragraph 2 had no specific reference to juveniles. But the Committee appreciated the fact that such action had been dictated by the force of circumstances. On careful consideration of the whole case the Committee decided to recommend to the Council that that body should recommend the Representative Body to modify its policy as to the treatment of uninsured persons so as to allow of lower fees being charged for the treatment of juveniles over 3 and under 16, and the Council agrees with the recommendation.

5. The reasons which have led the Council to this decision are chiefly (1) that experience has shown that whatever the theoretical arguments may be in favour of charging the same fees for juveniles as for adults, in practice such fees are rarely if ever obtainable, and that it would be well for members of the profession to have this fact brought home to them. (2) That to continue to uphold as the formal policy of the Association a standard which is proved to be unattainable, does not seem to be a sound policy. (3) That to enforce such a standard in every Division of the Association would be impossible, and knowing this, to retain it is to weaken the force of the resolutions of the Representative Body in general, as such action tends to promote the belief that those resolutions are mere pious opinions. There are three chief reasons why the Association has up to the present attempted to exact the same fee for juveniles as for adults :—

(a) Because juveniles are said to require just as much attendance as adults, and therefore there is no reason why they should pay less. The figures which have been collected on this head, and the experience of some members of the Council seem to show that this is not so; but that juveniles between the ages of 5 and 16 require less attendance than adults, and certainly less than women.

(b) Because if a less fee were accepted, it would afford a pretext for the Government to reduce the present Insurance rate for adults. But the Council is of opinion there is not much fear now of any attempt being made to lower the fee paid for Medical Benefit under the Insurance Act. Experience has shown that the inclusion of women introduced a factor which many had not fully appreciated, and which has added very considerably to the work which doctors working the Act were expected to have to do. This fact is known to the Government and appreciated by them. In addition, Parliament having once voted the present remuneration, is not likely to refuse to continue it unless recommended to do so by the Government. And finally, seeing the enormous difficulties the Government have had in getting the medical side of the Act to work with even comparative smoothness, they are not likely to wish to create for themselves the very awkward situation which would arise if any attempt were made to decrease medical remuneration. An attempt to increase the amount of responsibility imposed on the doctor for the same remuneration seems much more likely.

(c) Because if a less fee be accepted now for juveniles, it will be impossible for the profession to ask the present adult rate on behalf of the dependents if, and when, dependents are included under Medical Benefit. The Council would submit that it is highly improbable that any Government would think of offering 9s. for each child in every family.

It may be pointed out, moreover, that the conditions under which the Friendly Societies are asking for reduced terms for juveniles would not apply in the case of the extension of the Insurance Act to dependents. The Friendly Societies would, no doubt, be satisfied with the conditions as to certification which applied to their members before the introduction of the Insurance Act and, in many ways, which do not need elaboration, the conditions under which these juveniles would be attended would be less onerous than those under which dependents would be required to be attended if the Insurance Act were extended to include them.

6. It must not be forgotten that the Friendly Societies are fighting for reduced terms for juveniles because they fear that if they have to put up their subscriptions for juveniles their Juvenile Lodges—the feeders of their ordinary Lodges—will be killed. If this happened the tendency would undoubtedly be for the Collecting Societies, with their army of collectors and agents having access to the homes of the people, to gain at the expense of the Friendly Societies, thus gradually securing more and more power for bodies which are purely commercial ventures. It is not likely that the profession would gain by this, for at present the representatives of the medical profession on Insurance Committees undoubtedly find it to their advantage to utilize the differences which exist between the two sections of the Approved Societies.

7. The Medico-Political Committee had the special advantage of meeting a deputation from the Manchester Unity of Oddfellows consisting of its Grand Master (Rev. F. C. Davies), and Messrs. Wright and Warren (Past Grand Masters) and reported thereon as follows :

During the discussion it was agreed to ignore the question of a specific income limit, and to assume that the class of juveniles referred to consisted to a very great extent of children of insured persons and those eligible to become insured persons.

The Deputation stated (1) that they did not consider it possible for the Society to entertain any sliding scale of payment according to size of families, and desired a definite capitation fee ; (2) that their position was one of a fight for existence with the Collecting Societies, and that unless they could successfully run Juvenile Lodges as recruiting agencies, they were bound to be beaten out of the field ; (3) that the benefits they would like to give their juvenile members would be medical benefit (which they admitted was the most important, and without which their juvenile lodges would break down) and possibly payment of a sum at death ; (4) that they would like the Association to specify on what terms it would be prepared to recommend practitioners to accept juveniles entered as members (a) from birth, (b) from 3 years, (c) from 5 years, but expressed their opinion that entry at 5 years would be too late for their purpose. Any fee quoted to be inclusive of drugs ; (5) that the maximum subscription they could collect from parents of children of the class they were catering for was 1½d. per week or 6s. 6d. per annum, of which they thought 4s. 4d. per annum should suffice for medical benefit, leaving the remainder for provision of a payment on death and for administrative purposes.

The Deputation said they felt they were voicing the opinion of their Society as a whole when they said they were quite in accordance with free choice of doctor ; that as regards those areas in which the local profession had organised a Public Medical Service they did not think there would be any difficulty in their juvenile members receiving their medical treatment through such Service, provided no difference was made between them and the original members of the Service.

8. After careful consideration it appears to the Council that in view of the above facts and taking into account that it is only proposed to accept juveniles at a decreased rate when they are between the ages of 3 and 16—before which they require the most attention and after which most of them as insured persons will pay the 9s. rate—there is a clear case at any rate for the most careful consideration of the Association.

Recommendations.

The Council submits the following recommendations to the Divisions and Representative Body :—

(a) That juvenile contract rates apply only to the children of persons eligible for the benefits of the Insurance Acts ;

(b) that there shall be free choice of doctor by patient and of patient by doctor ;

(c) that the contract rates for medical attendance on the children of those persons eligible for the benefits of the Insurance Acts should be not less than 4s. 4d. per annum, from the age of 3 years up to the age of 16.

APPENDIX X.

REPORT OF CRIME AND PUNISHMENT SUB-COMMITTEE ON QUESTION OF PRESENT STATE OF LAW WITH REGARD TO LEGAL RESPONSIBILITY FOR CRIME.

(See para. 96 of Annual Report of Council.)

1. The Sub-Committee was appointed to consider the following resolution of the Section of Medical Sociology at the Annual Meeting at Brighton in August, 1913, referred by the Council to the Medico-Political Committee :—

That it be recommended to the Council of the British Medical Association to appoint a Committee of Members of the Association, with power to co-opt others not members of the medical profession, to consider the present state of the law with regard to the legal responsibility for crime, and to issue a report with recommendations to the Council.

2. The following members of the Medico-Political Committee were appointed a Sub-Committee, for the purpose :—Mr. T. W. H. Garstang, Mr. T. Jenner Verrall, LL.D., Dr. W. Duncan, Mr. E. J. Domville, Dr. J. Munro Moir, together with Dr. D. G. Thomson, Dr. R. L. Langdon-Down, and Mr. A.O. Jennings (Registrar H.M. Court of Justice, Brighton).

3. The Medico-Legal Society, the Medico-Psychological Association, the Bar-Council, and the Incorporated Law Society, were invited to nominate representatives for appointment upon the Sub-Committee, with the result that the following were co-opted members :—Earl Russell and Mr. Roland Burrows, LL.D. (Medico-Legal Society), Dr. James Scott and Dr. Percy Smith (Medico-Psychological Association), Mr. E. A. Mitchell Innes, K.C., and Mr. Theobald Mathew (Bar Council), and Sir Homewood Crawford and Mr. A. J. Morton Ball (Incorporated Law Society).

4. Mr. E. J. Domville (Chelwood) was appointed Chairman of the Sub-Committee, which held six meetings, and the results of its deliberations are set forth below. The Sub-Committee gratefully acknowledges the considerable assistance derived from the Memorandum prepared by Mr. Roland Burrows, LL.D., on the present state of the Law of Insanity. (*See* Sub-Appendix I.)

LEGAL RESPONSIBILITY FOR CRIME.

5. The Sub-Committee first considered the present state of the Law on the subject of legal responsibility for crime in the case of accused persons suffering from insanity or mental defect, with special reference to the opinions of the Judges delivered at the request of the House of Lords after the trial of M'Naughton in 1843, together with the modifications suggested in the following Article 27 of Sir James Fitzjames Stephen's "Digest of Criminal Law" :—

No act is a crime if the person who does it is at the time when it is done prevented [either by defective mental power or] by any disease affecting his mind (a) from knowing the nature and quality of his act ; or (b) from knowing that the act is wrong [or (c) from *controlling* his own conduct unless the absence of the power of control has been produced by his own default].

But an act may be crime, although the mind of a person who does it is affected by disease, if such disease does not in fact produce upon his mind one or other of the effects above mentioned in reference to that act.

N.B.—"Wrong" may mean (1) morally wrong (2) illegal.

6. These suggested modifications which do something to widen the narrow definition of the kind of mental defect which should exclude responsibility laid down in the earlier cases, have not at present received judicial or legislative sanction and have no other authority than that derived from the reputation of the author.

7. **A.** Ultimately the Sub-Committee expressed the **opinion:**

That the following might be accepted by the medical profession as a fair definition of responsibility for crime in preference to the ruling laid down by Sir James Fitzjames Stephen

No act is a crime if the person who does it is at the time when it is done prevented either by defective mental power or by any disease affecting his mind :

(a) from knowing and appreciating the nature and quality of his act or the circumstances in which it is done ; or

(b) from knowing and appreciating that the act is wrong; or

(c) from controlling his own conduct unless the absence of the power of control has been produced by his own default.

N.B.—"Wrong" means morally wrong or illegal.

8. This opinion it will be seen adopts with variations the above quoted Article 27 of Sir James Fitzjames Stephen's "Digest of Criminal Law" and, by its form, allows for further expansion of the principle if suggested by the progress of human knowledge.

Evidence before Court as to Mental Condition of Accused Persons.

9. The Sub-Committee then considered the following Article 28 of Sir James Fitzjames Stephen's "Digest of Criminal Law":

> "Every person is presumed to be sane and to be responsible for his acts. The burden of proving that he is irresponsible is upon the accused person; but the Jury may have regard to his appearance and behaviour in Court,"

and in connection therewith considered the question of whether the method by which evidence is put before a Court as to the mental condition of the accused person secures that skilled evidence as to his present state and previous history shall be forthcoming.

10. The Sub-Committee had before it the appended memorandum and supplemental memorandum by Mr. Roland Burrows, LL.D. and Dr. James Scott on the above question (Sub-Appendix II.) and was informed that it is usual for the prison doctor to make a report to the Clerk of the Court as to the mental condition of prisoners in all cases where he has any doubt and that there is no difficulty in his obtaining further skilled opinion if he wished, before making his report, but that this report is not necessarily communicated to the Counsel or Solicitor on either side.

11. The Sub-Committee expressed the **opinions:**

B. That the following Standing Order issued by the Prison Commissioners should be embodied in the official Prison Rules:

> 302. (1) In the case of an untried prisoner, especially if charged with an offence of a grave nature, the Secretary of State desires that the prisoner's insanity shall, if possible, be publicly decided by the verdict of a jury, and that the prisoner shall, for this purpose, be left to stand his trial, unless there be strong reasons to the contrary.
>
> (2) When immediate removal to an asylum is unnecessary, the Governor will merely forward the report of the Medical Officer to the Prison Commissioners, saying that it is not proposed to obtain the usual certificate of Insanity, and will state the probable date of trial.
>
> (3) When removal to an asylum appears to the Medical Officer to be, for special reasons, necessary, the usual certificate will be obtained and forwarded, as directed in Order 301. In filling up the certificate, the probable date of trial will be added to the particulars of commitment, and the report of the Medical Officer, setting out the nature of the Insanity, and the necessity for immediate removal, will be enclosed, together with a newspaper report of the Police Court proceedings. If this latter is not procurable, a short report of the particulars of the prisoner's crime will be furnished.
>
> (4) When a prisoner awaiting trial has been certified to be insane, or is believed by the Medical Officer to have been insane on reception, or when there is any doubt as to his mental condition, the Medical Officer will furnish a report in writing to that effect to the Governor, who will forward it to the Clerk of Assize or Clerk of the Peace, as the case may be. In all cases when there is any reason to suppose that questions are likely to arise in Court, as to the mental state of the prisoner, the Medical Officer will attend to give evidence if required, whether he gets a subpœna or not.

C. That wherever a report from the prison doctor as to the mental state of the prisoner is communicated to the Clerk of the Court, it should be the duty of the Clerk to furnish a copy of the Report to the Counsel or Solicitor acting for the prosecution and defence respectively.

Position of Persons found "Guilty but Insane."

12. The Sub-Committee then considered the position of accused persons who had after trial been found "Guilty but Insane." It has been decided by the House of Lords in the recent case of Felstead v. the King [1914] A.C. 534, that persons found "Guilty but Insane," and therefore not having been found guilty of any *crime*, had no right of appeal from the verdict, and consequently were liable to be indefinitely detained in a criminal lunatic asylum.

13. This condition of affairs appears to be hard on the individuals concerned, and it is possible that some alteration in procedure might be productive of better results.

14. The Sub-Committee expressed the **opinion:**

D. That every person found "Guilty but Insane," should have the same right of appeal as is conferred by the Criminal Appeal Act on persons convicted on indictment; provided that if in any appeal brought by such person the Court should be of opinion that the verdict should be set aside so far as the finding of insanity is concerned, the Court should have the power to order a new trial.

Persons found unfit to Plead.

15. The position of persons who have been found "unfit to plead" by the verdict of a jury was considered by the Sub-Committee.

16. According to present practice, a person so found is ordered to be detained during His Majesty's pleasure as a criminal lunatic. It is submitted that such treatment of persons who have not even been tried upon the facts alleged against them, and who have no right of appeal (R. *v.* Larkins 105 L.T. 384) is contrary to the spirit of English justice, which presumes innocence till guilt is proved. Further the Sub-Committee is satisfied that in many cases insanity is aggravated, and recovery retarded if not entirely prevented by the sense of injustice under which such persons labour.

17. The remedy is not easy to find, and among those suggested were the following, any of which would require legislation:—

> (1) That the Court, when satisfied of unfitness to plead, should, without arraignment, enter a plea of "Not guilty," and proceed to trial upon the facts.
>
> (2) That, upon a verdict being returned by a jury of unfitness to plead, the Court should proceed to a trial upon the facts, as if a plea of "Not guilty" had been made.
>
> (3) That a special form of detention, not in criminal lunatic asylums, should be provided for persons found "unfit to plead."

18. The first of these hands over to the Court the decision of what has always been regarded as a question of fact for the jury. It is believed that Courts would demur, and rightly demur, to the acceptance of such a responsibility.

The second involves the trial of a person who has been found by the verdict of a jury unfit to stand his trial.

The last does not remove the grievance of loss of liberty without trial on the facts.

19. The Sub-Committee ultimately expressed the following **opinion**:

E. That persons found "unfit to plead" by the verdict of a jury and ordered to be detained should be entitled whilst so detained at any time to apply to a judge of the High Court to order the re-trial of the issue as to fitness to plead.

Medical Officers of Prisons.

20. Arising out of the consideration of its reference, the Sub-Committee gave consideration to the question of the status of medical practitioners appointed to posts as prison doctors and expressed the **opinion:**

F. That it is desirable that medical officers of prisons should have had experience in the diagnosis and treatment of insanity.

SUB-APPENDIX I.

MEMORANDUM PREPARED BY MR. ROLAND BURROWS, LL.D., ON THE PRESENT STATE OF THE LAW OF INSANITY.

The object of the State in determining what is or is not a crime is to impose upon all persons living under its protection a certain standard of conduct.

Prima facie every person who commits a crime is aware of the consequences of his acts and *prima facie* such person intends by his acts to bring about the necessary consequence of such acts.

As it is usually expressed the law lays down two great principles :

(1) Every person is presumed to be sane.

(2) Every person is presumed to intend the necessary consequence of his acts.

In very few cases is a *special* intention required other than that which is evidenced by the acts in question.

Consequently, as a rule, whenever it is proved that a person has done an act which constitutes a crime he is liable, unless he proves that some circumstance exists which exempts him from liability.

There are five cases in which want or defect of will power may be set up.

(i.) *Infancy.*

(a) When the offender is under 7.

(b) When the offender is under 14.

If the offender is under seven he cannot be convicted. If he is over seven and under fourteen he can only be convicted if the prosecution shew affirmatively that he understood the nature and quality of his act.

(ii.) *Coverture.*

Save in very serious or very minor offences, a wife who commits a crime in the presence or under the influence of her husband is presumed to have been under that influence to such an extent that she is incapable of exercising an independent judgment. This may be rebutted by the prosecution. For similar reasons a wife cannot be an accessory after the fact to her husband's felony. It is her duty to aid and succour him.

(iii.) *Duress.*

A man may be under such fear of another that his will is entirely overborne. Such fear must be the outcome of threats of immediate death or grievous bodily harm in case of disobedience.

See R. *v.* McGrowther (1746) 18 St. Tr. 391,
R. *v.* Crutchley (1831) 5 C. & P. 133,
and, as to unlawful oaths,
52 Geo. III. c. 104 s. 2,
37 Geo. III. c. 123 s. 2.

(iv.) *Drunkenness.*

It is generally stated that "drunkenness is no excuse for crime." This requires qualification.

A man is liable for anything he does while he is drunk if the drunkenness is the result of his own voluntary act, unless a special intent is necessary in order to constitute the crime and the fact of drunkenness negatives such intent. *See* R. *v.* Cruse (1838) 8 C. & P. p. 546.

He is also not liable if

(i.) he is made drunk without his knowledge ; or

(ii.) in consequence of his excessive drinking he becomes subject to a disease which affects his mind ; in other words if he becomes insane.

(v.) *Insanity.*

As pointed out in Stephen's Digest (arts. 28 and 29 in the Ed. of 1894) it is not every insane person who escapes liability for crime.

Moreover it follows from the rule that insanity is a defence that in all cases of doubt the verdict is against the prisoner. That is, unless the jury are satisfied that the prisoner is insane so as not to be responsible for the crime, then they find a verdict upon the facts of the case without regard to the defence which has failed.

It follows from the different objects which Law and Medicine have in view that the tendency of legal practice is to restrain insanity within narrow limits, while medicine favours an extension of these limits.

The exact position of insanity as an excuse for legal responsibility is not fully worked out. Although civil proceedings are not within the scope of the Committee's reference it may be stated that in matters of contract even a madman cannot escape liability where the other party does not know he is insane ; and in matters of tort the law is practically silent.

The foundation of the modern law on insanity as a defence in cases of crime is found in the opinion of the Judges, delivered at the request of the House of Lords, after the trial of M'Naughton in 1843.

The opinion is reported in 10 Cl. and Fin. pp. 209 et seq.

Partial Insanity.

(1) "Notwithstanding the party accused did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury, or of producing some public benefit, he is nevertheless punishable according to the nature of the crime committed, if he knew at the time . . . that he was acting contrary to law."

Questions for the Jury.

(2) and (3) "The jurors ought to be told in all cases that every man is presumed to be sane, and to possess a sufficient degree of reason to be responsible for his crimes, until the contrary is proved to their satisfaction ; and that to establish a defence on the ground of insanity, it must be clearly proved that, at the time of committing the act, the party accused was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act ; or, if he did know it, that he did not know he was doing what was wrong . . .

"If the accused was conscious that the act was one which he ought not to do, and if that act was at the same time contrary to the law of the land, he is punishable."

(4) Insane delusion as to existing facts.—"He must be considered in the same situation as to responsibility as if the facts with respect to which the delusion exists were real."

There was a fifth question as to medical evidence.

The principles may be reduced to two :

(1) In cases of partial insanity, where the prisoner is acting under delusions, assume that his delusions are realities and judge of his conduct in that light.

If A is under a delusion that B is about to kill him, he may lawfully slay B in self-defence, although B was not meditating any such attempt.

If A is under a delusion that B has slandered him, he may not lawfully kill B.

(2) In cases of insanity generally, if the prisoner is so insane as to be able to form no opinion as to his act, or if he is not so insane he is in such a state that he cannot appreciate that he ought not to do it, then he escapes responsibility.

A is in a state of violent dementia and in a struggle with his keeper kills the latter. He does not know that he did it or cannot appreciate that it was wrong to do so. He is not liable.

In other words, the law inflicts punishment on those persons who are capable of being deterred, and will not exempt them from responsibility unless it is proved that, whatever the penalty, their minds would not be affected.

The question of insanity may arise in three ways :

(1) *Before trial.*

It often happens that a prisoner's insanity is established before proceedings are taken. He is certified as insane and removed to an asylum before legal proceedings have gone far.

(2) *On arraignment.*

It sometimes happens that there is a doubt whether the prisoner is in a fit state to plead, and a jury is empanelled to try the issue.

This issue is *not* as to criminal responsibility. The jury are sworn to try the question whether the person then and there before them is capable of understanding the proceedings so as to be able to stand his trial.

If the jury find that he is not capable of being tried, the prisoner is ordered to be kept in strict custody until H.M. pleasure is made known.

Criminal Lunatics Act, 1800 (39 & 40 Geo. III. c. 94), s. 2.

The question of his guilt or innocence is never gone into, but the result is that an innocent man, because he is insane, may be confined as a criminal lunatic for life.

(3.) *At the trial.*

This is the occasion when the issue is decided whether the prisoner was so insane at the time of the crime as not to be responsible for his acts.

If the jury find in his favour on that point their verdict is Guilty but Insane. Before 1800 the verdict was Not Guilty. The law on this point is now contained in the Trial of Lunatics Act, 1883.

It is of course possible that the jury might acquit on the facts, but the defence of insanity is practically never raised where a defence on the facts is likely to succeed.

There are two grave defects in the law as to Criminal Lunatics.

First.—A person who is found to be unfit to plead is treated as a criminal lunatic, although no verdict has been found upon the charge. *See* Rex *v.* Stafford Prison (Govr.) [1909] 2 K.B. 81, where the prisoner was not even insane.

Secondly.—As the verdict "Guilty but Insane" is an acquittal, no appeal lies under the Criminal Appeal Act, 1907, from a verdict of insanity.

The fact that the prisoner is presumed to be sane involves the consequences that it is no part of the duty of the prosecution to call evidence upon the matter. In practice what happens is that the prison doctor attends the Court prepared to give the result of his observation. This is, of course, not possible in the case of prisoners on bail, and, in the country, where the position is sometimes held by a general practitioner, it is not always convenient for the doctor to be in Court at the trial.

It is desirable that No. 7 of the Minutes of the 8th April, 1914, should be extended to all cases where the state of the prisoner's mind is important, whether the question is fitness to plead, responsibility for crime or degree of punishment.

SUB-APPENDIX II.

I.—REPORT BY MR. ROLAND BURROWS, LL.D., AND DR. JAMES SCOTT PREPARED PURSUANT TO THE REQUEST OF THE SUB-COMMITTEE.

1. We are unable to recommend any alteration of the present condition of affairs relating to the medical examination of persons accused of crime with a view to ascertaining their mental condition.

2. Accused persons may, for this purpose, be divided into two classes: (i.) Those committed to prison; and (ii.) Those who are not committed to prison.

(i.) All prisoners awaiting trial in prison are under the care of the prison doctors, whose duty it is to report on their mental condition (if it calls for comment) to the prison governor. He forwards the report to the Prison Commissioners and to the Clerk of the Court having jurisdiction and, in cases where the Public Prosecutor is concerned, to that official. It is within the powers of the Prison Commissioners to have a further report, and the Public Prosecutor often takes that course.

In our opinion it is impracticable without enormous expense without adequate return to have more efficient examination of a prisoner's mental condition than at present.

A defect of the present system is that the report is in the hands of the Court, and is not necessarily known to prosecution or defence. It should be communicated to both sides but we would point out that any alteration in that respect is rather a matter of judicial than medical concern.

(ii.) As to persons not in custody awaiting trial, it would be impossible without drastic alteration of the law, in a way which it would be impossible to bring about, to have them medically examined against their will. If any doubt arises as to an accused person's sanity, he is always placed in custody for observation, so that the proportion of insane accused persons not in custody is extremely small.

3. We cannot recommend that any alteration shall be made in the present method of giving oral evidence as to sanity. An opinion, however accurate, ought not to be admitted unless sworn to by the person who is responsible for it and renders himself liable to cross-examination.

4. We do not recommend any alteration in the onus of proving sanity. As it stands in practice, in clear cases the prosecution usually calls the evidence, but there are still a number of cases in which it is important to leave the proof of insanity to the defence. Certainly there should be no alteration of the presumption that every person is sane until proved otherwise.

5. There is one respect in which we think the present practice is both harsh and unjust. A person who is found to be unfit to plead is confined as a Criminal Lunatic although not necessarily either guilty or insane (*see* Appendix A). Theoretically he is held until his condition improves so that he can be tried.

Criminal Lunatics are those who have been found "Guilty but insane." A prisoner who pleads Guilty cannot be so sentenced.

We have therefore three classes:—

(1) A prisoner found unfit to plead.

(2) A prisoner found Guilty but Insane.

(3) A prisoner pleading Guilty who is in fact insane.

These lead to departmental troubles but the main objection to the present rule as to accused persons who are insane is this: In many cases, insane prisoners, if left to themselves, would plead guilty. In order to get them out of the third class, the only method is to see that they are found unfit to plead. As it is now clearly settled that a verdict of Guilty but Insane is one of acquittal, it follows that persons found unfit to plead are not only confined without having been tried (a source of grievance to them and consequently a hindrance to their recovery) but also if tried they would in effect be found Not Guilty. There is, moreover, the possibility that they might be acquitted on the facts and in that case there would be no justification in treating them as Criminal Lunatics.

6. The procedure in such cases should be altered so that a plea of Not Guilty should be entered as in the case of persons found Mute of Malice and the trial proceed.

This could be done either by providing that the finding of the Jury that the prisoner is insane shall be equivalent to a plea of Not Guilty or by giving the Court power to enter that plea without any arraignment if the Court is satisfied that the prisoner is insane. We express no opinion upon the question which is the better course to adopt.

SUPPLEMENTAL REPORT BY MR. ROLAND BURROWS, LL.D., AND DR. JAMES SCOTT.

1. In view of the discussion which took place at the Meeting on June 10th, we desire to supplement our Report which was then presented by adding the following paragraphs.

2. *As to paragraphs* 3 *and* 4.—The great principle of English criminal procedure is that all questions of fact (which includes opinion) shall be decided by a jury after hearing oral evidence. The question of sanity or insanity is clearly one for a jury. The superiority of oral evidence over any other form is for this purpose overwhelming, and experience of the exception allowed (when the deposition of a witness unable for good reason to attend the trial is read) shews that it is highly undesirable to admit any other exception to the general rule. A document cannot be cross-examined.

The practical difficulty of appointing a medical man to advise the jury renders that course impracticable. A medical adviser assisting the Judge would only enable him to direct the jury, anything more would be a derogation from the principle of trial by jury. It is quite different from the cases, *e.g.*, Admiralty Causes and Workmen's Compensation Arbitrations, where assessors guide the Judge who also fulfils the functions of a jury.

As it is, the prison doctor, who usually attends the Court and can always attend if arrangements are made, gives evidence rather as an impartial adviser of the Court than as a witness. If any other medical man were appointed to sit with the Judge, there would be a tendency to consider the prison doctor as a mere witness for the side which happens to call him and the value of his evidence would be unduly depreciated.

No one who has had practical experience of the way in which prison doctors give evidence can fail to appreciate their impartiality, and their evidence is practically always accepted. Where they have any doubt they advise before the trial that another opinion be obtained and that opinion is also available at the trial.

In such cases therefore we are of opinion that the Court is aided by an impartial medical opinion.

In other cases, the question of sanity or not is difficult to determine, and it is important that medical evidence should be called on both sides. Obviously an honest difference of opinion can be entertained. It may be objected, and with considerable force, that a jury is not qualified to decide such an issue, but we venture to suggest that the argument, however cogent, cannot be relevant, because it is impossible to effect a change in the jury system for important crimes. One must deal with the tribunal that decides the issue whether it be competent or not. The argument is raised by many practitioners in other arts and crafts, but has never been admitted as valid in criminal cases.

We think that in such cases it may perhaps be desirable that a medical man should advise the Judge before he sums up to the jury, but would point out that the objections to this course are considerable. For instance, he would be advising one authority how to advise another, and, if he examines the accused in order to qualify himself for that purpose, he ought to be called as a witness. Moreover, as even skilled advisers are liable to error, great injustice may be done by advice given without either party having an opportunity to check it and correct errors. Instances of such cases will occur to anyone with practice in Workmen's Compensation Arbitrations.

It must be remembered that a Judge is not *dominus litis*. He may express any opinion he pleases as to what evidence should be called, but if, as rarely happens, the parties think otherwise and resist pressure from him, he must submit. He cannot call evidence himself. In *re* Enoch and Zaretzky Bock & Co. (1910), 1 K.B., 327. Consequently, medical evidence cannot under the present law be called by the Court of its own motion to give evidence before the Jury.

It is of course quite possible to pass legislation to provide that medical witnesses should be called by the Court, and we appreciate the desire of medical men to avoid the appearance of being partizans and also to avoid the pressure which is sometimes put upon them to become partizans. Any plan which would increase the impartiality of medical evidence must also increase its weight. We express no opinion either way but would add that there are objections to such a change. Some obvious ones are the following :—

The examination in chief would be conducted by the Clerk of the Court who, except in inferior Courts, is not accustomed to examine witnesses.

Secondly, a witness so called would be liable to cross-examination by both parties and not merely one.

Thirdly, if several medical witnesses, expressing divergent views, are called one after another, the jury will tend to exaggerate the current notions about expert witnesses, and the risk that the witness whose evidence sounds best will be preferred to the witness whose evidence is right will be increased.

3.—*As to paragraphs 5 and 6.*—The law upon the subject of "Guilty but Insane" has been recently discussed in several cases, which give rise to doubts now settled by the House of Lords. The current view of the verdict was that the prisoner was convicted but subjected to special treatment after conviction.

Under the influence of that view, prisoners who were found guilty but insane were held to be entitled to appeal against that part of the verdict which involved conviction, but not against the part which pronounced upon their mental condition. *See* Rex *v.* Ireland (1910), 1 K.B., 654, Rex *v.* Machardy (1911), 2 K.B., 1144. It is now clear that the verdict is not double, but single, and that, though it necessarily involves the conclusion that the accused committed the act alleged against him, it also means that under the circumstances the act was not criminal—in other words, the prisoner is innocent because insane. This view is now binding upon all Courts, and establishes that the Act of 1883 did not turn a successful defence of insanity into a conviction. Felstead *v.* the King (1914), A.C., 534.

The result of this decision is that prisoners found "Guilty but Insane" cannot appeal because they have not been convicted.

The same reason prevents an appeal from a verdict that a prisoner is fit to plead (Rex *v.* Jefferson (1908), 72 J.P., 467) or that he is not fit to plead (Rex *v.* Larkins (1911), 105 L.T., 384).

A prisoner who has been found guilty but insane should have an opportunity of challenging the verdict. It may be that the verdict, if challenged, would be set aside, and the mere fact that he is insane is no reason why it should not. Unless he has done such an act that would render him, if sane, guilty of a crime, the criminal law can have no concern with him. So, too, unless he is insane, there is no reason why he should be treated as a criminal lunatic.

We think that the alteration of procedure recommended in paragraph 6 would be more likely to be effected by way of a preliminary verdict than by giving the Judge power to enter a plea of Not Guilty. The balance of convenience would seem to be in favour of the latter course, but there is more probability that Parliament would not accept such an amendment of the law, as it might detract from the prisoner's existing rights.

APPENDIX XI.

PRECIS OF EVIDENCE SUBMITTED BY THE ASSOCIATION TO THE ROYAL COMMISSION ON VENEREAL DISEASES.

(See para. 100 of Annual Report of Council.)

1. The British Medical Association comprises some 24,000 members of the medical profession. It has members in all parts of the world and Branches practically wherever the British Flag flies. The United Kingdom is divided up into local organisations known as Branches and Divisions which enable the Association to keep in touch with the opinion of medical practitioners in a way available to no other medical organisation. The Association has already, on the invitation of the Chairman of the Royal Commission, nominated witnesses, who were in the opinion of the Association, able to give special assistance to the Commission on the prevalence and most recent methods of diagnosis and treatment of venereal diseases. The present Memorandum is confined to an examination, mainly from the point of view of the private practitioner, of the measures which the Association would suggest might prove useful in organising the treatment of these diseases.

2. The Association desires to lay special stress on its opinion that no plan for lessening the prevalence or severity of these diseases can be successful unless it secures the interest, sympathy and co-operation of the general practitioner. On this general principle the Association has always laid great stress particularly in dealing with recent developments of the medical service of the nation, as *e.g.*, the medical inspection and treatment of school children, the treatment of tuberculosis, and the recent movement to establish baby clinics and schools for mothers. The general practitioner is the nation's first line of defence against all forms of disease, and the Association deplores the tendency which is being shown in many directions, and has been shown by certain witnesses before the Commission as regards the treatment of venereal diseases to deflect clinical treatment mainly or entirely into the hands of institutions and specialists. The Association is of opinion that there is room for the co-operation of all classes of practitioners in combating the ravages of these diseases. The ideal method of treatment of most diseases is to supply the patient with skilled medical attendance at home with free access to specialist service when required, and this principle applies with perhaps particular force to venereal diseases.

3. As has been well stated by Dr. Johnstone in his Report to the Local Government Board on Venereal Diseases "the essence of the problem is how to get a willing patient at the earliest time to the doctor from whom, or to the institution from which such advice and treatment is to be had." It may be well therefore to consider at this stage what happens now as regards patients who suffer from these diseases. They may be roughly divided into three classes :—

(a) The well-to-do person who can obtain any treatment he needs. He may be left out of account except that any education of the medical profession and the public as to the exceptional seriousness of these diseases from an individual and national standpoint would have its effect upon him and he would probably be more anxious than he is now to seek early treatment and to continue it as long as may be necessary.

(b) The pauper. This patient may go to the Poor Law Medical Officer at an early stage ; more often he goes to a hospital out-patient department or a dispensary at irregular intervals until he finally seeks the Poor Law Medical Officer at a late and probably intractable stage of the disease.

(c) The patient of moderate income, including the fairly paid artisan. He may go to a private doctor (often not to his own family doctor because he is ashamed of his usual doctor knowing of his condition) and in a minority of cases he will continue the treatment until he is cured. More often he leaves the private practitioner at an early stage of his treatment either because his obvious symptoms have disappeared or because the doctor warns him that the course of the disease will be protracted and that therefore the treatment will be expensive. Those who leave because they think they are cured will generally return when their symptoms reappear, but there is always great difficulty in getting them to realise the necessity of continuing the treatment for some years. Sometimes because they feel well and think the doctor is magnifying the case in order to secure more fees, sometimes because the expenses of the treatment is felt to be a strain, they may

drift off to an unqualified practitioner or a chemist. Those who go to the unqualified person either at this, or as many do, at an earlier stage, generally go because the quack definitely promises something the qualified man cannot do, namely, a quick cure, a prospect attractive in itself and because it is cheaper.

4. In the opinion of the Association the access to unqualified practitioners should be stopped as far as possible and no weak sentiment about the liberty of the subject should be entertained seeing that we are dealing with such serious and widespread diseases. In saying this, the medical profession will, of course, be accused of trying to secure for itself a monopoly but this is an imputation which should have no force whatever with persons who are really concerned with the public health, and can take a long view. If there is any virtue in medical education and registration there is a clear case, in the opinion of the Association, for the establishment of such a monopoly in the interests, not of the medical profession, but of the public. The Association has for many years impressed on various authorities the necessity for a radical amendment of the Medical Acts which would prevent anyone practising medicine or surgery for gain under a severe penalty, and some years ago drafted a Bill (Medical and Dental Acts Amendment Bill) which is designed to effect this object. Such provision has already been made as regards midwifery. It has been made also in respect of veterinary practice, and the Association is not without hope that the time may come when the community will think it at least as necessary to protect men women and children, as to protect animals from the dangers which are inseparable from unqualified practice.

5. If it should be thought that such a suggestion is too drastic and not likely to be accepted by Parliament, the Association would draw the attention of the Royal Commission to the recent report of the Select Committee on Patent Medicines. That body was profoundly impressed with the necessity of suppressing the venereal quack and made several recommendations which would, it is believed, very largely meet the case. (*See* Report of Select Committee on Patent Medicines, pages 27 and 28, Recommendations (vi.), (vii.) and (viii.), and Sections 3 and 9 (a), (b), (c) of the recommendations regarding the amendment of existing laws.) The Association cordially approves these recommendations, which are much more radical than anything of the kind which has come from any similar body and trusts that the Royal Commission will see its way to support them with its powerful influence.

6. In view of the way in which the Medical and Dental Acts have been weakened by successive legal decisions which have enabled ingenious individuals to drive the proverbial "coach and horses" through these Acts, it is perhaps taking too hopeful a view to believe that the above recommended action would if applied entirely suppress venereal quackery, but the Association is sanguine enough to believe that it would go a very long way. If the danger of persons affected with venereal disease being treated by unqualified persons could be eliminated altogether, the problem under consideration would be vastly simplified, and the value of any system of remedial measures which the Commission may recommend, would be greatly enhanced as the authorities dealing with these diseases remedially, or making enquiries as to their incidence, would only have to deal in future with registered medical practitioners and institutions.

7. Dealing next with the patients who after going to a private practitioner drop out of treatment before they are cured, but do not go to an unqualified practitioner. These patients may be divided into three classes:—

(a) Those who can afford the treatment but do not realise the absolute necessity of continuing it for a prolonged period. Such patients can only be dealt with by a process of education which, judging from the attention recently given to the subject of venereal diseases in newspapers which always tabooed it previously, has already commenced. When this process of education is re-commenced, as it is bound to be shortly, the public are bound to learn more than they know at present of the insidious nature of these diseases, and that they cannot be cured by taking a bottle of medicine or a few pills for a few weeks. There seems to be no way of getting at this class of patients save through the growth of public knowledge, and the effect on the patient of representations made by the doctor whom he consults.

(b) Those to whom the cost of treatment may be a strain. The cost of the treatment of syphilis should in future be less, if Salvarsan be provided, as is later recommended, free of charge, and the more modern methods of mercurial treatment be adopted. But nothing should be done to weaken the sense of responsibility of the person who can afford to pay for his own treatment. It must be remembered however in connection with this class that *free* treatment of this and other diseases, so far as they are within the capacity of the practitioner of ordinary professional competence and skill, is now provided for one-third of the population by the Medical Benefit of the Insurance Act. This fact should have a very material bearing on the success of any scheme for combating venereal diseases. It is the duty of the panel doctor to treat these diseases, and his interest to get his patients better as quickly as possible. If the doctor be provided with the laboratory and institutional facilities recommended later, the treatment of the insured section of the population should be amply secured.

(c) Those who though not of the pauper class are clearly unable to pay for prolonged treatment. These should be referred in the great towns as they now are to the hospitals. Possibly they might be referred back to private practitioners for their non-institutional treatment, the State paying for it of course. The cases outside the towns would, it seems to the Association in any case have to be sent to the towns for institutional treatment, but there is no reason whatever why the other treatment should not be given by the local private practitioner, and no difficulty should arise as to the treatment of all insured persons.

8. The Wassermann and other delicate tests, and Salvarsan and other expensive treatment should be placed at the disposal of all doctors for the treatment of patients who are unable to pay the fees for such tests and treatment, just as the tests of swabs for diphtheria, and sputum for tuberculosis, and diphtheria antitoxin are now provided.

9. The tests should be carried out free of charge and unconditionally in any case in which a registered practitioner sends in the material. Salvarsan or any other expensive treatment of the kind might be provided on the statement of the doctor that the patient was unable to pay the cost of such treatment. It is possible that certain conditions might be attached to the free provision of Salvarsan or any improved treatment which may be costly. For example, a doctor might be asked to state the sex, and age of the patient, whether married or single, and whether the case has given a positive Wassermann reaction. This suggestion is made because it is noted that some witnesses before the Royal Commission have thought that certain statistical information of value might be got in such way. If the Commission should be of opinion that the information obtained by a more numerical notification would be of any value, it appears to the Association that such particulars as are above mentioned might quite fairly be required of the doctor. The Association does not approve of compulsory notification of venereal diseases by name because it believes that such notification could not be carried out in practice. The stigma attached to venereal diseases would prevent anything like universal notification, and an attempt to enforce compulsory notification, at any rate before public opinion is thoroughly prepared for it, would it is believed tend to increase the tendency of affected persons to hide the fact that they were affected.

10. Doubts have been expressed to the Commission as to whether the general practitioner is capable of administering Salvarsan treatment, owing to the delicacy of the technique involved. Those who say this can have little idea of the far more difficult and responsible things the general practitioner has to do every day. The same objection was raised not long ago to the administration of tuberculin injections by general practitioners, yet many of these practitioners have made themselves familiar with the technique of tuberculin injections, and are to-day administering them. In the opinion of the Association the great interest aroused in the treatment of venereal diseases by the recent discussions in the medical journals and at medical congresses, and by the deliberations of the Royal Commission, will tend to a much greater interest being taken by the members of the medical profession in the modern methods of treatment of these diseases if the private practitioner is encouraged to make himself familiar with such methods of treatment as can fairly be carried out at home, and is not encouraged to think that it is his duty to get rid of cases which present the slightest difficulty by placing the responsibility on some institution. Any such tendency would it is believed be bad for the private practitioner and still worse for the public. The medical schools will do their duty by more adequately preparing their students to recognise these cases and to treat them in the most efficient way.

11. The practitioner must however be in a position to ensure his patients access to hospital treatment when he considers that course desirable. At the present time a practitioner can

usually obtain such treatment for his patients by sending them to hospital with his card or a letter to one of the surgeons, but hospital accommodation for these diseases is admittedly limited and access from many country districts very difficult and expensive. If the State should desire to enter on a campaign against venereal diseases with a view to their being stamped out, it is suggested that grants should be made to the Hospitals for the necessary laboratory work and for the provision of Salvarsan and other expensive remedies. The receipt of such subvention might be made conditional on the hospitals giving information to local authorities similar to that suggested in the case of the general practitioner and it ought to be made a condition of the subsidy that the private practitioner should be admitted and indeed made welcome to the practice of the hospital as a spectator or even as a voluntary helper.

12. Hospitals thus encouraged would give more attention to these diseases, the number of post-graduate lectures which are now very limited would be increased, practitioners would be stimulated to send their cases, and go themselves for instruction, and suitable patients would be encouraged to make use of the hospitals. The suggestion that *special* institutions should be set up for the treatment of venereal diseases, would, in the opinion of the Association, defeat the purpose for which it is made, for patients would be afraid to label themselves by going to such an institution. It may be said that the same thing would happen if the patients were directed to a special department in a hospital, but this objection could to a large extent be obviated by utilising a department which dealt with other diseases and by calling the department for example, the "Hæmatology Department.' Such a name would be appropriate, as much blood testing would have to be done and the department would gradually become recognised as dealing with what are popularly known as "Blood diseases," a very wide and convenient colloquial term for this purpose. In some foreign hospitals syphilitic patients are treated in the department for skin diseases.

13. Wassermann and other tests should be carried out in laboratories, preferably attached to the hospitals or Universities, and in this connection mention should be made of the recent action of the Government in proposing to make a grant for the provision of Clinical Laboratories. The actual starting of these institutions has been delayed it is understood, by the War.

14. The Association would urge that the Royal Commission should press upon the Goverment the necessity for hastening on a reform which the Association has advocated for many years and which is long overdue, namely, the provision of a confidential system of death certification. Until this is established the country will never get over an approximate idea as to the extent of the ravages of these diseases. Such a system of certification would be of great service to the country from many other points of view, but in dealing with venereal diseases it is essential that the doctor should be able to certify the primary as well as the proximate cause of death without fear of hurting the feelings of the relatives and disturbing those confidential relations between himself and the families he attends which it is essential to preserve.

15. Finally the Association has little faith in the methods of direct attack on these diseases which have been proposed in various quarters, namely, compulsory notification, compulsory detention of patients, and prevention of the marriage of persons who have once suffered from venereal diseases until they can obtain a certificate of cure. Such suggestions appear to the Association to be impracticable in view of the moral stigma they would impose. The Association has much more hope of the indirect methods, which resolve themselves into the better education of the public as to the serious nature and widespread incidence of these diseases, and the grant of easy access to the best treatment. The appointment of the Royal Commission has been a powerful factor in this education and the Association hopes for very good results from the discussion which will no doubt occur when the Report of the Commission is issued. It is probable also that one of the most useful results of the deliberations of the Commission will be the education of the medical profession to a greater vigilance and sense of responsibility in regard to these diseases, such as has undoubtedly been aroused by similar propaganda in regard to tuberculosis. The Association fully realises the great responsibility of the medical profession in regard to this subject and offers the Royal Commission and the Government any help it can give in securing the interest and support of the medical profession for any administrative suggestions which may be made.

APPENDIX XII.

SPECIAL REPORT OF COUNCIL ON THE CONDITIONS OF EMPLOYMENT AND REMUNERATION OF ASSISTANT ASYLUM MEDICAL OFFICERS.

(*See para.* 103 *of Annual Report of Council.*)

1. The Council has had certain statistics placed before it by the representatives of the Assistant Asylum Medical Officers' Association which clearly demonstrate the unsatisfactory conditions of pay and prospects of the service. The commencing salaries of First Assistant Officers begin as low as £150 per annum and for Second Assistants as low as £120 per annum. The average salary for First Assistants is about £325 and for Second Assistants £225. To these salaries must be added certain emoluments, the cash value of which may be averaged at about £100 per annum. The inadequacy of pay and prospects is felt more particularly by officers who have spent some years in the service, for it appears that after 5 to 10 years' service the average salaries including emoluments amount only to £350, and after 10 years' service £425, with exceedingly little chance in the majority of cases of any further promotion. It thus appears that to many officers the service is in the nature of a "blind-alley."

2. It may be said that the best remedy would be for those who are dissatisfied to leave the service, but it must be remembered that there is hardly any other branch of medical activity which so unfits a practitioner for any other work, so that after a few years in the service it becomes exceedingly difficult for an officer to make a fresh start. Recently the operations of the law of supply and demand have raised the salaries of those entering the service and have thus led to the anomalous position that many juniors who have entered at the increased rates are getting better pay than a number of their seniors. The law of supply and demand cannot however be reckoned on to improve the conditions of the older officers who are, generally speaking, quite unable to make the only effective protest open to them, namely, to threaten to resign.

3. But in the case of the senior officers there is another grievance which is felt quite as much as the financial one. Many of them have no prospect of being able to marry, either because the rules at the Asylum specifically debar them from marriage or because there is no separate house accommodation. Statistics show that out of 167 officers, 146 are unmarried, and most of these are over 30 years of age. This is neither good for the individual nor for the State, and where this has been realised by the Asylum authorities and the Assistant Officers have been allowed to marry and have been provided with a house outside the institution, it has only been granted as a favour and is not established as a right. The Assistant Asylum Medical Officers' Association has represented to the Council that it is time that a certain proportion, at any rate, of the seniors of the Assistant Officers were provided with separate house accommodation as a matter of course, and not as a special privilege. With this proposition the Council is in cordial agreement and it therefore makes the following recommendations. The discussion of the recommendations will it is hoped evoke, among members of the Association generally, a feeling of sympathy with a branch of the profession which up to the present has been to a large extent isolated from the general body of the profession.

Recommendations.

Salaries and Emoluments.

(a) That the minimum commencing salary of Assistant Asylum Medical Officers be £220 rising after one year of probation to £250, and then by £25 per annum to £350 per annum irrespective of promotion, and that the salaries of officers who are not promoted should then rise automatically by £10 per annum for ten years.

(b) That in addition to the operation of the above scale, an officer on being promoted to Second Assistant should receive an additional £50 per annum, and on being promoted to Senior Assistant an additional £50 per annum.

(c) That Assistant Asylum Medical Officers who have received promotion shall also participate in the automatic increase of £10 per annum for ten years, which commences after five years' service.

(d) That emoluments should be valued at least at £100 per annum, and made commutable for full value at the end of five years.

House Accommodation.

(e) That every Asylum should contain a separate house suitable for a married Assistant Officer, and that where an Asylum contains four or more Assistants two such houses for Assistant Officers should be provided.

APPENDIX XIII.

MEMORANDUM ON THE POLICY OF THE ASSOCIATION WITH REGARD TO THE MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN.

(See para. 104 of Annual Report of Council.)

I.—INSPECTION.

(a) CONDITIONS OF EMPLOYMENT.

1. A whole-time Medical Officer of Health who is also School Medical Officer should not as a general rule undertake any of the actual work of Inspection of School Children. Exception may be made in the case of the smaller Education Authorities.

2. The titles of Assistant Medical Officer of Health and Assistant School Medical Officer should not be combined merely for the sake of allowing the holder of these offices to base a claim for an appointment elsewhere as Medical Officer of Health.

Where the title of Assistant Medical Officer of Health is assumed, it is very important that the public health duties of the Officer should be commensurate with the title.

3. Officers in the School Medical Service should have reasonable security of tenure of office, and their appointments should only be terminable with the consent of the Board of Education. They should also be admitted to participation in a Government Superannuation Scheme.

4. No whole-time Medical Officer of Health should accept any wholly new appointment involving fresh duties unless adequate remuneration is added to that previously received by him.

(b) METHODS OF REMUNERATION.

5. Officers of the School Medical Service should be remunerated by a fixed salary, or in the case of part-time officers by payment in proportion to the time they devote to the work. In sparsely populated districts special systems of capitation payment, such as are at present in operation, may be adequate.

(c) AMOUNT OF REMUNERATION.

Part-time School Medical Officers.

6. The remuneration for a part-time School Medical Officer should be at the rate of £50 per school year for attendance on half a school day per week, half a school day being defined to be two and a half hours.

Whole-time School Medical Officers.

7. Practitioners who enter the School Medical Service as whole-time officers are, by reason of longer and special education, justified in expecting a higher rate of remuneration than they would receive in ordinary clinical positions. The minimum whole-time salary should therefore commence at £300 per annum for Assistant School Medical Officers, and it is desirable that such salary should be subject to an annual increment. The minimum salary for a senior responsible whole-time School Medical Officer should be £500 per annum, and should be proportionately greater in the case of large towns or county areas. Such salary should also rise by suitable annual increments. These salaries are net salaries, exclusive of travelling expenses, clerical assistance, postage, etc.

Salaries of Women School Medical Officers.

8. The salaries paid to medical women should not be less than those paid to medical men in respect of the same work.

II.—TREATMENT.

9. Treatment by an education authority should be confined to necessitous children, that is, to those children whose parents cannot afford to pay privately for the treatment recommended as a result of inspection. Parents should always in the first place be recommended to seek treatment for their children from their family doctor.

10. The support of the Association should be given to the schemes by which medical treatment, and the treatment of refractions, should be carried out by local private practitioners. (For reasons in favour of the employment of private practitioners, *see* Sub-Appendix I.) In areas in which such schemes are in operation the duties of the School Medical Officers and their assistants should consist of inspection and the important work of "following up."

11. Notwithstanding the suggestions in the attached Memorandum on Treatment at Voluntary Hospitals of School Children found defective on Inspection, it must be clearly understood that the policy of the Association is that the treatment of school children, found upon inspection to be defective, should normally be carried out by private practitioners and not through voluntary hospitals, but that in cases where the work is carried out through voluntary hospitals the policy laid down in the attached Memorandum on the treatment of school children at voluntary hospitals should be enforced.

TREATMENT BY PRIVATE PRACTITIONERS.

12. Where treatment by private practitioners is adopted this should be done by means of a "School Centre" (*see* Model Scheme—Sub-Appendix II.), or in sparsely populated districts by the "recognition" of places (for example, a room in the school buildings) where the local practitioner or practitioners could carry out the necessary treatment.

The term "private practitioner" includes both specialists and general practitioners.

13. Where practitioners in any area are desirous of carrying out treatment of school children who have been found on examination to be defective, they should through the Division make representations to the Local Education Authority and place before that body a scheme.

14. The duty of the Division should be to place before the Local Education Authority a simple scheme and to present reasons why in its opinion such a scheme would be in the best interests of the public.

15. If the Local Education Authority is not convinced of the superiority of such a scheme it is not part of the policy of the Association to resist the adoption of some other scheme on the ground that it involves the employment of whole or part-time officers for the purpose of treating necessitous children.

A scheme for treatment might be a combination of treatment by whole-time and private practitioners.

16. Divisions desirous of placing a scheme of treatment by local practitioners before the Local Education Authority will have the full support of the Association, but for purposes of co-ordination such Schemes should be submitted to the Central Office of the Association, prior to being forwarded to the Education Authority.

17. The responsibility of the Local Education Authority for seeing that treatment is secured is recognised. If treatment is carried out by a private practitioner the School Medical Officer acting as the agent of the Local Education Authority is fulfilling his duty in "following up" the case to see if treatment has been obtained. Should the school medical officer not be satisfied with the result of treatment said to have been given, he should offer the private practitioner, if any, an opportunity of consultation on the case.

DENTAL INSPECTION AND TREATMENT.

18. The inspection and treatment of the teeth of school children should be carried out by qualified dentists at Treatment Centres (for an outline Model Scheme for treatment by medical practitioners and dentists, *see* Sub-Appendix II.).

TREATMENT BY MEDICAL CHARITIES.

19. School children found upon medical inspection to be defective should not in the first instance be referred to a voluntary (charitable) institution for treatment. Education Authorities shall be required to pay for all children of their schools receiving treatment at a voluntary hospital such sum as shall be arranged with the governing body. From such sum an amount agreed upon by the governing body and the medical board shall be placed to a special fund which shall belong to the medical staff.

20. The medical staffs of voluntary hospitals should do all in their power to prevent the reference in the first instance to those hospitals of school children who have been found on examination to be defective, and should decline to countenance in any way a method which is an abuse of voluntary charity and an inadequate provision for a public need.

TREATMENT BY PROVIDENT DISPENSARIES.

21. There is no objection to treatment by Provident Dispensaries, by Public Medical Services, or other contract medical practice organisations, provided that the remuneration of the practitioners is adequate for the work done and that effect is given to the principle of free choice of doctor by the parents of the patient, with a corresponding right on the part of the doctor to refuse any patient.

TREATMENT BY POOR LAW.

22. Any scheme for the provision for the treatment by the Poor Law of school children found upon inspection to be defective should be opposed.

REMUNERATION.

(a) *Of Private Practitioners.*

23. Remuneration of appointments under any scheme in which private practitioners are appointed should be made on a scale agreed upon between the medical profession as represented by the local Branch or Division of the British Medical Association and the Local Education Authority, and should be based on terms laid down in paragraph 6, where the circumstances permit of such an arrangement being made.

(b) *Of Whole-time Medical Officers.*

24. Where whole-time Medical Officers are engaged in the treatment of school children, their salaries should not be less than those paid to School Medical Officers and Assistant School Medical Officers engaged in inspection.

Rural Districts.

25. In rural districts the profession shall receive remuneration for the treatment of the following diseases, on a scale to be settled locally: Refraction; Nasal Obstruction, Adenoids, Tonsils, and Suppurating Ears; and Ringworm.

III.—DUTIES OF NURSE.

INSPECTION AND TREATMENT.

26. The School Nurse should always act under the instructions and supervision of a registered medical practitioner.

SUB-APPENDIX I.

REASONS IN FAVOUR OF THE EMPLOYMENT OF PRIVATE PRACTITIONERS AS COMPARED WITH WHOLE-TIME SCHOOL MEDICAL OFFICERS IN THE TREATMENT OF SCHOOL CHILDREN.

1. The medical treatment of school children is a great national undertaking, the ultimate success of which largely depends upon the number of persons who are interested. From this point of view it is better that as many as possible of the medical profession should have personal contact with the work, rather than that familiarity with it should be confined to a small class of public officials.

2. Medical practitioners who are engaged in private practice enjoy the benefit of a wider experience of the treatment of disease in general than those whose work is confined to the treatment (or the treatment and inspection) of school children.

3. Treatment and recurrent supervision of the school children by such practitioners, supplemented by the "following up" work of the School Medical Officer, in the opinion of the Association alone give security that the medical needs of the children will be adequately met.

4. The treatment of diseases of children gives those who carry it out opportunities of obtaining valuable experience. If the work is done by private practitioners who are engaged, apart from their school work, in treating members of the general public, the general public derives great benefit from the profession generally receiving this additional experience.

5. The employment of private practitioners gives the Education Authority a much wider field of choice than if the work is carried out by whole-time officers, and by the employment of part-time officers the authority would be able to adjust the appointment of persons of special skill to its requirements in each direction.

SUB-APPENDIX II.

OUTLINE MODEL SCHEME FOR TREATMENT CENTRE.

I.—PRECAUTIONS TAKEN BY THE LOCAL AUTHORITY TO ENSURE THAT ONLY THOSE CHILDREN SHALL BE TREATED AT THE CENTRE FOR WHOSE TREATMENT ADEQUATE PROVISION CANNOT OTHERWISE BE MADE.

1. Formation by Education Committee of a Committee called the "Medical Treatment Committee."

2. The chief duty of this Committee would be to determine, from information obtained by its Officers, whether any child applying for treatment is necessitous, and, if so, to sign a voucher for treatment. Due regard would be paid to the amount of income of the parent, to the existing facilities for obtaining the special treatment, and to its cost; and the Committee would decide whether the treatment was to be free, or what part, if any, of the charge for any operative treatment to be provided shall be paid by the parent. In default of payment in a case in which the parent was required to contribute, the amount would be recovered summarily as a civil debt.

3. The parents or guardians of all children requiring treatment should in the first place be informed that it is their duty to have the child treated by a doctor of their own choosing, and if he considers the child suitable for treatment at the Centre he would sign a voucher to that effect. The voucher would be endorsed by the Medical Treatment Committee before treatment is given.

4. The parents or guardians of those children who have no medical attendant would be advised to apply direct to the Medical Treatment Committee for a voucher. If a child whose parents or guardians are apparently in a position to afford to pay private fees is presented for treatment, the practitioner concerned should have the right to refer the case to the Medical Treatment Committee for further investigation.

5. In the case of any child sent from school to the School Medical Officer and diagnosed as suffering from a contagious skin disease, the head teacher would sign a voucher for treatment if the child were known to be necessitous; this would warrant treatment until the next meeting of the Medical Treatment Committee. Any further treatment should only be obtained if the Medical Treatment Committee countersigned the voucher.

II.—METHOD TO BE ADOPTED TO SECURE ADEQUATE TREATMENT OF DEFECTS DISCOVERED ON INSPECTION.

Management of Centre.

6. The Treatment Centre should be managed by a Committee of.....persons to be appointed by the Education Authority as follows:—

.....Members of the Education Committee who shall also be members of the Medical Treatment Committee.

.....Members nominated by the.....Division of the British Medical Association.

.....Members nominated by the.....Division of the British Dental Association.

Note.—The numbers would be so arranged as to place the Education Committee members in a majority.

Supervision of Centre.

7. The carrying out of the practical side of the Centre should be under the supervision of the Senior School Medical Officer, and the whole of the work of the Treatment Centre Committee would be subject to the approval of the Education Authority.

Staff of the Centre.

8. The staff of the Centre should be appointed by the Education Authority on the nomination of the Treatment Centre Committee, and would consist of duly qualified and registered practitioners for each of the medical, surgical, and dental departments it was decided to establish.

9. The members of the staff should hold office for..... years and should at the expiration of that time be eligible for re-election by the Education Committee on the recommendation of the Treatment Centre Committee.

Payment of Staff.

10. Each member of the staff should be remunerated at the rate of not less than £50 per school year for each half-day's attendance per week.

Arrangements as regards Accommodation, etc.

11. All necessary accommodation with suitable lighting and heating should be provided by the Education Authority.

12. All drugs and apparatus required by the staff should be provided by the Local Education Authority.

Provision of Nurses.

13. The Education Committee should provide a nurse or nurses for the assistance of the staff.

Clerical Assistance, Stationery, etc.

14. The Education Committee should provide all necessary stationery, and the services of a clerk, when official returns are required to be made.

Opportunities for Inspection of Centre.

15. The Centre would be open at any time to the medical officers of the Board of Education or of the Local Education Authority; to any of the medical or dental members of the Treatment Centre Committee of the Centre; and, when no medical treatment is actually taking place, to the lay members of the Committee.

APPENDIX XIV.

MEMORANDUM ON TREATMENT AT VOLUNTARY HOSPITALS OF SCHOOL CHILDREN FOUND DEFECTIVE ON MEDICAL INSPECTION.*

(See para. 104 *of Annual Report of Council.)*

1. The results of the medical inspection of elementary school children have shown that very large numbers are suffering from disease and defective conditions urgently calling for treatment.

2. At present provision is not made by Education Authorities to meet this national evil, except in a fragmentary and unorganised manner.

3. In spite of the establishment in certain places of School Clinics or Treatment Centres, many children receive no treatment at all, a few are taken by their parents to voluntary hospitals; and in a very few instances the Education Authority has entered into a restricted arrangement with such institutions.

4. The Association has for six years formulated and published the principles on which, in its opinion, the medical treatment of school children as a national measure of public health should be based.

5. These principles are as follows:

(1) That all treatment must be adequately remunerated by the State;

(2) That no case should be referred in the first instance to a voluntary (charitable) institution for treatment;

(3) That treatment should be carried out, if possible, in a Treatment Centre or School Clinic, staffed by the local medical practitioners, or at a recognised surgery, and under special conditions.

6. The enquiry initiated by the Association during the latter part of 1913, in accordance with the resolution of the Annual Representative Meeting, 1913, shows that though unofficially some cases have drifted to voluntary hospitals, in only a few areas (probably not more than 12-15) have the Education Authorities attempted officially to provide treatment for the children at charitable institutions.

7. The question is therefore one on which the opinion of the Association must be again stated. To secure a comprehensive settlement it is needful that every Division should (as soon as possible) put before the Local Education Authority of the district the scheme of the British Medical Association. Such a scheme has been authorised by the Association (*see* Appendix B, Sub-Appendix II), and is capable of providing for all such medical treatment as can be furnished without the child becoming an in-patient of an institution.

8. The provision of hospital or institutional treatment is a further matter which should be dealt with as follows:—

I. The co-operation with the Association of the members of the Medical Staffs of the hospitals must be first obtained in support of the principles laid down by the Association.

II. The Local Education Authority must then be invited to provide such hospital treatment by either

(a) paying the hospital authorities for accommodation and the medical officers for treatment supplied;

or

(b) itself providing hospital accommodation and obtaining the services of private practitioners for treatment of the children.

* Notwithstanding the suggestions in this Memorandum, it must be clearly understood that the policy of the Association is that the treatment of school children found, upon medical inspection, to be defective, should normally be carried out by private practitioners and not through voluntary hospitals, but that in cases where the work is carried out through voluntary hospitals, the policy laid down in this Memorandum should be enforced.

APPENDIX XV.

MATERNITY AND CHILD WELFARE.

(See paras. 110-1 *of Annual Report of Council.)*

(I.) CIRCULAR ISSUED BY LOCAL GOVERNMENT BOARD, JULY, 1914, TO COUNTY COUNCILS AND SANITARY AUTHORITIES.

Local Government Board,
Whitehall, S.W.
30th July, 1914.

MATERNITY AND CHILD WELFARE.

Sir,

I am directed by the Local Government Board to state that an estimate has been laid before Parliament for a Grant to be distributed by the Board in aid of the expenditure of local authorities and voluntary agencies in respect of institutions or other provisions for maternity and child welfare.

This Grant, if voted by Parliament, will be made in aid of expenditure in respect of clinics, dispensaries or other institutions primarily concerned with the provision of medical and surgical advice and treatment, as well as in respect of the salaries of health visitors and other officers engaged for this work.

The Local Government Board have in recent years devoted considerable attention to questions connected with infant welfare and they have observed with much satisfaction that efforts have been made by many local authorities and voluntary agencies, to deal with the matter. These efforts have undoubtedly helped to secure improved conditions for children and have played an important part in the campaign for the reduction of infantile mortality.

It is evident from the Reports issued by the Medical Department of the Board and those of many Medical Officers of Health that more extended and systematic measures than have hitherto been generally adopted are necessary, and it is hoped that the grant of assistance from the Exchequer will stimulate those local authorities who have not yet taken action to give the matter their earnest consideration and will encourage those already engaged in work to develop it still further.

Up to the present local authorities, in their infant welfare work, have concerned themselves more especially with the child in its first year of life; the matter is, however, one which needs to be dealt with on a more comprehensive basis and it is clearly desirable that there should be continuity in dealing with the whole period from before birth until the time when the child is entered upon a school register, *i.e.*, the register of a public elementary school, nursery school, crèche, day nursery, school for mothers, or other school.

Extension of the existing work is accordingly needed in two directions; on the one hand it is necessary that measures should be taken for securing improved ante-natal and natal conditions, and on the other, provision should be made for continuing the work in relation to children beyond the first year of life.

The accompanying memorandum, which has been prepared by the Board's Medical Officer with a view to assisting the formulation of schemes or extending the work already undertaken, sets forth in outline the matters needing consideration in the preparation of a comprehensive scheme. It will be seen that the memorandum contemplates that medical advice and, where necessary, treatment should be continuously and systematically available for expectant mothers and for children till they are entered on a school register, and that arrangements should be made for home visitation throughout this period.

The work of home visitation is one to which the Board attach very great importance and in promoting schemes on the lines laid down in the accompanying statement the first step should be the appointment of an adequate staff of Health Visitors.

It will be desirable, at all events in the case of the larger urban authorities, to provide consultation centres which may fitly be termed Maternity Centres, to which expectant mothers and mothers with infants and little children may be referred for advice and treatment; the operation of these Maternity Centres will be rendered most effective if co-operation is secured with the midwives of the district and with any local hospital having a maternity department.

It will be necessary to arrange for a medical officer to be in charge of such a Centre and for the attendance at the Centre of members of the staff engaged in home visiting. Careful records, for which the medical officer should be responsible, will need to be kept, and in regard to children the records should be in such a form that they may subsequently be available for the information of the School Medical Officer when the child is entered at a school.

For the rural and smaller urban areas the Board think it will generally be found desirable to develop a county organisation, but in all cases the county work should be intimately related with that of the local sanitary authority, and on the other hand any work separately undertaken by a sanitary authority should be co-ordinated with the county scheme.

It is not expected that all local authorities will be able at once to initiate complete schemes, but it is important that any partial arrangements that may be made shall be such as can ultimately form part of a more extended organisation.

Subject to the estimate now before Parliament being accepted by Parliament, the Board will be willing to consider applications for grants in respect of any work falling within the scope of the scheme outlined in the memorandum accompanying this letter; the grants will normally amount to one-half the approved expenditure on any of these purposes, but may be less if the Board so decide.

Grants to institutions of the nature of Schools for Mothers, the object of which is primarily educational, which provide training and instruction for mothers in the care and management of infants and little children, and which may include systematic classes, or home visiting, or infant consultations (the provision of specific medical and surgical advice and treatment, if any, being only incidental), will be administered by the Board of Education. Any cases of doubt and difficulty will be investigated by a Joint Committee of Officers of the two Boards, which will include women Medical Officers.

In sending a copy of this circular to voluntary agencies engaged in infant welfare work, the Board will state that applications for grants in respect of voluntary work may be made by a voluntary agency either directly or through a local authority.

The grant now presented to Parliament will be appropriated in aid of the expenditure of the half-year ended 30th September, 1914, and applications for grants should be accompanied by an account of the work undertaken by the authority, and by a detailed statement of the expenditure incurred, certified by the officer of the local authority in charge of the accounts.

I am to add that the Board will be happy to afford advice and assistance to local authorities in the initiation of schemes or the extension of existing schemes.

I am, Sir,
Your obedient servant,
H. C. MONRO,
Secretary.

The Clerk to the Council.

(II.) MEMORANDUM ISSUED JULY, 1914, BY LOCAL GOVERNMENT BOARD, WITH FOREGOING LETTER.

MATERNITY AND CHILD WELFARE.

A complete scheme would comprise the following elements, each of which will, in this connection, be organised in its direct bearing on infantile health.

1. Arrangements for the local supervision of Midwives.

2. Arrangements for—

ANTE-NATAL.
- (1) An Ante-natal Clinic for expectant mothers.
- (2) The home visiting of expectant mothers.
- (3) A Maternity Hospital or beds at a hospital, in which complicated cases of pregnancy can receive treatment.

3. Arrangements for—

NATAL.
- (1) Such assistance as may be needed to ensure the mother having skilled and prompt attendance during confinement at home.
- (2) The confinement of sick women, including women having contracted pelvis or suffering from any other condition involving danger to the mother or infant, at a hospital.

4. Arrangements for—

POST-NATAL.
- (1) The treatment in a hospital of complications arising after parturition, whether in the mother or in the infant.
- (2) The provision of systematic advice and treatment for infants at a Baby Clinic or Infant Dispensary.
- (3) The continuance of these Clinics and Dispensaries, so as to be available for children up to the age when they are entered on a school register, *i.e.*, the register of a Public Elementary School, Nursery School, Crèche, Day Nursery, School for Mothers or other school.
- (4) The systematic home visitation of infants and of children not on a school register as above defined.

Local Government Board,
Whitehall, S.W.

July, 1914.

(III.) SPECIAL REPORT OF COUNCIL ON MATERNITY AND CHILD WELFARE SCHEMES.

(See para. 111 of Annual Report of Council.)

(I.)

The Council has considered carefully the Circular and accompanying Memorandum issued by the Local Government Board to Local Authorities with regard to Maternity and Child Welfare. The Council is of opinion:

1. That the organisation of agencies and establishment of machinery under the auspices of the Local Government Board for giving attention to the health of expectant mothers and of children below school age is desirable; but that while there may be general agreement as to the results to be arrived at, the determination of the methods by which those results may be secured is of the utmost moment to the health of the community, to the well-being of the individuals concerned, and to the status, the welfare, and the continued efficiency of the medical profession.

2. That, while the establishment of any scheme such as that outlined in the Board's Memorandum must be for some years both partial in scope and limited as to the extent of the country in which it is operative, both the Board and the Association are bound to consider its effects upon the public and upon the medical profession when it becomes (as it is intended to become) both complete and universal. If schemes are established on wrong methods the results may be disastrous to the profession and must at least fall short of what might otherwise have been accomplished in the public interest.

3. That the present Scheme of the Board is open to the objection that it is very likely to lead to the establishment of principles and methods which would in the long run vitally alter the present status of the profession, and the relation between doctor and patient to the detriment of both; but that these dangers are not a necessary outcome of the scheme if properly safeguarded.

4. That there would be a tendency under the Scheme to the formation of a class of practitioners who will be wholly concerned with the treatment of disease in expectant mothers and in young children, and that almost the whole of actual practice among such patients may be withdrawn from the general practitioner; and that if the medical and surgical treatment of the public is to continue to be (as it should) in the hands of general medical practitioners, aided by suitable opportunities for consultative and pathological assistance, the effect of this must be seriously detrimental to public and profession alike.

5. That, correspondingly, if it be correct that the most satisfactory and valuable form of receiving advice and treatment is by means of the "family doctor," with considerable personal choice as to who that "family doctor" shall be, the Scheme would have a tendency to lead away from this to the less desirable method of treatment by one or two officially appointed whole-time practitioners.

6. That the Scheme, instead of forming part of a consistent and continuous whole would rather tend to interfere with the tendency of the Insurance Acts to provide every worker with medical attendance on the lines of private practice. The public supervision of the medical treatment of most persons in their earlier years may be said to fall into three periods—(i.) from birth till school age; (ii.) during attendance at school; (iii.) from 16 years of age, when they become insured persons, thus leaving a short period from about 14-16 years of age during which there is no supervision; and seeing that, under arrangements made by the State, treatment for all ordinary conditions of ill-health during the last of these periods is given in practically all cases by general practitioners, it would be a departure from a desirable continuity of method if a different system were encouraged in the earlier years.

7. That it is important to bear in mind that if instead of extending downwards from 16 years of age the giving of treatment by general practitioners, a scheme be adopted which encourages the building up from the first of a system of treatment by salaried whole-time officials, such a system, established as the normal for early years, might ultimately be extended to later years in substitution for that now prevailing.

8. That these dangers may be avoided or minimised, even under the present Scheme of the Local Government Board, if the Board will insist upon, or at least encourage, the use of general practitioners as the normal means by which advice and treatment shall be given to expectant mothers and young children, not only by referring such patients as are found to have a "family doctor" to such practitioners, but by providing a "family doctor" for such patients as have not one already, some choice in the matter being secured for the patients themselves.

9. That the Local Government Board should require Local Authorities to submit Schemes for their approval, and should require these authorities before submitting such Schemes, to endeavour to make arrangements with the medical profession in the locality on these lines; but that if such arrangements are not possible owing to practitioners being unwilling to undertake the work or willing to do so only on conditions incompatible with a reasonable economy, authorities should be quite at liberty to establish schemes on other lines.

(II.)

10. Certain general principles having been laid down it seems desirable in view of the importance of the subject to elaborate two points the establishment of which is fundamental to the acceptance of these principles, and then to outline a scheme which with necessary adaptations may be used to carry these principles into effect. The two points are :—

A. That in the public interest the employment of private practitioners would be the best system for adoption.

B. That such a system would be beneficial and attractive to the medical profession itself and that therefore its adoption would not only be the best in the public interest but would also be the line of least resistance.

A. The Employment of Private Practitioners the Best System in the Public Interest.

11. It is submitted that such a system would be far more efficient than the employment of whole-time officers because it at once enlists the experience of the general body of the local profession gained by years of work among the very people whom it is desired to benefit. The extent to which the poorer classes have up to the present had the benefit of this experience has been limited simply by their inability to pay for it. It will be generally allowed that if each of the expectant mothers and each poor child could be made the patient of some local practitioner with whom the ordinary relations between family and family doctor could be established, this would be an excellent way of dealing with the problem. A whole-time appointment, judging from experience, would carry with it a salary which would attract mainly the comparatively newly qualified practitioner, who would be unknown to the patients and who would know little or nothing of their home life and working conditions. The nature of the work under consideration essentially demands that the doctor should have free access to the homes and should have the confidence of the mothers. But the whole-time officer could rarely have the opportunity of gaining such access and such confidence, for his contact with the family would be both partial and temporary. He or she would (again judging by experience of such appointments) be continually on the look out for a better appointment and would rarely have any idea of making the town or district the scene of his life work, as the average private practitioner does. If wholetime appointments in connection with such work became the rule, the ordinary procedure as regards medical attendance on a working man's family would soon be as follows :—Father, attended by his panel doctor: Mother, if an insured person, attended by her panel doctor (most probably the husband's doctor), if not an insured person, attended when she can afford it by private doctor (probably husband's panel doctor); during pregnancy consults the Maternity Centre doctor; at her confinement attended either by a midwife or by a private doctor, probably again her husband's panel doctor. Infants and young children up to school age, attended by Maternity Centre doctor, alternating with private doctor in cases of severe illness when his services can be afforded, or parish doctor otherwise. School children, attended by School Medical Officer for "School diseases," and by private doctor (probably the father's panel doctor) for illness which necessitates staying from school. Children after school age and up to 16 years, attended by private doctor; after 16, by panel doctor (possibly the same practitioner). The absurdity and inefficiency of such a system, if it can be dignified by such a name, is patent as compared with one which would secure continuity of attendance by the same practitioner. If the private practitioner is made an essential part of all schemes for giving attendance to the working classes, the same doctor could advise the expectant mother, attend her in confinement, with or without the midwife, attend the baby and the children, whether for ordinary diseases or for the so-called "School diseases," and continue his attendance after the children have become insured persons, as so many of them will.

12. The scheme now advocated would in fact provide for nearly all members of the community a "family doctor," that is to say would put the poorer classes into the same relationship with their doctors as the better-to-do workmen and the middle classes are with theirs. If, in addition to the provision of a family doctor, opportunity for consultative and pathological assistance and institutional treatment were made available when required, the system would not only be efficient and complete but would have the merits of simplicity, which are certainly absent from the mixture of whole-time and private clinical attendance which is being allowed to grow up. It is to be noted that in providing doctors for some 13 millions of the population through the Insurance Act the Government definitely adopted the "family doctor" principle, presumably because it offered definite advantages and doubtless because it was preferred by the public.

B. The Employment of the Private Practitioner would Benefit, and would be Welcomed by, the Private Practitioner.

13. A system which preserves for the private practitioner experience which would otherwise be lost to him, thereby renders him more efficient to the great advantage of the public whom he serves. There is no doubt that recent legislation and the trend of local administration in these matters has tended to lessen his experience and responsibility in regard to the prevention, diagnosis, and treatment of disease. This tendency can only be regarded with grave disquietude by those who realise that anything which diminishes the capacity and efficiency of the general practitioner must be to the public disadvantage. Part of this movement may perhaps be inevitable, *e.g.*, the practical exclusion of the private practitioner from the treatment of some of the infectious fevers. The transfer of the majority of these cases to special institutions in the care of special officers may be defended on the ground that isolation cannot be carried out efficiently in most homes. But such a reason cannot be given in the case of the medical treatment of School Children, nor can it be advanced with much force in the case of the treatment of Tuberculosis. In these two regions of clinical medicine there has recently been a strong tendency to take such work as was being done by the private practitioner out of his hands and to place it, and all new work of the kind, in the hands of special whole-time officers. The above are given as examples of a trend of action which, if not checked, will undoubtedly tend to weaken the private practitioner, in status, in professional capacity, and financially. If the diagnosis and treatment of certain diseases are to be placed to an increasing extent, if not entirely, in the hands of special officers it follows naturally that the experience of, and interest in, these diseases by the private practitioner will gradually cease or, at any rate, his efficiency in dealing with them will be lessened. Not only will he suffer, but those members of the community who rely on him for their medical attendance will also suffer. If expectant mothers are now to be

encouraged to attend centres at which they will be advised and treated, and at which their babies and young children will be treated by a whole-time officer and afterwards be handed on to the School Medical Officer, it needs no special gift of prophecy to foretell that before long the acquaintance of the general practitioner with diseases connected with maternity and child life will be gravely diminished. For it must be realised that, though these centres are supposed to be only for people who are not at present getting adequate medical attendance, the history of all such movements demonstrates that before long treament at the public cost is expected as a right by nearly all persons belonging to the working classes and by large numbers of the middle classes.

14. Further, if the new scheme of Centres is to be successful it must not arouse the resentment of the private practitioner but must secure his sympathy and co-operation. But he may well be antipathetic if he sees in the scheme merely another nail in the coffin of his class. It is therefore submitted that the arguments in favour of the Local Goverment Board and local authorities giving the employment of private practitioners a trial in connection with all public schemes involving medical treatment, wherever they are willing to accept service, are overwhelming. It rests with the profession to formulate a plan which, while possessing the virtues inherent in the employment of the local private practitioners, shall compare not unfavourably with the employment of whole time officers in administrative convenience and financial economy.

15. Apart from these alternative systems of the employment of whole time officers or the employment of all private practitioners willing to serve, there are two other methods which may be briefly mentioned namely :—

(a) The employment of a selected number of local practitioners as part time officers. This method would be less successful than throwing the appointments open to all practitioners, because it would arouse opposition among those doctors who were not employed, as the system would place their colleagues in the position of being considered by some of the public as specialists in that particular line and might thus favour them in private practice to the detriment of the others. Moreover, it fails to do what would be achieved by the more open method, namely, to interest the whole body of the local profession in the subject of maternity and child welfare.

(b) The imposition of additional duties on whole time officers already employed in other capacities, *e.g.*, Assistant Medical Officers of Health or School Medical Officers. This method would appear to possess all the disadvantages of the whole time officer method without even its alleged merit of creating a new order of specialists.

(III.)

Maternity and Child Welfare Scheme Providing for the Employment of all Local Practitioners desirous of Serving.

16. The complete Scheme would provide for :

(1.) General supervision, including responsibility for records and statistics, and the following up of cases to ensure that adequate treatment is obtained.

(2.) Attendance at a centre, or at such places as may be arranged for, for the purpose of (a) giving advice and (b) deciding if treatment is necessary.

(3.) Treatment at the centre of such selected classes of cases as may be determined upon by the Local Authority.

(4.) Treatment of all cases requiring ordinary medical attendance either (a) at the centre, (b) at the doctor's surgery, (c) at the patient's home, (d) at an institution.

It would be for the Local Authority to determine how much of this ground should be covered in its area.

17. The work under (1) would be done by a supervising officer, preferably the M.O.H., assisted by nurses or health visitors.

18. The work under (2) (3) and (4)—except (d)—would be arranged for by the appointment for this purpose of all local practitioners who were prepared to undertake it. Such practitioners would be required to attend at the centre, or arranged place, for a certain time (say one hour) on certain days at fixed intervals. The general nature of their work there may be indicated as :—

A. Examination of, and advice to expectant mothers, together with the keeping of such records and giving such treatment as is included within the scope of the scheme.

B. Examination of infants and young children, together with the keeping of such records and giving such treatment as is included within the scope of the Scheme.

[Existing Schools for Mothers and Infant Consultation Centres could be made available for this work by the adoption of such arrangements as would comply with those Sections of the Scheme relating to the appointment and remuneration of the medical staff.]

19. Sufficient time must be allowed to ensure efficient work and it is suggested that at the most only eight cases should be seen in one hour. A nurse or health visitor would be in attendance and all routine work such as weighing, measuring, preparing the patient for the doctor, and entering records, would be done by her in order to free the practitioner from all work that can be carried out efficiently by a lay person.

20. All persons referred to the Centre would be allowed to choose whichever doctor on the list they preferred to consult.

21. Such a scheme would be capable of expansion and of adaptation to districts of various kinds. In country districts the doctors' surgeries might well be the Centres. In all cases any necessary medicines or appliances would be supplied at the cost of the patient or of the local authority. Attendance at confinements is not included in the scheme.

Remuneration of Doctor.

22. For attendance at Centre, for one hour if necessary, 5s. For this fee the doctor would be expected to see up to 4 cases. For each subsequent case, after the first four, a payment of 1s. 3d. per case, so that the maximum earned in the hour would be 10s.

23. Both doctors and patients would be expected to attend punctually at the hour appointed, and if on occasion there should not be sufficient work to occupy the full time, the doctor would not be expected to wait to the end of the hour.

24. As regards home treatment or treatment at the doctor's own surgery the following suggestions are tentatively made. It is found that among insured persons at least fifty per cent. apply to the doctor for treatment. That is to say that if a capitation payment were to be made on the basis of payment per patient and not payment per person liable to become a patient, the rate would have to be at least double what it is under the Insurance Act. It is suggested that the payment of a capitation fee of 15s. per person (mother or child) assigned for treatment under 16 (2) might be tried for a test period.

25. The money thus assigned could be distributed in the following ways :

1. By direct capitation payment for each patient on each doctor's list.
2. By payment per attendance out of a pool, the bills to be discounted if necessary.

26. It will possibly now be helpful to take a concrete case as an example of the working of the proposed scheme. Take first of all an industrial town of 30,000 inhabitants, with 14 medical men. Assume that 10 of these are willing to act. If there were sufficient work to require a daily consultation each doctor would require to take one hour at the Centre per fortnight.

27. There would be roughly 700 births per annum, which means 700 mothers and 700 infants to deal with. If the Centre were open one hour daily on five days a week, there would be a maximum of 260 hours of work in the year, but excluding Bank and other holidays, it would be fair to take the number of hours worked as 250. With 8 patients seen per hour there would be a maximum of 2,000 consultations per annum which would cost £125.

28. Now of the 700 mothers in the hypothetical town it may be safely assumed that, even after it had been established for some time, only one half would avail themselves of the scheme and, incidentally, also only one half of the infants. Seeing that many of the mothers would be insured persons, it is doubtful whether even 350 would need to be referred to the Centre. Some of the mothers would need institutional treatment and would be referred to the appropriate place. Some would be members of provident dispensaries or private medical clubs. Some would be able to pay for private medical treatment.

29. But assuming that half of both mothers and infants were referred to the Centre there would be 700 individuals to deal with, and if the 2,000 consultations were still given, every mother could be seen once and nearly every infant twice in one year for £125. Four thousand consultations could be given, for £250, which is less than the annual salary of a whole-time officer, unless the authority were content with a newly qualified and inexperienced practitioner.

30. If objection be taken by practitioners to the above scheme on the ground that the payment is inadequate it may be pointed out (1) that the scheme to be acceptable must compare favourably financially with the employment of a whole-time officer; (2) that if this and similar work gets into the hands of institutions or whole-time officers the private practitioner will get no remuneration at all and will lose many fees which he now earns; (3) that the scheme must be regarded as a method of combating the tendency to divert clinical work into the hands of whole time officers, and thus as a means of maintaining and improving the status, professional capacity and efficiency of the private practitioner; and (4) the remuneration is practically the same as that provided for under the Association's Scheme for School Centres where £50 per annum is paid for one attendance of about 2½ hours a week for the school year, namely 40 weeks. In the Maternity and Child Welfare Scheme the doctor would not necessarily get 10s. for every hour's work, but on the other hand the work of the School Centre is mainly operative.

APPENDIX XVI.

SPECIAL REPORT ON THOSE ASPECTS OF THE MEDICAL AID INSTITUTION QUESTION RAISED BY THE REFERENCES TO THE INSURANCE ACT COMMITTEE FROM THE COUNCIL.

(See para. 122 of Annual Report of Council.)

1. The instructions of the Council to the Committee on the above-mentioned subject were :—

(a) To obtain a legal opinion upon the questions of (i.) the treatment given to Medical Aid Institutes under the Insurance Acts as compared with that given to doctors on the panel in regard to the dispensing of medicines, and (ii.) the handing over of the Medical Benefit moneys to Approved Institutions without any audit (Min. 428 of Council of June 24th, 1914), and

(b) To consider and report on Minute 248 of the Annual Representative Meeting, 1914 :

Minute 248.—Resolved: That this Representative Body protests strongly against the immunity from control by the local Insurance Committee enjoyed by Medical Aid Institutes, and calls on the Council to take action with a view to having this amended, as being unfair both to ordinary medical practitioners on the panel and to those insured persons who are members of such Institutes.

THE DISPENSING OF MEDICINES QUESTION.

2. The Committee consulted the Solicitor of the Association as to the alleged difference between the treatment meted out to the patient who was attended by a panel doctor and one who was a member of an Approved Institution. It was pointed out to him that there was no specific power given under the Act or Regulations to the Insurance Committee to supervise the detailed arrangements as regards drugs and appliances supplied by an Institution, and that although Regulation 46 gave the Pharmaceutical Service Sub-committee power to deal with any complaint "made by a person entitled to obtain treatment from a practitioner on the panel against a person supplying drugs and appliances in respect of the quality of any drugs and appliances supplied," this power was not specifically extended to the dispensing arrangements in connection with an Approved Institution.

3. Mr. Hempson's opinion was to the effect that though Institutions are not specifically mentioned either in Clause 15 (5) of the National Insurance Act, 1911, which entails on the Insurance Committee the duty of making provision for the supply of "proper and sufficient drugs," or in the relative Regulations, neither are they excepted from them. A member of an Approved Institution remains an "insured person," and as such has a right to the protection of the Insurance Committee. He cannot be deprived or deprive himself of this right. The Insurance Committee would be bound therefore to allow such an insured person to formulate a complaint to the Insurance Committee as regards the quality of the treatment or drugs supplied to him at the Institute, and to investigate the complaint by the machinery devised for that purpose. If the Committee refused to do so the insured person would have the right to make representation of the facts direct to the Commissioners, and in Mr. Hempson's view this would be held to be a matter which the Commissioners would require the Insurance Committee to deal with.

4. Apparently therefore there is, in Mr. Hempson's opinion, no difference made in point of law between insured persons who are members of Approved Institutions and those who receive their treatment from doctors on the panel, as regards the protection of the Insurance Committee, and this would apply both as regards their medical treatment and as regards the provision of their drugs and appliances. If members of these Institutions do not as a matter of fact avail themselves of this protection it is either because they are ignorant of their rights, or they have no grievance, or are unwilling to lodge a complaint in the manner provided for by the Regulations.

THE QUESTION OF HANDING OVER PUBLIC FUNDS TO APPROVED INSTITUTIONS WITHOUT PROPER AUDIT OF THE EXPENDITURE.

5. The position in regard to this point is as follows: Under the 1912 Regulations every Institution was bound, as a condition of approval, to furnish such accounts and returns as the Commissioners or the Insurance Committee, with the consent of the Commissioners, should require (Reg. 15 (2) (ii.)). And as a condition of the payments made to Institutions the Insurance Committee had to be satisfied that accounts were kept by the Institutions showing separately the amounts expended by them in respect of treatment, and of the supply of medicines and appliances respectively. In Memo. 163 I.C. issued April, 1913, the Commissioners laid down the conditions under which payments could be made by Insurance Committees to Institutes. These provided (a) that the sum to be actually paid would be settled after examination of the "audited accounts" and after taking into account the average expenditure per head of all members, both insured and uninsured; (b) "where the amount claimed by the system or institution is such that the average cost per insured member exceeds the average cost of treatment of all members, it will be for the system or institution to prove to the satisfaction of the Committee by statistical or other evidence, that the treatment given to insured persons is, owing to its superior quality or wider scope, such as would, when compared with that given to non-insured persons justify a greater cost."

6. Then came the Chesterfield By-Election (August, 1913), and in consequence of pressure brought to bear on the Government on behalf of a powerful Medical Aid Institution in that area the following Memorandum was issued by the National Health Insurance Commissioners, England :—

1. Any existing approved institution will receive 9s. a head for every insured person who selects the institution to provide its medical treatment, upon the principal officer signing a statement that an average of 9s. per head has been expended in respect of insured persons for medical treatment (including provision of drugs) and general establishment charges; treatment to be not inferior to that given by doctors on the panel.

2. Arrangements will be made as soon as possible whereby insured persons receiving benefit from Medical Associations will be given green tickets when temporarily away from home.

3. Arrangements will also be made as soon as possible whereby insured persons, when permanently changing residence, shall have the option either of joining another Medical Association in their new location or of selecting a panel doctor.

7. According to the English Regulations for 1914 Boards of Management administering Approved Institutions must furnish to the Insurance Committee a certificate, on a form to be approved by the Commissioners, stating the amount expended by the Institution during the year upon the provision of treatment and medicines for insured members. The Committee must pay to the Institution a sum "bearing the same proportion to the sum standing to the credit of the Institution Fund . . . . as the number of insured persons of that Institution bears to the total number of insured members of Institutions . . . . . (Regulation 43 (3)). Regulation 43 (4) prescribes that the institution must comply with the conditions of the Parliamentary Grant in order to obtain that grant. There is no provision for the furnishing of accounts and returns. The only other control alluded to is mentioned in Regulation 13, where an institute is required to make such alterations in its rules as the Commissioners may require to comply with the conditions of any Parliamentary Grant and to observe "such other conditions, if any, as the Commissioners may think fit."

8. The latest form of the Model Rules of the English Commissioners for Approved Institutions impose the following obligations on the Institution :

(a) An insured person is entitled to obtain treatment not inferior in nature, quality, and extent to that provided under the panel system, and the insured member must be furnished with certificates in the same way as the ordinary panel patient is.

(b) The Institution must furnish reports necessary in any application for sanatorium benefit, and provide domiciliary treatment when required.

(c) Medicines must be dispensed either by or under the direct supervision of a registered pharmacist or by a person who for three years prior to December 16th, 1911, has acted as dispenser to the Institution or to a medical practitioner or to a public institution.

(d) The insured person must obey the rules as regards behaviour the same as a panel patient.

(e) Provision must be made for the settlement of disputes between members or officers and the Board of Management. There is a right of appeal to the Commissioners, whose decision is final.

NOTE.—*According to Mr. Hempson's opinion (supra) the above Rule should indicate that there is a right of complaint to the Insurance Committee.*

(f) The Board of Management must keep such records and furnish such returns and certificates at such times and in such forms as may be required by the Regulations and the conditions of any Parliamentary grant.

(g) The Board must comply with all requirements of the Commissioners as to the accounts of the Institution and shall, if at any time required by the Commissioners, submit its accounts for *audit* to an auditor appointed by the Commissioners.

(h) The Institution must afford facilities for inspection to any person authorised by the Insurance Committee or Commissioners, and must at any time, upon reasonable notice, produce all books, accounts and documents relating to the affairs of the Institution for inspection.

9. It will thus be seen that in spite of the Chesterfield By-Election surrender, the Commissioners and the Insurance Committees still have very considerable control over the Institutions, if they care to exercise it.

10. The Welsh Commissioners, who were not implicated in the Chesterfield arrangement, are more stringent in their regulations. They insist, in addition to the above, on the following conditions :—

(a) That the Institution must accept the offices of a Conciliation Committee set up by the Commissioners for the purpose of settling disputes between the Institution and its medical officers.

(b) If a representation is made to the Commissioners that the continuance of a practitioner as medical officer of an Institution is prejudicial to the medical service of the insured members, the Commissioners may hold an enquiry with a view to his removal, just as they may do with a panel doctor and they may hold such an enquiry on their own initiative.

(c) The Board must furnish a Balance Sheet to the Commissioners as well as to their members. The administrative expenses must not exceed an amount which appears to the Commissioners to be reasonable. Any of the medical officers may make representations to the Commissioners if they think more money is being spent in this way than is necessary.

(d) The medical officers must be paid without unreasonable delay.

11. As regards the question of what is the legal remedy, if it be held that public money is being distributed to these Institutions without proper public control Mr. Hempson has expressed the following opinion :—

"Under Section 15 (4) of the 1911 Acts the Commissioners clearly have power to make arrangements therein defined with the Institutions therein referred to, and it is imperative upon them to make Regulations giving effect thereto.

"Such safeguards as are to be exercised by the Commissioners in checking the amounts expended by these Institutions are left practically to their judgment and discretion.

"I understand that they are now content to accept and pass as evidence of such expenditure the Certificate of certain Officers of the Institution (Form 97 I.C.), and admitting that they have power under Section 15 (4) to make the grants referred to the question which arises is as to whether sufficient vigilance is exercised by them in accepting the Certificates of such Officers.

"My own view and opinion is that the Act contemplated something more than this being required, and it appears to me that the routine acceptance of such Certificates without any audit or other investigation opens the door for either fraud being committed or mistakes of a more or less venial character occurring, and it therefore appeals to me that there is room for contending with some force and reason that the system prevailing is not such as to faithfully fully and vigilantly discharge the obligations which arise under the Act.

"To succeed in this contention however the legal force and validity of Regulation 43 (3) would have to be impeached on the ground that it authorises a procedure to be adopted which is ineffective in its protection of public funds with the further affirmative contention that the Regulations contain no such proper or sufficient safeguards and are therefore incomplete in this respect."

12. The Insurance Committee is now capable of suing and being sued, so that action could be taken against that body. Mr. Hempson indicates that there may be considerable difficulty, however, in ascertaining what person or body in an individual capacity would be able to show that he or they had suffered such a legal wrong as would enable them to stand in the position of Plaintiff or Applicant for the purpose of founding proceedings. He goes on to say :

"Granted, for the sake of argument, that the procedure adopted under the Regulation is *ultra vires*, a legal wrong would in such circumstances be committed, but unless some individual or corporate body can show that damage has been sustained by them no action can be taken on their part and, the initial difficulty which presents itself would be in finding a person or corporate body to be placed in the position of Plaintiff to raise the question in the Courts.

"It may possibly be argued that a Medical Practitioner who could shew that, due to that which has occurred, his position in the locality in which he practices has been infringed upon or otherwise prejudiced to an extent whereby it can be established, inferentially at least, that a loss has been suffered by him and will be of a continuing character, might possibly claim to stand in the relation of Plaintiff in instituting these proceedings, but I very much doubt whether the Courts would accept or regard this as sufficiently tangible to recognise his eligibility in this direction.

"There is another course recognised in the law as one available to be adopted where a question arises upon a matter of general public importance affecting an appreciable portion of the community, namely, by initiating proceedings through the medium of the Attorney-General with the view of it being decided as to what the law is upon the subject in question.

"Speaking frankly, I find difficulty, and I am of opinion that Counsel will do so also, in advising that the circumstances which present themselves have material in them upon which to raise questions in the Courts either at the suit of an individual or a corporate body, or, indeed, at the suit of the Attorney General."

APPENDIX XVII.

REPORT OF INTERVIEW BETWEEN DEPUTATION FROM A SUB-COMMITTEE OF THE INSURANCE ACT COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION AND THE INSURANCE COMMISSIONERS ON THE QUESTION OF PAYMENTS TO PANEL PRACTITIONERS.

(See para. 141 *of Annual Report of Council.)*

A GREAT amount of correspondence having been received at the office of the British Medical Association complaining of discrepancies between the cheques paid to panel practitioners in various areas and the amounts expected by them, the subject was discussed by the Insurance Act Committee at its meeting on October 9th and the matter was referred to the Subcommittee. The Subcommittee at first considered it might be possible to secure some practitioner with a comparatively small panel who was so certain of the accuracy of his list that he could prove

that he had been underpaid and was willing, with the assistance of the Association, to take such a case into court. Inquiries showed, however, that this course was surrounded with great difficulties, because even if the most carefully kept doctor's list were taken, payments during the year are only provisional, and a final settlement can take place only after declaration of the final credit by Commissioners. An opinion could not be correctly formed until after this settlement, which means a long delay. The Subcommittee therefore resolved to approach the Commissioners by deputation.

The deputation was received on December 22nd, 1914, at the offices of the English Commission by Sir Robert Morant (Chairman), Mr. Smith Whitaker (Deputy Chairman), and Mr. H. N. Bunbury (Financial Member of the English Commission and Financial Adviser to the Joint Committee), and Messrs. J. Anderson (Secretary and Comptroller), S. P. Vivian (Assistant Secretary), and E. J. Strohmenger (Deputy Comptroller of the Accountant and Comptroller-General's Department).

The Subcommittee was represented by Dr. E. Rowland Fothergill, Chairman, Local Medical and Panel Subcommittee, Dr. B. A. Richmond (Secretary, London Panel Committee), Dr. J. Divine (Secretary, Hull Panel Committee), Mr. H. H. Tomkins (Secretary, Essex Panel Committee), and the Medical Secretary.

Dr. FOTHERGILL thanked the Commissioners for receiving the deputation, and stated that the position in regard to the payments made by Insurance Committees to panel practitioners was so complicated and so unsatisfactory, as evidenced by the numerous complaints that had been received at the offices of the Association, that it had been felt absolutely necessary to try to clear the position up. The deputation had been appointed by the Local Medical and Panel Subcommittee of the Insurance Act Committee, a Subcommittee consisting almost entirely of practitioners who are under agreement with various Insurance Committees, and which had recently, in response to a circular it had sent out, been promised the cordial co-operation of more than 90 per cent. of the Panel Committees in England, Scotland, and Wales.

The MEDICAL SECRETARY stated that according to his experience there was more confusion of thought, and consequent dissatisfaction, among insurance practitioners on the subject of how and under what system payments were made by the Insurance Commissioners to the various Insurance Committees, and from the latter to the individual practitioners, than on any other subject on the medical side of the Insurance Acts. The following were the points which had emerged with greatest frequency in the recent letters to the Association.

The panel practitioner's argument is that according to the agreement between the practitioner and his Insurance Committee, the practitioner was entitled to receive "the rate of per quarter for every person included in his list" at the beginning of that quarter. Regulation 25 placed on the Insurance Committee the duty of preparing a list of persons who have been accepted by or assigned to each practitioner, and furnishing the list to the practitioner. Therefore the practitioner assumes that he is entitled to the rate of per quarter for every person on that list.

Now the doctors have been relying on these lists to provide them with the means of ascertaining who are entitled to require attendance from them and for whom they are to expect payment. But the doctors in every area are now told that their lists cannot be regarded as accurate, nor can the register of the Insurance Committee, from which these lists are prepared, and on which the Insurance Committee relies for the payments from the Commissioners, which it in turn distributes to the doctors, be so regarded.

The accuracy of the register depends on the societies, who are bound by Regulation 3 (1) to supply to the Committee a list of the names and addresses of their members resident in the area of the Committee. It is now stated that the lists supplied by the societies are inaccurate or belated, and that therefore the registers cannot be relied upon. Apparently the only thing which can be relied upon is that the whole of the moneys received by the Commissioners on behalf of the medical benefit of all insured persons has been, or will be distributed among the various Insurance Committees.

But this one definite fact amid so many uncertainties gives no consolation to the doctors in an area where they are told that the Insurance Committee has been most careful to keep its register as accurate as possible, and estimates, as for example in Hull, that the mean of the quarterly counts of insured persons for 1914 is 103,279, while it is only given credit by the Commissioners for 89,728.*

If it be true that *all* the money of *all* the insured persons is being distributed among the Committees in proportion to the numbers on their index registers, it would appear that those Committees which take the most pains to verify their registers and eliminate duplicates, deaths, etc., will get a smaller credit from the Commissioners than they would have done if they had left their lists in the original state of inflation and incorrectness—that is, there appears to be a premium on slackness on behalf of the Insurance Committee.

The Medical Secretary also said that there was doubt in the minds of many as to whether an Insurance Committee did not lose financially by the greater accuracy of its index register—that is, apart from any question of paying money to the doctors, and he asked for some detailed statement as to the causes of the inflation of the register, what steps are being taken to reduce this, and how far they are showing any results.

The Medical Secretary then drew attention to the Payments to Insurance Committee Regulations, 1914, and asked (*a*) why is the credit to the Insurance Committee to be made only for the number ascertained from contribution cards for the first half of the year. Is this a fair method, seeing that the number of insured persons is gradually growing? (*b*) Is it a fact that the Commissioners are getting no records from approved societies for persons over 70, those who are getting disablement benefit, and those cases of sickness in which cards are not being stamped? If so, will this not inflict great injustice upon the medical men who are attending them?

Finally, the Medical Secretary urged that the Commissioners should either issue some detailed explanation of the whole system, made as simple as possible, or should put the deputation in a position to answer the following questions:

1. Can the Commissioners show that the funds collected by them for the remuneration of doctors receive contributions in respect of *all* the insured persons for whose treatment the doctors are collectively responsible?

2. Can it be shown that each Insurance Committee secures the proper share of those funds?

3. Can it be shown that each individual doctor under agreement with an Insurance Committee receives the amount properly due to him in respect of the insured persons for whom he is responsible, and also his proper share of any moneys due on account of the unallotted residue?

In reply, Sir ROBERT MORANT stated that, as, owing to the great complexity of the subject, there was no one person who could be said to have a complete knowledge of it in all its bearings, he had asked the heads of the various departments concerned to be present; and he suggested that the best plan which could be followed by the Association in approaching the panel committees was to assure them that the Commissioners had convinced the deputation, if this should be the outcome of the deputation, of the equity of the system and the desire of the Department to improve it by any means in their power.

It was then agreed to discuss the subject under the following heads:

1. The total debit to the societies.
2. The distribution of the central pool among Insurance Committees.
3. The distribution by the Insurance Committee to the individual doctors.

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* *Note by Commissioners, to whom the Report was submitted for agreement.*—The figures compared in the case of Hull were not comparable, as the figure of 103,000 was the mean of the counts of the register for 1914, whereas the figure of 89,000 was the number of insured persons for whom the Hull Committee were credited for 1913. The mean register figure comparable with the figure of 89,000 was 95,000, the difference being due to inflation.

The Total Debit to Societies.

The debit to the societies is made centrally by the Commissioners, all the money received forming a pool, out of which each Insurance Committee is entitled to its share. A debit is raised against each society based on the number of members entitled to medical benefit who have surrendered contribution cards for the first half of the year, together with the number of members who were at the commencement of the year of the age of 70 years and upwards, as shown in an audited return obtained from societies.

The debit in respect of each member who at any time during the first half of the year was entitled to medical benefit is the full amount of the medical charge for the year, and a society is thus charged in respect of every such member for the whole year notwithstanding that he or she may have entered into insurance only towards the end of the half-year, or may at any time during the year have lapsed from insurance through death or any other cause, or have suspended payment of contributions.

The excess charges raised in respect of the above-mentioned members are computed to be the fair equivalent for the absence of any charge in respect of persons who come into insurance during the second half of the year, or who have not surrendered contribution cards owing to having been in receipt of sickness or disablement benefit or unemployed for the whole of the first half year.

The amounts thus debited against societies, together with the corresponding amounts debited against deposit contributors, and the State Grants payable towards the cost of medical benefit, are pooled for distribution amongst Insurance Committees. After a very careful weighing of all relevant considerations, it can be confidently stated that the basis of charge adopted results in a full payment being made for each insured person for the period of the year for which he is entitled to benefit.

As regards the 1913 medical year, the Commissioners' Annual Report for that year (pp. 506–7) contains a financial statement showing, as regards England, in the form of a balance sheet, how much money was received from societies, etc., and in what manner the whole sum received was disposed of. From this statement, it would seem that medical benefit funds were collected for distribution amongst Insurance Committees in respect of 10,400,000 insured persons entitled to medical benefit, and that doctors have accordingly been paid in respect of that number. This figure, which was obtained by the system explained above, is so close to the number of the total insured population (including those not entitled to medical benefit) arrived at on actuarial estimates and on actual returns, that there can be little doubt that the medical profession have been paid in respect of the whole insured population entitled to medical benefit.

Doubts as to the accuracy of those figures have been based upon the number of insured persons on doctors' lists. The following facts, however, demonstrate the fallacy of calculations based on those lists. At the end of 1913 the number of insured persons on doctors' lists in England was approximately 10,100,000. But the issue of medical cards to those persons at that time resulted in the return through the Dead Letter Office of 850,000; and, while it is true that some of the 850,000 were subsequently traced at other addresses in their respective doctors' practices, it is known, on the other hand, that many of those not returned through the post either did not reach the addressees at the addresses given or were forwarded on to a distant address. These figures prove, therefore, the existence of inflation on the doctors' lists at the end of 1913 to at least the extent of 850,000, thus reducing those lists to 9,250,000 effectives at most—a figure well within the total insured population as arrived at on the system employed by the Commissioners.

Again, any doubts as to the accuracy of the Commissioners' figures based upon the total figures of Insurance Committees' Index Registers, are demonstrably ill-founded, for the aggregate of these has been ascertained, and proves to be considerably in excess of the total membership of approved societies and the total of deposit contributors combined, and it is clear from this and from other evidence that the Committees' registers are inflated.

The Distribution of the Pool among Insurance Committees.

There can be no doubt, therefore, that the pool collected by the methods explained above contains all the money due in respect of all the inhabitants of all the several areas who are entitled to medical benefit. The next question which arises is whether every individual Insurance Committee receives out of this pool payment in respect of all the inhabitants of its own particular area who are entitled to medical benefit.

The procedure actually in operation is to distribute the pool by giving each Committee such proportion of the total pool as their insured population (as shown by their register) bears to the total insured population (as shown by the aggregate of the registers). Now, if the registers of Insurance Committees were exactly accurate, both severally and in the aggregate, this method would obviously afford to each Committee the precise payment in respect to its exact insured population. But the registers are known to be inflated. The only question for consideration is therefore whether every Insurance Committee's Register is uniformly inflated to the same proportionate extent, and whether, as suggested by the Association, the system penalizes efficiency by ignoring the efforts of individual committees to reduce the inflation in their own respective registers.

As regards the first point, the Commissioners are satisfied that the causes of the inflation are general and not local—that is, they affect all areas alike. These causes are, in the main, two: The issue by more than one society of an index slip in respect of the same insured person, and the absence of knowledge on the part of societies as to their members who have died, lapsed from insurance, etc., and therefore their unavoidable failure to issue the necessary notifications. As the great majority of insured persons are members of societies having members all over the country, it follows that there can be no reason to apprehend the partial or local operation of the tendencies towards inflation. Further, this conclusion and the correctness of the Commissioners' credits is supported by figures, quoted by the Commissioners, which were derived from the operations in connexion with the issue of medical cards.

As the duplication of index slips is widely spread throughout the various Insurance Committee areas, it follows that no efforts of an individual Insurance Committee could have any substantial effect upon the inflation due to this cause, as the duplicate slips will be in other Committee's registers; nor, where societies have failed to receive complete information as to the lapses, etc., among their membership, is there any possibility of Insurance Committees obtaining it. The Commissioners are satisfied, therefore, that it is not possible for any individual Insurance Committee by any degree of activity in the correction of their own register to reduce its proportionate share of the general *inflation*. This could only be done by some general clearing operations embracing all registers as a whole. The Commissioners already have under their consideration the question of undertaking such a clearance, and hope to take the necessary steps at the earliest practicable date.

But while in these circumstances, for the reasons stated, the Commissioners are satisfied that the efforts of Committees will not penalize them under the present system as regards *inflation*, those efforts must, in the different case of the *suspense register*, result in advantage to their funds, and therefore to the doctors in their area.

Substantially, therefore, the present system results in each Committee being credited with the funds necessary for the payment of the doctors in its area in respect of all the insured persons entitled to medical benefit who are resident in the area.

Distribution of the Committee's Fund among Individual Doctors on their Panel.

The next question which arises is as to the payment to the individual panel doctor. This is a share of the local pool. He is entitled to receive such proportion of the local pool as his annual credit bears to the aggregate

annual credits of all the doctors on the panel for the area. His annual credit is arrived at by adding together his quarterly credits, which are in turn arrived at by multiplying the number of persons on his list by a given rate of money. But his contract is not to receive payment at the rate of any given number of shillings per person on his list, but to receive a share of the local pool, the share being calculated as above; and while the rate of credit specified in his agreement is the actual amount which he would receive per effective insured person per annum if all the lists were theoretically exact, it is not open to a doctor to claim that he is entitled under his agreement to that rate of actual money multiplied by the number of insured persons nominally comprised in his list.

Sir Robert Morant, in closing the discussion, said that the whole system was one of great complexity. There had never been in this country previously an attempt to deal centrally, for anything like the present purposes, with the registration of so many millions of people. He hoped that they had convinced the deputation that the Commissioners had no other purpose in view than to arrive as accurately as was humanly possible at the sum of money which was due from societies to the doctors. They had to do justice to both parties as regards the determination of the sums due, while as regards the actual sums collected, every stage in the disposition of those funds was subject to Government audit.

Many efforts had already been made, and every possible step would be taken to tighten up the machinery all round so as to make the lists more accurate and to make it more demonstrably certain that the payments actually received by individual doctors did amount to the agreed rate of from 7s. to 7s. 6d. per head per annum, of those in respect of whom he was at risk through the year. But it should be clearly understood that theoretical exactitude could not be expected in an undertaking of such dimensions; and could not even be approached without an elaborate census of the whole insured population being taken every night of the year. If, therefore, the medical profession were not satisfied with any system short of one which produced theoretically exact results, it would be necessary in order to give them satisfaction, to adopt some other method of payment of doctors than the capitation basis.

Dr. FOTHERGILL then thanked Sir Robert Morant for having received the deputation and asked that the Commissioners would allow some one on their staff to look over any statement which the Association thought it right to issue to the Panel Committees so that it might correctly represent the position of affairs. Sir ROBERT MORANT promised his co-operation in this matter.

Association Intelligence.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held at 429, Strand, W.C., on Wednesday, April 28th, 1915, at 2 p.m.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the chair.

Dr. W. AINSLIE HOLLIS, Hove, Past-President.

Mr. T. JENNER VERRALL, LL.D., Bath, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow
Lieut.-Col. Sir JAMES BARR, M.D., LL.D., Liverpool
Surgeon-General P. H. BENSON, I.M.S., Walmer, Kent (Indian Medical Service)
Dr. M. G. BIGGS, London
Mr. H. B. BRACKENBURY, London
Dr. CHARLES BUTTAR, London
Dr. H. J. CAMPBELL, Bradford
Dr. E. ROWLAND FOTHERGILL, Hove
Dr. ADAM FULTON, Basford
Major JAMES GALLOWAY, London.
Mr. T. W. H. GARSTANG, Altrincham
Dr. THOMAS A. GOODFELLOW, Manchester
Mr. JAMES GREEN, Portsmouth
Major T. D. GREENLEES
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick, N.B.
Mr. RICHARD HARDING, New Radnor
Captain F. CHARLES LARKIN, Liverpool
Captain ALBERT LUCAS, Birmingham
Dr. H. C. MACTIER, Wolverhampton
Colonel C. H. MILBURN, D.L., Hull
Captain J. E. MOORHOUSE
Major GEORGE PARKER, Bristol
Dr. A. TENNYSON SMITH, Orpington
Captain F. J. SMITH, London
Dr. W. JOHNSON SMYTH, Bournemouth
Mr. E. B. TURNER, London
Dr. O. R. M. WOOD

THE ROLL OF HONOUR.

Before commencing the ordinary business, the CHAIRMAN expressed to Sir James Barr the sincere sympathy of the Council on the loss he and Lady Barr had suffered by the death of their only son, killed in action.

APOLOGIES.

Letters of apology for non-attendance, owing to military duties and other causes, were received from Professor Henry Corby, Dr. David Ewart, Dr. John Gordon, Captain W. J. Greer, Major R. Wallace Henry, Colonel W. T. Johnston, Major J. Livingstone Loudon, Colonel Munro Moir, and Sir James Porter.

THE PRESIDENT.

The CHAIRMAN reported that the President had accepted an invitation to serve in a hospital in Belgrade, and that he left England to take up his duties towards the end of March.

DEATHS.

The CHAIRMAN reported the deaths of Dr. W. T. Edwards, of Cardiff, President of the Association at the Cardiff Meeting in 1885, and Dr. Charles Macfie, of Bolton, a former member of the Council, and was requested to convey, on behalf of the Council, an expression of sympathy to the respective families.

ELECTION TO COUNCIL, 1914–15.

The CHAIRMAN reported the election of, and welcomed to the Council, Major T. Duncan Greenlees, as representative of the South African Group.

FINANCE.

The TREASURER presented the financial statement for the year ending December 31st, 1914 (see p. 168), and explained the result of the year's working. The statement, as certified by the auditors, was approved, and in accordance with By-law 40 will be presented to the Annual Representative Meeting.

The accounts for the quarter ending March 31st, 1915, amounting to £10,898 15s. 10d., were approved, and the Treasurer empowered to pay those remaining outstanding.

CANDIDATES FOR ELECTION TO THE ASSOCIATION.

The seven candidates whose names appeared on the notice convening the meeting were duly elected members of the British Medical Association.

ORGANIZATION COMMITTEE.

GRANTS TO BRANCHES FOR 1915.

(a) Home Branches.

Capitation grants to Branches for 1915 were made as follows, provided that in each case a report for 1914 satisfactory to the Grants Subcommittee has been received:—

Aberdeen, 3s.; Birmingham, 4s.; Border Counties, 4s.; Cambridge and Huntingdon, 4s.; Dorset and West Hants, 4s.; Dundee, 1s.; Essex, 4s.; Fife, 2s.; Glasgow and West of Scotland, 1s.; Gloucestershire, 4s.; Kent, 2s.; Metropolitan Counties, 2s.; Norfolk, 4s.; North of England, 4s.; Northern Counties of Scotland, 4s.; North Lancashire and South Westmorland, 1s.; North Wales, 6d.; Oxford and Reading, 1s.; Perth, 4s.; Shropshire and Mid-Wales, 1s. 6d.; South-Eastern of Ireland, 4s.; Southern, 3s.; South Wales and Monmouthshire, 4s.; South-Western, 2s. 6d.; Staffordshire, 3s. 6d.; Suffolk, 4s.; Surrey, 2s. 6d.; Ulster, 4s.; Wiltshire, 2s.; Worcestershire and Herefordshire, 1s.; Yorkshire, 1s.

The grants will be paid by the Treasurer as follows: 50 per cent. in May, 25 per cent. in September, and 25 per cent. in November.

The members of the Council of the late East Anglian Branch had made application for a temporary resuscitation of that Branch, to take the place of the newly-formed Essex, Norfolk and Suffolk Branches. If this proposal is carried into effect the grants to the three new Branches will be made to the East Anglian Branch.

No grant for 1915 was made to the Edinburgh, Lancashire and Cheshire, Munster, or South Midland Branches, each of which had in its possession as at December 31st, 1914, including moneys in the hands of Divisions, a balance equivalent to over 5s. per member.

Should any of the eight Home Branches which have not up to the present reported for 1914 forward a report satisfactory to the Chairman of the Grants Subcommittee, the

Treasurer, on being so informed, is empowered to make a preliminary grant of 1s. per member to such Branch, if he is satisfied that the Branch is in urgent need of money, pending settlement of the grant for 1915 by the Council.

(b) Oversea Branches.

The grants to Oversea Branches remain, as in previous years, at the rate of 4s. per member who has paid the full subscription for the year, and 2s. per member, elected after July 1st, who has paid half the ordinary subscription.

ANNUAL REPORT OF COUNCIL.

The Annual Report of the Council was considered and approved for circulation to the Divisions and Branches, and submission to the Annual Representative Meeting in accordance with Article 40. This is an important record of the work carried out by the Association, and should be carefully studied. It will be found at p. 166 *et seq.*

The Council dealt with a heavy agenda and completed its session at 8.15 o'clock. Most of the matters settled are embodied in the Annual Report of Council.

NEXT QUARTERLY MEETING.

The next meeting of the Council is fixed for Wednesday, June 30th.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

NOTICES OF MOTION: LAST DAY FOR RECEPTION.

ATTENTION is drawn to the fact that Notices of Motion, if any, from Divisions and Branches for the consideration of the Annual Representative Meeting must be published in the BRITISH MEDICAL JOURNAL not later than the issue of May 22nd, and for this purpose should be received by me not later than May 15th, 1915.

CHANGES OF BOUNDARIES.

TEMPORARY RE-ESTABLISHMENT OF EAST ANGLIAN BRANCH.

IN view of difficulties that have arisen in the organization of the new Essex, Norfolk, and Suffolk Branches, constituted in December, 1914, it has been decided by the Council to revert temporarily to the one, East Anglian, Branch for the area in question.

The following change has therefore been made in accordance with the Articles and By-laws, and takes effect as from the date of publication of this notice:

> That the Essex, Norfolk and Suffolk Branches be temporarily discontinued, and their place taken by the East Anglian Branch, of boundaries and area identical with those of that Branch as existing up to December 19th, 1914.

Representation in Representative Body.—Unaffected.

GRANTS IN AID OF SCIENTIFIC RESEARCH.

THE Council of the British Medical Association is prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.

Applications.

Applications for Grants for the year 1915–16 must be made not later than Saturday, June 19th, 1915, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX, *Medical Secretary.*

429, Strand, London, W.C.
May 8th, 1915.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—Dr. Frank Fowler (29, Poole Road) and Mr. Percy A. Ross (Kensington, Boscombe Spa Road), Bournemouth, Honorary Secretaries, give notice that the annual meeting of the Branch will be held at the Royal Hotel, Weymouth, on Wednesday, May 19th, at 3 p.m. Members having papers or notices of motions are requested to send notice to the Honorary Secretaries.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—Dr. Eleanor C. Bond, Honorary Secretary (106, Christchurch Road, Boscombe), gives notice that the annual meeting of the Division for the election of officers will be held at the Library of the Bournemouth Medical Society—The Lansdowne—at 3.30 p.m., on Friday, May 14th.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary, Chillingworth House, Tunbridge Wells, gives notice that the second annual meeting of the Branch will be held on Wednesday, June 2nd, at 4.30 p.m., at the Town Hall, Tunbridge Wells (by kind permission of His Worship the Mayor). Agenda: In addition to the business of an ordinary meeting—(1) To receive the Report of the Election of Officers for 1915–16, who shall thereupon take office. (2) To receive the Annual Report and Financial Statement, etc. His Worship the Mayor of Tunbridge Wells kindly invites members to tea at the Town Hall at 4 p.m. The annual meeting will begin at 4.30 p.m. At 5 p.m. the President of the Branch, Dr. Claude Wilson, will read a paper on "Irregular Action of the Heart," in which the differentiation and significance of the various types of arrhythmia will be discussed. The annual dinner will be held at the Calverley Hotel at 7.30 p.m., to which the President kindly invites all members present. Wine will be provided by the local members.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—Dr. John J. McNaboe, Acting Secretary (465, Kingsland Road, N.), gives notice that the fifteenth annual general meeting will be held at Balfour Hall, on Friday, May 14th, at 9.30 p.m., to receive reports; to elect officers and members of Executive Committee; to nominate for election members of Council of the British Medical Association, and officers for the Council of the Metropolitan Counties Branch; to instruct Representatives for forthcoming Representative Meeting. Dr. David Ross will move that the insurance certificates of non-panel doctors be accepted unconditionally, and that it is detrimental to the honour and interest of the medical profession that sections of the profession should receive public money for professional services not rendered, and for which the sections were not collectively responsible.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.—Mr. N. Bishop Harman, Chairman (108, Harley Street, W.), gives notice that the annual meeting of the Division will be held at No. 108, Harley Street, W., on Friday, May 14th, at 5.30 p.m. Agenda: To receive annual report of Executive Committee. To elect officers and representatives for ensuing year.

Naval and Military Appointments.

INDIAN MEDICAL SERVICE.

THE services of Major D. G. RAI are replaced at the disposal of the Government of Madras, with effect from February 20th, 1915.

Major G. TATE, Surgeon to His Excellency the Commander-in-Chief, is appointed to be in charge of the current duties of the Civil Surgeon, Simla, East, in addition to his own duties, with effect from April 1st, 1915.

Colonel H. STC. CARRUTHERS, I.M.S. (ret.), is appointed temporarily to be Civil Surgeon, Coorg, with effect from the date of his assuming charge.

Major W. M. ANDERSON, Medical Officer, 4th (Quetta) Division, Quetta, is appointed to hold charge of the current duties of the office of the Civil Surgeon, Quetta, in addition to his own duties, with effect from February 18th, 1915.

Lieutenant P. S. B. LANGTON, M.B., has been permitted to resign the service, with effect from December 1st, 1914.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

COLONEL EDWIN LEE, from Assistant Director of Medical Services, West Riding Division, to be Colonel. Lieutenant-Colonel ARTHUR L. JONES, late 3rd Welsh Field Ambulance, to be Lieutenant-Colonel.

CORRESPONDENCE.

PROTEST AGAINST THE REDUCTION OF CAPITATION PAYMENTS.

DR. W. COODE ADAMS (Hampstead) writes: Will you grant me a little space to correct an inaccuracy in your report of the meeting of the Panel Medico-Political Union in the Connaught Rooms?

You state that the Commissioners had notified the Insurance Committees to reduce their advances to practitioners "*in proportion to the number of their enlistments.*"

It was not so stated at the meeting in question, and the words in italics were not used in the notification from the Commissioners. Thus your reporter's account gives the meeting an air of futility, for the chief resolution, moved by Dr. Cardale, demanded this very proportional arrangement, and would have been superfluous if the Commissioners had already directed this to be done.

In fact, the whole object of the meeting was to protest against any other method of deduction, and was not directed against the deduction itself.

*** The statement in the letter of the Commissioners to Insurance Committees, dated March 31st, is in the following terms:

The Commissioners are of opinion that advances may be safely made for all the purposes of medical benefit to a total amount in each quarter not exceeding a sum calculated at the rate of £72 per thousand of the count of their Register at the beginning of that quarter, unless they have reason to believe that the enlistment in their area is considerably above the average. If the Committee are of opinion that the rate of enlistment in their area is much in excess of the average, they should make a corresponding reduction in the total amount of their advances.

PETTY COMPLAINTS AND VEXATIOUS REGULATIONS.

Dr. A. G. BATEMAN (London) writes: The letter of Dr. Cox, published in the SUPPLEMENT of May 1st, p. 153, addressed to the National Insurance Commissioners *re* the temporary suspension of the clerical work of the over-burdened panel practitioner is most opportune and necessary. The demand upon the time of panel practitioners should be medical, not clerical, and unless there is some relief in this respect granted by the Commissioners the legitimate work and the patients must suffer.

There is another burden, too, which is pressing very heavily upon many and must be removed, and that is the time wasted in answering petty complaints made to Insurance Committees by panel patients or their employers, and in attending meetings of the committee called to inquire into such complaints. I have had to deal with many of these, and in no instance has the complaint made been worthy of the expensive machinery which has been set in motion. In one, a panel practioner was seriously called upon to answer a charge that more than two years previously he had attended a panel patient who alleged that after a visit of the practitioner he had got worse, and had to call in another doctor! This is not an unusual occurrence, even in the history of the highest professional advice, and one would have thought, in the present time of stress and overwork, the committee would have thrown it out at once; but no! cumbersome machinery had to be used, and our member was called upon to answer the complaint, as if it were the most serious charge of neglect possible, and, at considerable trouble and some expense, to attend the meetings. The value of the time lost cannot be estimated, of course. There are other cases in which the time of the practitioner has been illegally wasted by committees by their not even correctly carrying out the regulations issued in such quantity by the Commissioners; and in these appeals have had to be lodged and money and time spent in obtaining justice. The day has come when panel practitioners must refuse to do more than attend and prescribe for their patients.

Restraint must also be put upon approved societies in the matter of their unjust and rapidly increasing requirements in respect of medical certificates. I question the legality of the new regulations, and hope soon to be able to test the matter in the High Court. The profession is a "patient ass," but the burden to be placed must be in proportion to its strength; otherwise the pack will have to be kicked off and the weary animal set free.

The whole conditions of the one-sided contract into which panel practitioners have entered must be revised; the quarterly remuneration must no longer be cut down almost to a vanishing point at the free will of committees under the threat of deferred payment until the end of the year; and the wholesale surcharges now being made, which are in my opinion illegal (and this opinion is supported by counsel), must be stopped.

The National Insurance Act is rapidly destroying the freedom of the practitioner, and the worst days of "friendly society" practice are being revived. The approved societies are asserting their control, and a condition of *corvée* is rapidly being developed.

Unless the present state of things is altered for the better, and soon, nothing but a wholesale resignation from the panel will have any effect. The matter, however, rests with the profession; and if they are agreed to continue, theirs alone will be the blame. The Act cannot be worked without their assistance, and they have only to insist upon just treatment to have it carried out.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ANGLO-SERBIAN HOSPITAL, Urnjatchka Banja, Serbia.—Surgeon.

ASHTON-UNDER-LYNE UNION. — Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £170 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRIGHTON EDUCATION COMMITTEE.—Temporary Junior School Doctor. Salary, £350 per annum.

BRISTOL: BEAUFORT WAR HOSPITAL. — (1) Chief Resident Surgeon. (2) Resident Physician and Surgeon.

BRISTOL GENERAL HOSPITAL.—Second House-Physician, House-Surgeon, and Casualty House-Surgeon; also Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer or Locumtenent. Salary, £200 per annum.

BURNLEY VICTORIA HOSPITAL.—House-Surgeon. Salary, £115 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—Resident Surgical Officer. Salary, £160 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CHESHIRE COUNTY ASYLUM, Parkside, Macclesfield.—Junior Assistant Medical Officer. Salary, £250 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House-Physician.

CROYDON UNION.—Assistant Medical Superintendent of the Infirmary, etc. Salary, £225 per annum, rising to £250.

DENBIGH: NORTH WALES COUNTIES ASYLUM. — Second Assistant Medical Officer. Salary, £220 per annum, rising to £300.

ESSEX COUNTY. — Temporary Assistant Tuberculosis Officer. Salary, £350 per annum.

EXETER CITY.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary, £300 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

HONG KONG UNIVERSITY.—Professor of Physiology. Salary, $500 a month.

HULL: ROYAL INFIRMARY.—(1) House-Physician. (2) Assistant House-Surgeon. (3) Casualty House-Surgeon. Salary, £105, £100, and £80 per annum respectively.

IPSWICH BOROUGH MENTAL HOSPITAL.—Resident Medical Superintendent. Salary, £400 per annum.

KING EDWARD VII SANATORIUM, Midhurst.—Second Assistant Medical Officer. Salary, £150 per annum, rising to £200.

LEEDS GENERAL INFIRMARY. — Resident Casualty Officer. Salary, £125 per annum.

LONDON FEVER HOSPITAL, Liverpool Road, N.—Assistant Resident Medical Officer. Salary, £250 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Two Qualified Residents.

MANCHESTER CHILDREN'S HOSPITAL.—(1) Resident Medical Officer; (2) Medical Officer for Out-patients' Department (non-resident). Salary for (1) £100 and £5 bonus per month during war, and for (2) £180 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and, upon promotion, to £450.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £250 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Northwood. — House-Physician. Salary, £150 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £130 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Temporary Surgeon in charge of Out-patients.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—(1) Resident Medical Officer. (2) Assistant Resident Medical Officer. Salary, £110 and £90 per annum respectively.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £250 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) Assistant Physician; (2) Surgeon in Charge of the Ear, Nose, and Throat Department (temporary). Honorarium, £25 per annum each.

ROTHERHAM HOSPITAL.—Junior House-Surgeon. Salary, £125 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident Medical Officer.

ST. PANCRAS DISPENSARY, 39, Oakley Square, N.W.—Resident Medical Officer. Salary, £300 per annum.

SALISBURY GENERAL INFIRMARY. — (1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SCARBOROUGH HOSPITAL AND DISPENSARY. — Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD MUNICIPAL TUBERCULOSIS DISPENSARY.—Two Assistant Medical Officers. Salary, £350 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOMERSET COUNTY EDUCATION COMMITTEE, Weston-super-Mare.—School Oculist and Medical Inspector. Salary, £350 per annum, rising to £400.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Lady House-Surgeon. Salary, £150 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford. — House-Surgeon. Salary, £200 per annum.

STEPNEY TUBERCULOSIS DISPENSARY.—Medical Officer, whole time. Salary, £500 per annum.

STOCKTON-ON-TEES: STOCKTON AND THORNABY HOSPITAL.—House-Surgeon. Salary, £200 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Senior House-Surgeon. Salary, £250 per annum.

TIVERTON HOSPITAL.—House-Surgeon and Dispenser. Salary, £80 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL. — House-Surgeon. Salary, £100 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WARRINGTON: LORD DERBY WAR HOSPITAL. — Resident Physician and Surgeon and Resident Pathologist and Bacteriologist.

WEST BROMWICH AND DISTRICT HOSPITAL. — (1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Clinical Assistants.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—House-Physicians. Salary, £220 and £100 per annum.

WHITECHAPEL DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Temporary Medical Officer. Salary, £500 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL: — (1) Resident Medical Officer; (2) House-Surgeon. Salary, £150 per annum.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer. Salary, £250 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

CERTIFYING FACTORY SURGEONS. — The Chief Inspector of Factories announces the following vacant appointments: Birtley (co. Durham), Lurgan (co. Armagh).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

BURKE, J. D. G., M.B., B.Ch., R.U.I., Assistant Medical Superintendent of the Exeter Asylum.

COLLINGS, D. W., M.B., District Medical Officer of the Blything Union.

CORNWALL, W. F., M.B., C.M.Aberd., District Medical Officer of the Towcester Union.

DESMOND, Michael P., L.R.C.P.and S.Edin., L.R.F.P.S.Glas., Certifying Factory Surgeon for the Slievereagh District, co. Cork.

DIX, W. R., M.D.Durh., District Medical Officer of the Great Yarmouth Union.

HUNTER, J. W. M., L.R.C.P.and S.Edin., District Medical Officer of the Basford Union.

MACCARTHY, E. F. T., L.R.C.P.and S.Ire., District Medical Officer of the St. Pancras Parish.

MELVILLE, G. M., M.D.Edin., District Medical Officer of the Basingstoke Union.

MILLER, W. R., M.D.Dubl., District Medical Officer of the Penzance Union.

PROCTER, G. W., M.B., M.R.C.S., L.R.C.P., Certifying Surgeon for the Garston District of Liverpool.

SMITH, Miss C. L., M.B., Ch.B.Glas., District Medical Officer of the Lincoln Union.

TAYLER, F. E., M.R.C.S., L.R.C.P., Medical Officer of the Boys' Home of the Trowbridge and Melksham Union.

WILKINSON, C. A., L.R.C.P.and S.Edin., District Medical Officer of the Scarborough Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

MARRIAGE.

YORKE-GREENING.—May 4th, at the Wesleyan Church, Frodsham, by the Rev. H. Lefroy Yorke, M.A., B.D., father of the bridegroom, assisted by the Rev. William Stevenson, Professor Warrington Yorke to Elsie, only daughter of Mr. and Mrs. N. Greening, of Newlands, Frodsham.

DEATHS.

BELL.—William Bell, M.R.C.S., J.P., V.D., son of John Bell, M.D., of Uppingham, at Rutland House, New Brighton, in his 77th year.

JACQUES.—On May 1st, 1915, at 2, Oakley Square, N.W., Edwin Jacques, M.D., aged 83 years. Formerly Surgeon to Police and Prisons at Mauritius.

TOWNLEY.—On April 30th, at Brynrhôs, Crickhowell, after a short illness, Elizabeth Julia, the wife of Dr. Townley (Lieutenant, R.A.M.C., Brecknockshire Battalion, Aden), and youngest daughter of the late George Livingstone Rorie, banker, Edinburgh.

DIARY FOR THE WEEK.

TUESDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.—8 p.m., General meeting. 8.30 p.m., Demonstration by Mr. D'Arcy Power on early books on naval and military surgery from the Society's library.

THURSDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF NEUROLOGY, 8 p.m.—Annual General Meeting, to be followed by Clinical Meeting.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF OTOLOGY, 5 p.m.—Annual General Meeting, Clinical and Pathological Meeting. Cases and Specimens.
CLINICAL SECTION, 8 p.m.—Annual General Meeting.

SATURDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF BALNEOLOGY AND CLIMATOLOGY.—12.30 p.m., Annual General Meeting. 2 p.m., Visit to Epsom College, etc.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MAY.
7	Fri.	London: Committee of Chairmen of Standing Committees, 2 p.m.
14	Fri.	Bournemouth Division, Annual Meeting, Library of Bournemouth Medical Society, 3.30 p.m. City Division, Annual Meeting, Balfour Hall, 9.30 p.m. Marylebone Division, Annual Meeting, 108, Harley Street, W., 5.30 p.m.
19	Wed.	Central Division, Annual Meeting, Medical Institute, Birmingham, 3.30 p.m. Dorset and West Hants Branch, Annual Meeting, Weymouth, 3 p.m.
		JUNE.
2	Wed.	Kent Branch, Tunbridge Wells, 4.30 p.m. Tea, 4 p.m.; Dinner, 7.30 p.m.
30	Wed.	London: Council.
		JULY.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

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British Medical Association.

THE WAR EMERGENCY.

ST. PANCRAS AND ISLINGTON.

A LARGELY attended meeting of the profession in the St. Pancras and Islington Division was held at the Midland Hotel on April 20th, when Dr. Roche, Chairman of the Division, presided.

Dr. Roche laid before the meeting the urgent need of the War Office for medical men, and Colonel Harrison, R.A.M.C., from the office of the D.D.M.S., was present as the representative of the War Office, and addressed the meeting, and very kindly answered numerous questions.

After a lengthy discussion, the following were appointed a Medical War Emergency Committee:— *St. Pancras:* Drs. Alexander, Brown, Glinn, Morley; *Islington:* Drs. Beaton, Jackson, Rattray, Turner; with Dr. M. Hunt as a representative of the lady practitioners, and Dr. Roche, *ex officio*, as the Chairman of the Division.

At a subsequent meeting of the Committee it was decided to send a circular to the practitioners in the district to ascertain what assistance they would be willing to render.

NORTH-EAST LONDON.

ABOUT fifty medical practitioners in surrounding boroughs attended a meeting at the Hackney Town Hall on April 27th to consider what steps should be taken in regard to the request of the War Office for 2,000 doctors for war service.

Dr. C. F. Hadfield urged young doctors to take temporary commissions and older men to give part-time service, and so release institutional officers. About 120 doctors in that Division had offered to do the work of their colleagues called away on service.

Colonel Harrison (from the office of the D.D.M.S.) said that commissions would only be given to those giving whole-time service.

Dr. Evan Jones believed doctors would go willingly if there was any hope of a reasonable part of their practices being left on their return.

Dr. Leslie Durno said the public could not afford to lose many more general practitioners. It was all very well for those who remained to say they would look after the practices of those who went, but compensation was essential.

A resolution urging younger men to take temporary commissions and older men to give part-time service was carried, as was also a motion advocating institutional officers being released for part-time service.

Several members expressed their willingness to go abroad at once if necessary.

ISLE OF THANET.

A WELL-ATTENDED meeting of the Isle of Thanet Division was held at Broadstairs on April 27th to consider the Director-General's appeal, when Lieutenant-Colonel Winter, R.A.M.C., A.D.M.S., representing the D.D.M.S. Eastern Command, explained the local requirements. Questions were invited from members, and led to a good deal of discussion. Stress was laid on the difficulties experienced by members in offering themselves for whole-time service, the amount of extra work at present being done by a large number proving very onerous. A resolution to the effect that the Division was willing to organize the local profession so as to provide for the military needs of the district so far as was possible by part-time service was carried unanimously. The Division also agreed that the medical men of each district should make their own arrangements in carrying on the work of any practitioner who offered himself for whole-time service.

REIGATE.

A MEETING of the Reigate Division was held at the Reigate and Redhill Hospital on May 1st to which non-members were also invited. Mr. A. R. Walters was in the chair; twenty-six others were present.

Figures for insuring members on active service were quoted, and after considerable discussion it was decided that the rates were prohibitive. The Subcommittee watching the interests of those members was instructed to draw up a scheme for establishing a guarantee fund for the relief of widows, orphans, or disabled members for submission to the Executive Committee.

The results of the circular on part-time service were put before the meeting, and it was resolved that Colonel Simpson be informed of the following facts:

In August last there were 86 men in private practice in this Division; 27 men from this district are already serving with His Majesty's forces and 2 more are probably joining. Of these 13 were in private practice. In addition there are at least 18 more doing part-time service.

As regards further part-time work the Division can probably guarantee to fill two appointments at one of the new hospitals by a succession of short-period men up to the end of October. There are also a large number of men willing to undertake half-day work, but the distance of the proposed hospitals renders this quite impracticable.

BATH.

A MEETING of medical practitioners resident in the area of the Bath Division was held in Bath on April 20th, when

Dr. Whitby was in the chair, and the following resolutions were carried:

1. That, in view of the possibility of a concrete demand for the whole-time services of additional men from this area, a scheme be prepared for the pooling of gratuitous dispensary and hospital out-patient work in the town, as an economy of time and effort could thereby be effected.
2. That, in view of the sacrifices involved by men with established practices taking whole-time appointments, and the high rate of pay demanded by locumtenents at present, the remuneration offered by the Government in such cases is entirely inadequate.
3. That the remuneration of men with established practices should be sufficient to pay the expenses of their establishment during their absence.

It was stated that in the Bath town and surburban districts about 25 per cent. of the practising members of the profession were absent on service, and that in the Frome district 40 per cent. (4 out of 10) were similarly absent. Among the thirty-five practitioners who were present there were offers for whole- and part-time service.

SOUTH-WESTERN BRANCH.

A MEETING of the Devon County Committee of the South-Western Branch was held at the Royal Devon and Exeter Hospital on May 6th, when Mr. Walter Woollcombe, President, was in the chair.

Colonel Mackay pointed out that medical men could give help either as whole- or part-time medical officers. It was unanimously decided to draw up a letter, to which the signature of the Lord Lieutenant and the President of the Branch should be appended, to be sent to every practitioner in Devonshire, except those in the Three Towns and Exeter City, where the difficulty was being dealt with separately. Any medical man in Devonshire who has not received a copy of the letter detailing the various ways in which help can be given is asked to communicate with Mr. J. M. Ackland, the acting Branch Secretary, at 1, Barnfield Crescent, Exeter.

KESTEVEN.

A MEETING of the Kesteven Division was held at Grantham on April 27th, when Dr. Galletly, Chairman, presided, and fifteen practitioners, including four non-members of the Association, were present. Sir Alfred Keogh's appeal was discussed, and Colonel Younge, representing the D.D.M.S. at York, made some interesting observations on the position, and the need of more medical men for whole-time work particularly. Two practitioners present—Dr. A. H. Lowe (Grantham) and Dr. A. C. Greenwood (Corby)—stated that they were prepared to apply for commissions. Fourteen medical men practising in the Division have expressed their willingness to give part-time service.

NOTTINGHAM.

ON April 21st a meeting of the Nottingham Division was held, to which non-members of the profession were invited. The meeting was very well attended, there being upwards of ninety doctors present. The D.D.M.S. at York had been advised of the date of the meeting, but was not represented.

As a result of the meeting two medical men volunteered for whole-time service abroad, but one of them is unable to obtain leave unless he provides a locumtenent. Two gentlemen volunteered for whole-time service at home provided they were able to obtain locumtenents. It was understood that a large number of those present were willing to do part-time work. Feeling strongly expressed at the meeting was that established men in private practice with families and high standing expenses were quite unable to accept the offer of the Government for whole-time service either at home or abroad, but there seemed no reason to doubt that if more generous terms could be arranged, a fair number of practitioners could and would at once come forward.

The medical officers of health of the city and county explained what those authorities were doing in the way of releasing their officers for war service. A resolution was carried urging them to diminish the tuberculosis work as far as possible, and to suspend the inspection of school children.

WORCESTER.

AT a meeting of the Worcester Division of the British Medical Association on April 23rd the following suggestions were made as a means of obtaining more whole-time doctors for the army:

1. That whole-time assistant medical officers of health, school medical inspectors, and tuberculosis officers should be liberated by their councils.
2. That, in order materially to decrease the monetary loss of medical practitioners joining the R.A.M.C., this meeting considers that the Government should materially increase the pay offered.
3. That the War Office should take into consideration the professional status and experience of practitioners in granting initial rank.
4. That the hospitals should do without junior resident medical officers (male), and that the teaching hospitals should draft senior students to the hospitals concerned to act as resident medical officers, and that the time so spent should count towards the time required to be spent by students in hospitals.

Dr. H. Neville Crowe, Honorary Secretary of the Division, has intimated to the D.D.M.S. at Salisbury that the Division is willing to organize a part-time medical service to meet the requirements of the locality.

BOLTON.

AT a meeting of the Bolton Division of the British Medical Association, held on April 20th, the following resolutions were adopted:

That we are wishful to help the War Office to have all the medical aid available and to see that the medical men lose as little as possible by serving with the forces.

That any one joining the R.A.M.C. agrees to pay six guineas per week for work done in his absence by his fellow practitioners, they keeping a strict account of all attendances on his patients.

[This resolution to include addenda (1) and (4) of the Southampton Scheme (SUPPLEMENT, August 8th, 1914, p. 143).]

That practitioners accepting part-time service under the War Office are to be paid for their work.

That a notice be displayed in the waiting-rooms of practitioners requesting patients who had been under the care of absentee doctors to notify the fact when consulting any other doctor.

OLDHAM.

A WELL-ATTENDED meeting of the profession was held at the Oldham Royal Infirmary on April 27th, when Dr. Frank Radcliffe was in the chair. The following resolutions were adopted:

1. That the profession of Oldham and district pledges itself to perform loyally and conscientiously the work of medical men who have gone or may go on military service.
2. That no charge be made from men on service for work done.
3. That a fund be raised among the profession by levy to defray the out-of-pocket expenses of the medical men on whom the bulk of the work of absent practitioners falls.
4. That a special committee be appointed to control the distribution of this fund.
5. That the committee consist of the following: Drs. Frank Radcliffe, Martin, Thomson, Ferguson, Godson, Edwards, and Hutton.

It was announced that the staff of the infirmary were doing their utmost to set free the residents there, and further, that Dr. Payne, the resident at the Workhouse Infirmary, had gone on military service to Serbia. Dr. Gartshore stated his intention of applying for a commission, and it is understood that other members of the profession also intend to go on service.

ROCHDALE.

A MEETING of medical men practising in Rochdale was held on April 21st, when a letter from the D.D.M.S. Western Command, Chester, was discussed. Dr. Fulton, medical inspector of schools and temporary tuberculosis officer, having stated that he was willing to serve provided he received the sanction of the Health Committee, it was unanimously resolved to intimate to the Health Committee that it was the unanimous wish of the meeting that Dr. Fulton be given leave to join the R.A.M.C., and that those present were willing to do what they could during his absence. The present War Emergency Committee, together with representatives from Heywood, Littleborough, and Bacup, was appointed the War Emergency Committee for the Division. All those present having notified their willingness to do part-time work, the arrangements for carrying on the work of men who took commissions were left in the hands of the War Emergency Committee.

WAKEFIELD.

THE committee appointed at the meeting of the profession at Wakefield on April 23rd (SUPPLEMENT, May 1st, p. 152) met at Castleford on May 7th. It was announced that some half a dozen practitioners of the district had already offered for whole-time military service, while others proposed to do so provided arrangements could be made.

It was decided to call a series of local meetings of the profession at Wakefield, Pontefract, Featherstone, Castleford, Normanton, Goole, and Doncaster, with the following objects:

1. To get as many men as possible, not necessarily under 40 years of age, to offer themselves for whole-time service (to apply for temporary commissions in the Royal Army Medical Corps); and to make arrangements whereby their practices and general interests will be carried on and preserved during their absence on duty with the King's forces.
2. To make arrangements, after consultation with the local military authorities, whereby the remaining local medical practitioners may be able to undertake as much as possible of the local military service.

CARLISLE.

A MEETING of the doctors in the area of the English Division of the Border Counties Branch of the British Medical Association was held at Carlisle on April 28th to consider the appeal made by the War Office. The gathering was fully representative of practitioners in the district, and the meeting was most enthusiastic and harmonious.

Dr. G. B. Muriel, Chairman of the Division, explained the objects of the meeting, and the following resolutions were adopted:

That we, the practitioners in this Division area, are willing to organize the local profession to further the military medical interests in this area, and for that purpose to urge that in the opinion of this meeting of doctors, who are both members and non-members of the English Division of the British Medical Association, medical men who are under 40 years of age, and who are fitted for active service, should apply for temporary commissions in the Royal Army Medical Corps, if their civil obligations will allow them to do so. That means should be devised to set free such doctors, and to preserve their obligations and general interests while they are absent. That arrangements should be made with the local military authorities whereby the remaining local practitioners may be able to undertake as much as possible of the local medical military service.

That a Committee be formed to promote and carry through a scheme whereby the services of medical men of suitable age may be secured for the present military needs of the country, and that the Committee be instructed to act in conjunction with the military authorities.

That the practitioners of the English Division honourably pledge themselves to safeguard to the utmost the interests of their colleagues on military duty at home or abroad, and suggest that the remuneration be divided in the following proportions, namely—In town practice, five-eighths to the doctor in attendance and three-eighths to the absentee; in country practice, three-fourths to the doctor in attendance and one-fourth to the absentee; expenses and out-of-pocket outlay to be divided in the same proportion. All patients should be resigned on the return of the absentee. These arrangements not to prejudice any special agreement entered into by a practitioner with another doctor or doctors to act as his substitute. No appointment to be taken over, only temporarily filled.

That the medical inspectors of school children should be relieved of their duties during the war, with the option of resuming their posts when peace is declared.

That, in the event of any man of military age doing full-time tuberculosis work and desiring to join the R.A.M.C., his work could be temporarily taken over by local men, who could arrange to do it by giving part-time service.

That as many doctors are taking over the work of panel doctors on active service, it will greatly assist them in their extra work if the duty of keeping panel records is remitted for the time of the war. Further, that if the duty of keeping the panel records is remitted temporarily for *all* panel practitioners, they would have much more time to devote to the needs of the country at the present time of stress.

Drs. Barnes, Bird, Bowser, Cullin, Doughty, Edington, Fisher, Muriel, Anderson, Arnold, Burnett, Braithwaite, Coulthard, Crerar (Maryport), Dolan, Govan, Graham, Macdonald (Carlisle), Rankine, and Stevenson were appointed to carry out the necessary details of organization, etc.

ST. BOSWELLS.

AT a meeting of the South-Eastern Counties Division of the Edinburgh Branch of the British Medical Association held at St. Boswells on April 27th. Dr. Muir spoke of the assistance senior students might give by acting as assistants to practitioners, particularly during the summer vacation.

The Secretary was instructed to ask the Secretary to the Scottish Committee, British Medical Association, to represent to the Insurance Commissioners the absolute necessity if practitioners were to be available to relieve prospective candidates for temporary commissions in the R.A.M.C. of the obligations they were under to the Insurance Committees; and, that in the case of those giving part-time assistance to the military authorities and of those undertaking to carry on the practices of absentees in addition to their own, it was impossible to give adequate attention to the medical needs of the public unless they were relieved from much of the clerical work required under the Insurance Act, including in particular the writing of weekly sickness certificates, and the copying out of prescriptions in full instead of using the phrase "Rep. mist."

The Executive Committee of the Division was empowered to conduct negotiations for the organization of practices locally in order to permit of practitioners leaving, and the settlement of questions as to the division of fees, attendance on patients, and matters affecting the interests of absentee practitioners. Private arrangements and agreements entered into between practitioners for the conduct of practices will hold good, but where such agreements have not been made, or where practitioners not with such agreements are through force of circumstances called in to give attention to patients, the Division considered that the following clauses represented terms and conditions fair and just as between an absentee and acting practitioner:

I.—*For Whole-time Absentees.*

(*a*) *Private Patients.*—The acting doctor attends patients for the absentee. He will remit to them on his own forms the accounts, stating thereon that he is sending it on behalf of the absentee. He will, if possible, charge the usual fee of the absentee. Payment to be made to the acting doctor. On settlement of account the acting doctor will remit 50 per cent. thereof to the absentee's representative.

This includes all private work, temporary resident panel patients, National Seamen's Insurance patients, etc.

The acting doctor to be liable for all expenses incurred in connexion with cases.

All accounts to be rendered quarterly.

Each absentee doctor before leaving to name his representative (bank, etc.), and to leave authority for settlements to be made with that representative. Representatives' names to be intimated to the Secretary of the Division.

(*b*) *Panel Patients.*—A list of the acting doctors to be placed in the surgery of the absentee and panel patients invited to select one. The doctor attending to keep a record of attendances and to charge the absentee doctor the uniform sum of 1s. per attendance, whether consultation or visit.

(*c*) *Parish Patients.*—In cases where the official deputy is unable to give necessary attendance and another doctor has to act for him, he, the official deputy, will pay to the acting doctor an amount equivalent to the number of attendances at the above rate.

II.—*For Part-time Absentees.*

(*a*) *Private Patients.*—The part-time absentee will remit the account to his own patient and credit the acting doctor with 50 per cent. of the emoluments for the work undertaken by the acting doctor on behalf of the part-time absentee.

(*b*) *Panel Patients.*—The part-time absentee for work done by the acting doctor under this heading pays the latter the same fee per consultation or visit as has been agreed upon for panel work under the "whole-time absentee" scheme.

(*c*) *Parish Patients.*—As under "Parish Patients" in scheme for "whole-time absentees."

Addenda.

In case of any dispute arising in connexion with this scheme the decision of the Executive Committee of the Division will be final.

A private patient of an absentee doctor is one who would have called him in if he had not been absent.

The acting doctor to be debarred from attending on his own behalf any patient of an absentee doctor for whom he has acted in respect of the said patient for a period of one year after the return of the latter doctor.

FIFE.

A LARGE and representative meeting of members and non-members of the Fife Branch of the British Medical Association was held at Kirkcaldy on April 20th.

Dr. Balfour Graham (Leven), who took the chair, explained that the special meeting had been called to consider the appeal by the War Office for whole-time and part-time service of medical practitioners during the

present crisis. Considerable discussion took place, and the following resolutions were adopted:

1. That the Secretary be instructed to appeal to the Scottish Insurance Commissioners asking them if they could see their way to forego the keeping of records of those who were giving up or have given their service during the present crisis.
2. That the Secretary be instructed to ask the education authorities in the county to set free the school medical officers, should they desire to give their time to the War Office, during the present crisis.
3. That the Secretary be instructed to appeal to the War Office, pointing out the difference in pay between the Territorial medical officer and the Regular medical officer, with a view to having the rates of pay more equal.
4. It was decided to divide the county up into seven districts, as had been done for the few months previous to the National Insurance Act coming into force, each district to consider means (*a*) whereby it would be possible to free one or more medical men, who would give up their whole time to the War Office; (*b*) whereby it would be possible to help the military authorities by part-time service.

LANARKSHIRE.

AT a meeting of the Lanarkshire Division, held in Hamilton on May 7th, the following resolutions were unanimously adopted:

1. That the members of this Division are prepared to render part-time service to the military authorities when required.
2. That, while the Division has supplied many practitioners to the army, so that now there is a considerable scarcity throughout the county, yet the members are prepared to do all in their power to liberate more for service if such should be urgently required.
3. Practitioners remaining at home are prepared, as far as possible, to do the work of their colleagues on service and to conserve their interests by refusing to accept their patients or any transfers from their panel lists.
4. That everything possible should be done to lessen the amount of clerical work imposed on the profession, and more especially that the keeping of Insurance Act records should be temporarily discontinued.

STIRLING.

AT a meeting of the Stirling Branch of the British Medical Association, held on May 5th, Surgeon-General Bourke explained the needs of the Army in the present emergency, and the different capacities in which members of the profession might offer their services—by (1) whole-time service anywhere; (2) whole-time service at home, and (3) part-time service. The meeting discussed the way in which the practices of those who volunteered for service should be conducted in their absence, and decided that 50 per cent. of the income should be conserved for the absent doctor, and the other 50 per cent. divided amongst the men doing the work proportionately to the amount of work done by each, the apportionment to be determined by the Council of the Branch. It was also agreed to call a meeting of the local profession to make arrangements whereby men might be relieved for service.

BELFAST.

A SPECIAL meeting of the Belfast Division of the British Medical Association was held in the Medical Institute, Belfast, on April 29th, when Dr. St. George was in the chair.

The object of the meeting, to which non-members were invited, was (1) to devise means by which those medical men who are willing to apply for commissions, and particularly those under 40, may be set free and their practices and general interests preserved while they are absent; (2) to make arrangements, after consultation with the local military authorities, whereby the remaining local practitioners might be able to undertake as much as possible of the local military medical service. Colonel Buchanan, R.A.M.C., A.D.M.S., who attended by invitation, explained what had already been done locally, and emphasized the pressing need that still existed for commissioned medical officers who would be willing to proceed to "any part of the world," and reminded the profession that personal sacrifice must be made by all. He also stated that whole-time officers would be accepted for limited periods of service if the applicant deemed a longer period impracticable. Those in Belfast district of over 40 years could, by giving their services locally, release the younger men for whole-time service elsewhere. On the motion of Mr. R. J. Johnstone the following resolution was passed unanimously:

That a Committee be appointed with the following objects: (1) To make arrangements for looking after the practices of those who may become whole-time medical officers under the R.A.M.C.; (2) to form a list of practitioners willing to serve as whole-time officers for a short period.

TEMPORARY DISPLACEMENT OF PART-TIME MEDICAL MEN.

DR. J. A. DRAKE (Tenby) writes: In view of the recent urgent appeal to the medical profession for whole- and part-time service with the troops during the war, it is somewhat astonishing to note that more than one civilian practitioner who has been doing part-time service in this neighbourhood has received an intimation during the last few days that his services are no longer required. The notice states that "owing to the large number of R.A.M.C. officers for whom employment must be found, it has been deemed necessary to detail them for duty in relief of civilian medical practitioners."

To judge from this notice, there is a superabundance of medical officers of the R.A.M.C. rather than the dearth which the appeal suggests. I write quite disinterestedly, as I am not one of those affected.

*** We have made inquiries, and find that the incident does not bear the interpretation our correspondent puts upon it. Medical officers, while waiting for the units to which they will be attached to be formed, are sent to the commands, and in this way local medical men may be temporarily displaced, but the units being destined to serve abroad, the displacement is not likely to be of long duration.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

AN ordinary meeting of the Division was held at Newtown St. Boswells on April 27th, when Dr. P. C. MACROBERT, Chairman of the Division, presided.

Medical Referees.—The SECRETARY reported that the resolution under the ethical by-laws passed at the special meeting had become a formal ethical rule of the Division, the stipulated time having passed and no poll being demanded.

Belgian Fund.—It was announced that the subscriptions received on behalf of the Belgian Doctors' and Pharmacists' Fund amounted to the sum of £51 5s., that the expenses of collection was 3s. 4d., and that the balance of £51 1s. 8d. had been paid to Dr. Des Voeux, Treasurer of the Fund.

School Appointment.—The SECRETARY reported that in view of the action taken by the Association in the matter of a school appointment, the Joint Education Committee had decided to appoint the county medical officer as chief school officer, with an assistant, at a salary not less than the minimum demanded by the Association.

Payments to Panel Practitioners.—The SECRETARY stated that this matter was under inquiry. After some discussion, it was resolved to ask for information as to the probable date of payment of accounts for travellers and visitors.

Financial Statement.—The accounts for the year 1914 were submitted. Dr. J. Carlyle Johnstone was appointed auditor, and subsequently certified them as correct.

Medical Certificates for Soldiers on Leave.—The SECRETARY reported that he had communicated to practitioners in the Division the contents of a letter from the officer commanding troops at Galashiels, complaining of men remaining on leave under medical certificates when they were perfectly able to report themselves at head quarters, and requesting the medical profession only to grant certificates when men were unable to travel to the military hospital.

Matters Referred to Divisions.—The meeting decided to approve of the Council's recommendations with reference to fees for the treatment of juvenile members of friendly societies, with regard to fees for medical examination for life insurance, and with regard to membership of the Association.

Certificates for Mentally Defective Children.—The SECRETARY read a letter from Dr. Georgeson (Lauder), suggesting that the Division should fix a minimum fee for certificates in respect of mentally defective children. Dr. J. CARLYLE JOHNSTONE pointed out that there were two different certificates required in connexion with these cases. One was a mere statement of opinion to a school board that a particular child was unfit to receive education. As a result of such a certificate the child came under the charge of the parish council, which required a lunacy certificate. Dr. Johnstone considered that the latter, a lunacy certificate, should in no case be charged at less than one guinea. After further discussion the Division considered that the minimum fee for the certificate supplied to a school board should not be less than 7s. 6d. with mileage.

Sickness Certificates for Insured Persons.—It was resolved to ask the Scottish Committee to bring to the notice of the Insurance Commissioners the amount of work and visiting required in order to provide insured persons with their weekly sickness certificates; this was particularly irksome in the case of chronic cases residing at a distance who otherwise would require only an occasional visit.

ESSEX BRANCH:

NORTH-EAST ESSEX DIVISION.

THE annual general meeting of the North-East Essex Division was held at Colchester on May 1st, when Dr. CURL was in the chair.

Election of Officers.—The following officers were elected:

Chairman: Dr. Burgess.
Vice-Chairman: Dr. Rowland.
Honorary Secretary: Dr. Fell.
Representative at Representative Meetings: Dr. Agnes Estcourt-Oswald.
Representatives on Branch Council: Drs. Curl and Salter.
Executive Committee: Drs. Kevern, Clowes, Hall, Dickin, S. Worts, Coleman, Caudwell, Roberts, Campbell, Bree; and *ex officio*, Drs. Burgess, Rowland, Fell, and Agnes Estcourt-Oswald.

Model Rules.—The model rules and model ethical rules as recommended by the Council were adopted.

Matters Referred to Divisions.—It was decided to support the three recommendations of the Council (SUPPLEMENT, March 20th), with the exception of the words "from the age of 3 years up to the age of 16" in the first of the recommendations.

LANCASHIRE AND CHESHIRE BRANCH:

BOLTON DIVISION.

A GENERAL meeting of the Bolton Division was held at the Bolton Infirmary on April 20th, when Sir THOMAS FLITCROFT was in the chair.

Representative at Representative Meetings.—Sir Thomas Flitcroft was elected to act as Representative for the year 1915–16.

Matters Referred to Divisions.—The recommendations of the Council for the fees for medical examinations for life insurance were adopted. The meeting considered that the contract rate of 4s. 4d. per annum for juvenile members of friendly societies was too small, and that if any rate were adopted it should be 9s. per annum, but disapproved of contracting to attend children at any rate.

Attendance on Dependants. — The resolutions of the Branch Council *re* the attendance on the necessitous dependants of men serving with the colours were discussed and passed.

The late Dr. Charles Macfie.—Sir THOMAS FLITCROFT, in paying a tribute to the life and work of the late Dr. Macfie, proposed a vote of condolence with his family, which was seconded by Dr. THORNLEY, and passed by all members standing in silence.

(The proceedings with regard to the war emergency are reported in another column.)

ROCHDALE DIVISION.

THE annual meeting of the Rochdale Division was held on April 21st, when Dr. GEDDES, Vice-Chairman, presided. It was decided to send to the chairman a letter of regret of the cause of his absence.

Annual Report. — The annual report showed that on December 31st there was a decrease of 1 in membership as compared with December 31st, 1913. The financial statement showed a balance of £4 19s. 3d.

Election of Officers. — The following officers were unanimously elected:

Chairman: Dr. Jefferson (Rochdale).
Vice-Chairman: Dr. Geddes (Heywood).
Secretary and Treasurer: Dr. James Melvin (Rochdale).
Representative for Representative Meetings: Dr. Walker (Rochdale).
Deputy Representative: Dr. Lord (Castleton).
Executive Committee: Drs. Carse, Grant, Richmond, and Wilson, and the officers.

Expenses of Representative. — It was unanimously resolved to make a levy of 5s.

MIDLAND BRANCH:

NOTTINGHAM DIVISION.

A MEETING of the Nottingham Division was held on April 21st, when Dr. JACOB, Vice-Chairman, presided.

Election of Officers.—The following were appointed to fill casual vacancies:

Chairman: Dr. J. H. Cox (Nottingham).
Representatives to Branch Council: Dr. W. R. Smith (Burton), Dr. G. T. Tate (Mansfield).
Executive Committee: Dr. E. Ringrose (Newark).

Matters Referred to Divisions.—The recommendations of the Council (SUPPLEMENT, March 20th) were considered. With regard to A, it was resolved to recommend to the Council—

> That the contract rates for medical attendance on the children of those persons eligible for the benefits of the Insurance Acts should be not less than 6s. per annum net from the age of 3 years up to the age of 16 years, and that this apply only to juvenile societies.

Recommendations B and C were agreed to.

Medical Referees.—On the motion of Dr. W. R. SMITH, seconded by Dr. RENDAL, it was resolved:

> That the policy of the Association should be the policy of this Division in this matter, and that the minimum fee for refereeing under the Insurance Act should be 10s. 6d., whether the examination be carried out at the patient's house or at the doctor's surgery.

STIRLING BRANCH.

THE annual general meeting of the Stirling Branch was held at Stirling on May 5th, when Dr. YOUNG, Vice-President, was in the chair.

The late Dr. Mitchell.—The CHAIRMAN referred to the loss the Branch had sustained by the death of Dr. Mitchell (Camelon), who, he said, always had the interests of the profession at heart, and on account of his eloquence, erudition, and wise counsel, was always listened to with appreciation. The Secretary was instructed to send an excerpt to Mrs. Mitchell.

Election of Officers.—The following office-bearers were nominated for the ensuing year:—

President: Dr. J. Young.
Vice-President: Dr. J. H. Lumsden.
Secretary: Dr. E. Dyer.
Honorary Secretary (pro. tem.): Dr. D. C. Maclachlan.

The proceedings with regard to the war emergency are reported in another column.

SUFFOLK BRANCH:

WEST SUFFOLK DIVISION.

A MEETING was held on April 20th at the Guildhall, Bury St. Edmunds, when Dr. WILKIN was in the chair.

Vice-Chairman.—On the motion of Dr. MASTER, seconded by Dr. HINNELL, Dr. Wood was elected Vice-Chairman in the place of Dr. Caie, who wrote stating that owing to prolonged absence from home he was unable to accept the office.

Matters Referred to Divisions.—The CHAIRMAN stated that the reports of the Council on: (1) Fees for treatment of juvenile members of friendly societies; (2) fees for medical examination for life insurance; (3) eligibility for election as a member of the Association (SUPPLEMENT, March 20th), had been fully considered by the Executive Committee, whose recommendations were read to the meeting. After a short discussion the Representative was instructed to vote accordingly. With reference to fees for the treatment of juvenile members of friendly societies,

a letter from Dr. Cox, dated April 8th, 1915, was read, in which he defined the class of juveniles who should be undertaken at contract rates. These should be, generally speaking, only the children of people who do not pay income tax.

SURREY BRANCH:

REIGATE DIVISION.

AT a meeting of the Reigate Division held on May 1st a letter was read from Dr. F. W. Robertson (Bletchingley), thanking the Association for its services in a dispute between himself and the Godstone Board of Guardians, and forwarding a cheque for £5 to be disposed in any way the executive committee might think fit. A hearty vote of thanks was accorded to Dr. Robertson.

The proceedings with regard to the war emergency are reported in another column.

YORKSHIRE BRANCH:

WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION.

A MEETING of the Division was held at the Clayton Hospital, Wakefield, on April 16th, when Dr. HILLMAN (Castleford), the Chairman, presided.

Matters Referred to Divisions.—It was decided to support the recommendation of the Council regarding fees for contract medical attendance on juveniles.

It was resolved that the recommendations with reference to fees for medical examination for life assurance be not supported.

It was agreed to support the Council's recommendation (SUPPLEMENT, March 20th) regarding eligibility for membership of the Association.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

NOTICES OF MOTION: LAST DAY FOR RECEPTION.

ATTENTION is drawn to the fact that Notices of Motion, if any, from Divisions and Branches for the consideration of the Annual Representative Meeting must be published in the BRITISH MEDICAL JOURNAL not later than the issue of May 22nd, and for this purpose should be received by me not later than May 15th, 1915.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—Dr. Frank Fowler (29, Poole Road) and Mr. Percy A. Ross (Kensington, Boscombe Spa Road), Bournemouth, Honorary Secretaries, give notice that the annual meeting of the Branch will be held at the Royal Hotel, Weymouth, on Wednesday, May 19th, at 3 p.m. Members having papers or notices of motions are requested to send notice to the Honorary Secretaries.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—Dr. Eleanor C. Bond, Honorary Secretary (106, Christchurch Road, Boscombe), gives notice that the annual meeting of the Division for the election of officers will be held at the Library of the Bournemouth Medical Society—The Lansdowne—at 3.30 p.m., on Friday, May 14th.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary, Chillingworth House, Tunbridge Wells, gives notice that the second annual meeting of the Branch will be held on Wednesday, June 2nd, at 4.30 p.m., at the Town Hall, Tunbridge Wells (by kind permission of His Worship the Mayor). Agenda: In addition to the business of an ordinary meeting—(1) To receive the Report of the Election of Officers for 1915–16, who shall thereupon take office. (2) To receive the Annual Report and Financial Statement, etc. His Worship the Mayor of Tunbridge Wells kindly invites members to tea at the Town Hall at 4 p.m. The annual meeting will begin at 4.30 p.m. At 5 p.m. the President of the Branch, Dr. Claude Wilson, will read a paper on "Irregular Action of the Heart," in which the differentiation and significance of the various types of arrhythmia will be discussed. The annual dinner will be held at the Calverley Hotel at 7.30 p.m., to which the President kindly invites all members present. Wine will be provided by the local members.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—Dr. John J. McNaboe, Acting Secretary (465, Kingsland Road, N.), gives notice that the fifteenth annual general meeting will be held at Balfour Hall, on Friday, May 14th, at 9.30 p.m., to receive reports; to elect officers and members of Executive Committee; to nominate for election members of Council of the British Medical Association, and officers for the Council of the Metropolitan Counties Branch; to instruct Representatives for forthcoming Representative Meeting. Dr. David Ross will move that the insurance certificates of non-panel doctors be accepted unconditionally, and that it is detrimental to the honour and interest of the medical profession that sections of the profession should receive public money for professional services not rendered, and for which the sections were not collectively responsible.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.—Mr. N. Bishop Harman, Chairman (108, Harley Street, W.), gives notice that the annual meeting of the Division will be held at No. 108, Harley Street, W., on Friday, May 14th, at 5.30 p.m. Agenda: To receive annual report of Executive Committee. To elect officers and representatives for ensuing year.

SCOTTISH COMMITTEE.—A meeting of the Scottish Committee will be held in the North British Station Hotel, Edinburgh, on Saturday, May 15th, at 12.30.

SOUTHERN BRANCH.—Mr. James Green, Honorary Secretary (Brandon House, Mile End, Landport, Portsmouth), gives notice that nominations for the offices of President-elect, two Vice-Presidents, Honorary Secretary, and Treasurer of the Branch will be made at the meeting of the Branch Council on May 28th pursuant to the rules. Any three members of the Branch, however, may nominate candidates for any of these offices by sending a notice to that effect to him on or before June 1st, and in that case voting papers will be issued in accordance with Organization Rule 5 of the Branch. Failing any such notice, the members nominated by the Branch Council will be duly elected.

IRISH MEDICAL COMMITTEE.

A MEETING of the Irish Medical Committee was held at the Royal College of Surgeons, Dublin, on April 14th, when Mr. R. J. JOHNSTONE was in the chair.

Votes of Condolence.—Votes of condolence were passed with the families of the late Dr. P. J. Macnamara (chairman), and Dr. J. W. Olpherts (member) of the Irish Medical Committee.

Election of Chairman and Vice-Chairman.—Mr. R. J. Johnstone (Vice-Chairman) was unanimously elected Chairman, and Dr. Joseph Power Vice-Chairman.

Medical Certifiers for Dispensary Districts.—It was resolved to ask the Cork medical practitioners to continue to support the Irish Medical Committee in regard to medical certification.

Fees for Certificates for Sickness Benefits.—It was unanimously resolved:

> That the Irish Medical Committee does not approve of the acceptance of 2s. 6d. per certificate in rural areas.

Part-time Tuberculosis Officers.—It was resolved that the acceptance by a doctor of part-time tuberculosis appointments is inconsistent with the resolutions of the delegates' meetings, inasmuch as it necessitates the visiting, whilst he is engaged in private practice, of patients of other doctors.

Deputation to Mr. Montagu.—It was reported that Mr. Montagu had expressed his willingness to receive a deputation from the Irish Medical Committee relative to the question of medical certification under the Insurance Act.

Annual Meeting of Delegates.—It was decided to hold the annual meeting of delegates on June 15th, or at an earlier date if there was an urgent necessity.

British Medical Association.

RETURN OF ATTENDANCES

At Representative Meetings, Council, Committee, and Sub-Committee Meetings, from the Annual Representative Meeting, 1914, to April 30th, 1915.

Prepared pursuant to Standing Order 34.

REPRESENTATIVE BODY AND COUNCIL MEETINGS.

Name.	ATTENDANCES. Daily Session of Rep. Body		Council Meetings		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
REPRESENTATIVES.						
cAdams, Dr. John, Glasgow	4	4	3	3	7	7
Alexander, Dr. T. H. W., Elgin, N.B.	4	4	—	—	4	4
Anderson, Dr. C. M., Sheffield ...	4	4	—	—	4	4
Anning, Mr. J. J., Leeds	4	4	—	—	4	4
Askin, Dr. T. C., Woodbridge ...	4	4	—	—	4	4
Baildon, Dr. F. J., Southport ...	4	4	—	—	4	4
Barnes, Mr. J. A. Percival, London...	4	4	—	—	4	4
Barton, Dr. H. T., Blackpool ...	4	4	—	—	4	4
Bassett, Mr. F. P., St. Helens ...	4	4	—	—	4	4
DSBatt, Dr. B. E. A., Bury St. Edmunds	4	4	—	—	4	4
DSBeaton, Dr. Frank, Ashington, Northumberland	4	4	—	—	4	4
*Beaton, Dr. R. M., London	4	4	—	—	4	4
Beddie, Dr. L. B., Fraserburgh ...	2	4	—	—	2	4
DSBell, Mr. T. D., Leeds...	4	4	—	—	4	4
Bhabha, Rev. S. D., M.D., London ...	4	4	—	—	4	4
cBiggs, Dr. M. G., London	4	4	3	3	7	7
Blair, Dr. Wm., Jedburgh	—	4	—	—	—	4
Bolam, Prof. R. A., Newcastle-on-Tyne	4	4	—	—	4	4
Bone, Dr. J. W., Luton	4	4	—	—	4	4
Boyd, Dr. J. J., Pretoria	1	4	—	—	1	4
DSBoyd, Mr. Sidney, London	4	4	—	—	4	4
Bradbrook, Mr. W., Fenny Stratford	4	4	—	—	4	4
DSBrownlee, Dr. James, Middlesbrough	4	4	—	—	4	4
cButtar, Dr. Charles, London	4	4	2	3	6	7
DButtery, Mr. G. B., Oldbury... ...	—	4	—	—	—	4
Cairns, Dr. D. L., Huddersfield ...	—	4	—	—	—	4
Callaghan, Mr. J. L., Barrow-in-Furness	4	4	—	—	4	4
Campbell, Dr. A. T., Glasgow ...	4	4	—	—	4	4
Cantley, Mr. J., Manchester	4	4	—	—	4	4
DSCarruthers, Dr J. F., Guernsey ...	4	4	—	—	4	4
Castle, Dr. R. F., Barnsley	—	4	—	—	—	4
DChalmers, Dr. R. W., Norwich ...	4	4	—	—	4	4
Clarke, Mr. E. A., Dukinfield ...	—	4	—	—	—	4
Clendinnen, Dr. W. McE., Cannock...	4	4	—	—	4	4
Clow, Dr. Wm, Paisley	4	4	—	—	4	4
BSCoombe, Mr. Russell, Exeter ...	4	4	—	—	4	4
Costobadie, Mr. H. P., Midsomer Norton	4	4	—	—	4	4
Crago, Mr. W. H., New South Wales	4	4	—	—	4	4
Craig, Dr. J., Accrington	4	4	—	—	4	4
DSCrowe, Dr. H. N., Worcester... ...	4	4	—	—	4	4
Curme, Surg. Lieut.-Col. Decimus, Blandford	2	4	—	—	2	4
DDanvers, Dr. H., Southampton ...	4	4	—	—	4	4
DSCDarling, Dr. J. Singleton, Lurgan ...	4	4	2	3	6	7
Denning, Mr. J. V. C., London ...	4	4	—	—	4	4
Dick, Dr. J. S., Manchester	4	4	—	—	4	4
Douglas, Dr. W., Goudhurst ...	4	4	—	—	4	4

D = Deputy Representative. D S = Division Secretary.
C = Member of Council. B S = Branch Secretary.
* = Former Member of Council.

Representative Body and Council Meetings—*continued*

Name.	ATTENDANCES. Daily Session of Rep. Body		Council Meetings.		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
REPRESENTATIVES.						
Drury, Dr. A., Halifax	4	4	—	—	4	4
Duff, Dr. J., Chester	—	4	—	—	—	4
Duncan, Dr. A. G., London ...	4	4	—	—	4	4
Duncan, Dr. W., Chesterfield...	4	4	—	—	4	4
BSDyer, Dr. E. E., Alloa ...	4	4	—	—	4	4
Edwards, Dr. W. B., Neath ...	4	4	—	—	4	4
Elliot, Lt.-Col. R. H., I.M.S., S. India and Madras	—	4	—	—	—	4
DEvans, Dr. A. E., Kingston Hill ...	4	4	—	—	4	4
DSFarquharson, Dr. A. C., Spennymoor...	4	4	—	—	4	4
BS*Finlay, Dr. D. E., Gloucester ...	4	4	—	1	4	5
Fitzgerald, Mr. D. A., Cardiff ...	4	4	—	—	4	4
Flemming, Mr. C. E. S., Bradford-on-Avon	4	4	—	—	4	4
Flitcroft, Sir Thomas, E., Bolton ...	3	4	—	—	3	4
cFothergill, Dr. E. Rowland, Hove ...	4	4	2	3	6	7
CDFulton, Dr. Adam, Nottingham ...	4	4	2	3	6	7
Gallard, Mr. J. R., London	—	4	—	—	—	4
cGalloway, Dr. James, London ...	3	4	2	3	5	7
Ganteaume, Dr. P., S. Africa... ...	4	4	—	—	4	4
Garden, Dr. A. S., Ceylon	4	4	—	—	4	4
DSCGarstang, Mr. T. W. H., Altrincham	4	4	3	3	7	7
Gilbertson, Mr. J. H., Hitchin ...	4	4	—	—	4	4
Giles, Dr. L. T., Scarborough ...	4	4	—	—	4	4
Goodbody, Dr. F. W., London ...	4	4	—	—	4	4
Gostling, Dr. W. A., W. Worthing ...	4	4	—	—	4	4
DSDGraham-Jones, Dr. J. L., Guildford...	2	4	—	—	2	4
cGreenwood, Dr. Major, London ...	4	4	3	3	7	7
BSCGreer, Mr. W. J., Newport, Mon. ...	4	4	2	3	6	7
Grey, Dr. H., Bristol	4	4	—	—	4	4
DSHaig, Dr. D. V., Darlington	4	4	—	—	4	4
Haig, Dr. W., Crieff, N.B.	4	4	—	—	4	4
Hall, Dr. C. Herbert, Watford ...	4	4	—	—	4	4
cHarding, Mr. R., New Radnor ...	4	4	2	2	6	6
Harston, Dr. G. M., Hong Kong & China	2	4	—	—	2	4
*Haslip, Dr. G. E., London	4	4	—	—	4	4
DSHawkins, Dr. C. L., Bromsgrove ...	4	4	—	—	4	4
Hebblethwaite, Mr. A. G., Keighley	4	4	—	—	4	4
DSHeggs, Dr. T. Barrett, Sittingbourne	—	4	—	—	—	4
*Helme, Dr. T. Arthur, Manchester ...	—	4	—	—	—	4
BS, DS, C Henry, Dr. R. Wallace, Leicester	4	4	1	3	5	7
Hill, Dr. F. R., Carlisle	—	4	—	—	—	4
Hillman, Mr. G. B., Castleford ...	4	4	—	—	4	4
Hopkin, Mr. R., Llangadock	4	4	—	—	4	4
DIvens, Dr. M. H. Frances, Liverpool	4	4	—	—	4	4
Jack, Dr. R. P., Motherwell	4	4	—	—	4	4
Johnson, Dr. I. W., Bury	4	4	—	—	4	4
cJohnston, Col. W. T., R.A.M.C., Kingstown	4	4	1	2	5	6
D*Jones, Mr. P. Napier, Crowthorne ...	4	4	—	—	4	4
Jordan, Mr. J. Furneaux, Birmingham	4	4	—	—	4	4
Kerr, Dr. J. Wishart, Glasgow ...	4	4	—	—	4	4
Kidd, Dr. F. W., Dublin	—	4	—	—	—	1
Laffan, Dr. T., Cashel	4	4	—	—	4	4
Langdon-Down, Dr. R., London ...	4	4	—	—	4	4
Langford, Dr. F. C., London	4	4	—	—	4	4
CD, BS Larkin, Mr. F. Charles, Liverpool...	4	4	3	3	7	7
Lawson, Dr. D., Banchory, N.B. ...	4	4	—	—	4	4
DLilley, Mr. F., Birmingham	4	4	—	—	4	4
cLucas, Mr. Albert, Birmingham ...	4	4	3	3	7	7
Lundie, Dr. R. A., Edinburgh ...	4	4	—	—	4	4
DSMacdonald, Dr. J., South Shields ...	—	4	—	—	—	4
cMacdonald, Dr. J. A., LL.D., Taunton	4	4	3	3	7	7
Macevoy, Dr. H. J., London ...	4	4	—	—	4	4
MacFetridge, Dr. W. C., Cork ...	1	4	—	—	1	4
Macnamara, Mr. J. T., London ...	4	4	—	—	4	4

D = Deputy Representative. D S = Division Secretary.
C = Member of Council. B S = Branch Secretary.
* = Former Member of Council.

Representative Body and Council Meetings—*continued.*

Name.	ATTENDANCES.					
	Daily Session of Rep. Body		Council Meetings.		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
REPRESENTATIVES.						
DSCMactier, Dr. H. C., Wolverhampton	4	4	3	3	7	7
Martin, Dr. A. A., New Zealand ...	—	4	—	—		4
DMartine, Dr. W. R., Haddington ...	3	4	—	—	3	4
DSDMaxwell, Mr. J. B., Southend-on-Sea	4	4	—	—	4	4
Meade, Mr. C. G., Flaxton	4	4	—	—	4	4
Mearns, Dr. W., Gateshead	4	4	—	—	4	4
CDMilburn, Dr. C. H., Hull	4	4	3	3	7	7
DSD / BS Mills, Dr. John, Ballinasloe ...	4	4	—	—	4	4
Mitchell, Dr. A. M., Manchester ...	4	4	—	—	4	4
Mitchell, Dr. W., Bradford	4	4	—	—	4	4
BSCMoir, Dr. J. Munro, Inverness ...	4	4	1	3	5	7
Monks, Mr. E. H., Wigan	4	4	—	—	4	4
*DMontgomery-Smith, Mr., London ..	1	4	—	—	1	4
DMoore, Dr. Milner, Eastbourne ...	4	4	—	—	4	4
Morison, Dr. B. G., London (dead) ...	4	4	—	—	4	4
DMorris, Mr. Arnold, Leamington ...	4	4	—	—	4	4
DSMullings, Dr. W. T., London... ...	4	4	—	—	4	4
DMuspratt, Dr. P. K., Harrow... ...	4	4	—	—	4	4
COldham, Dr. H. F., Morecambe ...	4	4	1	3	5	7
Orton, Dr. John, Coventry	4	4	—	—	4	4
DOswald, Dr. Agnes, Colchester ...	—	4	—	—	—	4
DSOxley, Mr. W. H. F., London ...	4	4	—	—	4	4
Palmer, Mr. C. J., Woodhouse, Notts	4	4	—	—	4	4
CParker, Dr. George, Bristol	4	4	3	3	7	7
DSPearson, Mr. Ellis, Bideford	1	4	—	—	1	4
Petersen, Dr. Julius, Cape of Good Hope	4	4	—	—	4	4
DPicken, Mr. James, Rotherham ...	—	4	—	—	—	4
Picton, Dr. L. J., Holmes Chapel ...	4	4	—	—	4	4
Pochin, Dr. F. L., Oldham	4	4	—	—	4	4
Preston, Dr. L. L., Ryde, I. of W. ...	4	4	—	—	4	4
Price, Dr. E. O., Morecambe	4	4	—	—	4	4
DSPritchard, Dr. H., London	2	4	—	—	2	4
DSRaiment, Mr. P. C., London	4	4	—	—	4	4
Ratcliffe, Dr. J. R., Birmingham ...	4	4	—	—	4	4
Ratcliff-Gaylard, Dr. J., Birkenhead...	4	4	—	—	4	4
Robertson, Dr. C. E., Glasgow ...	4	4	—	—	4	4
Robinson, Mr. H. J., Burnley ...	4	4	—	—	4	4
DSRobson, Dr. J. D., Dumfries	4	4	—	—	4	4
Ross, Dr. A. N., Stockton-on-Tees ...	4	4	—	—	4	4
DRoughton, Mr. J. P., Kettering ...	4	4	—	—	4	4
Rowland, Mr. F. S., Wrexham ...	4	4	—	—	4	4
Russell, Dr. J., Burslem	4	4	—	—	4	4
Ryley, Dr. J., Great Yarmouth ...	4	4	—	—	4	4
Scott, Mr. S. Noy, Plymstock ..	4	4	—	—	4	4
DSDScudamore, Mr. C. G. C., Croydon...	4	4	—	—	4	4
Sheahan, Dr. D. A., Portsmouth ...	4	4	—	—	4	4
DSSmiley, Dr. G. K., Derby	4	4	—	—	4	4
DSCSmith, Dr. A. Tennyson, Orpington	4	4	3	3	7	7
CDSmith, Dr. F. J., London	4	4	3	3	7	7
Smith, Dr. J. W., sen., Ryton-on-Tyne	4	4	—	—	4	4
CSmyth, Dr. W. Johnson, Bournemouth	4	4	3	3	7	7
Sneddon, Dr. W., Cupar, N.B. ...	4	4	—	—	4	4
DSSouthcombe, Dr. A. G., London ...	4	4	—	—	4	4
BSStarling, Dr. E. A., Tunbridge Wells	4	4	—	—	4	4
BSStevens, Dr. John, Edinburgh ...	4	4	—	—	4	4
Stokes, Dr. John, Sheffield	4	4	—	—	4	4
DSStorey, Dr. W. L., Belfast	4	4	—	—	4	4
DStraton, Mr. C. R., Wilton	4	4	—	—	4	4
Swift, Dr. H., South Australia ...	3	4	—	—	3	4
DSwindells, Dr. S. W., Grimsby ...	4	4	—	—	4	4
DSykes, Dr. W., Preston	4	4	—	—	4	4
Taylor, Dr. M. R., Helston	4	4	—	—	4	4
DTaylor, Dr. W. C., London	4	4	—	—	4	4
Teague, Dr. H. O., West Australia ...	—	4	—	—	—	4
Thomas, Mr. A. W., Swaffham ...	—	4	—	—	—	4
Thomas, Dr. W. E., Ystrad Rhondda	4	4	—	—	4	4
DSThomson, Dr. D. G., Norwich ...	4	4	—	—	4	4
Tisdall, Mr. J. J., Liverpool	4	4	—	—	4	4
CTodd, Mr. D. F., Sunderland... ...	4	4	—	3	4	7
Tomkins, Mr. H. H., London... ...	4	4	—	—	4	4
Tomory, Dr. D. M., Orange Free State and Basutoland	—	4	—	—	—	4
Treasure, Dr. W. B. Crawford, Cardiff	4	4	—	—	4	4
Tredinnick, Mr. E., Craven Arms, Salop	4	4	—	—	4	4
DTrinder, Mr. A. P., Wadebridge ...	4	4	—	—	4	4
Tucker, Major E. F. G., I.M.S., Bombay	4	4	—	—	4	4
CTurner, Mr. E. B., London	4	4	3	3	7	7
DSTuxford, Mr. R., Boston	4	4	—	—	4	4
Walker, Mr. J., Liverpool	4	4	—	—	4	4
Walker, Mr. J. C., Rochdale	4	4	—	—	4	4
DWallis, Mr. C. E., London	4	4	—	—	4	4
Wiggins, Mr. C. A., East Africa and Uganda	2	4	—	—	2	4
DSDWill, Mr. H. Chisholm, Sidcup ...	4	4	—	—	4	4
DS*Willock, Mr. E. H., Croydon ...	4	4	—	—	4	4
Wilson, Dr. A., London	4	4	—	—	4	4
Withers, Mr. F. E., Horncastle ...	4	4	—	—	4	4
Yelf, Dr. R. E. B., Moreton-in-Marsh	4	4	—	—	4	4
Young, Mr. C. S., Dundee	4	4	—	—	4	4
Young, Dr. R. R., Leicester	4	4	—	—	4	4
Young, Mr. W. J., Harston	4	4	—	—	4	4
MEMBERS OF COUNCIL WHO ARE **not** REPRESENTATIVES.						
Verrall, Mr. T. Jenner, LL.D., Chairman of Representative Meetings ...	4	4	3	3	7	7
Ogston, Sir Alexander, K.C.V.O., M.D., President	3	4	—	3	3	7
Allbutt, Sir T. Clifford, K.C.B., M.D., F.R.S., President-Elect	—	3	—	3	—	6
Hollis, Dr. W. Ainslie, Past President	—	4	2	3	2	7
Rayner, Dr. Edwin, Treasurer ...	4	4	3	3	7	7
Barr, Sir James, M.D., LL.D., L'pool.	3	4	3	3	6	7
Abbott, Maj. S. H. L., M.B., I.M.S. (Indian Branches)	—	4	—	3	—	7
*Atkinson, Dr. J. Mitford (Malaya and Hong Kong and China Branches) ...	—	4	—	—	—	4
Benson, Surg.-Genl. P. H., I.M.S. (Indian Medical Service)	—	4	3	3	3	7
Brackenbury, Mr. H. B., London ...	—	4	2	3	2	7
Brook, Mr. W. F., Swansea	—	4	—	3	—	7
Campbell, Dr. H. J., Bradford ...	—	4	3	3	3	7
*Cholmeley, Mr. W. F., Wolverhampton	—	4	—	—	—	4
Corby, Prof. Henry, M.D., Cork ...	—	4	—	3	—	7
*Domville, Mr. E. J., Chelford ...	4	4	—	—	4	4
Ewart, Dr. David, Chichester (New Zealand)	—	4	—	3	—	7
BS*Fowler, Dr. Frank, Bournemouth ...	4	4	—	—	4	4
Goodfellow, Dr. T. A., Didsbury ...	2	4	3	3	5	7
Gordon, Dr. John, Aberdeen	4	4	2	3	6	7
*Greany, Surg.-Gen. J. P., I.M.S. (Indian Medical Service)	—	4	—	—	—	4
Griffin, Dr. C. T. (Hong Kong, China and Malaya Branches)	—	4	—	3	—	7
BSGreen, Mr. James, Portsmouth ...	4	4	3	3	7	7
Greenlees, Dr. T. D. (South African Group of Branches)	—	4	1	1	1	5
Hackett, Lt.-Col. R. I. D., A.M.S. (Royal Army Medical Corps) ...	—	4	1	3	1	7
Hamilton, Dr. J. R., Hawick ...	4	4	3	3	7	7

D = Deputy Representative. DS = Division Secretary.
C = Member of Council. BS = Branch Secretary.
* = Former Member of Council.

D = Deputy Representative. DS = Division Secretary.
C = Member of Council. BS = Branch Secretary.
* = Former Member of Council.

Representative Body and Council Meetings—*continued.*

Name.	ATTENDANCES.					
	Daily Session of Rep. Body		Council Meetings.		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
MEMBERS OF COUNCIL WHO ARE not REPRESENTATIVES.						
Hayward, Dr. W. T. (Australasian Group of Branches)	3	4	1	1	4	5
Johnstone, Mr. R. J., Belfast ...	—	4	2	3	2	7
DSLoudon, Dr. J. Livingstone, Hamilton, N.B.	4	4	—	3	4	7
Martin, Dr. C. J., F.R.S. (New South Wales and Queensland Branches)...	—	4	—	3	—	7
Moorhouse, Dr. J. E., Stirling ...	4	4	2	3	6	7
Porter, Sir James, K.C.B., LL.D. (Royal Navy Medical Service) ...	4	4	2	3	6	7
Walshe, Dr. Denis, Graigue	—	4	—	3	—	7
White, Prof. A. H., Dublin	—	4	—	3	—	7
Wood, Dr. O. R. M., Woolpit ...	4	4	2	3	6	7

COMMITTEES.

FINANCE COMMITTEE.

Chairman: THE TREASURER.

Name.	ATTENDANCES.					
	Com. Meetings.		Sub-Com. Meetings.		Total.	
	Actual	Possible	Actual	Possible	Actual	Possible
President, ex officio...	—	2	—	—	—	2
Chairman of Representative Meetings, ex-officio	2	2	1	1	3	3
Chairman of Council, ex-officio ...	2	2	1	1	3	3
Treasurer, ex-officio	2	2	—	1	2	3
cBarr, Sir James, M.D., LL.D., Liverpool	2	2	—	—	2	2
cButtar, Dr. Charles, London... ...	2	2	—	—	2	2
†Galloway, Dr. James, London ...	2	2	—	—	2	2
rHaslip, Dr. G. E., London	2	2	—	—	2	2
rLangdon-Down, Dr. R., Hampton Wick	1	2	—	—	1	2
rLawson, Dr. David, Banchory ...	2	2	—	—	2	2
rMoore, Dr. J. Milner, Eastbourne ...	2	2	—	—	2	2
cParker, Dr. George, Bristol	1	2	—	—	1	2
cTodd, Mr. D. F., Sunderland ...	—	2	—	—	—	2
Chairman, Organisation Committee (Mr. Larkin)	2	2	—	—	2	2
Chairman, Journal Committee (Mr. Lucas)	2	2	—	1	2	3
Chairman, Science Committee (Dr. F. J. Smith)	1	2	—	—	1	2
Chairman, Medico-Political Committee (Mr. Garstang)	—	2	—	—	—	2
Chairman, Central Ethical Committee (Dr. Biggs)	2	2	—	—	2	2

† Representative of the Journal Committee.

ORGANISATION COMMITTEE.

Chairman: Mr. F. CHARLES LARKIN.

Name.	ATTENDANCES.					
	Com. Meetings.		Sub-Com. Meetings.		Total.	
	Actual	Possible	Actual	Possible	Actual	Possible
President, ex-officio	—	3	—	—	—	3
Chairman of Representative Meetings, ex-officio	2	3	1	1	3	4
Chairman of Council, ex-officio... ...	—	3	—	—	—	3
Treasurer, ex-officio	—	3	1	2	1	5
rBarnes, Mr. J. A. Percival, London ...	3	3	3	3	6	6
rCampbell, Dr. A. T., Glasgow	—	3	—	1	—	4
rCoombe, Mr. Russell, Exeter	3	3	1	2	4	5
cGarstang, Mr. T. W. H., Altrincham ...	3	3	1	2	4	5
cGreer, Mr. W. J., Newport, Mon. ...	1	3	—	1	1	4
cLarkin, Mr. F. Charles, Liverpool ...	3	3	3	3	6	6

JOURNAL COMMITTEE.

Chairman: Mr. ALBERT LUCAS.

Name.	ATTENDANCES.					
	Com. Meetings.		Sub-Com. Meetings.		Total.	
	Actual	Possible	Actual	Possible	Actual	Possible
President, ex-officio	—	2	—	—	—	2
Chairman of Representative Meetings, ex-officio	—	2	—	—	—	2
Chairman of Council, ex-officio ...	—	2	—	—	—	2
Treasurer, ex-officio	1	2	—	—	1	2
cBarr, Sir James, M.D., LL.D., Liverpool	2	2	—	—	2	2
cGalloway, Dr. James, London	2	2	—	—	2	2
rHall, Dr. C. Herbert, Watford ...	1	2	—	—	1	2
rLucas, Mr. Albert, Birmingham ...	2	2	—	—	2	2
cMoir, Dr. J. Munro, Inverness... ...	—	2	—	—	—	2
rSmyth, Dr. W. Johnson, Bournemouth	2	2	—	—	2	2
Chairman of Central Ethical Committee (Dr. Biggs)	2	2	—	—	2	2

R = Appointed by Representative Meeting.
C = „ „ Council.

SCIENCE COMMITTEE.

Chairman: Dr. F. J. Smith.

Name.	ATTENDANCES.					
	Com. Meetings.		Sub-Com. Meetings.		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
President, ex-officio	—	2	—	—	—	2
Chairman of Representative Meetings, ex-officio	—	2	—	—	—	2
Chairman of Council, ex-officio ...	—	2	—	—	—	2
Treasurer, ex-officio	—	2	—	—	—	2
cBolton, Dr. Charles, London	2	2	—	—	2	2
cDixon, Prof. W. E., F.R.S., Cambridge	2	2	1	1	3	3
cGreer, Mr. W. J., Newport, Mon. ...	—	2	—	—	—	2
cHaldane, Dr. J. S., F.R.S., Oxford ...	—	2	—	—	—	2
cHenry, Dr. R. Wallace, Leicester ...	—	2	—	—	—	2
cMartin, Dr. C. J., F.R.S., London ...	1	2	—	—	1	2
cSmith, Dr. F. J., London	2	2	1	1	3	3
cStockman, Prof. Ralph, Glasgow ...	2	2	1	1	3	3

CENTRAL ETHICAL COMMITTEE.

Chairman: Dr. M. G. Biggs.

Name.	ATTENDANCES.					
	Com. Meetings.		Sub-Com. Meetings.		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
President, ex-officio	—	3	—	—	—	3
Chairman of Representative Meetings, ex-officio	1	3	—	—	1	3
Chairman of Council, ex-officio ...	—	3	—	—	—	3
Treasurer, ex-officio	2	3	—	—	2	3
rBateman, Dr. A. G., London	3	3	3	4	6	7
cBiggs, Dr. M. G., London	3	3	4	4	7	7
rEwart, Mr. J. Henry Eastbourne ...	3	3	4	4	7	7
cGoodfellow, Dr. Thomas A., Didsbury	3	3	—	—	3	3
rJordan, Mr. J. Furneaux, Birmingham	3	3	—	—	3	3
rKerr, Dr. J. Wishart, Glasgow	2	3	—	—	2	3
rLangdon-Down, Dr. R., Hampton Wick	2	3	3	4	5	7
rLee, Mr. P. G., Cork	2	3	—	—	2	3
cMilburn, Dr. C. H., Hull	2	3	—	—	2	3
cMoore, Dr. Milner, Eastbourne ...	3	3	—	—	3	3
cTurner, Mr. E. B., London	3	3	4	4	7	7

R=Appointed by Representative Meeting.
C= ,, ,, Council.

MEDICO-POLITICAL COMMITTEE.

Chairman: Mr. T. W. H. Garstang.

Name.	ATTENDANCES.					
	Com. Meetings.		Sub-Com. Meetings.		Total.	
	Actual	Possible	Actual	Possible	Actual	Possible
President, ex-officio	-	4	—	—	—	4
Chairman of Representative Meetings, ex-officio	2	4	4	4	6	8
Chairman of Council, ex-officio ...	—	4	—	—	—	4
Treasurer, ex-officio	2	4	—	—	2	4
cBrackenbury, Mr. H. B., London ...	4	4	5	6	9	10
rDomville, Mr. E. J , Chelwood ...	4	4	4	4	8	8
rFarquharson, Dr. A. C., Spennymoor...	2	4	2	3	4	7
cFulton, Dr. Adam, Basford	3	4	1	2	4	6
cGarstang, Mr. T. W. H., Altrincham...	3	4	9	11	12	15
cGordon, Dr. John, Aberdeen	3	4	—	—	3	4
rHarman, Mr. N. Bishop, London ...	4	4	3	5	7	9
rHenry, Dr. R. Wallace, Leicester ...	—	4	—	—	—	4
rMacnamara, Mr. J. T., London ...	2	4	1	5	3	9
cMactier, Dr. H. C., Wolverhampton ...	4	4	3	3	7	7
cRatcliff-Gaylard, Dr. J., Birkenhead ...	2	4	1	2	3	6
Chairman of Public Health Committee (Mr. James Green)	1	4	—	—	1	4

PUBLIC HEALTH COMMITTEE.

Chairman: Mr. James Green.

Name..	ATTENDANCES.					
	Com. Meetings.		Meetings. Sub-Com.		Total.	
	Actual.	Possible.	Actual.	Possible.	Actual.	Possible.
President, ex-officio	—	2	—	—	—	2
Chairman of Representative Meetings, ex-officio	2	2	—	—	2	2
Chairman of Council, ex-officio ...	—	2	—	—	—	2
Treasurer, ex-officio	—	2	—	—	—	2
rBlandford, Dr. L. J., Stockton-on-Tees	1	2	—	—	1	2
rDomville, Mr. E. J., Chelwood... ...	2	2	—	—	2	2
rGordon, Dr. John, Aberdeen	—	2	—	—	—	2
cGreen, Mr. James, Portsmouth ...	2	2	—	—	2	2
cGreenwood, Dr. Major, London ...	2	2	—	—	2	2
rHeggs, Dr. T. B., Sittingbourne ...	—	2	—	—	—	2
cJones, Mr. Herbert, Hereford ...	1	2	—	—	1	2
cLoudon, Dr. J. Livingstone, Hamilton	—	2	—	—	—	2

R=Appointed by Representative Meeting.
C= ,, ,, Council.

HOSPITALS COMMITTEE.

Chairman: Dr. H. J. CAMPBELL.

Name.	ATTENDANCES. Com. Meetings. Actual	Com. Meetings. Possible	Sub-Com. Meetings. Actual	Sub-Com. Meetings. Possible	Total. Actual	Total. Possible
President, ex-officio	—	2	—	—	—	2
Chairman of Representative Meetings, ex-officio	1	2	—	—	1	2
Chairman of Council, ex-officio ...	—	2	—	—	—	2
Treasurer, ex-officio	—	2	—	—	—	2
cBiggs, Dr. M. G., London	2	2	—	—	2	2
rBolam, Prof. R. A., M.D., Newcastle-on-Tyne	1	2	—	—	1	2
r*Bushby, Dr. T. H., Liverpool ...	—	1	—	—	—	1
cCampbell, Dr. H. J., Bradford... ...	2	2	—	—	2	2
rEason, Dr. J., Edinburgh	2	2	—	—	2	2
rEccles, Mr. W. McAdam, London ...	—	2	—	—	—	2
cGalloway, Dr. James, London	2	2	—	—	2	2
rHarman, Mr. N. Bishop, London ...	1	2	—	—	1	2
cJohnstone, Mr. R. J., Belfast	—	2	—	—	—	2
cMackintosh, Dr. D. J., M.V.O., Glasgow	—	2	—	—	—	2
rMactier, Dr. H. C., Wolverhampton ...	2	2	—	—	2	2
cMorison, Prof. J. Rutherford, Newcastle-upon-Tyne	1	2	—	—	1	2

* Resigned owing to ill-health.

NAVAL AND MILITARY COMMITTEE.

Chairman: SIR JAMES PORTER, K.C.B.

Name.	ATTENDANCES. Com. Meetings. Actual	Com. Meetings. Possible	Sub-Com. Meetings. Actual	Sub-Com. Meetings. Possible	Total. Actual	Total. Possible
President, ex officio	—	2	—	—	—	2
Chairman of Representative Meetings, ex-officio	—	2	—	—	—	2
Chairman of Council, ex-officio ...	—	2	—	—	—	2
Treasurer, ex-officio	—	2	—	—	—	2
cBull, Col. W. H., Stony Stratford ...	2	2	—	—	2	2
cElliot, Lt.-Col. R. H., I.M.S., London	2	2	—	—	2	2
rGreany, Surg.-Gen. J. P., I.M.S., London...	2	2	—	—	2	2
rThomas, Col. J. Raglan, Exeter ...	1	2	—	—	1	2
Representatives on the Council of the Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service:—						
Benson, Surg.-Gen. P. H., I.M.S., Walmer	2	2	—	—	2	2
Hackett, Lt.-Col. R. I. D., A.M.S., Cheltenham	1	2	—	—	1	2
Porter, Sir James, K.C.B., LL.D., Chatham	1	2	—	—	1	2

R = Appointed by Representative Meeting.
C = ,, ,, Council.

DOMINIONS COMMITTEE.

Chairman: Surg.-Gen. P. H. BENSON, I.M.S. (*pro tem.*).

Name.	ATTENDANCES. Com. Meetings. Actual	Com. Meetings. Possible	Sub-Com. Meetings. Actual	Sub-Com. Meetings. Possible	Total. Actual	Total. Possible
President, ex-officio	—	1	—	—	—	1
Chairman of Representative Meetings, ex-officio	—	1	—	—	—	1
Chairman of Council, ex-officio ...	—	1	—	—	—	1
Treasurer, ex-officio	—	1	—	—	—	1
rBenson, Surg.-Gen. P. H., Walmer ...	1	1	—	—	1	1
rGreany, Surg.-Gen. J. P., I.M.S., London...	1	1	—	—	1	1
cMorier, Mr. C. G. D., London	1	1	—	—	1	1
MEMBERS OF COUNCIL WHO REPRESENT COLONIAL BRANCHES.						
Abbott, Maj. S. H. Lee, I.M.S., London	—	1	—	—	—	1
Ewart, Dr. David, Chichester	—	1	—	—	—	1
Greenlees, Dr. T. D., Weymouth ...	—	1	—	—	—	1
Griffin, Dr. Chas. T., London	—	1	—	—	—	1
Hayward, Mr. W. T., London	—	1	—	—	—	1
Martin, Dr. C. J., F.R.S., London ...	—	1	—	—	—	1

SCOTTISH COMMITTEE.

Chairman: Dr. J. R. HAMILTON.

Name.	ATTENDANCES. Com. Meetings. Actual	Com. Meetings. Possible	Sub-Com. Meetings. Actual	Sub-Com. Meetings. Possible	Total. Actual	Total. Possible
President, ex-officio	—	5	—	—	—	5
Chairman of Representative Meetings, ex-officio	—	5	—	—	—	5
Chairman of Council, ex-officio... ...	—	5	—	—	—	5
Treasurer, ex-officio	—	5	—	—	—	5
Adams, Dr. John, Glasgow	4	5	—	2	4	7
Anderson, Dr. G. C., Fife	2	5	—	1	2	6
Bryce, Dr. W., Dennistoun	—	5	—	—	—	5
Buist, Dr. R. C., Dundee	3	5	2	2	5	7
Caskie, Dr. W. A., Glasgow	4	5	—	—	4	5
Dewar, Dr. M., Edinburgh	2	2	—	—	2	2
Dyer, Dr. E. E., Alloa	—	5	—	—	—	5
Eason, Dr. John, Edinburgh	1	5	—	—	1	5
Fraser, Dr. Thomas, Aberdeen ...	—	5	—	—	—	5
Gordon, Dr. John, Aberdeen	1	5	—	2	1	7
Hamilton, Dr. J. R., Hawick ...	5	5	2	3	7	8
Kerr, Dr. J. W., Glasgow	2	2	1	1	3	3
Livingston, Dr. G. R., Dumfries ...	3	5	—	2	3	7
Loudon, Dr. J. Livingstone, Hamilton	—	5	—	2	—	7
Lyell, Dr. J. H., Perth	4	5	—	—	4	5
Maclaren, Dr. Norman, Carlisle ...	—	5	—	—	—	5
Macpherson, Dr. W. G., Bothwell ...	2	2	1	1	3	3
Moir, Dr. J. Munro, Inverness... ...	2	5	—	—	2	5
Moorhouse, Dr. J. E., Stirling... ...	1	5	—	3	1	8
Smith, Dr. F. K., Aberdeen	2	5	—	2	2	7
Smith, Dr. Martin, Dundee	—	5	—	—	—	5
Stevens, Dr. J., Edinburgh	4	5	2	3	6	8
Young, Dr. C. S. Dundee	1	2	—	—	1	2

Appointed under By-law 68.

R = Appointed by Representative Meeting.
C = ,, ,, Council.

IRISH COMMITTEE.

Chairman: Mr. R. J. Johnstone.

Name.	ATTENDANCES. Com. Meetings. Actual	Com. Meetings. Possible	Sub-Com. Meetings. Actual	Sub-Com. Meetings. Possible	Total. Actual	Total. Possible
President, ex-officio	—	3	—	—	—	3
Chairman of Representative Meetings, ex-officio	—	3	—	—	—	3
Chairman of Council, ex-officio	—	3	—	—	—	3
Treasurer, ex-officio	—	3	—	—	—	3
Cooke, Dr. J. G., Londonderry	1	3	—	—	1	3
Corby, Prof. Henry, Cork	2	3	—	—	2	3
Costello, Dr. T. B., Tuam	1	3	—	—	1	3
Craig, Dr. James, Dublin	2	3	—	—	2	3
Darling, Dr. J. Singleton, Lurgan	3	3	—	—	3	3
Grace, Dr. Pierce, Kilkenny	1	3	—	—	1	3
Giusani, Dr. J. J., Cork	1	3	—	—	1	3
Johnstone, Mr. R. J., Belfast	3	3	—	—	3	3
Johnston, Col. W. T., R.A.M.C. Dublin	1	3	—	—	1	3
Kenny, Dr. J. M., Granard	1	3	—	—	1	3
Lee, Mr. Philip G., Cork	—	3	—	—	—	3
Mills, Dr. John, Ballinasloe	3	3	—	—	3	3
Power, Dr. J., Cahir	1	3	—	—	1	3
Ryan, Dr. J. V., Carlow	1	3	—	—	1	3
Storey, Dr. W. L., Belfast	3	3	—	—	3	3
Walshe, Mr. Denis, Graigue	2	3	—	—	2	3
Warnock, Dr. H. T., Donegal	2	3	—	—	2	3
White, Prof. A. H., Dublin	1	3	—	—	1	3

Appointed under By-law 68.

INSURANCE ACT COMMITTEE.

Chairman: Chairman of Representative Meetings.

e.	ATTENDANCES. Com. Meetings. Actual.	Com. Meetings. Possible.	Sub-Com. Meetings. Actual.	Sub-Com. Meetings. Possible.	Total. Actual.	Total. Possible.
President, ex-officio	—	7	—	—	—	7
Chairman of Representative Meetings, ex-officio	6	7	—	—	6	7
Chairman of Council, ex-officio	4	7	—	12	4	19
Treasurer, ex-officio	4	7	—	—	4	7
RAdams, Dr. John, Glasgow	6	7	3	5	9	12
Claydon, Dr. Olive, Oldham	4	5	—	—	4	5
RDarling, Dr. J. Singleton, Lurgan	2	7	—	—	2	7
Doolin, Mr. W. (resigned)	—	6	—	—	—	6
REccles, Mr. W. McAdam, London	—	7	—	—	—	7
RFarquharson, Dr. A. C., Spennymoor	2	7	2	7	4	14
RFothergill, Dr. E. Rowland, Hove	7	7	12	12	19	19
Greenwood, Dr. Major, London	7	7	5	5	12	12
Harding, Dr. R., New Radnor	6	6	—	—	6	6
CHollis, Dr. W. Ainslie, Hove	6	7	—	—	6	7
RHunter, Dr. John, Corstorphine	7	7	5	5	12	12
RJohnson, Dr. I. W., Bury	6	7	5	7	11	14
Jones, Mr. Herbert, Hereford	1	7	—	—	1	7
RSmiley, Dr. G. K., Derby	5	7	—	—	5	7
CTodd, Mr. D. F., Sunderland	2	7	—	—	2	7
RTreasure, Dr. W. B. Crawford, Cardiff	5	7	4	5	9	12
RTurner, Mr. E. B., London	7	7	8	12	15	19

R = Appointed by Representative Meeting.
C = ,, ,, Council.

COMMITTEE OF CHAIRMEN OF STANDING COMMITTEES.

Chairman: Chairman of Representative Meetings.

Name.	ATTENDANCES. Com. Meetings. Actual	Com. Meetings. Possible	Sub-Com. Meetings. Actual	Sub-Com. Meetings. Possible	Total. Actual	Total. Possible
President, ex-officio	1	4	—	—	1	4
Chairman of Representative Meetings, ex-officio	4	4	—	—	4	4
Chairman of Council, ex-officio	3	4	—	—	3	4
Treasurer, ex-officio	2	4	—	—	2	4
cBenson, Surg.-Gen., P. H., I.M.S., Walmer	4	4	—	—	4	4
cBiggs, Dr. M. G., London	4	4	—	—	4	4
cBrook, Mr. W. F., Swansea	1	4	—	—	1	4
cCampbell, Dr. H. J., Bradford	3	4	—	—	3	4
cGarstang, Mr. T. W. H., Altrincham	2	4	—	—	2	4
cGreen, Mr. James, Portsmouth	4	4	—	—	4	4
cHamilton, Dr. J. R., Hawick	3	4	—	—	3	4
cJohnstone, Mr. R. J., Belfast	—	4	—	—	—	4
cLarkin, Mr. F. C., Liverpool	3	4	—	—	3	4
cLucas, Mr. Albert, Birmingham	1	4	—	—	1	4
cPorter, Sir James, K.C.B., Chatham	—	4	—	—	—	4
cSmith, Dr. F. J., London	3	4	—	—	3	4

REDUCTIONS IN ADVANCES TO INSURANCE PRACTITIONERS.

Solicitor's Opinion.

The steps recently taken by Insurance Committees, acting on the advice of the Commissioners, to reduce the monthly or quarterly advances made to insurance practitioners have naturally caused great concern on the part of these practitioners and of the Panel Committees, the result being that the Insurance Act Committee has had many applications for advice as to the legality and necessity of such a step. That Committee instructed its Local Medical and Panel Subcommittee to take legal advice, and this was done by conference between Mr. Hempson and several members of the Subcommittee.

Mr. Hempson's opinion is set out below and should be read very carefully, in conjunction with the report of the interview between representatives of the Subcommittee and the Commissioners on December 22nd, 1914, which is reprinted on page 234 et seq. of the Supplement to the British Medical Journal of May 8th, 1915. Mr. Hempson's opinion as to the legality and justifiability of reasonable reductions is clear and definite. In consideration of this matter, however, many important points emerged, such as whether the reductions made were not in some cases more than are warranted by the circumstances; whether the reduction in the amount of work demanded from the doctors on the panel is proportionate to the reduction in the remuneration; and as to what will be the position when many of the insured persons now in military service return to the panel lists in a deteriorated state of health. These points were felt to be of such importance that the Subcommittee decided to collect what information it could from the Panel Committees of the country, and to put the matter down for discussion at the Conference of Representatives of Local Medical and Panel Committees which is to be held in London on June 16th and possibly 17th.

Opinion.

1. As requested, I have carefully perused the printed correspondence between the Commissioners, the Bristol Insurance Committee and the Chairman of the Bristol Panel Committee (printed in the Supplement to the

BRITISH MEDICAL JOURNAL of April 3rd, 1915), and also the report in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of January 30th, 1915, of an interview between a deputation from a Subcommittee of the Insurance Act Committee and the Insurance Commissioners on December 22nd, 1914, and at the same time I have had before me the Regulations and the Form of Agreement usually entered into between an Insurance Committee and a panel practitioner.

2. In the above-mentioned report there is set out (more or less fully) a speech made by Sir Robert Morant at this interview. The first clause of such speech, headed "The total debit to Societies," refers to the administration of the Insurance Fund as between Insurance Committees and approved societies, and therefore presumably I am not called upon to deal with this aspect.

3. The next clause, "The distribution of the pool among Insurance Committees," deals with the ordinary procedure in the distribution of the pool (that is, the entire Insurance fund) among the several Insurance Committees. This has to do with the administration of the Insurance Fund as between the Insurance Commissioners and Insurance Committees. Various statements are made in this, as well as in the earlier clause, with the object of showing why the particular procedure is followed by the Insurance Commissioners. Of course I cannot verify such statements, as I have no knowledge of these facts, though the procedure adopted in the distribution, as detailed by Sir Robert Morant, seems to be in accordance with the Regulations.

4. With respect to the third head, namely, "Distribution of the Committee's fund among individual doctors on their panel," I think it best, in expressing my opinion, to follow the language of the Regulations rather than to sum it up in the terse way in which Sir Robert Morant is reported to have done in his speech, which may be liable to misconstruction.

5. By Regulation 35 the Insurance Committees have to credit to each practitioner in respect of each of the persons on his list at the commencement of each quarter an amount calculated in accordance with the rate contained in his agreement with the Committee; that is to say, if the practitioner has 500 persons on his panel and the rate contained in his agreement is 1s. 7½d., he would be entitled to be credited with 1s. 7½d. × 500—say, £40 12s. 6d. In addition, he is also to be credited with further capitation fees in respect of insured persons who have not been accepted by or assigned to any doctor. It will be recognized that the doctor is to be *credited* with this £40 12s. 6d., which means that the whole of such sum is not necessarily to be paid to him at that time, or, in fact, at any later time. In fact, Regulation 37 provides that, "as soon as may be" (whatever that expression may mean) after the expiration of each quarter, the Committee shall pay to each practitioner in advance of the amount due to him such sum as may be agreed between the Insurance Committee and the Panel Committee, and gives power to the Insurance Committee to pay to a practitioner, if they think fit, additional sums "on account."

6. These payments are to be "in advance of the amount due to him." The clause therefore appears to contemplate that the amount does not become payable to him until some later period, which is not definitely stated, but the Regulation in question says that the balance due to the practitioner is to be paid to him "as soon as may be" after the expiration of the year.

7. The deduction from this seems to be that it is only after the expiration of the year and when the final account has been taken that the money is actually due and payable to the practitioner, but that power is given to make payments on account in advance.

8. It must be understood that while a practitioner may be credited with a certain amount he is not necessarily entitled to be paid that sum in full, but only his proportionate share (based upon the number of persons upon his list) of the whole Practitioners' Fund. For instance, for the sake of argument, if there are five practitioners on the panel of a certain Committee—A. having 1,000 patients on his list, B. having 900, C. having 800, D. having 700, and E. 600—there would therefore be on these five lists 4,000 persons in all. A. would accordingly receive $\frac{1000}{4000}$ths of the total Practitioners' Fund X, B. $\frac{900}{4000}$ths, C. $\frac{800}{4000}$ths, and so on. If the fund eventually worked out so as to permit of payment in full to each practitioner upon the panel in respect of each person for whom he was wholly responsible, there would, of course, be no need to trouble with this proportionate method of division, but there are bound to be more names on the total of the lists of practitioners than have been allowed for in the Practitioners' Fund due to duplication, failure to notify change of address or death, travellers and the like, so this method was provided for by Regulation 35 (3).

9. With regard to the questions raised by the Chairman of the Bristol Panel Committee to the Insurance Commissioners, dated March 1st, 1915, and set out in the printed correspondence before referred to.

10. There seems to me to be a certain misconception underlying these questions, and on which they all depend, and which I should wish to deal with before answering these questions seriatim.

11. The Chairman of the Panel Committee, as voicing the opinion of his Committee, seems to be under the impression that there is due to each medical man upon the panel a fixed sum quarterly for each of the insured persons named on his list, and that he is entitled to receive this intact. Such, however, is not the case, as it is only at the end of the year, or rather "as soon as may be after the expiration of the year" when the Committee have declared a final account, that there is any opportunity for estimating the probable number of insured persons entitled to be considered as being on his list, and for deciding the sum actually due to him; as these quarterly payments are merely "payments on account" regulated by what the Committees deem expedient (see Regulation 37).

12. I now deal with the questions seriatim:

(a) "Was the Insurance Committee justified in making a deduction of 6d. per insured person for the third quarter followed by one of 8d. for the last quarter?"

The word "deduction" is, in my opinion, incorrectly used. I have stated above, under paragraph 8, the principles upon which a practitioner upon the panel is entitled to be paid, and that, practically, he cannot claim that any definite sum is due to him until after the end of the year. The Committee, however, credit him with a certain sum every quarter, of which sum they are at liberty by Regulation 37 to pay him the whole or such portion of the whole as they may deem expedient having regard to the condition of the fund and the contingencies that may arise.

13. It must, of course, always be borne in mind that the Commissioners, and under them the various Committees, are dealing with public funds, and are accordingly accountable for every penny they expend, and it is incumbent upon them to keep in hand a certain sum to meet eventualities and to guard against paying more to one source than a total final account will permit of.

14. If, for instance, every practitioner on the panel were to receive the full amount mentioned in the agreement each quarter for every name upon his list, it might be found when the final annual account came to be taken that a considerably greater sum had been expended in this way, due to duplication, travellers (temporary residents), or other causes, such as insured persons having died, changed their address, or joined the forces, and their names being allowed inadvertently to remain on the doctor's list, than should properly have been allotted to the Practitioners' Fund, and consequently it would be necessary for the Committee to obtain back from each practitioner such sums as have been paid to him in excess of his true share. The objections to this course are, I think, so obvious that it is unnecessary for me to enlarge upon them.

(b) "Was the Insurance Committee justified in making deductions pro rata to the panel lists on account of persons serving with His Majesty's forces?"

Under Section 46 of the Insurance Act, 1911, a soldier is not entitled to medical benefit, and provision therefore has to be made in respect of those insured persons who have joined the forces. As I have said before, the Committee has a discretion as to these quarterly payments on account, and this discretion cannot in my opinion be disputed. I consider, however, that if a doctor can prove that on his list there is no person who has joined the army or navy or likely to do so, he would be entitled to protest formally against any temporary withholding on this account from payment, made in advance. But as the question of "deduction" for insured persons who have joined the forces cannot finally be adjusted until the final account has been taken after the end of the year, only then could a legal

claim be made based on evidence that a deduction made was not justified.

(c) "*Has the Insurance Committee the power of making any deductions from the quarterly cheques that may seem advisable? and, if the answer to this question be in the negative,*

(d) "*In what way can the Insurance Committee be restrained from following this procedure?*"

The foregoing questions have already been answered by me earlier in this opinion, so there is no need for me to deal with them specifically.

(Signed) W. E. HEMPSON.

33, Henrietta Street, Strand, W.C.,
April 28th, 1915.

REDUCTION OF CAPITATION PAYMENTS.

THE Insurance Commissioners have addressed the following letter to Insurance Committees:

I.C.L. 124.

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
March 31st, 1915.

Sir,—I am directed by the National Health Insurance Commission (England) to point out that in the abnormal circumstances at present prevailing, it has appeared to them that Insurance Committees may be desirous of some further guidance as to what may be regarded as a safe basis for the payment of advances to doctors and chemists, etc.

In arriving at such a basis it is necessary to take into account not only the facts that the 1915 medical year is a full calendar year, and that in the ordinary case it would be reasonable to estimate for a small increase in the total credits of all committees owing to the normal growth of the insured population, but also the fact that, owing to the mobilization of the Reserve and Territorial Forces and the enlistment of men for the new armies, the insured population has sustained a heavy abnormal reduction. It is further necessary to reserve a margin out of the sum thus arrived at in order that due allowance may be made for case value, etc., adjustments, and in order that committees may retain in hand a small balance for the purpose of subsequent adjustment, and avoid causing inconvenience by overpayments.

The accurate calculation of the allowances to be made in respect of these various factors is, of course, a matter of some difficulty. After careful consideration, however, the Commissioners are of opinion that advances may be safely made for all the purposes of medical benefit to a total amount in each quarter not exceeding a sum calculated at the rate of £72 per 1,000 of the count of their register at the beginning of that quarter unless they have reason to believe that the enlistment in their area is considerably above the average. If the Committee are of opinion that the rate of enlistment in their area is much in excess of the average they should make a corresponding reduction in the total amount of their advances.

When the maximum amount which may safely be distributed by way of advances for all the purposes of medical benefit has thus been arrived at, the Committee will then be in a position to determine the amounts which may be advanced to approved institutions, to doctors, and to chemists respectively. After having had regard to the proportion of the total which will in due course be required for the Institutions Fund and Special Arrangements Fund, not more than $\frac{13}{17}$ of the remainder (together with an amount from the moneys available for sanatorium benefit equal to $\frac{1}{17}$ of the $\frac{13}{17}$ so obtained) should be distributed as advances to the doctors on the panel.

The balance of the $\frac{4}{17}$ may be regarded as available for the purpose of advances to chemists, but in any event a suitable percentage of the amount of the chemist's accounts should be retained in hand for the purpose of any adjustments which may be necessary as a result of the checking and scrutiny of the accounts.

Advances to institutions should not exceed the amount set apart for that purpose as indicated above, together with $\frac{1}{17}$ of that amount from the moneys available for sanatorium benefit.

In the event of this basis being subsequently rendered unduly conservative by reason of a heavy reduction in the accounts of the Committee's Register consequent upon the issue of orange slips by approved societies, it will of course be reconsidered, and a further communication will be addressed to you on the subject.—I am, Sir, your obedient servant,

(Signed) S. P. VIVIAN.

The Clerk to the Insurance Committee.

NATIONAL INSURANCE DRUG TARIFF.

THE QUESTION OF STOCK MIXTURES.

THERE has been, we are told, a good deal of misunderstanding as to the respective positions of Panel, Pharmaceutical, and Insurance Committees in regard to putting into operation the provision made by the Commissioners in Circular 49/I.C. for the use, in those areas which wished to adopt them, of a specified number of stock mixtures. The Commissioners stated their opinion that where, owing to the adoption of a local formulary, special economies in dispensing are rendered possible, the advantages of such economies should be shared by the local drug fund. They therefore introduced into the tariff of 1915 a clause which stipulated that if a formulary is adopted locally for use in prescribing by practitioners on the panel, dispensing fees will be charged at half the ordinary tariff rates in respect of not exceeding ten of such of the mixtures specified in the local formulary as are adjudged to be capable of being stocked in bulk without deterioration.

Certain Panel Committees that desired to take advantage of this provision were met with strong opposition on the part of their Pharmaceutical and Insurance Committees, who apparently were under the impression that they could nullify the provision by preventing the adoption of a local formulary. The following correspondence between the Croydon Panel Committee and the Commissioners, and the Commissioners and the Croydon Insurance Committee, makes it quite clear that the preparation of a local formulary is a matter for the Panel Committee alone.

CROYDON PANEL COMMITTEE.

February 6th, 1915.

Sir,—Taking action upon the new clause inserted in the tariff at the instance of the Commissioners, the Panel Committee selected ten mixtures in the local Pharmacopoeia.

At a meeting of panel practitioners held on January 20th last this action was approved, and the following resolutions adopted unanimously:

> This meeting of panel practitioners endorses and approves the action of the Panel Committee in selecting ten mixtures for dispensing which there shall be paid the reduced fee approved by the Insurance Commissioners.
>
> In the opinion of this meeting, many mixtures (including the ten selected by the Panel Committee) can be kept for a reasonable time without deterioration, and that their use is not harmful to patients, it being a matter of common knowledge that for many years hospitals, practitioners, and chemists have commonly and with advantage used such mixtures.

At a meeting of the Insurance Committee on February 2nd, on the proposal of a chemist, the following resolutions were adopted by a majority, after considerable debate:

> That in view of the inclusion at the instance of the Commissioners in the tariff of drugs, etc., for 1915, of a clause dealing with the principle of the supply of stock mixtures as part of medical benefit, this Insurance Committee places on record their disapproval of the introduction into the tariff of anything in the nature of stock mixures, as in the opinion of the Insurance Committee the adoption of such principle is prejudicial to the interests of insured persons.
>
> That a copy of this motion be submitted to the Panel Committee with a request that they agree to the clause in the tariff referred to being inoperative.

It was suggested that unless we surrendered the position voluntarily, the whole clause would be rendered nugatory by the destruction of our Pharmacopoeia.

Do the Commissioners advise us to give way?

If not, are the Commissioners prepared to issue regulations giving the Panel Committee the power to adopt a Pharmacopoeia with the consent of the Commissioners, failing agreement with the Insurance Committee?

Section 15 (5) of the principal Act clearly lays down that the Insurance Committee shall provide for the supply of medicines, etc., ordered by the practitioner, and the suggested regulation would simply give the practitioner the right to order certain combinations of drugs by a short title, instead of always writing the prescription in full.

As a matter of fact, the titles of six mixtures are given in the tariff itself.

Finally, I would respectfully emphasize the fact that it was the Commissioners themselves who insisted on the insertion of this clause in the tariff, and our natural inference was that they intended that a judicious use should be made of it.

By fighting for and securing the effective application of this clause, we conceived that we were both doing a

public duty and also carrying out the wishes of the Commissioners, feeling confident that they, in their turn, would use their admittedly great powers for the protection of those who did so.

It is obvious that, without an assurance of support from the Commissioners, our present position is untenable.

We should be grateful, therefore, if such promise of sympathy and help could be given us.

Clearly the future action of the Panel Committee in the matter must be guided altogether by the wishes and intentions of the Commissioners.

I apologize for troubling you at such length, but the subject touches me nearly.—Believe me to be yours faithfully,

(Signed) G. GILBERT GENGE,
Honorary Secretary.

The Secretary,
The Insurance Commissioners,
Buckingham Gate.

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
12th February, 1915.

I.C. 68/411½.

Sir,—In reply to your letter of the 6th instant, I am directed by the National Health Insurance Commissioners (England) to state that the preparation of a Special Formulary or Local Pharmacopoeia for use by practitioners in prescribing is a matter for the Panel Committee alone in their capacity as expert advisers to their constituents.

Neither the Insurance Committee nor the Pharmaceutical Committee need be consulted with regard to the adoption of such a formulary unless its adoption involves alteration of any administrative procedure.

With regard to the bringing into operation of the clause set out on page 2 of Circular 49/I.C., I am to enclose, for the information of your Committee, a copy of a letter addressed to the Croydon Insurance Committee on the 30th November last.—I am, Sir, your obedient servant,

(Signed) S. P. VIVIAN.

G. Gilbert Genge, Esq., M.D.,
Croydon Panel Committee.

[*Enclosure.*]

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
30th November, 1914.

I.C. 68/411.

Sir,—In reply to your letter of the 26th instant, I am directed by the National Health Insurance Commission (England) to state that the clause inserted in the drug tariff with regard to the reduction of dispensing fees in the event of a formulary being adopted will only take effect—

(i) In the event of a formulary being adopted, and
(ii) in the event of it being decided to apply the terms of the clause to any of the mixtures specified in the formulary.

If a formulary has been adopted in the borough, and if certain mixtures specified therein have been selected by the Panel Committee for the purposes of the Clause, it is not open to the Insurance Committee or to the Pharmaceutical Committee to veto the operation of the clause.

It is, of course, necessary for the Panel Committee to consult the Pharmaceutical Committee on the question of fact whether a particular mixture to which it is proposed to apply the clause is capable of being stocked in bulk without deterioration, and in the event of disagreement this would have to be referred to the Commissioners.—I am, Sir, your obedient servant,

The Clerk, (Signed) S. P. VIVIAN.
Croydon Insurance Committee.

THE DELAY IN PAYMENT OF PANEL PRACTITIONERS.

STRONG PROTEST FROM EAST SUSSEX.

THE Executive Committee of the East Sussex Panel and Medical Committees, at its meeting on May 5th, had under consideration a communication from the Clerk to the East Sussex Insurance Committee stating that that Committee had received circular letters from the National Health Insurance Commission dealing with—

(*a*) The procedure to be adopted in regard to notifications received from societies of particulars of members who had joined the army or navy; and
(*b*) The basis upon which, in the opinion of the Commissioners, advances might safely be made to doctors and chemists in the abnormal circumstances at present prevailing;

and that the East Sussex Insurance Committee had directed its clerk—

(*a*) To inform the Commissioners that, having regard to long delay in the issue by the Commissioners of instructions to societies with regard to the notification of insured persons who have ceased to be entitled to medical and sanatorium benefits on joining the army or navy, and to the length of time which must elapse before such notification is even approximately complete, the Committee regrets that the count taken on October 12th, 1914, is to be reopened, as apparently the final settlement for 1914 will be thereby indefinitely postponed.

(*b*) To request the Commissioners for immediate information as to the credits for 1914, and at the same time to state that, having regard to the provisions of the National Health Insurance (Payments to Insurance Committees) Regulations, 1914, under which the Committee's credits are based (except as regards members over the age of 70 and in the mercantile marine) on the number of insured persons whose contribution cards for the first half-year of the year have, before a date to be determined by the Commissioners, been forwarded by each society to the Commissioners, the Committee assume that, as the enlistment of insured persons could not affect the number of cards surrendered during the first half of 1914, the funds of the Committee for that year will not be affected by the war.

The Executive Committee resolved to recommend the Panel Committee to support the resolutions of the East Sussex Insurance Committee, and to point out to the Commissioners that grave dissatisfaction exists amongst the practitioners on the panel in this district at the continued delay in payments, the Chancellor of the Exchequer having repeatedly promised that the payments under the Act would be certain and regular; and to request the Commissioners when drafting the new agreements with medical practitioners to insert a clause to the effect that all accounts due to medical practitioners in respect of any year shall be settled not later than April 30th in the following year.

LOCAL MEDICAL AND PANEL COMMITTEES.

SURREY.

PANEL COMMITTEE.

THE monthly meeting of the Surrey Panel Committee was held at Surbiton Cottage Hospital on April 16th, when Dr. LANKESTER was in the chair.

Medical Tickets.—A letter was read from the Middlesex Panel Committee, in which it asked if the Surrey Committee would join with it in the event of it refusing to attend insured persons who have not been supplied with their proper "medical ticket." It was decided that it was a matter which should be taken up by the British Medical Association and not by individual Committees. Several complaints were made of the orange cards which were sent to practitioners last month, and the opinion was expressed that the clerical work at the County Office had been inefficiently carried out. It was resolved that in future, insured persons should remain on a practitioner's list until there was evidence that they had been placed on the list of another practitioner or by death or any reason ceased to be insured.

Supply of Drugs and Appliances.—In connexion with the report of a case in which a patient had been advised to take liquid paraffin, it was resolved to ask the Commissioners whether the regular supply of aperients to insured persons is to be part of medical benefit.

Panel Medical Political Union.—It was decided to take no action in the matter of a proposal that the members should join the Panel Medical Political Union.

Doctors' Lists.—A practitioner having complained that a patient, although moving from the immediate district still wished to remain on his list, but that without his being consulted her name was removed from his list, it was resolved to request the clerk of the Surrey Committee not to remove from the lists of doctors any persons changing their address within the county, unless the application was made in the usual way by the insured person to be placed on the list of another doctor.

Temporary Residents.—A proposal that the accounts for temporary residents should be sent to the Panel Committee before being paid was carried.

CROYDON.

PANEL COMMITTEE.

A MEETING of the Croydon Panel Committee was held at the Insurance Offices on April 27th.

Payments to Practitioners.—The suggested arrangements for payment to practitioners for the current year—namely, monthly advances of 5d. for each insured person on the lists until such time as further adjustment can be made—were approved, and it was agreed that the present system for the distribution of funds available for those insured persons not accepted by practitioners be continued until further notice.

Scrutiny of Prescriptions.—It was decided to agree to the Checker making inquiries on behalf of the Supply of Drugs Special Joint Subcommittee, and using an approved form of words for the purpose.

Excessive Prescribing.—The Committee's Circular on "Excessive Prescribing" was amended by adding under the heading of "Lavish Quantities" the following words: "Failing adequate explanation the prescription of liniments in greater quantities than 3 ounces at one time would be regarded as the prescribing of an unnecessarily lavish quantity." With regard to cod-liver oil and extract of malt (including emulsions containing either or both) if prescribed in greater quantities than 1 lb. per week or at one time, it was agreed that the responsibility for showing cause against surcharge would rest upon the practitioner concerned. Several cases referred by the Drugs Subcommittee were dealt with under Article 40, and in some cases small surcharges were recommended and in others the practitioners were warned.

BERKSHIRE.

MEDICAL COMMITTEE.

THE twenty-eighth meeting of the Berkshire Medical Committee was held at the Royal Berks Hospital on March 30th.

Vacancies.—Owing to the resignation of Dr. Heywood, who was on military duty, it was decided to nominate Dr. McCrea as his substitute on the Insurance Committee, and to elect Dr. Leslie, of Streatley, to serve in his place on the Medical Committee.

Supply of Cod-liver Oil.—It was agreed that the tuberculosis medical officer should supply the cod-liver oil prescribed under the tuberculosis benefit, as he was able to do so at 6d. per pound instead of the usual price of 1s. 1d.

Medical Attendance and Treatment.—A letter was read from the Commissioners to the Berks Insurance Committee, which purported to be an answer to the letter sent by the Medical Committee to the Insurance Committee (see SUPPLEMENT, February 6th, 1915, p. 44); the letter contained the followed paragraph:

> With reference to the letter addressed to your Committee by the Panel Committee, a copy of which was enclosed in your letter, I am to point out that Articles 21 (4) and 35 (1) of the Regulations provide that the arrangement in question should be agreed between the Insurance Committee and the Panel Committee, and that the agreement does not make the Panel Committee responsible for the carrying out of the scheme. The terms of the scheme are, however, binding on the individual practitioners in virtue of Clauses 2 and 3 of their agreements with the Insurance Committee.

It was decided to inform the Insurance Committee that the Panel Committee was prepared to agree that practitioners on the Berkshire panel shall give medical advice to all insured persons on the panel in respect of whom the proper moneys were paid to the credit of the Insurance Committee.

Scrutiny of Prescriptions.—It was resolved to agree that a scrutiny of prescriptions dispensed in the first quarter of last year was desirable, but to express the opinion that the medical men's share should be paid out of the Drug Fund, as the Medical Committee's funds were supplied by doctors who did their own dispensing as well as by those who prescribed through chemists.

COUNTY OF OXFORD.

LOCAL MEDICAL AND PANEL COMMITTEE.

THE fifth meeting of this Committee was held at the Radcliffe Infirmary on April 24th, when Dr. SUSMANN was in the chair. Dr. Wood, of Brampton, was co-opted to be a member.

Analysis of Prescriptions.—The SECRETARY reported that since the last meeting he had arranged provisionally to have an analysis made quarterly of all prescriptions in the form as already adopted by this Committee at a cost of £5 4s. per annum, and that the Insurance Committee had agreed to pay half this sum. The arrangement was approved.

Temporary Residents.—The SECRETARY reported that the accounts for the temporary residents for the year 1914 had to be in hands of the Commissioners by April 15th, 1915, and that out of 265 persons so treated accounts for only 147 had been received, and in only 1 case was mileage claimed.

Recruits and Others Serving.—It was pointed out that although insured persons were automatically removed from a doctor's list on enlistment they had to be re-accepted by a doctor after discharge, and that this must inevitably lead to great chaos at the end of the war. Every person had been allowed to retain his former medical ticket, which already bore the name of a doctor, so that the insured person would see no reason to have it signed afresh. Further, the medical card had ceased to be a guarantee that a person is entitled to attendance. It was decided to refer the matter to the British Medical Association in the hope that it would see its way to take some action, and to suggest that the remedy lay either in collecting the medical tickets of all who had enlisted from the beginning, or by automatically putting the persons back on the doctor's list when discharged in the same way as they were removed.

Donation.—The sum of £5 was voted to the Radcliffe Infirmary in recognition of the courtesy of the authorities in allowing meetings of the Committee to be held at the infirmary.

Chemists' Report and Analysis.—The chemists' report for the quarter ending March 31st showed that 13,003 prescriptions had been dispensed at a cost of £349 6s. 3d., giving an average in the county of 6.44d. per prescription and 6.5d. per capita.

Total Credits for 1913.—The SECRETARY reported that the final credit for 1913 was now in the hands of the Insurance Committee. He had drawn up an analysis which showed that 7s. 4.7d. had been received for every person in the Insurance Committee's index (36,934); this did not include the 1s. 6d. for drugs. The result showed that the Committee's index in the eyes of the Commission was inflated to the extent of 519 persons.

Honorary Secretary.—Dr. Venning was appointed to take over the work of Honorary Secretary during the absence of Dr. Hebb on military duty.

Diphtheria Antitoxin.—In reply to a communication, it was decided to recommend the Insurance Committee to ask the Public Health authorities to continue to supply diphtheria antitoxin as is still done in most counties, or to reimburse doctors, seeing that it was not a matter merely personal but of advantage to the whole community.

Etiquette.—It was decided to issue the following circular letter to all practitioners in the county:

> Dear Sir,—The Local Medical Committee draws your attention to the fact that a large number of medical men in the county have left their practices in order to join the military forces.
>
> This Committee is of the opinion that any medical man who is called upon to treat a private patient of an absent colleague should notify the latter or his representative that he has been called in. It should be made quite clear to the patient that such attendance is only given during the absence of the patient's regular medical attendant and that no permanent transfer can be entertained as a result of the doctor's absence.
>
> The proportion of fee which is to be set aside for the absent colleague shall be a matter of mutual arrangement on his return (if not already arranged).—Believe me, yours truly,
>
> J. H. HEBB, Honorary Secretary,

ISLE OF WIGHT.

LOCAL MEDICAL AND PANEL COMMITTEES.

AT a meeting of the Isle of Wight Local Medical and Panel Committees held at Newport on April 28th, Dr. K. W. I. MACKENZIE was in the chair.

Scrutiny of Prescriptions.—It was decided to ask the Drug Subcommittee to confer with the Pharmaceutical Subcommittee of the Insurance Committee on the matter of the cost of checking prescriptions. A letter was read from the British Medical Association with regard to checking of prescriptions, and it was resolved that at present this process should be dealt with locally. M. 5 (B.M.A.) was also discussed.

Certificates.—It was resolved to call the attention of the Insurance Commissioners and the Isle of Wight Insurance Committee to the unnecessarily arbitrary action on the part of the approved societies in requiring weekly certificates in chronic cases having special reference to paragraph 36 of Circular 211/I.C.

Payments to Practitioners.—A letter was read from the Medical Secretary, British Medical Association, on payments to panel practitioners. It was understood that 80 per cent. was again to be paid for the last quarter. (This was the recommendation of the Finance Committee, but it had not then been adopted by the Insurance Committee.) It was resolved to ask the local Insurance Committee that the individual sums paid to doctors should not be published in the local press.

EXETER.

PANEL COMMITTEE.

A MEETING of the Exeter Panel Committee was held at the Court House, Exeter, on April 15th, when Dr. PEREIRA was in the chair.

Certificates.—It was resolved to adhere to the rule that no official certificate should be either ante- or post-dated, and that in the case of unofficial or private certificates a charge of 1s. be made for the "signing on" and another 1s. for the "signing off" certificate.

Sanatorium Benefit.—It was decided to ask the tuberculosis officer to state on what authority he asks the panel practitioners to furnish him with charts and the clinical history of tuberculous patients, and it was agreed that the interests and status of the panel practitioners in any agreement with the city council, and the tuberculosis officers who will shortly be appointed, would require careful watching.

HERTFORDSHIRE.

PANEL COMMITTEE.

A MEETING of the Hertfordshire Panel Committee was held at the British Medical Association offices, 429, Strand, W.C., on March 10th, when Dr. S. A. BONTOR was in the chair.

Emergency Committee.—Drs. Cleveland and Evill, with the Chairman and Hon. Secretary, were constituted an Emergency Committee to deal with matters of urgency arising between meetings of the Panel Committee.

Local Medical Committee.—A letter from the Insurance Commissioners, formally recognizing the Hertfordshire Panel Committee as the Local Medical Committee for the County of Hertfordshire until July 15th, 1915, was received, and the Chairman and Secretary of the Panel Committee were appointed Chairman and Secretary respectively of the Local Medical Committee. It was decided that the expenses of the Local Medical Committee be paid out of the voluntary levy received by the Panel Committee.

Vacancy on the Insurance Committee.—It was decided that the Honorary Secretary be appointed to fill the casual vacancy on the Insurance Committee.

Assignment of Patients.—It was decided that an insured person referred by the Insurance Committee to the Panel Committee for assignment should be assigned to the practitioner whose residence is the nearest to that of the insured person; in the case of rural districts where there was no resident practitioner, to one of the practitioners in the nearest town as determined by lot.

Attendance on Soldiers.—A letter from the Clerk to the Insurance Committee enclosing a circular letter (L. 119) from the Commissioners to Insurance Committees in reference to attendance upon soldiers by civilian doctors, was read, and the Hon. Secretary was directed to obtain further information in reference to the position of R.A.M.C. officers who may be stationed in the district, and also as to whether the arrangements detailed might be retrospective, and to circulate the information given by the Commissioners to all practitioners practising in Hertfordshire, and to offer to collect and transmit claims where the practitioner so desires.

Checking Prescriptions.—It was decided to support the request of the Pharmaceutical Committee for the adoption for 1915 of the conjoint arrangement between the Insurance, Panel, and Pharmaceutical Committees for the checking and statistical analysis of prescriptions and chemists' accounts suggested by the Commissioners in Memo. 199/I.C.

Pharmaceutical Committee.—It was decided that there should be no addition to a "Rep. mist." scrip; that there should be a mark of identification—namely, date on the scrip, with the suggestion that this should be placed on the bottle; that no "Rep. mist." should refer to a previous quarter; and that the chemists should be asked to refer back scrips not conforming with these requirements.

Expenses of Pharmaceutical Committee.—It was decided not to raise any objection to the estimates of expenditure submitted by the Pharmaceutical Committee for the half year ending July 15th, 1915, and for the half year ended December 31st, 1914, respectively.

Expenses of Panel Committee.—It was decided to ask the Clerk to the Insurance Committee to make a deduction of ½ per cent. from the next quarterly payment to practitioners for the expenses of the Panel Committee.

MONMOUTHSHIRE.

PANEL COMMITTEE.

A MEETING of the Monmouthshire Panel Committee was held on March 19th, when Dr. H. T. EVANS presided.

Unallocated Funds for 1913.—Those funds which in July, 1914, had been stated to be £1,859 13s. were now found to amount to £695 9s. 8d. only. It was decided to request the Insurance Committee to pay the amounts to the panel doctors at once in accordance with the scheme adopted by the Panel Committee and approved by the Insurance Committee.

Grant to Pharmaceutical Committee.—A proposal to rescind a previous resolution refusing to sanction a grant towards the administrative expenses of the Pharmaceutical Committee was defeated.

Panel Committee's Expenses.—It was decided that a voluntary levy of not more than ¼d. per quarter per insured person be made to defray the expenses of the Panel Committee, and that the Clerk to the Insurance Committee be asked to collect the same.

Ynysddu and Risca Scheme.—It was stated that the Ynysddu and Risca scheme had now taken on a new phase, inasmuch as agreements had been entered into with the doctors employed, by which they received all the moneys from the Insurance Committee and the collieries, with the exception of 5 per cent. which was paid to the Committee. It was decided to draw the attention of the Monmouthshire Insurance Committee to the alleged change in the constitution of the scheme.

Doctors' Lists.—Several members stated that the Insurance Committee was not paying for a very large number of insured persons whom the panel doctors had contracted to attend, and that medical slips were not received for anything like the medical cards and Forms 50 which were sent to the clerk. A deputation, consisting of the chairman, secretary, and three other members of the Panel Committee, was appointed to wait on the Welsh Commissioners in connexion with the non-payment for medical attendance on insured persons for whom medical slips have not been issued though they have been accepted by panel doctors for treatment.

HEREFORDSHIRE.

PANEL COMMITTEE.

A MEETING of the Herefordshire Panel Committee was held on April 3rd.

Finance Committee.—A Finance Subcommittee, consisting of Drs. Steed, Steel, and Morris, was appointed to deal with accounts.

Secretaries.—Mr. E. Newton was appointed assistant secretary at a salary of £13 per annum, and Dr. Steed was appointed honorary secretary, vice Dr. Ainslie, who is on active service.

Election of Panel Committees.—It was decided to co-operate with other committees in an attempt to obtain triennial instead of annual elections of Panel Committees.

Medical Tickets.—A form for use in the case of insured persons who have no medical tickets was agreed to, provided it was issued to doctors on stamped addressed cards.

Certificates.—It was resolved that the Insurance Act practitioners of Herefordshire having given a fair trial to the new form of certificate, the Panel Committee is of opinion that it is absolutely impossible to carry out the Regulations in respect of these certificates.

Central Bureau for Checking Prescriptions.—The question of checking prescriptions locally or by a central bureau was discussed, and the Committee expressed the opinion that local checking was preferable.

LIVERPOOL.

PANEL COMMITTEE.

A MEETING of the Liverpool Panel Committee was held on April 13th at the Medical Institution, when Mr. F. CHARLES LARKIN was in the chair.

Reinstatement of Discharged Soldiers.—A letter was read from the administrative officer stating that the suggested arrangement for the reinstatement of insured persons withdrawn from civil to military life which had been approved of by the Panel Committee at its last meeting had since been adopted by the Insurance Committee.

Attendance on Soldiers.—A letter was read from the administrative officer stating that, as the provision of medical treatment to soldiers and sailors whilst (*a*) quartered in barracks or camps, (*b*) on furlough, (*c*) training at home or in billets were not questions concerning insured persons, the Insurance Committee did not consider it necessary to inform panel practitioners of the communication from the Commissioners on this subject. It was resolved that a circular letter be sent by the Panel Committee to panel practitioners in the Liverpool area informing them of the procedure advised by the Commissioners.

Clerical Work.—In order that as many practitioners as possible may be enabled to respond to the urgent appeal of the Director-General of the Army Medical Service for whole-time or part-time medical officers, it was decided to urge the Insurance Commissioners to issue an order cutting down to a minimum the clerical work of those panel practitioners who are doing part-time military service, or who are doing the work of practitioners engaged in full-time military duty.

Scrutiny of Prescriptions.—It was decided not to take any further action with regard to the proposed formation of a joint Committee for the analysis of prescriptions.

Dockers' Battalion.—It was decided to inquire from the administrative officer what was the position of insured persons who had joined the newly-formed Dockers' Battalion.

SOUTHPORT.

LOCAL MEDICAL AND PANEL COMMITTEE.

A MEETING of the Southport Local Medical and Panel Committee was held on April 30th.

Payments to Practitioners.—The SECRETARY reported on the final credits for 1913, which included about 4d. per insured person transferred from the Drug Suspense Fund, and stated the sum was being divided amongst the practitioners on the panel pro rata to the average number of patients on their lists for the year.

A general discussion took place on: (*a*) Arrangements for carrying on the panel work of men who have gone on military service; (*b*) treatment of soldiers billeted in the town; (*c*) various matters dealing with certificates; (*d*) transfer of patients.

EAST RIDING OF YORKSHIRE.

PANEL COMMITTEE.

A MEETING of the Panel Committee for the county of the East Riding of Yorkshire was held at Hull on March 5th, when Dr. JOHNS was in the chair.

Drug Tariff.—The SECRETARY reported that the Insurance Committee had been informed that the Panel Committee regretted that whilst the new drug tariff took into account the increased price of drugs to the chemists, no provision was being made to compensate the doctors who supplied drugs on a capitation basis for the increase in the price of drugs due to the war. A letter received by the Insurance Committee from the Insurance Commissioners was read, stating "that where the prices of drugs in the tariff adopted by the Insurance Committee are revised in view of the increased price of drugs, and the average cost of drugs per insured person per annum is thereby increased, a doctor with whom arrangements for dispensing have been made by the Committee will, in accordance with the provision of Article 29 (6) of the Medical Benefit Regulations, 1913, receive payment on the basis of a capitation rate as affected by such revision of the tariff. The maximum of such capitation rate as indicated in the Regulations will, however, remain as at present." It was resolved that the letter be received. The SECRETARY reported that owing to the representations of the Pharmaceutical Committee to the effect that the water in the East Riding generally was unsuitable for dispensing purposes owing to its hardness, and in many places its unsatisfactory quality, the Commissioners had agreed to delete from the proposed drug tariff the clause stipulating that where "aqua" appears in a prescription it shall be taken to mean ordinary water and not distilled water.

Travelling Expenses of Members of Committees.—A letter from the Cumberland Panel and Pharmaceutical Committees asking the support of this Committee in urging upon the Insurance Commissioners the unfairness of their decision that the travelling expenses of members of the Panel and Pharmaceutical Committees cannot be paid out of moneys provided for the Committees' expenses under Section 39 (2) of the Amending Act, was read, and it was resolved to request the Insurance Commissioners to make provision in the next Amending Act for the payment of the travelling expenses of members of the Panel and Pharmaceutical Committees.

Medical Referees.—A letter from a practitioner was read stating that another panel practitioner in the town had at the request of an approved society called upon and examined one of his panel patients and asking the opinion of the Committee on the matter. It was resolved that whilst the Committee recognized the undesirability of a panel practitioner acting as medical referee in his own district, the practitioner in this case having given notice of the time of his visit, and thus having given the patient's doctor an opportunity of being present, had carried out all his ethical obligations in connexion with the case.

Attendance on Soldiers on Furlough.—A letter was read from the Clerk to the Insurance Committee offering to circularize the practitioners on the panel giving them the necessary information with regard to the treatment by civilian doctors of soldiers on furlough, etc., and to provide them with copies of Army Form O. 1667 required for the purpose of tendering their accounts. The letter also asked whether the Panel Committee thought that the Insurance Committee should undertake the collecting of the doctor's accounts and the forwarding of them to the Deputy Director of Medical Services. It was decided to accept his offer to circularize the doctors and provide them with the necessary forms, but to point out that the Panel Committee saw no necessity for the Insurance Committee to go to the trouble of collecting the accounts for the doctors concerned.

Transfer of Patients of Doctors on Military Service.—A practitioner having complained with regard to the transfer of certain of his panel patients to other practitioners while he has been away on active service, alleging that certain of his colleagues were attending on their own behalf some of his private patients, it was decided to inform the practitioner that the Committee considered that according to the return of transfers received from the Insurance Committee, the number of persons who transferred from his list at the end of 1914 was not disproportionate to the number of persons who transferred from the lists of the other practitioners in the town, when the numbers on their respective lists were considered. Also that the Committee considered that with regard to his private patients, this was a matter that could better be dealt with by the Ethical Committee of the Division.

Co-operation of Local Medical and Panel Committees.—The Secretary was authorized to enter into the steady and close relationship with the office of the British Medical Association asked for by the Local Medical and Panel Subcommittee in its letter of November 14th.

Scrutiny of Prescriptions.—The Committee expressed its disapproval of the establishment of a central bureau for checking prescriptions, and the medical member of the Insurance Committee was asked to oppose any such scheme should it be suggested.

Expenses of Panel Committee.—It was resolved that the expenses of the Panel Committee for the present year be again met by means of a compulsory levy made under Section 33 (2) of the Amending Act.

NEWCASTLE-UPON-TYNE.

PANEL COMMITTEE.

A MEETING of the Newcastle-upon-Tyne Panel Committee was held on March 31st, under the chairmanship of Dr. H. L. RUTTER.

Certificates.—It was reported that a meeting of the Committee, with representatives of the Council of the Friendly Societies, held with a view to the substitution of monthly

certificates for weekly certificates in the cases of those members of societies who were on permanent disablement benefit, had had a favourable result. It was decided that a conference should be held with a representative deputation from the Council representing insurance offices to debate the question as to the substitution for weekly certificates of ones at longer interval for members of such societies.

Medical Benefit Credit.—It was agreed that a deputation consisting of a member of the Panel Committee and a member of the Insurance Committee for Newcastle-upon-Tyne should confer with the Commissioners as regards a more favourable solution and fixation of the medical benefit credit for the year ending December 31st, 1914.

Final Allocation for 1913.—The methods to be adopted for the final allocation for 1913 were agreed upon, and the Chairman and Vice-Chairman were empowered to pass the amount given to each person.

Legal Defence for Panel Doctors.—It was decided to ascertain the views of all doctors on the panel for the district on the question of legal defence for panel doctors.

Scrutiny of Prescriptions.—The estimate of Pharmaceutical Committee's expenses and the checking of chemists' prescriptions were considered and confirmed.

Central Bureau for the Scrutiny of Prescriptions.—A communication on this question from the Newcastle-upon-Tyne Division of the British Medical Association was read, and it was noted that the action of the Newcastle-upon-Tyne Panel Committee was in accord with the opinion of the Council of the British Medical Association.

Record Cards and Quarterly Reports.—It was decided that all panel doctors should be instructed to fill up and return quarterly reports of domiciliary treatment in accordance with their agreement, and that further information should be obtained on the question of record cards.

GLASGOW BURGH.

LOCAL MEDICAL COMMITTEE.

THE inaugural meeting of the Glasgow Burgh Local Medical Committee for 1915 was held in the Christian Institute on February 9th, when Dr. MILLER SEMPLE was in the chair.

Election of Officers.—The following officers were elected unanimously, namely:

Chairman: Dr. Miller Semple.
Vice-Chairman: Dr. Lamb.
Secretary: Dr. Drever.
Legal Adviser: Mr. W. Findlay.

Vacancy on Committee.—Dr. W. S. Paterson was elected to fill the vacancy caused by the resignation of Dr. John Lindsay.

B.P., 1914.—A letter from the Glasgow and West of Scotland Chemists' Association was read suggesting that, in view of the many alterations in strength, particularly of the tinctures in the 1914 *Pharmacopoeia*, there would be less danger of confusion if an agreement were come to between the doctors and pharmacists, to the effect that, until, say, the end of April, doctors who desired the new preparations would prescribe them as "*B.P.*, 1914," and that, otherwise, the older preparations would be dispensed.

It was agreed to adopt the suggestion, and to extend the time to the end of June. It was also agreed to send to all the practitioners in the city a printed card containing a note of the principal changes.

Range of Services: Eye Testing.—A letter was read from the Commissioners, intimating their approval of the Committee's decision to exclude eye testing, on the understanding that this "does not include the simple methods for ascertaining if a patient is suffering from presbyopia, myopia, etc., but is restricted to the complete examination necessary to determine refractive errors with a view to the provision of suitable spectacles."

PANEL COMMITTEE.

A meeting of the Glasgow Burgh Panel Committee was held in the Faculty Hall on March 10th, when Dr. CAMPBELL was in the chair.

Scheme of Allocation.—The scheme of allocation under Regulation 35, outlined in the minute of meeting of February 26th, was considered, and it was agreed to accept the scheme as a basis for arrangement, with the proviso that doctors in institutions should not share in any surplus.

Surplus for 1913.—It was decided by the casting vote of the Chairman that steps should be taken to facilitate the disbursement of the balance of the panel fund for 1913, which was understood to be in the hands of the Insurance Committee.

MEETING OF THE EXECUTIVES.

A joint meeting of the Executives was held in the Faculty Hall on April 30th, when Dr. SEMPLE was in the chair.

Certificates.—Evidence was submitted showing that certain societies are refusing to pay weekly benefit beyond the date of the doctor's certificate, and also that the agents of certain societies are encouraging breaches of the rules of certification. It was agreed to recommend that these matters be brought to the notice of the Commissioners and of the Insurance Act Committee of the British Medical Association.

Return of Men on Service.—The question of the restoration to doctor's lists of men returning to civil life after service with the Forces was considered, and it was decided to recommend that the Commissioners be asked to arrange that such restoration be automatic.

Surplus for 1913.—A letter was read from the Clerk to the Insurance Committee explaining that the delay in distributing the balance of the Panel Fund for 1913 was due to certain information not having been furnished by the Commissioners. The required figures were in course of preparation and would be furnished at an early date.

Expenses of Panel Committee.—A letter was submitted from the Clerk to the Insurance Committee asking for an estimate of the expenses of the Panel Committee for 1915. It was agreed to recommend that an estimate be prepared on the same basis as 1914, including the Secretary's remuneration of £105.

FORFARSHIRE.

LOCAL MEDICAL COMMITTEE.

A MEETING of the County of Forfar Local Medical Committee was held at the Town Hall, Forfar, on April 21st, when Dr. HOILE was in the chair.

Vacancy in Committee.—Dr. MacCallum (Alyth) was appointed to fill the vacancy in the Committee caused by the resignation of Dr. Tait.

Uninsured Members of Societies.—It was reported that the practitioner who had been written to by the Committee regarding the attendance on uninsured members of societies at a lower rate than that fixed by the Committee had now agreed to accept the fee fixed by the Committee.

Repeat Prescriptions.—A letter addressed to the Clerk to the Forfarshire Insurance Committee by a chemist in the area with reference to a certain practitioner still sending prescriptions "Rep. mist." was read, and the Secretary was instructed to write the defaulting practitioner, drawing his attention to Rule 3 in the official medical formulary.

Proposed Scheme for Medical Referees.—The following scheme was considered:

1. The Panel Committee shall be appointed to act as medical referees.
2. In a doubtful case, when the doctor attending does not wish to take the responsibility of certifying as fit for work, the doctor will tell the patient that he is not allowed by the Panel Committee to give a further certificate until the patient has been examined by a referee appointed by the Panel Committee.
3. The doctor will thereafter choose any one of the Panel Committee and send him a message giving necessary details. This message should not be given to the patient, who should be instructed to attend at the referee's surgery during the usual hours.
4. The referee will, after examination, communicate to the doctor his views of the condition of the patient.
5. If an initial certificate has been given to a doubtful case the doctor should communicate with a referee who will see the patient as soon as convenient.
6. Each doctor to keep notes, preferably in a small book, giving the name of the patient, his address, the disease, how long he has been on the sick list, the referee to whom sent, and remarks as to whether the patient signed off on his own accord or was signed off by him after consultation with the referee.
7. Each referee also to keep records of the cases examined.
8. This scheme to be in force for the remainder of the current year.

It was agreed to accept the scheme provisionally provided the societies in the areas would be prepared to co-operate and pay a proportion of the fee of the medical referee, which was resolved should be at the flat rate of

10s. 6d., and the Secretary was instructed to ascertain what proportion of the fee the societies would be willing to pay.

PANEL COMMITTEE.

A meeting of the County of Forfar Panel Committee was held on the same date and place and with the same chairman.

Vacancy in Committee.—Dr. Johnston (Newtyle) was appointed to fill the vacancy in the committee caused by the resignation of Dr. Tait.

Medical Certificates.—Drs. Hoile, Peterkin, and Burgess were appointed to draw up a letter giving full particulars of the dissatisfaction expressed by the Committee with the new method of certification for transmission to the Commissioners, the Forfarshire Insurance Committee, and the British Medical Association.

Death Certificates.—In order to keep the index register up to date it was agreed to recommend panel practitioners to intimate all deaths of insured persons on their list to the Clerk to the County Insurance Committee, provided that the necessary certificate forms and stamped addressed envelopes be supplied at the expense of the Forfarshire Insurance Committee.

ABERDEEN.

PANEL COMMITTEE.

AT a meeting of the Aberdeen Burgh Panel Committee, held on April 29th, Dr. Ann Mercer Watson was appointed Honorary Secretary of the Committee during the absence of Dr. Charles Forbes on military service. It was resolved to record in the minutes the appreciation of the Committee for the great amount of time and trouble spent by Dr. Forbes on its behalf.

RENFREW COUNTY.

PANEL COMMITTEE.

A MEETING of the Renfrew County Panel Committee was held at Paisley on March 24th, when Dr. CORBETT presided.

Allocation of Insured Persons.—It was reported that the Insurance Committee had approved of the Panel Committee's proposals with regard to the assignment of insured persons, and had forwarded them to the Insurance Commissioners for their approval; and that the Commissioners had replied to the Insurance Committee desiring that arrangements be made for the immediate treatment of insured persons requiring assignment at times when application to the Insurance Committee clerk might not be possible. It was resolved that in cases of emergency, where application to the Insurance Committee for assignment cannot immediately be made and the insured person is liable to be prejudiced by delay, the practitioner to whom application is made will either (1) agree to take the person on his list; or (2) will give the treatment immediately required until the practitioner either (*a*) has arranged with another practitioner to accept the person, or (*b*) has communicated with the Insurance Committee; notice of any arrangement under clause (2) (*a*) to be made to the Insurance Committee in due course by the practitioner who finally accepts the insured person.

Free Choice of Chemist.—A letter from the secretary to the Pharmaceutical Committee, asking the Panel Committee to issue a circular letter to practitioners on the subject of free choice of chemist was received, and as it was understood that the Insurance Committee had in preparation a circular letter to practitioners covering a number of points, it was decided that the Insurance Committee be asked to deal with this matter in their circular letter.

Extravagant Prescribing.—The Pharmaceutical Committee had in the same letter drawn the attention of the Panel Committee to the continued increase in the drug accounts and to the large amount of proprietary medicines prescribed, and it was resolved that the Insurance Committee be asked to warn practitioners in their circular letter against extravagant prescribing, and to discourage generally the use of proprietary medicines.

Medical Benefit of Ex-soldiers.—It was agreed that an arrangement should be adopted whereby insured persons who have enlisted in the army and have returned, or will return, to civil life at the end of the war are reinstated, on discharge from the army, on the list of the doctor previously selected by them without the necessity of their making a formal choice of that doctor by means of a fresh medical card. It was, however, recognized that any arrangement so made could not prejudice the right of the insured person to change his doctor, and, conversely, the right of the doctor to refuse to re-accept the insured person.

Minutes to British Medical Association.—It was resolved that a copy of the Panel Committee minutes be sent to the British Medical Association at the same time as those are issued to members of the Committee.

GALWAY.

MEDICAL COMMITTEE.

THE following resolutions have been adopted by the County Galway Medical Committee:

War Emergency.—That where any of our medical colleagues volunteer for whole-time service in the Army Medical Service, we bind ourselves loyally to perform all the duties of our absent colleagues on terms to be agreed upon by the County Galway Medical Committee.

Medical Certifiers.—That considering the services the Irish medical profession has rendered in the great national emergency, we consider it is time the Government should mark its appreciation of those services, which in many instances are gratuitously given, by insisting that the Irish Insurance Commissioners should immediately come to terms with the profession on the question of medical certification for sickness benefits, and cease the insulting and penalizing attitude they have adopted towards the Irish medical profession, to the detriment of the insured and successful working of the Insurance Act in Ireland.

CORRESPONDENCE.

THE FINANCES OF THE ACT.

DR. ARTHUR CAMPBELL (Chairman of the Gloucestershire Local Medical and Panel Committees) writes: Dr. F. L. Pochin's letter on the finances of the Insurance Act in the JOURNAL of March 27th gives some facts regarding the proportionate number of panel patients treated by him in a town during 1914; his list gave a return of about 60 per cent. treated, and he adds, "our remuneration is hopelessly inadequate as compared with that of our friends in rural areas."

I live in the country. During 1913 I treated 75 per cent. of my panel patients, and in 1914 60 per cent., but my mileage would, I am sure, greatly exceed that of a town doctor with the same number of panel patients, and the expenses of travelling, especially in our hilly districts, should much exceed that of a town; in towns one expects a pavement to walk on, whereas the muddy condition of our lanes and paths, the fields soaking with moisture, the inaccessibility of some of the cottages, handicap us in our work, especially during the winter.

As regards drugs, the time expended in dispensing is considerable; the town doctors benefit very much in having merely to write out a prescription; we have practically to write it out, and then dispense it, and I do not hold that the amount nominally allowed is sufficient to cover the cost of good drugs.

It is seldom noticed that (disregarding this war period) we have had the same population to attend to as before the Insurance Act came into force, but much more work to do, and in my case at least more than 50 per cent. of my insured patients were formerly private cases.

We have to support committees and attend meetings at our own expense, read a multitude of official regulations and alterations of regulations, keep records (probably never looked at by the powers); we are subject to vexatious and in many cases most unreasonable investigations of our conduct, the evidence mostly "hearsay," while even the elections for the Local Medical and Panel Committees must be conducted according to the Commissioners' ideas, regardless of expense, the cost, of course, coming from the panel practitioners' pockets.

If a panel doctor could know exactly who was on his list for even one quarter, and how much exactly he was to be paid per patient, much dissatisfaction would cease. If not merely patients but doctors would read the directions issued from time to time, if doctors would acquaint the Panel Committees of their difficulties and grievances, much good would result. A serious time is coming for the general practitioner, and only by carefully kept statistics and the ventilation of grievances can we hope for any amelioration of our trials. I agree with

Dr. Pochin's criticisms, except that I always thought the town doctor's position was better than the country practitioner's.

THE DEFECTIVE BASES OF THE ACT.

Dr. GARRATT (Chichester) writes: An instructive commentary upon my recent letters dealing with the serious danger now threatening us is supplied by the following extract from the *National Insurance Gazette* of May 1st:

Approval of Medical Associations.

At the annual conference of the Friendly Societies Medical Alliance on April 5th at Gloucester a resolution was carried, that the Government be asked to amend the Insurance Acts, so as to give to "medical associations" coming into existence since the enactment of the Acts the right to become approved, and to administer the medical benefits under the Acts; also that all insured persons, residing in a district in which there is an approved medical association, should have the right of free choice to obtain medical benefits through such association. The National Conference of Friendly Societies has been asked to support the resolution.

Thus the Harmsworth amendment, designed expressly to neutralize our success in transferring control of medical benefit from the societies, is, if possible, to receive vastly extended scope. With regard to such "associations" our Medico-Political Committee reported: "These organizations illustrate every abuse connected with contract practice, especially underselling of other practitioners and canvassing." It is therefore designed to set up, wherever possible, the very worst type of medical institution, staffed no doubt by men who will be entirely at their service, and tout for our patients all round. This would be but a natural sequel of the new regulations, which, for the first time in our history, empower any club official to order us about. I have excellent authority for repeating my opinion that those regulations are *ultra vires*, and steps should be at once taken by our Council to test their legality in the High Court.

Will nothing rouse the leaders and members of our Association to recognize that, taking advantage of our preoccupation in patriotic work, a determined and only too successful attempt is in progress to reverse the decision of Parliament, and transfer the control of medical benefit from the Insurance Committees, where, at any rate, we have some friends and representatives, and those not without influence, to other bodies where we have no friends or representatives at all? Those thus working against us have never ceased to resent their defeat in the House of Commons, and have chosen to commence hostilities at this time for their own ends. It is, however, a time when we have them entirely at our mercy if we arise and parry the blow. Let us, therefore, put forth our powers now and crush this danger, while we are in a position to do so, by at once contesting the new regulations in a court of law. Presently it may be too late.

P.S.—Since writing the above I read (BRITISH MEDICAL JOURNAL SUPPLEMENT, p. 190, section 127) that our own Council not only accept without protest the "societies" as arbiters of how often we doctors are to visit our own patients, but actually petition these societies not to be too overbearing while the war lasts!

Truly our cup of degradation overflows! With no surprise I learn (section 117) that "there is a strong demand on the part of Local Medical and Panel Committees for more direct relationship with the Insurance Act Committee than at present exists." Meanwhile, I turn with relief to the admirable letter of the Secretary to the Medical Defence Union, Dr. Bateman, and glean a hope of better things in store.

STATISTICS.

We have received from a panel practitioner in Yorkshire the following particulars regarding the amount of work and remuneration from insurance practice for 1913 and 1914:

	1913.	1914.
Number of patients on panel:		
First quarter	467 ...	700
Last quarter	608 ...	820
Number of record cards	352* ...	534
Number of consultations and visits ...	3,514 ...	4,576
Amount received	£197 18s. 8d.	£215 5s. 6d.
Rate per visit or consultation	1s. 1½d.	11½d.

* In addition to the 352 record cards in 1913 there were fourteen pages of the medical register, used during the first quarter, filled in. For those in the record cards no allowance was made, but the "A's and V's" shown in the register have been added to the "A's and V's" in the record cards for 1913, so giving the total amount of consultations and visits.

INSURANCE ACT IN PARLIAMENT.

DISABLEMENT BENEFIT.

MR. JOWETT asked whether, in the case of an insured person in receipt of disablement benefit entering a charitable institution (whether or not making a charge for admission or maintenance), a payment of the disablement benefit was withheld from the insured person during the period of such residence; whether, in such a case, if the insured person could not otherwise provide the weekly payment required for admission, the disablement benefit had been in any instance allowed to be applied for this purpose, and whether it was proposed to allow such a course in future; if not permitted to be so applied, and if the insured person had no dependants, and in the absence of any agreement between the approved society and the institution, would payment of the disablement benefit be suspended until the beneficiary left the institution, and the amount then due be paid to him in a lump sum; if so, what was the provision made for the payment of the amount due in the case of permanently incapacitated persons entitled to disablement benefit, and entering institutions for incurables or homes for the dying, without prospect of coming out of them alive; and whether, in view of the desirability of facilitating the entry into institutions for the incurable of permanently disabled persons having no dependants, the Insurance Commissioners would make it known that disablement benefit might be made applicable to the payments required by such institutions. Mr. Acland said that the National Insurance Acts contained provisions whereby sickness or disablement benefit, so far as it was not payable either to the insured person or to his dependants while he was an inmate of an institution, could be paid over in whole or in part by his approved society to the institution towards his maintenance. The Insurance Commissioners had conveyed full information on this point to approved societies in a circular.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Fleet Surgeons E D. JAMESON to the *Dreadnought*, J. MARTIN to the *Egmont*, additional, for Malta Hospital, M. J. SMITH, M.D., to the *Essex;* Surgeons C E. GREESON, M.D., to the *Pembroke*, G F. B. PAGE, M B., to the *Himalaya*, vice Wright; temporary Surgeons E. F. COX to the *Victory*, additional, for Engineer Unit, R N Division, Deal, H. G. MOSER to the *Neptune*, JACK R. L. WILLIS, M.B., and W E. GOSS, M.B., to the *Vivid*, additional, for disposal, W. S LYND, M B., J S. KENNEDY, HUGH L P. PEREGRINE, STEWART W TOULMIN and D S. FALCONER, M.B., to the *Victory*, additional, for Haslar Hospital. JOHN C. SINCLAIR, M.B., and WILLIAM H KAY, M B., to the *Pembroke*, additional, for disposal, C D. HANAN, M.D., to the *Cyclops*, additional, E F. THOMAS to the *Conqueror*, FREDERICK N. V DENNING to the *Victory*, additional, A. J MCNAIR, M D., to the *Pembroke*, additional, temporary, W. G WYLLIE, to the *Invincible*, vice Greeson, W. L M GOLDIE and R. S. LAWSON to the Hospital-ship *Plassy*, A. C. MOONEY, M.B., to the R.M. Dépôt, Deal, THOMAS OWEN to the *Pembroke*, additional, W J. FISON to the *Pembroke*, additional, for Chatham Hospital, C. H. BROWNE to the *President*, additional, W. B CUNNINGHAM, M B., to the *Actaeon*, vice Browne, G. M. FRASER to the *Zealandia*, vice Lawson, GUY W. WOODHOUSE, B.A., ALFRED B. DENBY, L. B. STRINGER, JOHN C. GILLES, M B.

ROYAL NAVAL VOLUNTEER RESERVE.

SURGEON C. DEVEREUX MARSHALL, F.R.C.S., promoted to the rank of Staff Surgeon; Surgeon Probationer GEORGE W. M. FINDLAY to the *Thorn;* R. D. AYLWARD to the *Lydiard*, vice Savory; C. J. DENNY to the *Liberty*, vice Lawless; G. L. CUTTS to the *Laforey;* S. M. RIDDICK to the *Lizard*.

ARMY MEDICAL SERVICE.

TEMPORARY MAJOR CUTHBERT S. WALLACE, from R.A.M.C., to be Colonel.

ROYAL ARMY MEDICAL CORPS.

MAJOR ARTHUR W. MAYO ROBSON, C.V.O., F.R.C.S., to be temporary Lieutenant-Colonel.

To be temporary Majors: WILLIAM G. K. BARNES, late Deputy Surgeon-General R.N., STAFFORD M. COX. M.D., WILLIAM PEARSON, M.D., F.R.C.S.I., JAMES L. MAXWELL, M.D., ALEXANDER G. P. GIPPS, F.R.C.S., late Fleet Surgeon, R.N.

To be temporary Captains: JOHN H. SPENCER, M.B., CHARLES E. MURPHY, F.R.C.S., GERALD T. S. SICHEL, F.R.C.S., HECTOR MUNROE, M.B., JOHN A. GIBB, M.D., Sir VINCENT NASH; Temporary Lieutenants ALBERT T. DUKA, D.S.O., FRANCIS HERNAMAN-JOHNSON, M.D., late Surgeon, R.N.; ERNEST W. WITHAM, late Surgeon-Captain, Assam Valley Light Horse; GEORGE H. WARD HUMPHREYS, late Surgeon-Captain, 1st Gloucestershire Engineers (T.F.): MATTHEW L. G. HALLWRIGHT, M.D., HARRY Y. C. TAYLOR, M.B., F.R.C.S., CHARLES C. CHOYCE, M.D., F.R.C.S.

Temporary and Honorary Lieutenants granted the temporary and honorary rank of Captain: Lionel E. C. NORBURY, JAMES F. MACKAY, JAMES D. LYLE

The undermentioned are granted temporary rank as indicated whilst serving with the War Hospitals named. *Napsbury War Hospital:* LANCELOT W. ROLLESTON, M.B., to be Major, ARTHUR

O'NEILL to be Captain. *Springfield War Hospital*: REGINALD WORTH, M.B., to be Major; GAYTON W. SMITH, M.D., to be Captain.

JAMES ERLANK, M.B., is granted temporarily the honorary rank of Lieutenant whilst serving with the Duchess of Westminster's War Hospital.

Temporary Lieutenant SYDNEY G. TIBBLES appointed Specialist in Ophthalmology at the Devonport Military Hospital.

Temporary Lieutenants CHARLES GIBSON and CHARLES B. PEARSON having ceased duty with the British Red Cross Hospital, relinquish their commissions.

Temporary Lieutenants RAYMOND J. JONES, ERNEST M. HIME, M.B., and REGINALD P. COCKIN, M.D., relinquish their commissions.

The name of temporary Lieutenant JAMES RANDOLPH GYLLENCREUTZ is as now described, and not as stated in the *London Gazette* of September 25th, 1914.

To be temporary Lieutenants: HENRY R. BROWN, M.D., WILLIAM A. REES, HERBERT E. CLUTTERBUCK, M.D., F.R.C.S.E., SYDNEY WILLIAMS, THOMAS P. NOBLE, M.D., THEODORE H. WHITTINGTON, M.D., ERNEST H. DRINKWATER, BERNARD H. S. AYLWARD, M.B., ERNEST A. AYLWARD, M.B., DAVID RIDDELL, M.D., ERNEST E. ISAAC, CUTHBERT J. NICHOLSON, FREDERICK T. D. CLINDENING, NINIAN McI. FALKINER, M.D., REGINALD T. COOKE, JAMES W. BENNETT, ADOLPHE ABRAHAM, M.D., MAX HERSHEL, E. R. MONTESOLE, M.B., HUBERT V. LEIGH, M.B., ROGER L. WILLIAMS JOHN W. HEEKES, THOMAS D. JAGO, CECIL H. HOPWOOD, M.B., WILLIAM F ABBOTT, ERNEST W. MILNE, M.B., ARTHUR J. H. BOYTON, CLARENCE B. DOBELL, M.D., FRANCIS A. HORT, M D., IAN CAMPBELL, HARRY CRICHTON, M.D., THOMAS FEARNHEAD, CHARLES L. CHAIK, FRANK L. UNDERWOOD, EVERARD M. LE POER POWER, MARTIN REMERS, GEORGE B. BROWN, M.B., DUNCAN MACN. CALLENDER, M.B, F.R.C.S.E., LANCHLAN ROSE, M.D., JOHN BROWN, M.D., WILLIAM D. KNOCKER, M.B., JOHN M. MACPHAIL, M.D., GEORGE A. JELLY, F.R.C.S.E., WILLIAM KIRK, M D., CHARLES F. PRIDHAM, ROBERT M. FORDE, THOMAS P. GRAY, M.D., JOHN R. H. ROSS, M.B., ANTHONY A. COOPER, JOHN M. TWENTYMAN, M.B., ERNEST M. ROOKE, CHARLES A. FARRELL, MARSHALL HALL, ALFRED E. CARSBERG, M.D., REGINALD W. T. CLAMPETT, M.B., GEORGE H. S. LETCHWORTH, FRANCIS S MITCHELL, CLAUDE E. W. WILMOT, M.D. EDWARD C. WALLACE, ROBERT M. CLARKE, M.B., ROBERT M. CHANCE, M.D., HAROLD A. UPWARD, M.B., HENRY H. CLARKE, M.D., GEORGE M. ADAM, M.B., ERNEST V. HUNTER, JOHN B. MASON, M.B., CUTHBERT J. BUTLER, BENJAMIN SWEETER, M.B., HENRY H. K. SPARROW, WILLIAM LEGGETT, M.D., JOHN T. HURST, M.B., BENJAMIN B. FERRAR, M.D., ROBERT BUCHANAN, M.B., WILLIAM W. BANHAM, JOHN H. BLAKENEY, ROBERT S. DEWAR, M.B., CYRIL H. T. ILOTT, M.B., GEORGE M. ELLIOTT, M.B., JAMES A. R LEE, ALEXANDER C. PROFEIT, M.D., ROBERT A. G. WHITING, FIFE SLATER, M.B., ISAAC A. DAVIDSON, M.D., NORMAN G. W. DAVIDSON, ROBERT M. MACKAY, M.B., STANLEY J. A. BEALE, M.B., EDWARD A. EVANS, WILLIAM MACDONALD, M.D., THOMAS A. FULLER, M.B., RALPH C. FULLER, FREDERICK M KIRWAN, WILLIAM E. COOKE, M.D., WILLIAM H. HOOTON, GEORGE F. HOLT, FRANK J. DUNNE, M.B., ALEXANDER J. CAMPBELL, M.D., FINLAY S. CAMPBELL, M.D , ANDREW A. RUTHERFORD, M.B., DAVID MCK. REID, M.D., HENRY H. ROBINSON, GERALD I. MORIARTY, M B., HUGH T PRINCE, AUGUSTUS W. TABUTEAU, F.R.C.S.I., CYRIL W. JENNER, JOHN H MASON, M.B , WILLIAM W. DICKSON, M B., JOHN S. H. LEWIS, M.D., REDCLIFFE N. SALAMAN, M.D., JOHN T. MCCONKEY, CHARLES A W. POPE, M B., WALLACE T. HEDLEY, M.B., EDWARD H. P. BRUNTON, THOMAS STRAIN, M.D., ANDREW G. R. RITCHIE, M.B., GEORGE A SIMPSON, DANIEL COWIN, M.B., WILLIAM S. LANGWORTHY, ROBERT RICHARDS, WILLIAM C. GAVIN, M.B., JOHN M. POOLEY, EDMUND W. LYNCH, WILLIAM A. ALEXANDER, M.B., PERCY E. MIDDLETON, WILFRED E. BURROWS, M.D., WALTER SALISBURY, M.B., HERBERT J. HICKIN, M.B., FRANK BRICKWELL, M.B., ALEXANDER E. CAMPBELL, M.B., CHARLES J. ARMSTRONG-DASH, M D., ERNEST G. KLUMPP, M.B., VICTOR H. MASON, M.B., IAN MACFARLANE, M B , HENRY E. O'BRIEN, GEORGE N. LORIMER, M.B., CLETUS MCSHANE, M.B., MATTHEW E. ROBINSON, M.B., HUGH N. M. PUCKLE, M.B., REGINALD M. CLARKE, M.B., JOHN W. FARRAR, M.B., ALAN T. ROBERTS, M B., GEORGE D. K. WALDRON, M.B., JAMES I. M. JAMIESON, M B., WILLIAM E. GIBLIN, M.B., WILLIAM A. EDWARDS, M.B., DONALD F. FINLAY, M.B., LESLIE J. JARVIS NYE, M.B., LIONEL B. DALY, M B., FRANCIS E. KEANE, M.B., GEORGE A. BIRNIE, M.B., OSWALD BARTON, M B., ALEXANDER H. D. SMITH, MICHAEL T. MACMAHON, M.B., Captain CHARLES F. WHITE, M.B., 6th Battalion Cheshire Regiment, NEIL CAMPBELL, M.B., LORNE B. GRAHAM M.B., PERCY H. DELAMERE, ARTHUR L. THORNLEY, M.B., ARTHUR H. PRIESTLEY, M.B., JAMES R. ROBERTSON, JOHN H. MOIR, M.D., ARTHUR THOMSON, M.B., ARTHUR W. HARE, M.B., ALEXANDER M. COWIE, M.B., REGINALD N. WEEKES, LINDSEY W. BATTEN, CHARLES H. W. MCCULLAGH, M.D., ALFRED D. BIGLAND, M.D., CYRIL M. WILLMOTT, ALEXANDER FISHER, M.B., JOSEPH MCGOWAN, M.D., EDWARD MAPOTHER, M.D., F.R.C.S., GEORGE H. WOOD, M.B., PHILIP N. VELLACOTT, M.B., F.R.C.S., NORMAN S. GILCHRIST, M.D., GUY B. COURTNEY, M.D., FREDERICK J. BLACKLEY, M.D., CHARLES H. NEWTON, M.B., ROBERT MCC. SERVICE, M.D., JOHN PORTER, M.B., FREDERICK J. PIERCE, ROBERT J. MERSON, M.B., FREDERICK W. S. STONE, JOHN E. GETHING, M.B., WILLIAM A. G. RUSSELL, M.B., LANGFORD G. DAVIES, M.B., JAMES H. ROBERTSON, M.B., THOMAS S MCINTOSH, M.D., ROBERT B. DEBENHAM, JOHN C. SALE, JOHN SCOTT, M B., THEODORE F. DILLON, M.B., HERBERT M. SPOOR, M.B., HERBERT F. NOLAN, WALTER H. B. MACDONALD, HUGH H. MOFFAT, ALEXANDER WAUGH, M.B., EDWIN FRYER, GEORGE H. DARLINGTON, M B., FREDERICK G. THOMPSON, M B., FRANK G. WRIGLEY, M.D., JAMES H. MARSHALL, M.B., ARTHUR L. WEAKLEY, M.B., F.R.C.S.Edin., VICTOR J. BATTESON, GUY S. GOODWIN, M.D., JOHN ROWAT, M.D., EVAN L. HICKEY, M.D., JAMES J. ROBB, M.D., ALPHONSUS MCGRATH, M.B., WILLIAM C P. BARRETT, M.B., ARTHUR M. WARWICK, M.B., BERTRAM E. WRIGHT, M.B., CRAWFORD S. CRICHTON, M.D. THOMAS L. WORMALD, M.D., WILLIAM G. HOPKINS, FRANCIS CHARLESWORTH, M.B., GEORGE S. APPLEGATE, ROBERT M. WALKER, M.B , ARTHUR H. BUTCHER, ARTHUR E. DRUITT, HERBERT A. HANCOCK, MICHAEL J. PETTY, M.B., F.R.C S., RICHARD KENEFICK, M B., GEORGE R. LIPP, M.B., JOHN W. N. ROBERTS, M.B., TOM STANSFIELD, M.B., WILBERFORCE J. J. ARNOLD, M.B., WILLIAM CARNES, GERALD W. STONE, RICCARDO STEPHENS, M.B , JAMES C. WAITHAM, M D., GEORGE B. PRICE, M.D., WILLIAM R. ETCHES, M.D., GEOFFREY W. THOMPSON, M.D., HENRY C. THORP, M.B., WILLIAM A. SHANN, M.B., CUNISON C. FINLATER, M.D., RALPH P. WILLIAMS, M D., WILLIAM P. TAYLOR, NORMAN GRELLIER, HUGH S. DAVIDSON, M.B., F R.C.S.Edin., TOM E. FERGUSON, JOHN FORBES, M.B., DAVID JOHNSON, M.B., JAMES CHARLES MARTIN.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN PHILIP N. BUTTON resigns his commission on appointment as Temporary Surgeon, Royal Navy.

Lieutenant JAMES MCCUSKER is dismissed from His Majesty's service by sentence of a general court-martial.

Lieutenant JAMES T. CAMERON resigns his commission.

Lieutenants confirmed in their rank: WILLIAM T. HARE, JOHN D. MACCORMACK, HENRY R. SHEPPARD, DONALD C. MACDONALD.

To be Lieutenants on probation: FREDERICK E. FEILDEN, GEOFFREY B. EGERTON, M.B., PATRICK A. CLEMENTS, M.B.

Ex-Cadets of O.T.C. to be Lieutenants on probation: NEVILLE H. LINZEE, AUSTIN B. CLARKE, JAMES G. WILSON, ALFRED T. LOGAN, JAMES LAWSON, M.B., NORMAN B. GRAHAM, M.B., ARTHUR E. RICHMOND.

INDIAN MEDICAL SERVICE.

CAPTAIN R. H. BOTT, M.B., F.R.C.S., was appointed to be Professor of Midwifery, Medical College, Lahore, substantively *pro tempore* from September 17th to March 30th, 1915.

The Hon. Major J. C. ROBERTSON, C.I E., M.B., Sanitary Commissioner with the Government of India, is granted privilege leave for one month and twenty-one days with furlough on medical certificate for six months and ten days in continuation, with effect from April 13th, 1915.

Major W. W. CLEMESHA, M.D., Sanitary Commissioner, Bengal, is appointed to officiate as Sanitary Commissioner with the Government of India during the absence on leave of the Hon. Major Robertson.

Captain GREEN EDMUND MALCOLMSON, M.D. (resigned), has been reinstated in the service with effect from February 22nd.

The promotion to the present rank of Major ROBERT MCLAUCHLAN DALZIEL, M.B., F.R.C.S E., is antedated from January 29th, 1913, to July 29th, 1913.

The promotion to the present rank of Majors JAMES WOODS, M.B., and ROGER DURANT-WILLCOCKS, M.B , is antedated from January 29th, 1914, to July 29th, 1913.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

London Mounted Brigade Field Ambulance.—Captain WILLIAM P. THOMSON, M.D., to be temporary Major.

1st London (City of London) Sanitary Company.—DANIEL M. TAYLOR, M.D., to be Lieutenant.

3rd London Sanitary Company.—To be Lieutenants: EDWIN J. MESSENT, ARTHUR G. WHITFEILD, OWEN H. PETERS, M.B.

4th London General Hospital.—FRANCIS W. TUNNICLIFFE, M.B , to be Captain, whose services will be available on mobilization.

5th London Field Ambulance.—Captain JOHN H. DIXON, M.D., from London Mounted Brigade Field Ambulance, to be Captain.

1st Home Counties Field Ambulance.—HENRY G. L. ALLFORD, late Captain Territorial Force Reserve, General List, to be Captain, temporary. WILLIAM T. HENDERSON, M.B., to be Lieutenant.

1st Southern General Hospital.—To be Captains whose services will be available on mobilization: GEORGE P. MILLS, M.B., ANDREW R. BEARN, M.D., F.R.C.S., ARTHUR A. R. GREEN. To be Lieutenant: WILLIAM A. STOKES.

3rd Southern General Hospital.—WILLIAM STOBIE, M.B., to be Lieutenant.

4th Southern General Hospital.—ROBERT JAQUES to be Captain whose services will be available on mobilization.

Eastern Mounted Brigade Field Ambulance.—VERNON M. WALLIS to be Lieutenant.

East Anglian Casualty Clearing Station.—JAMES MOWAT, M.B., late Fleet Surgeon R N. to be Major temporary. To be Lieutenants: ROBERT C. S. SMITH, M.B., WILLIAM J. DEIGHAN.

1st East Anglian Field Ambulance.—Lieutenant GILBERT C. GRAY to be temporary Captain.

2nd Eastern General Hospital.—HAROLD H. E. SCATLIFF (late Captain, Sussex R.G.A.), to be Captain whose services will be available on mobilization.

3rd East Anglian Field Ambulance.—Captain JAMES TURTLE to be temporary Major; JOHN N. ROBINS to be Lieutenant.

South Midland Casualty Clearing Station.—Major PEVERELL S. HICHENS, M.D., from Attached to Units other than Medical Units, to be Major.

1st North Midland Field Ambulance.—Lieutenant KENNETH B. CLARKE from Eastern Mounted Brigade Field Ambulance to be Lieutenant.

2nd Western General Hospital.—Captain WILSON H. P. HEY, M.B., F.R.C.S., is seconded for service with No. 18 Field Ambulance. R A.M.C., Special Reserve. Captain CHARLES ROBERTS, M.B., from the 1st East Lancashire Field Ambulance, to be Captain.

Welsh Border Mounted Brigade Field Ambulance.—Lieutenant WILLIAM S. SNELL resigns his commission.

1st Northern General Hospital.—To be Lieutenants: SYDNEY HAVELOCK, M.B , CHARLES H. KEAY, M.B., late Cadet Lance-Corporal, Durham University Contingent, Senior Division, O.T.C.

3rd Northern General Hospital.—To be Lieutenants: BALFOUR MCKEAN, M.D., ROBERT P. ANDERSON, M.B.

4th Northern General Hospital.—CHRISTOPHER W. SHARPLEY to be Lieutenant.

5th Northern General Hospital.—Captain BERNARD STRACEY, M.B.; from North Midland Casualty Clearing Station, to be Captain, whose services will be available on mobilization. Lieutenant-Colonel GEORGE C. FRANKLIN, F.R.C.S., relinquishes his commission.

1st East Lancashire Field Ambulance.—Captain CHARLES ROBERTS, M.B., is restored to the establishment.

2nd East Lancashire Field Ambulance.—GRAHAM STEVENSON, M.B., to be Lieutenant.

3rd East Lancashire Field Ambulance.—Lieutenant WILLIAM J. REID, M.B., to be Captain, and to remain seconded.

West Riding Casualty Clearing Station.—PETER MCEWAN, M.B., F.R.C.S.Edin., to be Lieutenant.

Northumbrian Casualty Clearing Station.—Captain WILLIAM SIMPSON, from the 1st Northumbrian Field Ambulance, to be Captain. HAROLD M. EVANS, M.D., late Surgeon-Captain 1st Norfolk Volunteers Artillery, to be Major, temporary. Second Lieutenant COLIN MEARNS, M.B., from Durham Light Infantry, to be Lieutenant.

2nd Northumbrian Field Ambulance.—To be Lieutenants: CECIL D. ROGERS, M B., JAMES G. HILL, M.B.

3rd Northumbrian Field Ambulance.—To be Lieutenants: ROBERT RAFFLE, M.B., JOHN S. HORN, M B.

Lowland Casualty Clearing Station.—Major JOHN MCKIE, M.B., from the 2nd Lowland Field Ambulance, to be Lieutenant-Colonel; Lieutenant GEOFFREY B. FLEMING, M.B., to be Captain.

Lowland Mounted Brigade Field Ambulance.—To be Lieutenants: JOHN R. HERBERTSON, M.B., STUART S. MEIGHAN, M.B., THOMAS C. HOUSTON, M.B

1st Lowland Field Ambulance.—Captain JOHN W. LEITCH, M.B., to be temporary Major.

Highland Casualty Clearing Station.—To be Lieutenants: JOSEPH E. MILNE, M D., CHARLES FORBES, M.B., ALEXANDER J. PRESSLIE, M B.

3rd Lowland Field Ambulance.—Lieutenant ARCHIBALD C McMASTER, M.B., to be Captain.

2nd Scottish General Hospital.—JAMES MILLER, M.D., F.R.C.P Edin., to be Captain, whose services will be available on mobilization.

Highland Mounted Brigade Field Ambulance.—Captain JOHN W. MACKENZIE, M.D., to be temporary Major. Lieutenants LACHLAN M V. MICHELL, M.B., and ALEXANDER V. LEE, M.D., to be temporary Captains. G. M. McLEOD to be Lieutenant.

Sanitary Service.—ARTHUR H. LOWE, M.B., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—Lieutenant PERCIVAL T. RUTHERFORD to be Captain. Lieutenant JOHN D. STALEY is dismissed from His Majesty's service by sentence of a general court-martial. Lieutenant LOUIS B. STRINGER resigns his commission. The announcement of the appointment of CECIL R. HARPER as Lieutenant, which appeared in the *London Gazette* of March 1st is cancelled. To be Lieutenants: THOMAS D. BELL, THOMAS PORTER, M.B., EDMUND H. GONIN, M.D., EDWARD P. DAWES. Lieutenant ISAAC B. BERNSTEIN resigns his commission.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN the ninety-six largest English towns 8,952 births and 6,022 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 19.9, 19.0, and 17.4 per 1,000 in the three preceding weeks, further fell to 17.3 per 1,000 in the week under notice. In London the death-rate was equal to 18.2, against 21.1, 20.3, and 18.7 per 1,000 in the three preceding weeks. Among the ninety-five other large towns the death-rate ranged from 8.4 in Blackpool, 8.9 in Carlisle, 9.2 in Norwich, 9 3 in Southend, 10.2 in Enfield, and 10.3 in Ealing and in Derby, to 23.5 in Cambridge and in West Hartlepool, 23.8 in St. Helens, 23.9 in Sunderland, 24.0 in West Bromwich, 25.6 in Wigan, and 30.5 in Middlesbrough. Measles caused a death-rate of 3.4 in Sunderland, 3.7 in Edmonton, 3 8 in Wolverhampton, 4.0 in Barrow, 4.1 in Middlesbrough, 4.3 in Merthyr Tydfil, 5.0 in Walsall, 5.3 in West Bromwich, and 6.9 in Northampton; whooping-cough of 1.3 in Southampton, 1.5 in Walthamstow, 1.6 in Middlesbrough, 1.8 in Great Yarmouth, 2.0 in Wakefield, 2.4 in Rotherham, 2.6 in St. Helens, 3.5 in Stockton on-Tees, and 5.7 in Wigan; and diphtheria of 1.1 in Stoke-on-Trent and 1.2 in Leyton. Two fatal cases of small-pox were registered in Bristol, but none in any other of the ninety-five large towns. The causes of 35, or 0.6 per cent, of the total deaths were not certified either by a registered medical practitioner or by a coroner; of this number, 5 were recorded in Birmingham, 4 in Liverpool, 3 each in West Bromwich and Gateshead, and 2 each in Stoke-on-Trent, Preston, and Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,505, 2,422, and 2,369 in the three preceding weeks, rose to 2,377 on Saturday, May 1st; 316 new cases were admitted during the week, against 275, 263 and 259 in the three preceding weeks.

In ninety-six of the largest English towns, 8,776 births and 5,383 deaths were registered during the week ended Saturday, May 8th. The annual rate of mortality in these towns, which had been 19.0, 17.4, and 17.3 per 1,000 in the three preceding weeks, further fell to 15.5 per 1,000 in the week under notice. In London the death-rate was equal to 16.0 per 1,000, while among the ninety-five other large towns it ranged from 6.1 in Lincoln, 7.7 in Enfield, 8.1 in Southend, 8.2 in Hornsey and in Smethwick, 8 7 in Wimbledon, and 9.0 in Willesden, to 22.7 in Gateshead, 23.7 in Barrow, 23.8 in Walsall, 24.3 in West Hartlepool, 24.5 in Wigan, and 25.2 in Middlebrough. Measles caused a death-rate of 2.4 in Salford, 2.8 in Sheffield, 3.1 in Tottenham and in St. Helens, 3.5 in Darlington, 4.0 in Northampton and in West Hartlepool, 4.4 in Walsall, 4.5 in Middlesbrough, and 6.3 in Barrow; scarlet fever of 1.2 in Middlesbrough; whooping-cough of 1.2 in Willesden and in Walthamstow, 1.4 in South Shields, 1.7 in Reading, 2.0 in Swindon and in Aberdare, and 3.4 in Wigan; and diphtheria of 2.7 in Great Yarmouth. The mortality from enteric fever showed no marked excess in any of the large towns and no fatal case of small-pox was registered during the week. The causes of 32, or 0.6 per cent, of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 9 were recorded in Birmingham, 4 in Liverpool, and 2 each in St. Helens, Southport, Warrington, Sunderland, and South Shields. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,422, 2,369, and 2,377 at the end of the three preceding weeks, rose to 2,384 on Saturday, May 8th; 307 new cases were admitted during the week, against 263, 259, and 316 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,285 births and 909 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 20.8, 20.9, and 18.5 per 1,000 in the three preceding weeks, rose to 20.2 in the week under notice, and was 2.9 per 1,000 above the rate recorded in the ninety-six large English towns. Among the several towns the death-rate ranged from 12.8 in Kirkcaldy, 12.9 in Clydebank, and 14.9 in Hamilton, to 21.3 in Coatbridge, 23.3 in Leith, and 25.0 in Dundee. The mortality from the principal infective diseases averaged 3.3 per 1,000, and was highest in Dundee and Leith. The 437 deaths from all causes in Glasgow included 42 from whooping-cough, 25 from measles, 3 from scarlet fever, 2 from diphtheria, and 1 from infantile diarrhoea. Fourteen deaths from whooping-cough were recorded in Dundee, 8 in Edinburgh, 4 in Paisley, and 4 in Greenock; from measles, 9 deaths in Aberdeen; from scarlet fever, 2 deaths in Leith and 2 in Clydebank; and from diphtheria, 2 deaths in Leith and 2 in Motherwell.

In the sixteen largest Scottish towns 1,231 births and 815 deaths were registered during the week ended Saturday, May 8th. The annual rate of mortality in these towns, which had been 20.9, 18.5, and 20.2 per 1,000 in the three preceding weeks, fell to 18.1 in the week under notice, but was 2.6 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 10.2 in Kirkcaldy, 11.7 in Leith, and 11.8 in Coatbridge, to 20.3 in Edinburgh, 20.6 in Perth, and 24.0 in Greenock. The mortality from the principal infective diseases averaged 3.2 per 1,000, and was highest in Falkirk and Clydebank. The 380 deaths from all causes in Glasgow included 35 from measles, 34 from whooping-cough, 6 from infantile diarrhoea, 3 from scarlet fever, and 2 from diphtheria. Ten deaths from whooping-cough were registered in Edinburgh, 9 in Dundee, and 3 in Greenock; from measles, 7 deaths in Aberdeen and 2 in Clydebank; from scarlet fever, 2 deaths in Aberdeen and 2 in Paisley; and from diphtheria, 2 deaths in Paisley and 2 in Motherwell.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, April 24th, 692 births and 521 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 701 births and 515 deaths in the preceding period. These deaths represent a mortality of 22.4 per 1,000 of the aggregate population in the districts in question, as against 22.1 per 1,000 in the previous period. The mortality in these Irish areas was therefore 5.0 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 29.8 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 26.1 (as against an average of 25.0 for the previous four weeks), in Dublin city 26.7 (as against 25.4), in Belfast 20.3 (as against 21 8), in Cork 23.1 (as against 25.1), in Londonderry 22.8 (as against 18.1), in Limerick 16.2 (as against 21.0), and in Waterford 15.2 (as against 25.6). The zymotic death-rate was 1.8, as against 1.4 in the previous period.

During the week ending Saturday, May 1st, 658 births and 444 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 692 births and 521 deaths in the preceding period. These deaths represent a mortality of 19.1 per 1,000 of the aggregate population in the districts in question, as against 22.4 per 1,000 in the previous period. The mortality in these Irish areas was therefore 1.8 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28.3 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 19.0 (as against an average of 24.8 for the previous four weeks), in Dublin city 19.3 (as against 25.1), in Belfast 19 8 (as against 21.6), in Cork 17.7 (as against 24.3), in Londonderry 24.0 (as against 15.2), in Limerick 19.0 (as against 20.0), and in Waterford 17.1 (as against 26.6). The zymotic death-rate was 1.5, as against 1.8 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM: JAFFRAY BRANCH OF THE GENERAL HOSPITAL.—Resident Medical and Surgical Officer. Salary, £150 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £110 per annum, with £5 laundry allowance.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—(1) Resident Medical Officer; (2) House-Surgeon. Salary, £300 and £100 per annum respectively.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £170 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for the Boscombe Branch. Salary, £100 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BRIGHTON EDUCATION COMMITTEE.—Temporary Junior Schoo Doctor. Salary, £350 per annum.

BRISTOL GENERAL HOSPITAL.—Second House-Physician, House-Surgeon, and Casualty House-Surgeon; also Resident Obstetric Officer. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer or Locumtenent. Salary, £200 per annum.

BURNLEY VICTORIA HOSPITAL.—House-Surgeon. Salary, £115 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

CROYDON BOROUGH HOSPITAL.—(1) Senior Resident Medical Officer and Bacteriologist to the Hospital and Assistant Medical Officer of Health. (2) Assistant Resident Medical Officer. Salary, £200 and £150 per annum respectively.

DENBIGH: NORTH WALES COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £220 per annum, rising to £300.

DERBY COUNTY ASYLUM, Mickleover.—Medical Superintendent. Salary, £550 per annum.

DERBYSHIRE EDUCATION COMMITTEE.—Three Assistant School Medical Officers. Salary, £400 per annum.

DUMFRIES: CRICHTON ROYAL MENTAL HOSPITAL.—Temporary Assistant Physician. Salary, £5 5s. a week.

EXETER CITY.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary, £300 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—House-Physician. Salary, £150 per annum.

GRAVESEND HOSPITAL.—House-Surgeon.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—House-Surgeon. Salary, £60 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—Resident Medical Officer.

HONG KONG UNIVERSITY.—Professor of Physiology. Salary, $500 a month.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £50 for six months and £2 10s. washing allowance.

HULL: ROYAL INFIRMARY.—(1) House-Physician. (2) Assistant House-Surgeon. (3 Casualty House-Surgeon. Salary, £105, £100, and £80 respectively.

IPSWICH BOROUGH MENTAL HOSPITAL.—Resident Medical Superintendent. Salary, £400 per annum.

KILKENNY UNION.—Medical Officer for Tullaroan Dispensary District. Salary, £130 per annum, rising to £150, and vaccination fees.

KINCARDINE PARISH.—Medical Officer. Salary, £135 per annum.

KING EDWARD VII SANATORIUM, Midhurst.—Second Assistant Medical Officer. Salary, £150 per annum, rising to £200.

LEEDS GENERAL INFIRMARY.—(1) Resident Aural Officer; (2) Resident Casualty Officer. Salary, £100 and £125 per annum respectively.

LIVERPOOL PARISH.—Resident Assistant Medical Officer for the Brownlow Hill Institution. Salary, £300 per annum.

LORD MAYOR TRELOAR CRIPPLES' HOSPITAL, Alton.—Two Assistant Resident Medical Officers.

MANCHESTER: ANCOATS HOSPITAL.—Two Qualified Residents.

MANCHESTER CHILDREN'S HOSPITAL.—Medical Officer for the Out-patients' Department. Salary, £180 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

MILE END OLD TOWN GUARDIANS.—Assistant Medical Officer. Salary, £75 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £150 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—(1) Resident Medical Officer. (2) Assistant Resident Medical Officer. Salary, £110 and £90 per annum respectively.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £250 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—House-Surgeon. Salary, £150 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary, £50 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Assistant Physician.

ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES, near Birmingham.—Assistant Resident Medical Officer. Salary, £250 per annum.

ROTHERHAM HOSPITAL.—Senior and Junior House-Surgeons. Salary, £200 and £125 per annum respectively.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Hunterian Professors and Arris and Gale Lecturers.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident Medical Officer.

ST. PANCRAS DISPENSARY, 39, Oakley Square, N.W.—Resident Medical Officer. Salary, £300 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £75 per annum respectively.

SCARBOROUGH BOROUGH.—Medical Officer of Health. Salary, £400 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon. (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD: WHARNCLIFFE WAR HOSPITAL.—Resident Medical Officers.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOMALILAND PROTECTORATE.—Medical Officer. Salary, £400 per annum, rising to £500.

SOUTHAMPTON PARISH INFIRMARY.—Resident Assistant Medical Officer. Salary, £200 per annum, rising to £250.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Lady House-Surgeon. Salary, £150 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House-Surgeon. Salary, £250 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £150 per annum.

WALSALL AND DISTRICT HOSPITAL. Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—House-Physicians. Salary, £220 and £100 per annum.

WEST HAM UNION.—(1) Fourth Assistant (Lady) Medical Officer at the Infirmary; (2) Lady Assistant Medical Officer at the Workhouse. Salary, £160 and £140, rising to £180 and £160 per annum respectively.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £150 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer (Lady). Salary, £150 per annum.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer. Salary, £250 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

BLIGH, John M., M.D., Honorary Assistant Physician to the David Lewis Northern Hospital, Liverpool.

CAMMOCK, Wm. R., M.B., F.R.C.S.Edin., Surgeon to the Ear, Nose, and Throat Department, Oldham Royal Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

SOWRY.—On May 6th, 1915, at Newcastle, Staffs, the wife of Geo. H. Sowry, M.D., F.R.C.S., a son.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
General Meeting of Fellows, 5 p.m.
SECTION OF PSYCHIATRY, 6 p.m.—Annual General Meeting.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF THE HISTORY OF MEDICINE, 5 p.m.—Annual General Meeting. Papers:—Dr. George C. Peachey: William Bromfield, Surgeon. Dr. Charles Mercier: Paracelsus and Van Helmont. Dr. Hector A. Colwell: Lionel Lockyer. Exhibits: Mr. Macleod Yearsley: Two documents concerning Touching for the King's Evil.

THURSDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF DERMATOLOGY.—4.30 p.m., Exhibition of Cases. 5 p.m., Annual General Meeting.

FRIDAY.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W., 8.30 p.m.—Papers: (*a*) An Epidemic of African Tick Fever among the Troops in British Somaliland; (*b*) American Leishmaniasis: (*c*) Treatment of Bilharziasis by Thymo-benzol; (*d*) Treatment of Ankylostomiasis by Milk of Higueron.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Course will be given next week:

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MAY.
14	Fri.	• Bournemouth Division, Annual Meeting, Library of Medical Society, 3.30 p.m.
		City Division, Annual Meeting, Balfour Hall, 9.30 p.m.
		Marylebone Division, Annual Meeting, 108, Harley Street, W., 5.30 p.m.
15	Sat.	Scottish Committee, North British Station Hotel, Edinburgh, 12.30 p.m.
19	Wed.	Central Division, Annual Meeting, Medical Institute, Birmingham, 3.30 p.m.
		Dorset and West Hants Branch, Annual Meeting, Weymouth, 3 p.m.
		JUNE.
2	Wed.	Kent Branch, Tunbridge Wells, 4.30 p.m. Tea, 4 p.m.; Dinner, 7.30 p.m.
9	Wed.	London: Journal Committee, 2 p.m.
		London: Medico-Political Committee, 2 p.m.
16	Wed.	London: Conference of Local Medical and Panel Committees.
23	Wed.	London: Finance Committee, 2 p.m.
30	Wed.	London: Council.
		JULY.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 22ND, 1915.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs.

BY ORDER.

MATTERS REFERRED TO DIVISIONS.

ANNUAL REPRESENTATIVE MEETING AT LONDON,

JULY 23rd AND FOLLOWING DAYS.

NOTICES OF MOTION.

THE following Notices of Motion by the Divisions and Branch stated have been received for consideration by the Annual Representative Meeting of the Association, to be held at London on Friday, July 23rd, 1915, and following days:

A.—AFFECTING MEMORANDUM, ARTICLES AND BY-LAWS OF ASSOCIATION.

(1) *Policy of Association.*

By ROCHDALE:

That any resolution of a Division relating to matters of medical politics within the area of that Division shall, subject to veto by the Council of the Association to be exercised only on the advice of the Council of the Branch to which the said Division belongs, be deemed the policy of the Association within the area of such Division.

(2) *Question of Subscriptions to Association and to Oversea Branches.*

By NEW ZEALAND:

That steps be taken for amendment (by footnote or otherwise) of By-law 11 so as to make it clear that members of the Association resident outside the United Kingdom may be called upon to pay, in addition to the 25s. subscription payable by them to the Association under that By-law, a special subscription to their Branch under By-law 15.

(3) *Question of a Standing London Committee.*

By WESTMINSTER:

That in view of the large number of members and potential members within the area of the Metropolitan Counties Branch and in view of the varying and special conditions prevailing, for the purposes of effectively organizing the Branch the time has now arrived for the appointment of a Special Committee, to be called the "London Committee," on the same lines as the Irish and Scottish Committees.

B.—AFFECTING ADMINISTRATION OF ASSOCIATION.

(4) *Membership of Association.*

By PLYMOUTH:

That arrangements be made whereby the Medical Secretary or his Deputy shall visit the Divisions, to take such action as may be considered advisable to increase the membership of the Association, and especially by holding meetings and by personally canvassing non-members.

C.—AFFECTING POLICY OF ASSOCIATION.

(5) *Duties of School Medical Officer.*

By NORTH-EAST ESSEX:

That, without special payment, treatment should not be included in the duties of the School Medical Officer.

By Order,

ALFRED COX,
Medical Secretary.

May 19th, 1915.

British Medical Association.

THE WAR EMERGENCY.

STRATFORD.

IN response to a circular notice sent to every medical practitioner in the area of the Stratford Division, a meeting was held at the Stratford Town Hall on April 21st, when seventy-two local practitioners attended. The following officers of the R.A.M.C. were present: Colonels Harrison, Simpson, and Hamilton; Majors Swain and Galloway (T.F.). Some information was given as to the possible military requirements in the area, and as to the status and rate of pay offered to civilian practitioners accepting service. The Executive Committee of the Stratford Division was appointed the local organization to deal with the matter. The Executive Committee on April 23rd resolved to issue a circular letter and list of questions to every practitioner in the area. A further meeting of the Committee was held on May 7th to consider the replies received. Out of just over 200 practitioners in the area 24 were already away on active service, and 14 will be available for whole-time service if suitable arrangements could be made for the conduct of their practices during absence. At the date of the meeting 98 others had replied, the great majority of whom were willing to undertake afternoon work at any military hospital in the area, and to help to

undertake the local work of any practitioner away from home on service. Later replies received since the meeting bring the total up to 114, of whom 60 are willing to do absentees' work (14 already doing such work), 72 to do afternoon work at a military hospital with a minimum of two afternoons a week, 10 for morning work, and 12 were uncertain as to their hours. The special work undertaken was—surgery 15, eye work 3, anaesthetics 9, *x* rays 6, and 1 each for sanitation, psychotherapy, and pathology.

WEST DORSET.

THE annual meeting of the West Dorset Division was held at Dorchester on April 27th, when the officers were re-elected.

At a general meeting of all practitioners in the Division subsequently held to discuss the medical emergency which had arisen owing to the war, the following resolutions were passed:

That this meeting of medical men, representing the West Dorset Division of the British Medical Association, is willing and anxious to help the military authorities at the present crisis. They ask the military authorities to state definitely their requirements in the various districts, and on receipt of such information the local medical men will meet and, to to the best of their ability, make the necessary arrangements to carry out these requirements.

That the remuneration for all classes of military work be at the rate of £1 1s. per diem, irrespective of the time required, with mileage at 1s. per mile.

PLYMOUTH.

A MEETING, convened by the Plymouth Division of the British Medical Association, was held at the Athenaeum, Plymouth, when Mr. R. Jaques, chairman of the Division, presided. Mr. Noy Scott having explained the objects of the meeting, Colonel Jones, Assistant Director of Medical Services, replied to questions. A committee was appointed to consider the replies received to a circular to be issued to medical practitioners asking whether they were prepared to give whole- or part-time service, and to consider what could be done to provide for the practice of those practitioners who volunteered.

NORTHAMPTONSHIRE.

A WELL-ATTENDED meeting of the Northamptonshire Division was held at the Northampton General Hospital on May 4th, to which non-members were also invited. Mr. G. H. Percival was in the chair. Colonel H. W. Murray, A.D.M.S. Eastern Command, was present, and addressed the meeting. Drs. Linnell, Tolputt, Cropley, Cooke, Percival, Churchouse, O'Rafferty, Robb, Audland, McCrindle and Baxter were appointed a committee to deal with the question of recruiting for commisslons in the R.A.M.C.

At a subsequent meeting of this committee it was agreed to send a circular to the practitioners in the county stating that the committee was prepared to make arrangements to safeguard the interests of absentee practitioners and carry on their work, and to inquire whether they were willing to undertake (*a*) a whole- or part-time service, (*b*) a portion of the work of neighbouring practitioners absent on service, (*c*) or work anywhere for a period of one or more months for R.A.M.C. men temporarily incapacitated.

LEICESTER AND RUTLAND.

A MEETING of the Leicester and Rutland Division of the British Medical Association was held at the 1/5th Northern General Hospital, Leicester, on May 11th, when the Vice-President, Dr. Pike, took the chair, in the absence of the President, Mr. McAllister-Hewlings, in France. Dr. Pike, having briefly explained the objects of the meeting, Surgeon-General Kenny, D.D.M.S. Northern Command, stated the urgent need for more medical and surgical assistance both at home and with the forces abroad, and pointed out the various ways in which assistance could be rendered by those present. Mr. C. J. Bond also spoke, emphasizing the necessity of prompt action. The Honorary Secretary, Dr. Wallace Henry, asked those who could see their way to act either as whole-time officers, or who could give part-time service, to communicate with him as soon as possible.

DUDLEY.

A MEETING of the Dudley Division of the British Medical Association was held at Stourbridge on April 15th, when Dr. W. Kirkpatrick was in the chair. A communication was read from the Medical Secretary emphasizing the need for more medical men to take up temporary commissions in the R.A.M.C., and of the need for more doctors to give part-time service. During the discussion which followed it was reported that ten practitioners had left, or were about to leave, their practices to take up military service, while others were rendering part-time service in various capacities. The Chairman and Secretary, with Drs. Dudley, Clarke, and H. W. Plant, were appointed a committee to draw up a statement of action of the Division for publication in the local press. It was decided to send to the Worcestershire County Council and Education Committee, the Staffordshire Insurance and Education Committees, and the Dudley Insurance Committee a resolution urging the desirability of affording facilities for whole-time medical officers employed as tuberculosis officers and school medical inspectors being released for such service.

MID-CHESHIRE.

THE subcommittee appointed by the Mid-Cheshire Division to deal with the matter of the war emergency has issued the following circular to the medical profession in the district, together with a form of undertaking to be signed by the practitioner.

BRITISH MEDICAL ASSOCIATION: MID-CHESHIRE DIVISION.

Clairville, Altrincham,
April 21st, 1915.

Dear Sir,—The War Office has made, through the British Medical Association, a most urgent appeal to the profession for medical men to serve with the forces.

Several medical men in the area of this Division are offering themselves and have asked the Division to help them in making arrangements as to carrying on their work while they are away and restoring their practices to them intact on their return.

At the last meeting of the Division a subcommittee was appointed to consider the matter, and this subcommittee has decided to ask every medical man in practice in this area to undertake that he will attend any patients of a man on service for him during his absence, and that he will refuse to attend any patients he thus comes in contact with as his own patients for at least six months after the absentee's return.

It is arranged that all fees for confinements attended for an absentee shall belong to the medical man who attends the case, and that all other fees paid for work done shall be equally divided between the absentee and the doctor who has acted for him.

The Subcommittee realizes that much extra work will be thrown on practitioners, and it is clear that any doctor must have the right to refer such patients of the absentee as he cannot find time to attend to some other doctor.

The Subcommittee expects that no medical man will feel disinclined to assist his country and his professional friends who are making such a great sacrifice, and it therefore instructs me to ask you to sign the enclosed undertaking, and send it to me by return of post.—I am, Sir, faithfully yours,

(Signed) ARTHUR T. BLEASE,
Honorary Secretary.

Form of Undertaking.

BRITISH MEDICAL ASSOCIATION.

To the Honorary Secretary of the Mid-Cheshire Division.

Dear Sir,—I hereby promise on my word of honour that if any persons who are ordinarily patients of any medical man practising in this neighbourhood who is on active service with the forces, consult me during his absence, I will attend them for him (on the terms arranged by the Division's Subcommittee appointed for the purpose) and will refuse to act as their medical attendant on my own behalf from the date of his return until at least six months have elapsed. Also I will in every way do all in my power to safeguard the absentee's interests with the patients I attend for him, and to induce them to return to him when he resumes practice.

Signed.....

Date.....

Terms arranged are: Equal division of all fees, other than confinements, between the absentee and the doctor who attends the patient; the whole fee in the case of confinements to belong to the doctor who attends the case.

The following letter is sent to the member's patients, while the panel patients receive in addition the card printed on page 267:

Dear Sir,—You are no doubt aware that the War Office has recently issued a very urgent appeal for additional medical men to undertake military duty with the forces. I beg to inform you that I have considered it my duty to offer myself, and have been accepted for temporary medical service.

The British Medical Association has made arrangements under which any patient of mine may during my absence consult any medical man practising in this district under a definite agreement which includes the financial aspect, and also involves

an undertaking on the part of those whom my patients may consult, as to keeping my practice intact against my return.

Sincerely yours,

(Signed) .....

Card.

Patients on my insurance list must select one doctor on the panel, and no other, for the period of my absence; and it is desired that those who have already consulted me since January 1st, 1915, should call or send for their record card at my surgery before they receive any further treatment.

(Signed) .....

BARROW.

A MEETING of the Furness Division of the British Medical Association was held at Barrow on April 21st, when Dr. Parsons was in the chair.

Dr. Cross urged that all tuberculosis and school medical officers should be set free, in order to take commissions in the R.A.M.C. Drs. Wilson, Ware, Harper, Callaghan, Alexander, and Thompson were appointed a special war committee, and it was decided to ascertain how many medical men in the Furness area under 40 years of age were willing to take commissions in the R.A.M.C., and also what the medical practitioners over 40 years of age were prepared to do.

SCOTTISH COMMITTEE.

A MEETING of the Scottish Committee was held on May 15th at the North British Station Hotel, Edinburgh. In addition to the members of committee who were invited to the meeting, invitations were issued to the Deputy Director of Medical Services, the Presidents of the Edinburgh Colleges of Physicians and Surgeons, and of the Glasgow Faculty of Physicians and Surgeons, the Dean of the Faculty of Medicine, Edinburgh; Dr. Leslie McKenzie, of the Local Government Board; Dr. McVail of the Scottish Insurance Commission, and Dr. Norman Walker of Edinburgh, the Convener of the War Emergency Committee. There was a large attendance of members and of the invited guests. Dr. Cox, Medical Secretary, was in attendance, along with the Clerk of the Committee. Dr. Hamilton, of Hawick, Chairman of Committee, occupied the chair.

The principal question under consideration was the immediate need of the Royal Army Medical Corps for the provision of additional medical men for the army. Various points were brought up for consideration and discussion, and explanations given on these points by the Deputy Director of Medical Services (Surgeon-General Bourke) and by Dr. Cox. Thereafter the following resolution, proposed by Professor Harvey Littlejohn, and seconded by Dr. Livingston, was carried unanimously:

> That this general meeting, having heard from Surgeon-General Bourke the immediate needs of the Royal Army Medical Corps, resolves to undertake to provide, before June 7th next, at least 400 additional medical men for the army.

On the motion of Dr. Buist, seconded by Dr. Moorhouse, the following resolution was unanimously carried:

> That each Branch Secretary be informed of the proportion which his Branch is expected to contribute on the basis of the medical population.

The invited guests, with the exception of Dr. Norman Walker, then retired from the meeting. The Scottish Committee thereupon resumed consideration of the resolutions of the joint meeting and unanimously approved thereof. It was agreed to issue a circular letter to the Branches and Divisions calling attention to the present need for more medical men for the army, and urging Branches and Divisions to look upon the work of providing the additional men required as a national duty of the most important kind, and one which, if fulfilled successfully, would redound to the credit of the profession in Scotland.

Dr. Stevens (Edinburgh) moved the following resolution, which was seconded by Dr. Gordon, and carried unanimously:

> That tuberculosis officers, school medical officers, medical officers of health, Poor Law medical officers, prison medical officers, and all other Government medical officers willing to offer their services for the war, should be released during the war from the duties of their appointments, and that their interests in respect of these appointments should be safeguarded.

On the motion of Dr. Anderson, it was unanimously resolved:

> That the Committee should urge upon the Treasury the necessity of abandoning the keeping of records of those doctors who have offered their services with His Majesty's forces, and whose work is being carried on by neighbouring practitioners.

The following resolution, moved by Dr. Wishart Kerr and seconded by Dr. Macpherson, was unanimously adopted:

> That it be represented to the Scottish Insurance Commissioners that in the present crisis, and to enable practitioners to give adequate attention to the medical needs of the public, it is of great importance that members of the profession be relieved from much of the clerical work required under the National Insurance Act, including in particular the writing of weekly sickness certificates in chronic and long-continued cases.

EDINBURGH.

THE Executive Committee of the South-Eastern Counties Division of the Edinburgh Branch has issued a circular to members of the profession in the area inquiring whether the practitioners can give any assistance either by accepting commissions in the R.A.M.C. or by undertaking part-time service to troops stationed within a reasonable distance. Suggestions are set out with regard to the carrying on the practices of men who join for whole- or part-time services, and it is proposed that 50 per cent. of the fees received from patients should be allocated to the absentees and the remainder to belong to the doctor attending.

THE CALL IN RURAL DISTRICTS.

A GENERAL PRACTITIONER writes: I attended one day last week a meeting of the local Branch of the British Medical Association, where proposals were brought forward with respect to general practitioners taking up military work. I came away feeling that we had spoken a good deal, but that no very practical suggestion had been made so as to get the most out of the profession.

Let the War Office tell the British Medical Association how many men will be necessary; then let us as members of the Association submit ourselves to a form of conscription worked by the local Branches. In small country districts the medical work is, as a rule, done by two practitioners. If either of these at the present time mentions to his patients that he is contemplating applying for a commission, he is not called a noble fellow and patted on the back, but is at once met by the rejoinder, "And what about *us?* You can't leave us to the 'other man.' You needn't think we'll have the 'other man,'" and so on. Yet one knows that, while in winter the work requires the strenuous exertions of two men, it could be done in summer time with comparative comfort by one man. Now, suppose the Branches of the Association went over their districts and marked out those where one man could be spared, he (it would in a general way be the younger practitioner) could go to his patients, and (parodying the song) say, "I don't want to leave you, but I really *have* to go," showing the requisition signed by the chairman of the Branch; then the patients would rise to the occasion, and say good-bye with quite different feelings. Similarly, in popular resorts where there are many doctors, a considerable number might be called on without injury to any one.

One other point. Many medical men would prefer to pay handsome fees to a locumtenent rather than be under any obligation to any of their neighbours. At the present time, as a matter of course, there are no (able-bodied) male locumtenents that one would think worthy of being entrusted with their practices, but one would like to know how many lady practitioners could be drawn on. A register of these ought to be kept so that application could be made for securing a locumtenent, and lady doctors should at the present time be discouraged in every way from taking up practice on their own account.

Meetings of Branches and Divisions.

ASSAM BRANCH.

AT the annual meeting held at the Berry White Medical School, Dibrugarh, on January 10th, with Dr. MCCOMBIE, President, in the chair, the following were elected officers for 1915:

President: Dr. Macnamara.
Honorary Secretary: Dr. Murphy.
Council: Drs. Smythe, Winchester, Griffin, and Russell.
Representative on Representative Body: Dr. Witham.

LANCASHIRE AND CHESHIRE BRANCH:

GLOSSOP DIVISION.

THE annual meeting of the Division was held at Glossop on May 5th.

Election of Officers.—The following officers were appointed:

Chairman: Dr. Walker (Glossop).
Vice-Chairman: Dr. A. C. Nicol (Glossop).
Secretary and Treasurer: Dr. R. W. Bollans (Hadfield).
Representative to Branch Council: Dr. Mackenzie (Glossop).
Committee: Dr. W. J. Bowden (Glossop), Dr. J. Hadfield (Glossop).
Representative to Meeting of Representatives: Secretary, Ashton-under-Lyne.

War Emergency.—It was decided that if any men could or would enlist in the R.A.M.C. means would be arranged to conduct and safeguard their practices whilst away.

METROPOLITAN COUNTIES BRANCH:

MARYLEBONE DIVISION.

The annual meeting of the Marylebone Division was held on May 14th, when Mr. N. BISHOP HARMAN was in the chair.

Annual Report of Executive Committee.—The annual report of the Executive Committee was approved, as also was the action of the executive in reducing the meeting of the Division to the minimum, and the circular letter for the recruiting for regimental medical officers.

Election of Officers.—The following were elected officers for the ensuing year:

Chairman: Mr. N. Bishop Harman.
Vice-Chairman: Mr. W. McAdam Eccles.
Honorary Treasurer: Dr. Comyns Berkeley.
Honorary Secretary: Mr. Edward D. Davis.
Representatives to the Representative Meeting: Dr. James Galloway, Dr. Francis W. Goodbody, Mr. N. Bishop Harman, Dr. Gordon J. Lane, Mr. Edward D. Davis.
Nominations for the Central Council: Messrs. Biggs, Buttar, Galloway, and F. J. Smith.
Nominations for Branch Council: President-elect, Mr. Atwood Thorne; Treasurer, Dr. C. O. Hawthorne; Vice-Presidents, Messrs. James Galloway, F. J. Allan, W. McAdam Eccles; Honorary Secretaries, Dr. R. E. Crosse and Mr. Bishop Harman.

Association Notices.

NOMINATIONS FOR COUNCIL, 1915 16.

ENGLAND AND WALES.

North of England, North Lancashire, and South Westmorland Branches:
Bolam, Robert Alfred, Professor, M.D., 3, Queen's Square, Newcastle-on-Tyne.

Yorkshire Branch:
Campbell, Henry Johnstone, M.D., F.R.C.P., 36, Manningham Lane, Bradford.

Lancashire and Cheshire Branch:
Goodfellow, Thomas Ashton, M.D., 60, Palatine Road, West Didsbury, Manchester.
Larkin, Frederic Charles, F.R.C.S., 54, Rodney Street, Liverpool.

East York and North Lincoln and Midland Branches:
(No nomination.)

Cambridge and Huntingdon, Essex, Norfolk, Suffolk, and South Midland Branches:
Wood, Orby Russell Morgan, M.B., Woolpit, Suffolk.

Birmingham and Staffordshire Branches:
Lucas, Albert, F.R.C.S., 9, Easy Row, Birmingham.

North Wales, Shropshire and Mid Wales, and South Wales and Monmouthshire Branches:
Brook, William Frederick, F.R.C.S., Longlands House, Swansea.

Metropolitan Counties Branch:
Biggs, Moses George, M.D., 101, Northcote Road, Battersea, S.W.
Brackenbury, Henry Britten, M.R.C.S., L.R.C.P., 21, Quernmore Road, Stroud Green, N.
Buttar, Charles, M.D., 41, Inverness Terrace, W.
Galloway, James, M.D., F.R.C.P., 54, Harley Street, W.
Greenwood, Major, M.D., LL.B., 243, Hackney Road, N.E.
Smith, Frederick John, M.D., F.R.C.P., 138, Harley Street, W.

Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches:
Parker, George, M.D., 14, Pembroke Road, Clifton, Bristol.

Dorset and West Hants and South Western Branches:
Smyth, William Johnson, M.D., The Bournemouth Hydro., Bournemouth, W.

Oxford and Reading and Southern Branches:
Green, James, M.R.C.S., L.R.C.P., Brandon House, Mile End, Portsmouth.

Kent, Surrey, and Sussex Branches:
Smith, Alfred Tennyson, M.D., "Shanklin," Orpington, Kent.

SCOTLAND.

Aberdeen, Northern Counties, Dundee and Perth Branches:
Gordon, John, M.D., 1, Rubislaw Terrace, Aberdeen.

Edinburgh and Fife Branches:
Hamilton, John Rogerson, M.D., Hawick.

Glasgow and West of Scotland Branch (Four City Divisions):
Adams, John, M.B., 1, Queen's Crescent, Glasgow.

Glasgow and West of Scotland (Five County Divisions), Border Counties and Stirling Branches:
(No return.)

IRELAND.

Connaught and South-Eastern of Ireland Branches:
(No return.)

Leinster Branch:
(No return.)

Munster Branch:
(No return.)

Ulster Branch:
Johnstone, Robert James, F.R.C.S., 14, University Square, Belfast.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

RETURN OF REPRESENTATIVES.

Honorary Secretaries of Divisions who have not yet forwarded to the Head Office the names and addresses, and dates of election, of the Representatives appointed by their Constituencies for 1915–16, are asked to forward me these particulars by the earliest possible date. Under the By-laws Representatives must be elected not more than nine months nor less than four weeks before the Annual Representative Meeting, and their names must be notified to the Head Office *by at latest July 2nd.* A Representative can if necessary be elected and instructed at one and the same meeting of the Constituency.

By Order,
ALFRED COX, *Medical Secretary.*

May 19th, 1915.

BRANCH AND DIVISION MEETINGS TO BE HELD.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary, Chillingworth House, Tunbridge Wells, gives notice that the second annual meeting of the Branch will be held on Wednesday, June 2nd, at 4.30 p.m., at the Town Hall, Tunbridge Wells (by kind permission of His Worship the Mayor). Agenda: In addition to the business of an ordinary meeting—(1) To receive the Report of the Election of Officers for 1915–16, who shall thereupon take office. (2) To receive the Annual Report and Financial Statement, etc. His Worship the Mayor of Tunbridge Wells kindly invites members to tea at the Town Hall at 4 p.m. The annual meeting will begin at 4.30 p.m. At 5 p.m. the President of the Branch, Dr. Claude Wilson, will read a paper on "Irregular Action of the Heart," in which the differentiation and significance of the various types of arrhythmia will be discussed. The annual dinner will be held at the Calverley Hotel at 7.30 p.m., to which the President kindly invites all members present. Wine will be provided by the local members.

METROPOLITAN COUNTIES BRANCH.—Dr. R. E. Crosse and Mr. N. Bishop Harman (Honorary Secretaries) give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C., on Friday, June 25th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of council and of Representatives

of the Branch on the Central Council. (3) Alteration of Rule 19*b* by the insertion of the words "and adopt (with or without amendment)" after the words "To receive" so that the rule shall read as follows: 19. In addition to the ordinary business of any ordinary general meeting, the business of the annual meeting shall be: To receive the report of the election of new officers; (*b*) to receive and adopt (with or without amendment) the annual report of the council on the affairs of the Branch, and the annual financial statement; (*c*) to receive the annual report of the Representatives of the Branch on the Central Council of the Association; (*d*) to make new rules, or alter or repeal existing rules. (4) President's address.

MIDLAND BRANCH: HOLLAND DIVISION.—Dr. R. Tuxford, Honorary Secretary (12, Wide Bargate, Boston) gives notice that the annual meeting of the Holland Division will be held at the "White Hart Hotel," Boston, on Friday, May 28th, at 3.30 p.m. Business: To elect officers, the Representative of the Division in the Branch Council, and the ordinary members of the Executive Committee. To receive the annual report of the Executive Committee. To consider the business of the Annual Representative Meeting. To transact any business that may be transacted at an ordinary meeting.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—Mr. David Ranken, Honorary Secretary (23, Ridley Place, Newcastle-upon-Tyne) gives notice that the annual meeting of the Newcastle-upon-Tyne Division will be held on Wednesday, June 30th, 1915. Nominations for all officers for the ensuing year must be sent to him on or before May 31st.

SOUTHERN BRANCH.—Mr. James Green, Honorary Secretary (Brandon House, Mile End, Landport, Portsmouth), gives notice that nominations for the offices of President-elect, two Vice-Presidents, Honorary Secretary, and Treasurer of the Branch will be made at the meeting of the Branch Council on May 28th pursuant to the rules. Any three members of the Branch, however, may nominate candidates for any of these offices by sending a notice to that effect to him on or before June 1st, and in that case voting papers will be issued in accordance with Organization Rule 5 of the Branch. Failing any such notice, the members nominated by the Branch Council will be duly elected.

CONFERENCE OF REPRESENTATIVES OF LOCAL MEDICAL AND PANEL COMMITTEES.

As announced in the JOURNAL last week, the Association is calling a conference of representatives of Local Medical and Panel Committees in London on June 16th. The following circular letter, together with the provisional agenda for the conference, has been sent by the Medical Secretary to the secretaries of Local Medical and Panel Committees:

British Medical Association,
Medical Department,
429, Strand, London, W.C.,
13th May, 1915.

Dear Sir,—

CONFERENCE OF REPRESENTATIVES OF LOCAL MEDICAL AND PANEL COMMITTEES.

1. I beg to inform you that the Association has decided to call a conference of representatives of Local Medical and Panel Committees throughout the country, which will be held in the Connaught Rooms, Great Queen Street, London, W.C., on Wednesday, June 16th, at 10 a.m., and on the 17th, if necessary.

2. The Association has decided to pay all the central expenses of such a conference, namely, the hiring of the place of meeting, necessary printing and postage, and the provision of clerical assistance. It is expected that the Local Medical and Panel Committees will pay the expenses of their representatives, and it is suggested that in considering this matter the Committees might take into consideration the question of out-of-pocket expenses as well as travelling expenses.

3. The Local Medical and Panel Committees of each insurance area are asked jointly to appoint one representative to attend the conference, but where the personnel of the two committees differs materially each committee may appoint one representative. It should be clearly understood that the committees are at liberty to appoint any medical practitioner they like as their representative, whether he or she is a member of the British Medical Association or not.

4. In order that the conference may be kept fully in touch with the work that is being done by the Association for insurance practitioners and their respective committees, it has been decided that the members of the Insurance Act Committee of the Association and of its Local Medical and Panel Subcommittee shall attend the conference and take part in its deliberations. They will not, however, vote unless they are also elected to the conference as representatives of some Local Medical or Panel Committee. Dr. J. A. Macdonald, LL.D., of Taunton, Chairman of the Insurance Act Committee, has consented to act as chairman.

Business of the Conference.

5. It is proposed to encourage discussion of all matters of general importance in connexion with the medical aspect of the Insurance Acts, and Local Medical and Panel Committees are invited to send in to me notices of motion, which will be inserted in the final agenda. In the meantime, the Local Medical and Panel Subcommittee of the Association, in whose hands the arrangements for the conference have been left, suggests the enclosed Provisional Agenda as containing most of the questions which seem to be exciting widespread attention at the present time.

6. The Local Medical and Panel Committees are urged to give careful consideration to that portion of the annual report of the Council of the Association which deals with the Insurance Acts, and which will be found on pages 188 to 193 of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 8th. It will be open to any member of the conference to criticize any action which has been taken by the Association during the past session in regard to Insurance Act matters, and to make suggestions as to future action.

7. It is intended to issue within the next week certain documents connected with the questions referred to on the provisional agenda, and it is hoped these will enable Local Medical and Panel Committees to instruct their representatives as to the line they should take at the conference.

8. There are several questions of the first importance which insurance practitioners must shortly face, and at the conclusion of the war the whole financial basis of medical benefit will be open to revision. It is therefore essential that some central body should be in a position to know the opinion of the Panel Committees, and should be empowered to voice that opinion at the appropriate moment. It is sincerely hoped, therefore, that the Local Medical and Panel Committees of every insurance area will see their way to send representatives to this conference, and I shall be glad to receive the names of the representatives at the earliest possible date.

9. Arrangements will be made so that, probably, the Waldorf Hotel will be the official hotel at which members of the conference may stay if they choose or may at any rate meet in the evening to discuss matters with one another, and to meet members of the central staff of the Association, who will be glad to make the personal acquaintance of as many members of the conference as possible, and to give what information and help they can. Further particulars as to these arrangements will be sent to those practitioners who are notified as coming to the conference.—I am, yours faithfully,

ALFRED COX,
Medical Secretary.

To the Secretaries of Local Medical and Panel Committees.

PROVISIONAL AGENDA.

The provisional agenda contains, in addition to formal matters of business, the consideration of the following questions of policy arising out of the Insurance Acts:

(*a*) Position of insurance practitioners with regard to insured persons who are discharged from the services.

(*b*) Reduction in the amounts of the periodical advances to insurance practitioners on account of the moneys due to them from Insurance Committees. (*See* SUPPLEMENT *to* BRITISH MEDICAL JOURNAL, *May 8th, 1915, Appendix 17, pages 234–237. Also* SUPPLEMENT *to* BRITISH MEDICAL JOURNAL *of May 15th, pages 252–254.*)

(*c*) New certification system.

(*d*) Questions of (i) Panel Committees being furnished at an early date with amended Regulations and Agreements for the purpose of advising panel practitioners as to signing the Agreements, and (ii) relationship between the Panel Committees and the British Medical Association in connexion therewith.

(*e*) Question of nominating six members for appointment on the new standing Insurance Acts Committee of the British Medical Association. (*For full particulars regarding this see* SUPPLEMENT *to* BRITISH MEDICAL JOURNAL, *May 8th, 1915, pages 188 and 189. The proposed constitution of the new Committee cannot come into effect until it is approved by the Annual Representative Meeting in July, but, assuming that the recommendation of the Council will be adopted, it will be necessary that six*

representatives of the Local Medical and Panel Committees throughout the country should be selected for appointment to the Committee on a territorial basis, and it is hoped that the Conference will nominate six members who can afterwards be put forward for appointment to the new Committee.)

(*f*) Question of amendment of present Regulations having reference to inquiries into cases of alleged over-prescribing.

(*g*) Question of Local Medical and Panel Committees being elected triennially instead of annually as at present.

(*h*) Question of medical representation on the Advisory Committees.

(*i*) Domiciliary treatment of tuberculosis.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

PANEL COMMITTEE.

Adjustment of Lists of Insured Persons.

AT the last meeting of the London Insurance Committee it was suggested that a conference should take place with representatives of the Panel Committee in view of the refusal of the Panel Committee to concur in a proposal to reduce the advances to practitioners for the second quarter of 1915 to two payments of 6d. in each half-quarter, in order to cover the diminution in the medical benefit fund owing to enlistment.[1] It was reported to the Panel Committee on May 18th that the conference had been held and the Medical Benefit Subcommittee had decided to recommend the Insurance Committee to increase the advances to 8d. in each half-quarter in respect of each capitation fee. The General Purposes Subcommittee advised the Panel Committee to concur in this amended proposal, but at the same time to point out to the Insurance Committee:

1. The great inconvenience likely to be caused to practitioners at this time of stress by any diminution in the normal rate of advances.
2. The special injustice caused by a uniform reduction to cover the general incidence of recruiting in the case of practitioners whose lists contained a very small number of men of military age.
3. The conviction of the Panel Committee that greater inconvenience and injustice were being caused than would be necessary if the registration of insured persons were reasonably up to date and accurate.
4. The desirability of doctors' lists being speedily corrected and readjusted, so that, at least during the last quarter of the year, any necessary deductions from the advances might be made in respect of insured persons definitely removed by name from individual lists.
5. The willingness of the Panel Committee to confer with the Insurance Committee as to the present defects in the medical registers, and the possible means of removing them.

It was decided to send a communication to the Insurance Committee to this effect.

The War Emergency.

It was reported that a section of the General Purposes Subcommittee had been appointed to consider the steps which should be taken to enable practitioners on the panel to render the greatest possible assistance in view of war emergencies, and to inquire as to the manner in which the Panel Committee could most usefully co-operate with the British Medical Association in this direction.

Local Panel Associations.

The General Purposes Subcommittee also stated that it had considered the advantages which would accrue to the Panel Committee and to practitioners on the panel from the recognition by the Committee of a Local Panel Association in each metropolitan borough. The Subcommittee had appointed a special section to formulate a scheme, and to consider the extent to which it would be possible to render financial aid to each local association.

INSURANCE NOTES.

PANEL MEDICO-POLITICAL UNION.

A SPECIAL urgency meeting of the Panel Medico-Political Union was held on Thursday, May 13th, at the Presbyterian Lecture Hall, Brighton.

The meeting had been extensively advertised by a wide distribution of invitations, followed by a special post card whip on the day of the meeting, and had been foreshadowed by the remarks of Dr. Welply, the General Secretary of the Union, at the annual supper of the Lambeth Panel Practitioners' Association, when he stated that they hoped to form a branch of the Union in Brighton early in May. About eighteen local panel doctors were present, and some four or five London representatives of the Panel Medico-Political Union, including Drs. Cardale, Farman, and Welply, the General Secretary. Dr. LOUIS DODS was voted to the chair. Dr. CARDALE was called on to explain the object of the meeting, and stated that the Panel Medico-Political Union was intended to especially represent and support the interests of panel practitioners who, in his opinion, required a special body to reflect their especial needs. He was a member of the British Medical Association, and advised all to join it who were not already members, but felt that as a mixed body it was not able to voice the feelings of panel practitioners adequately. He defended the registration of the Panel Medico-Political Union as a trade union. Another of its purposes was to obtain special parliamentary representation. The speaker dwelt at length with several grievances which the London panel practitioners in particular suffered under, and, in conclusion, reiterated the disclaimer he earlier had made of antipathy to any other body, especially the British Medical Association.

Dr. WELPLY followed on similar lines, and stated that he should consider the Union a failure if it did not include every panel practitioner.

Dr. ALLFREY, the Honorary Secretary of the Sussex Branch, then proposed:

> That this meeting of panel doctors considers that there is no necessity for any medical organization on the lines of the Panel Medico-Political Union.

He emphasized the need for unity, and deprecated the dissipation of energy among a number of different societies. The resolution was seconded by Dr. BURCHELL, the honorary secretary of the Brighton Division and of the Local Medical and Panel Committees, who stated that Dr. Welply's hope of success was doomed to disappointment, as, from personal knowledge of the local panel doctors, he could promise the Panel Medico-Political Union an extremely small response in that area to their appeal for support. He could also speak for Dr. Benham, the chairman of the East Sussex Local Medical and Panel Committees, who held the same opinion, and he read a letter from Dr. Muir Smith of Eastbourne, stating that the panel practitioners in Eastbourne would be unable to give support to any movement seeking to usurp the function of the British Medical Association—a body which, by reason of its established influence and ramified organization, must be better fitted to ascertain the consensus of opinion and defend the interests and requirements of the whole profession than a new organization like the Panel Medico-Political Union.

Dr. FOTHERGILL, a member of the Council of the British Medical Association, dealt with several points raised by Dr. Cardale, and pointed out that it was futile to make demands that were clearly unreasonable. He proved statistically that several of the alleged complaints rested on quite a small basis.

Dr. CARDALE briefly replied, but made no attempt to answer the specific question put by one of the previous speakers—namely, "What could the Union do that the British Medical Association did not do?"

The resolution was then put to the meeting and carried without a single hand being raised against it.

A vote of thanks to the Chairman and to the gentlemen from London who had so kindly attended the meeting concluded the proceedings.

INSURANCE ACT IN PARLIAMENT.

PANEL DOCTORS' SALARIES.

MR. CREAN, on May 11th, asked the Chief Secretary for Ireland whether he was aware that the salaries of the panel doctors of the City of Cork were now six months in arrear; whether the Insurance Commissioners, in dealing with the county panel doctors, paid only three months' salary about three months ago, six months' salary being then due; and whether he would have this state of things

[1] SUPPLEMENT, May 1st, p. 157.

attended to immediately in the interest of the service. Mr. Montagu said he was informed by the Irish Insurance Commissioners that further payments on account would be made to the doctors referred to both in the county borough and the county in a few days.

NATIONAL INSURANCE ACT (DRUG FUND DEFICITS).

In reply to Mr. Snowden, Mr. Montagu, on May 11th, said that he had received a resolution passed by the Insurance Committee for the borough of Blackburn appreciating the action proposed to be taken by the Insurance Commissioners respecting the deficits in the drug funds of the various overspent Insurance Committees for the year 1913. The cost of the supply of drugs under the Insurance Acts was already the subject of inquiry by a Departmental Committee, and he proposed to await its report. He added, in reply to Mr. Glyn-Jones, that he had under consideration the question whether these deficits were likely to be increased by reason of the new proposed modified taxes upon alcohol, and would keep watch upon the subject.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Fleet Surgeons E. T. P. EAMES, to the *Prince of Wales*; ROBERT T. GILMOUR, to the *Vivid*, additional, for disposal. Staff Surgeons promoted to Fleet Surgeons: S. H. WOODS, M.D., P. T. SUTCLIFFE, M.B., J. P. H. GREENHALGH, M.D., E. T. BURTON, K. HUGHES, N. J. ROCHE, H. L. GEOGHEGAN, M.D., J. H. LIGHTFOOT, P. G. WILLIAMS. Staff Surgeons CECIL R. RICKARD, to the *Topaze*: ARTHUR H. RICHARDSON, to the *Skirmisher*. Surgeons to be Staff Surgeons: C. ROSS, M.D., C. R. M. BAKER, M.B., G. G. VICKERY, M.B., H. D. DRENNAN, M.B. Temporary Surgeons: G. W. POOL, J. C. GILLIES, and A. CRAIG, to the *Victory*, additional, for Haslar Hospital; J. A. WATSON, to the *President*, additional, for Eastbourne Aerodrome; A. B. DANBY, to the *Vivid*, additional, for Plymouth Hospital; G. W. WOODHOUSE, to the *Pembroke*, additional, for Chatham Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationer JOHN J. CARROLL, to the *Kale*. To be Surgeon Probationers: IAN M. ROBERTSON, JOHN C. BROWN, G. G. SPERE.

ARMY MEDICAL SERVICE.

TEMPORARY MAJOR CUTHBERT S. WALLACE, from R.A.M.C., to be temporary Colonel (substituted for notification published in the *London Gazette* of May 8th).

JOHN ATKINS, M.B., F.R.C.S., to be temporary Colonel.

ROYAL ARMY MEDICAL CORPS.

To be temporary Majors: ALFRED LINGARD, M.B., temporary Captain CHARLES C. CHOYCE, M.D., F.R.C.S.

Temporary and Honorary Captain CYRIL A. R. NITCH is granted the temporary and honorary rank of Major whilst serving with the British Red Cross Hospital, Netley.

To be temporary Captains: JOHN D. DUNCAN, M.B., late Captain 5th Black Watch (Royal Highlanders) T.F., JOHN E. PHILLIPS, late Captain 1st North York Volunteer Artillery, temporary Lieutenants EDWARD A. EVANS, JAMES A. TORRENS, M.B.

HAROLD J. JOHNSON, M.B., late Surgeon-Captain, to be temporary honorary Captain.

Captains SYDNEY SCOTT, M.S., F.R.C.S., and THOMAS M. BODY, relinquish their temporary commissions on ceasing to serve with the Duchess of Westminster's War Hospital.

The undermentioned are granted temporary rank as indicated whilst serving with the War Hospital named:—*County of London War Hospital*: JOHN R. LORD, M.B., to be Lieutenant-Colonel; NORCLIFFE ROBERTS and REGINALD G. RICHES to be Majors. *City of London War Hospital*: WILLIAM D. DUNCOMBE to be Major. *Fulham War Hospital*: CHRISTOPHER T. PARSONS, M.D., to be Major. *Norfolk War Hospital*: DAVID G. THOMSON, M.D., to be Lieutenant-Colonel; ALEXANDER M. HUMPHRY, CHARLES NOON, F.R.C.S., and JOHN S. LAW, M.B., to be Majors. *Duchess of Westminster's War Hospital*: FORBES FRASER, F.R.C.S., and JOHN W. NUNN to be Captains. *Beaufort War Hospital*, Bristol: JAMES V. BLACKFORD, M.D., to be Lieutenant-Colonel; JOHN R. P. PHILLIPS and ALEXANDER McL. CATO to be Majors. *Lewisham War Hospital*: FREDERICK S. TOOGOOD to be Major.

EDWARD L. Z. FICKLING to be temporary Lieutenant (substituted for notification published in the *London Gazette* of December 24th, 1914).

The name of Lieutenant ADOLPHE ABRAHAMS, M.D., is as now described, and not as stated in the *London Gazette* of May 3rd.

To be temporary Lieutenants whilst serving with the Welsh Hospital: WILLIAM MACADAM, M.B., and DAVID J. HARRIES, M.B.

Lieutenant WILKINSON OVEREND is dismissed from H.M. Service by sentence of a general court-martial.

To be temporary Lieutenants: ARTHUR C. A. JEKYLL, M.B., CEDRIC K. COHEN, M.B., ERIC P. DARK, M.B., KEITH G. COLQUHOUN, M.B., CLIVE T. STEPHEN, M.B., HARRY C. COLVILLE, M.B., ALAN PRYDE, M.B., CHARLES F. DREW, M.B., EDWARD ROGERSON, M.B., LOUIS M. PIGOTT, M.B., REGINALD P. LUCAS, M.B., WILLIAM H GODBY, M.B., JOHN W. TURNER, M.B., THOMAS WRIGHT, M.D., ARTHUR G. J. THOMPSON, M.B., THOMAS WARNER, M.D., F.R.C.S., WALTER C. BLACKHAM, M.B., WALTER D. PERRY, GEORGE H. CULVERWELL, M.D., ROBERT W. BUCHANAN, M.B., WILLIAM PENBERTHY, ISIDORE J. BLOCK, M.B., THOMAS GILCRIEST, F.R.C.S.I., JAMES BOYD, M.B., ARTHUR T. MARSHALL, M.B., JOHN BRUNTON, M.D., BARRINGTON W. MUDD, M.B., RAY C. PHELPS, M.B., HARRY L. CUMMING, M.D., JAMES H. BOGAN, F.R.C.S.I., JAMES L. WHATLEY, JOHN H. HEDDLE, IVAN W. MAGILL, M.B., CHARLES GIBSON, M.B., EDMUND S. CUTHBERT, JOHN M. MACKENZIE, M.B., JAMES M. MACKAY, M.B., DONALD M. MACINTYRE, M.B., THOMAS RUDDOCK-WEST, M.B., THOMAS G. WILLIAMS, M.B., WILLIAM H. STOTT; Second Lieutenant ALBERT E. QUINE, M.B., F.R.C.S., from Reserve of Officers.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

MAJOR CHARLES ROBERTS, M.B., having ceased to perform duty with No. 18 Field Ambulance, resigns his commission.

Captain WILSON H. P. HEY, M.B., F.R.C.S., 2nd Western General Hospital, R.A.M.C.(T.F.), to be Captain.

Lieutenants to be Captains: WILLIAM F. MCLEAN, ROBERT M. BEATH, THOMAS WALKER, WILLIAM ST. L. DOWSE, WILLIAM MCN. WALKER, WILLIAM MCK. MCCULLAGH, HARRY D. ROLLINSON, SAMUEL R. ARMSTRONG.

Lieutenants on probation confirmed in their rank: JOHN R. CROLIUS, ROBERT H. WILLIAMS.

To be Lieutenants on probation: DAVID W. J. ANDREWS, ROBERT O. C. THOMSON, WILLIAM MURDOCH, M.B.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

MAJOR CHARLES J. MARTIN, M.B., from Attached to Units other than Medical Units, to be Deputy Assistant Director of Medical Services, 2nd London Division.

Lieutenant-Colonel ERNEST B. DOWSETT, from 5th London Field Ambulance, to be Assistant Director of Medical Services, 2nd London (Reserve) Division, with the temporary rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

1st Southern General Hospital.—Lieutenant-Colonel HARRY G. BARLING, F.R.C.S., is seconded.

3rd Southern General Hospital.—ARTHUR J. DREW, F.R.C.S., to be Captain, whose services will be available on mobilization.

South-Eastern Mounted Brigade Field Ambulance.—Captain CHARLES E. SILVESTER, M.B., to be Captain. ALEXANDER G. S. LOGIE, M.B., to be Lieutenant.

2nd Wessex Field Ambulance.—ERNEST H. SCHOLEFIELD, M.B., to be Lieutenant.

3rd Wessex Field Ambulance.—Captain HAROLD W. READ, from Attached to Units other than Medical Units, to be Captain.

London Mounted Brigade Field Ambulance.—JOHN P. MACLULICH, M.D, late Captain South African Medical Corps, to be Captain, temporary.

2nd London Sanitary Company.—FREDERICK G. ROSE to be Lieutenant.

3rd London General Hospital.—Lieutenant ALFRED H. GOSSE, M.D., to be Captain on the permanent personnel.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ALL SAINTS HOSPITAL FOR GENITO-URINARY DISEASES, Vauxhall Bridge Road, S.W.—House-Surgeon.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £110 per annum, with £5 laundry allowance.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £170 per annum.

BRIGHTON COUNTY BOROUGH.—Resident Medical Officer at the Isolation Hospital. Salary, £200 per annum.

BRISTOL GENERAL HOSPITAL.—House-Surgeon and Casualty House-Surgeon. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY VICTORIA HOSPITAL.—House-Surgeon. Salary, £115 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Honorary Assistant Surgeons in (1) Ear, Nose, and Throat Department, (2) Ophthalmic Department.

CANNING TOWN WOMEN'S SETTLEMENT HOSPITAL.—(1) Honorary Ophthalmic Surgeon. (2) Senior and Junior Resident Medical Officers; salary, £120 and £30 per annum respectively.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

DUNDEE COMBINATION POORHOUSE AND HOSPITAL.—Resident Medical Officer. Salary, £225 per annum, rising to £300.

EALING BOROUGH.—Medical Officer of Health and School Medical Officer. Salary, £700 per annum.

EDMONTON MILITARY HOSPITAL.—Assistant Surgeons and Physicians. Terms, £1 daily.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—House-Physician. Salary, £150 per annum.

FOLKESTONE: ROYAL VICTORIA HOSPITAL.—House-Surgeon.

GLASGOW CORPORATION. Physician-Superintendent to two Fever Hospitals. Salary, £600 per annum.

GLASGOW ROYAL MATERNITY AND WOMEN'S HOSPITAL.—Two indoor and three outdoor House-Surgeons.

GRAVESEND HOSPITAL.—House-Surgeon.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

HARROGATE INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

HONG KONG UNIVERSITY.—Professor of Physiology. Salary, $500 a month.

HULL: ROYAL INFIRMARY.—(1) House-Physician; (2) Assistant House-Surgeon; (3) Casualty House Surgeon. Salary, £105, £100, and £80 respectively.

KINCARDINE PARISH.—Medical Officer. Salary, £135 per annum.

KING EDWARD VII SANATORIUM, Midhurst.—Second Assistant Medical Officer. Salary, £150 per annum, rising to £200.

LEEDS CITY.—Medical Assistant in the Public Health Department. Salary, £350 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Honorary Assistant Laryngologist.

LORD MAYOR TRELOAR CRIPPLES' HOSPITAL, Alton.—Two Assistant Resident Medical Officers.

MANCHESTER: ANCOATS HOSPITAL.—(1) Senior House-Surgeon; (2) House-Physician. Salary, £100 and £80 per annum respectively and war bonus of £10 a month.

MANCHESTER CHILDREN'S HOSPITAL.—Medical Officer for Out-patients' Department. Salary, £180 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy Square, W.—(1) House-Surgeon (non-resident; salary up to £150 per annum. (2) Honorary Anaesthetists.

NEWCASTLE-UPON-TYNE PARISH.—Assistant Resident Medical Officer (male) to the Poor Law Institution and Infirmary. Salary, £250 per annum, rising to £300.

NORTHUMBERLAND: CHILDREN'S SANATORIUM, Stannington.—Lady Resident Medical Officer. Salary, £200 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £150 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—(1) Resident Medical Officer; (2) Assistant Resident Medical Officer. Salary, £110 and £90 per annum respectively.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

PORTSMOUTH PARISH.—Second Assistant Medical Officer (female) of the Workhouse Infirmary, etc. Salary, £150 per annum, rising to £160.

PRESTWICH: COUNTY ASYLUM.—Assistant Medical Officer. Salary, £250 per annum, increasing to £300, and upon promotion to £450.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) Assistant Physician. (2) House-Physician and House-Surgeon; salary, £100 per annum.

ROTHERHAM HOSPITAL.—Junior House-Surgeon. Salary, £125 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident Medical Officer.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £100 per annum respectively.

SCARBOROUGH BOROUGH.—Medical Officer of Health. Salary, £400 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD: WHARNCLIFFE WAR HOSPITAL.—Resident Medical Officers.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SOUTHAMPTON PARISH INFIRMARY.—Resident Assistant Medical Officer. Salary, £200 per annum, rising to £250.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Lady House-Surgeon. Salary, £150 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House-Surgeon. Salary, £50 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill. (1) Two House-Surgeons; (2) House-Physician. Salary, £150 per annum each.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon.

SWANSEA EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary, £300 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £125 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £120 per annum, rising to £140 after six months.

WARRINGTON: LORD DERBY WAR HOSPITAL.—Resident Physician.

WELSH METROPOLITAN WAR HOSPITAL, Whitchurch.—Junior Resident Surgeon. Pay, £1 a day.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—(1) Resident Medical Officer; (2) House-Physicians. Salary, for (1) £160 per annum, and for (2) £120 and £100 per annum respectively.

WEST HAM UNION.—At the Infirmary: (1) Second Assistant Resident Male Medical Officer; (2) Fourth Assistant (Lady) Medical Officer; (3) Deputy Resident Male Medical Officer at the Sick Home; (4) Lady Assistant Medical Officer at the Workhouse. Salary, for (1) and (3) £250 per annum, and for (2) and (4) £160 and £140, rising to £180 and £160 per annum respectively.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £150 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—(1) Resident Medical Officer; (2) House-Surgeon. Salary, £150 per annum.

WORCESTER CITY AND COUNTY BOROUGH.—Lady Assistant Medical Officer. Salary, £300 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

WREXHAM INFIRMARY.—Resident House-Surgeon. Salary, £125 per annum.

YORK: THE RETREAT.—Junior Assistant Medical Officer. Salary, £200 to £225 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Earls Barton (Northampton), Houghton-le-Spring (co. Durham), Swords (co Dublin).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

JONES, O. W., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Ashton-in-Makerfield District, co. Lancaster.

OVEREND, H. F., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Irlam District, co. Lancaster.

PARSONS, Leonard G., M.D., M.R.C.P., Lecturer in Infant Hygiene and the Diseases Peculiar to Children in the University of Birmingham.

WILLIAMSON, James, M.B., Ch.B., Honorary Ophthalmic Surgeon to the Bury Infirmary, vice Dr. G. Aubrey Jelly.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

CARNARVON BROWN.—On May 12th, at Egdean, Sevenoaks, the wife of A. Carnarvon Brown, M.R.C.S., late of India, of a son.

MARRIAGE.

BARNES—NORMAN.—On May 15th, 1915, at St. John's, Angell Town, Brixton, by the Rev. J. D. Dyke, M.A., Rural Dean, assisted by the Rev. L. Reiss, M.A., Vicar, Lieutenant Howell Wood Barnes, M.B.Cantab., R.A.M.C., to Sarah Frances (Bunnie), youngest daughter of Frederick Norman, J.P., F.R.C.S., of Wiltshire House, Wiltshire Road, Brixton.

DIARY FOR THE WEEK.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION FOR THE STUDY OF DISEASE IN CHILDREN, 4.30 p.m.—Cases and Specimens. Paper:—Dr. C. O. Hawthorne: Case of Tuberculous Meningitis.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Courses will be given next week:

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		MAY.
26	Wed.	London: Local Medical and Panel Subcommittee, Regulations Amendment Subcommittee.
27	Thur.	London: Insurance Act Committee, 2 p.m.
28	Fri.	London: Central Ethical Committee, 2 p.m.
		Holland Division, Annual Meeting, Boston, 3.30 p.m.
		JUNE.
2	Wed.	Kent Branch, Tunbridge Wells, 4.30 p.m. Tea, 4 p.m.; Dinner, 7.30 p.m.
8	Tues.	London: Organization Committee, 2 p.m.
9	Wed.	London: Journal Committee, 2 p.m.
		London: Medico-Political Committee, 2 p.m.
16	Wed.	Conference of Local Medical and Panel Committees, Connaught Rooms, Great Queen Street, London, W.C., 10 a.m.
23	Wed.	London: Finance Committee, 2 p.m.
25	Fri.	Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C., 4 p.m.
30	Wed.	London: Council.
		Newcastle-on-Tyne Division, Annual Meeting.
		JULY.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 29TH, 1915.

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British Medical Association.

THE WAR EMERGENCY.

DUBLIN.

A GENERAL meeting of the profession of the City of Dublin, convened by the Dublin Division of the British Medical Association, was held on May 18th at the Royal College of Physicians, when the President of the College (Dr. McDowell Cosgrave) was in the chair. The meeting was very well attended, and most representative of the Dublin profession. Dr. M. R. J. Hayes, Honorary Secretary of the Dublin Division of the British Medical Association, explained the objects of the meeting. Amongst others who addressed the meeting were: The President of the Royal College of Physicians, Professor McWeeney, Dr. Tweedy, Sir Andrew Horne, Sir Arthur Chance, and Mr. Conway Dwyer, President of the Royal College of Surgeons, Ireland. Colonel Hearn, R.A.M.C., was present, and gave information as to the requirements of the Army Medical Service at the front and at home. The following resolution was proposed by Sir A. Horne, F.R.C.P., and seconded by Sir W. Thompson, F.R.C.P., Registrar-General, and passed unanimously:

> That a committee be formed, consisting of the President and Vice-President, or two representatives of the various licensing bodies, with power to add to their number, to co-operate with the local military authorities in providing duly qualified medical practitioners for whole- or part-time service.

ELY.

A SPECIAL meeting of the Isle of Ely Division was held at March on May 18th, under the chairmanship of Dr. C. H. Gunson.

Colonel H. W. Murray, R.A.M.C., A.D.M.S. (Bedford District), addressed the meeting, pointing out the great need of men under 40 for whole-time service abroad. He also explained the requirements of the Government with regard to part-time service at home and answered several questions.

The following resolutions were unanimously carried:

> That the members of the Isle of Ely Division pledge themselves to safeguard the interests of those medical men who leave their practices for temporary commissions in the R.A.M.C.
>
> That the remuneration of the men doing the work of the local medical men on active service shall be half the fees received for the work done and that expenses entailed shall be borne in the same proportion.
>
> That members of this Division give an undertaking not to accept transfers (private, insurance, or club) of a medical man on active service for one year from the date of his return. In case of death or permanent disablement this shall apply to the purchaser of his practice.
>
> That this Division is of opinion that the keeping of records under the Insurance Act be discontinued during the war.
>
> That whole-time medical officers of health, school medical inspectors, and tuberculosis officers be liberated by their councils for active service.

SCOTTISH COMMITTEE.

A Correction.

WE regret that, owing to a printer's error, the first resolution passed by the Committee at its meeting at Edinburgh on May 15th was incorrectly reported in the account of the meeting published in last week's SUPPLEMENT (p. 267). The resolution as passed reads as follows:

> That this joint meeting, having heard from Surgeon-General Bourke the immediate needs of the Royal Army Medical Corps, resolves to endeavour to undertake to provide, before July 7th next, at least 400 additional medical men for the army.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

LANCASHIRE AND CHESHIRE BRANCH:

OLDHAM DIVISION.

THE annual meeting of the Division was held on May 6th at the Oldham Royal Infirmary. Owing to the unsettled conditions prevailing at present the business transacted was purely formal.

Election of Officers.—The following office-bearers were appointed for the ensuing year:

Chairman: Dr. Godson.
Vice-Chairman: Dr. Patterson.
Representative to Representative Meetings: Dr. Pochin.
Representatives on Branch Council: Drs. Pochin and Lendrum.
Honorary Secretary: Dr. Hutton.
Committee: Dr. Martland, Dr. Ed. Kershaw, Dr. Radcliffe, and Dr. Goulden.

WARRINGTON DIVISION.

THE annual meeting of the Warrington Division was held at the Infirmary, Warrington, on May 14th, when Dr. BENNETT was in the chair.

Election of Officers.—The officers were re-elected as follows:

Chairman: Dr. Bennett.
Vice-Chairman: Dr. Edwards.
Representative on Branch Council: Dr. Bowden.
Honorary Secretary and Treasurer: Dr. Murray.
Executive Committee: The above officers together with Drs. Langdale, Naden, and Binns.
Central Council Election: Mr. F. Charles Larkin, F.R.C.S., was nominated for election to the Central Council.

Vote of Thanks.—A vote of thanks was passed to Dr. Bassett for his services as representative at the Representative Meetings and for his attendance that evening.

Representative Meeting.—The agenda of the Representative Meeting was discussed in readiness for the joint meeting with St. Helens in June.

METROPOLITAN COUNTIES BRANCH:

CAMBERWELL DIVISION.

THE annual general meeting of the Camberwell Division was held on May 18th, when Dr. W. T. PARTRIDGE Chairman of the Division, presided.

Election of Officers.—The following officers were elected:

Chairman: Dr. W. T. Partridge.
Vice-Chairman: Dr. H. G. Clitherow.
Representative at Representative Meetings: Dr. F. C. Langford.
Representative on Branch Council: Dr. J. T. Clark.
Honorary Secretary and Treasurer: Dr. A. F. Heald.
Committee: Drs. G. B. Batten, J. H. Clatworthy, C. Cooper Cripps, H. Isaacs, W. G. Stone, W. Cooper Keates, R. P. Marshall.

Mental Deficiency Act Certificates.—On a question in which a member of the Division had been refused a fee of more than half a guinea by the London County Council for granting a certificate under the Mental Deficiency Act, 1913, it was resolved:

> That this meeting of the Camberwell Division recommend that a fee of not less than one guinea be accepted for certification under the Mental Deficiency Act, 1913.

Matters Referred to Divisions.—It was decided to support the recommendations of the Council with reference to fees for treatment of juvenile members of friendly societies. After some discussion on the question of fees for medical examination for life insurance, the following resolution was carried, and the Representative was instructed to move it at the Representative Meeting:

> That the recommendation be referred back to the Council of the Association on the grounds that the Division is not satisfied with the terms offered.

It was resolved that the matter of eligibility for election be left to the Representative to vote at his discretion.

CITY DIVISION.

THE annual general meeting of the City Division was held at Balfour Hall, Kingsland Road, on May 14th, Dr. HADFIELD, President of the Division, in the chair.

Report of Executive Committee.—The annual report of the Committee, together with treasurer's financial statement, were received and approved. The report stated that, in view of the strain of the war, it had been decided not to hold any ordinary scientific and clinical meetings. In response to a communication issued by the Division to members of the profession in the area, 122 practitioners had expressed willingness to undertake the work of colleagues who had been called away in the service of the country. Most of the practitioners in the district had agreed to give gratuitous medical attendance to the necessitous dependants of soldiers and sailors called up on service, but since the new scale of allowance had been in force the necessity for the continuance of the scheme had almost ceased. The report gave a list of the subscriptions received on behalf of the Belgian Doctors' and Pharmacists' Relief Fund, and as well as particulars of the steps with regard to the demand for more medical men for military work. The membership of the Division was 156, and the average attendance at the four meetings of the Executive Committee was 11. The financial statement showed a balance of £7 9s. 6d. on the hospitality fund, and £8 14s. 5d. on the general account.

Election of Officers.—The following officers were elected:

President: Dr. Leslie Durno.
President-elect: Dr. Evan Jones.
Secretary: Mr. J. J. McNaboe.
Representatives at Representative Meetings: Dr. Major Greenwood and Dr. Durno.
Executive Committee: Drs. E. W. Goodall, J. W. Hunt, A. W. Miller, Vaughan Price, W. E. Worley, T. Rushbrooke, D. Petty, William Whitelaw, David Ross, J. H. Porter, C. F. Hadfield, J. Dorran, J. P. Fennell, A. L. Marshall, J. E. Richards.

The CHAIRMAN spoke of the great loss the Division had sustained in consequence of Dr. Southcombe's acceptance of a commission in the R.A.M.C., and enlarged on his many services in the posts, pointing out how much the members owed to his strenuous and untiring labours on their behalf. He expressed the hope that a time might come when he would return among them, and possibly give them again the benefit of his services. Dr. MAJOR GREENWOOD, in proposing a vote of thanks to Dr. Southcombe, said that during his nine years of office he had never missed a meeting of the Division or Executive Committee. The motion was seconded by Dr. DURNO, and supported by Dr. EVAN JONES, and the following resolution was carried with acclamation:

> That this Division expresses its deep regret at the loss of its Secretary, Dr. Southcombe, and tenders its gratitude for his long and faithful service to the Division during a specially arduous period. It also notes with admiration the keen patriotism he has shown, which cannot but serve as an excellent example to the members of the Division.

The PRESIDENT said that Mr. J. J. McNaboe had accepted the secretarial office provisionally, and the hope was expressed that he would continue to act as Secretary for the present. Mr. MCNABOE thanked the meeting, and expressed his willingness to act as Secretary till some one could be found to take his place.

Nomination for Central Council.—The CHAIRMAN proposed that Dr. Major Greenwood be nominated by the Division for election as one of the Representatives of the Metropolitan Counties Branch on the Central Council of the Association. Dr. Greenwood would this year become President of the Metropolitan Counties Branch, and it was a great honour to the Division that a member should occupy that exalted position. He believed that only once before had a member of the Division been elected President of the Branch—namely, Dr. Frederick Wallace in 1894. The motion was carried unanimously.

Annual Report of Central Council.—The report of the Council was considered. The Representatives were instructed (1) to oppose the recommendation to paragraph 57, page 182 (SUPPLEMENT, May 8th), and to move for a return of all emoluments received by the Subeditor during the last three years. (2) To oppose paragraph 159, page 194, *re* tuberculosis medical officers. (3) To oppose Clause 61, page 165, unless qualified by resolution of previous Representative Meetings at Liverpool and Brighton, that any tuberculosis dispensary be freed from hospital control and that work be paid as at any other tuberculosis dispensaries. (4) To support Motion 14, page 162. (5) To support Motions 15 and 16, page 162.

Payments to Military Medical Officers.—On the motion of Dr. JAFFÉ, seconded by Dr. GITTENS, it was resolved:

1. That the Council of the British Medical Association be requested to approach the naval and military authorities with a view to induce them to fix a graduated scale of payment for doctors joining the forces, such payment to be increased proportionately for every year from date of qualification up to a limit of ten years, and that such graduated scale of payment be made retrospective.
2. That the gratuity at present offered to medical men at the end of their period of service with the army is quite insufficient for those who have been engaged in practice, and be very much increased.

On the motion of Dr. MAJOR GREENWOOD, seconded by Dr. DURNO, it was resolved:

1. That in all cases where military duties are discharged by institutional medical officers the salaries paid to whole-time officers should be on a scale not less than that paid by the War Office to members of the R.A.M.C. discharging similar duties.
2. That where the duties are part-time only, an addition should be made to the medical officer's salary in proportion to the extra labour involved.

Insurance Certificates.—The following motion, proposed by Dr. Ross, seconded by Dr. JAFFÉ, was carried *nemine contradicente*, and ordered to be an instruction to Representatives:

> That this Division demands that the insurance certificates of non-panel doctors be accepted as unconditionally as those of panel doctors.

Dr. Ross proposed a resolution regarding certain payments received under the Insurance Acts, which was seconded by Dr. JOHNSON. On being put to the meeting the voting was equal, and, the Chairman declining to vote, the matter dropped.

Vote of Thanks.—The meeting concluded with a vote of thanks to Dr. Hadfield for the able manner in which he had occupied the chair during his year of office.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

BANFF, ELGIN AND NAIRN DIVISION.

THE annual meeting of the Division was held in Gray's Hospital, Elgin, on May 8th, when Dr. RENNIE, Vice-Chairman, presided. Dr. Sellar, Chairman, acted as Honorary Secretary in the absence of Dr. Stephen on active service.

Election of Officers.—The following officers were appointed:

Chairman: Dr. Rennie, Forres.
Vice-Chairman: Dr. Ironside, Fochabers.
Honorary Secretary and Treasurer: Dr. J. A. Stephen, Elgin.
Honorary Secretary (interim): Dr. Sellar, Aberlour.
Representative at Representative Meetings: Dr. Alexander, Elgin.
Substitute Representative: Dr. Brodie Cruickshank, Nairn.
Representatives on Branch Council: Drs. Johns and Rennie.
Executive Committee: Drs. Adam (Forres), Alexander, Campbell, Fergusson, senr., Taylor (Keith), and George Wilson.
Ethical Committee: Drs. Ferguson, senr., Alexander, Campbell, Brander, and Taylor (Elgin).

Matters referred to Divisions.—A communication from the Medical Secretary on Sir A. Keogh's appeal on the war emergency was laid before the meeting, to which non-members were invited; and after discussion resolutions were adopted on (*a*) payment to medical practitioners attending patients of men on active service, and (*b*) payment for operations on school children at hospitals. Letters from the Medical Secretary on (*a*) contract medical attendance on juveniles, (*b*) fees for medical attendance for life insurance; and (*c*) eligibility for membership of the Association were also submitted.

PERTH BRANCH.

Doctors' Holidays.—A special meeting of the Perth practitioners and members of the local Branch was held on May 6th, with the object of formulating a scheme of mutual relief during holidays or sick leave, owing to the difficulty and expense of securing locumtenents during the war. It was arranged that each doctor was to have one month's holiday, exclusive of sick leave, not more than two to be absent at one time, and various rules were drawn up whereby patients should have free choice of a substitute for their own doctor during his absence. Special terms of remuneration in connexion with appointments and insurance work were also agreed upon. A short notice addressed to the public was inserted in the local newspapers, in order to facilitate the working of the scheme.

SOUTH-EASTERN OF IRELAND BRANCH.

THE annual meeting of the South-Eastern of Ireland Branch was held in Kilkenny on May 5th, when Dr. JAMES was in the chair.

Election of Officers.—The following office-bearers were elected for the year:

President: Dr. Quirke (Piltown).
Treasurer: Dr. J. W. H. Jellett.
Honorary Secretary: Dr. P. Grace.
Representative for Representative Meeting: Dr. Laffan.
Deputy Representative for Representative Meeting: Dr. J. Power.
Representative on Irish Medical Committee: Dr. J. V. Ryan.
Members of Branch Council: Drs. James, G. Mackesy, J. W. H. Jellett, J. M. Morrissey, W. R. Morris, J. V. Ryan, John Shee, A. B. Stephenson, D. Walshe, J. Power, J. Dowling, T. O'Connell, J. P. Murphy, J. Quirke, P. Grace.

Vote of Thanks.—A hearty vote of thanks was passed to the outgoing President, Dr. T. O'Connell, for the capable and very satisfactory manner in which he conducted the meetings during his term of office.

Resolutions of Congratulation.—Resolutions of congratulation were passed to Drs. T. Laffan and Dr. Walshe on their receiving the honorary degree of M.D. of the National University, Ireland.

Medical Service of the Army.—It was arranged that every facility should be given to medical practitioners who desired to join the medical service of the army, and that steps should be taken in order that their practices would not suffer during their absence.

ETHICAL COMMITTEE.

At a meeting of the Branch Council of the South-Eastern of Ireland Branch, held immediately after the Branch meeting, the following members were elected to form the Ethical Committee: Drs. R. R. O'Brien, J. Power, T. Laffan, J. V. Ryan, D. Walshe, C. James, J. Shee, W. R. Morris, J. M. Morrissey, G. Mackesy, J. W. H. Jellett, T. O'Connell, J. Dowling, J. Quirke, and P. Grace. Drs. W. W. Morris and J. M. Morrissey, Waterford, members of the Ethical Committee, have joined the medical service of the army.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

RETURN OF REPRESENTATIVES.

Honorary Secretaries of Divisions who have not yet forwarded to the Head Office the names and addresses, and dates of election, of the Representatives appointed by their Constituencies for 1915–16, are asked to forward me these particulars by the earliest possible date. Under the By-laws Representatives must be elected not more than nine months nor less than four weeks before the Annual Representative Meeting, and their names must be notified to the Head Office *by at latest July 2nd.* A Representative can if necessary be elected and instructed at one and the same meeting of the Constituency.

By Order,
ALFRED COX, *Medical Secretary.*

May 19th, 1915.

NOMINATIONS FOR COUNCIL, 1915–16.

ENGLAND AND WALES.

North of England, North Lancashire, and South Westmorland Branches:
Bolam, Robert Alfred, Professor, M.D., 3, Queen's Square, Newcastle-on-Tyne.

Yorkshire Branch:
Campbell, Henry Johnstone, M.D., F.R.C.P., 36, Manningham Lane, Bradford.

Lancashire and Cheshire Branch:
Goodfellow, Thomas Ashton, M.D., 60, Palatine Road, West Didsbury, Manchester.
Larkin, Frederic Charles, F.R.C.S., 54, Rodney Street, Liverpool.

East York and North Lincoln and Midland Branches:
Fulton, Adam, M.B., Old Basford, Nottingham.

Cambridge and Huntingdon, Essex, Norfolk, Suffolk, and South Midland Branches:
Wood, Orby Russell Morgan, M.B., Woolpit, Suffolk.

Birmingham and Staffordshire Branches:
Lucas, Albert, F.R.C.S., 9, Easy Row, Birmingham.

North Wales, Shropshire and Mid Wales, and South Wales and Monmouthshire Branches:
Brook, William Frederick, F.R.C.S., Longlands House, Swansea.

Metropolitan Counties Branch:
Biggs, Moses George, M.D., 101, Northcote Road, Battersea, S.W.
Brackenbury, Henry Britten, M.R.C.S., L.R.C.P., 21, Quernmore Road, Stroud Green, N.
Galloway, James, M.D., F.R.C.P., 54, Harley Street, W.
Greenwood, Major, M.D., LL.B., 243, Hackney Road, N.E.
Smith, Frederick John, M.D., F.R.C.P., 138, Harley Street, W.

Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches:
Parker, George, M.D., 14, Pembroke Road, Clifton, Bristol.

Dorset and West Hants and South Western Branches:
Smyth, William Johnson, M.D., The Bournemouth Hydro., Bournemouth, W.

Oxford and Reading and Southern Branches:
Green, James, M.R.C.S., L.R.C.P., Brandon House, Mile End, Portsmouth.

Kent, Surrey, and Sussex Branches:
Smith, Alfred Tennyson, M.D., "Shanklin," Orpington, Kent.

SCOTLAND.

Aberdeen, Northern Counties, Dundee and Perth Branches:
Gordon, John, M.D., 1, Rubislaw Terrace, Aberdeen.

Edinburgh and Fife Branches:
Hamilton, John Rogerson, M.D., Hawick.

Glasgow and West of Scotland Branch (Four City Divisions):
Adams, John, M.B., 1, Queen's Crescent, Glasgow.

Glasgow and West of Scotland (Five County Divisions), Border Counties and Stirling Branches:
(No return.)

IRELAND.

Connaught and South-Eastern of Ireland Branches:
Walshe, Denis, M.D., Graigue, co. Kilkenny.

Leinster Branch:
(No return.)

Munster Branch:
(No return.)

Ulster Branch:
Johnstone, Robert James, F.R.C.S., 14, University Square, Belfast.

GRANTS IN AID OF SCIENTIFIC RESEARCH.

THE Council of the British Medical Association is prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.

Applications.

Applications for Grants for the year 1915–16 must be made not later than Saturday, June 19th, 1915, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX, *Medical Secretary.*

May 8th, 1915. 429, Strand, London, W.C.

CHANGES OF BOUNDARIES.

BROMLEY AND WOOLWICH DIVISIONS.

THE following change has been made in accordance with the Articles and By-laws and takes effect as from the date of publication of this notice:

That the parish of Mottingham be transferred from the area of the Bromley Division of the Kent Branch to that of the Woolwich Division of the Metropolitan Counties Branch, and that the areas of these Branches and Divisions be modified accordingly.

Representation in Representative Body.—Unaffected.

SUGGESTED CHANGES OF BOUNDARIES.

PROPOSED TRANSFER OF SABDEN FROM BLACKBURN TO BURNLEY DIVISION.

NOTICE is hereby given to all concerned of a proposal made by the Burnley Division that Sabden be transferred from the area of the Blackburn to that of the Burnley Division. Written notice of the proposal has been given to the Blackburn Division and Lancashire and Cheshire Branch, and the matter will be determined in due course by or on behalf of the Council. Any member affected by the proposed change and objecting thereto is requested to notify the fact, and his or her reason therefor, to the Medical Secretary, 429, Strand, W.C., not later than June 29th, 1915.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST YORK AND NORTH LINCOLN BRANCH: EAST YORKSHIRE DIVISION.—Mr. H. L. Evans, Honorary Secretary (101, Prince's Avenue, Hull), gives notice that the annual meeting of the East Yorkshire Division will be held on Friday, June 11th, at 8.15 p.m., in the Hull Royal Infirmary. Business: To elect officers; to receive the report of the Executive Committee; to transact any other business which is proper to annual meetings.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary, Chillingworth House, Tunbridge Wells, gives notice that the second annual meeting of the Branch will be held on Wednesday, June 2nd, at 4.30 p.m., at the Town Hall, Tunbridge Wells (by kind permission of His Worship the Mayor). Agenda: In addition to the business of an ordinary meeting—(1) To receive the Report of the Election of Officers for 1915–16, who shall thereupon take office. (2) To receive the Annual Report and Financial Statement, etc. His Worship the Mayor of Tunbridge Wells kindly invites members to tea at the Town Hall at 4 p.m. The annual meeting will begin at 4.30 p.m. At 5 p.m. the President of the Branch, Dr. Claude Wilson, will read a paper on "Irregular Action of the Heart," in which the differentiation and significance of the various types of arrhythmia will be discussed. The annual dinner will be held at the Calverley Hotel at 7.30 p.m., to which the President kindly invites all members present. Wine will be provided by the local members.

METROPOLITAN COUNTIES BRANCH.—Dr. R. E. Crosse and Mr. N. Bishop Harman (Honorary Secretaries) give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C., on Friday, June 25th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of council and of Representatives of the Branch on the Central Council. (3) Alteration of Rule 19 *b* by the insertion of the words "and adopt (with or without amendment)" after the words "To receive" so that the rule shall read as follows: 19. In addition to the ordinary business of any ordinary general meeting, the business of the annual meeting shall be: To receive the report of the election of new officers; (*b*) to receive and adopt (with or without amendment) the annual report of the council on the affairs of the Branch, and the annual financial statement; (*c*) to receive the annual report of the Representatives of the Branch on the Central Council of the Association; (*d*) to make new rules, or alter or repeal existing rules. (4) President's address.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—Mr. David Ranken, Honorary Secretary (23, Ridley Place, Newcastle-upon-Tyne) gives notice that the annual meeting of the Newcastle-upon-Tyne Division will be held on Wednesday, June 30th, 1915. Nominations for all officers for the ensuing year must be sent to him on or before May 31st.

LOCAL MEDICAL AND PANEL COMMITTEES.

BUCKINGHAMSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEE.

A MEETING of the Bucks Local Medical and Panel Committee was held on April 13th at the Royal Bucks Hospital, when Dr. DUNBAR DICKSON was in the chair.

Payments to Practitioners.—The letter from the Commissioners on the proposed amount of the advances to be made for 1915 was read, in which payment at the rate of £72 per 1,000 of insured persons was advised. It was pointed out that the date of removal from the medical men's lists of those who had joined the army often went back some months, and that it ought to be an easy matter to ascertain the exact number of insured persons who had joined the army, and that it was not fair to treat all medical men alike. Some members stated that about 10 per cent. of those on their lists had joined. It was decided to ask the representatives on the Insurance Committee to inquire on what data the Commissioners had arrived at the decision to pay at the rate of only £72 per 1,000.

Serums and Vaccines.—It was agreed to ascertain whether neighbouring insurance areas allow serums and vaccines to be charged to the Drug Fund.

New Certificates.—A circular referring to the new certificates was adopted for issue to all on the Bucks panel.

Local Formulary.—It was decided that each practitioner should be asked to send in about a dozen stock mixtures used by him, with a view to compiling a local formulary for the county.

Medical Cards.—In reply to a letter from the Secretary of the Middlesex Panel Committee, it was agreed that persons who could not produce a medical card had no right to treatment.

Doctors absent on Military Duty.—During a discussion on the case of those medical men who were away on military service, it was stated that partners had arranged that the military salary should be treated as an appointment and paid into the practice, and the shares to be as before. It was felt that the circumstances varied so very

much in individual instances that it was necessary to judge each case on its merits, and it was decided:

That in cases where a colleague went away on military duty and no private arrangement had been made by him with the other medical men, the Local Medical Committee is prepared to appoint a board of three medical men to advise on the matter if any difficulty arises, and that the absent practitioner be allowed to nominate a medical friend to appear for him and to state the facts of the case.

EAST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the Committee was held at Saxmundham on May 11th, when Dr. HELSHAM was in the chair.

Payments to Doctors.—A letter from the Clerk to the Insurance Committtee was read, stating that the Commissioners, in view of the abnormal circumstances prevailing owing to the mobilization of the Reserve and Territorial Forces and the enlistment of men for the new armies, were of opinion that advances might be safely made for all the purposes of medical benefit to a total amount in each quarter not exceeding a sum calculated at the rate of £72 per 1,000 of the count of the index registers of Committees at the beginning of the quarter, unless they had reason to believe that enlistment in their area was considerably above the average. It was resolved that the Clerk to the Insurance Committee be asked for copies of the Medical Benefit Fund Account Balance Sheet for the years 1913 and 1914.

Reinstatement of Discharged Soldiers.—It was resolved to urge upon the Commissioners that panel patients who have joined His Majesty's forces during the period of the war should on their discharge from the army automatically revert to the list of the doctor who was responsible for their treatment prior to enlistment, unless the patients within one month decide to select another medical attendant.

Election of New Committee.—The CHAIRMAN reported that the election of the new committee would take place at the next meeting, and it was resolved that the Commissioners be recommended to appoint the Acting Secretary to be returning officer, and that the requisite steps be taken to ensure the proper conduct of the election.

ISLE OF ELY.

PANEL COMMITTEE.

A MEETING of the Isle of Ely Panel Committee was held on March 30th, when Dr. C. E. STEPHENS was in the chair.

Mileage Scheme.—It was resolved to apply immediately to the Insurance Committee for a special mileage grant for the year 1914, and a deputation, consisting of Drs. Stephens, Hendley, and Waters, was appointed to wait on the Commissioners and appeal for a larger grant than that of the year 1913. In view of the peculiar nature of the Isle of Ely and its Fen districts it was decided to adhere to the 1913 scheme for distribution of the grant. On the suggestion of the Clerk to the Insurance Committee it was decided that the claims, after registration checking by the Clerk to the Insurance Committee, be submitted to a meeting of the Panel Committee, and that the whole of the panel practitioners resident in the Isle (whether members of the Panel Committee or otherwise) be invited to attend the meeting.

Drug Tariff.—It was resolved that each doctor on the Isle of Ely list be asked to prescribe so that a general practice of half-ounce doses should be instituted instead of ounce doses, and thus relieve to some extend the Drug Fund, without lessening the efficiency of the mixtures, by saving dispensing fees.

YORK.

PANEL COMMITTEE.

A MEETING of the York Panel Committee was held on April 30th.

Payments to Practitioners.—It was agreed that the capitation fees in respect of insured persons not on a practitioner's list at the commencement of a quarter should be credited to practitioners in the same proportions as the total credits due to each practitioner for the quarter bore to the whole amounts payable in respect of that quarter to all the practitioners on the panel.

Complaint against a Practitioner.—A complaint of a member of the York panel, that an alleged complaint made against him as to negligence had originated with the sick visitor, was considered, and it was decided to request the York Insurance Committee to investigate the complaint (which had been dropped) with a view to bringing the matter home.

INSURANCE COMMITTEES.

LONDON.

The Chairmanship.

THE Chairman (Mr. F. Coysh) having resigned at the last meeting, the Vice-Chairman (Mr. J. Howarth) was appointed to hold office until July, when the annual meeting of the Committee takes place.

Adjustment of Lists of Insured Persons.

On a recommendation by the Medical Benefit Subcommittee that the advances to practitioners for the second quarter of the year be at the rate of 1s. 4d. per insured person, having regard to the diminution of the Medical Benefit Fund owing to enlistments, Dr. H. H. MILLS (the Chairman) said that this payment would be in excess of the rate suggested by the Insurance Commissioners. The Panel Committee, however, preferred, in view of the short notice to practitioners, that the rate of payment for the second quarter should be as high as possible, although the amounts available for the third and fourth quarters would be correspondingly smaller. Dr. Mills added that the position of affairs seriously affected the medical service of the country. While practitioners loyally accepted the situation, it must be noted that the advantages of payment on an insurance basis, so far as male lives were concerned, had disappeared; so many young healthy lives had gone, and of those who would return many would be maimed. He understood that this aspect of the question had been brought to the notice of the Chairman of the Joint Committee (Mr. Montagu), and was receiving consideration.

Advances to practitioners at the rate of 1s. 4d. for the quarter were ordered to be made.

Practitioners with the Forces.

Dr. MILLS said that 130 doctors on the London panel had joined the forces, and deputies were undertaking their work by amicable arrangement. In one case a consultant and Fellow of the Royal College of Physicians was doing the work of a general practitioner, having obtained special sanction to do so.

Excessive Prescribing.

Acting on reports by the Panel Committee, the Medical Benefit Subcommittee recommended that four practitioners be surcharged amounts varying from 10s. to £7 19s. in respect of excessive prescribing.

Mr. EDWARD SMITH suggested that if many similar deductions had to be made the Committee would be unwise to make advances to practitioners even at the reduced rate already determined. He understood that the Departmental Committee now considering the question of excessive prescribing had called for 250,000 prescriptions from all parts of London in order to submit them to a critical examination. If that number was an index to the position of affairs, the funds of the Committee ought to be safeguarded in view of possible surcharges.

Mr. H. UGLOW WOOLCOCK (Secretary of the Pharmaceutical Committee) said he could state, as a member of the Departmental Committee, that the call for 250,000 prescriptions had nothing to do with surcharging practitioners or scrutinizing what they had prescribed. The prescriptions were wanted for a critical analysis of the chemists' charges. As to the surcharges under discussion, he was surprised to find a member alarmed at their dimensions. His own view was that if the Panel Committee recommended that a doctor be surcharged £4, the amount of damage that the doctor had done to the Drug Fund was probably about £40.

Dr. B. A. RICHMOND (Secretary of the Panel Committee) mentioned the difficulties connected with the examination of prescriptions owing to the cumbrous nature of the machinery. He entirely dissociated himself from Mr. Woolcock's remarks if they were meant to suggest that the Panel Committee wished to shelter doctors from the consequences of irregularity or extravagance. The Committee did not show any favour, but dealt with each practitioner justly and fairly.

The surcharges were approved.

Full-time Tuberculosis Adviser.

The Sanatorium Benefit Subcommittee presented a report recommending the appointment of a full-time medical adviser in connexion with the administration of sanatorium benefit. The duties appropriate to the position were described by the Subcommittee as: The classification of cases, personal examination where necessary, to confer with the medical officers of tuberculosis dispensaries and sanatoriums, to assist in securing co-operation with practitioners on the panel, to advise the Insurance Committee, and to confer with the medical officers of other public bodies. The medical members of the Subcommittee stated that they attached considerable importance to an arrangement by which the medical adviser should not lose touch with general clinical work, and they suggested that any physician appointed nominally as a full-time officer should be allowed facilities to undertake other work. The Subcommittee thought this proposal worthy of serious consideration, and proceeded to discuss the position of Dr. J. Edward Squire, who had been the part-time medical adviser for nearly three years. It recommended:

That as from July 1st, 1915, Dr. J. Edward Squire, F.R.C.P., C.B., be appointed full-time medical adviser to the Committee at a salary equal to the minimum remuneration guaranteed to him under the present arrangements, which is at the rate of 100 guineas a month; and that he be allowed to retain an appointment as consulting physician to a life assurance company, on the understanding that his services are available for the work of the Committee when required.

The recommendation was approved.

INSURANCE ACT IN PARLIAMENT.

INSURANCE DOCTORS' ARREARS.

MR. BRIDGEMAN asked the Secretary to the Treasury, on May 19th, why doctors were not paid each quarter the full amount due to them under the National Insurance Act; what means doctors had of recovering arrears due to them; and why in the border parishes they received mileage pay on the Welsh side but not on the English side for patients distant more than three miles. Mr. Montagu said that the remuneration due to practitioners on the panel under their agreements with Insurance Committees was ascertainable annually and not quarterly. The quarterly payments were advances on account of remuneration which could not be determined until after the close of the year, and no quarterly settlement was therefore practicable. The distribution of any mileage grant among the doctors in any particular area was largely a matter for those doctors themselves. If, however, the hon. member had in mind any particular case he would be pleased to make inquiries.

CORRESPONDENCE.

ADJUSTMENT OF LISTS OF INSURED PERSONS.

PANEL DOCTOR writes: The report of the meeting of the London Panel Committee is interesting. At the beginning of each quarter the number of patients on each doctor's panel is mutually fixed between the Committee and the doctor. Surely that is a binding agreement. If it is agreed that any reduction from the amount payable shall be made on account of those who have joined the army, it must be realized that these latter are, on the whole, the healthy ones, and all the chronics, the weaklings, the aged and infirm are left to be dealt with as usual.

In accepting a body of men at capitation rates the healthy are supposed to help pay for the delicate. If 10 per cent. of the young and healthy leave the panel by joining the army, what percentage would it be fair to deduct from the total payments? My personal experience is that, in spite of a certain number of my patients having joined the army and though my panel has not increased, my insurance work has been very considerably heavier (probably nearly double) compared with the corresponding quarter of last year. When the Insurance Act came into force we did not expect that our patients were going to work long hours regularly. I hear of some of mine working nearly 140 hours one week. This is not normal, and consequently the amount of illness cannot be expected to be normal.

DENTAL TREATMENT FOR DOMESTIC SERVANTS.

MR. ALBAN GORDON (Secretary, Domestic Servants' Insurance Society, London, W.) writes: Will you allow me, through the agency of your columns, to bring to the notice of the medical profession the fact that this society has now made arrangements for all its members to receive free dentistry, in addition to the ordinary benefits which they have so far enjoyed under the National Insurance Act? Arrangements have been made in the provinces for members to receive treatment at the hands of members of a panel of fully qualified and registered dentists. As regards London, a special clinic has been established at North Row, Oxford Street, W. It has been equipped on the most up-to-date lines, and is also in charge of fully qualified dental practitioners.

The principal purpose of this letter is to invite the co-operation of doctors (more particularly those on the panel) in seeing that domestic servants, whose teeth are notoriously bad, shall get the fullest advantage out of this scheme. Any doctor having among his patients a female domestic servant the condition of whose mouth is injurious to her health is invited to notify this society, or to advise the patient herself to get into touch with this society direct.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-six of the largest English towns 8,117 births and 4,954 deaths were registered during the week ended Saturday, May 15th. The annual rate of mortality in these towns, which had been 17.4 17.3, and 15.5 per 1,000 in the three preceding weeks, further fell to 14.2 per 1,000 in the week under notice. In London the death-rate was equal to 14.5 per 1,000, while in the ninety-five other large towns it ranged from 5.2 in Ilford, 7.2 in Gloucester, 7.3 in Ealing and in Great Yarmouth, 7.7 in Enfield, 7.9 in Wimbledon, and 8.0 in Dudley to 21.2 in Wolverhampton, 22.0 in Bury, 22.4 in York, 22.5 in Lincoln, 24.2 in Sunderland, and 31.8 in Middlesbrough. Measles caused a death-rate of 2.0 in Salford and in Sheffield, 2.4 in Barrow, 2.6 in Coventry, 3.8 in Wolverhampton, 4.8 in Sunderland, 6.1 in Walsall, and 6.6 in Middlesbrough, and whooping-cough of 1.2 in Walthamstow, 1.6 in Acton and in St. Helens, 2.1 in Middlesbrough, and 2.3 in Wigan. The mortality from the remaining infective diseases showed no marked excess in any of the towns, and no fatal case of small-pox was registered during the week. The causes of 48, or 1.0 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number 10 were recorded in Birmingham, 6 in Liverpool, 3 each in Gillingham, Stoke-on-Trent, Bootle, and Gateshead, and 2 each in Southend-on-Sea, Dudley, Nottingham, and Rotherham. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,369, 2,377, and 2,384 at the end of the three preceding weeks, fell to 2,332 on Saturday, May 15th; 270 new cases were admitted during the week, against 259, 316, and 307 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,175 births and 807 deaths were registered during the week ended Saturday, May 15th. The annual rate of mortality in these towns, which had been 18.5, 20.2 and 18. per 1,000 in the three preceding weeks, further fell to 17.9 in the week under notice, but was 3.7 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 11.7 in Clydebank, 12.9 in Edinburgh, and 14.0 in Kirkcaldy, to 19 6 in Glasgow, 21.3 in Falkirk, and 27.6 in Motherwell. The mortality from the principal epidemic diseases averaged 2 6 per 1,0 0, and was highest in Glasgow and Falkirk. The 406 deaths from all causes in Glasgow included 40 from measles, 33 from whooping-cough, 3 from diphtheria, 3 from infantile diarrhoea, and 2 from scarlet fever. Five deaths from measles were recorded in Aberdeen and 3 in Falkirk; from scarlet fever, 2 deaths in Aberdeen; from whooping-cough, 4 deaths in Aberdeen and 9 in Edinburgh; and from typhus, 1 death in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, May 8th, 592 births and 463 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 658 births and 444 deaths in the preceding period. These deaths represent a mortality of 19.9 per 1,000 of the aggregate population in the districts in question, as against 19.1 per 1,000 in the previous period. The mortality in these Irish areas was therefore 4 4 per 1,0 0 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 25.5 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 23.7 (as against an average of 23.8 for the previous four weeks), in Dublin city 25.0 (as against 23.9), in Belfast 16.7 (as against 20.7), in Cork 20.4 (as against 21.6), in Londonderry 15.2 (as against 18.7), in Limerick 23 0 (as against 21.3), and in Waterford 13.3 (as against 24.2). The zymotic death-rate was 1.5, or the same as in the previous period.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Staff Surgeons HENRY D. DRENNAN, M.B., A. LA T. DARLEY, and J. C. BRINGAN to the *Victory*; CYRIL V. GRIFFITHS and A. C. W. NEWPORT to the *Vivid*; P. L. CROSBIE and J. J. H. ROONEY to the *Pembroke*; Surgeons MAURICE C. MASON, CECIL G. SPRAGUE, and H. E. PERKINS to the *Pembroke*; A. M. HENRY and J. P. BERRY to the *Victory*; G. B. COCHREM to the *Vivid*. Temporary Surgeons ROBERT TENNANT, M.B., HOWARD J. BATES, and JOHN A. B. SNELL to the *Pembroke*, additional, for Chatham Hospital; BASIL SAMPSON to the *Victory*, additional, for Haslar Hospital; CHARLES W. LEWIS, M.B., to the *Queen Mary*; JAMES GRIMOLDBY to the *Hibernia*; CHARLES E. RECKITT to the *Shannon*; JAMES D. BANGAY to the *Antrim*; ALGERNON R. UPTON to the *Minotaur*. To be temporary Surgeons: HAROLD B. PADWICK, T. M. WOOD-ROBINSON to the *Black Prince*, vice Cochrem; W.

WHITFIELD to the *Conqueror*, vice Crosbie; W. A. BAILEY to the *Monarch*, vice Bringan; A. F. R. WOLLASTON to the *Agincourt*, vice Berry; R. H. H. NEWTON, M.B., to the *King George V*, vice Atkins; E. D. GRANGER to the *Centurion*, vice Perkins; J G. NICHOLSON, M.B., to the *Albemarle*, vice Rooney; H. WILKS to the *St. George*, vice Darley; A. H. WEAR, M.B., to the *Ajax*, vice Newport; G. M. HEIRON, M.B., to the *Africa*; HAROLD B. PADWICK and J. PAXTON to Haslar Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationers I. M. ROBERTSON to the *Savage*, J. C. BROWN to the *Laurel*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

GEORGE A. WRIGHT, M.B., F.R.C.S., late Lieutenant-Colonel R.A.M.C.(T.F.), to be temporary Lieutenant-Colonel whilst serving at the Military Hospital, Whalley.

Captain JOHN A. HAYWARD, having ceased duty with the British Red Cross Hospital, Netley, relinquishes his temporary commission.

EDGAR W. WILLETT, M.D., F.R.C.S., late Surgeon-Captain Volunteer Medical Staff Corps, to be temporary Captain

Lieutenant IAN MACDONALD, M.D., F.R.C.S.E., relinquishes his temporary commission on account of ill health.

Lieutenant FRANK H. RAE relinquishes his temporary commission.

The name of temporary Lieutenant DANIEL MCKINLAY REID, M.D., is as now described and not as stated in the *London Gazette* of May 3rd.

Temporary Lieutenant OWEN RICHARDS, M.D., to be temporary Captain.

To be temporary Lieutenants: JOSEPH H. N. F. SAVY, M.B., HENRY ADAMS, M.B., COLIN G. SHEARER, M.B., JAMES D. MACKINNON, M.B., ALFRED G. B. DUNCAN, M.B., HERBERT H. TAYLOR, M.B., GEORGE FLEMING, M.B., JOHN ROSS, M.B., WILLIAM F. STEVENSON, THOMAS H. SCOTT, M.B., GEORGE F. C. WALKER, M.B., WILLIAM MAGNER, M.B., JOSEPH E. JUDSON, THOMAS B. JOBSON, M.B., JOSEPH H. JONES, GODFREY D. HINDLEY, M.B., JAMES H. E. DAVIS, THOMAS CLIFFORD, M.B., VALENTINE H. BLAKE, M.B., ALFRED R. ROCHE, MAURICE G. MCELLIGOTT, F.R.C.S., DENIS V. O'CONNOR, ROBERT B. T. STEPHENSON, M.D., JOHN R. DICKSON, M.B., SIDNEY J. WAREHAM, F.R.C.S. JAMES J. ABRAHAM, M.D., F.R.C.S., DANIEL O. TWINING, ARTHUR L. JACKSON, M.D., EVERARD C. ABRAHAM, M.B., WILFRED RAFFLE, CEDRIC R. DENNY, JOHN JONES, M.D., EDGAR TAUNTON, M.B., F.R.C.S., RICHARD HARRISON, GEORGE T. MACLEAN, M.B., GEOFFREY A. BIRD, M.B., DAVID FLECK, M.B., CALEB T. HILTON, M.B., STANLEY E. HUMPHREYS, M.B., WILLIAMSON R. REITH, M.D., JOHN S. BOOKLESS, M.B., F.R.C.S., CHARLES F. HARFORD, M.D., STEPHEN V. TEIFER, M.B., JAMES SMITH, M.B., ALEXANDER C. RENWICK, M.B., GEORGE L. NEIL, GERARD E. LOCKYER, JOHN KEAN, ROBERT T. HERRON, M.D., ERNEST E. FRAZER, M.D., ANDREW CRAWFORD, WILLIAM R. W. ASPLEN, M.B., RICHARD H. G. WESTON, M.B., from the 15th (Service) Battalion, The King's (Liverpool Regiment); CHARLES G. MACKAY, M.B., CECIL C. CRAGG, M.D., JOHN N. F. FERGUSON, M.B., JOHN M. BENNION, M.D., ARTHUR RICHMOND, M.B., GEORGE MCMULLAN, M.D., ALFRED MACKENZIE CLARK, M.B., REGINALD F. YENCKEN, AUBREY J. C. TINGEY; JOHN R. PATE, M.B., CHARLES E. PRICE, WILLIAM S. MASON, M.B., GEORGE S. MILLER, M.B.

FRANCIS M. FARMER to be temporary honorary Lieutenant.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANTS confirmed in their rank: ARTHUR C. BATEMAN, EDMOND ROBINSON, CHARLES A. MASON.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL C. MACTAGGART, C.I.E., M.B., Inspector-General of Prisons, United Provinces, is appointed to be Inspector-General of Civil Hospitals, United Provinces, with effect from March 29th, 1915.

Major H. C. BROWN, M.B., is appointed permanently to the Bacteriological Department.

Surgeon-General G. F. A. HARRIS, C.S.I., M D., F.R.C.P., K.H.S., is permitted to ret re from the service with effect from April 1st, 1915.

Major W. H. COX, D.S.O., has been permitted to retire from the service with effect from April 12th, 1915.

Major T. S. B. WILLIAMS is posted as Agency Surgeon, Eastern Rajputana States, with effect from March 23rd, 1915.

The following changes are sanctioned among Agency Surgeons under the Foreign and Political Department: Lieutenant Colonel R. C. MACWATT, an officiating Agency Surgeon of the 1st Class, to be an Agency Surgeon of the 1st Class substantive *pro tempore*, with effect from September 21st, 1913; Major F. A. SMITH, an Agency Surgeon of the 2nd Class, to be an Agency Surgeon of the 1st Class substantive *pro tempore*, with effect from October 7th, 1914.

The promotion to present rank of Majors H. ROSS, M.B., F.R.C.S.I., and L. HIRSCH, F.R.C.S.E., is antedated from July 26th, 1914, to January 26th, 1914.

The promotion to present rank of Majors J. O'LEARY, M.B., F.R.C.S.I., C. L. DUNN, and R. D. SAIGOL, F.R.C.S.E., is antedated from September 1st, 1914, to March 1st, 1914.

The following promotions are made with effect from February 28th:—Captains to be Majors: R. KELSALL, M.D., C. H. BRODRIBB, M.B., J. MCC. A. MACMILLAN, M.B., F.R.C.S., C. A. GILL, R. F. STEEL, M.B., F.R.C.S.E., A. C. INGRAM, M.D., E. W. C. BRADFIELD, M.B., F.R.C.S.E., J. B. D. HUNTER, M.B., F.R C.S.E.

Lieutenant-Colonel R. H. ELLIOT, M.D., F.R.C.S., has been permitted to retire from the service, with effect, from April 19th, 1915.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICES.

MAJOR FRANCIS J. BROWN, from Deputy Assistant Director of Medical S rvices, to be Assistant Director of Medical Services, Lowland Division, with the temporary rank of Colonel.

Colonel HENRY N. THOMPSON, D.S.O., M.B., to be Assistant Director of Medical Services, South Midland Division, vice Colonel John R. I. Raywood, who vacates the appointment.

ROYAL ARMY MEDICAL CORPS.

1st London Casualty Clearing Station — Captain WILLIAM S. FORBES, M.B., from the Unattached List for the Territorial Force, to be Captain.

1st London (City of London) Sanitary Company.—Corporal CUTHBERT E. CAULFIELD FERREY to be Lieutenant.

2nd London Sanitary Company.—Lieutenant ARTHUR H. SAVAGE, M D., from the 1st South-Western Mounted Brigade Field Ambulance, to be Lieutenant.

3rd London General Hospital.—WILLIAM F. B. BENSTED-SMITH to be Lieutenant.

2nd Home Counties Field Ambulance.—HENRY T. JONES, M.B., to be Lieutenant.

1st Eastern General Hospital.—WILLIAM L. MURPHY to be Captain, whose services will be available on mobilization.

East Anglian Casualty Clearing Station.—RICHARD V. SLATTERY to be Lieutenant.

2nd East Anglian Field Ambulance.—Lieutenant ARTHUR E. TAIT, M.B, from the 2nd Northumbrian Field Ambulance, to be Lieutenant.

South Midland Casualty Clearing Station. — Captain JAMES L. JOYCE, F R.C.S., is seconded. ASTLEY B. PROSSER and WALTER M. COX, M.B., to be Lieutenants.

2nd North Midland Field Ambulance.—Major RICHARD M. WEST, M.D., to be temporary Lieutenant-Colonel; Captain JOSEPH F. DIXON, M.D., to be temporary Major.

1st Southern General Hospital.—Major OTTO J. KAUFFMANN, M.D., to be Lieutenant-Colonel. Captain ALBERT LUCAS, F.R C.S., to be Major. CHRISTOPHER MARTIN, M.B., F.R.C S., and LEONARD K. THOMAS to be Captains, whose services will be available on mobilization.

2nd Southern General Hospital.—Captain WILLIAM COTTON, M.D., to be seconded

Supernumerary for Service with the Officers' Training Corps.—Temporary Major ARCHIBALD M. H. GRAY, M.D., to be Major.

1st Western General Hospital.—Captain KEITH W. MONSARRAT, M.B., is seconded.

2nd Northern General Hospital.—To be Captains, whose services will be available on mobilization: CARLTON OLDFIELD, M D., F.R.C.S., LEONARD A. ROWDEN, M.B., ALFRED GOUGH, M.B., F.R.C.S., HENRY H. GREENWOOD, M.B., JOSEPH A. BLAYNEY, ARTHUR ELLISON, FREDERICK W M. GREAVES, M B.

1st Northumbrian Field Ambulance.—Captain GEORGE H. SPENCER to be temporary Major.

2nd Northumbrian Field Ambulance.—HENRY STONEHOUSE to be Lieutenant.

1st Scottish General Hospital.—To be Lieutenants: IAN G. BISSET, M.B., HERBERT J. A. LONGMORE, M B., DOUGLAS W. BERRY, M.B., Cadet CAMERON M. NICOL, M.B., from the Aberdeen University Contingent, Senior Division, O.T.C.

Highland Casualty Clearing Station.—Captain ALEXANDER DON, M.B., F.R.C.S.E., from 1st Scottish General Hospital, to be Major, temporary; JAMES DAVIDSON, M.B., to be Lieutenant.

2nd Highland Field Ambulance.—JOHN MOIR, M.B., to be Lieutenant.

Highland Divisional Sanitary Service. — Captain JAMES M. MCQUEEN, M.B., from the 1st Scottish General Hospital, to be Captain.

Attached to Units other than Medical Units.—To be Majors: Surgeon-Major PERCIVAL E. BARBER, from the West Riding R.H.A.; Surgeon-Captain ALFRED ROBINSON, M.D, from 5th Battalion York and Lancaster Regiment; Surgeon-Major JAMES P. S. WARD, from Devonshire R G A., Captain NORMAN MACLAREN. WILLIAM APPLEYARD, late Captain 6th Battalion, Prince of Wales's Own, West Yorkshire Regiment, to be Captain. To be Lieutenants: ANDREW L. MCCULLY, JOHN D. JONES (late Lieutenant 4th Battalion Welsh Regiment), SAMUEL SHEPHEARD, EDGAR BABST, M.B. (late Lieutenant 5th Battalion Northumberland Fusiliers) RICHARD P. POLLARD, M.B. Lieutenant CHARLES W. WIRGMAN, M.D., is seconded.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £170 per annum.

BRISTOL: BISHOP KNOLL HOSPITAL, Stoke Bishop.—Surgeon in Residence. Salary, £250 per annum.

BRISTOL GENERAL HOSPITAL.—House-Surgeon and Casualty House-Surgeon. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURNLEY VICTORIA HOSPITAL.—House-Surgeon. Salary, £115 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Honorary Assistant Surgeons in (1) Ear, Nose, and Throat Department, (2) Ophthalmic Department.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CARMARTHEN JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £200 per annum, rising to £230.

DENBIGH: NORTH WALES COUNTIES ASYLUM.—Second Assistant Medical Officer, Salary, £300 per annum.

EALING BOROUGH.—Medical Officer of Health and School Medical Officer. Salary, £700 per annum.

ECCLESALL BIERLOW UNION.—Resident Assistant Medical Officer of the Institution. Salary, £350 per annum.

EDINBURGH: ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.—Four Resident Medical Officers.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—House-Physician. Salary, £75 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—House-Physician. Salary, £150 per annum.

HARROGATE INFIRMARY.—Resident House-Surgeon. Salary, £100 per annum.

KINCARDINE PARISH.—Medical Officer. Salary, £135 per annum.

LEEDS CITY.—Medical Assistant in the Public Health Department. Salary, £350 per annum.

LIVERPOOL: HIGHFIELD MILITARY HOSPITAL, Knotty Ash.—Resident Assistant Medical Officer. Salary, £300 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Honorary Assistant Laryngologist.

MANCHESTER: ANCOATS HOSPITAL.—(1) Senior House-Surgeon; (2) House-Physician. Salary, £100 and £80 per annum respectively and war bonus of £10 a month.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

NEWCASTLE-UPON-TYNE PARISH.—Assistant Resident Medical Officer (male) to the Poor Law Institution and Infirmary. Salary, £250 per annum, rising to £300.

NORTHAMPTON COUNTY BOROUGH.—Clinical Tuberculosis Officer. Salary, £350 per annum.

NORTHUMBERLAND: CHILDREN'S SANATORIUM, Stannington.—Lady Resident Medical Officer. Salary, £200 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £150 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—(1) Resident Medical Officer: (2) Assistant Resident Medical Officer. Salary, £110 and £90 per annum respectively.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

PRESTWICH: COUNTY ASYLUM.—Locumtenent. Salary, £6 6s. per week.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident Medical Officer.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £100 per annum respectively.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—Junior Lady House-Surgeon for the Gynaecological and Maternity Departments. Salary, £80 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SHREWSBURY: ROYAL SALOP INFIRMARY.—House-Physician. Salary, £110 per annum.

SIDLAW SANATORIUM.—Resident Medical Officer. Salary, £200 per annum.

SINGAPORE MUNICIPALITY.—Resident Medical Superintendent for Infectious Diseases Hospital. Salary, 4,200 dollars per annum, rising to 4,800 dollars.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE INFIRMARY.—Lady House-Surgeon. Salary, £150 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House-Surgeon. Salary, £250 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) Two House-Surgeons; (2) House-Physician. Salary, £150 per annum each.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £120 per annum.

SUNDERLAND: ROYAL INFIRMARY CHILDREN'S HOSPITAL.—Resident Medical Officer (lady). Salary, £100 per annum.

SWANSEA EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer Salary, £300 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £125 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—(1) Resident Medical Officer; (2) House-Physicians. Salary, for (1) £160 per annum, and for (2) £120 and £100 per annum respectively.

WESTERN GENERAL DISPENSARY, Marylebone Road, S.W.—Honorary Ophthalmic Surgeon.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £150 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

WREXHAM INFIRMARY.—Resident House-Surgeon. Salary, £125 per annum.

YORK: THE RETREAT.—Junior Assistant Medical Officer. Salary, £200 to £225 per annum

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Aberavon (Glamorgan).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

BELLEW, T. M., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer of the Alder Hey Hospital of the West Derby Union.

CAMERON, A. A. J. D., M.D., Ch.B.Aberd., District Medical Officer of the Settle Union.

DAWSON, J. Maxwell, M.D.Edin., D.P.H., Medical Officer of Health for the Burgh of Buckhaven, Methil, and Innerleven, and also Medical Superintendent of Cameron Infectious Hospital.

FENTON, D., M.B., Ch.B.Edin., District Medical Officer of the Blackburn Union.

GILES, J. D., M.D.Edin., Medical Superintendent of the Salford Union Infirmary.

JONES, P., M.D.Edin., Certifying Factory Surgeon for the Abergele District, co. Denbigh.

MEADE, J. N., L.R.C.P. and S.Edin., School Medical Inspector to the Ayr County Education Committee.

VERVER, B. T., M.R.C.S., L.R.C.P., District Medical Officer of the Basford Union.

WELFORD, C. H., M.D.Aberd., Certifying Factory Surgeon for the Stanhope District, co. Durham.

WHITELEY, D. F., L.R.C.P., M.R.C.S., District Medical Officer of the Fulham Parish.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—The following appointments have been made:

Resident Medical Officer to the Military Wing.—Niel McDonald, M.B., B.S.

House-Physician.—Miss Pillman, M.B., B.S.

House-Surgeon.—Miss Blandy, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

DEATHS.

BEATTIE.—On the 28th April, at Maiduguri, W. Africa, John Abernethy, M.D., of the West African Medical Staff, and "The Nook," Lower Green Road, Esher, aged 27.

HODGSON.—On May 9th, 1915, killed in action whilst capturing a German trench near Fromelles, France, George Graham Hodgson, Lieutenant, 2nd Battalion Royal Berkshire Regiment, aged 26, elder son of Dr. and Mrs. Graham Hodgson, Curfew House, Chertsey.

MCLEOD.—At Whitehall, Drighlington, suddenly, on the 12th inst., Dr Neil McLeod, youngest son of Neil McLeod, J.P., The Friars, Ettrick Road, Edinburgh, aged 34 years.

PAYNE.—On the 21st inst., at 76, Onslow Gardens, South Kensington, S.W., Surgeon-General Arthur James Payne, M.D., I.M.S., ret., in his 89th year.

DIARY FOR THE WEEK.

MONDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ODONTOLOGY, 8 p.m.—Annual General Meeting. Casual Communication:—Mr. J. G. Turner: A Note on Extraction. Paper:—Mr. F. J. Bennett: Recent Studies in Calcification of the Teeth.

TUESDAY.

RÖNTGEN SOCIETY, Cancer Hospital, Fulham Road, S.W., 8.15 p.m.—Annual General Meeting. Demonstrations in the Electrical and Radio-Therapeutic Department of the Hospital.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Election of officers 1915-16. Clinical meeting.

ROYAL SOCIETY OF MEDICINE:
SECTION OF DERMATOLOGY, 5 p.m.—Resumed debate on the Pemphigoid Eruptions.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF EPIDEMIOLOGY AND STATE MEDICINE, 8.30 p.m.—Paper:—Mr. Major Greenwood, jun., Mr. G. Udney Yule: Antityphoid and Anticholera Inoculation: a Statistical Study.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Courses will be given next week:

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		JUNE.
2	Wed.	Kent Branch, Tunbridge Wells, 4.30 p.m. Tea, 4 p.m.; Dinner, 7.30 p.m.
8	Tues.	London: Organization Committee, 2 p.m.
9	Wed.	London: Medico-Political Committee, 2 p.m.
11	Fri.	East Yorkshire Division, Annual Meeting, Hull Royal Infirmary, 8.15 p.m.
16	Wed.	Conference of Local Medical and Panel Committees, Connaught Rooms, Great Queen Street, London, W.C., 10 a.m.
23	Wed.	London: Finance Committee, 2 p.m.
25	Fri.	Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C., 4 p.m.
30	Wed.	London: Council.
		Newcastle-on-Tyne Division, Annual Meeting.
		JULY.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 5TH, 1915.

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NON-PANEL DOCTORS AND NATIONAL INSURANCE CERTIFICATES.

IN order to minimize as much as possible the inconveniences caused to doctors who attend insured persons in their private capacity, the Association has published books of certificates which, it is believed, will meet the requirements of approved societies, so far as is practicable in the case of certificates not given under the obligations of the official medical certification rules. The form of certificate is sufficiently like the official form to remove many of the difficulties which insured persons who have been attended by private doctors have had in satisfying the requirements of their approved societies, but is sufficiently distinct from the official form to show at once that it is being used by a doctor who is attending the patient in a private capacity, that is to say, either by a doctor who is not on a panel, or by a panel doctor other than the one on whose list the insured person is.

The Association has shown the certificates to the Insurance Commissions for England, Scotland, and Wales, and they raise no objection to the issue of them by the Association to medical practitioners for use when attending insured persons not being their panel patients, and not being persons whom they are attending as medical officers of institutions under Section 15 (4), or in virtue of "own arrangements" under Section 15 (3).

The books are being issued at cost price. They contain 50 certificate forms, and may be obtained from the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C., price 6d. each, post free.

INSURANCE ACT COMMITTEE.

A MEETING of the Insurance Act Committee was held at the office of the Association on Thursday, May 27th, when Dr. J. A. MACDONALD, LL.D., was in the chair, and the other members present were:—*England and Wales:* Dr. Olive Claydon (Oldham), Dr. E. R. Fothergill (Hove), Dr. Major Greenwood (London), Dr. R. Harding (New Radnor), Dr. W. Ainslie Hollis (Brighton), Dr. I. W. Johnson (Bury), Lieutenant-Colonel Herbert Jones, R.A.M.C.(T.) (Hereford), Dr. W. B. Crawford Treasure (Cardiff). *Scotland:* Dr. John Adams (Glasgow), Dr. John Hunter (Edinburgh). *Ex officio:* Mr. T. Jenner Verrall, LL.D. (Chairman of Representative Meetings), Dr. Edwin Rayner (Treasurer).

CERTIFICATES OF NON-PANEL DOCTORS.

It was announced that the Commissioners had been consulted as to the publication of the new form of certificates for use when insured persons are attended as private patients, and were desirous that such publication should be made with the particular form of words as follows:

The British Medical Association has shown the certificates to the Insurance Commissions for England, Scotland, and Wales, and they raise no objection to the issue of them by the British Medical Association to medical practitioners for use when attending insured persons not being their panel patients, and not being persons whom they are attending as medical officers of institutions under Section 15 (4), or in virtue of "own arrangements" under Section 15 (3).

It was resolved:

(*a*) That the form of certificate and information on the cover of the books be approved, subject to the inclusion of the above words, and an indication as to where the books may be purchased; (*b*) that 500 books, of 50 certificates each, be printed as a first instalment and placed on sale at 6d. per book post free; and (*c*) that a sample copy of the certificate be forwarded to Honorary Secretaries of Local Medical and Panel Committees with the next circular letter.

TREATMENT OF INSURANCE PATIENTS DISCHARGED FROM THE ARMY.

It was decided that the arrangements entered into in the Renfrewshire insurance area be adopted as a suitable method of dealing with this matter, provided that the doctors were informed by the Insurance Committee concerned that such arrangements in no way prejudice the right of free choice on either side.

THE WAR EMERGENCY.

Dr. VERRALL, as Chairman of the Special Committee of Chairmen of Standing Committees, brought forward the question of the effect of the general demand for more doctors for the army upon the various civilian interests including the Insurance Act work, and the Insurance Act Committee suggested the following for the consideration of the Chairmen's Committee:

That the interests of the army as regards medical officers should be made paramount to everything else at present; that the Scottish plan of endeavouring to obtain the requisite number of practitioners for the army by asking each area to provide the numerical proportion of practitioners apparently due from it be extended to the whole of the United Kingdom, and that the question of whether the proportion provided by any particular area should be reduced on account of its creating a possibly dangerous deficiency of doctors for civilian work should be left to be safeguarded by the local profession who best know the requirements of the area.

Nurses as Sick Visitors.

In consequence of corespondence it was decided to make representations to the Queen Victoria Jubilee Institute for Nurses to the effect that the employment of nurses in uniform as sick visitors for approved societies was detrimental to the best interests of nurses:

(*a*) Because such a system will tend to cause confusion in the minds of the public, and

(*b*) Because the function of a nurse and sick visitor are essentially different, the former being actuated only by a desire for the welfare of the patient, while the latter is employed primarily in the interests of the approved society.

Rhymney Valley Medical Association.

A letter was received from the Rhymney Valley Medical Association expressing thanks to the Committee for its assistance and advice in regard to certain legal proceedings which had been settled in a manner satisfactory to the local profession.

Attendance on Soldiers on Furlough.

The question of medical attendance on soldiers on furlough was again discussed (Supplement, March 13th, p. 89, and 27th, p. 110), together with correspondence with the Insurance Commissioners and a letter sent to the War Office. The Insurance Commission stated that it was permissible for a soldier on furlough to call in a civil medical practitioner provided that he was not within two miles of a military hospital, and that this superseded the arrangements described in Army Form O. 1667. The War Office had replied to the Committee's letter referring to the inability of certain civilian medical practitioners to obtain fees for attendance on soldiers on furlough, stating that inquiries would at once be made regarding the claims of the practitioners specifically referred to, and asking the Association in future to instruct practitioners to send their claims to the Deputy Director of Medical Services of the Command in which they were resident. It was reported that those practitioners whose cases had been brought specifically to the notice of the War Office had now received payment of their accounts, and had thanked the Association for its help.

Drug Tariff.

In regard to the representations made to the Chairman of the Joint Committee of Insurance Commissioners objecting on behalf of the Association to the Special Drug Fund being used for the purposes of a special grant to chemists in those areas where the discount had been greatest during the last two years, the reply received stated that Mr. Montagu was satisfied that the proposed application of the moneys contained in the fund could not be regarded as outside the intentions of Parliament in voting those grants. It was resolved to address a further communication to Mr. Montagu as to the correctness of the statement in his communication of May 12th that the 1913–14 grants were for contributing "towards the cost of drugs where epidemics or other abnormal conditions have caused an excessive demand upon the funds available for this purpose" in view of the fact that in the 1915–16 Civil Service Estimates in the note relating to the same grant the word "sickness" occurred between the words "abnormal" and "conditions."

Reduction of Clerical Work of Practitioners during the War.

The Medical Secretary reported the result of a conversation with the Chairman of the English Insurance Commission concerning the representations made by the Committee in accordance with the decision of the meeting on April 15th (Supplement, May 1st, p. 154). It was resolved to inform Sir Robert Morant that the Committee proposed to lay the question of whether it was advisable to ask for a suspension of insurance medical records during the war, before the forthcoming conference of representatives of Panel and Local Medical Committees, and that there was in the meantime no desire to press for an answer.

Medical Referees.

It was resolved to recommend the Council to report to the Representative Body that, having had reports as to the working of the resolution in favour of a minimum fee of 10s. 6d. for the work of medical referees, the Council is of opinion that the whole subject needs careful reconsideration.

Meetings of Branches and Divisions.

BORDER COUNTIES BRANCH:

Dumfries and Galloway Division.

The annual general meeting of the Division was held in the Dumfries Infirmary on May 25th, when Dr. Chalmers was in the chair.

War Emergency.—A letter was read from the D.D.M.S. Scottish Command, regretting his inability to be present at, or to send a representative to, the previous meeting owing to pressure of clerical work. A further communication from the Scottish Secretary was read relevant to the proportion of medical men to be provided by the Division for whole-time military service, and a list of men serving in the army, either in the R.A.M.C. or in the ranks was sent to him as follows:

R.A.M.C.	*Combatant.*
Dr. J. Saffley, Annan.	Colonel P. M. Kerr, Dumfries.
Dr. G. R. Livingston, Dumfries.	Private W. D. Chambers, Dumfries,
Dr. Millar, Sanquhar.	Captain J. J. Dykes, Dumfries.
Dr. C. J. Tisdale, Dumfries.	Captain E. S. Forde, Castle Douglas.
Dr. Moyes, Dumfries.	Lieutenant W. Murdoch, Annan.
Dr. D. C. Welsh, Castle Douglas.	
Dr. D. Smith, Creetown.	
Dr. G. Scott, Ruthwell.	
Dr. F. W. Mackenzie, Lockerbie.	
Dr. J. Dawson, Newton Stewart.	
Dr. R. Carruthers, Portrack, Dumfries.	

Election of Officers.—The following officers were elected:

Chairman: Dr. Chalmers.
Secretary and Representative: Dr. J. D. Robson.
Executive Committee: Drs. Easterbrook, Sanders, Reid, McLaughlan.
Representative on Branch Council: Drs. Ross, Martin, Scott.

Annual Report of Central Council.—The recommendations and Report of Council were next considered, and the Representative was instructed to oppose Motion 25 (see Journal), also to oppose 85 (p. 185), as being contrary to a resolution passed by the Division on May 15th, 1914, where contracts, as pertaining to juvenile societies, were not to be entered into at less than 8s. 6d. per annum, inclusive of medicine, with free choice of doctor. Other recommendations were dealt with, and the Representative instructed as to voting.

Good Wishes to Colonel Kerr.—It was unanimously agreed to convey to Colonel Kerr, O.C. 1/5th K.O.S.B., the good wishes, for the welfare and godspeed of the officers and men under his charge, from the members of the Division.

DORSET AND WEST HANTS BRANCH.

The annual meeting of the Branch was held at Weymouth on May 19th, Mr. H. H. Du Boulay, President, in the chair.

Annual Reports.—Dr. Fowler presented the annual report of the Branch for the year ending December 31st, which showed that the total membership was 199, as against 250 in the previous year. The financial statement showed a balance in hand of £50 10s. The Branch Council regretted a diminution in membership of the Branch, which was largely due to the resignation of many members who had retired from practice. The necessity for the existence of the Association had been clearly demonstrated by the war emergency, in which it had been able to give invaluable help to the Government. The Branch Council pointed out that membership of the Association afforded help and support to the members. Dr. James Miller, Honorary Secretary, presented the report of the West Dorset Division, which showed a balance in hand of £3 13s. 2d. Three meetings of the Division were held, with an average attendance of seventeen. Dr. Eleanor Bond read the report of the Bournemouth Division, the accounts of which showed a balance of £2 12s. 6d. Two meetings of the Division only were held, the average attendance being twenty. On the motion of the President, the reports were received and directed to be entered on the minutes.

President's Address.—The President-elect, Dr. C. D. Muspratt, on taking the chair, expressed the thanks of

the Branch for the hospitality of the Weymouth members who entertained them to luncheon and tea, and then gave an address "On some cases of interest." At its conclusion a hearty vote of thanks to the President was proposed by Mr. H. H. DU BOULAY, and carried by acclamation.

Next Meeting.—On the motion of Mr. C. EDWARDS, seconded by Mr. MARSH, it was decided that the next meeting should be held at Sherborne during the first week in July.

War Emergency.—Dr. SIMMONS proposed and Dr. JOHNSON SMYTH seconded the following motion:

> That, while this meeting is anxious to assist the Government in the war emergency, it is of opinion that many questions of organization and detail require negotiation with the Government in order to make full use of the local profession for hospital and part-time service, and to facilitate the enlistment of whole-time men, and that the special War Committees of the Association should obtain reports from the officers of the Divisions as to the character and condition of military services demanded and offered in their areas.

Dr. PARSONS, a visitor, said that a good deal of hardship and injustice would be removed if the senior members of the profession were given appropriate rank. Dr. SAUNDERSON WELLS suggested that recognition should be given by the Government to civilian practitioners who are doing Government work. Dr. HYLA GREVES supported the resolution, which was carried.

Election of Officers.—The following were elected the Branch Council for 1915–16:

President: Dr. C. D. Muspratt.
Vice-Presidents: Dr. V. Milner, Mr. H. C. Unwin.
Past-President: Mr. H. H. Du Boulay.
Secretaries: Dr. F. Fowler, Mr. P. A. Ross.
Elected by Bournemouth Division: Dr. Alexander, Dr. Bottomley, Mr. Forster, Dr. Haylock, Dr. Milner, Mr. Montgomery, Dr. Simmons, Mr. Spinks, Dr. Willans, Dr. Johnson Smyth, Dr. Eleanor Bond.
Elected by West Dorset Division: Dr. Macdonald, Dr. Morrice, Mr. Unwin, Dr. Whittingdale, Lieutenant-Colonel Decimus Curme, Dr. W. Miller.

DUNDEE BRANCH.

THE annual meeting of the Dundee Branch was held in University College, Dundee, on May 27th, when Dr. G. A. PIRIE was in the chair.

Model Rules.—The model rules were adopted as the rules of the Branch.

Election of Officers.—The following were appointed:

President: G. A. Pirie.
President-elect: A. B. Dalgetty.
Vice-Presidents: H. C. Colman, J. E. Taylor.
Council: J. Strathearn, G. A. Rorie, Emily C. Thomson, G. A. Peterkin, A. D. Yule, H. Hoile, with the Chairman and Secretary of the Dundee, and the Secretaries of the Forfarshire and Arbroath Local Medical Committees.
Secretaries: R. C. Buist, J. Martin Smith.
Treasurer: D. M. Greig.
Representative: C. S. Young, the Council being authorized to appoint a deputy if need be.

Matters Referred to Divisions.—The agenda of the Annual Representative Meeting were considered, and the recommendations of Council approved on (*a*) fees for juveniles, (*b*) fees for examination for life assurance, (*c*) salaries of assistant asylum medical officers.

War Emergency.—The Secretary reported that twenty-six members of the Branch were on whole-time duty and twenty of the non-members, and that ten members offered part-time service equal to twenty-four hours. The area was expected to furnish further sixteen men for whole-time duty.

Ethical Rules.—The proviso that the Branch Council should act as the Ethical Committee was rescinded.

METROPOLITAN COUNTIES BRANCH:

LAMBETH DIVISION.

THE annual meeting of the Lambeth Division was held on May 28th at the Bethlem Royal Hospital.

Election of Officers.—The following were elected:

Chairman: Dr. Harvey Norton.
Vice-Chairman: Dr. F. H. Lane.
Representative at Representative Meetings: Dr. J. C. V. Denning.
Secretary: Dr. T. H. Parkes Peers.
Representative at Branch Council: Dr. Moran.
Committee: Drs. A. R. French, A. R. Moore, E. W. Herrington, G. B. Scott, G. R. Elwin, A. G. Everard, P. D. Pywell, F. O. Stoker, D. McCarthy, S. S. Brook, J. Stoker, T. Huston.

War Emergency.—A well represented meeting of the profession resident in the area subsequently held was addressed by Colonel Harrison and Major Galloway as representative of the War Office. Certain facts were laid before the meeting emphasizing the requirements of the military medical service. At the same time very slight encouragement was held out by the speakers as to the employment of part-time medical officers and as to the employment of practitioners over the age of 40.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

ROSS AND CROMARTY DIVISION.

THE annual meeting of the Division was held in the Ross Memorial Hospital, Dingwall, on May 28th, when Dr. Ross (Tain), President, was in the chair.

Matters Referred to Divisions.—The Council's report on the question of fees for treatment of juvenile members of friendly societies (SUPPLEMENT to the BRITISH MEDICAL JOURNAL of March 20th) was not approved, the Division taking the view that the interests of rural members of the Association were neglected by the Council. The Secretary was asked to draw the attention of the Medical Secretary to their complaint, and to point out that in all recent reports the position and special needs of rural members were only considered as an afterthought, with the result that, as in the case of the National Insurance Act, rural members of the Association suffered great injustice as compared with urban members. The Secretary was also instructed to lay the complaint before the Representative of the Division for the Representative Meeting, and to have the matter brought before the next meeting of the Branch.

The report of the Council upon fees for medical examination for life insurance was approved.

Belgian Doctors' and Pharmacists' Relief Fund.—The contribution of the Division to the Belgian Doctors' Relief Fund was considered satisfactory.

Insurance Act.—Correspondence between the Secretary and the Scottish Insurance Commissioners was read and approved.

War Emergency.—A letter was read from the Medical Secretary as to the war emergency. The Division expressed the view that, while it was almost impossible for rural members to give "whole-time" service, much more use could be made of their willingness to give "part-time" service than was at present being done. The Division further expressed the hope that in any scheme of compulsory medical service the special needs and difficulties of rural members, both from the point of view of the public and the medical men, would be kept in view by those in authority. The Secretary was asked to draw the attention of the Medical Secretary to this matter.

Annual Report.—The annual report was read and approved.

Election of Officers.—The following office-bearers were elected for the coming year:

Chairman: J. Pender Smith, M.B., Dingwall.
Vice-Chairman: Hugh Ross, M.B., Tain.
Honorary Secretary: E. K. Mackenzie, M.D., Tain.
Representatives for Representative Meeting: J. Munro Moir, M.D., Inverness.
Representative on Branch Council: J. Pender Smith, M.B., Dingwall.
Executive Committee: John Cameron, M.B., Hugh Ross, M.B., W. W. N. Knox, L.R.C.P. and S.Edin., W. McLean, M.B., J. P. Smith, M.B., J. A. Somerville, M.B.

Votes of Thanks.—The Chairman and Secretary were thanked for their services during the past year.

STAFFORDSHIRE BRANCH:

SOUTH STAFFORDSHIRE DIVISION.

THE annual meeting of the Division was held at Wolverhampton on May 20th, at 8 p.m., when Mr. J. A. WOLVERSON was in the chair.

School Medical Officer.—The HONORARY SECRETARY reported that Dr. Badger, the school medical officer, had now been granted leave of absence to take up a commission for the duration of the war, and that his salary had been increased to £400 per annum, rising by annual increments of £25 to £500.

Election of Officers.—The following officers were elected for 1915–16:

Chairman: Dr. J. A. Codd.
Vice-Chairman: Mr. J. A. Wolverson.
Honorary Secretary: Dr. H. C. Mactier.

Representative in Representative Meetings: Dr. H. C. Mactier.
Representatives on Branch Council: Dr. Ridley Bailey, Dr. J. A. Codd, and Dr. T. C. Craig.
Six Members of Executive Committee: Mr. W. F. Cholmeley, Dr. E. H. Coleman, Mr. E. Deanesly, Dr. T. H. Galbraith, Dr. D. Mann. and Dr. W. L'E. Mathews. Dr. H. Malet, as President-elect of the Branch, is also a member of the Executive Committee *ex officio.*

Medical Attendance on Dependants of Soldiers and Sailors.—The following recommendation of the Executive Committee was passed unanimously, but in view of the action of the Branch Council in this matter, the Honorary Secretary was instructed to send the resolution to the local branch of the Soldiers' and Sailors' Association only:

> That the South Staffordshire Division call the attention of the Committees in charge of giving out prescription books to the dependants of soldiers and sailors to the fact that such books are only to be given when the recipients are unable to pay for medical attendance, and that the doctors have the right to challenge in any case where the patient is considered in a position to pay.

War Emergency.—The War Emergency was considered, and the Honorary Secretary was instructed to write to the D.D.M.S. at York, pointing out that as seventeen members of the profession were already serving with the forces, no more could give whole-time service, but that the Division was willing to give any service in its power, such as the examination of recruits and the staffing of a military hospital should one be formed at Wolverhampton. A meeting of the executive will be called to consider the reply.

Vote of Thanks.—Dr. J. A. CODD then took the chair, and moved a vote of thanks to Mr. J. A. Wolverson for his services as chairman during the past year; this was seconded by Dr. RIDLEY BAILEY, and carried with acclamation. Mr. J. A. WOLVERSON suitably replied.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

RETURN OF REPRESENTATIVES.

Honorary Secretaries of Divisions who have not yet forwarded to the Head Office the names and addresses, and dates of election, of the Representatives appointed by their Constituencies for 1915–16, are asked to forward me these particulars by the earliest possible date. Under the By-laws Representatives must be elected not more than nine months nor less than four weeks before the Annual Representative Meeting, and their names must be notified to the Head Office *by at latest July 2nd.* A Representative can if necessary be elected and instructed at one and the same meeting of the Constituency.

By Order,
ALFRED COX, *Medical Secretary.*

May 19th, 1915.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, June 30th, in the Council Room, 429, Strand, London, W.C., at 2 o'clock in the afternoon.

By order,
GUY ELLISTON,
Financial Secretary and Business Manager.

June 1st, 1915.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: NUNEATON AND TAMWORTH, AND COVENTRY DIVISIONS.—Drs. L. E. Price (Hazelmere, Coton Road, Nuneaton) and W. H. Loman (Norton House, Coventry), Honorary Secretaries, give notice that a meeting of the constituency of the Nuneaton and Tamworth, and Coventry Divisions will be held on Friday, June 11th, at 4 p.m., at the Coventry and North Warwickshire Hospital, to elect and instruct Representative for the forthcoming Representative Meeting.

EAST YORK AND NORTH LINCOLN BRANCH: EAST YORKSHIRE DIVISION.—Mr. H. L. Evans, Honorary Secretary (101, Prince's Avenue, Hull), gives notice that the annual meeting of the East Yorkshire Division will be held on Friday, June 11th, at 8.15 p.m., in the Hull Royal Infirmary. Business: To elect officers; to receive the report of the Executive Committee; to transact any other business which is proper to annual meetings.

METROPOLITAN COUNTIES BRANCH.—Dr. R. E. Crosse and Mr. N. Bishop Harman (Honorary Secretaries) give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C., on Friday, June 25th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of council and of Representatives of the Branch on the Central Council. (3) Alteration of Rule 19 *b* by the insertion of the words "and adopt (with or without amendment)" after the words "To receive" so that the rule shall read as follows: 19. In addition to the ordinary business of any ordinary general meeting, the business of the annual meeting shall be: To receive the report of the election of new officers; (*b*) to receive and adopt (with or without amendment) the annual report of the council on the affairs of the Branch, and the annual financial statement; (*c*) to receive the annual report of the Representatives of the Branch on the Central Council of the Association; (*d*) to make new rules, or alter or repeal existing rules. (4) President's address: Sidelights on the Practice of Medicine in the Past from Early English Literature.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—Mr. David Ranken, Honorary Secretary (23, Ridley Place, Newcastle-upon-Tyne) gives notice that the annual meeting of the Newcastle-upon-Tyne Division will be held on Wednesday, June 30th, 1915.

SOUTH MIDLAND BRANCH.—Dr. E. Harries-Jones, Honorary Secretary (16, Castilian Street, Northampton), gives notice that the annual meeting of the South Midland Branch, which was to have been held towards the end of June, 1915, at High Wycombe, under the presidency of Dr. L. W. Reynolds, has, by the expressed wish of the President, been postponed *sine die* on account of the war.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.—Dr. A. E. Larking, Honorary Secretary (Castle Street, Buckingham), gives notice that the annual meeting of the Buckinghamshire Division will be held, by the kind invitation of Dr. Shaw, at the King's Head Hotel, Aylesbury, on Tuesday, June 8th, at 3 p.m. The committee will meet at 2.30 p.m. previous to the meeting.

STAFFORDSHIRE BRANCH.—Dr. Harold Hartley, Honorary General Secretary (Bashford, Stoke-on-Trent), gives notice that the forty-second annual meeting of the Branch will be held at the George Hotel, Lichfield, on Thursday, June 24th, at 5.15 p.m., when an address will be delivered by the President-elect, Dr. F. M. Rowland. Agenda: Correspondence. Report of the Council. Financial statement. Election of officers for the ensuing year—President-elect, Secretary, and Treasurer. To decide the place of the next annual meeting. Address by the President. Members have the privilege of introducing friends. Dinner at 6.30 p.m.; charge 5s.

SURREY BRANCH.—Mr. Cecil P. Lankester, Honorary Secretary (1, Rectory Place, Guildford), gives notice that the second annual meeting of the Surrey Branch will be held on Thursday, July 1st, at 4 p.m., at the Head Offices, 429, Strand. Agenda: In addition to the business of an ordinary meeting, (1) to receive the report of the election of officers for 1915–16, who will thereupon take office; (2) to receive the annual report and financial statement. There will be no social function this year.

WAR EMERGENCY.

EDINBURGH.

THE Edinburgh and Leith Division of the British Medical Association has issued a circular to medical practitioners in the district inquiring whether they are willing to give whole or part time services in the present emergency. Those practitioners accepted for whole-time service are advised, in making arrangements for their practices during their absence, to peruse carefully the circular issued by the Scottish Medical Emergency Committee, copies of which can be obtained from the Convener of the Committee, Royal College of Physicians, 9, Queen Street, Edinburgh.

HARROW.

AT a recent meeting of the practitioners resident in the Harrow Division, the following resolution was passed:

> That the War Emergency Committee of the Branch be asked to ascertain whether the D.D.M.S. of the Eastern Command

could utilize the services of twelve civilian doctors who might be prepared to offer for a period of one month each in rotation. Such an offer practically amounting to the offer of one civilian doctor for whole-time service for one year to undertake the ordinary routine duties of military work or military hospital.

The War Emergency Committee submitted a copy of the resolution to the D.D.M.S. Eastern Command, Horse Guards, Whitehall, who replied that the A.D.M.S. Woolwich District could make use of the twelve civilian doctors of the Harrow Division who had offered their services for a month each in rotation, and requested the Secretary of the Division to place himself in direct communication with the A.D.M.S. of the Woolwich District.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

PANEL COMMITTEE.

Alleged Excessive Prescribing.

A SPECIAL meeting of the London Panel Committee was held on June 1st to consider a report by the Pharmacy Subcommittee urging the necessity for limiting the time and money expended on inquiries at the request of the Pharmaceutical Committee under Article 40 of the Medical Benefit Regulations, 1913, into allegations of excessive prescribing by practitioners on the panel. The Subcommittee said that the Panel Committee had done its utmost to deal with the representations of the Pharmaceutical Committee without raising objections which might reasonably have been preferred. In respect of a period of eighty days from April 12th to June 30th, 1914, 175,000 prescriptions, representing over £10,000, had been submitted, and the Pharmaceutical Committee would shortly make representations in respect of 500 prescriptions dated from January 1st to April 12th, 1914. Representations in respect of the remainder of last year might soon be expected; and, meanwhile, prescriptions for 1915 would be accumulating. The Pharmacy Subcommittee urged the impossibility of examinations being made by the Panel Committee over periods as short as one month, since the number of investigations would then be twelve times as great as it would be if a yearly period were taken. If the period were quarterly, and the number of practitioners involved were 500, it would be necessary to conduct 2,000 separate investigations, and it had been recently decided that each practitioner had the right to be heard by the whole Committee. Apart altogether from the feasibility of undertaking so many inquiries, it was impossible for the Panel Committee to bear the financial burden. The cost of dealing with 2,000 bundles of 1,500 prescriptions would be £3,750. The Subcommittee recommended that the bodies concerned be informed that, in view of the circumstances described above, the Panel Committee give formal notice that it would limit the time and money spent on these investigations; that it would only deal with a certain number of prescriptions each quarter; and that the Pharmaceutical Committee be informed that, in view of the difficulty of testing the explanations of practitioners in respect of prescriptions remotely dated, the Panel Committee would always select the most recent cases for examination; further, that it be suggested that the prescriptions for 1915 should now be proceeded with in view of the importance of dealing promptly with any tendency to excessive prescribing.

The Committee decided to adopt this course, and to fix 50 separate investigations as the number it would be possible to deal with at present in a period of three months.

A report was also presented as to the arrangements under which the Panel Committee has united with the Insurance Committee and the Pharmaceutical Committee for the examination of prescriptions, and has contributed £800 towards the cost. The Pharmaceutical Subcommittee recommended that this arrangement be discontinued on the ground that the most important part of the examination had to be made in the Panel Committee's office, and that the mere arithmetical checking was the duty of the Insurance Committee, and the Panel Committee was not liable for a contribution. It was also urged that the value of the statistics depended on the promptitude with which they were prepared and that continuous examination throughout the year was essential to secure economy in prescribing. The Subcommittee suggested that every practitioner on the panel should be informed monthly of the average cost of his prescriptions, and that no useful purpose was served by conveying information on this point more than a year after the prescriptions were written.

The Committee decided to give notice of its intention to withdraw from the joint arrangement on December 31st, 1915.

The War Emergency.

Dr. R. J. FARMAN proposed that a Subcommittee be empowered to assist practitioners desiring to offer their services to the military authorities, to approach other bodies concerned, and to draw up a scheme. Dr. Farman commended the Sunderland scheme, by which practitioners on the panel made themselves jointly responsible for the treatment of persons on the lists of practitioners who had taken up military duties, and said that a similar scheme might be arranged in London.

Dr. H. G. COWIE, who seconded, said that the pressure upon practitioners who undertook work for their colleagues would be greatly relieved if the Insurance Committee would urge insured persons to be as reasonable as possible in their demands. His experience was that 25 per cent. of the calls made upon the doctor's services by insured persons were unnecessary.

Dr. HUDSON expressed a preference for the Dundee method, by which the patients of a doctor at the war were treated at a central clinic, and the temptation to transfer to another practitioner was much reduced. He suggested that free choice of doctor might be withheld for the time being from insured persons on the list of a doctor at the front.

Dr. MAJOR GREENWOOD thought that efforts in this direction should be co-ordinated. The War Office had approached the British Medical Association, and a committee was dealing with the matter for the whole of London. Seeing that most practitioners on the panel had private patients, it seemed unnecessary for one committee to deal with the position as regards the insured persons and another as regards the private patients.

The Chairman (Dr. H. J. CARDALE) remarked that the Panel Committee would naturally wish to offer its services to any committee undertaking this work, and the resolution was then carried.

BIRMINGHAM.

PANEL COMMITTEE.

A MEETING of the Birmingham Panel Committee was held on May 4th.

Conference with Approved Societies.—The SECRETARY reported that since the last meeting a deputation from the Panel Committee had conferred with the representatives of some of the largest approved societies, and several matters which had recently given rise to grievance on the part of doctor, society, and patient, were adjusted. It was felt that great benefit was likely to be derived by all parties from such conferences, and it was arranged to hold another at some future date.

Excessive Prescribing.—A letter was read from the Clerk to the Insurance Committee to the effect that that Committee approved of the report of the Panel Committee on this subject, and would proceed to surcharge the sixteen practitioners concerned and pay the money so raised to the credit of the Drug Fund.

BERKSHIRE.

LOCAL MEDICAL COMMITTEE.

THE twenty-ninth meeting of the Local Medical Committee was held at the Royal Berks Hospital on May 6th.

Emergency Set of Dressings.—It was resolved that every practitioner on the panel shall be entitled to order per annum up to £1 worth of such articles as are on the emergency list from time to time as he may require.

Medical Attendance and Treatment.—Further correspondence was read with reference to the scheme prepared by the Berkshire Insurance Committee under Articles 21 (4) and 35 (1), and it was decided to inform the Insurance Committee that the Local Medical Committee sees no reason to depart from its resolution of March 30th, 1915 (see SUPPLEMENT, May 15th, 1915, p. 256).

Special Mileage Grant.—A letter was read from the Clerk of the Insurance Committee stating that the Commissioners were ready to distribute for 1914 special mileage

grant to the amount of the sum available to the Committee for distribution under their 1913 scheme.

Drugs Used for Tuberculosis Benefit.—It was reported that the Tuberculosis Subcommittee had agreed that all drugs and medicines (other than cod-liver oil and malt) required in connexion with the domiciliary treatment of insured persons should be supplied (where the doctor does his own dispensing) by the medical attendant subject to the approval of the medical adviser, and that payment therefor should be made at the standard rate of 7d. for twelve doses in the case of mixtures and 6d. per oz. in the case of inhalations and sprays.

WARWICKSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Warwickshire Local Medical and Panel Committees was held at Leamington on May 20th.

PANEL COMMITTEE.

Expenses of Committee.—A balance-sheet was submitted showing the amount produced by the voluntary levy to be £335 6s. 6d., while the Committee's expenses for the year were £185 6s. 6d. It was decided that the levy should be repeated this year, but at the rate of ½d. instead of 1d.

Supply of Drugs.—A complaint had been received from the Pharmaceutical Committee that a panel practitioner had supplied medicine gratis to his patients instead of ordering it from a chemist in the usual way. The practitioner had replied: "I frequently dispense for my patients because—(1) It saves time; (2) there is no need to consult a drug list; and (3) patients like it." It was pointed out that his action might be thought to be a breach of his agreement with the Committee to order medicines on the proper form, and also might create an altogether false impression as to the value of panel practice, and the Chairman was asked to communicate with him again.

Conference of Local Medical and Panel Committees.—Dr. H. Tibbits (Warwick) was appointed to represent the Local Medical and Panel Committees at the Conference arranged by the British Medical Association to be held in London on June 16th.

Voluntary Contributors.—A discussion took place as to medical benefit for voluntary contributors, and it was suggested that if there was reason to believe that such a person claiming benefit had an income of over £160 per annum, the case should be referred to the Secretary of the Committee with a view to its investigation by the Commissioners' inspector.

Expenses of Pharmaceutical Committee.—The estimates of the expenses of the Pharmaceutical Committee for the current year—namely £100 (including part salary of prescriptions clerk £25, and salary of secretary, including clerical assistance, with office, telephone, etc., £50)—was agreed to.

Election of New Committee.—The Clerk of the Committee was appointed returning officer to carry out the election, in accordance with the scheme, in June next. It was also decided to approach the Commissioners with a view to the committee so elected holding office for a term of three years instead of one.

LOCAL MEDICAL COMMITTEE.

Range of Medical Service.—It was reported that the Insurance Committee had agreed with the Local Medical Committee that treatment, including pneumococci vaccines, was not within the scope of the doctors' agreement. Two further questions were raised. It was decided that dentistry, not being within the agreement, an anaesthetic for dental purposes was also excluded. The practitioner's statement was that, being unable to reduce a compound dislocation of the interphalangeal joint of thumb, he called in another practitioner, who also failed, whereupon the panel doctor gave an anaesthetic and the second doctor operated. It was decided that the case being one of quite exceptional difficulty, it was outside the agreement and proper for a charge to be made. A discussion took place on the supply of salvarsan, etc., and members were advised to inform patients that such treatment was not within the scope of the agreement, leaving the insured person to appeal if he thought fit. It was agreed that doctors should be entitled to order dressings, etc., for surgery use, to a cost not exceeding 7s. 6d., without mentioning the name of any particular patient, the doctor to be liable to a surcharge if and when extravagance were proved.

WEST RIDING OF YORKSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Local Medical Committee and Panel Committee of the West Riding of Yorkshire was held at the County Hall, Wakefield, on April 9th, when Dr. R. MAY was in the chair.

New Edition of West Riding Formulary.—The Pharmacy Subcommittee presented a list of suggestions for the new edition of the Formulary. It was considered that the list was too short and incomplete, and the matter was referred back to the Subcommittee, with the suggestion that it should ask the clerk for fifty or 100 of the most frequently used prescriptions in the area, and report further to next meeting of this Committee.

The War Emergency.—The attention of the Committee was drawn to the recent appeal of Sir Alfred Keogh, Director-General of Medical Services, published in the BRITISH MEDICAL JOURNAL of March 13th. It was pointed out that, though not addressed specially to Local Medical and Panel Committees, the appeal was addressed to the medical profession of which these formed a part.

Rules for Administration of Medical Benefit.—It was decided to accept the invitation to attend a conference with the Insurance Committee on April 29th, with a view to a consultation under Regulation 81.

Travelling Expenses of Members of the Committee.—A proposal that all the panel practitioners of the West Riding area be asked to agree to a deduction from their credits to meet the travelling expenses of members of the Local Medical and Panel Committee was defeated.

Medical Referees.—The SECRETARY read a reply from the doctor, to whom he had written as directed by the Committee on January 29th, stating that the doctor was resigning at the request of the Committee the medical referee appointment in question, which he had only accepted under the impression that the Committee's original scheme had been allowed to drop.

COUNTY MEATH.

MEDICAL COMMITTEE.

A MEETING of the County Meath Medical Committee was held at the County Infirmary, Navan, on May 1st, when Dr. BYRNE (Slane) was in the chair. The meeting was largely attended, and included, amongst those attending, Dr. Hennessy and Mr. C. H. Gick, secretaries of the Irish Medical Committee.

Medical Certifiers under the Insurance Act.—The acceptance of the position of medical certifier under the Insurance Act in Ireland by doctors was strongly condemned as unprofessional and detrimental to the best interests of the profession, and the professional relations of the local and consultant profession in Dublin with medical certifiers were rigidly defined, and the meeting expressed its firm determination that there should be no violation on the part of any consultant of these rules.

Part-time Tuberculosis Medical Officers.—The appointment of part-time tuberculosis officers was disapproved of, and a resolution was passed calling on those doctors who held such appointments to resign them.

CORRESPONDENCE.

PAYMENTS TO PANEL PRACTITIONERS.

DR. R. J. FARMAN (Chairman, Lambeth Division, British Medical Association) writes: In the SUPPLEMENT to the JOURNAL, dated May 8th, is reproduced under Appendix XVII the report of an interview between a deputation of the British Medical Association and the National Health Commissioners, England. In reply to this deputation Sir R. Morant stated that theoretical exactitude, as regards 7s. per annum per insured person, could not be expected in an undertaking of such dimensions. In an explanatory pamphlet issued by the Commission in December, 1912, it was definitely stated that should practitioners select a pure capitation basis of payment they would know definitely that they would get £325 per annum for every

1,000 insured persons on their lists, and in addition £25 per annum for the domiciliary treatment, under the tuberculosis scheme, of those 1,000 persons; also a further £25 per annum per 1,000, should the cost of drugs not exceed 1s. 6d. per insured person per annum. How, if it were possible to make this promise in 1912, is it not possible to fulfil the promise in 1915? False pretence is a hard thing to suggest, but one wonders how many practitioners would have signed contracts had the present dilemma been foreseen.

PANEL MEDICO-POLITICAL UNION.

Dr. S. J. Ross (Bedford) writes: I was interested in the account given in the SUPPLEMENT of the JOURNAL of May 22nd, p. 270, of a meeting of the Panel Medico-Political Union, and still more interested in the result—the triumph of common sense. I notice the trade union fetish once more holding up its head. Whatever the supporters of the Medico-Political Union may say to the contrary, it must be a rival to the Association. The Association is doing, and doing well, the very work which this Union undertakes; and by implication the members of the Union think they can do it better. Dr. Cardale advised all non-members to join the Association. If he had stopped at this everybody who has the interests of the profession at heart would have supported him heartily, but he proceeds, "that, as a mixed body, it was not able to voice the feelings of panel practitioners adequately." Surely, if this be so, it is an excellent reason for *not* joining the Association. Dr. Cardale apparently wishes to see a sharp cleavage between panel and non-panel practitioners. But Dr. Welply has given us a bright ray of sunshine, because he stated that he should consider the Union a failure if it did not include every panel practitioner. The result of the meeting must surely have convinced him that he must consider, according to his own standard, the Union a failure. And now I hope that Dr. Welply will use all his energies in the interests of the Association, which has done so much for the profession in the past and is doing so much at the present time, and will continue to do in the future if we will only give it our whole-hearted and united and loyal support. Let us never forget that the Association is the recognized spokesman of the profession.

Dr. E. ROWLAND FOTHERGILL (Hove) writes: In the SUPPLEMENT for May 22nd, p. 270, you report the result of a meeting called by the Panel Medico-Political Union in Brighton on May 13th in order to form a local branch.

From that report it is seen that a resolution was carried, "without a single hand being raised against it," to the effect that "local panel doctors considered that there is no necessity for any medical organization on the lines of that Union." Fourteen attended out of over 300 invited.

In the issue of the *Medical World* for May 27th, p. 658, it is reported that at an Executive Committee meeting of that Union held on May 19th, "the general secretary (Dr. A. Welply) reported upon a successful meeting under the auspices of the Union at Brighton on May 13th."

The London panel doctors should note.

THE MUDDLE OF THE REGISTERS.

HAKIM writes: Arising out of your article, "The Muddle of the Registers," I would like to draw attention to a further anomaly in regard to enlisted men.

I was recently asked to act, in a civil capacity, as medical officer to a service battalion of 1,300 men. The pay is £1 *per diem*, or £365 *per annum*, but the doctor has to provide all drugs and dressings. Divide £365 by 1,300, and one gets a capitation fee of 5.6 shillings per annum. Thus the rate offered is much lower than the "panel" rate of 8s. 6d., which would mean a salary of £552 10s. per annum. Thus having taken these 1,300 men from our panels, the Government then asks us to attend them again, and profits to the tune of £187 10s. per annum by the transaction.

But to show the haphazard way in which these payments are made, I was informed by another doctor that he received the same rate of pay, that is, £1 per diem for attending only 300 men! Moreover, he eventually obtained drugs, etc., supplied by Government, though when I asked for them the reply I got was "*non possumus*."

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

SUMMER SESSION, 1915.

Tuesday, June 1st, 1915.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

THE one hundred and first session of the General Council of Medical Education and Registration began at its offices, 299, Oxford Street, on Tuesday, June 1st, 1915, at 2 p.m.

PRESIDENT'S ADDRESS.

Gentlemen,—My first duty is an agreeable one. I have in your name to welcome back to the Council two former members, whose past services are still fresh in our remembrance. Sir Bertram Windle, from the National University of Ireland, takes the place of our late colleague Sir Christopher Nixon. Sir Arthur Chance, from the Royal College of Surgeons in Ireland, resumes his old seat, vacated in February last by Sir Lambert Ormsby on the completion of his term of office.

The Council will also be glad to see in his accustomed place our Registrar, Major King. After strenuous labours with his regiment at the front, Major King was invalided home some months ago. He has now sufficiently recovered from his disablement to be allowed to give us his services as registrar during the session, pending the decision of the War Office as to his future sphere of military duty. During Major King's absence, Mr. Cockington as acting registrar, and the other members of the staff, have carried on the work of the office with praiseworthy zeal and efficiency.

I have to record with regret the death, since we last met, of our former colleague, Mr. Thomas Bryant, who retired in 1904, after thirteen years of service as treasurer of the Council.

The War.

The stress of the great war is still urgent upon us all. The country's call for service and sacrifice has been heard and answered in every part of the Empire. The response from members of our own profession has been especially prompt and generous. Many thousands of our brethren have freely given themselves and their sons, postponing every other claim to the demands of national duty. Members of the Council are fully sharing both in the service and in the sacrifice. To those of our colleagues who are to-day mourning, in proud sorrow, the loss of gallant and promising sons, we offer the tribute of our heart-felt sympathy. And we deepen our resolve to ensure, by every service within our power, that such sacrifices shall not have been made in vain.

The call for qualified physicians and surgeons to take up duties with the forces has become more and more insistent with the growth of the new armies. Our professional reserves, at no time large, have been drawn upon to the full. Throughout the kingdom organized efforts are in progress for such a readjustment of civil practice as will liberate all who can possibly be spared for the medical service of the navy and army. In these efforts the Scottish Emergency Committee and local committees of the British Medical Association, with the effective co-operation of members of this Council, have taken a leading part. The services of qualified women have been freely offered and accepted for many of the places that are now vacant at home. Senior students, enrolled in the combatant ranks, have been recalled by the War Office, and directed to complete their curriculum with a view to qualification for the Royal Army Medical Corps. Special qualifying examinations have been held by the licensing bodies for candidates whose curriculum was completed. And from overseas have come large numbers of our Colonial colleagues, who are possessed of qualifications registrable in this country, and so are eligible for commissions in our army. By the opportune action of the Belgian Government and of the Privy Council the Executive Committee was enabled to give effect to the application of Part II of the Medical Act (1886) to Belgium, with the result that about sixty Belgian doctors of medicine have become

legally qualified to practise in Britain and to occupy professional positions in public and other institutions.

From all these sources we have obtained timely and valuable help; but they must, if possible, be supplemented. If we are to make good the losses in the Army Medical Service we must accumulate larger reserves. The casualty lists, and, I am proud to add, the lists also of rewards for conspicuous gallantry, testify to the magnitude of these losses. We must endeavour to fill the vacant places by men whose training and skill can be guaranteed, and whose devotion is not inferior to that of their fallen comrades. We look with confidence to the medical schools and corporations to aid us in our endeavour to maintain, even in the present emergency, the standards of teaching and of testing which we regard as essential to efficiency.

The Number of Medical Students.

The inquiries to which I referred in my address last November, regarding the number of students actually in attendance on courses of medical study at the several schools, have shown that at the end of 1914 there were considerably over 1,000 fewer than in 1913. The recall of senior students from active service to resume their professional studies has had a favourable effect on the fifth year, now drawing to a close; but we must expect during the next few years a falling off of some 250 per annum in the number who become qualified as medical practitioners.

Canada.

In the same address I called attention to the fact that, from certain of the Provinces of Canada, able and efficient surgeons were desirous of coming to the aid of the Mother Country, but were hindered by difficulties created by their local registration laws. Encouraged by the reception accorded to my remarks here and in Canada, I ventured to communicate with the various medical authorities concerned, and to point out once more the Imperial bearings of the question of reciprocity. The response has exceeded all my expectations. From Ontario, British Columbia, Saskatchewan, Manitoba, and Alberta have come messages, often by cable, stating that legislation has already been initiated for the removal of existing provincial restrictions; and that the Provinces desire that reciprocity with this country may be established at the earliest possible date. When the necessary steps are completed—and I have reason to think that no obstacles need be apprehended on this side of the Atlantic—all the Provinces of Canada will have severally entered into reciprocal relations with the United Kingdom. The way will then be open for the application of the Medical Act (1886) to the Dominion as a whole, as it is now open to the Commonwealth of Australia. Thus, by the concurrent action of the separate Provinces, the Dominion Medical Act, whose operation has hitherto been restricted so far as Imperial relations are concerned, will assume a more comprehensive character, and the medical federation of the Empire will be at length accomplished. Canada possesses schools of medicine of the highest repute, and we may confidently count on receiving from them a further supply of graduates qualified in all respects for the medical service of the State and legally entitled to practise in any part of His Majesty's dominions.

The British Pharmacopoeia.

The *British Pharmacopoeia*, 1914, was duly published, in accordance with your instructions, on December 31st. The first issue of 20,000 copies is nearly exhausted. Steps have been taken for the preparation of a second issue, in which a few typographical faults, noted in the first issue, have been corrected. As you are aware, the Pharmacopoeia Committee endeavoured to adapt the work to the general requirements of the British Empire, and at the same time to harmonize its directions with those of the States which were parties to the International Agreement of 1906. The reception accorded to the new *Pharmacopoeia*, both in the British Dominions and in foreign countries, encourages us to hope that our efforts have in a large measure been successful. The Government of India has intimated that a special edition, such as was prepared in 1900 for Indian use, will no longer be necessary in that country. The Belgian Government, notwithstanding its present difficulties, has courteously undertaken the duty of intimating to the signatory Powers the publication of the *British Pharmacopoeia*, and the manner in which effect has been given therein to the recommendations of the International Agreement.

India.

In India legislation for the better regulation of medical practice, already accomplished as regards certain of the Presidencies, is in course of extension. We have received official intimation of a proposed medical ordinance for the United Provinces; and of new regulations, by the Government of India, under which the educational and professional standards for the Subordinate Medical Department will be considerably improved. These will probably form the subject of a report to the Council from the Examination Committee.

Secondary School Examinations and Leaving Certificates.

From the English Board of Education a communication has been received, from which it appears that there is now some prospect of the establishment in England of a central authority, charged with the co-ordination and supervision of secondary school examinations, and the inception of a system of leaving certificates. Such a system has long existed in Scotland, to the manifest advantage of secondary education in that country. The Council in 1904 resolved: "That any well-considered plan which would tend to a diminution in the number of examinations in preliminary subjects of education, and to a unification of standard of those which remain, would meet with the hearty approval of the Council." The subsequent experience of the Education Committee and of the Council with reference to the recognition and supervision of preliminary examinations has not been such as to suggest that a "well-considered plan" of the kind would be other than welcome now. I have referred the Board of Education's circular to the Education Committee in order that you may have its report on the proposals at the present session.

Deficiency of Registered Dentists.

At the instance of the Dental Education and Examination Committee, inquiries have been addressed to the dental licensing authorities and dental schools as to the suggested deficiency of registered dentists. The replies received indicate the prevalence of an opinion that the unsatisfactory state of the law concerning unqualified practice has a deterrent effect on candidates, and that the duration and stringency of the present curriculum do not constitute a serious obstacle. The Committee will present to you a synopsis of the views expressed by the various authorities, and will report on the questions raised by Dr. Newsholme's motion of November 26th, 1914.

Council's New House.

Under the powers conferred by you on the Executive and Office Site Committees, these bodies have made satisfactory progress in the task of providing new and better accommodation for the medical and dental work of the General Council and the English Branch Council. The present site and buildings facing Oxford Street have been sold to advantage. A new site in Hallam Street, near Portland Place and New Cavendish Street, has been secured. Mr. Eustace Frere, A.R.I.B.A., has prepared a design for handsome and commodious buildings, which has met with your approval, and has been accepted for exhibition at the Royal Academy. A contract for the erection of the buildings has been made with Messrs. Chinchen and Co., who have undertaken to complete the work by November 1st. The structure has already reached the first floor, and there is a good prospect that the Council may be able to enter into occupation of it by the end of the year. Much pains have been taken by your Committees to ensure that the arrangements made for the disposal of the old building, which we have outgrown, and for the new premises, in which we count on carrying forward our work with greater efficiency and convenience, shall be profitable to the Council and adequate to its needs.

Finance.

Certain financial adjustments, as between the General Council, the Branch Councils, and the Dental Fund, have been under the consideration of the Treasurers and the Legal Advisers of the Council. You will probably think this a suitable opportunity to define more clearly than

heretofore the relations of their accounts in respect of capital and current expenditure. Fortunately the financial position for the last year is a favourable one; for, although the expenses of the General Council have been unavoidably increased by certain temporary causes, the income of the four Councils in the aggregate exceeds their total expenses by some £2,300. The prospect of a greatly diminished income, due to the falling off in registrations during the next four or five years, which we must face as an incident of the war, will make it wise to persevere in effecting economies wherever these are practicable.

Penal Provisions.

I am happy to say that our judicial work at this session promises to be less exacting than usual, and that our sittings need not be prolonged beyond this week. In connexion with the enforcement of the penal provisions of the Medical Acts, our thanks are specially due to the Royal College of Physicians of Edinburgh for its public-spirited action in prosecuting two firms of unqualified persons, who conducted so-called practices in that city to the scandal of the civic authorities and of the profession. The penalties recovered have, by order of the Executive Committee, been remitted to the Royal College as a contribution towards the expenses it has incurred. The College, by undertaking this important service, has demonstrated anew its corporate interest in the safeguarding of the public health.

Vote of Thanks.

A hearty vote of thanks was accorded to the President for his address.

COMMITTEES.

The following Committees were elected:

Executive Committee (re-elected).

Penal Cases Committee (re-elected).

Business Committee.—Dr. Norman Moore (Chairman), The President, Sir Henry Morris, Dr. Norman Walker, Dr. Little.

Pharmacopoeia Committee.—The President (Chairman), Dr. Norman Moore, Sir George Philipson, Dr. Caton, Dr. Barrs, Sir Thomas Fraser, Dr. Cash, Sir John Moore, Sir William Whitla.

Finance Committee.—Mr. Tomes (Chairman), The President, Sir Henry Morris, Mr. Hodsdon, Dr. Little.

Dental Committee.—The President (Chairman), Sir Henry Morris, Mr. Tomes, Mr. Hodsdon, Sir Charles Ball.

Dental Education and Examination Committee.—Mr. Tomes (Chairman), The President, Sir Henry Morris, Mr. Hodsdon, Dr. Knox, Sir Arthur Chance, Sir William Whitla.

Students' Registration Committee.—Dr. Norman Moore (Chairman), The President, Dr. Langley Browne, Sir Bertram Windle, Dr. Mackay, Dr. Norman Walker, Sir William Whitla.

REPORT OF THE FINANCE COMMITTEE.

Mr. TOMES, Senior Treasurer and Chairman of the Finance Committee, in presenting its report said that the financial results for the past year, as had been indicated by the President in his address, had been satisfactory. There had been a slight increase in the income of the General Council and material increases in those of the Branches due to larger receipts from registration fees. The expenditure showed an increase of £863.

This is explained in the following passage from the report:

The Executive Committee, owing to the war and the production of the new *Pharmacopoeia*, held six meetings, instead of the usual three. This increased the cost by £208. The expenditure upon the printing of the *Registers* was increased by £235, as the cost of setting up in the new style had to be paid for; in this item there will be in future a permanent saving of some £150 per annum. A systematic revision of the *Register* was begun, including all names from A to L, and the cost was £252; in view of the fact that so many practitioners are absent from their practices in connexion with the war, the revision has been suspended for the present. As a result of the sale of the Oxford Street premises, the rent of the present building and the ground rent of the new site appear as a fresh item of £214 8s. 2d. Law expenses show a decrease of £128 12s. 9d., which is gratifying in view of the valuable services rendered to the Council by the solicitor. The new system of reports on the examinations of the Apothecaries' Hall, Dublin, has resulted, as was foreshadowed in the last annual finance report, in an increased expenditure, which amounts to £134 9s.

It was pointed out that several of the items of increased expenditure would not appear in 1915, or would be reduced, and the Committee anticipated that the position at the end of the year would be satisfactory unless something abnormal occurred. The surplus for 1914 was £654. The Dental Fund had received £230 from registration fees, and the surplus was £673. This fund of late appeared to have been charged rather less than its proper proportion of expenditure, a matter which might be adjusted on a more equitable basis.

The report was adopted, and the Council went into camera to consider a supplemental report for the Finance Committee.

RECIPROCITY WITH BELGIUM.

Reports of the Executive Committee on medical and dental reciprocity with Belgium were received and entered on the minutes. The reports embodied the following resolutions:

Medicine.—That so long as the Order in Council of January 7th, 1915, remains in force, any person who produces evidence satisfactory to the Registrar that he has obtained the degree of Doctor of Medicine in the Belgian universities of Brussels, Ghent, Liége, and Louvain, and is legally authorized to practise medicine, surgery, and midwifery in Belgium; and who satisfies the Registrar as to the other particulars specified in Section 12 of Part II of the Medical Act, 1886, shall be entitled to be registered in the Foreign List of the *Medical Register*.

Dental Surgery.—That a person who has attained the grade of Candidate in Medicine at one of the four Belgian universities of Brussels, Ghent, Liége, and Louvain, and has, after pursuing the further course of study prescribed for dental practitioners, passed the diploma examination held by a Belgian Provincial Medical Commission, shall be entitled to be registered in the Foreign List of the *Dentists' Register*, provided he produces to the General Registrar satisfactory evidence in regard to the particulars set forth in Sections 9 and 10 of the Dentists Act, 1878.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Temporary Surgeons: P. N. BUTTON to the *Yarmouth*, vice Gibson, J. B. CRAWFORD, M.B., to the *Mantua*, vice Wollaston, C. W. ARCHER, M.B., to the Hospital Ship *China*, vice Jobson, WM. L. COULLIE to the *Birmingham*, vice Raven, MARTIN O. RAVEN to the Hospital Ship *China*, vice Fadden.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Probationer G. DONALD to the *Meteor*, vice Sterling.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL SIR DAVID BRUCE, C.B., F.R.S., is retained on the Active List under the provisions of Article 120, Royal Warrant for Pay and Promotion, and to be supernumerary.

Captain CHARLES A. BALLANCE, M.V.O., F.R.C.S., R.A.M.C.(T.F.), to be temporary Colonel.

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank whilst serving at the hospitals indicated:—*Edmonton War Hospital:* SPENCER MORT, M.D., F.R.C.S.E., to be Lieutenant-Colonel; WILLIAM B. B. TAYLOR, HENRY M. RASHBROOK, M.B., DAVID M. HUGHES, to be Majors. *Northumberland War Hospital:* HECTOR D. MACPHAIL, M.D., CUTHBERT U. LAWS, M.D., and CHARLES D'O. GRANGE, M.B., F.R.C.S., to be Majors. *British Red Cross Hospital in France:* EDWARD STEWART, M.D., to be Lieutenant-Colonel; EDWARD H. HICKS to be Lieutenant. *Lord Derby War Hospital:* ALEXANDER SIMPSON, M.D., to be Lieutenant-Colonel; FREDERICK M. RODGERS, M.D., to be Major; ALEXANDER M. CATO to be Lieutenant (substituted for the notification which appeared in the *London Gazette* of May 11th). *Liverpool Merchants' Mobile Hospital:* Major HAROLD S. PEEKE, Reserve of Officers, R.A.M.C., to be Lieutenant-Colonel. *Welsh Metropolitan War Hospital:* EDWIN GOODALL, M.D., F.R.C.P., to be Lieutenant-Colonel. *British Red Cross Hospital, Netley:* GORDON N. BRANDON and WILLIAM BURT to be Lieutenants. *Welsh Hospital:* Temporary Lieutenant JOHN S. ROWLANDS to be temporary Captain.

The following having ceased duty with Queen Mary's Convalescent Home for British Officers, Nice, relinquish their commissions: Temporary Major SAMUEL MACKEN; Temporary Captains HENRY S. C. STARKEY, FREDERICK P. NUNNELEY.

Temporary Lieutenants to be temporary Captains: NORMAN BLACK, M.B., late Captain Singapore Volunteer Corps; JOHN PATON, M.D., late Captain R.A.M.C.(T.F.).

To be temporary Lieutenants: RUPERT FARRANT, F.R.C.S., JAMES R. WORTABET, M.B., CHARLES M. HARRIS, M.D., NORMAN E. PACKER, M.B., CHARLES O. DONOVAN, M.B., JOHN T. ANDERSON, M.B., ROBERT B. CARTER, M.B., ERIC P. BLASHKI, M.B., JOHN L. DIGBY, M.B., NORMAN M. GREGG, M.B., EUSTACE T. PINHEY, M.B., NORMAN W. BROUGHTON, M.B., SYDNEY W. G. RATCLIFF, M.B., CLIVE FARRANRIDGE, M.B., ARTHUR W. RAYMOND, M.B., HAROLD J. PENNY, M.B., JOHN J. O'NEILL, M.B., BRIAN W. WIBBERLEY, M.B., BRUCE M. CARRUTHERS, M.B., GORDON A. RENWICK, M.B., JOHN R MACCULLOCH, M.B., CHARLES G. ADAMS, M.B., WALTER F. S. YEATES, M.B., CHARLES H. ARMITAGE, M.B., CHARLES R. R. HUXTABLE, M.B., FRANCIS J. FAHY, M.B., HUGH A. C. WALL, M.B., ARCHIBALD W. G. MURRAY, M.B., ERNEST ROBERTSON, M.B., BASIL W. COHEN, M.B., NORMAN C. TALBOT, M.B., COLIN H. MARTIN, M.B., ALEXANDER H. MELVILLE, M.B., FREDERICK H. MORAN, M.B., ARCHIBALD S. ANDERSON, M.B., HAROLD W. WARD, M.B., HUGH M. MEYRICK-JONES, M.D., WILLIAM S. HAWTHORNE, M.B., LEWIS W. SHELLY.

Temporary Lieutenant ISIDORE J. BLOCK, M.B., relinquishes his commission.

INDIAN MEDICAL SERVICE.

To be Colonel: Lieutenant-Colonel C. MACTAGGART, C.I.E., M.B., March 29th. Lieutenants to be Captains, January 27th: F. J. ANDERSON, M.B., J. H. HISLOP, M.B.

The following promotions are made subject to the officers passing the prescribed examination for promotion at the first opportunity after the termination of the war: Lieutenants to be Captains, dated October 22nd, 1914: H. S. CORMACK, M.B., F.R.C.S.E., E. S. GOSS, G. B. HARLAND, M.D. Dated January 27th, 1915: R. H. CANDY, M.B., P. J. VEALE, M.B., J. C. BHARUCHA, H. HINGSTON, M.B., H. J. M. CURSETJEE, M.B., P. F. GOW, M.B., J. S. S. MARTIN, M.B., R. V. MORRISON, M.D., J. C. DEY, M.B., J. W. JONES, M.B.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

COLONEL D. J. MACKINTOSH, M.V.O., Assistant Director of Medical Services, 2/1st Lowland Division, in addition to his other duties, is appointed to supervise the administration and organization of all military war and Territorial general hospitals in the Glasgow area.

ROYAL ARMY MEDICAL CORPS.

1st East Anglian Field Ambulance.—Lieutenant LAURENCE H. HUTCHINS, from the 3rd East Anglian Field Ambulance, to be Lieutenant.

1st London (City of London) Sanitary Company.—Lieutenant JOHN H. BALDWIN to be temporary Captain. GILBERT N. ANDERSON, M.B., to be Lieutenant.

2nd London Sanitary Company.—ARTHUR E. RAYNER to be Lieutenant.

1st Southern General Hospital.—Major JAMES T. J. MORRISON, M.B., F.R.C.S., is restored to the establishment. EDWARD M. WOODMAN, F.R.C.S., late temporary Lieutenant, R.A.M.C., to be Captain, whose services will be available on mobilization. To be Lieutenants: HERBERT C. H. BRACEY, M.B., ARTHUR H. NEWTON.

2nd Southern General Hospital.—Lieutenant JAMES G. MCLANNAHAN from the 3rd South Midland Field Ambulance to be Captain on the permanent personnel.

3rd Southern General Hospital.—EDWARD W. S. ROWLAND to be Captain, whose services will be available on mobilization. HUGH A. B. WHITELOCKE to be Lieutenant.

North Midland Mounted Brigade Field Ambulance.—ARTHUR AVENT (late Lieutenant of this unit) to be Captain, temporary.

1st North Midland Field Ambulance.—Captain FREDERICK W. JOHNSON, M.B., from Attached to Units other than Medical Units, to be Major, temporary.

3rd North Midland Field Ambulance.—JAMES E. WILSON, M.D., to be Lieutenant.

1st Welsh Field Ambulance.—Lieutenant JOHN CLARKE, from Attached to Units other than Medical Units, to be Lieutenant.

3rd Welsh Field Ambulance.—Major JOHN LIVINGSTONE, M.B., from Attached to Units other than Medical Units, to be Major.

3rd East Lancashire Field Ambulance.—Lieutenant FRANK G. PRESTWICH, from Attached to Units other than Medical Units, to be Lieutenant.

Yorkshire Mounted Brigade Field Ambulance.—JOSEPH C. DENVIR, M.B., to be Lieutenant.

1st West Riding Field Ambulance.—Lieutenant HERBERT B. POPE, F.R.C.S., to be temporary Captain.

West Riding Casualty Clearing Station.—Major LOUIS P. DEMETRIADI, M.D., from Attached to Units other than Medical Units, to be Lieutenant-Colonel, temporary.

1st Northern General Hospital.—JOHN D. LICKLEY, M.D., to be Lieutenant.

3rd Northern General Hospital.—Captain ARTHUR G. YATES, M.D., to be Major.

5th Northern General Hospital.—To be Captains, whose services will be available on mobilization: ERNEST W. HOLYOAK, M.B., FREDERICK V. MILBURN.

Lowland Casualty Clearing Station.—Major GEORGE R. LIVINGSTON, M.D., from Attached to Units other than Medical Units, to be Major. To be Lieutenants: Lieutenants STUART ROBERTSON, M.B., and ADAM RANKINE, M.B., from 1st Lowland Field Ambulance; Lieutenant STEPHEN A. MACPHEE, M.B., from the 2nd Lowland Field Ambulance; WILLIAM CULLEN, M.B.

Lowland Divisional Sanitary Section.—Lieutenant THOMAS J. MACKIE, M.B., from Attached to Units other than Medical Units, to be Lieutenant.

1st Lowland Field Ambulance.—FRANK M. ROBERTSON to be Lieutenant.

2nd Lowland Field Ambulance.—To be Lieutenants: WILLIAM GROVE, M.B., WILLIAM J. SCADE, M.D.

4th Scottish General Hospital.—WILLIE WHITELAW, M.B., to be Captain, whose services will be available on mobilization.

Sanitary Service.—ALEXANDER GREGOR, M.D., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—Major ROBERT J. R. C. SIMONS is seconded. To be Captains: Surgeon-Captain EVAN J. T. CORY, M.D., from the 5th Battalion the Welsh Regiment; temporary Captain JOHN B. BATE, M.D. To be Lieutenants: CHARLES B. ALEXANDER, WILLIAM J. LACY-HICKEY, M.B., DAVID A. R. HADDON, M.B., late Lieutenant, 9th (Highlanders) Battalion Royal Scots (Lothian Regiment), WILLIAM H. CALVERT, M.D., late Surgeon-Lieutenant, 1st Roxburgh and Selkirk (Border Rifle Volunteer Corps).

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL WILLIAM M. YOUNG, M.D., from the West Riding Casualty Clearing Station, to be Lieutenant-Colonel.

Vital Statistics.

VITAL STATISTICS OF LONDON DURING THE FIRST QUARTER OF 1915.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

IN the accompanying table will be found summarized the vital statistics of the City of London and of the metropolitan boroughs, based upon the Registrar-General's returns for the first quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided. The 28,240 births registered in the quarter under notice were equal to an annual rate of 25.1 per 1,000 of the population, estimated at 4,518,021 persons in the middle of last year; in the corresponding quarters of the three preceding years the birth-rates were 25.8, 25.7, and 25.1 per 1,000 respectively. The lowest birth-rates last quarter were 12.9 in the City of Westminster, 14.3 in Holborn, 14.7 in Hampstead, 18.4 in Chelsea, 18.8 in Stoke Newington, 19.0 in Kensington, and 19.1 in Wandsworth; among the highest rates were 28.1 in Southwark, 29.4 in Lambeth, 30.1 in Bethnal Green, 31.3 in Shoreditch, 31.4 in Bermondsey, 31.7 in Poplar, and 32.0 in Stepney.

During the quarter the deaths of 23,159 London residents were registered, equal to an annual rate of 20.6 per 1,000; in the corresponding quarters of the three preceding years the rates were 15.3, 17.5, and 16.1 per 1,000 respectively. The death-rates last quarter ranged from 14.8 in Hampstead, 16.6 in Lewisham, 16.7 in Wandsworth, 18.7 in Fulham, and 18.9 in Camberwell, to 23.2 in the City of London, 23.8 in Chelsea, 24.0 in Poplar, 24.1 in Finsbury, 25.0 in Southwark, and 26.2 in Bermondsey.

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the First Quarter of 1915.

BOROUGHS.	Estimated Population middle of 1914.	Births.	Deaths.	Annual Rate per 1,000 Living.		Deaths from								Deaths of Children Under 1 Year of Age to 1,000 Registered Births
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (Under 2 Years).	Phthisis.	
COUNTY OF LONDON	4,518,021	28,240	23,159	25.1	20.6	37	3	1,120	100	378	199	234	2,089	111
Paddington	142,193	697	774	19.7	21.9	3	—	67	3	10	8	6	52	152
Kensington	171,234	811	868	19.0	20.4	1	—	68	5	10	10	6	61	155
Hammersmith	123,853	696	653	22.4	21.0	—	—	34	6	13	4	10	58	148
Fulham	157,303	1,086	740	27.4	18.7	3	3	63	8	11	6	10	69	128
Chelsea	64,511	293	378	18.4	23.8	—	—	4	1	1	1	3	35	99
City of Westminster ...	154,544	491	762	12.9	20.1	1	—	16	4	5	2	8	61	108
*St. Marylebone ...	114,355	996	555	35.4	19.7	—	—	22	2	3	3	5	35	50
Hampstead	86,388	318	320	14.7	14.8	—	—	11	—	3	2	3	11	101
St. Pancras	214,133	1,259	1,171	23.8	22.1	—	—	24	5	18	14	11	128	122
Islington	325,496	1,936	1,777	23.9	21.9	2	—	56	7	35	20	14	176	127
Stoke Newington ...	50,511	236	265	18.8	21.1	—	—	15	2	—	2	1	17	106
*Hackney	223,393	1,397	1,075	25.0	19.3	2	—	38	1	12	8	15	90	99
*Holborn	46,832	163	236	14.3	20.6	—	—	10	1	8	3	3	27	129
*Finsbury	84,521	846	501	40.8	24.1	—	—	6	1	15	2	6	57	80
City of London	17,831	109	99	25.5	23.2	—	—	3	—	—	1	1	6	37
Shoreditch	109,569	849	557	31.3	20.5	1	—	11	1	8	3	10	82	112
Bethnal Green	127,807	957	692	30.1	21.7	2	—	60	4	19	11	14	58	131
*Stepney	275,081	2,182	1,332	32.0	19.6	—	—	45	9	5	17	9	155	85
Poplar	160,839	1,267	958	31.7	24.0	3	—	55	2	14	6	11	75	132
Southwark	188,321	1,311	1,165	28.1	25.0	1	—	78	1	14	9	16	109	136
Bermondsey	124,683	973	811	31.4	26.2	—	—	53	3	47	5	9	77	149
*Lambeth	297,094	2,172	1,572	29.4	21.2	2	—	64	6	16	12	15	143	86
Battersea	167,451	993	859	23.8	20.6	3	—	68	4	28	11	9	73	128
Wandsworth	331,321	1,615	1,410	19.1	16.7	2	—	98	7	25	9	9	93	100
Camberwell	261,828	1,632	1,236	25.0	18.9	2	—	66	5	11	10	9	118	92
Deptford	109,269	727	586	26.7	21.5	2	—	22	4	21	5	4	56	142
Greenwich	96,018	589	489	24.6	20.4	2	—	21	1	17	3	4	52	100
Lewisham	169,211	847	714	19.7	16.6	2	—	19	4	6	4	4	55	87
Woolwich	122,431	792	604	25.9	19.7	3	—	23	3	3	8	9	60	116

* No correction is made for births in lying-in institutions; the boroughs principally affected are marked thus (*).

The 23,159 deaths from all causes included 37 from enteric fever, 3 from small-pox, 1,120 from measles, 100 from scarlet fever, 378 from whooping-cough, 199 from diphtheria, and 234 from diarrhoea and enteritis among children under 2 years of age. Enteric fever was proportionally most fatal in Paddington, Fulham, Poplar, Battersea, Deptford, Greenwich, and Woolwich; measles in Paddington, Kensington, Fulham, Bethnal Green, Southwark, Bermondsey, and Battersea; scarlet fever in Hammersmith, Fulham, Stoke Newington, Bethnal Green, Stepney, and Deptford; whooping-cough in Holborn, Finsbury, Bethnal Green, Bermondsey, Battersea, Deptford, and Greenwich; and diphtheria in St. Pancras, Islington, Holborn, Bethnal Green, Stepney, Battersea, and Woolwich. The 3 fatal cases of small-pox belonged to Fulham. The mortality from diarrhoea and enteritis among children under 2 years of age in proportion to the births registered during the quarter was greatest in Hammersmith, the City of Westminster, Holborn, Shoreditch, Bethnal Green, Southwark, and Woolwich.

The deaths from phthisis among London residents last quarter numbered 2,089, and were equal to an annual rate of 1.86 per 1,000; in the corresponding quarters of the three preceding years the rates were 1 52, 1.55, and 1.58 per 1,000 respectively. The death-rates from this disease last quarter ranged from 0.51 in Hampstead, 1.10 in Wandsworth, 1.24 in St. Marylebone, 1.28 in Lewisham, and 1.35 in Stoke Newington, to 2.34 in Southwark, 2.36 in Holborn, 2.42 in St. Pancras, 2.49 in Bermondsey, 2.75 in Finsbury, and 3.02 in Shoreditch.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 111 per 1,000 last quarter, against 95, 116, and 96 in the corresponding quarters of the three preceding years. Among the lowest rates recorded last quarter were 37 in the City of London, 85 in Stepney, 86 in Lambeth, 87 in Lewisham, 92 in Camberwell, and 99 in Chelsea and in Hackney; the highest rates were 131 in Bethnal Green, 132 in Poplar, 136 in Southwark, 142 in Deptford, 148 in Hammersmith, 149 in Bermondsey, 152 in Paddington, and 155 in Kensington.

HEALTH OF ENGLISH TOWNS.

In the ninety-six large English towns 8,530 births and 5,340 deaths were registered during the week ended Saturday, May 22nd. The annual rate of mortality in these towns, which had been 17.3, 15.5, and 14.2 per 1,000 in the three preceding weeks, increased to 15.4 per 1,000 in the week under notice. In London the death-rate was equal to 14.9, while in the ninety-five other large towns it ranged from 7 9 in Wimbledon, 8.6 in Oxford, 8.8 in Edmonton and in Rhondda, 9 3 in East Ham, in Reading, and in Bolton, and 9.4 in Leyton, to 23.8 in Tynemouth, 23.9 in Wigan, 25.1 in Dewsbury, 25.8 in Gateshead, 28.9 in Middlesbrough, and 29.9 in Walsall. Measles caused a death-rate of 2.2 in Coventry, 2.5 in Tynemouth, 2.6 in St. Helens, 2.7 in Wolverhampton, 3.5 in Gateshead, 4.0 in Barrow-in-Furness, 4.2 in Sheffield, 4.4 in Sunderland, 5.5 in Walsall, and 7.0 in Middlesbrough; and whooping-cough of 1.8 in Salford, 2.0 in Wakefield and in Carlisle, 2.1 in Bootle, and 4.6 in Wigan. The mortality from the remaining infective diseases showed no marked excess in any of the large towns. A fatal case of small-pox was recorded in Bristol, but none in any other of the towns. The causes of 46, or 0.9 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 9 were recorded in Birmingham, 5 in Gillingham, 4 in Liverpool, and 3 each in Southport and Warrington. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,377, 2,384, and 2,332 at the end of the three preceding weeks, had further fallen to 2,286 on Saturday, May 22nd; 320 new cases were admitted during the week, against 316, 307, and 270 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In the sixteen largest Scottish towns 1,121 births and 724 deaths were registered during the week ended Saturday, May 22nd. The annual rate of mortality in these towns, which had been 20 2, 18.1, and 17.9 per 1,000 in the three preceding weeks, further fell to 16.1 in the week under notice, but was 0.7 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 5.9 in Clydebank, 8.9 in Kirkcaldy, and 11.4 in Aberdeen, to 18.6 in Ayr, 18.8 in Motherwell, and 19.1 in Perth. The mortality from the principal epidemic diseases averaged 2.0 per 1,000, and was highest in Glasgow and Falkirk. The 373 deaths from all causes in Glasgow included 26 from measles, 22 from whooping-cough, 5 from scarlet fever, 2 from infantile diarrhoea, 1 from diphtheria, and 1 from enteric fever. Eleven deaths from whooping-cough were recorded in Edinburgh, 4 in Dundee, and 2 in Falkirk; and from measles, 4 deaths in Aberdeen, 3 in Dundee, and 2 in Falkirk.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, May 15th, 582 births and 438 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 592 births and 463 deaths in the preceding period. These deaths represent a mortality of 18 8 per 1,000 of the aggregate population in the districts in question, as against 19.9 per 1,000 in the previous period. The mortality in these Irish areas was therefore 4.6 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 25.0 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 21.9 (as against an average of 23.2 for the previous four weeks); in Dublin city, 22.8 (as against 23.7); in Belfast, 15.1 (as against 19.6); in Cork, 16.3 (as against 21.7); in Londonderry, 20.2 (as against 18.7); in Limerick, 31.1 (as against 17.9); and in Waterford, 19.0 (as against 17.1). The zymotic death-rate was 1.2, as against 1.5 in the previous period.

During the week ending Saturday, May 22nd, 680 births and 425 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 582 births and 438 deaths in the preceding period. These deaths represent a mortality of 18.3 per 1,000 of the aggregate population in the districts in question, as against 18.8 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.4 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 29.2 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 20.8 (as against an average of 22.7 for the previous four weeks), in Dublin City 21.2 (as against 23.4), in Belfast 16.7 (as against 18.0), in Cork 21.8 (as against 19.4), in Londonderry 12.7 (as against 20.5), in Limerick 10.8 (as against 22.3), and in Waterford 30.4 (as against 16.2). The zymotic death-rate was 1.1, as against 1.2 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION. — Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BARNSLEY COUNTY BOROUGH.—Assistant Tuberculosis Officer and Resident Medical Officer at Mount Vernon Sanatorium. Salary, £300 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons (ladies). Salaries, £180 and £150 per annum respectively.

BIRMINGHAM CITY HOSPITAL.—Resident Medical Officer (lady). Salary, £250 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £170 per annum.

BRADFORD EDUCATION COMMITTEE.—Assistant School Dentist. Salary, £300 per annum.

BRISTOL: BISHOP KNOLL HOSPITAL, Stoke Bishop.—Surgeon in Residence. Salary, £250 per annum.

BRISTOL: BRISLINGTON HOUSE PRIVATE ASYLUM.—Assistant Medical Officer. Salary, £200 per annum.

BRISTOL GENERAL HOSPITAL. — House-Surgeon and Second House-Physician. Salaries, £150 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Honorary Assistant Surgeons in (1) Ear, Nose, and Throat Department, (2) Ophthalmic Department.

CANTERBURY MENTAL HOSPITAL. — Locumtenent Assistant Medical Officer. Salary, £6 6s. per week.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—Resident Medical Officer. Salary, £5 5s. per week.

GENERAL LYING-IN HOSPITAL, York Road, S.E. — Resident Medical Officer. Salary, £50 per annum.

GLASGOW: ANDERSON COLLEGE OF MEDICINE.—Chair of Anatomy.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Resident Medical Officer. Salary, £200 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—(1) Assistant Resident Medical Officer; salary, £100 per annum. (2) House-Physician; honorarium, £30 for six months.

LEICESTER: TUBERCULOSIS DISPENSARY. — Locumtenent, Salary, £6 6s. per week.

MACCLESFIELD GENERAL INFIRMARY. — Resident Medical Officer. Salary, £150 per annum.

MANCHESTER CORPORATION.—Medical Superintendent of the Baguley Sanatorium. Salary, £400 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

METROPOLITAN, EAR, NOSE, AND THROAT HOSPITAL, Fitzroy Square, W. — House-Surgeon (non-resident). Salary, £150 per annum.

MIDDLESEX HOSPITAL, W.—Officer in charge of Electro-cardiograph Department. Honorarium, £50 per annum.

NEWCASTLE-UPON-TYNE: NORTHUMBERLAND EDUCATION AUTHORITY.—Assistant School Medical Inspector. Salary, £300 per annum, rising to £350, and £25 for meals and incidental expenses.

NORTHAMPTON COUNTY BOROUGH.—Clinical Tuberculosis Officer. Salary, £350 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £150 per annum.

NOTTINGHAM GENERAL HOSPITAL. — Senior and Assistant House-Physicians. Salary, £300 and £250 per annum respectively.

OLDHAM UNION.—Resident Medical Officer for Poor Law Institution. Salary, £250 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary, £90 per annum and honorarium of £10 on completion of six months' service.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Surgeon.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £250 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL. — House-Surgeon. Salary, £150 per annum.

PRESTWICH: COUNTY ASYLUM. — Assistant Medical Officer. Salary, £250, increasing to £300, and on promotion to £450.

ROCHDALE TOWN COUNCIL.—Tuberculosis Officer and Assistant Medical Officer of Health. Salary, £400 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £100 per annum respectively.

SCARBOROUGH HOSPITAL AND DISPENSARY. — Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—Junior Lady House-Surgeon for Gynaecological and Maternity Departments. Salary, £80 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD: WHARNCLIFFE WAR HOSPITAL. — Resident Medical Officers.

SINGAPORE MUNICIPALITY.—Resident Medical Superintendent for Infectious Diseases Hospital. Salary, 4,200 dollars per annum, rising to 4,800 dollars.

SOUTHAMPTON PARISH INFIRMARY. — Resident Assistant Medical Officer. Salary, £250 per annum.

SOUTHWARK UNION INFIRMARY. — Assistant Medical Superintendent. Salary, £250 per annum, rising to £275 at end of one year.

STAFFORDSHIRE EDUCATION COMMITTEE.—Female Assistant School Medical Inspectors. Salary, £300–£350 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford. — House-Surgeon. Salary, £250 per annum.

STOCKPORT INFIRMARY.—Senior House-Surgeon. Salary, £200 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY.—Harrishill.—(1) Two House-Surgeons; (2) House-Physician. Salary, £150 per annum each.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SUNDERLAND: ROYAL INFIRMARY CHILDREN'S HOSPITAL.—Resident Medical Officer (lady). Salary, £100 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £125 per annum.

TUNBRIDGE WELLS: GENERAL HOSPITAL.—House-Surgeon.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL. — (1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—(1) Resident Medical Officer; (2) House-Physicians. Salary for (1) £160 per annum, and for (2) £120 and £100 per annum respectively.

WESTERN GENERAL DISPENSARY, Marylebone Road, S.W.—Honorary Ophthalmic Surgeon.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £150 per annum.

WILLESDEN HOSPITAL.—Members of Honorary Medical Staff.

WINSLEY SANATORIUM FOR CONSUMPTION.—Assistant Resident Medical Officer. Salary, £150 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—(1) Resident Medical Officer. (2) House-Surgeon. Salary, £150 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Alford (Lincoln), Leigh (Lancaster).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

BEVERS, E. C., M.A., M.B., B.Ch.Oxon., F.R.C.S.Eng. and Edin., Surgeon to the Radcliffe Infirmary and County Hospital, Oxford, vice H. P. Symonds, resigned.

CROSSE, R. E., B.A.Camb., M.R.C.S., L.R.C.P., Medical Referee under the Workmen's Compensation Act for the County Court Circuit No. 47, and to be attached more particularly to the Greenwich and Woolwich County Courts, vice Dr. Ralph Gooding, resigned.

EDWARDS, R., M.R.C.S., L.R.C.P., District Medical Officer of the Cranbrook Union.

GEMMELL, A. C., M.B., B.C.Cantab., M.R.C.S., L.R.C.P., Resident Medical Officer, Red Cross Hospital, Ampton Hall, Bury St. Edmunds.

HALL, W. T., M.B., C.M.Edin., District Medical Officer of the Newcastle-upon-Tyne Union.

HARKNESS, R. C., M.B., Ch.B.Edin., Medical Officer of the Workhouse and Children's Home of the South Shields Union.

HEATON, E. H., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Tendring Union.

HELLYER, W. W., M.R.C.S., L.R.C.P., Medical Officer of Health for Aberavon, vice J. Arnallt Jones, M.D.

HUNTER, T. R., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Cardenden District, co. Fife.

JAYNE, F. J., M.B., C.M.Glasg., District Medical Officer of the Hay Union.

JOHNSTON, G. J., F.R.C.S.I., Honorary Consulting Surgeon to the Royal Hospital for Incurables, Dublin, vice Sir John Lentaigne, deceased.

JONES, Peter, M.D.Edin., Medical Officer of Health to the Abergele Urban District Council, vice H. O. W. Williams.

JONES, R. N., M.B., F.R.C.S. Resident Medical Officer to the Royal Gwent Hospital, Newport, Mon.

JONES, W. Black, M.D., B.S., D.P.H., M.O.H. for the Combined Rural Districts of Builth and Colwyn, and for the Urban District of Builth, also Medical Officer and Public Vaccinator for the Lower District of the Builth Union.

MACKENZIE, Miss B. R., M.B., Ch.B.Edin., Assistant Medical Officer of the Bolton Union Workhouse.

MOORE, J. T., L.R.C.P. and S.Edin., L.F.P.S.Glasg., District Medical Officer of the Liverpool Parish.

SAYEED, A. L., M.B., Ch.B.Edin., Assistant Medical Officer at the St. Mary's Infirmary, Highgate Hill.

SHORLAND, W. E., M.R.C.S., L.R.C.P., Medical Officer and Public Vaccinator for the Britonferry District of the Neath Union.

SMITH, W. H., M.R.C.S., L.S.A., Medical Officer of the Children's Home of the Boston Union.

THOMPSON, C., M.B., Ch.B.Vict.Manch., District Medical Officer of the Oldham Union.

TOULMIN, E. W., L.R.C.P., M.R.C.S., District Medical Officer of the Blything Union.

TROTTER, R. H., M.D.Vict., District Medical Officer of the Huddersfield Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTH.

KIRBY.—On May 28th, to Dr. and Mrs. Guy H. Kirby, at Listowel, Bearwood Road, Smethwick, a daughter.

DIARY FOR THE WEEK.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF OPHTHALMOLOGY.—8 p.m., Cases; 8.30 p.m., Paper by Mr. Fisher: Retinitis in Pregnancy.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Courses will be given next week:

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

PUBLISHERS' ANNOUNCEMENTS.

IN view of the new issue of the *British Pharmacopoeia*, Dr. J. Mitchell Bruce has, with the aid of Dr. W. J. Dilling, Lecturer in Materia Medica and Pharmacology in the University of Glasgow, rearranged and rewritten his volume *Materia Medica and Therapeutics*. The tenth edition was recently issued by Messrs. Cassell and Co.

Messrs. J. and A. Churchill have just published a book, entitled *Sanitation in War*, by Major P. S. Lelean, Assistant Professor of Hygiene at the Royal Army Medical College. An introduction to the volume has been written by Surgeon-General Sir Alfred Keogh, K.C.B., M.D.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		JUNE.
8	Tues.	London: Organization Committee, 2 p.m. Buckinghamshire Division, Annual Meeting, Aylesbury, 3 p.m.; Committee, 2.30 p.m.
9	Wed.	London: Medico-Political Committee, 2 p.m.
11	Fri.	London: Journal Committee, 2 p.m. London: Committee of Chairmen of Standing Committees, 2.30 p.m. Nuneaton and Tamworth, and Coventry Divisions, Coventry and North Warwickshire, Hospital, 4 p.m. East Yorkshire Division, Annual Meeting, Hull Royal Infirmary, 8.15 p.m.
16	Wed.	Conference of Local Medical and Panel Committees, Connaught Rooms, Great Queen Street, London, W.C., 10 a.m.
23	Wed.	London: Finance Committee, 2 p.m.
24	Thur.	Staffordshire Branch, Annual Meeting, Lichfield, 5.15 p.m; Dinner, 6.30 p.m.
25	Fri.	Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C., 4 p.m.
30	Wed.	London: Council, 2 p.m. Newcastle-on-Tyne Division, Annual Meeting.
		JULY.
1	Thur.	Surrey Branch, Annual Meeting, 429, Strand, London, W.C., 4 p.m.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 12TH, 1915.

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NON-PANEL DOCTORS AND NATIONAL INSURANCE CERTIFICATES.

IN order to minimize as much as possible the inconveniences caused to doctors who attend insured persons in their private capacity, the Association has published books of certificates which, it is believed, will meet the requirements of approved societies, so far as is practicable in the case of certificates not given under the obligations of the official medical certification rules. The form of certificate is sufficiently like the official form to remove many of the difficulties which insured persons who have been attended by private doctors have had in satisfying the requirements of their approved societies, but is sufficiently distinct from the official form to show at once that it is being used by a doctor who is attending the patient in a private capacity, that is to say, either by a doctor who is not on a panel, or by a panel doctor other than the one on whose list the insured person is.

The Association has shown the certificates to the Insurance Commissions for England, Scotland, and Wales, and they raise no objection to the issue of them by the Association to medical practitioners for use when attending insured persons not being their panel patients, and not being persons whom they are attending as medical officers of institutions under Section 15 (4), or in virtue of "own arrangements" under Section 15 (3).

The books are being issued at cost price. They contain 50 certificate forms, and may be obtained from the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C., price 6d. each, post free.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

SUMMER SESSION, 1915.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

INDIAN SUBORDINATE MEDICAL DEPARTMENT.

A REPORT of the Examination Committee which had sat with the Chairmen of the Education and of the Students' Registration Committees on the Indian Subordinate Medical Department and preliminary examinations was received. Dr. MACKAY, in moving its adoption, said that on the last occasion when the matter dealt with in the report was before the Council[1] two steps were taken. It was arranged that certificates brought by Indian students who sought recognition as students in this country should be in a form which had been drawn up and approved by the India Office and the Indian Government. The forms as first drawn up were found by the Indian Government to be in some degree unsuitable; they were modified accordingly and were now finally approved by the India Office. The other point was of more importance. The Council had found that the preliminary examination for subordinate medical officers was not necessarily one which was accepted by the Council, and did not involve the courses of study required for licence in England. The India Office had now intimated that, in future, candidates for subordinate medical posts would be required to pass a preliminary examination recognized by the Council, and that the course of professional study would be extended from four to five years. It became necessary therefore for the Council to modify its recommendations to the Licensing Bodies as to the extent of recognition to be extended to the Indian course of students who sought to obtain any licence in this country.

The Committee advised the Council to request from the India Office full particulars of the new conditions, including the subjects of study, the time devoted to each, the nature of the examinations, and the character of the teaching. The report pointed out that under existing conditions the Council accepted the actual preliminary examinations at present conducted in India as marking the date of the commencement of the curriculum, and establishing full recognition of the courses of study in chemistry, physics, and biology, but not as of themselves entitling to admission to the *Students' Register* in this country, and for that end they must be supplemented by an additional examination specified in the list printed by the Council.

The report was adopted, and directed to be transmitted to the India Office.

[1] BRITISH MEDICAL JOURNAL, SUPPLEMENT, June 6th, 1914, p. 47.

APOTHECARIES' HALL OF IRELAND.

The Examination Committee presented reports on the results of examinations held in June, July, August, and October, 1914, and February, 1915, by the Apothecaries' Hall of Ireland, and also a report in regard to the licence of the Hall. Sir CHARLES BALL said that certain discrepancies in the reports handed in by the Apothecaries' Hall and the reports received by the Council from the

assistant examiners had been cleared up. In regard to the examinations in October, 1914, and February, 1915, the tables furnished by the Hall gave full information which the Council for a long time had sought to obtain. The previous history of students who sought diplomas could now be traced. The tables dealt with 12 candidates, 6 at each examination; 2 of the 12 passed the Primary Professional Examination at the Apothecaries' Hall, both being Licentiates of the Pharmaceutical Society, the other 10 being exempted as having passed a similar examination elsewhere. One candidate only was returned as having completed the examinations for the L.A.H.

Sir Charles Ball then proceeded to deal with the report of the licence of the Hall, which contained the following conclusions:

1. Notwithstanding a considerable inducement to take the first professional examination at the Apothecaries' Hall, students do not to any appreciable extent, when commencing the study of medicine, select the Apothecaries' Hall as the means of obtaining a registrable qualification.
2. Many who obtain the L.A.H. diploma have commenced their series of professional examinations but have failed to obtain a qualification elsewhere, and the cases given support this statement.

Dr. Finny reports unfavourably on the examination in physiology, anatomy, and pathology, while in clinical medicine he states that in January, 1914, the single candidate who presented himself and who passed for the diploma should not have been allowed to pass.

Before speaking to the report Sir Charles Ball moved:

> That it appears to the General Council that the course of study and examinations to be gone through in order to obtain the qualification of Licentiate of the Apothecaries' Hall of Ireland are not such as to secure the possession by persons obtaining that qualification of the requisite knowledge and skill for the efficient practice of their profession.

Sir Charles Ball said that if the motion was adopted by the Council it became a question for further consideration whether any move in the direction of reporting to the Privy Council should be carried out, but the passing of the resolution did not bind the Council to do so. A person who registered as a licentiate of the Apothecaries' Hall had all the advantages of any other registered practitioner. A large proportion of those who took the diploma shortly afterwards came to one of the Royal Colleges and presented themselves as registered practitioners for the licences issued by those Royal Colleges. For instance, a man taking the L.A.H. diploma could come to London, present himself for examination for membership of the College of Surgeons, or the licence of the College of Physicians as a separate licence. He had to undergo a certain examination for that, but if he succeeded in passing that examination he could at once demand the registration of his licence, not in addition to his former qualification, but in substitution for it. It was possible for a man obtaining the L.A.H. diploma, if he obtained the M.R.C.S., to have his L.A.H. removed from the *Register*, and appear only on the *Register* afterwards as M.R.C.S.

Mr. VERRALL desired to second the resolution, as at the last (November) session of the Council he had seconded a proposal for inquiry, having satisfied himself of the justness of the proposal now before the Council. Sir Charles Ball spoke with full knowledge of his subject. He (Mr. Verrall) had satisfied himself that the proposal was a just one on the statements contained in the report, more especially on the latest report—namely, that made by Dr. Finny when he represented the Council as deputy at the professional examinations from July, 1913, to April, 1914. He did not think, subject to any explanation or reply which might be made on behalf of the Hall, that anybody could doubt that there was a substantial case for impugning the value of the examination in question. Some of Dr. Finny's remarks were exceedingly strong. The heaviest was that as to the examiners' "extreme leniency" in regard to anatomy and also with regard to clinical medicine. It seemed to him (Mr. Verrall) that even if the Council were prepared to continue the expense of supervising the examination, there was no proof that it would provide such a test of candidates as the Council as a body was bound to see was given.

Dr. MACDONALD moved as an amendment, "that the discussion of this matter be adjourned to the next meeting of the Council," on the one ground that the Council had not had sufficient time in which to consider the report. The report might absolutely condemn the Apothecaries' Hall, and with such a far-reaching effect as that he thought the members of the Council should have a longer time to give it due consideration.

Sir HENRY MORRIS seconded, having cause to know what would follow if the resolution were passed. If it were passed the Council, if it acted consistently, would send it to the Privy Council. He did not know what alternative course could be taken. It was clear that if it passed a resolution that the course of study was not sufficient, the Council should do something to ensure that if the examinations were to be continued, the course of study should be such as to fit candidates to be qualified. With regard to the remark of Sir Charles Ball that a man who got the qualification of L.A.H. might come over to London and get the M.R.C.S. in substitution for the L.A.H., surely it was not meant to suggest that the college which he (Sir Henry Morris) had the honour of representing were likely to pass a man any easier, or to pass him at all, if it thought he was not up to the standard. Possibly a man might come to one of the licensing bodies, and be justly passed because of the amount of study he might have done between the interval of passing for the L.A.H. and submitting himself for examination by the College of Surgeons, or any other body.

Sir JOHN MOORE said that it was futile to say the matter had been sprung upon the Council. He himself raised it many years ago, and, as representing the College of Physicians of Ireland, he could speak strongly. One candidate presented himself quite recently under the Conjoint scheme, and was rejected. He went to the Apothecaries' Hall, passed the L.A.H., and returned to the College, asking it to examine him. He was rejected, and it was necessary to alter the by-laws of the College so as to provide that it would not accept any registered medical practitioner who came for examination unless he fulfilled certain additional requirements. He would be quite content to send the opinion of the Council to the Apothecaries' Hall, but the matter should not be postponed.

Dr. NORMAN MOORE could not regard the proposition as one which had been sprung upon the Council. In the course of the present and previous discussions the different representatives of the Apothecaries' Hall of Dublin had most, if not all, complained that the Apothecaries' Hall was constantly being attacked, that it was not once and for all attacked, but that it was constantly the subject of adverse criticism. The object of the present motion was to bring matters to a head; it was not hostile to the body in question. He hoped it would do that body good and lead to its reform. It was quite clear from the discussions of the past ten years that it needed reform, and it was surely fair to it that the Council, which was the authority undoubtedly appointed to criticize all the qualifying bodies or universities, should let the Apothecaries' Hall know that the time for reform had come. All bodies could reform themselves, and in their reformed condition might be totally free from the criticism which they were subjected to before. He agreed with Sir Henry Morris in seeing no objection to men taking another qualification, whether that of the English Conjoint Board, or at a university. It was rather a proof that a man was anxious to show he had more in him. On the other hand, it would be wrong to send the resolution to the Privy Council. It would be a hasty act which the Council ought not to commit. The object of the resolution was purely and simply to give the Apothecaries' Hall the opportunity of showing that it was a body, in spite of all that had happened in the past, which deserved to be trusted with the power of granting a qualification. The present suggestion was a final opportunity (an indication that the Council was in doubt about it) for the Apothecaries' Hall to put their house in order, and with that view, and without the slightest hostile feeling towards the body, he thought the Council ought to adopt the resolution and forward it to the Apothecaries' Hall of Dublin and await what he hoped would be its complete reformation.

Dr. MAGENNIS deplored the fact that he had only received the report of the Committee that day. He could not reply fully to the report at such short notice. The resolution proposed was after all practically an attempt at the extinction of an old Irish institution. On the report of Dr. Finny he held that any court would come to the

conclusion that the examinations were sufficient. The reports showed that the Hall had been constantly improving year by year, and he challenged the Council to point to any other licensing body that set such difficult examinations in medicine and surgery, or under such strict conditions, as the Apothecaries' Hall. The Apothecaries' Hall was quite prepared to stand by the report of Dr. Finny, the Council's own Assistant Examiner, and would be delighted that the Council should appoint visitors from amongst its own members to attend the examinations.

The amendment that the consideration of the motion be adjourned to the ensuing November session was put to the meeting and lost.

Discussion on the motion having been invited, and no one wishing to speak the motion was put to the Council and carried.

On the motion of Sir CHARLES BALL names and numbers were taken, when it appeared that 29 voted for, 2 against, 3 did not vote, and 4 were absent.

Dr. NORMAN MOORE moved:

> That the resolution and the report of the Committee be forwarded to the Apothecaries' Hall for its information.

Sir HENRY MORRIS seconded. In sending the resolution he hoped the Council would point out to the Apothecaries' Hall in what directions there should be modifications or alterations in their curriculum, as it was within the Council's province to indicate where the deficiency existed or in what directions improvements would lie.

Dr. MAGENNIS was about to make the same suggestion. They were anxious to improve their examination, and it would be unfortunate if they could not be assisted by the Council as to the manner in which it should be done. He would undertake that any suggestion or recommendation from this Council would be stringently carried out.

The PRESIDENT pointed out that the Council could not act as nurse and guide to a body which was capable of governing itself and making regulations which were satisfactory in every respect. The Examination Committee was not charged with such a duty. It could not both pass a final judgement and be responsible for drafting regulations for improvement.

Mr. THOMSON felt very strongly that the document before the Council was not sufficient to justify the action it had taken.

Dr. NORMAN MOORE observed that there were only two courses open to the Council: one was to send the report to the Privy Council, the other to send it to the body involved. He thought the most business-like course was to send it to the body.

The motion was then put, when 32 voted for and 2 against, and it was carried.

PHARMACOPOEIA COMMITTEE'S REPORT.

On the motion of the CHAIRMAN, seconded by Dr. NORMAN MOORE, the report of the Pharmacopoeia Committee was received and directed to be entered on the minutes. The report stated that up to the end of 1914 the total sales of the *British Pharmacopoeia*, 1898, amounted to 46,585 copies, and those of the *Indian and Colonial Addendum* to 4,529 copies. Up to May 29th, 1915, 17,239 copies of the *British Pharmacopoeia*, 1914, had been sold. As the first issue of 20,000 copies was thus nearly exhausted, a second issue of 10,000 copies had been prepared, and would shortly be ready for distribution. The opportunity had been taken to amend the typographical errors noted in the first issue. The only alteration in the text calling for notice was that referring to the specific gravity of guaiacol, which should read "1.116 to 1.140." The Government of India had intimated that no special edition of the *Pharmacopoeia* for use in that country would on this occasion be required. The Belgian Government had undertaken to inform foreign governments who were parties to the international agreement of 1906 of the publication of the *British Pharmacopoeia*, 1914, and of the manner in which effect had been given therein to the recommendations the agreement contained. The expenditure on the *Pharmacopoeia* of 1914 showed a saving of about £2,200 as compared with that on the *Pharmacopoeia* for 1898. The Committee had received with regret the resignation of Dr. Tirard from the post of secretary, which he had held for twenty years, during which time he had seen through the press the *Pharmacopoeia* of 1898 and had acted as senior editor of the 1914 edition. Dr. Tirard had found that his duties as Commanding Officer of the 4th London General Hospital occupied his time so fully that he was constrained to limit his other engagements. The Council authorized the President to convey to Dr. Tirard its sense of the very valuable services he had rendered.

RECOGNITION OF TEACHING INSTITUTIONS.

On the motion of Dr. NORMAN MOORE, seconded by Dr. LANGLEY BROWNE, the following recommendations of the Students' Registration Committee were approved:

1. That satisfactory evidence as to visitation having been received, Reading School, Blaenau Festiniog County School, and the Intermediate County School, Towyn (Merionethshire), be added to the list of recognized institutions approved by the Council.
2. That the City of Dublin Technical Schools be added to the list of recognized institutions approved by the Council, only so far as their day classes are concerned.

DENTAL EDUCATION AND EXAMINATION COMMITTEE.

On the recommendation contained in the report of this committee, the Council resolved to recognize the degrees of Bachelor and Master of Dental Surgery of the National University of Ireland and the degree of Bachelor of Dental Surgery of the University of Melbourne. Mr. TOMES, the Chairman, said that an application had been received from the University of Illinois for the recognition of its College of Dentistry as a teaching body and of its degree of Doctor of Dental Surgery. He pointed out that the recognition of schools as teaching bodies did not lie in the hands of the General Medical Council, and that the curriculum for the degree extended to only three years instead for four in Great Britain. Further, the information furnished as to scope and conduct of the examinations was quite insufficient to enable the committee to judge of it. The Council declined to accede to the request.

SCHOOL LEAVING EXAMINATIONS.

In presenting the report of the Education Committee the Chairman, Dr. MACKAY, said that the Council in 1903–04 had cordially agreed in a general way with the suggestion from the Board of Education that steps should be taken to make uniform the large number of examinations in England admitting to the universities and other examining bodies. The Board had now put forward concrete proposals, which were almost ripe for adoption, and it would be well that the Council should again emphasize its support of the Board of Education expressed on November 26th, 1904, in this most laudable desire.

The PRESIDENT said that it was common knowledge that the co-operation of the universities in England to the proposal had been secured, so that if it came to fruition it would be the result of a national effort on the part of all concerned.

The Council accepted the recommendation of the Committee, and resolved to report as follows:

> The General Medical Council cordially welcomes the proposed foundation by the Board of Education of a central authority to be charged with the supervision and co-ordination of school examinations in England, and the establishment of a system of leaving certificates.
>
> With reference to the recognition of the proposed examinations for the purpose of admission to the *Register* of medical and dental students, the Council reports that the standard of the Second Examination, as contemplated, would appear to be satisfactory; and that that of the First, which the Council is informed is to be approximately that of the Senior Local Examinations of the University of Oxford, would be accepted under the present Regulations: provided in both instances that the several subjects required by the Council are included in the examination. These are Latin, English, Mathematics, and one of the following: Greek, or a Modern Language. This proviso would necessitate in the syllabus of the Second Examination, as at present planned, the inclusion of more than one "subsidiary subject." When the detailed arrangements have been completed, the Council will be glad to receive further particulars from the Board of Education.

The circular from the Board of Education dealing with this question was directed to be published as an appendix to the Council's minutes.

PHARMACEUTICAL SOCIETY.

A further report from the Education Committee stated that a request had been put forward by the Pharmaceutical Society of Great Britain for the recognition,

for the purpose of admission to the *Students' Register*, of the certificates attesting the preliminary examination of qualified pharmacists desirous of attaining a licence in medicine; and, further, for the recognition in the medical curriculum of the classes taken and the examinations in medical subjects passed by qualified pharmacists in their special course of instruction. These proposals were made in view of the present "shortage of medical men and the possible emphasis of that shortage in the near future." The Committee pointed out that the society had no preliminary examination of its own, and that among the examinations which it recognized were many not accepted by the Council, on the ground that their standard was not sufficiently high. The professional course embraced botany, physics and chemistry, and materia medica and pharmacy. These subjects were studied chiefly from the point of view of their practical application to pharmacy, and the examinations appeared to be amply sufficient for that purpose. The question the Committee is advised was one which did not seem to call for any action on the part of the Council, as machinery already existed in the Students' Registration Committee, under which candidates whose preliminary examination was in any respect incomplete might have *pro tanto* recognition extended to those portions which were satisfactory. So far as the recognition of the professional course was concerned, the matter was primarily one for the consideration of the licensing bodies, which had power to recognize any courses of study and examinations, other than the final or qualifying examination, which in their opinion were equivalent to the course of study and examinations prescribed for the medical curriculum.

The recommendation of the Education Committee, that the Council should take no action at present, was accepted, and the letter from the Pharmaceutical Society was added as an appendix to the minutes.

MEDICAL DISCIPLINARY CASES.

Charge of Adultery.

On the consideration of disciplinary cases Mr. Bodkin attended as Legal Assessor, and Mr. Harper appeared as Solicitor to the Council.

The case of Alexander Orford Schorn, registered as of Sacriston, Durham, M.B., C.M. 1892, U.Edin., was considered on June 2nd. He was summoned to appear before the Council on the following charge:

That, being a registered medical practitioner, you abused your position by committing adultery with a Mrs. Collins, whom you had been attending professionally, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated June 29th, 1914, and made absolute on January 25th, 1915, in the case of Collins *v.* Collins and Schorn, in which you were the co-respondent. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

There was no complainant in the case.

Mr. Schorn appeared in person.

Mr. HARPER, in submitting the facts, put in the decree *nisi* of the Divorce Court, made absolute on January 25th, 1915, and also read from proofs of the evidence in the proceedings before Mr. Justice Bargrave Deane, which, he contended, established the professional relationship of doctor and patient.

In answer to the PRESIDENT, Mr. SCHORN stated that the whole of his defence was contained in his letter to the Registrar of March 6th, 1915. The letter having been read by the Legal Assessor, Mr. Schorn declared that in all the years he had known Mrs. Collins there had been no guilt on her part or on his.

Strangers and parties withdrew. On readmission, the PRESIDENT announced the decision of the Council as follows:

Mr. Schorn, I have to inform you that the Council has judged you to have been guilty of infamous conduct in a professional respect, and has directed the Registrar to erase your name from the *Medical Register*.

Canvassing Insured Persons.

On June 2nd the Council considered the case of Alfred Bertie Kramer, registered as of King's Cliffe, Wansford, Northants, M.R.C.S.Eng. 1911, L.R.C.P.Lond. 1911, who had been summoned to appear before the Council on the following charge:

That being a registered medical practitioner you have systematically canvassed for patients by visits made personally and by a Mrs. Saunt on your behalf to persons in the village of Bulwick, Northamptonshire, who were patients of Mr. Arthur Samuel Stokes. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainant was Mr. Arthur Samuel Stokes, M.R.C.S.Eng., L.R.C.P.Edin., of Weldon, Kettering.

Mr. Parker, solicitor, appeared for Mr. Stokes.

Mr. Batten, solicitor, appeared for Dr. Kramer.

Mr. PARKER, in opening the case, said the Council, by its rules, had laid it down that it was infamous conduct in a professional respect for a medical practitioner to advertise or canvass, or employ other persons to canvass, or sanction the employment of agents or canvassers. It was alleged that Dr. Kramer himself canvassed Mr. Stokes's panel patients, or sanctioned the canvassing of those patients by a Mrs. Saunt, in whose house Dr. Kramer's surgery was situate. He also obtained the medical cards of Mr. Stokes's patients, which were filled in and signed by Dr. Kramer. These patients were seen by Mrs. Saunt, who told some of them that Mr. Stokes did not care much for panel business, and that he was giving up some of his Bulwick patients. She told Mr. Stokes, when he met her on one occasion, that she had been requested by Dr. Kramer to see these people. She now denied having made that statement, although she admitted that several of the patients came to see her who stated they wished to change from Mr. Stokes to Dr. Kramer. When the war broke out, in order to dispel any doubt as to his nationality, Dr. Kramer sent out a circular stating that he was a British subject, which circular was inserted in the parish magazine, and was sent to Mr. Stokes's patients. This, although not strictly canvassing, was a procedure which the Council would not approve of.

Mr. A. S. STOKES was called and said that he had practised in Bulwick for the last twenty-four years. Dr. Kramer arrived in the district in June, 1914, and started a branch surgery at the house of Mrs. Saunt in Bulwick. On January 1st last Mr. Stokes learnt to his surprise that all his panel patients, except three, at Bulwick had transferred to Dr. Kramer. On making inquiries it was found that Dr. Kramer and Mrs. Saunt had canvassed from house to house in December, 1914, inducing the patients of Mr. Stokes to transfer to Dr. Kramer.

Mr. HERBERT THOMAS BINDER, in answer to Mr. PARKER, said that on January 12th, 1915, he and Mr. Stokes saw Mrs. Saunt, when she told them that Dr. Kramer had asked her to see Mr. Stokes's panel patients and get them off Mr. Stokes's list on to Dr. Kramer's.

Mr. PARKER read the statutory declaration of Susan Patrick, district nurse at Bulwick, who deposed to Dr. Kramer calling upon her and asking her to join his list of panel patients. Dr. Kramer gave her to understand that Mr. Stokes did not care for so much panel work.

JAMES BARRETT, in answer to Mr. PARKER, said he had been on Mr. Stokes's list till December last. On December 8th Dr. Kramer came to him, saying he had heard that he (the witness) was going to change doctors. Dr. Kramer asked for his medical card, which he (the doctor) signed and took away. He found afterwards that he had been transferred to Dr. Kramer's list. He had had no fault to find with Mr. Stokes.

FREDERICK DOLBY (Bulwick), replying to Mr. PARKER: Mrs. Saunt called at his house in the month of December, asking him to join Dr. Kramer's panel. She said Dr. Kramer had had a letter from Mr. Stokes, saying he could have all his panel patients in Bulwick.

ALFRED LANE, examined by Mr. PARKER, said that in December last Dr. Kramer called and asked for his insurance card, which had to be in by the next day. Witness gave it to him and did not see it again until January, when it came back with Dr. Kramer's name upon it. The witness's signature on the card was not in his handwriting.

By the LEGAL ASSESSOR: He did not know Dr. Kramer when he first called, but he recognized him now.

Cross-examined by Mr. BATTEN: He had never signed a request to be transferred from Mr. Stokes.

ROBERT PERKINS gave similar evidence.

Dr. FREDERICK T. FISHER, Elm Park Gardens, Kensington, examined by Mr. PARKER, said in May he negotiated with Dr. Kramer for the purchase of his

practice at King's Cliffe, Wansford, Northants. The reason given by Dr. Kramer for relinquishing it was that he was going to take up a public appointment. Subsequently he (Dr. Fisher) discovered this was not true, and that there was some scandal with regard to a woman, and that Dr. Kramer was proposing to acquire another practice.

By Mr. BATTEN: There was no intention of selling you the practice until after this inquiry?—I did not know of the inquiry until this morning.

Mr. BATTEN: There was no attempt made by Dr. Kramer to get you to complete the purchase?—Yes, there was. I saw his lawyer yesterday, and he told me that the provisional agreement I had signed was binding and the practice was sold, but I refused to take it up.

Mr. BATTEN said this evidence placed him in a difficulty, and he would like to consider his position.

The hearing was accordingly adjourned for a short time, the Council proceeding with other business. Subsequently,

Mr. BATTEN stated he retired from the case, but he wished to communicate to Dr. Kramer (who had been taken ill) any decision the Council might come to as to any adjournment.

The PRESIDENT said that as it was desirable to ascertain the procedure with regard to the transfer of insurance patients from one doctor to another an official from the Insurance Commissioners was present to give the Council information on the point, and at the request of the President Mr. Batten undertook to take a note of the evidence in the interest of, and communicate it to, Dr. Kramer.

Mr. RAE, in reply to the PRESIDENT, said he was an officer of the National Insurance Commissioners. It was competent for an insured person, with the consent of both doctors, to change his doctor at any time. He had to apply for the prescribed form to the Committee and fill it up as directed, and then present it to the doctor on whose list he desired to be, who signed that he was willing to attend the insured person, and the form was then returned to the Insurance Committee. A person who desired to change at the end of the year without the consent of the doctor must give notice to the Committee before December 1st. There was no prescribed form in such a case. With the notice of change the insured person had to send his medical card containing the name of his old doctor. A new medical card was only granted in the case of a transfer from one doctor to another; no doctor's name appeared on it; only the name and address of the insured person and the name of his society, and by means of that card he could choose any doctor he liked. When a change was effected the doctor who agreed to attend the insured person kept the card and sent it to the Insurance Committee to note the fact that he had accepted the insured person, and the latter was then placed on that doctor's list and the doctor's name stamped on the front page of the card and then sent back to the insured person by post. That completed the procedure. When a panel doctor died and his representative made arrangements to transfer the practice to another doctor, notices were sent to the insured persons that they were to be transferred to that doctor. If they did not wish to be so transferred they must give notice within fourteen days, and if no such notice was received, they were so transferred. There was no conceivable method by which a number of insurance cards blank could be supplied to any but an insured person.

By Dr. MACDONALD: It was not possible for a medical card to be sent to any but an insured person; if it was, it would be contrary to the regulations and instructions. The insured person should sign the card himself, but he did not always do so.

By Mr. VERRALL: There was no way, other than a definite application, by which an insured person could be transferred from one panel doctor to another. Any application for transfer sent in without the medical card would be ignored.

The PRESIDENT said he had been informed that Dr. Kramer's condition of health was such that he was not able to take part in the proceedings that day, but he had undertaken to appear on the following day. In the circumstances he proposed to conclude Dr. Fisher's evidence, and asked Mr. Batten to take a note of it and communicate its effect to Dr. Kramer.

Dr. FISHER (continuing) said in May last he agreed to pay £750 for the practice—£200 down and the balance £300 per annum until it was paid. An agreement to this effect was drawn up and signed by both parties in the presence of Dr. Kramer's lawyer. He (Dr. Fisher) never refused to complete because of misrepresentation. Only yesterday he went to the solicitor, who said he had had a note from Dr. Kramer saying he was to get £200 down and the formal agreement signed, but the witness repudiated the whole transaction.

In reply to the PRESIDENT, the witness undertook to attend on the following day for cross-examination by Dr. Kramer, and the further hearing was adjourned.

On the resumption of the case on June 4th, the PRESIDENT announced that he had received a telegram from Dr. Kramer—"Sorry unable to appear. Letter following by Express Messenger." The letter, which had arrived, said:

Sir,—I wish to apologize for the inconvenience and delay caused by my indisposition yesterday. After a bad night I feel quite unable to appear at the Council this morning, as wired a short time ago. If the Council will be good enough to postpone the hearing until I am well enough to appear, all the accusations brought against me will be answered. Again apologizing for the inconvenience caused, I am, yours truly, A. B. Horton Kramer.

A special messenger had been sent to Dr. Kramer, to tell him the case was proceeding, and that his presence was required. He had not forwarded any medical certificate indicating that he was unable to attend.

The PRESIDENT further informed the Council that the National Insurance Commissioners had permitted an official from the local Insurance Committee, who was cognizant of the facts of the case during November and December last, to attend, not as a witness for or against either party, but to give such information as was within his knowledge as to the procedure followed at the time in question.

Mr. GROVE, in reply to the PRESIDENT, said he was a clerk to the Northampton County Insurance Committee. The procedure followed with regard to the transfer of patients from one practitioner to another was that at the end of the year a notice was inserted in the newspapers, in addition to the notice on the medical card, that insured persons desiring to change their doctor must give written notice before December 1st, and also send to the Insurance Committee his card with the old doctor's name on it. The office then issued a new card without any doctor's name upon it. The two cards were then returned, the old one with a rubber stamp across it, saying, "Available only prior to January 1st"; the new card, "Not available until January 1st." The new card was then taken to the doctor chosen, who signed it and returned it to the Committee's office. Then the doctor's name was placed on the front, and it was returned to the insured person, and the doctor credited with that insured person as from January 1st. A blank card was never issued unless a transfer was applied for and the insured person's medical card enclosed with it, except where the card had been lost. All applications after December 1st would be rejected. His committee received last November approximately 240 applications for transfer, 91 of which were transfers to Dr. Kramer. He produced a number of the applications for inspection by the Council. It was not possible for an approved society to possess blank cards; they were only issued by Insurance Committees. No steps were taken to authenticate an application; only the fact of his being an insured person was verified. An insured person could choose a new doctor at any time, but if the doctor was to have credit for the patient for the future year it must be done before December 1st. A blank card was available at any time. There were a number of rejections in his district last December on the ground that they were too late. On October 29th, 1914, Dr. Kramer wrote:

Dear Sir,—Would you please let me know about what time panel patients will be able to change their doctor this year. Thanking you in anticipation, yours truly, A. B. KRAMER.

The information asked for was given. On November 26th, 1914, he again wrote:

Dear Sir,—I should be obliged if you will let me know by return of post what is the latest time that panel patients can change their doctors. Inquiries by patients anxious to come on my list are being made daily, and it appears they are all under the impression that the change can be made up to the end of the year. Please let me know fully about this matter. Thanking you for a reply by return, yours truly, A. B. KRAMER.

The information was again forwarded so that he had full information as to the procedure. On November 3rd, 1914, his committee received from Robert W. Perkins the following letter:

Bulwick, November 27th, 1914. Please transfer me to the panel list of Dr. Horton Kramer of King's Cliffe. Robert W. Perkins.

On the same date letters to the like effect were received from James Barrett, John George Perkins, Eliza Perkins, Alfred Allen, and James Kirkwood. They were all in the same handwriting, which was similar to the handwriting on their medical cards. Part A of the card beginning "I (signature)" was expected to be filled in by the insured person himself. Properly filled in it should contain the insured person's signature twice, once in Part A and once at the side. Apparently the cards in this case were not so filled in; they were filled in in the same handwriting as the applications to transfer. The object of the signature was that the card should not be used by other than the insured person.

By Dr. MACDONALD: He could not give the number of insured persons at Bulwick, but Dr. Kramer had as on April 1st this year 518, which had gone up in the following manner: 350 were handed over by his predecessor; on July 12th last he had 368; on October 12th, 378; January 1st, 490, which included the 91 transferred last December. The applications to transfer which the Council had inspected were all in the same handwriting.

The PRESIDENT said he had 47 applications, all apparently in one handwriting.

This concluded the witness's evidence, and the PRESIDENT thanked him on behalf of the Council for the admirable manner in which he had given the information required.

Mr. PARKER submitted his case was proved. The evidence of Mr. Stokes and his witnesses had not been shaken in cross-examination, and he submitted it was true. Canvassing had been alleged, and canvassing by Dr. Kramer and his agent, Mrs. Saunt, had been proved. Insurance cards had been transferred to Dr. Kramer on representations which were not true. Further, reports with regard to Mr. Stokes relinquishing panel work had been circulated which were totally unfounded.

The PRESIDENT said he had just received a report that Dr. Kramer had left his lodgings for an unknown destination, accompanied by a woman.

Strangers and parties withdrew. On readmission, the PRESIDENT announced the decision of the Council as follows:

I have to announce in public that the Council have adjudged Alfred Bertie Kramer to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the *Medical Register* the name of Alfred Bertie Kramer.

DENTAL DISCIPLINARY CASES.

The Council proceeded on June 1st to the consideration, adjourned from May 28th, 1914, and further adjourned from November 25th, 1914, of the charge against Valleck Cartwright Mallan.[1]

The Dental Committee, at its meeting on May 31st, again considered the case and found that the following facts were established by the evidence:

Since the last hearing the said Valleck Cartwright Mallan has removed the tickets, newspapers, advertising letters from patients and photographs from the doorway and window of the premises, and he put in a photograph of the premises as they now are. He stated that he has also entirely discontinued advertising his practice by means of circulars, pamphlets, or newspapers, by hand or through the post.

The complainants offered no evidence that the said Valleck Cartwright Mallan had not fulfilled the undertaking which he had given to the Council.

Neither Mr. Mallan nor Mr. Turner wished to add anything to the facts stated in the report. Strangers and parties were directed to withdraw. On readmission, the PRESIDENT announced the judgement of the Council as follows:

Mr. Mallan, I have to inform you that the Council has not seen fit to direct the Registrar to erase your name from the *Dentists' Register*.

The Council also considered the case of George William Hammond registered in the *Dentists' Register* on December 31st, 1878, as "in practice on July 22nd, 1878." The Dental Committee found that he had been convicted of stealing potatoes from a field and fined £1 and 7s. 6d. costs or the alternative of one month's imprisonment with hard labour. Mr. Hammond did not appear, and the Council directed his name to be erased from the *Dentists' Register*.

[1] SUPPLEMENT, June 6th, p. 415, and December 5th, p. 259.

CONSTITUTION OF COMMITTEES.

On the motion of Dr. NORMAN MOORE, seconded by Dr. NORMAN WALKER, the nominations to the following committees were approved:

Education Committee.—Dr. Norman Moore, Sir G. Philipson, Sir Francis Champneys (from English Branch Council), Dr. Mackay, Mr. Hodsdon, Dr. Knox (from Scottish Branch Council), Sir Arthur Chance, Sir William Whitla, Dr. Little (from Irish Branch Council).

Examination Committee.—Dr. Taylor, Dr. Saundby, Dr. Caton (from English Branch Council), Sir Thos. Fraser, Dr. Russell, Dr. Knox (from Scottish Branch Council), Sir John Moore, Sir Chas. Ball, Dr. Kidd (from Irish Branch Council).

Public Health Committee.—Dr. Newsholme, Dr. Latimer, Mr. Verrall (from English Branch Council), Dr. Norman Walker, Dr. Cash, Dr. McVail (from Scottish Branch Council), Sir John Moore, Dr. Magennis, Dr. Kidd (from Irish Branch Council).

National Insurance Act Committee.—Sir Arthur Chance was appointed an additional member.

THE REGISTRAR.

At the close of the session of the Council on Friday, June 4th, it was intimated that Major N. C. King, the Registrar, who was present in khaki, had been instructed to report himself for duty with the 3rd Battalion of the London Rifle Brigade at Tadworth Camp. Major King received the good wishes of the Council on his departure. It is understood that he will be called to an important command in his regiment.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

GLASGOW AND WEST OF SCOTLAND BRANCH.

THE annual meeting of the Council of the Glasgow and West of Scotland Branch was held on May 20th, when Dr. GOFF, President, was in the chair.

Election of Officers.—The following office-bearers were elected for the ensuing year:

President: Colonel D. J. Mackintosh, M.B., LL.D., M.V.O.
President-elect: Dr. W. F. Brown, Ayr.
Vice-Presidents: Dr. John Goff, Bothwell, and Dr. A. T. Campbell, Glasgow.
Honorary Secretary: Major Wm. Bryce.
Interim Honorary Secretary: Dr. J. Wishart Kerr.
Honorary Treasurer: Dr. J. Wishart Kerr.

KENT BRANCH.

THE annual meeting of the Kent Branch was held, by kind permission of the Mayor, on June 2nd, at the Town Hall, Tunbridge Wells.

Election of Officers.—The members were entertained to tea by the Mayor at 4 o'clock, after which the following officers were declared to have been elected for 1915–16:

President: Dr. Claude Wilson, Tunbridge Wells.
Vice-Presidents: Dr. William Douglas and Dr. E. L. Aldeney, J.P.
President-elect to be President 1916–17.—Dr. Godfrey Taunton, of Chatham.
Honorary Secretary and Treasurer.—Dr. E. A. Starling.

Annual Report and Financial Statement.—The annual report and financial statement were received and adopted. The auditors were thanked, and Drs. Davies and Linton were elected for the following year.

Vote of Thanks.—The officers of the past year were thanked for their services.

President's Address.—A very valuable paper was then read by the President, Dr. CLAUDE WILSON, on irregular action of the heart, for which he received the hearty thanks of the meeting. The address was published in the JOURNAL of June 5th, p. 957.

Dinner.—The PRESIDENT subsequently entertained the members and several guests to dinner at the Calverley Hotel.

LANCASHIRE AND CHESHIRE BRANCH:

BLACKPOOL DIVISION.

THE annual meeting and dinner of the Blackpool Division was held at the Clifton Hotel, Blackpool, on May 19th, when Dr. CARR, Chairman, presided.

Report of Executive Committee.—The annual report of the committee was received and approved.

Election of Officers.—The following office-bearers were elected for the year:

Chairman: Dr. Court.
Vice-Chairman: Dr. Hodgson.
Honorary Secretary: Dr. Baird.
Representative on Branch Council: Dr. Barton.
Representative at Representative Meetings: Dr. Barton.
Executive Committee: Drs. Godley, Smith, Penman, Buckley, English, Penistan, and E. Hilliard.

Vote of Thanks.—A hearty vote of thanks was accorded to the outgoing chairman, Dr. Carr, for the capable and very satisfactory manner in which he had conducted the meetings during his term of office.

Representative at Representative Meetings.—At the joint meeting of the Blackpool and Isle of Man Divisions held immediately after the above meeting, Dr. Barton was appointed Representative for the joint Divisions at the Representative Meetings.

BURNLEY DIVISION.

THE annual meeting of the Burnley Division was held on May 21st.

Election of Officers.—The following officers were appointed for the ensuing year:

Chairman: A. C. Glashan, M.B. (Burnley).
Vice-Chairman: Mr. A. E. Bird (Burnley).
Honorary Secretary and Treasurer: James Gardner, M.B. (Burnley).
Representative for Representative Meetings: Mr. H. J. Robinson (Burnley).
Representative on Branch Council: Mr. J. M. Ferguson (Burnley).
Executive Committee: Drs. C. A. Anderson, Thomas Clarke, T. C. Crump, H. S. Dixon, G. S. Pullon, T. M. Scott, W. Crabtree, A. E. Normington, A. W. Eadie, M.B., John Hoyle, and W. J. Bromley.

Annual Report.—The annual report stated that the dispute between the district medical officers and the Burnley Board of Guardians had not been settled. The names of members serving with the colours were given and it was mentioned that arrangements had been made as far as possible to assist in the working of practices left vacant, and that an understanding had been come to where there was any desire by panel patients to transfer from one doctor to another. The members of the Division had arranged to give gratuitous medical attendance (except midwifery) to necessitous dependants of men on active service. The subject of the war emergency had received serious consideration and the D.D.M.S. at Chester had been notified that, in addition to the medical men who had taken commissions in the R.A.M C., those remaining at home were prepared to do their share in giving part-time service when required.

Votes of Thanks.—Votes of thanks were accorded to Dr. A. Edward Bird for his services as chairman last year, to Dr. H. J. Robinson and Dr. J. M. Ferguson, the Representatives at the Representative Meetings and on the Branch Council respectively, and also to Dr. James Gardner, the honorary secretary.

SOUTHPORT DIVISION.

THE annual meeting was held on May 26th.

Election of Officers.—The following officers were elected:

Chairman: J. G. G. Corkhill, M.D.
Vice-Chairman: G. R. Penrose, Esq.
Honorary Secretary and Treasurer: R. Harris, M.B.
Representative for Representative Meetings: F. J. Baildon, M.B.
Deputy Representative for Representative Meetings: C. R. Schofield, M.B.
Representatives on Branch Council: F. J. Baildon, M. B., and R. Harris, M.B.
Executive Committee: C. R. Schofield, M.B., J. F. Pridie, M.B., A. W. Limont, M.B., and E. W. Lewis, M.D.

Annual Reports of Central Council.—Various reports of the Council of the Association were considered, and instructions given to the representative respecting the recommendations.

Annual Meeting of Branch.—Explanations were given of the postponement until next year, in consequence of the war, of the annual meeting of the Branch, which was to have been held in Southport in June.

METROPOLITAN COUNTIES BRANCH:

WILLESDEN DIVISION.

THE annual general meeting of the Willesden Division was held on May 27th, when Dr. H. J. MACEVOY was in the chair.

Election of Officers.—The following officers for 1915–16 were elected:

Chairman: Dr. A. Archibald.
Vice-Chairman: Dr. R. A. Bindley.
Representative at Representative Meetings: Dr. H. J. Macevoy.
Representative on Branch Council: Dr. Coram L. S. James.
Honorary Secretary: Dr. G. P. Joy.
Executive Committee: Drs. Frame, Moore, Rawes, Anderson Smith, Stocker, Turner, Cruden, Armitage, Skene, Clark, Soden, Seagrove.

MIDLAND BRANCH:

HOLLAND DIVISION.

A MEETING of the Holland Division was held at Boston on May 28th, when Dr. WHITE, Vice-Chairman, was in the chair.

Election of Officers.—The officers and Executive Committee were re-elected.

Annual Representative Meeting.—On the motion of Dr. BRAITHWAITE, seconded by Dr. WITHAM, the business of the Annual Representative Meeting was left to the conjoint meeting of the Kesteven and Holland Divisions.

War Emergency.—Subsequently a meeting of the Division, to which all non-members of the Division had received an invitation to be present—none of them, however, came—was held on the subject of the war emergency. Major DUGGAN, R.A.M.C., of the Military Hospital, Lincoln, was present, and after giving a short outline of what the War Office required, answered questions.

KESTEVEN DIVISION.

THE annual meeting of the Kesteven Division was held at Grantham on May 25th.

Election of Officers.—The following officers were elected:

Chairman: Dr. J. A. Macdonald.
Vice-Chairman: Mr. W. J. Gilpin.
Honorary Secretary and Treasurer: Dr. C. H. D. Robbs.
Representative on Branch Council: Dr. C. Frier.
Committee: Mr. H. T. Benson, Dr. J. G. Cooper, Dr. J. Galletly, Mr. G. W. Shipman, Dr. H. N. Turner.

SOUTHERN BRANCH:

SOUTHAMPTON DIVISION.

THE annual meeting of the Southampton Division was held on May 28th.

Election of Officers.—The following officers were elected for the coming year:

Chairman: Dr. Hope Robson.
Vice-Chairman: Dr. McDougall.
Secretary and Treasurer: Dr. Simpson.
Representative to Representative Meeting: Dr. Mackeith (66, Howard Road).
Representatives on Branch Council: Drs. Aldridge, Le Quesne, and Robson.
Executive Committee: The above, with Drs. Cowen, Fox, Harris, Purvis and May.

STIRLING BRANCH.

AT a meeting of the Stirling Branch held at the County Buildings, Stirling, on June 3rd, when Dr. LUMSDEN, Vice-President, was in the chair, the following resolutions were adopted:

Private Practice and Midwifery Fees.—Council recommends that all moneys collected for such work be divided in accordance with resolution passed by Branch at meeting of May 5th, 1915—namely, 50 per cent. of same to go to the doctor on service, and 50 per cent. to be divided among those doing the work. Council was of opinion that this should be arranged privately between the doctor or doctors deputizing and the representative of the absent doctor. At the same time the Council is willing when requested to act as intermediary for this Division, or act as referee on any disputed point should such arise. In such an event the decision of the Council to be binding.

Works and Panel Practice.—The moneys derived from this to be divided in the same manner. As regards the works

practice, half of the proceeds to be handed over to Council, who will apportion same after receiving a statement from each deputy of work done. It is recommended that these statements be sent to Council quarterly. In works practice, where medicines are supplied to dependants, the amount for same to be deducted from gross receipts before division between deputies and doctor. In panel practice, the secretary of the various Panel Committees should be instructed, preferably by the doctor before going on service, to pay one half to Council, who will apportion in accordance with statement of work done.

It was also agreed that the fees should be the same as those charged by the absent doctor.

War Emergency.—A letter was read from the Scottish Committee regarding the medical military requirements. It was agreed to ascertain by letter from each doctor in the area (*a*) his age; (*b*) whether he was willing to offer for active medical service; (*c*) if under 40, whether he was willing to offer for whole-time home medical service.

SURREY BRANCH:

KINGSTON-ON-THAMES DIVISION.

THE following officers were elected at the annual meeting of the Division held on May 11th:

Chairman: N. C. Carver, M.B.
Vice-Chairman: George Cowen, M.D.
Secretary: T. W. Letchworth, M.B., F.R.C.S.
Representative at Representative Meetings: T. W. Letchworth.
Representative on Branch Council: A. E. Evans, M.B.
Executive Committee: H. Cooper, M.D., H. R. Cran, M.B., Alderman W. E. St.L. Finny, M.D., A. Gale, R. N. Goodman, M.D., H. N. Holberton, M.D., R. R. Mowll, M.D., C. E. Sparks, M.B., A. M. Sully, A. S. Taylor, M.D., F.R.C.S., R. F. Walker.

ULSTER BRANCH:

BELFAST DIVISION.

AT the annual meeting of the Belfast Division the following office-bearers were elected for the year:

Chairman: A. Fullerton, F.R.C.S.I.
Honorary Secretary and Treasurer: W. L. Storey, M.D.
Representative for Representative Meeting: W. L. Storey, M.D.
Representatives on Branch Council: Drs. H. J. Boyd, M. J. Cahill, T. A. Davidson, D. Gray, H. R. Irvine, R. Reid, J. L. Rentoul, A. G. Robb.
Executive Committee: Drs. Burnside, T. C. D. Cathcart, J. A. Clarke, J. R. Davison, W. R. Davison, W. D. Donnan, S. T. Irwin, A. E. Knight, R. W. Leslie, J. MacDonald, W. McLorinan, J. Rusk, F. C. Smyth, G. St. George, D. H. Tweedie, and R. Watt, with the representatives on Branch Council.

YORKSHIRE BRANCH:

SHEFFIELD DIVISION.

THE annual meeting of the Sheffield Division was held on June 1st.

Election of Officers.—The following officers were elected:

Chairman: Dr. A. L. Husband.
Vice-Chairman: Dr. G. H. Dawes.
Honorary Secretary: Dr. Sophia Witts.
Auditors: Drs. H. Brown and Kilham.
Representative on Branch Council: Drs. Cheesewright, Forbes, Sinclair White, and Cuff.
Executive Committee: Drs. Forrest, Sheahan, A. T. Simpson, Hardy, Holroyd, Carter, A. J. Hall, A. E. Barnes, Furey, Young, Mylan, Johnston, J. H. Wilson, J. H. Harrison, France, O. H. Hudson, Gordon, Heim, Paterson, Wiseman, Nutt, Kilham, Sime, Kemp, and Thompson.

Medical Referees.—The CHAIRMAN informed the meeting that in view of the small attendance at the meeting on March 9th, at which a resolution was passed with reference to fees for medical referees, the Executive Committee had deemed it inadvisable to take the steps necessary to make this resolution ethically binding on the Division. After some discussion, in which several members expressed the view that every effort should be made to prevent men taking a smaller fee than 10s. 6d. for referee work under the Insurance Act, it was resolved:

That the subject of undercutting of the recognized rates by medical referees be relegated to the Executive for the formation of a plan of action.

Annual Representative Meeting.—The meeting was then continued as a joint one of the Sheffield and Rotherham Divisions for the purpose of electing Representatives on the Representative Body and instructing the Representatives. Drs. Lodge and J. Stokes were elected Representatives, and were instructed to support Motions 29, 31, 32 to 37, and 50. Voting on the other motions was left to the discretion of the Representatives. The recommendation of Council with reference to fees for medical examination for life insurance was discussed, and the meeting expressed itself in favour of the recommendation, provided it was likely that the adoption of the fees suggested as minima could be enforced.

Medical Treatment of the Dependants of Men Serving with the Colours.—The opinion was expressed that the offer of free treatment by the doctors had been grossly abused, and that the conditions had not been fulfilled by the Local Relief Committee. Drs. Husband, Forrest, Forbes, and Witts were appointed a committee to deal with this subject.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

RETURN OF REPRESENTATIVES.

Honorary Secretaries of Divisions who have not yet forwarded to the Head Office the names and addresses, and dates of election, of the Representatives appointed by their Constituencies for 1915–16, are asked to forward me these particulars by the earliest possible date. Under the By-laws Representatives must be elected not more than nine months nor less than four weeks before the Annual Representative Meeting, and their names must be notified to the Head Office *by at latest July 2nd.* A Representative can if necessary be elected and instructed at one and the same meeting of the Constituency.

By Order,
ALFRED COX, *Medical Secretary.*

May 19th, 1915.

QUARTERLY MEETING OF COUNCIL:

THE Quarterly Meeting of Council will be held on Wednesday, June 30th, in the Council Room, 429, Strand, London, W.C., at 2 o'clock in the afternoon.

By order,
GUY ELLISTON,
Financial Secretary and Business Manager.

June 1st, 1915.

CHANGES OF BOUNDARIES.

BLACKBURN AND BURNLEY DIVISIONS.

THE following change has been made in accordance with the Articles and By-laws, and takes effect as from the date of publication of this notice:

That Sabden be transferred from the area of the Blackburn Division of the Lancashire and Cheshire Branch to that of the Burnley Division of the same Branch, and that the areas of the two Divisions be modified accordingly.

Representation in Representative Body: Unaffected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—Dr. F. Fowler and Mr. P. A. Ross, Honorary Secretaries, give notice that the summer meeting of the Branch will be held on Wednesday, July 7th, at Church Hall, Sherborne, at 3 p.m. The meeting of the Branch Council will take place at 2.30 p.m. The Sherborne practitioners kindly invite members to luncheon at the Digby Hotel at 1.30 to 2.30 p.m.

EDINBURGH BRANCH.—Dr. John Stevens, Honorary Secretary (78, Polwarth Terrace, Edinburgh), gives notice that the annual meeting of the Branch will be held at the Royal College of Physicians, 9, Queen Street, Edinburgh, on Wednesday, June 23rd, at p.m.

METROPOLITAN COUNTIES BRANCH.—Dr. R. E. Crosse and Mr. N. Bishop Harman (Honorary Secretaries) give notice that

the annual general meeting of the Branch will be held at 429, Strand, W.C., on Friday, June 25th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of council and of representatives of the Branch on the Central Council. (3) Alteration of Rule 19 *b* by the insertion of the words "and adopt (with or without amendment)" after the words "To receive" so that the rule shall read as follows: 19. In addition to the ordinary business of any ordinary general meeting, the business of the annual meeting shall be: To receive the report of the election of new officers; (*b*) to receive and adopt (with or without amendment) the annual report of the Council on the affairs of the Branch, and the annual financial statement; (*c*) to receive the annual report of the representatives of the Branch on the Central Council of the Association; (*d*) to make new rules, or alter or repeal existing rules. (4) President's address: Side-lights on the Practice of Medicine in the Past from Early English Literature.

MUNSTER BRANCH.—Dr. Philip G. Lee, Honorary Secretary, gives notice that the annual general meeting of the Branch will be held at 74, South Mall, Cork, on Saturday, June 26th, at 4.30 p.m., to elect officers, Representatives, and Council for the ensuing year; to receive the reports of Council, and transact any other business proper to general meetings.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—Mr. David Ranken, Honorary Secretary (23, Ridley Place, Newcastle-upon-Tyne) gives notice that the annual meeting of the Newcastle-upon-Tyne Division will be held on Wednesday, June 30th, 1915.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—Dr. J. Munro Moir, Honorary Secretary (4, Ardross Terrace, Inverness), gives notice that the annual meeting of the Branch will be held at Kyleakin on Saturday, June 26th. Particulars as to place and hour of meeting will be sent to members of the Branch by circular.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH: FURNESS DIVISION.—Drs. George Alexander and A. E. Thompson give notice that the annual meeting of the Furness Division will be held in the Masonic Hall, Barrow-in-Furness, on Wednesday, June 30th, at 3.15 p.m. Agenda: Annual report. Consider report and recommendations of the Ethical Committee. Election of officers. Reports on (*a*) the question of fees for treatment of juvenile members of friendly societies, (*b*) fees for medical examination for life insurance, (*c*) on eligibility for election as a member of the Association (SUPPLEMENT, March 20th). Any other business.

SOUTH MIDLAND BRANCH.—Dr. E. Harries-Jones, Honorary Secretary (16, Castilian Street, Northampton), gives notice that the annual meeting of the South Midland Branch, which was to have been held towards the end of June, 1915, at High Wycombe, under the presidency of Dr. L. W. Reynolds, has, by the expressed wish of the President, been postponed *sine die* on account of the war.

STAFFORDSHIRE BRANCH.—Dr. Harold Hartley, Honorary General Secretary (Basford, Stoke-on-Trent), gives notice that the forty-second annual meeting of the Branch will be held at the George Hotel, Lichfield, on Thursday, June 24th, at 5.15 p.m., when an address will be delivered by the President-elect, Dr. F. M. Rowland. Agenda: Correspondence. Report of the Council. Financial statement. Election of officers for the ensuing year—President-elect, Secretary, and Treasurer. To decide the place of the next annual meeting. Address by the President. Members have the privilege of introducing friends. Dinner at 6.30 p.m.; charge 5s.

SURREY BRANCH.—Mr. Cecil P. Lankester, Honorary Secretary (1, Rectory Place, Guildford), gives notice that the second annual meeting of the Surrey Branch will be held on Thursday, July 1st, at 4 p.m., at the Head Offices, 429, Strand. Agenda: In addition to the business of an ordinary meeting, (1) to receive the report of the election of officers for 1915-16, who will thereupon take office; (2) to receive the annual report and financial statement. There will be no social function this year.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.—Dr. S. C. Legge, Honorary Secretary (24, Foregate Street, Worcester), gives notice that the annual meeting of the Branch will be held at the Hereford Hospital, Hereford, on Wednesday, June 23rd, at 3 p.m. The Branch Council will meet at 2.45 p.m.

IN the list of officers elected at the annual meeting of the Dumfries and Galloway Division, published last week, p. 282, the name of Dr. McLachlan as vice-president should have been included.

THE WAR EMERGENCY.

BRIGHTON.

IN response to requests by practitioners thinking of offering themselves for military service, the Executive Committee has prepared a scheme to conserve the practices of those doctors resident and practising within the area of the Brighton Division who may be absent in consequence of the war. The scheme will be administered by the Executive Committee, which has adopted the arrangements customary amongst the medical men of the district when leaving their practices. Any difficulty encountered referred to the Committee for consideration will be dealt with as it thinks fit, and its decision shall be binding on all concerned. A list is in preparation of medical practitioners willing to attend on the terms formulated the patients of other practitioners engaged on military duties. All practitioners in the Division are being invited to join the movement, and are requested to indicate their willingness to undertake work in any of the following branches of practice: (1) Private practice, (2) practice under the Insurance Act, (3) Poor Law practice. The payment for services rendered in the case of private patients will be half of all fees earned. In the cases of practice under the Insurance Act one half of the quarterly cheque from the Insurance Committee will be retained by the absent doctor, and the other half divided among the doctors attending in proportion to the number of insured persons attended. The accounts for medical attendance undertaken on behalf of the doctor absent on military duties will be sent out by him, or a person appointed by him. One half of the out-of-pocket expenses incurred in attendance upon the absent doctor's patients will be borne by him and the other half by the practitioner doing the work.

COLCHESTER.

THE emergency committee in the Colchester district sent, on May 21st, a list of twenty-nine doctors in the Division willing to give part-time assistance to the A.D.M.S., Colchester. That officer has been asked to communicate individually with the doctors whose services he may require.

SOUTH-WEST ESSEX.

THE War Emergency Committee of the South-West Essex Division of the British Medical Association has prepared the following terms of agreement upon which practitioners in the area will undertake the work of local practitioners absent on war service:

1. No patient of an absentee, attended by a deputy, shall be accepted as a patient (panel or private) by that deputy after the return (or decease whilst absent) of the absentee until twelve months have elapsed.
2. A list of practitioners willing to act as deputies shall be made for each ward.
3. The absentee's patient shall be permitted to select any practitioner on this list, provided the practitioner's residence is within reasonable distance from the patient's residence.
4. The absentee shall take half the remuneration received from appointments—the other half shall be divided amongst the practitioners acting as deputies, in proportion to the amount of work done by them in connexion with these appointments.
5. Private fees shall be divided equally between the absentee and the deputy.
6. Any contentious point arising in connexion with the working of this scheme shall be referred to this Committee, and absentees and deputies will be required to abide by the decision of the Committee.
7. In the event of the death of an absentee, the deputies agree to carry on the practice under the conditions stated in this agreement, for the succeeding three months.
8. Any appointments held by any absentee, at rates of remuneration below the minimum rates agreed to by the Association, will not be worked under this scheme.
9. Deputies will not be expected to attend private patients except at reasonable fees.

INVERNESS.

A MEETING of the Inverness Division of the Northern Counties of Scotland Branch was held in the Northern Infirmary on April 17th, when Dr. Munro Moir was in the chair. A discussion took place regarding the war emergency and the shortage of medical officers. The members present expressed their willingness to give their services to the military authorities either as a whole-time or part-time service.

On the motion of Dr. Hunter, seconded by Dr. McFadyen, it was resolved:

> That under existing conditions the discrimination between rate of pay, kit, and allowance of the Territorial medical officers and temporary R.A.M.C. officers of similar rank is unjust, and ought to be remedied.

INSURANCE ACT.

OFFICIAL DOCUMENTS.

QUARTERLY LIST.*

THE JOURNAL publishes the more important documents issued by the Commissioners which are of general interest to insurance practitioners, but there are some which are not placed on sale, and others which for various reasons cannot be published. It is proposed, however, to publish in the SUPPLEMENT once a quarter a list of documents issued by the Commissioners concerning matters of interest to insurance practitioners. Information as to those documents mentioned which are neither on sale nor have been printed in the JOURNAL may be obtained on application to the Medical Secretary of the Association, 429, Strand.

FEBRUARY, 1915.

First Report, 1912–1914, on the work of the National Insurance Audit Department formed in order to comply with the provisions of Sections 35 (1) (*a*) and 60 (1) (*c*) of the 1911 Act. Gives interesting account as to the formation, preliminary work, and functions of the Department. Refers principally to work in connexion with accounts of Approved Societies, but the Department is also responsible for the auditing of the accounts of Insurance Committees, which it states were, on the whole, found to be well and carefully kept. Price 2½d. (797.)

Document No. 623 (Scotland). Memorandum on the Card System of Medical Records. (632.)

Document No. 624 (Scotland). Memorandum on the Modified Day-Book System of Medical Records. (803.)

MARCH, 1915.

Circular A.S. 161, issued to Approved Societies under the authority of the English, Scottish, and Welsh Insurance Commissioners, concerning the giving of certificates to insured persons by practitioners in their private capacity. The salient point of the circular is that the Commissioners "point out in the clearest terms that insured persons do not disqualify themselves from receiving sickness benefit by obtaining their certificates from doctors . . . attending them in their private capacity." (338.)

Printed in **Supplement,** *March 20th, 1915, page 103, and commented on in same issue (page 103).*

Circular Letter Med. 30 (Scotland). Letter from Scottish Insurance Commissioners to Scottish medical practitioners (i) pointing out that the difficulty experienced by practitioners in convincing insured persons that a final certificate could not be given if insured person had already resumed work, or, having no work, had unduly delayed declaring off, might be lessened if practitioners had a supply of leaflets for handing to insured persons explaining the situation, and (ii) stating that such a leaflet had been prepared and that copies would be supplied on application. (798.)

Form A.S. 167 (Scotland), being leaflet above referred to. (339.)

Draft (Exempt Persons) Consolidated Regulations (England) proposed to be made by the Joint Committee and the English Commissioners under Section (2) and Subsection (4) of Section 4 of the 1911 Act as amended by Sections 5 and 9 of the 1913 Act. The Consolidated Regulations will supersede, so far as they relate to England, the National Health (Claims for Exemption) Regulations (England). 1914, and the National Health Insurance (Exempt Persons' Benefit) Regulations, 1914. (March 16th.) Price 1d. (794.)

Commented on in **Supplement**, *April 3rd, 1915, p. 123.*

Statutory Rules and Orders, 1915 (No. 230). Panel Committee Regulations (England and Wales) which supersede the Panel and Pharmaceutical Committees Regulations, 1913, so far as they related to Panel Committees. (March 12th.) Price 1d. (801.)

Printed in **Supplement,** *April 17th, 1915, p. 133.*

Statutory Rules and Orders, 1915 (No. 231). Pharmaceutical Committee Regulations (England and Wales), which supersede the Panel and Pharmaceutical Committees Regulations, 1913, so far as they related to Pharmaceutical Committees. (March 12th.) Price 1d. (398.)

Panel and Pharmaceutical Committees Amendment Regulations (Scotland), which are to be read in conjunction with the Panel and Pharmaceutical Committees Regulations (Scotland), 1913, March 17th. These provide (*a*) that notwithstanding anything in the 1913 Regulations, members of either Panel or Pharmaceutical Committees shall not be deemed to have vacated their seat thereon by reason of absence without leave from meetings for a period of six consecutive months where such absence is occasioned by employment during the war in the naval or military forces, or in connexion with naval and military operations; and (*b*) that Panel or Pharmaceutical Committees may, with the Commissioners' consent, appoint and delegate any of their powers and duties to Subcommittees. (March 16th.) (802.)

Circular A.S. 159 Wales. Memorandum issued to Approved Societies as to the position of persons whose "normal occupation is employment," but who are from time to time temporarily unemployed. (793.)

Circular 157/M., A.G.D. (England) to Approved Societies as to last date to notify the Commissioners for those Societies which desire to claim rebate in respect of their foreign-going seamen members on sums payable to Insurance Committees for medical benefit. (799.)

Circular 157/M., A.D. Wales. Same as foregoing. (800.)

List issued by Welsh Commissioners of five sanatoriums and twenty hospitals with a total of 600 beds, in addition to fourteen dispensaries, approved by Welsh Commissioners for treatment of persons suffering from tuberculosis and resident in Wales. The list also gives names of thirteen sanatoriums and four hospitals in England approved by the Welsh Commissioners and the Local Government Board (England) for the same purpose. Price ½d. (804.)

Circular A.S. 160 (England) to Approved Societies and Branches respecting notification by Societies to Insurance Committees of changes affecting latter's index registers, specially as regards members joining the navy or army. (805.)

Form 18 M., I.C. List, revised to March, 1915, of addresses of Insurance Committees in United Kingdom, which includes two new Committees of Carlisle and Southend-on-Sea, and shows that the area of the Devonport Committee is now included in the new Plymouth County Borough. (806.)

APRIL, 1915.

Leaflet No. 29 (England) (Revised) to Approved Societies as to the position of seamen, marines, and soldiers, including Reservists, Naval Volunteers, and Territorials, during service and after discharge. (808.)

Leaflet No. 29 (Wales). Same as foregoing. (809.)

Circular 53 I.C., sent by the English Commissioners to Insurance Committees concerning special arrangements to be made for the treatment of soldiers discharged from the army suffering from tuberculosis. It points out that as the Army Council desires to keep available for the treatment of wounded soldiers as much as possible of the accommodation in their regular military hospitals or in the institutions adapted since the commencement of the war to serve as military hospitals; they are accordingly anxious that the retention of such hospitals for tuberculous soldiers awaiting discharge should be reduced to a minimum; that in view of the national emergency special arrangements are desirable to ensure that the transfer of these soldiers from the military to the special hospitals is accomplished without prejudicial interruption to the patient's treatment; that it has been decided to institute certain emergency arrangements and to make special grants in connexion therewith in the case of such of these soldiers as are members of Approved Societies in order to assist Insurance Committees defraying the cost of the treatment; that such emergency arrangements and grants

* For previous list see SUPPLEMENT to JOURNAL of February 13th, 1915.

will only apply in the case of those tuberculous soldiers discharged from military hospitals for whom a further period of residential treatment is essential, and in whose case the military authorities feel it necessary that preparation should be made for their reception into a residential institution immediately upon discharge from a military hospital. It is proposed to supplement the payments to the Committee out of the Central Sanatorium Benefit Fund under Article 24 of the payment to Insurance Committees Regulations, 1914, by grants out of the Grant in Aid of £100,000, amounting in all to Insurance Committees being credited with a sum of at least £20 in respect of each case dealt with. (April 16th.) (812.)

Circular 53 I.C. (Scotland). Same as foregoing. (813.)

Circular 53 I.C. (Wales). Same as foregoing, except that the Welsh Insurance Committees will arrange for the removal of such persons to beds provided by the Welsh National Memorial Association. (814.)

Statutory Rules and Orders, 1915, No. 286. Being National Health Insurance (collection of contributions) Consolidated Regulations. (March 12th.) Price 3d. (796.)

National Insurance (Joint Committee) Provisional Regulations, 1915. These specify the powers to be exercised by the Joint Committee in connexion with the provisions of the National Insurance (Part I, Amendment) Act, 1915. (Price 1d.) (795.)

Circular A.S. 165 (England and Wales) as to (I) the increased amount which may be appropriated by Approved Societies for administration expenses in respect of members serving in the Navy or Army, and (II) the continuation of the present provisional arrangements as to medical referees appointed by Societies. For the latter purpose the Administration Expenses Regulations are to be amended so as to allow such additional sum, not exceeding 2d. a member, to be carried to the Administration account of Societies for the year 1915, as is required to meet any deficiency shown to be due to expenditure by Societies on medical referees during the year. (810.)

LOCAL MEDICAL AND PANEL COMMITTEES.

WILTSHIRE.

PANEL COMMITTEE.

A MEETING of the Wilts Panel Committee was held at Trowbridge on May 19th.

Pharmaceutical Committee's Expenses.—It was agreed to sanction the estimated expenses (£20) of the Pharmaceutical Committee for 1915, but that this should not prevent the question of refusal being raised another year—or whenever the war might be over—as the £20 will practically be paid out of moneys that would otherwise go into the Medical Benevolent Fund.

Definition of "Dangerous Incompatibility."—A suggestion from the Pharmaceutical Committee that a footnote be added on page 3 of the tariff: "Dangerous incompatibility *will* occur—the element of danger being relative to dose—in: (1) All cases where poisonous alkaloids are prescribed; (2) solutions of mercurial salts; (3) chloral hydrate and its preparations; (4) acid solutions of arsenic; and that they be therefore advised to use aq. destil. where these drugs are prescribed, and charge tariff rates," was referred to the Insurance Commissioners for their opinion and approval.

Conference of Representatives of Local Medical and Panel Committees.—A communication from the British Medical Association with reference to the proposed conference of Local Medical and Panel Committees was read, and it was decided that the Honorary Secretary should attend as a representative, and that his out-of-pocket expenses should be allowed. It was also decided to submit the agenda of the proposed conference to all practitioners on the panel with a request that those who would like their views expressed or motions brought forward should write to the representative as soon as possible.

Certificates.—A letter was read from the Clerk to the Insurance Committee stating that friendly societies were complaining as to the signing of medical certificates in pencil, and not in ink or indelible pencil; that the State auditors were calling in question pencil signatures, and in some cases societies had been obliged to disallow claims. It was decided to draw the attention of practitioners to the necessity of signing certificates in ink.

GLOUCESTERSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Gloucestershire Local Medical and Panel Committees was held at the Gloucester Infirmary on May 29th.

Dr. Dighton was elected to succeed Dr. Condor (resigned) on the Cheltenham District Committee.

Levy.—It was unanimously resolved, with the consent of the Clerk to the Health Insurance Committee, to have the voluntary levy collected at the Shire Hall. Twenty doctors had declined to assist in the necessary expenses of the Committees, expenses ordered by the Commissioners, which could not be collected from any other source. A compulsory levy on account of official interference was objected to.

Drug Supply.—Drs. Bell and Perrott and the Chairman were elected a subcommittee to consider the circular to be issued to panel doctors on general items and to chemists on the question of drug supply.

Conference of Local Medical and Panel Committees.—The Chairman being unfortunately unable to attend the conference of Local Medical and Panel Committees in London on June 16th, Dr. Cairns Terry was elected in his place, and it was unanimously agreed that all reasonable expenses incurred by him should be refunded out of the voluntary fund.

Annual Election.—The CHAIRMAN appealed to the committee men to secure a better attendance at the election in June.

LANCASHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Lancashire Local Medical and Panel Committees was held at Preston on April 21st, when Dr. H. FALCONER OLDHAM was in the chair.

Claim by Panel Practitioner.—A claim upon a Form 122/I.C. was received from a panel practitioner in respect of an operation performed by him upon an insured patient. It was decided that the claim should be allowed, as the Committee considered that the operation was not one which could, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill (Regulation 50).

Excessive Prescribing.—A number of prescriptions which were considered to be examples of over-prescribing were submitted, and it was decided to forward the prescriptions to the member of the Panel Committee representing the area concerned, so that he might obtain explanations from the doctors.

Certification.—It was pointed out by several members of the Committee that certain approved societies were not adhering to the rules of the system of medical certification which came into operation on January 1st, 1915. Instances were given in which the approved societies had sent the members to their panel doctors for a second certificate on a particular day of the week, explaining that it would be a convenience to them when making up their books. The further consideration of the matter was postponed.

Deductions from Payments to Doctors.—Several members expressed the opinion that the doctors practising on the panel were not being treated fairly as far as regards payments for the treatment of insured persons. The SECRETARY read a portion of a speech by Sir Robert Morant in which he said that many efforts had been made, and every possible step would be taken to tighten up the machinery all round so as to make the lists more accurate, and to make it more demonstrably certain that the payments actually received by individual doctors did amount to the agreed rate of from 7s. to 7s. 6d. a head per annum of those in respect of whom he was at risk through the year. It was added that it should be clearly understood that theoretical exactitude could not be expected in an undertaking of such dimensions, and could not even be approached without an elaborate census of the whole insured population being taken every night of the year. If, therefore, the medical profession were not satisfied with any system short of one which produced theoretically exact results, it would be necessary, in order to give them satisfaction, to adopt

some other method of payment of doctors than the capitation basis. The SECRETARY stated that a sum of about £5,000 had been forwarded by the Insurance Commissioners to the Lancashire Insurance Committee for allocation amongst the panel doctors of the county. The further consideration of the matter was postponed.

Infant Population of the Country.—A member of the Committee stated that specific cases had come before his notice in which approved societies had refused to pay sickness benefit to women who were suckling their children, on the grounds that if they were capable of suckling their children they were also capable of following their respective employments. He felt that this was contrary to the intentions of the Act, and that it ought to be stopped as soon as possible. The subject was postponed for further consideration.

SOUTHPORT.

LOCAL MEDICAL AND PANEL COMMITTEE.

A MEETING of the Southport Local Medical and Panel Committee was held on May 27th, when Dr. LIMONT presided.

Term of Office of Local Medical and Panel Committees.—It was resolved to join with the British Medical Association in making representations to the Commissioners in favour of the continuance in office of the present Local Medical and Panel Committees during the period of the war.

Conference of Local Medical and Panel Committees.—Dr. Limont was appointed representative of the Committee at the conference to be held on June 16th.

Reduction of Payments in Advance.—A letter was read from the Insurance Committee with reference to a reduction in payment of advances to doctors and chemists. It was resolved to object to the proposed reduction and to point out why they were unreasonable and disproportionate in the area.

STAFFORDSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Staffordshire Local Medical and Panel Committees was held at Stafford on May 18th, when Dr. T. RIDLEY BAILEY was in the chair.

Regulation 45 (9).—It was resolved to urge the Commissioners that discussions on cases under Article 45 (9) of the Regulations by Insurance Committees should be held *in camera*, and that only the resolution of the Committee with regard to the case should be communicated to the press.

Drug Fund.—It was resolved to urge the Commissioners that practitioners who dispense for persons on their lists should share proportionately in any extra sum added to the Drug Fund by the Commissioners.

Certificates.—It was resolved to represent to the Commissioners that breaches of Rule 9 (2) of the rules for medical certification occur very frequently; that primarily the approved societies are responsible for this by bringing pressure to bear on practitioners through their patients; and that practitioners who loyally carry out the regulations are prejudiced in their professional relationships accordingly.

Attendance at Military Camps.—Special arrangements for medical attendance on workmen engaged at the Brocton and Hednesford Military Camps were approved.

Rep. Mist.—It was resolved that the use of the formula "Rep. mist." should be restricted, and that it should not be used on or after the first day of the month subsequent to the date of the original prescription.

Conference of Local Medical and Panel Committees.—Dr. T. Ridley Bailey was appointed to represent the Committee at the Conference on June 16th.

Alleged Excessive Prescribing.—Several cases of alleged excessive prescribing were investigated but no surcharges were recommended, satisfactory explanations or assurances being given in all cases.

WOLVERHAMPTON.

PANEL COMMITTEE.

A MEETING of the Wolverhampton Panel Committee was held on May 27th, when Dr. CRAIG was in the chair.

Surplus Capitation Fees. — Correspondence with the Commissioners with reference to the powers of the Panel Committee to rescind its resolution as to the surplus capitation fees for the year 1914, passed in September last, was reported. The Chairman thereupon ruled that if any member or members of the Committee desired to amend the scheme they must give notice in writing of such intention to the Honorary Secretary, stating they would move the rescinding of the scheme of September, 1914, and the scheme they proposed to move in its place should the motion to rescind be carried.

Conference of Local Medical and Panel Committees.—Dr. H. C. Mactier was appointed to represent the Wolverhampton Local Medical and Panel Committees at the conference in London on June 16th.

YORK.

LOCAL MEDICAL AND PANEL COMMITTEES.

A JOINT meeting of the York Local Medical and Panel Committees was held on May 26th. The suggestion that elections for new Committees should be suspended during the war was approved.

Conference of Local Medical and Panel Committees.—Dr. J. C. Lyth was appointed as representative at the forthcoming Conference. The Honorary Secretary was instructed to circularize all members of Local Medical and Panel Committees, giving provisional agenda of Conference and other particulars, with a view to instructing the representative as to the views of Committees at another meeting to be held prior to 16th prox. The representative was instructed to give notice of following motion at Conference:

> That this Conference recommends that Insurance Societies should, in all cases of suspension from medical benefit of an insured person, secure the medical card of that individual and forward it with the suspense slip to the Clerk to the Insurance Committee affected.

Representative on Insurance Committee.—It was resolved to recommend to a meeting of York panel doctors, which will be held to elect a representative on the York Insurance Committee, to appoint Dr. J. C. Lyth in place of Dr. Craig (who will be absent on military service).

KINGSTON-UPON-HULL.

PANEL COMMITTEE.

A MEETING of the Panel Committee was held on March 5th, Dr. MILBURN presiding.

Circulars of the British Medical Association.—Circulars M.4 and M.6 of the British Medical Association were read, and it was agreed that the establishment of a central bureau is unnecessary and that the work is being, and will continue to be, done more efficiently under the present local arrangement for checking prescriptions. Circular M.5 of the British Medical Association was considered and generally approved. It was felt, however, that the present local method of working was preferable, providing as it did for a constant survey of all prescriptions, without full analysis, but with immediate challenge of anything apparently extravagant or repeated at apparently too frequent intervals, especially as the prescribing of foods, toilet preparations, disinfectants, and proprietary articles had been forbidden, and so made the subject of surcharge automatically.

At a meeting of the Panel Committee held on March 30th a letter was read from the Insurance Committee, forwarded by the Commissioners, on the subject of "medical benefit of soldiers called up for active service," suggesting that claims arising for attendance upon soldiers might be sent in either by (1) individual practitioners, (2) the Insurance Committee, or (3) the Panel Committee. It was agreed to let the Insurance Committee deal with the matter.

At a meeting of the Panel Committee held on May 7th, Dr. MILBURN presiding, the Secretary was instructed to write to the Commissioners asking that the keeping of panel records should not be insisted on during the war on account of the pressure of work falling upon practitioners, and in support of this request to submit statistics as to number of practitioners on the panel, the number on active service, and other relevant facts. It was agreed to ask the Commissioners to continue the present Panel Committee for another year and so obviate the necessity for an election.

MONMOUTHSHIRE.

PANEL COMMITTEE.

A MEETING of the Panel Committee was held on May 18th, when Dr. H. J. EVANS presided.

Chairmanship.—A letter was read from Dr. J. W. Mulligan resigning the Chairmanship of the Committee, as he intended to retire from practice. A hearty vote of thanks was accorded to him, and a hope was expressed

that he would have a long and happy life in his retirement. Colonel W. D. Steel (Abergavenny) was unanimously appointed Chairman.

Expenses of Pharmaceutical Committee.—A notice of motion was handed in to rescind the resolution passed by the Committee in which it refused to approve of a grant towards the expenses of the Pharmaceutical Committee.

Doctors' Lists.—The SECRETARY reported that Drs. Mulligan, J. D. O'Sullivan, Colonel Steel, and himself had met the Deputy Chairman of the Welsh Commissioners concerning the discrepancy between the number of insured persons contracted by the panel doctors to be attended and the number actually paid for, and also as to the division of the unallocated funds for 1913. The Deputy Chairman stated that the different Insurance Committees were getting matters into shape as regards the registering of insured persons, and that it was hoped that the unallocated funds would be paid out almost immediately.

Secretaryship.—The SECRETARY reported that having been given a commission in the R.A.M.C. he must resign his office. On the motion of Colonel STEEL, seconded by Dr. J. D. O'SULLIVAN, the best thanks of the Committee were accorded to Dr. Ryan for the valuable services he had rendered to the Committee since its inception. Dr. Ryan was requested not to resign, and eventually it was decided to appoint Dr. M. J. Ryan assistant secretary during the war, Dr. Ryan promising to give him every possible help in performing the duties.

Conference of Local Medical and Panel Committees.—Dr. Verity was appointed to represent the Panel and Local Medical Committees at the meeting summoned by the British Medical Association to be held in London on June 16th.

Unallocated Funds.—The Secretary was instructed to ask the Clerk to the Insurance Committee to proceed with the payment of the unallocated funds for 1913.

Cost of Prescriptions.—A Subcommittee was appointed to go into the prices of prescriptions for 1914 and make a report to the Committee, when the question of making recommendations for surcharge to the Insurance Committee would be considered.

BURGH OF EDINBURGH.

PANEL COMMITTEE.

A MEETING of the Burgh of Edinburgh Panel Committee was held in No. 5, St. Andrew Square, on May 7th, when Dr. DEWAR occupied the chair.

Correspondence with the Insurance Committee.—Letters from the Insurance Committee were read dealing with the following subjects: (1) Consultations on Sundays and off-evenings. (2) Excessive prescribing. (3) Dispensing during night time and on half holidays, with list of chemists who have a night-bell, and of those who are open on the afternoon half holiday. (4) Copy of letter from an Edinburgh insurance practitioner on the subject of his panel list, and the Insurance Committee's assignment scheme under Section 21 (4) of the Medical Benefit Regulations. In connexion with the last item the SECRETARY read a copy of a letter which he had sent to this practitioner, pointing out that under the scheme very few patients would be assigned to him, and at the same time drawing his attention to the fact that, if he did not care to have any assignment made to him, he could not participate in the distribution of the unallocated funds. It was agreed to report to the Insurance Committee on these lines.

Domiciliary Benefit.—From experience during the past year, it was felt that the principles underlying domiciliary benefit were not fully understood by insurance practitioners, and it was resolved to insert some information on the point in the next circular.

STIRLINGSHIRE.

PANEL COMMITTEE.

A MEETING of the Stirlingshire Panel Committee was held within the County Buildings, Stirling, on April 22nd.

Expenses of Committee.—It was decided to requisition the Insurance Committee for a payment of £25 out of the Medical Benefit Fund, under Section 33 (2) of the 1913 Act.

Central Bureau.—It was agreed that one-third of the Drug Accounts Committee's expenses chargeable to the county should be paid out of the panel funds.

Transfer of Insured Patients of Practitioners on Military Duty.—It was agreed to attend the patients of panel doctors absent on military service as deputies and to decline in any circumstances to accept transfer of such patients until the expiration of one year after the absent doctors' return, and it was further agreed that a fair and reasonable financial arrangement between the doctors who had joined the army and their deputies should be that each party receive 50 per cent. of the panel fees.

Panel Fund.—It was reported that the balance at the credit of the Panel Fund so far as received from the Commissioners for the year 1914 was £2,073, and that this sum was deficient by about £165 to enable the Insurance Committee to pay the doctors the 15 per cent. retained from the quarterly payments. The Commissioners had given instructions that the balance in hand should be retained until the approved societies had completed their intimations of the numbers of insured who had joined the army.

CORRESPONDENCE.

ADJUSTMENT OF LISTS OF INSURED PERSONS.

DR. JAMES HAMILTON (Chelsea) writes: Allow me to comment on two letters appearing in your issue of May 29th:

"Panel Doctor" writes: "At the beginning of each quarter the numbers of patients (he means insured persons) on each doctor's panel is mutually fixed between the Committee and the doctor." So far as I am concerned, this is quite inaccurate. The London Insurance Committee sends a statement that so many are on my list at the commencement of the quarter; I have no means of verifying the correctness of the number. The statement is autocratic, and therefore, as I am not consulted, there is no mutual arrangement, nor can there be, as I have never had a list of those on my panel.

The other letter is that of Dr. Larking, of Buckingham. So far as it relates to the Medical Defence Union, Dr. Bateman has answered it this week; but what I wish to protest against most strongly is the impertinence of any Panel Committee labelling as "extraordinary concoctions" the prescriptions of registered doctors. The Insurance Act was not designed to give Panel Committees the right to criticize the methods of treatment of registered practitioners. If these men who prescribe extraordinary concoctions are inefficient, the licensing bodies and the General Medical Council are to blame, but as they have been registered, I cannot see what claim any Panel Committee has to criticize their mode of prescribing. The fact that these men have panel people on their lists shows that some at any rate appreciate their "extraordinary concoctions."

Dr. J. M. HERMON (Wakefield) writes: Your article on "The Muddle of the Registers" (BRITISH MEDICAL JOURNAL, May 29th), states the position of the panel practitioners pretty accurately, but in my opinion you do not go far enough, and I had hoped to see in the JOURNAL of June 5th a further article suggesting how the unsatisfactory state of affairs which you so well describe is to be met. What I want to know is: "Is any attempt being made to organize the medical men of the whole country so that the Insurance Commissioners will be compelled to grant them treatment commensurate with their education and services?"

We must not allow the cry, "It is War Time," to be used to lull us into an acceptance of whatever the Commissioners may choose to send us either in the way of regulations or fees. When the National Insurance Act was first introduced, I in common with hundreds of others thought I was making with the responsible representatives of the British Government a contract to do certain work for a certain fee, and that fee was 8s. 6d. a head per annum, to be divided, of course, between doctor and druggist. Now I find that this is not so, and that we have to accept whatever the Commissioners may send, and I am told that they actually go so far as to say that they are not legally bound to pay us anything at all. This is a state of affairs which should not be tolerated by the profession, but unless efficient arrangements are made to combat this, the final year of the "experimental" stage of the Insurance Act will have elapsed and our condition become probably worse still.

As you truly say, the medical profession has accepted without murmur the hard task imposed upon it by the

war and has contributed generously towards the national need both in men and money, but when the war is over hundreds of doctors will return to their practices damaged in health and big losers financially; it is only fair to them that those of us who have had to remain at home should see to it that their interests shall be watched and their conditions and terms of service under the National Insurance Act amended. This is a duty which we owe to them, to ourselves at home, and to the future practitioners of medicine in this country. The medical profession has never got the public recognition to which its continuous and devoted self-sacrifice entitles it, and the day has gone by for trusting Governments and public generosity. We must insist upon a payment of 90 per cent. at least of the capitation fee originally mentioned, and not be left as residuary payees only, and this can only be arranged by the British Medical Association, which must represent the opinion of a profession absolutely unanimous and united.

Lack of organization, as we have seen recently, has nearly wrought the destruction of the British Empire, so let us organize now—"quick, ere it be too late"—so that for all time our position may be established.

If you will kindly publish this in your correspondence columns, perhaps further expressions of opinion on this subject may be sent in to you.

THE SURCHARGING OF PANEL PRACTITIONERS.

Dr. HENRY BLAKE (Great Yarmouth) writes: Allow me a few words in favour of Dr. Larking and against the action and contention of the Medical Defence Union.

Having examined many—both economical and expensive—prescriptions for insured persons, I have no hesitation in saying that the former are as efficacious as the latter on an average, and that the expensive ones are very often the result of carelessness or some similar quality. In short, expensiveness is generally extravagance.

Whatever the actual law may be, my sympathies are against those who having joined a panel do not try earnestly to conform to its requirements. If they honestly consider that the money allowed for prescriptions is insufficient they might retire.

I believe and can prove it to be quite sufficient. In our district it was not exceeded in 1914, though burdened by many specimens like the following, which are not the worst:

I.	Liq. bismuthi	...	...	℥j
	Sod. bicarb. } Magnes. carb. lev. }	...	...	āā ℥ss
	Tr. chlorof. et morph.	...	...	℥jss
	Inf. gent. co. conc.	...	...	℥ij
	Aq. font. ...	...	...	ad ℥viij
	℥ss t.d.s.			
	Hyd. ammoniat. ...	...	...	gr. xxv
	Ung. zinci ...	...	...	℥ij
	Misce.			

Cost 1s. 3d.

II.	Tr. quin. ammon.	...	...	℥vj
	Sp. eth. nitros. ...	...	...	℥j
	Sod. salicyl. } Pot. bicarb. }	...	...	āā ℥ss
	Aq. font. ...	...	...	ad ℥viij
	℥ss 4tis hor.			
	Antipyrin (Knorr's)	...	...	gr. xv
	Sulphonal ...	...	...	gr. xx
	Misce; fiat pulv. Make vi.			

(N.B. No direction to patient.) Cost 1s. 9d.

For one I absolutely decline to support such extravagances directly or indirectly.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Fleet Surgeons J. H. PEAD, to the *Minotaur*, vice Stalkartt; W. H S. STALKARTT, M.D., to the *Vivid*, for Royal Naval Barracks, Devonport, vice Pead; HARRY J. HADDEN, M.B., to the *President*, additional. Temporary Surgeons A. G. STEWART, M.B., to the *Victory*, additional; MARMADUKE FAWKES, M.B , H. M. GELLERT, M.B., to the *President*, additional; J. T. E. EVANS, to the *Pembroke*, additional; JOHN A. FAIRER, M.B., to the *Victory*, additional, for Haslar Hospital; GERALD W. MOONEY, to the *Pembroke*, additional, for Chatham Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

To be Surgeon Probationers: R. W. PAYNE, J. S. MCGRATH, J. B. W. TELFORD, H. W. HALL, H. L. PRIDHAM.

ARMY MEDICAL SERVICE.

TEMPORARY LIEUTENANT-COLONEL ARTHUR W. M. ROBSON, C.V.O., from R.A.M.C. to be temporary Colonel.

ROYAL ARMY MEDICAL CORPS.

THE surname of temporary Lieutenant-Colonel J. V. BLACHFORD, M.D., is as now described, and not as stated in the *London Gazette* of May 18th.

To be temporary Majors: Major ROBERT R. T. HUGHES, Welsh Divisional Train, A.S.C.; Major NATHANIEL S. MANNING, F.R.C.S.I., 6th Battalion, Devonshire Regiment; Major EDWARD B. POOLEY, 4th Battalion, King's Own, Royal Lancaster Regiment; Captain JOHN C. DAVIES, M.D., 4th Battalion Royal Welsh Fusiliers, T.F., whilst employed with the Field Ambulances of the 43rd Division; EDWIN H. T. NASH, while serving at the Lord Derby War Hospital; ARTHUR NEVE, F.R.C.S.E., PHILIP TURNER, M.B., F.R.C S., Sir DAVID HARDIE, M.D.

The appointment of ALEXANDER MCL. CATO as temporary Major, published in the *London Gazette* of May 18th, is cancelled.

RICHARD G. ROWS, M.D., is granted temporarily the honorary rank of Major whilst doing duty at Moss Side Military Hospital.

Captain DOUGLAS S. B. THOMSON is placed on the Half-pay List on completion of ten years' service with the Egyptian army.

To be temporary Captains: HENRY M. HOLT, Home Hospitals Reserve, GEORGE BLACKER, M.D., F.R.C.S., temporary Lieutenants LEWIS E. BARNETT, M.B., F.R.C.S., GODFREY M. HUGGINS, F.R.C.S.; Captain SIDNEY HERBERT from 9th (Service) Battalion Bedfordshire Regiment; Captain CHRISTOPHER V. BULSTRODE, Shropshire R.H.A.

The names of the following temporary Lieutenants are as now described, and not as previously stated in the *London Gazette*: WILLIAM K. CALWELL, M.B., BENJAMIN SWEETEN, M.B., ROBERT MCC. SERVICE, M.D.

ALFRED WILLS to be temporary Lieutenant whilst serving with the British Red Cross Hospital, Netley.

Lieutenant JOHN P. BROWN, M.D., relinquishes his temporary commission.

Lieutenant JOHN F. HUTTON, M.B., relinquishes his temporary commission on account of ill-health.

To be temporary Lieutenants: CUTHBERT A. VERGE, M.B., DENIS F. O'KELLY, HORACE C. BARR, ROBERT J. LEDLIE, M.B., COLIN M. GEDDIE, M.B., FRANK JUBB, JOHN H. HEBB, M.B., JOHN BOWES, M.D., CHARLES COVENTRY, M.B., REGINALD T. COX, M.B., JOHN HOWE, M.B., WILLIAM R. MAIN, ALFRED H. MOUNTCASTLE, WILLIAM F. G. SCOTT, ARTHUR S. WEBLEY, OLIVER HEATH, M.B., JOHN MCKENZIE, M.B., HASSELL D. FIELD, WALTER E. COOPER, ROBERT H. COX, F.R.C.S.I., CHARLES CRERAR, M.B., STANLEY D. ADAM, WILLIAM WALLACE, M.D., JAMES ASH, RICHARD J. BATTY, M.B., JOHN H. SAUNDERS, M.B., THOMAS H. PHILLIPS, JOHN J. MCCONNELL, CHARLES F. STRANGE, THOMAS D. KENNEDY, M.B., WILLIAM S. STEVENSON, M.D., WILLIAM R. WATT, M.B., ALEXANDER DUNCAN, ROLAND D. BRINTON, M.D., HENRY H. R. CLARKE, ARTHUR MATTHEY, GEORGE D. KERR, EDWARD P. CAREY, M.B., GEORGE S. WARE, M.B., JAMES F. WOLFE, M.B., SAMUEL WYBORN, ROY. M. STEWART, M.B., HENRY SPINKS, THOMAS F. B. REID, M.D., FREDERICK W. ROWLAND, M.D., CLAYTON C. HARRIS, THOMAS H. HARKER, M.D., MONTAGU D. EDER, ROBERT PARK, M.D., ELIOT W. BLAKE, BERNARD PICKERING, M.B., HAROLD H. PROUDFOOT, M.B., JAMES T. MACNAMARA, ARCHIBALD G. K. LEDGER, M.D., ALAN RANDLE, M.D., ROBERT A. M. MACLEOD, M D., BENJAMIN H. SHAW, M.D., HOWELL G. G. JEFFREYS, ROGER O. BRIDGMAN, RUSSELL W. RICHARDS, M.B., KERR SIMPSON, M.B., WILLIAM J. DUNLOP, ALEXANDER S. ALLAN, MICHAEL A. MCKEEVER, M.B., SIDNEY E. HOLDER, JOHN H. HART, NORMAN DEVEREUX, JOHN H. DREW, M.D., REGINALD W. DAVIES, M.B., GEORGE E. KENNERSLEY, JOHN G. MURRAY, JOHN MACDONALD, M.B., WILLIAM G. R. MACAULEY, JOHN PURCELL, GEORGE M. BLUETT, JOHN L. ATKINSON, M.D., REGINASD T. RAINE, CECIL P. JONES, M.B , HENRY HARVEY, WILLIAM A. ROGERSON, FRANCIS B. CHAVASSE, MICHAEL J. MCCARTHEY, DAVID L. HUTTON, WORSLEY J. HARRIS, STANLEY A. HALL, EDGAR D. WELLBURN, RICHARD H. WILLIAMS, JAMES C. TURNBULL, M.D., DAVID MOODIE, JOSHUA B. DALTON, M.B., CYRIL M. BROPHY, JAMES RAE, M.D., CHARLES E. FENN, M.D., LESLIE F. E. JEFFCOAT, M.B., ERNEST G. SWORDER, M.B., ANDREW D. BLAKESLEY, M.B., THOMAS M. CRAWFORD, AUGUSTUS L. PALIOLOGUS, ROBERT HUGHES, M.B., RICHARD DOWDEN, M.D., HENRY P. D'A. BENSON, M.D., F.R.C.S.E., MARTIN ASHLEY, M.B., WILLIAM K. BIGGER, GEORGE B. SIMPSON, GUY V. FLETCHER, WILLIAM S. STOLKER, M.D., PERCY H. BERRY, JOHN MACQUEEN, M.B., from R.F.A.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

CAPTAIN WILLIAM J. HOYTEN, M.D., from the 1st East Anglian Field Ambulance, to be Deputy Assistant Director of Medical Services, South Midland (Reserve) Division, with the temporary rank of Major.

Lieutenant-Colonel FRANCIS E. FREMANTLE, M.B., F.R.C.S., from Sanitary Section, to be Deputy Assistant Director of Medical Services, East Anglian Division, vice Major E. C. Freeman, M.D., who vacates the appointment.

ROYAL ARMY MEDICAL CORPS.

1st London (City of London) Sanitary Company.—VINCENT P. NORMAN (Lieutenant I.M.S.), to be Lieutenant.

4th London General Hospital.—Major WILLIAM A. TURNER, M.D., is restored to the establishment. EDWARD B. CLAYTON to be Captain, whose services will be available on mobilization.

5th London Field Ambulance.—Lieutenant-Colonel EDWARD LLOYD-WILLIAMS, from the T.F. Reserve, to be Lieutenant-Colonel (temporary).

2nd Home Counties Field Ambulance.—Major ANTONY A. MARTIN, M.D., to be temporary Lieutenant-Colonel.

3rd Home Counties Field Ambulance.—To be Lieutenants: JOHN F. MOLYNEUX, WILLIAM W. MAXWELL.

2nd East Anglian Field Ambulance.—Captain DUDLEY W. BOSWELL, M.D., to be temporary Major.

South-Eastern Mounted Brigade Field Ambulance. — WILLIAM TRESAWNA, M.B., to be Lieutenant.

1st Southern General Hospital. — FREDERICK W. ELLIS, M.D., F.R.C.S., to be Lieutenant-Colonel, temporary, whose services will be available on mobilization.

1st South-Western Mounted Brigade Field Ambulance.—Lieutenant IVAN C KEIR, M.D., to be Captain.

1st Eastern General Hospital.—HENRY S. C. STARKEY to be Captain, whose services will be available on mobilization.

North Midland Mounted Brigade Field Ambulance. — ROBERT HARGREAVES, late Cadet Sergeant, Cambridge University Contingent, Senior Division, O.T.C., to be Lieutenant.

Notts and Derby Mounted Brigade Field Ambulance.—Captain OSWALD K. WRIGHT, M.B., to be temporary Major.

1st Western General Hospital.—Major JAMES E. BEATTIE, M.D., from the 3rd Northern General Hospital, to be Major; WALTER C. ORAM, M.D., to be Captain, whose services will be available on mobilization. To be Lieutenants: CHARLES P. BRENTNALL, LESLIE OLDERSHAW.

2nd Western General Hospital.—HARRY PLATT, M.B., F.R.C.S., to be Captain, whose services will be available on mobilization.

Yorkshire Mounted Brigade Field Ambulance.—Captain and Honorary Major ALFRED H. BENSON, retired list (late Captain, R.A.M.C. Militia), to be Captain, temporary. Captain CHARLES H. BULLEN, M.D., from Attached to Units other than Medical Units, to be Captain.

West Riding Divisional Sanitary Section.—Captain CUTHBERT B. MOSS-BLUNDELL, M.D., from List of Sanitary Officers available on Mobilization, to be Captain.

3rd East Lancashire Field Ambulance.—Lieutenant KINGSMILL W. JONES, M.D., to be Captain, and to remain seconded.

2nd West Lancashire Field Ambulance.—Captain WALTER L. HAWKSLEY, M.B., to be temporary Major.

1st Northern General Hospital.—WILLIAM STOTT, M.B., to be Lieutenant.

2nd Northern General Hospital.—JOHN K. JAMIESON, M.B., to be Major, temporary, on the permanent personnel. To be Captains whose services will be available on mobilization: ALFRED H. HORSFALL, D.S.O., M.B., late Major, Australian Medical Corps, MATTHEW J. STEWART, M.B., HERBERT J. MACVEAN, M.B. To be Lieutenant: HAROLD D. PICKLES, M.B., late Cadet, Leeds University Contingent, Senior Division, O.T.C.

5th Northern General Hospital.—To be Captains, whose services will be available on mobilization: EVERARD HARRISON, M.B., HENRY MASON, M.D., NEVILLE I. SPRIGGS, M.D., F.R.C.S., and ALFRED E. PAYNE.

Northumbrian Casualty Clearing Station.—Major WILLIAM A. WETWAN to be temporary Lieutenant-Colonel.

1st Lowland Field Ambulance.—ALEXANDER G. BUCHANAN, M.B., to be Lieutenant.

3rd Lowland Field Ambulance.—Captain JAMES YOUNG, M.B., F.R.C.S., to be temporary Major.

Highland Casualty Clearing Station.—JOHN INNES, M.B. (late Captain, 2nd Highland Field Ambulance), to be Captain, temporary.

3rd Highland Field Ambulance.—To be Lieutenants: ALEXANDER R. MOODIE, M.B., late Second Lieutenant, St. Andrews University Contingent, Senior Division, O.T.C., ALEXANDER B. JAMIESON, M.B.

Attached to Units other than Medical Units.—Surgeon-Major ARTHUR C. OLDHAM, from 2nd South Midland Brigade, R.F.A., to be Major; Captain HALDINSTEIN D. DAVIS is restored to the establishment; Captain ARTHUR C. BIRD, from T.F. Reserve, to be Captain; Lieutenant HUGH PATERSON, M.B., to be Captain; Lieutenant CECIL W. ROWNTREE, M.B., F.R.C.S., to be Captain and to remain seconded; Lieutenant GEORGE W. MASON resigned his commission on account of ill health. To be Lieutenants: JOHN K. BROWNLEE, LEONARD H. H. BOYS, THOMAS S. ALLAN, late Surgeon Lieutenant, 1st V.B. Middlesex Regiment; Lieutenant JOHN J. PORTER, from the 3rd Welsh Field Ambulance; GEORGE J. E. TROTTER.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-six of the largest English towns 7,337 births and 4,756 deaths were registered during the week ended Saturday, May 29th. The annual rate of mortality in these towns, which had been 15.5, 14.2, and 15.4 per 1,000 in the three preceding weeks, fell to 13.7 per 1,000 in the week under notice. In London the death-rate was equal to 13.1, while among the other ninety-five towns it ranged from 4.3 in Lincoln, 5.9 in Bath, 6.0 in Wallasey, 6.4 in Hornsey, 6.5 in Acton, and 7.0 in Wimbledon, to 20.3 in Barnsley, 20.9 in Huddersfield, 21.3 in Halifax, 22 1 in Barrow, 22.9 in South Shields, and 24.7 in Middlesbrough. Measles caused a death-rate of 1.8 in Coventry, 1.9 in Dewsbury, 2.0 in Sunderland, 2.3 in Northampton, 3.0 in West Bromwich, 3.3 in South Shields, 3.4 in Sheffield, 6.1 in Walsall, and 6.6 in Middlesbrough; and whooping-cough of 1.4 in South Shields, 1.7 in Tynemouth, and 3.4 in Wigan. The mortality from the remaining infective diseases showed no marked excess in any of the towns. A fatal case of small-pox was recorded in Bristol. The causes of 40, or 0.8 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner; of this number, 10 were recorded in Birmingham, 5 in Liverpool, 3 each in Stoke-on-Trent and Darlington, and 2 each in London, Gillingham, Bootle, and Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,384, 2,332, and 2,286 at the end of the three preceding weeks, had further fallen to 2,252 on Saturday, May 29th; 257 new cases were admitted during the week, against 307, 270, and 320 in the three preceding weeks.

In ninety-six of the largest English towns 9,202 births and 4,847 deaths were registered during the week ended Saturday, June 5th. The annual rate of mortality in these towns, which had been 14.2, 15.4, and 13.7 per 1,000 in the three preceding weeks, rose to 13.9 per 1,000 in the week under notice. In London the death-rate was equal to 13.3 per 1,000, while among the ninety-five other large towns it ranged from 4.6 in Reading, 6.2 in Walthamstow, 6.4 in Hornsey, 6.6 in Ealing, 6.8 in Enfield, and 7.0 in Wimbledon, to 19.9 in Wigan, 20.8 in Rotherham, 23.7 in Carlisle, 23.9 in Middlesbrough, 27.6 in Sunderland, and 28.2 in Gillingham. Measles caused a death-rate of 1.8 in Coventry and in Preston, 2.0 in Carlisle, 2.1 in Derby, 2.2 in Walsall, 2 6 in Stockton, 3.2 in Barrow, 4.1 in Sunderland, 4.2 in Sheffield, 4.5 in Middlesbrough, and 5.3 in West Bromwich; whooping-cough of 1.1 in East Ham and in Wigan, 1.4 in South Shields, 1.6 in Rotherham, and 2.0 in Carlisle; and diphtheria of 1.3 in Norwich and 2.9 in Northampton. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 45, or 0.9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner, and included 8 in Liverpool, 7 in Gillingham, 5 in Birmingham, 4 in Sunderland, 3 each in Warrington and Gateshead, and 2 each in Preston and Barrow. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2 332, 2.286, and 2,252 at the end of the three preceding weeks, rose to 2,267 on Saturday, June 5th; 327 new cases were admitted during the week, against 270, 320, and 257 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,075 births and 818 deaths were registered during the week ended Saturday, May 29th. The annual rate of mortality in these towns, which had been 18.1, 17.9, and 16.1 per 1,000 in the three preceding weeks, rose to 18.2 in the week under notice, and was 4.5 per 1,000 above the rate in the ninety-six large English towns. Among the several towns the death-rate ranged from 10.1 in Paisley, 10.2 in Kirkcaldy, and 11 3 in Motherwell, to 20.7 in Leith, 22.1 in Perth, and 23.7 in Aberdeen. The mortality from the principal infective diseases averaged 3.2 per 1,000, and was highest in Falkirk and Aberdeen. The 408 deaths from all causes in Glasgow included 53 from measles, 25 from whooping-cough, 5 from diphtheria, 3 from scarlet fever, and 3 from infantile diarrhoea. Thirteen deaths from measles were recorded in Aberdeen and 4 in Falkirk: from whooping-cough 5 deaths in Edinburgh, 5 in Aberdeen, 4 in Dundee, and 3 in Hamilton; and from scarlet fever 2 deaths in Aberdeen.

In the sixteen largest Scottish towns 1,171 births and 848 deaths were registered during the week ended Saturday, June 5th. The annual rate of mortality in these towns, which had been 17.9, 16.1, and 18 2 per 1,000 in the three preceding weeks, rose to 18.9 in the week under notice, and was 5.0 per 1,000 above the rate in the large English towns. Among the several towns the death-rate ranged from 10.9 in Ayr, 11.7 in Leith, and 11.8 in Coatbridge, to 20.9 in Dundee, 21.0 in Glasgow, and 21.8 in Aberdeen. The mortality from the principal epidemic diseases averaged 3.3 per 1,000, and was highest in Kirkcaldy and Clydebank. The 435 deaths from all causes in Glasgow included 70 from measles, 20 from whooping-cough, 4 from infantile diarrhoea, 3 from scarlet fever, and 1 from diphtheria. Five deaths from whooping-cough were recorded in Edinburgh, 5 in Dundee, 4 in Aberdeen, and 2 in Kilmarnock; from measles, 4 deaths in Aberdeen and 3 each in Dundee, Kirkcaldy, and Clydebank; and from infantile diarrhoea, 4 deaths in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, May 29th, 653 births and 382 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 680 births and 425 deaths in the preceding period. These deaths represent a mortality of 16.4 per 1,000 of the aggregate population in the districts in question, as against 18.3 per 1,000 in the previous period. The mortality in these Irish areas was therefore 2.7 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 28.1 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 17.0 (as against an average of 21.3 for the previous four weeks), in Dublin city 17.3 (as against 22.1), in Belfast 16.9 (as against 17.1), in Cork 19.0 (as against 19.1), in Londonderry 16.5 (as against 18.0), in Limerick 17.6 (as against 21.0), and in Waterford 7.6 (as against 19.9). The zymotic death-rate was 0.9, as against 1.1 in the previous period.

During the week ending Saturday, June 5th, 645 births and 396 deaths were registered in the twenty-seven principal urban districts of Ireland, as against 653 births and 382 deaths in the preceding period. These deaths represent a mortality of 17.0 per 1,000 of the aggregate population in the districts in question, as against 16.4 per 1,000 in the previous period. The mortality in these Irish areas was therefore 3.1 per 1,000 higher than the corresponding rate in the ninety-six English towns during the week ending on the same date. The birth-rate, on the other hand, was equal to 27.7 per 1,000 of population. As for mortality of individual localities, that in the Dublin registration area was 19.0 (as against an average of 20.8 for the previous four weeks), in Dublin city 20.7 (as against 21.6), in Belfast 16.7 (as against 16.4), in Cork 15.6 (as against 19 4), in Londonderry 20.2 (as against 16.2), in Limerick 23.0 (as against 20.6), and in Waterford 15.2 (as against 17.6). The zymotic death-rate was 1.2, as against 0.9 in the previous period.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House-Surgeons.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum, and £5 laundry allowance.

BIRMINGHAM CITY HOSPITAL.—Resident Medical Officer (lady). Salary, £250 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Medical and Surgical Officer to the Jaffray Branch. Salary, £100 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House-Surgeon. Salary, £100 per annum.

BRADFORD EDUCATION COMMITTEE.—Assistant School Dentist. Salary, £300 per annum.

BRISTOL: BRISLINGTON HOUSE PRIVATE ASYLUM.—Assistant Medical Officer. Salary, £200 per annum.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House-Surgeon. Salary, £120 per annum.

BUENOS AIRES: BRITISH HOSPITAL.—Senior and Assistant Resident Medical Officers. Salary, £275 and £250 per annum, rising to £300 and £275 respectively in second year.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—House-Surgeon.

CROYDON UNION.—Assistant Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse and Children's Homes. Salary, £225 per annum, rising to £250.

DORSET COUNTY HOSPITAL, Dorchester.—House-Surgeon. Salary, £150 per annum.

DUNDEE COMBINATION POORHOUSE AND HOSPITAL.—Resident Medical Officer. Salary, £225 per annum, rising to £300.

FOLKESTONE: ROYAL VICTORIA HOSPITAL.—House-Surgeon.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—House-Surgeon. Salary, £60 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £150 per annum.

HARTLEPOOLS HOSPITAL: House-Surgeon. Salary, £125 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE Chest, Brompton, S W.—(1) Assistant Resident Medical Officer; salary, £100 per annum. (2) House-Physician; honorarium, £30 for six months.

INVERNESS: NORTHERN INFIRMARY.—House-Surgeon. Salary, £150 per annum.

LEAMINGTON SPA: WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary, £200 per annum.

LIVERPOOL: WEST DERBY UNION.—Assistant Resident Medical Officer at the Walton Institution. Salary, £300 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

MANCHESTER CORPORATION.—Medical Superintendent of the Baguley Sanatorium. Salary, £400 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND Children.—House-Surgeon. Salary, £120 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy Square, W.—(1) House-Surgeon (non-resident); salary, £150 per annum. (2) Honorary Anaesthetist. (3) Honorary Clinical Assistant.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £150 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Senior and Assistant House-Physicians. Salary, £300 and £250 per annum respectively.

OLDHAM UNION.—Resident Medical Officer for Poor Law Institution. Salary, £250 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary, £90 per annum and honorarium of £10 on completion of six months' service.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—House-Surgeon. Salary, £150 per annum.

PRESTWICH: COUNTY ASYLUM.—Locumtenent. Salary, £6 6s. per week.

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL.—Assistant House-Surgeon.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion Square, W.C.—Three Clinical Assistants.

SALFORD COUNTY BOROUGH.—Medical Officer for Maternity and Child Welfare Work. Salary, £300 per annum.

SALISBURY GENERAL INFIRMARY. (1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £100 per annum respectively.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SOUTHAMPTON PARISH INFIRMARY.—Resident Assistant Medical Officer. Salary, £250 per annum.

SOUTHWARK UNION INFIRMARY.—Assistant Medical Superintendent. Salary, £250 per annum, rising to £275 at end of one year.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House-Surgeon. Salary, £250 per annum.

STOCKPORT INFIRMARY.—Senior House-Surgeon. Salary, £200 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) Two House-Surgeons; (2) House-Physician. Salary, £150 per annum each.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £150 per annum.

SUNDERLAND: ROYAL INFIRMARY CHILDREN'S HOSPITAL.—Resident Medical Officer (lady). Salary, £100 per annum,

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £125 per annum.

UIG PARISH COUNCIL.—Medical Officer and Public Vaccinator. Minimum salary of £300 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WALTON-ON-THAMES: NEW ZEALAND AUXILIARY HOSPITAL.—Resident Medical Officer. Salary, £7 7s. per week.

WELSH METROPOLITAN WAR HOSPITAL, Whitchurch, near Cardiff.—Pathologist and Bacteriologist.—Terms, £1 per diem.

WEST BROMWICH AND DISTRICT HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—(1) Resident Medical Officer; (2) House-Physicians Salary for (1) £160 per annum, and for (2) £120 and £100 per annum respectively.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £150 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Charlestown (co. Mayo), Milngavie (Dumbarton), New Quay (Cardigan).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

COX, W. A. C., L.M.S.S.A.Lond., District and Workhouse Medical Officer of the Hartley Wintney Union.

PEDLOW, T. B., M.B., B.Ch., R.U.I., Certifying Factory Surgeon for the Lurgan District, co. Armagh.

POTTER, Miss L. M., L.M.S.S.A.Lond., Senior Assistant Medical Officer of the Greenwich Union Infirmary.

ROBINSON, S. V., L.R.C.P.and S.Edin., Surgeon to the Gateshead Borough Police Force, vice A. A. Abraham, L.R.C.S.I., resigned.

SHAH, A. M., L.R.C.P.and S.Edin., Medical Officer of the Blackburn Union Workhouse.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

BIRTHS.

BURY.—On June 9th, at Hollinwood, Darwen, the wife of George W. Bury, M.D.(Vict.), F.R.C.S.E., of a son.

CANE.—On June 3rd, at her father's residence, Orton Longueville, Peterborough, to Captain L. B. Cane, M.D., R.A.M.C., and Mrs. Cane, a daughter.

DEATH.

HOLLIS.—On June 4th, 1915, at Tower House, Freshwater, I.W., Alfred Hollis, M.D., in his 70th year.

DIARY FOR THE WEEK.

TUESDAY.

LONDON DERMATOLOGICAL SOCIETY.—Annual General Meeting, St. John's Hospital, Leicester Square, W.C., 4.30 p.m. 5 p.m., Paper:—Major E. G. Ffrench, M.D., R.A.M.C.: The Substitutes for Salvarsan and Neo-salvarsan. Clinical Cases.

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W., 5 p.m.—First Croonian Lecture by Surgeon-General Sir David Bruce, C.B., F.R.S., A.M.S.: Trypanosomes causing Disease in Man and Domestic Animals in Central Africa.

ROYAL SOCIETY OF MEDICINE:
SECTION OF DERMATOLOGY, 4.30 p.m.—Cases.

FRIDAY.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W., 8.30 p.m.—Paper by the late Dr. R. M. C. Linnell: Some Observations on Malaria on Rubber Estates. Discussion: Quinine Prophylaxis in Malaria.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Courses will be given next week:

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		JUNE.
11	Fri.	London: Journal Committee, 2 p.m.
		London: Committee of Chairmen of Standing Committees, 2.30 p.m.
16	Wed.	CONFERENCE OF LOCAL MEDICAL AND PANEL COMMITTEES, Connaught Rooms, Great Queen Street, London, W.C., 10 a.m.
23	Wed.	London: Finance Committee, 2 p.m.
		Edinburgh Branch, Annual Meeting, Royal College of Physicians, 9, Queen Street, Edinburgh, 4 p.m.
		Worcestershire and Herefordshire Branch, Annual Meeting, Hereford Hospital, 3 p.m.; Branch Council, 2.45 p.m.
24	Thur.	Staffordshire Branch, Annual Meeting, Lichfield, 5.15 p.m; Dinner, 6.30 p.m.
25	Fri.	Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C., 4 p.m.
26	Sat.	Northern Counties of Scotland Branch, Annual Meeting, Kyleakin.
		Munster Branch, Annual Meeting, Cork, 4.30 p.m.
30	Wed.	London: Council, 2 p.m.
		Furness Division, Annual Meeting, Barrow-in-Furness, 3.15 p.m.
		Newcastle-on-Tyne Division, Annual Meeting.
		JULY.
1	Thur.	Surrey Branch, Annual Meeting, 429, Strand, London, W.C., 4 p.m.
7	Wed.	Dorset and West Hants Branch, Sherborne, 3 p.m.; Council, 2.30 p.m.; Lunch, 1.30 p.m.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 19TH, 1915.

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NON-PANEL DOCTORS AND NATIONAL INSURANCE CERTIFICATES.

In order to minimize as much as possible the inconveniences caused to doctors who attend insured persons in their private capacity, the Association has published books of certificates which, it is believed, will meet the requirements of approved societies, so far as is practicable in the case of certificates not given under the obligations of the official medical certification rules. The form of certificate is sufficiently like the official form to remove many of the difficulties which insured persons who have been attended by private doctors have had in satisfying the requirements of their approved societies, but is sufficiently distinct from the official form to show at once that it is being used by a doctor who is attending the patient in a private capacity, that is to say, either by a doctor who is not on a panel, or by a panel doctor other than the one on whose list the insured person is.

The Association has shown the certificates to the Insurance Commissions for England, Scotland, and Wales, and they raise no objection to the issue of them by the Association to medical practitioners for use when attending insured persons not being their panel patients, and not being persons whom they are attending as medical officers of institutions under Section 15 (4), or in virtue of "own arrangements" under Section 15 (3).

The books are being issued at cost price. They contain 50 certificate forms, and may be obtained from the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C., price 6d. each, post free.

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH:

BLACKBURN DIVISION.

THE annual meeting of the Blackburn Division was held at Blackburn on June 1st, when the President (Dr. TOUGH) was in the chair.

Election of Officers. — The following officers were elected:

President: Dr. Greeves.
Vice-President: Dr. J. Craig.
Honorary Secretary and Treasurer: Dr. Shearer.
Representative at Representative Meetings: Dr. W. R. Tough.
Representatives on Branch Council: Dr. W. R. Tough, Dr. J. T. T. Ramsay.
Committee: Dr. Barr, Dr. Beaton, Dr. Lees, Dr. Prebble.

Annual Report of Council.—The report of the Council was then considered.

METROPOLITAN COUNTIES BRANCH.

Election of Council, 1915–16.

THE only contest in the election of members of Council by Branches of the British Medical Association took place in the Metropolitan Counties Branch, when five candidates were nominated for the four vacancies.

In accordance with the practice that has prevailed for many years, the election was conducted on the principle of proportional representation, each elector having one transferable vote. The first preferences for the several candidates were as follows:

Smith, Frederick J., M.D.	188
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Greenwood, Major, M.D.	103
Biggs, M. G., M.D.	70
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There being four vacancies, the smallest number of votes—known as the "quota," that would render certain the election of any candidate—was the next whole number greater than *one-fifth* of all the votes. The quota was therefore 119, and Dr. Smith and Dr. Galloway were immediately declared elected.

The next process of the election consisted in transferring Dr. Smith's surplus of 69 votes. The votes were transferred in the usual way in proportion to the number of second preferences marked for the unelected candidates on the whole of Dr. Smith's papers. The result gave 50 votes to Dr. Major Greenwood, 15 to Dr. Biggs, and 4 to Mr. Brackenbury. Dr. Major Greenwood was thereby elected with a surplus of 34. This surplus was in turn distributed in due proportions in order to determine the election to the last vacancy. As a result Mr. Brackenbury received 21 votes, Dr. Biggs 13. This brought the election to an end, and the final result was declared as follows:

Smith, Frederick J., M.D. ...	119	elected.
Galloway, James, M.D.	121	,,
Greenwood, Major, M.D.	119	,,
Brackenbury, H. B., M.R.C.S. ...	134	,,
Biggs, M. G., M.D ...	98	
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It may be noted that it was never necessary to distribute Dr. Galloway's surplus of 2 votes since this distribution could not at any time have made any difference in the relative position of the candidates at the bottom of the poll.

ST. PANCRAS AND ISLINGTON DIVISION.

THE annual meeting of the Division was held on June 10th.

Election of Officers. — The following officers were elected:

Chairman: Dr. A. Brown.
Vice-Chairman: Dr. J. Crabb.
Honorary Secretary and Treasurer: Dr. N. H. Turner.
Representatives on Branch Council: Dr. G. F. Glinn, Dr. O. A. Wickham.
Executive Committee: The above *ex officio* members, together with Drs. A. Alexander, J. E. Jackson, J. Maughan, A. S. Morley, P. W. Rattray, J. Wilson.

SOUTH MIDLAND BRANCH:

NORTHAMPTONSHIRE DIVISION.

THE annual meeting of the Division was held on June 8th at the General Hospital, when Dr. CHURCHOUSE was in the chair, and the divisional report was presented by the DEPUTY HONORARY SECRETARY.

Election of Officers.—The following were elected:

Chairman: Mr. W. H. Bull, K.H.S., F.R.C.S.
Vice-Chairman: Mr. P. N. B. Odgers, F.R.C.S.
Honorary Secretary and Treasurer: Dr. P. S. Hichens.
Deputy Honorary Secretary and Treasurer: Dr. S. E. Baxter.
Representative for Representative Meetings: Dr. L. W. Dryland.
Deputy Representative for Representative Meetings: Dr. J. P. Roughton.
Representatives on Branch Council: Dr. J. Arthur, Dr. D. G. Greenfield, Dr. W. M. Robson.
Executive Committee: Drs. H. Cropley, A. Linnell, Cecil Powell, W. E. Audland, A. G. Tolputt.

Matters Referred to Divisions.—The agenda of the Annual Representative Meeting was considered and the Representative was given a free hand on all matters regarding which no specific resolutions had been passed by the Division.

War Emergency.—The report of the committee to promote recruiting for the R.A.M.C., presented by Dr. COOKE, stated that in response to the circular letter sent to all practitioners in the district, thirteen gentlemen had agreed to offer their services for full-time work, in addition to twenty-two who were already serving. There was a good response to the appeal for part-time service. A deputation had been appointed to wait on the Northampton Borough Council and the Northamptonshire County Council, with a view to making arrangements that certain whole-time medical officers might be released for army service. The committee also reported that a letter calling attention for the urgent need for medical officers in the R.A.M.C. and the co-operation of the public in freeing civilian doctors from unnecessary work had been inserted in all the leading papers in the county.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1915.

DATE OF MEETING.

THE Annual Representative Meeting of the Association, 1915, will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 23rd, 1915, and following days as may be required.

RETURN OF REPRESENTATIVES.

Honorary Secretaries of Divisions who have not yet forwarded to the Head Office the names and addresses, and dates of election, of the Representatives appointed by their Constituencies for 1915–16, are asked to forward me these particulars by the earliest possible date. Under the By-laws Representatives must be elected not more than nine months nor less than four weeks before the Annual Representative Meeting, and their names must be notified to the Head Office *by at latest July 2nd.* A Representative can if necessary be elected and instructed at one and the same meeting of the Constituency.

By Order,
ALFRED COX, *Medical Secretary.*

May 19th, 1915.

QUARTERLY MEETING OF COUNCIL.

THE Quarterly Meeting of Council will be held on Wednesday, June 30th, in the Council Room, 429, Strand, London, W.C., at 2 o'clock in the afternoon.

By order,
GUY ELLISTON,
Financial Secretary and Business Manager.

June 1st, 1915.

GRANTS IN AID OF SCIENTIFIC RESEARCH.

THE Council of the British Medical Association is prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.

Applications.

Applications for Grants for the year 1915–16 must be made not later than Saturday, June 19th, 1915, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX, *Medical Secretary,*
May 8th, 1915. 429, Strand, London, W.C.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—Dr. F. Fowler and Mr. P. A. Ross, Honorary Secretaries, give notice that the summer meeting of the Branch will be held on Wednesday, July 7th, at Church Hall, Sherborne, at 3 p.m. The meeting of the Branch Council will take place at 2.30 p.m. The Sherborne practitioners kindly invite members to luncheon at the Digby Hotel at 1.30 to 2.30 p.m.

EAST YORKSHIRE AND NORTH LINCOLNSHIRE BRANCH.—Dr. H. L. Evans, Honorary Secretary, 101, Princes Avenue, Hull, gives notice that the annual meeting will be held in the Grimsby and District Hospital on Friday, July 9th, at 4.15 p.m. Business: To elect officers, to receive the annual report and balance sheet, and to discuss any other business which is proper to annual meetings.

EDINBURGH BRANCH.—Drs. John Stevens and John Eason, Honorary Secretaries, have given notice that the annual meeting of the Edinburgh Branch will be held in the hall of the Royal College of Physicians, 9, Queen Street, on Wednesday, June 23rd, at 4 p.m. Business: Report of Branch Council. Treasurer's financial statement. Election of office-bearers. Election to vacancy on the trusteeship of the old Branch fund. Report of election of Dr. J. R. Hamilton as member of Council for the Edinburgh and Fife Branches for 1915–16. Election to annual vacancy on the Board of Management of the Queen Mary Nursing Home. Branch Council nominate Mr. W. J. Stuart. Scottish Committee: Report of proceedings. The war emergency: Its claims on the profession. Action of (1) the Association, (2) the Scottish Committee and the Branches and Divisions, (3) the Scottish Medical Service Emergency Committee. Annual report of Council and Annual Representative Meeting. Rules of Edinburgh Branch. Any other competent business. Tea at 3.45 p.m.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—Dr. M. J. Oliver, Honorary Secretary, St. Boswells, gives notice that the annual meeting of the Division will be held on Tuesday, June 22nd, at the Railway Hotel, Newtown St. Boswells, at 3 p.m. Business: Election of Officers and Committee. Annual Report of Executive Committee. Instructions to Representative in Representative Meetings. War Emergency: Report of result of canvass.

METROPOLITAN COUNTIES BRANCH.—Dr. R. E. Crosse and Mr. N. Bishop Harman (Honorary Secretaries) give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C., on Friday, June 25th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of council and of representatives of the Branch on the Central Council. (3) Alteration of Rule 19 *b* by the insertion of the words "and adopt (with or without amendment)" after the words "To receive" so that the rule shall read as follows: 19. In addition to the ordinary business of any ordinary general meeting, the business of the annual meeting shall be: To receive the report of the election of new officers; (*b*) to receive and adopt (with or without amendment) the annual report of the Council on the affairs of the Branch, and the annual financial statement; (*c*) to receive the annual report of the representatives of the Branch on the Central Council of the Association; (*d*) to make new rules, or alter or repeal existing rules. (4) President's address: Sidelights on the Practice of Medicine in the Past from Early English Literature.

METROPOLITAN COUNTIES BRANCH: TOWER HAMLETS DIVISION.—Dr. W. H. F. Oxley, Honorary Secretary, 119, East India Road, gives notice that the annual meeting of the Division will be held at the Public Health Offices, 43, White Horse Street, Stepney, on Tuesday, June 22nd, at 3 p.m.

MUNSTER BRANCH.—Dr. Philip G. Lee, Honorary Secretary, gives notice that the annual general meeting of the Branch will be held at 74, South Mall, Cork, on Saturday, June 26th, at 4.30 p.m., to elect officers, Representatives, and Council for the ensuing year; to receive the reports of Council, and transact any other business proper to general meetings.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—Dr. J. Munro Moir, Honorary Secretary (4, Ardross Terrace, Inverness), gives notice that, owing to many members of the Branch being absent on military duty, the Branch Council have decided not to hold the annual meeting at Kyleakin on June 26th, as advertised in the SUPPLEMENT of June 12th.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—Mr. David Ranken, Honorary Secretary (23, Ridley Place, Newcastle-upon-Tyne) gives notice that the Executive Committee of the Newcastle-upon-Tyne Division have decided to hold the annual meeting at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Wednesday, June 23rd, at 8.30 p.m., instead of Wednesday, June 30th, as previously announced.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH: FURNESS DIVISION.—Drs. George Alexander and A. E. Thompson give notice that the annual meeting of the Furness Division will be held in the Masonic Hall, Barrow-in-Furness, on Wednesday, June 30th, at 3.15 p.m. Agenda: Annual report. Consider report and recommendations of the Ethical Committee. Election of officers. Reports on (*a*) the question of fees for treatment of juvenile members of friendly societies, (*b*) fees for medical examination for life insurance, (*c*) on eligibility for election as a member of the Association (SUPPLEMENT, March 20th). Any other business.

SOUTH-WESTERN BRANCH.—Mr. Russell Coombe, Honorary Secretary, and Mr. J. M. Ackland, Acting Secretary *pro tem.*, give notice that the annual meeting of the Branch will be held at the Athenaeum, Plymouth, on Tuesday, June 29th, at 3.30 p.m. The report of the Branch Council will be presented, and the officers for the year 1914-15 elected. The Branch Council gives notice under Branch Rule 20 that it will propose the adoption of new Branch Organization Rules based on the Model Branch Organization Rules of the Association, with the modifications necessary to retain certain special provisions of the existing Branch Organization Rules. By the kind invitation of the President, members and any ladies accompanying them are asked to tea at 16, The Crescent, at the conclusion of the meeting.

STAFFORDSHIRE BRANCH.—Dr. Harold Hartley, Honorary General Secretary (Basford, Stoke-on-Trent), gives notice that the forty-second annual meeting of the Branch will be held at the George Hotel, Lichfield, on Thursday, June 24th, at 5.15 p.m., when an address will be delivered by the President-elect, Dr. F. M. Rowland. Agenda: Correspondence. Report of the Council. Financial statement. Election of officers for the ensuing year—President-elect, Secretary, and Treasurer. To decide the place of the next annual meeting. Address by the President. Members have the privilege of introducing friends. Dinner at 6.30 p.m.; charge 5s.

SURREY BRANCH.—Mr. Cecil P. Lankester, Honorary Secretary (1, Rectory Place, Guildford), gives notice that the second annual meeting of the Surrey Branch will be held on Thursday, July 1st, at 4 p.m., at the Head Offices, 429, Strand. Agenda: In addition to the business of an ordinary meeting, (1) to receive the report of the election of officers for 1915-16, who will thereupon take office; (2) to receive the annual report and financial statement. There will be no social function this year.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.—Dr. S. C. Legge, Honorary Secretary (24, Foregate Street, Worcester), gives notice that the annual meeting of the Branch will be held at the Hereford Hospital, Hereford, on Wednesday, June 23rd, at 3 p.m. The Branch Council will meet at 2.45 p.m.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

THE following volumes were added to the Library during October, November, and December, 1914:

Presented by the Authors.

Bolton, C.: Ulcer of the Stomach. 1913.
Sandwith, F. M.: The Lettsomian Lectures on Dysentery. 1914.

Transactions of the Seventeenth International Congress of Medicine.

Section III (i) and (ii). General Pathology and Pathological Anatomy. (Presented by Dr. H. C. Bastian.)
Section IV (i), Bacteriology, and Section V (i), Therapeutics. (Presented by Dr. M. D. Eder.)

Presented by the Crown Agents for the Colonies.

The Yellow Fever Commission (West Africa). 1st and 2nd Reports. 1913-14.

Presented by Dr. H. M. Fernando, Colombo.

Journal of the Ceylon Branch, B.M.A. Vols. vi to x. 1909-13.

Calendars, Reports, and Society Transactions, etc.

Board of Education, Reports from Universities and University Colleges, 1912-13. 2 vols. 1914.
British Pharmaceutical Conference. The Yearbook of Pharmacy. 1914.
Calendars have been presented by the following Universities: Birmingham (1914-15), Bristol (1914-15), Calcutta (1914-15), King's College (1914-15), Leeds (1914-15), Manchester (1914-15), Sheffield (1914-15), South Wales (1915), Sydney (1915), University College (London) (1915).
Edinburgh Obstetrical Society. Transactions, vol. xxxix. 1914.
London Dermatological Society. Transactions and Second Report. 1914.
Medical Officer to the Local Government Board. Report by Dr. Carnwath on the Sanitary Circumstances of Padiham, Urban. 1914.
Metropolitan Water Board. Report on the Metropolitan Water Supply. July, August, September. 1914.
Navy, Statistical Report on the Health of the, 1913. 1914.
Philadelphia Academy of Surgery, Transactions, vol. 16. 1914.
Philadelphia Pathological Society, Transactions. 1914.
Registrar-General for England and Wales, Supplement Part I to 75th annual report. 1914.
Registrar-General for Scotland, 58th Annual Report, for 1912. 1914.
Rockefeller Institute for Medical Research Studies, reprints, vol. 19. 1914.
Society of Tropical Medicine and Hygiene, Transactions, vol. 7.
Straits Settlements, Annual Report of Medical Department. 1913.
United Provinces, Triennial Report of the Civil Hospitals and Dispensaries. 1911-1913.
United States Treasury Department, Hygienic Laboratory Bulletin, Nos. 95, 96. 1914.
United States War Department, Report of the Surgeon-General United States Army, 1913; Bulletin No. 6, Prophylaxis of Malaria, 1914.

Added to the Library through the BRITISH MEDICAL JOURNAL.

Adam, J.: Asthma, its Radical Treatment. 1913.
Adams and Cassidy: Acute Abdominal Diseases. 1913.
André, Thomas and Durupt: Localisations Cérébelleuses. 1914.
Asch: Die moderne Therapie der Gonnorrhöe bei Manne. 1914.
Babkin: Die aussere Sekretion der Verdauungsdrusen. 1914.
Ball: Mediterranean Winter Resorts. 1914.
Ballinger and Elder: Genito-urinary Diseases and Syphilis. 1914.
Bardswell, N. D.: Preliminary Report on the Treatment of Pulmonary Tuberculosis with Tuberculin. 1914.
Bickmore, A.: Industries for the Feeble-minded. 1913.
Buxton, D. W.; Anaesthetics, 5th ed. 1914.
Caird and Cathcart: Surgical Handbook, 16th ed. 1914.
Choyce, C. C.: A System of Surgery, vol. 3. 1914.
Elderton and Fippard: Construction of Mortality and Sickness Tables. 1914.
Gordon, A.: Diseases of the Nervous System. 2nd ed. 1914.
Green, C. E.: The Cancer Problem. 3rd ed. 1914.
Grotjahn: Geburten Ruckgang und Geburten Regelung. 1914.
Halliburton: Handbook of Physiology. 11th ed. 1913.
Harrower: Practical Hormone Therapy. 1914.
Hyvert: Pathologie interne et diagnostic. 1914.
Kellicott, W. E.: Textbook of General Embryology. 1914.
Lambart, H. C.: Handbook of Tropical Diseases in Asia and Africa. 1914.
Launoy, L.: Thyroïdes, Parathyroïdes, Thymus. 1914.
McMunn: Spectrum Analysis applied to Medicine and Biology. 1914.
Mercier: Astrology in Medicine. 1914.
Mumford: One Hundred Surgical Problems. 1911.
Mumford: The Practice of Surgery. 2nd ed. 1914.
Paterson: Anatomists' Notebook. 1914.
Reinheimer: Evolution by Co-operation. 1913.
Silk: Modern Anaesthetics. 1914.
Sollier: l'Hystérie et son traitement. 1914.
Springthorpe: Therapeutics, Diet, and Hygiene. Vol. i. 1914.
Stopford-Taylor: Salvarsan Treatment. 1914.
Swanberg: The Intervertebral Foramen. 1914.
Taylor, F.: The Practice of Medicine. 10th ed. 1914.
Verworn, M.: Irritability. 1913.
Walker, J. W. T.: Surgical Diseases and Injuries of the Genito-Urinary Organs. 1914.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

ELECTION OF COUNCIL, SESSION 1915-16.

BRANCHES IN THE UNITED KINGDOM.

BRANCHES INCLUDED IN GROUP.	NAME.	UNOPPOSED OR CONTEST.
North of England, and North Lancashire and South Westmorland Branches	Professor R. A. BOLAM, M.D.	Unopposed.
Yorkshire Branch	Dr. H. J. CAMPBELL	Unopposed.
Lancashire and Cheshire Branch	Dr. T. A. GOODFELLOW	Unopposed.
	Mr. F. C. LARKIN	Unopposed.
East York and North Lincoln, and Midland Branches	Dr. ADAM FULTON	Unopposed.
Cambridge and Huntingdon, East Anglian, and South Midland Branches	Dr. O. R. M. WOOD	Unopposed.
Birmingham and Staffordshire Branches	Mr. ALBERT LUCAS	Unopposed.
North Wales, Shropshire and Mid-Wales, and South Wales and Monmouthshire Branches	Mr. W. F. BROOK	Unopposed.
Metropolitan Counties Branch	Dr. F. J. SMITH	Elected.
	Dr. JAMES GALLOWAY	Elected.
	Dr. MAJOR GREENWOOD	Elected.
	Mr. H. B. BRACKENBURY	Elected.
	Dr. M. G. Biggs	—
Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches	Dr. GEORGE PARKER	Unopposed.
Dorset and West Hants, and South-Western Branches	Dr. WM. JOHNSON SMYTH	Unopposed.
Oxford and Reading, and Southern Branches	Mr. JAMES GREEN	Unopposed.
Kent, Surrey, and Sussex Branches	Dr. A. TENNYSON SMITH	Unopposed.
SCOTLAND.		
Aberdeen, Northern Counties, Dundee, and Perth Branches	Dr. JOHN GORDON	Unopposed.
Edinburgh and Fife Branches	Dr. J. R. HAMILTON	Unopposed.
Glasgow and West of Scotland Branch (4 City Divisions)	Dr. JOHN ADAMS	Unopposed.
Glasgow and West of Scotland (5 County Divisions), Border Counties, and Stirling Branches	Dr. J. LIVINGSTONE LOUDON	Unopposed.
IRELAND.		
Connaught and South-Eastern of Ireland Branches	Dr. DENIS WALSHE	Unopposed.
Leinster Branch	Professor ARTHUR HAMILTON WHITE	Unopposed.
Munster Branch	(No return.)	
Ulster Branch	Mr. R. J. JOHNSTONE	Unopposed.
COLONIAL RETURNS.		
New South Wales and Queensland Branches	Dr. C. J. MARTIN, F.R.S.	
New Zealand Branch	Dr. DAVID EWART.	
South Australian, Tasmanian, Victorian, and Western Australian Branches	Dr. G. S. SYME.	
South African, etc., Group of Branches	Dr. T. DUNCAN GREENLEES.	

LOCAL MEDICAL AND PANEL COMMITTEES.

PORTSMOUTH.

LOCAL MEDICAL AND PANEL COMMITTEES.

THE annual report, dated May 21st, 1915, of these Committees has been issued.

Alleged Excessive Prescribing.—A Joint Committee of the Insurance, Panel, and Pharmaceutical Committees has been appointed to deal with the matter of alleged excessive prescribing, and has arranged for a comprehensive scrutiny of all medical prescriptions for 1914.

Finance.—A grant has been applied for by the Committees under Section 33 (2) of the National Insurance Act, 1913, to be used mainly to meet the cost of the inquiry as to excessive prescribing.

Proposed Portsmouth Insurance Pharmacopoeia.—The Committees recommend the preparation of a Portsmouth insurance pharmacopoeia for the use of the local panel practitioners.

ISLE OF WIGHT.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Isle of Wight Local Medical and Panel Committees was held at Sandown on May 27th, when Dr. K. W. I. MACKENZIE was in the chair.

Certificates.—A letter was read from the Insurance Commissioners in reply to the copy of the resolution with regard to the unnecessary frequency with which certificates of sickness were granted, stating that it was for the approved society in the first instance to determine what evidence of claim for sickness would be accepted, and adding that in cases in which practitioners considered Memo. 211/I.C. (36) applied, they should make representation to the society, indicating the facts which led them to that opinion.

Election of Committees.—It was considered desirable to continue the present Committees during the war.

Conference of Local Medical and Panel Committees.—Dr. J. W. Pridmore was elected as representative at the conference of representatives of Local Medical and Panel Committees in London on June 16th.

EAST SUSSEX.

LOCAL MEDICAL AND PANEL COMMITTEES.

Official Medical Referees.—The East Sussex Local Medical and Panel Committees have recently passed a resolution urging the Government to appoint official medical referees. It is felt that such referees would be of great service to the panel practitioners in dealing with doubtful cases, and that the practice of some approved societies in appointing referees of their own without consultation with the profession does not provide for the difficulty in the same way that the appointment of medical referees by the Commissioners would do.

COUNTY OF SURREY.

PANEL COMMITTEE.

THE monthly meeting of the Panel Committee was held at Surbiton Cottage Hospital on May 21st, when Dr. LANKESTER was in the chair.

Supply of Drugs and Appliances.—A reply was read from the Insurance Commission to the letter from the Panel Committee asking whether the regular supply of aperients to insured persons was to be considered as part of medical benefit. The letter stated: "That an insured person is entitled in respect of medical benefit to such proper and sufficient medicines and prescribed appliances as may be required in connexion with any treatment rendered by the practitioner under the terms of his agreement with the Insurance Committee." It was decided to ask the British Medical Association to get a more definite ruling on the point from the Insurance Commission.

Temporary Residents.—It was decided to ask the British Medical Association if a medical practitioner who receives an honorarium for attending patients in a convalescent home should also make a charge against those patients as temporary residents.

Range of Services.—It was resolved that the examination of the eyes is not a service which could be rendered by a practitioner with ordinary competence and skill.

Distribution of Unallotted Funds.—The scheme for the distribution of the money for unallotted persons similar to the one in force now, except that it did not need renewing each year, was left to be settled by the chairman.

Vacancy on Medical Service Subcommittee.—Dr. CLARKE NEWTON was appointed to fill the vacancy on the Medical Service Subcommittee caused by the resignation of Dr. Crichton.

Conference of Local Medical and Panel Committees.—Dr. GRIPPER, of Wallington, was appointed to represent the Committee at the conference of representatives of Local Medical and Panel Committees.

Sunday Consultation Hours.—It was resolved to ask practitioners in the next circular, if they would discontinue having Sunday consultation hours, owing to the extra pressure a good many practitioners were feeling owing to the war.

Honorary Treasurer's Statement.—The TREASURER stated that the receipts to date were £161 10s. and the expenses £58. He estimated that after all expenses had been paid there would be a surplus of £16.

COUNTY OF BEDFORD.

PANEL COMMITTEE.

A MEETING of the Panel Committee for the County of Bedford was held at the County Hospital, Bedford, on May 13th, when Dr. JOHN WAUGH was in the chair.

Prescribing.—The Committee expressed the opinion that 2s. per insured person per annum is sufficient to meet the dispensing for insured persons, and a subcommittee was appointed to draw up a circular to be sent out to each practitioner on the panel with regard to future prescribing.

Local Pharmacopoeia.—Drs. Ross, Butters, and A. S. Phillips were appointed a subcommittee to draw up a pharmacopoeia for use in the area and to examine the drug tariff and make any suggestions for its improvement which they think necessary.

LOCAL MEDICAL AND PANEL COMMITTEE.

A meeting of the Local Medical and Panel Committee for the county of Bedford was held at Luton on June 3rd, when Dr. JOHN WAUGH was in the chair.

Local Pharmacopoeia.—It was decided that a draft of the proposed Pharmacopoeia be sent to each practitioner on the panel, inviting suggestions with regard to the inclusion of other mixtures, and in order that the Pharmacopoeia may come into use on July 1st, 1915, Drs. Butters, Ross, and A. S. Phillips were appointed, with executive powers, to meet three representatives of the Pharmaceutical Committee, to discuss with them the question of the ten mixtures which should bear half dispensing fees, in accordance with their agreement with the Insurance Committee. It was also agreed that as and from July 1st, 1915, prescriptions should be ordered from the Pharmacopoeia, or written out in full, and that rep. mist. prescriptions would not be issued after the said date.

Expenses of Pharmaceutical Committee.—It was resolved that the Panel Committee agrees to the Pharmaceutical Committee receiving funds not exceeding ½d. per insured person per annum, the charge to be the first charge upon the drug fund, the Pharmaceutical Committee agreeing to bear two-thirds of the cost of the checking, scrutiny, and analysis of prescriptions.

Medical Referees.—The Secretary was requested to draw up a letter of strong protest, to be signed by the President, and forwarded to the Insurance Commission, with regard to the action of certain medical referees in cases which have been brought to the notice of the Committee, and it was decided to bring the matter before the next Representative Meeting.

Attendance on Soldiers.—A scheme whereby a civil practitioner could attend the military cases and receive capitation fees in respect of all soldiers billeted in the district as a set-off against the likely loss by members of their panel joining the army, for which it is contemplated adjustments will be made from their insurance credits, was directed to be forwarded to the War Office, through the Insurance Commission, with a request that it be given consideration, and that Dr. Bone be asked to bring the matter before the conference in June.

EAST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the East Suffolk Panel Committee was held at Saxmundham on June 8th, when Dr. HELSHAM was in the chair.

Payments to Practitioners.—The Secretary was instructed to write to the Insurance Committee requesting it to furnish information as to the amount of the capitation fees credited to the respective practitioners on the East Suffolk Panel in accordance with Clause 35 (1) of the Statutory Rules and Orders, 1914, No. 5, for the year 1913, and for each quarter of the year 1914, and to request also that this information may in the future be supplied at the end of each quarter.

Expenses of Committees.—The Secretary reported that he had received payment of the Panel Committee's expenses up to December 31st, 1914, that the expenses of the Panel Committee from that time to date amounted to £17 16s. 6d., and that after payment of expenses incurred by the Local Medical Committee in 1913 there would be left a balance of £3 11s. 2d. in hand out of the special fund subscribed by practitioners.

Mileage.—It was resolved that an increased mileage grant for 1913 be applied for. The Committee considered that as there were comparatively few claims for distance of fifty yards or thereabouts, and the amount of the grant would not be thereby materially increased, and that owing to the exigencies of the country a dwelling fifty yards distance from the metalled road (which with the return journey made 100 yards to be traversed) was invariably difficult of access, the distance should not be increased.

WEST SUFFOLK.

PANEL COMMITTEE.

A MEETING of the West Suffolk Panel Committee was held at Bury St. Edmunds on June 8th, when Dr. WILKIN was in the chair.

Election of Committee.—The hope was expressed that the efforts of the British Medical Association to obtain suspension of elections this year would be successful. The Secretary was instructed to support at the conference in London on June 16th the suggestion that Panel Committees should be elected triennially, and also any action with a view to obtaining a system of monthly certification in chronic cases.

Annual Report and Balance Sheet.—These were considered and, with slight alterations, passed for issue to practitioners on the panel. The expenses of the Committee from March, 1914, to May 31st, 1915, amount to £14 18s. 7d.

Further Payment for the Year 1913.—It was decided to recommend that of the additional grant of £374 17s. 8d. for the year 1913 sufficient be allocated to pay the balance of the claims for the first quarter of that year in full, and that the remainder be allocated to the doctors in proportion to the mean of their panel lists for the last three-quarters of the year. The Secretary was instructed to inform practitioners in the next circular issued that an interval of thirteen days can, according to the rules, elapse between successive certificates.

NORTHAMPTONSHIRE.

PANEL COMMITTEE.

A MEETING of the Northamptonshire Panel Committee was held on June 10th in the board room of the Northampton Hospital, when Dr. BAXTER was in the chair.

Election of Committees.—The action of the Chairman and Secretary in signing the British Medical Association petition in favour of the suspension of Panel Committee elections this year was approved, and it was resolved to ask the Insurance Commissioners to recognize the Panel Committee as the Local Medical Committee for the area.

Voluntary Levy.—The SECRETARY reported that every practitioner on the panel had joined the scheme of voluntary levy towards the expenses of the Committee.

BIRMINGHAM.

PANEL COMMITTEE.

A MEETING of the Birmingham Panel Committee was held on June 1st.

Election of Committee.—The suggestion of the British Medical Association, that it is advisable to forego an election this year, was approved.

Registers of Insurance Committees.—Many complaints having been received from doctors as to the method adopted by the Insurance Committee for correcting and completing its registers, the Clerk to that Committee attended the meeting and gave reasons for the procedure. The Secretary was instructed to send a report of the interview and the finding of the Committee to all practitioners in the area.

LOCAL MEDICAL AND PANEL COMMITTEES.

A combined meeting of the Local Medical and Panel Committees was held later, when the draft rules for the administration of medical benefit were considered and approved.

Conference of Local Medical and Panel Committees.—Dr. DAIN was appointed to represent the joint Committees at the forthcoming conference of Local Medical and Panel Committees, and it was arranged to hold a special meeting to consider the final agenda.

LANCASHIRE.

PANEL COMMITTEE.

A MEETING of the Lancashire County Panel Committee was held on May 19th, when Dr. A. I. PETYT was in the chair.

Term of Office of Panel Committee.—It was considered that better work could be done if the Panel Committee could obtain recognition for three years instead of only for one, as there was always a certain amount of time lost, and also considerable expense incurred, in the formation of a new committee. It was decided therefore to apply to the Commissioners for an extension of the period of office of the Panel Committee from one year to three years.

Local Pharmacopoeia.—The question of adopting a local pharmacopoeia was considered, and the secretary was instructed to obtain copies of any pharmacopoeia which might be in use in the county areas.

Medical Certification.—The Committee had received notification that certain doctors had been antedating and post-dating sickness certificates at the request of approved societies, thereby breaking the most important part of the rules governing the system of medical certification. One of the advantages of the new system was that the demand for certificates on particular days of the week disappeared. It was decided to ask certain doctors who were alleged to have disregarded the rules with regard to the antedating and post-dating of certificates to attend the next meeting of the Panel Committee. The Committee considered that Clause 27 of the Commissioners' Memorandum 211/I.C. was the chief factor in producing friction, in so far as it left it open to approved societies, in certain cases, to require certificates from their members on specified days, and it was decided to ask the Commissioners to delete it.

Agreement.—It was resolved that the British Medical Association be asked to consider the agreement for next year.

Medical Benefit.—A copy of Revised Rules for the Administration of Medical Benefit, submitted by the Insurance Committee, was approved, since it did not differ materially from the last approved by the Committee.

Excessive Prescribing. — Certain prescriptions, considered to be examples of excessive prescribing, had been returned to the practitioners with requests for explanations; and a subcommittee was appointed to consider the replies.

Deductions from Doctors' Lists. — The Panel Committee was of opinion that no deductions should be made from the lists of those doctors who have joined His Majesty's Forces, either during the year or at the end of the year; and the Secretary was instructed to write to the Commissioners asking them to set aside for the period of the war Regulation 30, so far as it concerned doctors on military service.

Issuing of Medical Cards.—The Committee was of opinion that the medical cards were not issued (particularly in the cases of new entrants into insurance) as promptly as they might be, the result being that great inconvenience was caused both to insured persons and to doctors. The Committee instructed the Secretary to write to the Lancashire Insurance Committee, with the request that in future the buff medical cards be issued to insured persons without the usual delay.

LIVERPOOL.

PANEL COMMITTEE.

MEETINGS of the Liverpool Panel Committee were held, under the chairmanship of Mr. F. C. LARKIN, at the Medical Institution on May 18th and 28th.

Conference of Local Medical and Panel Committees.—The business for the conference of representatives of Local Medical and Panel Committees summoned by the British Medical Association to meet in London on June 16th was considered, and the following resolutions were adopted for submission to the conference:

That inasmuch as the men who are removed from the panel lists are amongst the best lives and were unlikely to be any serious charge on the medical services for many years, and that many of them are now returning permanently damaged in health, the Liverpool Panel Committee is of opinion that Parliament should make some grant to practitioners on the panel to compensate them for what is likely to be a serious charge on them in the future.

That the Insurance Commissioners be urged to provide that permission be given to any panel practitioner who so desires to dispense for his insurance patients, and in that event a sum of 2s. per patient on his list be paid to him out of the Drug Fund.

Dr. A. Stanley Parkinson (Wavertree) was deputed to attend the conference as representative of the Committee.

WEST RIDING OF YORKSHIRE.

LOCAL MEDICAL AND PANEL COMMITTEE.

A MEETING of the West Riding Local Medical and Panel Committee was held at the County Hall, Wakefield, on May 14th, when Dr. HILLMAN was in the chair.

Record Cards of Doctors Absent on Military Service.—The Secretary was instructed to write to the Commissioners again, pointing out the impossibility of coping with the immense clerical work involved in the duty of keeping the records, particularly in the case of doctors absent on military service, and requesting that this duty may be considered unnecessary. It was also decided to request the British Medical Association to have a representation made in Parliament to the effect that the duty of keeping these records should be abrogated during the period of the war.

Payments to Practitioners.—It was reported that the Insurance Committee was appointing a special subcommittee to consider the whole question of payments to doctors and chemists; the Panel Committee, being invited to appoint two representatives as members of this subcommittee, nominated Dr. Fry and Dr. Steven.

Range of Medical Services.—The Committee expressed the opinion that the surgical treatment of empyema (resection of rib under a general anaesthetic) was "a major operation, and not within the scope of medical benefit under the Insurance Act," but that the removal of a sebaceous cyst from the ear came within the scope of medical benefit under the Act.

Vacancy on the Committee.—Dr. H. A. Fenton, of Hatfield, near Doncaster, was elected representative for the district of Goole vice Dr. Eardley, who had resigned on his appointment to the Secretaryship of the Committee.

Belgian Doctors' and Pharmacists' Fund.—An appeal was made on behalf of the Belgian Doctors' and Pharmacists' Fund. Subscriptions to the above fund may be sent to Dr. A. G. Barrs, 25A, Park Square, Leeds.

YORK.

LOCAL MEDICAL AND PANEL COMMITTEES.

A JOINT meeting of the York Local Medical and Panel Committees was held on June 11th.

Election of Committee.—It was reported that the Commissioners have been approached with a view to postponing the election until after the war.

Complaint against a Practitioner.—A letter from the Clerk to the York Insurance Committee was read, stating that the Committee finds no grounds for the complaint against a practitioner which the Panel Committee had asked it to investigate. It was decided to instruct the Secretary to write to the approved society in question suggesting that the sick visitor responsible should apologize to the practitioner, the complaint having been proved to be not merely groundless, but to have never been made by the patient at all.

Payments to Practitioners.—The Honorary Secretary was instructed to suggest that quarterly cheques might be got out nearer the end of the quarter, as is done in the North, East, and West Riding areas.

DURHAM COUNTY.

MEDICAL AND PANEL COMMITTEE.

A MEETING of the Durham County Medical and Panel Committee was held on May 14th, when Major L. G. DILLON was in the chair.

Alleged Excessive Prescribing.—It was decided to notify certain practitioners of the Committee's intention to recommend the Insurance Committee to make deductions from the amounts payable to them on the ground that certain orders were extravagant in character or in quantity unless they intimated within fourteen days that they desired to be heard.

Mileage Grant.—It was reported that the Insurance Commissioners had approved the scheme for the distribution of the Special Mileage Fund for the medical year ended December 31st, 1914.

Final Medical Benefit Credit.—It was reported that an additional credit for the amount available for medical benefit had been received from the Insurance Commissioners in respect of the year ended January 11th, 1914, which it was estimated would enable the payment of a further dividend of 8d. in the £ to be made.

Advance Payments to Practitioners.—The meeting also considered correspondence between the Commissioners and the Insurance Committee, intimating that the total amount available for advance payments on account of medical benefit during the current year should not exceed £72 per 1,000 of the insured population on the Committee's Register at the commencement of the quarter, and it was agreed that the Insurance Committee would not be able to make monthly advance payments to practitioners at a capitation rate exceeding 6d. per insured person during the current year.

Suspense Register.—It was agreed to recommend the Insurance Committee to remove from the panel lists of practitioners the names of all patients whose title to medical benefit cannot be traced, on the understanding that such patients be reinstated on production of proof of such title, and be granted medical treatment in accordance with the scheme under Article 21 (4) and 35 of the Medical Benefit Regulations.

Medical Certification.—The Secretary was requested to submit to the Secretary of the British Medical Association for an expression of opinion the question of the right of approved societies to accept certificates of incapacity for work from unqualified men.

Acting Secretary.—An honorarium at the rate of £75 per annum was voted to the Acting Secretary as from October, 1914.

COUNTY OF GLAMORGAN.

PANEL COMMITTEE.

A MEETING of the County of Glamorgan Panel Committee was held in Cardiff on June 1st, when Dr. W. E. THOMAS was in the chair.

Over-prescribing.—The report of subcommittee was presented showing a surcharge of £23 17s. 9d. in one case.

Conference of Local Medical and Panel Committees.—Dr. J. Morgan Rees, Pontypridd, was appointed the representative at the conference in London on June 16th.

Travelling Expenses of Members of Committee.—The SECRETARY reported that he had sent out 331 circulars asking for a voluntary levy of 1s. 3d. per 100 insured persons, and had received 94 signatures authorizing the deduction.

Doctors' Lists.—It was decided to call the attention of the Glamorgan Insurance Commitee to the very unfair and unmethodical manner in which the lists are kept at present, and to ask that each doctor on the panel should be supplied with the number on his panel, a detailed account of what is due to him, and the payments that have been made to him.

BURGH OF EDINBURGH.

PANEL COMMITTEE.

A MEETING of the Burgh of Edinburgh Panel Committee was held on June 8th, when Dr. DEWAR occupied the chair.

Joint Services Subcommittee.—Drs. M'Larty and John M'Laren were appointed to fill two temporary vacancies on this Committee.

Collective Responsibility of Panel Practitioners towards Insured Persons.—It was proposed that panel practitioners should assume collective responsibility towards insured

persons, and that in order to put this on a business footing, each doctor should, in the absence of any individual doctor, make a visit when called upon, and that he should receive 2s. 6d. for an ordinary visit, 3s. 6d. from 8 to 11 p.m., and 5s. from 11 p.m. to 8 a.m.

Excessive Prescribing.—In connexion with a case of alleged excessive prescribing, it was reported that the practitioner concerned had explained that the case was one of a paroxysmal character, and that in order to meet the attacks he ordered the patient to take at times the medicine much more frequently than was ordered on the prescription form. This explanation was considered satisfactory.

Levy on Insurance Practitioners.—The INTERIM TREASURER reported that up to date twenty-five practitioners had sent in their subscriptions of one guinea. He was instructed to employ a collector to gather in the outstanding subscriptions.

COUNTY OF LANARK.

LOCAL MEDICAL AND PANEL COMMITTEES.

A MEETING of the Local Medical and Panel Committees for the County of Lanark was held on June 2nd at Glasgow, when Dr. W. G. MACPHERSON (Bothwell) was in the chair.

Suspension of Election of Committees.—It was agreed to inform the British Medical Association that the Committees were in favour of the suspension of elections during the war.

Drugs Account (Central) Bureau.—It was agreed not to contribute this year towards the expenses of the bureau, the Committee holding that the cost should come out of the administration expenses. It was also agreed to disapprove of the Pharmaceutical Committee making a contribution towards the expenses of the bureau.

Conference of Representatives of Local Medical and Panel Committees.—Drs. Thomson (Uddingston) and Grant (Blantyre) were appointed respectively as delegates from the Panel and Local Medical Committees to the conference summoned by the British Medical Association in London. It was agreed to propose at the conference that during the continuance of the war no further regulations be issued by the Insurance Commissioners.

CORRESPONDENCE.

THE RELATION OF PANEL COMMITTEES TO THE BRITISH MEDICAL ASSOCIATION.

DR. CHARLES FORBES of Aberdeen, Lieutenant R.A.M.C. (T.F.), now serving with the Highland Casualty Clearing Station, British Expeditionary Force, writes: In the agenda of business for discussion at the conference of the Local Medical and Panel Committees, as suggested in a letter from the Medical Secretary to Panel Committees, the very important question of the relation of Panel Committees and the British Medical Association is put down.

Owing to the very sudden call to join this unit I omitted to send a letter that I had written on this subject before leaving practice in April. The democratic representation of panel practitioners on the British Medical Association is a matter that is of vital importance for the future success of the British Medical Association and for the protection of the interests of the panel men in the rearrangement of medical benefit organization that is certain to come in the near future. Those of us who have voluntarily given up general practice to accept temporary commissions in the army are even more concerned in this matter than the men who remain in civil practice. We know we will, if and when we do return, return to depleted panel lists and nebulous private lists. Now, Sir, if the British Medical Association is to efficiently represent panel practitioners in the fight that is before us, there must be democratic representation of these on the British Medical Association, and this for two reasons—first, unless you have that the British Medical Association will not be able to say that it represents the authoritative opinion of panel practitioners; and secondly, it will be open to politicians who may be opposed to the policy of the British Medical Association to refuse to recognize the Association as authorized to act for and represent the panel men.

The advantage of having a body democratically representative of those who are working the panel system is well seen in the success of the Chemists Committee for Scotland. This committee has been able to influence the Scottish Commissioners so as to secure the appointment of a "drug" bureau staffed by chemists. There is not a single medical man on the staff, and only two medical representatives on a managing committee of fourteen. Judging from the way central bodies conduct business, it may safely be predicted that the permanent staff and their chemical confrères on the committee will wheel the business the way the chemists direct through their central body.

As one who has spent a great deal of time in committees running the medical benefit system, and from experience gained as the secretary of a Panel Committee, I am convinced that unless panel practitioners have a democratically appointed body to represent them there is risk of a defeat when the next big fight comes. That this will be soon is the opinion of any one who has had any close experience of the way the present system goes lumbering and creaking along.

Does the proposed representation of panel men on the Panel and Local Medical Committee of the British Medical Association constitute the British Medical Association a body that can be called representative of panel practitioners? It may be said that such a constitution gives a prospect of the representation of the views of men on the panel, but it is not democratic representation.

The Panel and Local Medical Committee has apparently got the mantle of the proposed federation of Local Medical and Panel Committees, and it is wearing it *à la* Mr. Fothergill. The Committee has done good work but it cannot—even with the revision of its constitution as proposed by itself—claim to be a body representative of panel practitioners. Some of us panel men were so dissatisfied with the want of a representative body, that we were seriously considering severing our connexion with the British Medical Association.

Now, Sir, I yield to no one in gratitude for the magnificent work the Association has done over the inception of the panel system and since then, but if the British Medical Association is to continue to do good and effective work in the future, it must either have a committee fully representative of Panel Committees, or act in co-operation with a body representative of panel practitioners.

Those of us who are unable to use any direct influence in moulding the decisions of Panel Committees and the British Medical Association can only hope that a wise and statesmanlike policy will be adopted in dealing with this question.

THE SURCHARGING OF PANEL PRACTITIONERS.

Dr. S. J. Ross (Bedford) writes: "*Ex uno disce omnes*" would be a suitable title for Dr. Blake's letter. The medical profession fully recognizes the debt of gratitude it owes to the Medical Defence Union, and trusts implicitly the judgement and ability with which the members of the council safeguard our interests. The attitude of the Defence Union on the question of surcharging panel practitioners is approved by the majority of the profession. We must all of us doubt the desirability of publishing prescriptions of our colleagues as examples of carelessness or some similar quality. A prescription is the private property of the medical man who prescribes it. Dr. Blake is not in a position to judge of the requirements of his colleagues' patients. Apparently experience counts for nothing.

The truly loyal member of the panel is the man who prescribes the cheapest mixtures. I was a most strenuous opponent of the Insurance Bill, but since it became law I have endeavoured to conform in every way to the requirements of the Act, but I have never sacrificed the interests of my patients to the fetish of cheapness. At the present time I am treating a case of general psoriasis and general eczema, a case of psoas abscess, and a case of perinephritic abscess—all expensive types of disease. Many of my colleagues are doubtless doing similar work.

Let us trust each other as honourable members of an honourable profession, and not ascribe to our colleagues a lower moral standard than that which we judge ourselves to possess.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Fleet Surgeons R. W. STANISTREET to the *Endymion*, F. BOLSTER to the *Pembroke*, additional, H. L. PENNY to the hospital ship *China*, vice Bolster, SAMUEL CONNER, M.B., to the *Theseus*, EDWARD D. J. O'MALLEY to the *Maidstone*, vice Conner. Staff Surgeon JOHN THORNHILL to the *Victorian*. Temporary Surgeons J. LAMBERT to the hospital ship *Rewa*, vice Murison, J. S. KENNEDY to the *Monarch*, vice Barley, S. N. TOULMIN to the *Endymion*. C. W. ARCHER, M.B., and S. N. WRIGHT, M.B., to the *Victory*, additional, for Haslar Hospital. F. R. GILHESPY and H. O. MARTIN to the *Vivid*, additional, for Plymouth Hospital. J. G. DOBSON, M.B., to the *Diana*, vice Gilhespy. C. W. KING to the *Colleen*, additional, for Haulbowline Hospital, vice Fisher. H. L. P. PEREGRINE to the hospital ship *China*. R. W. TOWNLEY to the *Victory*, additional. W. A. MCKERROW to the hospital ship *China*, vice Townley. E. F. FISHER to the hospital ship *China*, vice MCINTYRE. WILLIAM H. KAY, M.B., to the *Theseus*. To be temporary Surgeons: S. N. WRIGHT, M.B., H. O. MARTIN, C. M. BURRELL.

ROYAL NAVAL VOLUNTEER RESERVE.

SURGEON C. S. MCK. MURISON, M.B., to the *Vivid*, additional, for Royal Naval Barracks, Devonport. Surgeon Probationer JOHN B. W. TELFORD to the *Victorian*. To be Surgeon Probationer: J. J. KEATLEY.

ARMY MEDICAL SERVICE.

COLONEL SIR BERKELEY G. A. MOYNIHAN, M.B., F.R.C.S., relinquishes his temporary commission.

ROYAL ARMY MEDICAL CORPS.

Majors to be temporary Lieutenant-Colonels: WILLIAM A. TURNER, R.A.M.C.(T.F.), CHARTERS J. SYMONDS, M.D., F.R.C.S., R.A.M.C.(T.F.), ROBERT H. MILLS-ROBERTS, C.M.G., F.R.C.S.E. (6th Battalion, Royal Welsh Fusiliers), whilst employed with a field ambulance of the 43rd Division.

To be temporary Majors: Temporary Captain EDWARD L. GOWLLAND, M.B., late Major, R.G.A.(T.F.). Major ARTHUR N. WALKER, M.B., 1st West Lancashire Brigade, R.F.A.(T.F.).

To be temporary Captains: DENIS MURPHY, M.B., late Captain, R.A.M.C. (Special Reserve), FRANK A. A. HOLMDEN, M.B., D.S.O., WILLIAM J. GOW, M.D., RALPH B. MAHON, M.D., F.R.C.S., temporary Lieutenant PERCIVAL WOOD, late Surgeon-Captain, 3rd Middlesex R.G.V.A.

Temporary Lieutenant ERNEST C. PEAKE, M.B., relinquishes his commission on account of ill health.

To be temporary Lieutenants: ALFRED ADAMS, M.D., ROBERT F. RUSSELL, M.B., MARK S. FRASER, M.D., F.R.C.S.E., GERALD HOLROYDE, DALLAS G. PERRY, M.D., F.R.C.S.E., THOMAS E. ASHLEY, WILLIAM RUSSELL, M.B., FRANCIS G. M. SIMPSON,, M.B., ROWLAND HAMER, M.B., HENRY GRIFFITHS, F.R.C.S.E., RICHARD W. LONG, EDWARD T. LARKAM, M.D., WILLIAM H. MACKINLAY, M.B., CYRIL R. H. CRAWFORD, ERNEST C. PRATT, ALEC PHILLIPS, ROBERT J. BONIS, ARTHUR H. TOVEY, JAMES R. SPENSLEY, HENRY M. AGNEW, GEORGE GARDNER, M.D., ANDREW W. FORREST, M.B., JOHN B. BAIRD, M.B., JOHN D. BATT, ROBERT SPEARS, JOHN F. BROUGHTON, M.B., WYGER HARMENS, M.B., GUY N. MOTTRAM, JOCELYN L. WALLER, JOHN J. ROBERTSON, M.B., CHARLES B. PEARSON, M.D., HUGH H. CARLETON, M.D., STEPHEN F. LYNCH, F.R.C.S., WILLIAM FRASER, M.B., ERNEST G. RAWLINSON, M.D., DANIEL KELLY, EDWARD J. MORTON, M.B., F.R.C.S.E., EDWIN A. C. SWAINSON, M.B., CECIL BENNETT, CHARLES S. THOMSON, M.D., JOHN W. INNES, M.B., BENJAMIN JONES, M.D., ROBERT R. PIRRIE, M.D., LEO LANE, DONALD MCF. LIVINGSTONE, M.D., JOHN W. MCCAGIE, JOHN B. MILNE, M.B., FRANK B. G. STABLEFORD, THOMAS G. ELSWORTH, M.D., GERALD S. DOUGLAS, JOHN P. KITSON, M.B., PATRICK J. MURPHY, ERNEST H. WALKER, M.B., MEARNS A. MILNE, M.B., JAMES COUTTS, M.B., ANTHONY J. MCCREADIE, M.B., GEORGE MILLER, ROBERT MCN. MARSHALL, M.D., HAROLD WEBB, CHARLES L. G. POWELL, JAMES MUIRHEAD, M.B., JOSEPH B. DAWSON, M.D., F.R.C.S., HERBERT M. BROWN, M.D., AUGUSTUS J. HICKEY, RICHARD H. MERCER, M.B., ROBERT R. DUNCAN, M.B., NOEL INSTONE, M.B., ANDREW S. MCNEIL, ERNEST T. ROBERTS, M.D., RONALD J. BRUCE, M.B., JOSEPH M. MORRISSEY, F.R.C.S.I., PHILIP C. P. CLOAKE, GEORGE NORMAN, M.B., CHARLES P. SYMONDS, ARCHIBALD G. H. SMART, M.B., HENRY F. VANDERMAN, M.D., ALBERT W. D. COVENTON, M.D., F.R.C.S., ERNEST G. D. PINEO, PERCY K. MUSPRATT, GUY A. WYON, M.B., SYDNEY C. H. MOBERLEY, DENIS G. HALSTEAD, M.B., CHARLES R. VERLING-BROWN, M.D., OSWIN SHIELDS, M.D., HENRY YELLOWLESS, M.B., JOHN COFFEY, F.R.C.S.E., AUSTIN T. NANKIVELL, M.D., RICHARD H. KING, M.D., GEORGE POLLOCK, M.D., ROBERT MCL. WISHART, WILLIAM W. WOOD, M.B., CHARLES H. BLOXSOME, JOHN T. DICKSON, M.B., JOHN M. ELLIOT, M.B., JOHN M. CAMPBELL, M.B., JOHN BUCHANAN, M.B., D'ARCY I. HAMILTON, HAROLD E. P. YORKE, JOHN M. YOUNG, M.B., KENNETH I. AVELING, M.B. LEOPOLD E. V. EVERY-CLAYTON, M.D., F.R.C.S., GEORGE H. RUSSELL, SYDNEY WADDELL, M.B., JOHN D. MARSHALL, M.B., LIONEL A. J. GRAHAM, ALEXANDER B. GORDON, M.D., F.R.C.S.E., GEORGE H. KEANE, M.D., STANLEY V. P. PILL, JAMES F. HAMMOND, GEORGE A. ANDERSON, M.B., CHARLES REIDY, M.D., JOHN M. TAYLOR, M.B., WILLIAM R. MORRIS, M.B., WILLIAM P. COONEY, JOHN DIXON, FRANK RADCLIFFE, M.B., ALEXANDER C. B. MCMURTRIE, M.D., F.R.C.S.E., WILLIAM STEWART, M.B., HARRY T. NEWLING, HENRY E. COLLIER, HARRY L. ATTWATER, M.B., F.R.C.S., CECIL RUTHERFORD, M.B., GEORGE STODDART, M.B., F.R.C.S., SYDNEY J. ROWNTREE, JAMES A. W. WATTS, M.B., ALBERT V. CRAIG, M.B., GORDON W. R. RUDKIN, HERBERT M. MORAN, M.B., F.R.C.S.E., CLEMENT K. SYLVESTER, ARCHIBALD FERGUSON, M.B., DAVID A. HUTCHESON, M.D., HERBERT BATES, M.D., SAMUEL F. HOLLOWAY, FRANK E. MCGEE, EDWARD I. P. PELLEW, WILLIAM H. MCKINSTRY, M.B., GEORGE A. VARIAN, M.B., PETER MACDONALD, M.D., WILLIAM E. L. FOWLER, WILLIAM G. E. ALLEN, FREDERICK T. REES, WILLIAM J. V. CURTAIN, HUGH A. EVANS, PERCY HALL, GERALD R. C. WILSON, RICHARD H. ASKWIN, M.D., BENJAMIN BEAMISH, ALFRED B. BATEMAN, HARRY G. L. GILCHRIST, THOMAS MACKINLAY, M.B., WILLIAM ROSS, M.B., F.R.C.S.E., ARTHUR G. WELSFORD, M.D., F.R.C.S., WILLIAM H. HARDY, M.B., ROBERT D. MOTHERSOLE, M.D., F.R.C.S., COLIN C. G. GIBSON, NORMAN G. MEADE, ARTHUR D. CLANCHY, AARON S. COHEN, IGNATIUS P. KELLY, M.B., ERIC BAYLEY, M.D., F.R.C.S., JOHN E. L. A. TURNLEY, JOHN T. ARMSTRONG, BERTHOLD S. TAYLOR, RONALD T. HERDMAN, M.D., HOWARD S. MILLAR.

Officers of the Canadian Army Medical Corps to be temporary Lieutenants: Major NORMAN K. WILSON, M.B., Captains JOHN V. BROWN, M.B., ROBERT W. TENNENT, JOHN J. FIELD, M.B., Lieutenants WILLIAM S. PICKUP, M.D., WILLIAM J. M. MARCY, FRANK M. WALKER, M.B., HUBERT W. KERFOOT, JOHN G. MCLEOD, M.B., ERNEST V. FREDERICK, M.B., ALFRED H. MACKLIN, M.B., ALBERT F. MARETY, M.B., RICHARD E. HORKINS, M.B., GEORGE N. URIC, M.D., ROSS L. SHIELDS, M.B., JOHN J. MIDDLETON, M.B., JOHN LEK. MARETY, M.D., JAMES W. SUTHERLAND, M.B., JOSEPH A. EVANS, M.B., MURRAY H. PATERSON, FREDERICK J. LIVINGSTON, M.B., GEORGE C. ANGLIN, M.B., JOHN N. HUMPHREY, M.B., KEITH M. B. SIMON, M.B., JOHN F. MCLAY, M.B., RICHARD H. BONNYCASTLE, M.B., LIONEL M. DAWSON, M.D., WARREN A. DAKIN, M.D., JAMES E. KNOX, M.B., OSWALD J. DAY, M.B., KENNETH G. MCKENZIE, M.B., VICTOR H. MCWILLIAMS, M.B., FREDERICK J. COLLING, M.B., HENRY CRASSWELLER, M.B., OLIVER W. COLBECK, M.B., FRANK H. WHEELER, M.D., JOHN H. WHITE, M.D., GEORGE W. M. SMITH, M.D., ARCHIBALD HENDERSON, M.B., THOMAS O. HUTTON, M.B., CHARLES G. SUTHERLAND, M.B.

Non-commissioned officers and men of the Canadian Army Medical Corps to be temporary Lieutenants: Sergeant Majors CLARENCE A. BRISCO, M.B., WALTER J. B. BROWN, M.B.; Staff Sergeants WILLIAM J. DEADMAN, M.B., SAMUEL A OVEREND, M.D., DUNCAN A. FLETCHER, M.B., GEORGE M. SHAW, M.B., CHARLES L. T. ARTHUR, M.D.; Sergeants LEEMING A. CARR, M.B., FRANK W. OVERHOLT, M.D., JOHN F. RYAN, M.B.; Corporals JOHN V. WILLIAMS, M.B., GEORGE B. BURWELL, M.B., EVERETT F. G. WARD, M.B.; Lance-Corporal JOHN T. COURTICE; Privates JOHN CHASSELS, M.B., HARRY A. CATES, M.B., HALSTEAD G. MURRAY, M.B., CHARLES H. MACLEAN, M.D., HARRY A. SHARMAN, M.D., WELLINGTON L. PEDLOW, M.D., OTTO V. LUVAN, M.B., ERNEST J. DE BEAUPRÉ, M.B., FREDERICK W. DIAMOND, M.B., DAVID A. MACFARLANE, M.B., HECTOR MCKENZIE, M.B., KENNETH E. MILLAN, M.B., JOSEPH S. STEWART, M.B., NORMAN M. GLACE, M.B., GEORGE S. CRONK, M.B., JOHN H. FISHER, M.B., WARREN F. CLARK, M.B., JOHN H. BOX, M.B., ARTHUR G. HOWSON, M.B., KENNETH L. MACKINNON, M.B., HARRY L. JARMAN, M.B.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT THOMAS MACEWEN to be Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

4th Southern General Hospital.—FRANCIS E. PRICE, F.R.C.S.E., to be Captain, whose services will be available on mobilization.

5th Southern General Hospital.—Captain JOHN H. P. FRASER, M.B., is seconded.

South-Eastern Mounted Brigade Field Ambulance.—CHOLMONDELEY WEBB to be Lieutenant.

5th London Field Ambulance.—Captain JOHN H. DIXON, M.D., to be temporary Major.

3rd Home Counties Field Ambulance.—MICHAEL A. CURRY to be Lieutenant.

1st South Midland Mounted Brigade Field Ambulance.—FRANK SMITH to be Lieutenant.

East Anglian Casualty Clearing Station.—The announcement of the appointment of RICHARD V. SLATTERY as Lieutenant, which appeared in the *London Gazette* of May 21st, is cancelled.

2nd East Anglian Field Ambulance.—Lieutenant FREDERICK G. SHARPE resigns his commission on account of ill health.

1st Western General Hospital.—To be Captains, whose services will be available on mobilization: THOMAS P. MCMURRAY, M.B., EDGAR STEVENSON, M.D.

2nd Western General Hospital.—JUDSON S. BURY, M.D., late Major in this unit, to be Major; HOWARD BUCK, M.B., F.R.C.S., to be Captain, whose services will be available on mobilization; EDWARD A. WILLIAMS to be Lieutenant.

3rd Western General Hospital.—GILBERT I. STRACHAN, M.D., to be Lieutenant.

2nd Welsh Field Ambulance.—Lieutenant CHARLES W. C. MYLES, M.B., to be Captain.

1st East Lancashire Field Ambulance.—Lieutenant JOHN BRUCE, M.B., to be temporary Captain.

2nd West Lancashire Field Ambulance.—JAMES P. THIERENS, M.B., to be Lieutenant.

3rd West Lancashire Field Ambulance.—BERTRAM W. HOGARTH, M.B., late Major 5th Battalion, King's Own, Royal Lancaster Regiment, to be Major, temporary.

2nd Northern General Hospital.—JAMES B. LOCKERBIE, M.B., F.R.C.S.E., to be Captain, whose services will be available on mobilization.

1st Northumbrian Field Ambulance.—EDWARD TURTON, late Captain 5th Cyclist Battalion, East Yorkshire Regiment, to be Major, temporary.

1st Highland Field Ambulance.—Captain PETER HOWIE, M.B., to be temporary Major; JOHN M. CHRYSTIE to be Lieutenant.

3rd Scottish General Hospital.—DAVID WATSON, M.B., to be Captain, whose services will be available on mobilization.

Attached to Units other than Medical Units.—To be Majors: Surgeon-Captain JAMES W. COOK, M.B., from the 5th Battalion Lancashire Fusiliers; Captain RICHARD T. TURNER, M.D.; PALEMON BEST, late Captain, Cornwall (Duke of Cornwall's) R.G.A. Captain GEORGE C. JEAFFRESON resigns his commission on account of ill health. Captain LAWRENCE C. V. HARDWICKE, M.B., is restored to the establishment. JOHN E. RANSFORD to be Lieutenant.

Vital Statistics.

ENGLISH URBAN MORTALITY IN THE FIRST QUARTER OF 1915.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

IN the accompanying table will be found summarized the vital statistics of ninety-six of the largest English towns, based upon the Registrar-General's weekly returns for the first quarter of 1915. The 114,334 births registered in these towns during the thirteen weeks ending April 3rd were equal to an annual rate of 25.3 per 1,000 of the population, estimated at 18,134,239 persons in the middle of last year. In London the birth-rate last quarter was 25.1 per 1,000, while among the other large towns it ranged from 13.5 in Eastbourne, 13.6 in Bournemouth, 14.0 in Southport, 14.4 in Blackpool, 14.5 in Hastings, 15.2 in Bath, 16.5 in Hornsey, and 16.9 in Southend-on-Sea, to 32.7 in Stockton-on-Tees, 32.8 in Gateshead, 33.0 in South Shields, 33.1 in Dudley and in Middlesbrough, 34.7 in St. Helens, and 35.0 in Rhondda.

Analysis of the Vital Statistics of Ninety-six of the Largest English Towns during the First Quarter of 1915.

TOWNS.	Population estimated to the middle of Year 1914.	Births.	Deaths.	Annual rate per 1,000 Living.		Deaths from Principal Infectious Diseases.							Deaths under 1 year to 1,000 Births.	Uncertified Deaths per Cent. of Total.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (under 2 years.)		
96 Great Towns	18,134,239	114.334	88,444	25.3	19.6	177	3	3,782	371	1,520	890	945	125	0.9
London	4,516,612	28,240	23,159	25.1	20.6	37	3	1,120	100	378	199	234	111	0.1
Croydon	181,956	964	808	21.3	17.8	3	—	44	3	3	4	7	114	—
Wimbledon	59,598	283	209	19.0	14.1	—	—	7	1	2	2	1	85	—
Ealing	71,030	302	292	17.1	16.5	1	—	12	1	12	3	4	99	—
Acton	64,369	430	240	25.8	15.0	—	—	17	—	5	5	4	128	—
Willesden	167,922	948	716	22.6	17.1	1	—	32	3	32	5	6	138	—
Hornsey	88,953	365	338	16.5	15.2	—	—	13	2	3	4	7	112	—
Tottenham	149,495	976	631	26.2	16.9	—	—	71	6	12	6	3	106	—
Edmonton	71,024	480	253	27.1	14.3	—	—	12	2	2	5	1	110	—
Enfield	61,069	355	243	23.3	16.0	—	—	25	3	3	—	2	107	—
West Ham	296,570	2,313	1,402	31.3	19.0	1	—	64	6	13	17	8	102	—
East Ham	146,526	826	510	22.6	14.0	—	—	8	4	2	3	—	87	—
Leyton	133,719	690	448	20.7	13.4	—	—	22	1	7	2	2	103	—
Walthamstow	134,825	751	525	22.3	15.6	—	—	39	2	9	5	2	111	—
Ilford	91,041	405	273	17.8	12.0	—	—	8	—	—	2	2	84	0.7
Gillingham	55,559	301	331	21.7	23.9	—	—	2	—	9	4	3	130	1.2
Hastings	59,620	216	330	14.5	22.2	—	—	5	—	6	1	1	190	—
Eastbourne	55,662	187	254	13.5	18.3	—	—	2	—	6	7	—	134	0.4
Brighton	133,936	594	798	17.8	23.9	6	—	4	—	30	1	—	143	0.1
Portsmouth	245,827	1,499	1,149	24.5	18.7	4	—	62	4	20	15	7	106	0.3
Bournemouth	85,904	291	377	13.6	17.6	—	—	2	1	3	4	—	127	—
Southampton	123,948	705	531	22.8	17.2	—	—	—	—	10	19	6	91	—
Reading	90,083	462	428	20.6	19.1	3	—	—	1	24	2	3	119	2.3
Oxford	54,339	242	212	17.9	15.6	—	—	—	—	1	2	—	103	—
Northampton	91,123	455	571	20.0	25.1	2	—	70	1	4	9	4	193	0.7
Cambridge	57,676	290	396	20.2	27.5	—	—	50	—	1	3	—	152	—
Southend-on-Sea	83,908	353	346	16.9	16.5	—	—	5	1	8	1	3	127	4.9
Ipswich	76,472	436	410	22.9	21.5	—	—	1	7	10	2	—	119	—
Great Yarmouth	57,502	318	319	22.2	22.3	—	—	2	—	2	4	5	167	—
Norwich	124,107	707	607	22.8	19.6	—	—	4	2	2	7	3	139	0.2
Swindon	52,750	290	189	22.1	14.4	—	—	—	—	4	1	2	93	—
Exeter	60,788	314	310	20.7	20.5	1	—	—	—	—	—	3	86	0.3
Plymouth	212,421	1,223	1,151	23.1	21.7	6	—	113	3	9	12	8	144	—
Bath	70,292	267	352	15.2	20.1	—	—	—	1	8	1	1	142	—
Bristol	363,312	1,982	1,899	21.9	21.0	2	—	26	7	103	18	24	156	0.1
Gloucester	50,759	307	221	24.3	17.5	—	—	—	—	13	5	4	130	1.4
Stoke-on-Trent	241,430	1,818	1,169	30.2	19.4	6	—	22	1	28	21	21	159	2.5
Wolverhampton	95,725	662	541	27.7	22.7	—	—	67	1	4	2	8	165	—
Walsall	94,093	749	428	31.9	18.2	—	—	12	—	5	6	7	143	0.5
West Bromwich	69,430	555	380	32.1	22.0	—	—	31	—	—	5	12	164	2.6
Dudley	51,895	428	235	33.1	18.2	—	—	6	2	—	—	4	131	3.0
Birmingham	868,430	5,936	3,940	27.4	18.2	3	—	258	20	19	57	67	119	4.1
Smethwick	76,314	503	289	26.4	15.2	—	—	37	—	1	2	3	105	—
Coventry	119,003	752	458	25.3	15.4	4	—	17	4	—	4	5	88	2.2
Leicester	232,664	1,260	981	21.7	16.9	1	—	—	1	5	8	13	134	0.5
Lincoln	60,243	338	271	22.5	18.0	1	—	2	—	—	2	1	121	0.7
Grimsby	78,667	532	374	27.1	19.1	1	—	42	—	2	3	2	124	0.3
Nottingham	266,918	1,576	1,220	23.7	18.3	2	—	—	3	22	5	10	139	0.7
Derby	126,389	781	549	24.8	17.4	—	—	4	4	2	6	4	91	—
Stockport	126,040	701	548	22.3	17.4	1	—	—	1	3	1	6	111	0.4
Birkenhead	137,710	1,045	630	30.4	18.4	1	—	5	—	9	7	10	102	0.2
Wallasey	87,175	463	349	21.3	16.1	3	—	4	1	5	8	2	108	—
Liverpool	767,992	5,905	4,061	30.8	21.2	4	—	94	15	83	49	62	123	2.9
Bootle	73,230	547	377	30.0	20.6	1	—	5	3	32	3	3	152	4.8
St. Helens	100,775	873	534	34.7	21.3	2	—	78	1	13	5	9	128	3.7
Southport	71,747	251	340	14.0	19.0	—	—	1	2	1	—	1	104	3.2
Wigan	91,491	715	510	31.3	22.4	2	—	47	9	28	2	9	182	—
Warrington	74,923	552	347	29.6	18.6	—	—	13	6	16	12	4	116	3.7
Bolton	185,247	1,039	807	22.5	17.5	6	—	38	2	11	14	8	130	0.9
Bury	59,213	281	297	19.0	20.1	—	—	—	—	1	1	3	114	2.0
Manchester	738,538	4,676	3,590	25.4	19.5	14	—	155	23	13	48	43	127	0.4
Salford	234,975	1,508	1,192	25.7	20.3	4	—	123	9	15	11	13	133	—
Oldham	151,044	862	818	22.9	21.7	1	—	17	4	5	4	17	146	—
Rochdale	94,320	450	413	19.1	17.6	3	—	—	—	—	6	1	118	2.7
Burnley	110,040	583	500	21.3	18.2	1	—	—	—	1	4	11	153	0.6
Blackburn	134,387	695	648	20.7	19.3	4	—	1	1	25	2	10	180	1.1
Preston	118,514	710	707	24.0	23.9	1	—	42	10	11	12	9	158	4.1
Blackpool	62,206	223	321	14.4	20.7	—	—	9	1	1	—	—	135	5.0
Barrow-in-Furness	65,921	508	307	30.9	18.7	1	—	3	1	1	5	2	122	2.9
Huddersfield	112,265	528	550	18.9	19.7	—	—	16	—	5	5	2	102	0.6
Halifax	100,373	449	506	17.9	20.2	1	—	6	2	2	7	5	105	0.8
Bradford	291,482	1,376	1,294	18.9	17.8	5	—	—	8	13	17	8	121	0.1
Leeds	459,260	2,768	2,365	24.2	20.7	4	—	23	8	72	14	26	129	0.0
Dewsbury	54,083	293	271	21.7	20.1	1	—	—	1	5	1	—	116	—
Wakefield	52,643	304	253	23.2	19.3	1	—	8	—	4	1	1	118	0.4
Barnsley	53,929	414	232	30.8	17.3	—	—	5	—	8	2	6	159	0.9
Sheffield	477,228	3,324	2,202	27.9	18.5	4	—	155	11	10	34	28	117	0.6
Rotherham	65,313	497	348	30.5	21.4	1	—	37	2	12	11	3	139	1.7
York	83,802	520	418	24.9	20.0	2	—	3	1	3	2	2	104	—
Hull	291,118	1,965	1,313	27.1	18.1	3	—	6	1	29	7	10	110	0.8
Middlesbrough	126,452	1,042	645	33.1	20.5	2	—	13	4	11	14	20	128	0.6
Darlington	59,500	411	360	27.7	24.3	1	—	71	4	1	7	3	122	6.1
Stockton-on-Tees	59,311	483	351	32.7	23.7	—	—	34	1	3	7	7	135	1.7
West Hartlepool	64,374	482	330	30.0	20.6	1	—	44	—	3	—	2	156	1.8
Sunderland	152,927	1,234	876	32.4	23.0	—	—	13	2	29	1	15	190	1.0
South Shields	111,357	916	594	33.0	21.4	2	—	3	3	6	1	3	147	3.5
Gateshead	119,362	976	709	32.8	23.8	4	—	79	3	10	6	7	155	5.8
Newcastle-on-Tyne	273,415	2,011	1,594	29.5	23.4	5	—	160	16	30	10	12	171	0.3
Tynemouth	61,408	421	322	27.5	21.0	3	—	7	3	16	1	—	159	4.0
Carlisle	52,813	324	310	24.6	23.5	—	—	15	—	11	2	2	182	2.9
Newport (Mon.)	89,404	653	375	29.3	16.8	1	—	12	2	1	2	6	116	0.3
Cardiff	188,495	1,290	837	27.4	17.8	—	—	2	2	13	18	5	98	—
Rhondda	166,365	1,450	667	35.0	16.1	1	—	7	7	34	10	15	128	—
Merthyr Tydfil	85,082	626	571	29.5	26.9	—	—	77	3	51	2	5	244	0.2
Aberdare	53,427	428	262	32.1	19.7	1	—	11	—	14	4	4	180	0.4
Swansea	121,665	905	530	29.8	17.5	—	—	—	—	6	9	8	122	—

The 88,444 deaths in these towns during the period under notice were equal to an annual rate of 19.6 per 1,000; in London the death-rate was 20.6 per 1,000, while among the other towns the lowest rates were 12.0 in Ilford, 13.4 in Leyton, 14.0 in East Ham, 14.1 in Wimbledon, 14.3 in Edmonton, and 14.4 in Swindon, and the highest rates were 23.9 in Gillingham, in Brighton, and in Preston, 24.3 in Darlington, 25.1 in Northampton, 26.9 in Merthyr Tydfil, and 27.5 in Cambridge.

The deaths included 177 from enteric fever, 3 from small-pox, 3,782 from measles, 371 from scarlet fever, 1,520 from whooping-cough, 890 from diphtheria, and 945 among children under 2 years of age from diarrhoea and enteritis. The 3 deaths from small-pox belonged to London. The 177 deaths from enteric fever corresponded to an annual rate of 0.04 per 1,000; in London the death-rate from this disease was 0.03 per 1,000, while among the other large towns the highest rates were 0.13 in Reading, Coventry, Bolton, Rochdale, and Gateshead, 0.14 in Wallasey, 0.18 in Brighton, 0.20 in Tynemouth, and 0.21 in Liverpool. The 3,782 fatal cases of measles were equal to an annual rate of 0.84 per 1,000; in London the rate was 0.99 per 1,000, and it ranged upwards to 2.74 in West Hartlepool, 2.81 in Wolverhampton, 3.08 in Northampton, 3.10 in St. Helens, 3.48 in Cambridge, 3.63 in Merthyr Tydfil, and 4.79 in Darlington. The 371 deaths from scarlet fever were equal to a rate of 0.08 per 1,000; in London the scarlet fever death-rate was 0.09 per 1,000, while among the other towns the highest death-rates from this disease were 0.23 in Newcastle-on-Tyne, 0.27 in Darlington, 0.32 in Warrington, 0.34 in Preston, 0.37 in Ipswich, and 0.39 in Wigan. The 1,520 fatal cases of whooping-cough corresponded to an annual death-rate of 0.34 per 1,000, the rate in London being equal to the mean rate for all the large towns; the highest rates were 1.03 in Gloucester, 1.05 in Tynemouth and in Aberdare, 1.07 in Reading, 1.14 in Bristol, 1.23 in Wigan, 1.75 in Bootle, and 2.40 in Merthyr Tydfil. The 890 deaths from diphtheria were equal to an annual rate of 0.20 per 1,000; in London the rate was 0.18 per 1,000, while among the other large towns it ranged upwards to 0.41 in Preston, 0.44 in Middlesbrough, 0.47 in Darlington and in Stockton-on-Tees, 0.50 in Eastbourne, 0.61 in Southampton, 0.64 in Warrington, and 0.68 in Rotherham. The 945 fatal cases of diarrhoea and enteritis among children under 2 years of age were in the proportion of 8.27 to 1,000 births registered during the quarter; in London the proportion was 8.29 per 1,000, while among the other large towns the proportions ranged upwards to 15.72 in Great Yarmouth, 18.87 in Burnley, 19.18 in Hornsey, 19.19 in Middlesbrough, 19.72 in Oldham, and 21.62 in West Bromwich.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to the births registered during the quarter, was equal to 125 per 1,000; in London the rate of infant mortality was 111 per 1,000, while among the other large towns it ranged from 84 in Ilford, 85 in Wimbledon, 86 in Exeter, 87 in East Ham, 88 in Coventry, 91 in Southampton and in Derby, and 93 in Swindon, to 180 in Blackburn and in Aberdare, 182 in Wigan and in Carlisle, 190 in Hastings and in Sunderland, 193 in Northampton, and 244 in Merthyr Tydfil.

The causes of 762, or 0.9 per cent., of the deaths registered in the ninety-six towns last quarter were not certified either by a registered medical practitioner or by a coroner. In thirty-five of the towns the causes of all the deaths were duly certified; among the other towns the highest proportions per cent. of uncertified deaths were 4.0 in Tynemouth, 4.1 in Birmingham and in Preston, 4.8 in Bootle, 4.9 in Southend-on-Sea, 5.0 in Blackpool, 5.8 in Gateshead, and 6.1 in Darlington.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE Registrar-General has just issued his return relating to the births and deaths in the first quarter of the year, and to the marriages during the three months ending December last. The marriage-rate during that period was equal to 17.0 per 1,000, which was 0.4 per 1,000 above the mean rate in the corresponding period of the ten preceding years.

The 221,447 births registered in England and Wales last quarter were equal to an annual rate of 24.1 per 1,000 of the population, or 1.8 per 1,000 less than the mean rate in the ten preceding first quarters. The birth-rates in the several counties last quarter ranged from 16.8 in Cardiganshire, 16.9 in Sussex, 17.8 in Montgomeryshire, 18.0 in Dorsetshire, 18.2 in Carnarvonshire, 18.3 in Westmorland, and 18.5 in Oxfordshire, to 27.9 in Northumberland, 28.3 in Flintshire, 28.5 in Staffordshire, 30.9 in Glamorganshire, 31.3 in Monmouthshire, and 32.0 in Durham. In ninety-six of the largest towns the birth-rate averaged 25.3 per 1,000, and ranged from 13.5 in Eastbourne, 13.6 in Bournemouth, 14.0 in Southport, 14.4 in Blackpool, 14.5 in Hastings, to 32.7 in Stockton-on-Tees, 32.8 in Gateshead, 33.0 in South Shields, 33.1 in Dudley and in Middlesbrough, 34.7 in St. Helens, and 35.0 in Rhondda; in London the birth-rate was 25.1 per 1,000.

The excess of births over deaths last quarter was only 44,222, against 77,958, 70,088, and 71,140 in the corresponding quarters of the three preceding years. From a return issued by the Board of Trade it appears that the passenger movement between the United Kingdom and places outside Europe resulted in a net balance inward of 2,009 British and a balance outward of 130 alien passengers; the movement between the United Kingdom and the Continent of Europe resulted in an inward balance of 9,808 passengers; thus there was a net balance inward of 11,687 persons.

The 177,225 deaths registered in England and Wales during the quarter under notice were equal to an annual rate of 19.3 per 1,000; in the corresponding quarters of the ten preceding years the rate averaged 16.9 per 1,000 The death-rates in the several counties last quarter ranged from 15.3 in Middlesex, 15.3 in Radnorshire, 16.3 in Derbyshire, 17.0 in Westmorland, 17.1 in Leicestershire, and 17.2 in Essex, to 22.1 in Pembrokeshire, 22.2 in Merionethshire, 22.5 in Huntingdonshire and in Cambridgeshire, 23.5 in Cardiganshire, and 25.6 in Bedfordshire. In ninety-six of the largest towns the death-rate averaged 19.6 per 1,000, and ranged from 12.0 in Ilford, 13.4 in Leyton, 14.0 in East Ham, 14.1 in Wimbledon, 14.3 in Edmonton, and 14.4 in Swindon, to 23.9 in Gillingham, in Brighton, and in Preston, 24.3 in Darlington, 25.1 in Northampton, 26.9 in Merthyr Tydfil, and 27.5 in Cambridge; the death-rate in London was 20.6 per 1,000.

The 177,225 deaths from all causes last quarter included 363 which were attributed to enteric fever, 5 to small-pox, 5,690 to measles, 705 to scarlet fever, 3,012 to whooping-cough, 1,720 to diphtheria, and 1,600 (among children under 2 years of age) to diarrhoea and enteritis. The mortality from measles was nearly 70 per cent. above the average; that from whooping-cough and diphtheria was slightly above the average, while that from scarlet fever and enteric fever was below the average.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 128 per 1,000, which was 6 per 1,000 above the average for the corresponding quarters of the ten preceding years. Among the several counties the rates of infant mortality ranged from 74 in Radnorshire, 92 in Rutlandshire, 97 in Essex, 104 in Surrey, and 105 in Huntingdonshire, to 160 in Cumberland, Cardiganshire, and Denbighshire, 167 in Monmouthshire, 168 in Merionethshire, and 178 in Anglesey. In the ninety-six large towns the rate of infant mortality averaged 125 per 1,000, and ranged from 84 in Ilford, 85 in Wimbledon, 86 in Exeter, 87 in East Ham, and 88 in Coventry, to 182 in Wigan and in Carlisle, 190 in Hastings and in Sunderland, 193 in Northampton, and 244 in Merthyr Tydfil.

The death-rate among persons aged 1 to 65 years of age was equal to 10.3 per 1,000 of the population at this group of ages: in the ninety-six large towns the death-rates at these ages averaged 11.3 per 1,000, and ranged from 6.1 in Ilford, 6.7 in Oxford, 7.3 in Leyton, and 7.5 in Wimbledon, in Acton, and in Hornsey, to 15.0 in Darlington, 15.2 in Gateshead, 16.5 in Cambridge, 16.9 in Merthyr Tydfil, and 17.0 in Gillingham. Among persons aged 65 years and upwards the death-rate was 126.7 per 1,000, and averaged 131.1 per 1,000 in the ninety-six towns, among which the rates ranged from 82.7 in Edmonton, 93.8 in Leyton, 96.7 in Smethwick, 102.9 in Bournemouth, 104.5 in Walsall, and 106.6 in Gloucester.

The mean temperature of the air last quarter differed but little from the average; the rainfall was considerably in excess; but the duration of bright sunshine approximated closely to the average.

HEALTH OF ENGLISH TOWNS.

IN ninety-six of the largest English towns 8,049 births and 4,697 deaths were registered during the week ended Saturday, June 12th. The annual rate of mortality in these towns, which had been 15.4, 13.7, and 13.9 per 1,000 in the three preceding weeks, fell to 13.5 per 1,000 in the week under notice. In London the death-rate was equal to 12.7, while among the ninety-five other large towns it ranged from 4.4 in Hastings, 6.6 in Eastbourne, 6.8 in Enfield, 7.0 in Hornsey, 7.6 in Newport (Mon.), and 7.7 in Oxford, to 19.5 in West Bromwich, 20.1 in Blackpool, 21.1 in Bury, 23.5 in Cambridge, 24.3 in Middlesbrough, and 29.1 in Gillingham. Measles caused a death-rate of 2.3 in Wigan, 2.4 in Sunderland, 2.5 in Derby, 3.3 in Sheffield, 4.5 in West Bromwich, and 6.2 in Middlesbrough, and whooping-cough of 2.3 in Wigan. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 34, or 0.7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner; of this number, 9 were recorded in Birmingham, 3 in Liverpool, and 2 each in Gillingham, St. Helens, Preston, South Shields, and Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,286, 2,252, and 2,267 at the end of the three preceding weeks, rose to 2,336 on Saturday, June 12th; 330 new cases were admitted during the week, against 320, 257, and 327 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN the sixteen largest Scottish towns 1,123 births and 806 deaths were registered during the week ended Saturday, June 12th. The annual rate of mortality in these towns, which had been 16.1, 18.2, and 18.9 per 1,000 in the three preceding weeks, fell to 17.9 in the week under notice, but was 4.4 per 1,000 above the rate recorded in the ninety-six large English towns. Among the several towns the death-rate ranged from 7.1 in Kilmarnock, 10.0 in Motherwell, and 12.4 in Ayr, to 20.9 in Dundee, 22.0 in Leith, and 23.7 in Aberdeen. The mortality from the principal epidemic diseases averaged 3.3 per 1,000, and was highest in Clydebank and Aberdeen. The 396 deaths from all causes in Glasgow included 52 from measles, 23 from whooping-cough, 6 from scarlet fever, 5 from infantile diarrhoea, and 4 from diphtheria. Seventeen deaths from measles were recorded in Aberdeen and 3 in Edinburgh; from scarlet fever 3 deaths in Edinburgh and 3 in Aberdeen; and from whooping-cough 5 deaths in Edinburgh and 3 in Dundee.

Vacancies and Appointments.

NOTICES REGARDING APPOINTMENTS.—Attention is called to a Notice (see Index to Advertisements—Important Notice re Appointments) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

VACANCIES.

ABERDEEN UNIVERSITY.—Additional Examiners in (*a*) Anatomy, (*b*) Physiology.

ASHTON-UNDER-LYNE UNION.—Resident Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

BEXLEY: LONDON COUNTY ASYLUM.—Locumtenent Medical Officer. Salary, £6 6s. a week.

BIRKENHEAD BOROUGH HOSPITAL.—House-Surgeons. Salary, £300 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House-Surgeon. Salary, £100 per annum, and £5 laundry allowance.

BIRMINGHAM: FIRST SOUTH GENERAL HOSPITAL.—Resident Officers.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £250 per annum.

BLACKPOOL COUNTY BOROUGH.—Part-time Clinical Tuberculosis Officer.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House-Surgeon. Salary, £100 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £230 per annum.

BRISTOL: BRISLINGTON HOUSE PRIVATE ASYLUM.—Assistant Medical Officer. Salary, £200 per annum.

BRISTOL ROYAL INFIRMARY.—Assistant to the Ear, Throat, and Nose Department.

BROOK WAR HOSPITAL, Shooter's Hill, Woolwich.—Resident Assistant Surgeons and Physicians. Terms, £1 daily.

BROOKE HOUSE ASYLUM, Clapton, N.E.—Assistant Medical Officer. Salary, £200 per annum.

BURY INFIRMARY.—Senior and Junior House-Surgeons. Salary, £175 and £150 per annum respectively.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

CHELSEA INFIRMARY, Cale Street, S.W.—Assistant Medical Officer. Salary, £300 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Third House Surgeon. Salary, £6 6s. per week.

DORSET COUNTY HOSPITAL, Dorchester. — House-Surgeon. Salary, £150 per annum.

EDINBURGH: HOSPITAL FOR WOMEN AND CHILDREN.—Resident Medical Officer (female). Salary, £50 per annum.

EDINBURGH PARISH COUNCIL.—Second Medical Officer for Craiglockhart Poorhouse and Hospital. Salary, £150 per annum.

ESSEX EDUCATION COMMITTEE.—Two Lady School Medical Inspectors. Salary, £300 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Clinical Assistants in Out-Patient Departments.

FOLKESTONE: ROYAL VICTORIA HOSPITAL. House-Surgeon.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL. — House-Surgeon. Salary, £150 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—(1) Assistant Resident Medical Officer; salary, £100 per annum. (2) House-Physician; honorarium, £30 for six months.

INVERNESS NORTHERN INFIRMARY.—House-Surgeon. Salary, £150 per annum.

LEAMINGTON SPA: WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Second Resident Medical Officer. Salary, £200 per annum.

MACCLESFIELD GENERAL HOSPITAL.—House-Surgeon. Salary, £150 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £250, increasing to £300, and, upon promotion, to £450

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £120 per annum.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—(1) Resident Medical Officer. (2) Laboratory Assistant. Salary, £80 and £100 per annum respectively.

NOTTINGHAM GENERAL HOSPITAL. — Senior and Assistant House-Physicians. Salary, £300 and £250 per annum respectively.

OLDHAM COUNTY BOROUGH.—Assistant Schools Medical Officer. Salary, £325, rising to £400.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary, £90 per annum and honorarium of £10 on completion of six months' service.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—(1) House-Surgeon. (2) House-Physician.

PORTSMOUTH PARISH.—Second Assistant Medical Officer (female) for the Workhouse Infirmary, etc. Salary, £150 per annum, rising to £160.

RHONDDA URBAN DISTRICT COUNCIL.—Temporary Assistant Medical Officer of Health and School Medical Officer. Salary, £350 per annum.

SALFORD COUNTY BOROUGH.—Medical Officer for Maternity and Child Welfare Work. Salary, £300 per annum.

SALISBURY GENERAL INFIRMARY. — (1) House-Surgeon; (2) Assistant House-Surgeon. Salary, £150 and £100 per annum respectively.

SCARBOROUGH HOSPITAL AND DISPENSARY. — Senior and Junior House-Surgeons. Salary, £100 and £80 per annum respectively.

SHEFFIELD ROYAL INFIRMARY.—(1) House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum.

SHEFFIELD: WHARNCLIFFE WAR HOSPITAL. — Resident Medical Officers.

SOUTHAMPTON PARISH INFIRMARY. — Resident Assistant Medical Officer. Salary, £250 per annum.

STAFFORDSHIRE EDUCATION COMMITTEE.—Assistant School Medical Inspectors (females). Salary, £300–£350 per annum.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford. — House-Surgeon. Salary, £250 per annum.

STOCKPORT INFIRMARY.—Senior House-Surgeon. Salary, £200 per annum.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—(1) Two House-Surgeons; (2) House-Physician. Salary, £150 per annum each.

SUNDERLAND: ROYAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

SUNDERLAND: ROYAL INFIRMARY CHILDREN'S HOSPITAL.—Resident Medical Officer (lady). Salary, £100 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Physician. Salary, £200 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £250 per annum.

UIG PARISH COUNCIL.—Medical Officer and Public Vaccinator. Minimum salary of £300 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House-Surgeon and Anaesthetist. Salary, £150 per annum.

WALTON-ON-THAMES: NEW ZEALAND AUXILIARY HOSPITAL.—Two Visiting Surgeons. Honorarium, £1 1s. a visit and 10s. 6d. expenses.

WARRINGTON INFIRMARY AND DISPENSARY. — Senior and Junior House-Surgeons. Salary, £180 and £120 per annum respectively.

WELSH METROPOLITAN WAR HOSPITAL, Whitchurch, near Cardiff.—Pathologist and Bacteriologist. Terms, £1 per diem.

WEST BROMWICH AND DISTRICT HOSPITAL. — (1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £150 and £120 per annum respectively.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—(1) Resident Medical Officer; (2) House-Physicians and House-Surgeons. Salary for (1) £160 per annum, and for (2) £120 and £100 per annum respectively.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £150 per annum.

WINSLEY SANATORIUM FOR CONSUMPTION. — Assistant Resident Medical Officer. Salary, £250 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Buckhaven (Fifeshire), Kirkham (Lancashire), Market Bosworth (Leicestershire), Rothes (Elginshire).

To ensure notice in this column—which is compiled from our advertisement columns, where full particulars will be found—it is necessary that advertisements should be received not later than the first post on Wednesday morning. Persons interested should refer also to the Index to Advertisements which follows the Table of Contents in the JOURNAL.

APPOINTMENTS.

BAIRD, W. J., M.B., Ch.B.Edin., District Medical Officer of the Wellingborough Union.

DICKINS, S J O., M.D.Brux., M.R C S., L.R.C.P., District Medical Officer of the Horsham Union.

HARRIS, D. R., M.R.C.S., L.R.C.P., Medical Officer of the Children's Home of the Falmouth Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **5s.**, *which sum should be forwarded in Post Office Orders or Stamps with the notice not later than the first post Wednesday morning in order to ensure insertion in the current issue.*

DEATHS.

BRADSHAW.—On June 14th, at Oatlands, Paignton, aged 27 years, Kenneth James Charles Bradshaw, M.B., elder son of Dr. J. C. Bradshaw, Donard Lodge, Walton, Liverpool.

BRYSON.—At Peking, on May 18th, Ian Carruthers, the dearly beloved and only son of Dr. and Mrs. A. Carruthers Bryson, aged 3 years.

BRYSON.—At Peking, on May 24th, Daisy Isabel, wife of Dr. A. Carruthers Bryson, aged 34.

DAVIES.—On June 12th, 1915, at 23, Talbot Street, Southport, William Davies, L.R.C.P. and L.R.C S.Ed., in his 74th year.

FRANKLIN.—On April 27th, at Gwalior, Central India, Dorothy Jessie, the dearly loved wife of Major G. D. Franklin, Indian Medical Service.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W., 5 p.m.—Second Croonian Lecture by Surgeon-General Sir David Bruce, C.B., F.R S., A.M.S.: Trypanosomes causing Disease in Man and Domestic Animals in Central Africa.

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W., 5 p.m.—Third Croonian Lecture by Surgeon-General Sir David Bruce, C.B., F.R.S., A.M.S.

POST-GRADUATE COURSES AND LECTURES.

The following Post-graduate Courses will be given next week:

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.

NORTH-EAST LONDON POST-GRADUATE COLLEGE. — Prince of Wales's General Hospital, Tottenham, N.

[*Further particulars can be obtained on application to the Deans of the several institutions, or in some instances from our advertisement columns.*]

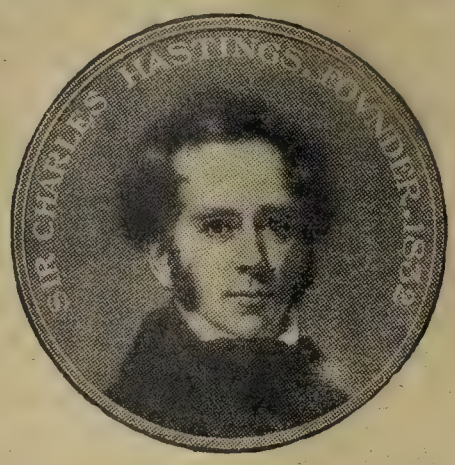
DIARY OF THE ASSOCIATION.

Date.		Meetings to b Held.
		JUNE.
22	Tues.	South-Eastern Counties Division (Edinburgh Branch) Newtown St. Boswells, 3 p.m.
		Tower Hamlets Division, Annual Meeting, 43, White Horse Street, Stepney, E., 3 p.m.
23	Wed.	London: Finance Committee, 2 p.m.
		Edinburgh Branch, Annual Meeting, Royal College of Physicians, 9, Queen Street, Edinburgh, 4 p.m.
		Newcastle-on-Tyne Division, Annual Meeting. Newcastle-on-Tyne, 8.30 p.m.
		Worcestershire and Herefordshire Branch, Annual Meeting, Hereford Hospital, 3 p.m.; Branch Council, 2.45 p.m.
24	Thur.	Staffordshire Branch, Annual Meeting, Lichfield, 5.15 p.m; Dinner, 6.30 p.m.
25	Fri.	Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C., 4 p.m.
26	Sat.	Munster Branch, Cork, 4.30 p.m.
29	Tues.	South-Western Branch, Plymouth, 3.30 p.m.
30	Wed.	London: Council, 2 p.m.
		Furness Division, Barrow-in-Furness, 3.15 p.m.
		JULY.
1	Thur.	Surrey Branch, 429, Strand, W.C., 4 p.m.
7	Wed.	Dorset and West Hants Branch, Sherborne, 3 p.m.; Council, 2.30 p.m.; Lunch, 1.30 p.m.
9	Fri.	East Yorkshire and North Lincolnshire Branch, Grimsby and District Hospital, 4.15 p.m.
23	Fri.	ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C., and following days, if necessary.

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The

British Medical Journal



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CONTENTS Page 1. **INDEX TO ADVERTISEMENTS Page 2.**

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Consulting Surgeon
to the London Hospital;
President, Second Congress of International Association of Urology.

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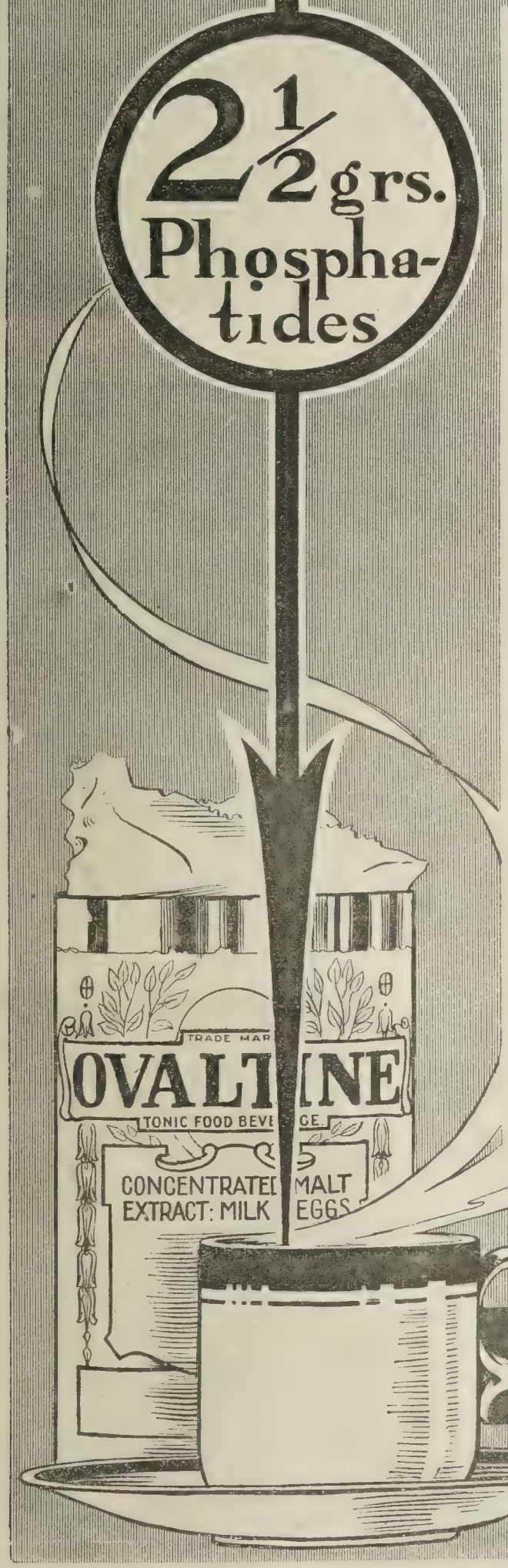
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By C. A. HOEFFTCKE,
21, Woodstock Street, Oxford Street, London, W.

To illustrate the usefulness of my apparatus for the Ambulatory treatment of recent fractures, the following case may be cited:—

A house surgeon of the L. H. rang me up, and also sent a note on Friday, 4/10/12, to say that a boy (æt 13) had been brought into the hospital the day before with a fractured femur (middle third), and that his senior surgeon wished to know if the patient could be made to walk without crutches by the following Wednesday (5 days later) for a lecture; if so, he could be sent on an ambulance to me at once (Friday). He duly arrived, and I took the cast on Friday afternoon. Not wishing to disappoint the surgeon, I managed to get the splint finished by Monday night, and the boy walked across the ward the following morning. On the Wednesday following the boy went by rail to a town 55 miles away for a lecture on the Ambulatory Treatment of Fractures with my Extension splint. When he was back in hospital he made himself generally useful in the ward, and was able to walk with comfort while the fracture was uniting; and within five weeks of the accident the splint was taken off, the bones being firmly united.

The fracture was an oblique one, and the bones overlapped by 1 inch (Fig. 1). When the splint was put on, the extension was applied and the 1 inch shortening reduced (Fig. 2). It was seen under the screen that the bones were still very much displaced, and by means of adjustment on the splint the bones were brought in good apposition (Fig. 3).

In applying the apparatus immediately after the accident the best results are obtained, for the leg does not atrophy, as is the case with the recumbent treatment. The movements in the joints are not impaired, the joints are exercised as usual, and the better circulation of the blood with the leg in the dependent position improves the formation of callus.

The appliance has mainly two objects—to transmit the weight of the body on to the tuber ischii and surrounding gluteal muscles and to keep the bones in perfect apposition. It is, moreover, distinctly beneficial to the patient's health to be enabled to dispense with compulsory lying up while the bones are uniting; besides which there are no troublesome after-effects so detrimental to the general health of the patient, and very often experienced where recumbent treatment has been resorted to.

Although the quickest and best results are obtained with recent fractures, this treatment is also successful in ununited fractures; or when the surgeon prefers to plate the bones, the cast may be taken before the bones are plated, and as soon as the wound has healed, the appliance put on, and the patient allowed to walk about without any fear of disturbing the plates or screws, while the fracture is uniting (see "The Operative Treatment of Badly United Fractures," *Lancet*, Nov. 4th, 1911; and "Operative Treatment of Fractures" (Second Edition) 1914, by Sir W. Arbuthnot Lane).

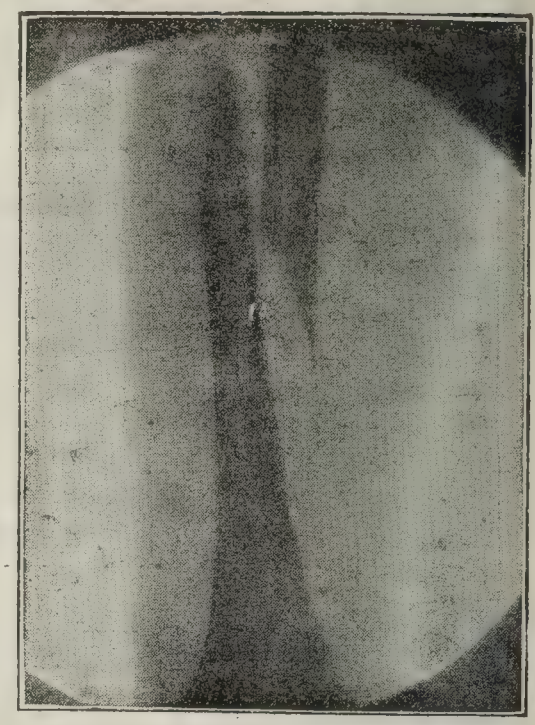


FIG. 1.
Showing bones overlapping.

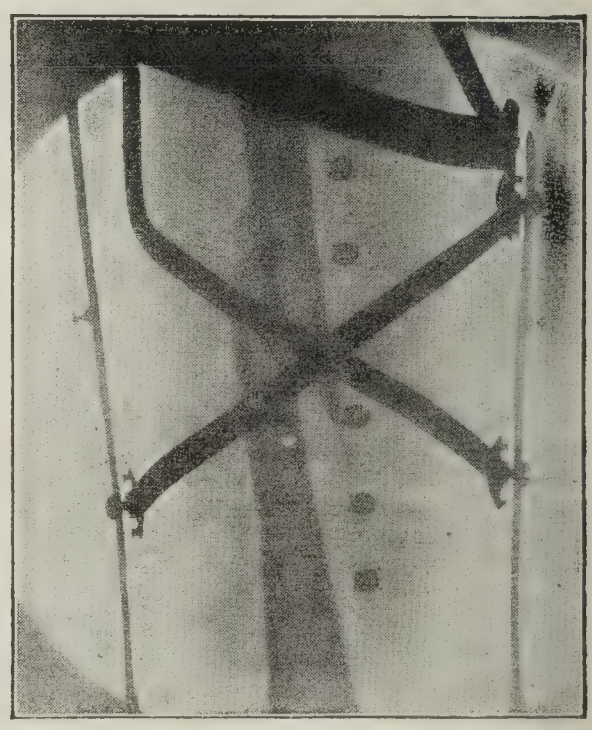


FIG. 2.
Showing shortening reduced by means of Extension appliance.

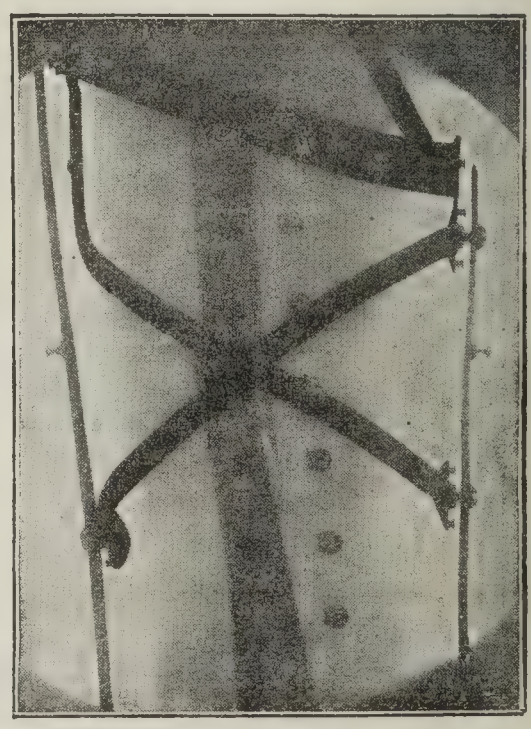


FIG. 3.
Showing bones in good apposition.

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Fat	23·8
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By C. A. HOEFFTCKE,

21, Woodstock Street, Oxford Street, London, W.

The principle of my appliance is to a certain extent the same as that of a Thomas's knee splint—that is to say, that the weight of the body is transmitted on the top of the appliance. Instead, however, of having an iron ring padded thickly under the tuber ischia and in the groin, I mould a thigh-piece to the exact shape of the ischial tuberosity and surrounding gluteal muscles, taking care to leave the perineum and pubic bone quite free, thus preventing the chafing so painful to the patient.

In addition to removing the weight of the body from the limb, extension is produced by means of an anklet consisting of a moulded piece of leather which fits the ankle joint like a glove, and fastens underneath the foot-piece of the apparatus by means of a strap and buckle. The thigh-piece is furnished with adjustable lateral bars jointed at knee; below the knee-joint the apparatus is furnished with an adjustable leg-piece which is also moulded exactly to the shape of the calf.

On the lower end of the lateral bars are a series of holes into which the steel pins, which are mounted on the lateral side bars of the foot-piece opposite the ankle-joint, can articulate. By pushing the thigh-piece upwards against the tuber ischia and pulling the foot-piece with anklet downwards the joints are extended, and extension is maintained by inserting the two pins of the foot-piece into the corresponding holes in the lateral bars, so that when the patient puts the weight of the body upon the apparatus there is an opening of a quarter of an inch between the heel of the foot and the sole of the foot-piece. In that way the weight of the body is entirely transferred on to the appliance, which is of such great importance in, for instance, tubercular and arthritic disease in hip and knee. The extension of the joints prevents the friction of the articular surfaces, and by this means the progress of the disease is arrested. In most cases a certain amount of movement in the joint is allowed, as while bending the knee the extension is still maintained. The use and exercise of the leg improves the circulation of the blood, and the usual swelling of the joint generally diminishes in a short time. Sinuses, which had been discharging for a long time while the joints were kept absolutely rigid, have closed up under this extension treatment, and while walking in my appliance there is no fear of atrophy in the limb as when a patient is put up in a Thomas's splint or kept in the recumbent position. The advantage of Hoefftcke's appliance in the treatment of a tubercular joint is that the patient can walk about without crutches or patten under the sound leg while the cure of the disease takes place.

In case of fracture the ends of the fractured bones are held in apposition while the movement in the joint is not impaired. The patient is therefore enabled to walk about while the fracture unites, and the natural movement of the leg (instead of being kept in the recumbent position) furthers the forming of callus, so that the fracture unites quicker than with the recumbent treatment.

Figs. 1, 2, 3. S. P. (æt. 7½ to 9½). In this case my splint was applied when the head of the femur was nearly absorbed. The boy walked about on the splint like any other healthy child, and the movement in the joint was in no way restricted, with the result that two years after the application the splint was taken off, no trace of tubercular disease remaining. The new head which formed, although a little flattened, was covered with good bone, and there was absolutely free movement in all directions.



Fig. 1. S. P. (æt. 7½). Active tubercular hip-joint.



Fig. 2. S. P. (æt. 7½). Head of femur partly absorbed.



Fig. 3. S. P. (æt. 9½). Head a little flattened, but articular surfaces re-covered. Free movement in every direction.

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Ambulatory Treatment of Fracture of the Limbs; Tuberculous and Arthritic Disease of Joints.

By C. A. HOEFFTCKE,
21, Woodstock Street, Oxford Street, London, W.

G. B. (æt. 12). Tubercular knee. When 15 months old knee began to swell; taken to —— Hospital; under the care of the senior surgeon. Put in plaster, and kept in hospital for three weeks. Afterwards attended the hospital as out-patient once in three weeks for six months. When the plaster was taken off there was a sinus underneath the knee in the popliteal region; for this reason he was re-admitted to the hospital. The first sinus healed up, but a second one broke out after being kept in the hospital for five or six months. The hamstring muscles contracted, and the leg could not be kept straight. An attempt was made to straighten the leg in order to put it in plaster, which, however, was not successful, the leg still remaining contracted to an angle of about 160 degrees. A third abscess formed below the infra patella bursa.

When three years of age the joint was opened from the inner side. When four years of age the limb was put in a leather splint which held the knee immovable. He wore the splint for three months and walked about, and had to be re-admitted to the Hospital. As another abscess formed on the outer side of the knee the joint was again opened and the articular surfaces scraped. A further attempt to straighten the knee was made later on, without effect however, as by that time there was close fibrous ankylosis. On and off the knee was in plaster until five years ago.

In May, 1911, he was sent to me by the surgeon and my Extension instrument applied. The angle of contraction was then 155 degrees. The tib. and fib. were dislocated backwards on the femur. Gradually the knee was straightened out with steel bar traction, until in about three months' time the leg was straight. Elastic traction was substituted and movement allowed. The extensors gradually became stronger, but there was still a certain amount of flexion to overcome when walking with the help of the elastic traction. From time to time the elastic traction was left off, and the patient allowed to straighten the knee, when walking, by his own efforts.

In 1912 the mother broke her leg, and as there was nobody at home to attend to her son the knee was allowed to contract again to about 165 degrees. After nine months the patient came up again and the appliance had to be lengthened and re-adjusted. The gradual straightening of the 15 degrees contraction was re-commenced, with the result that the knee was straight in about six weeks' time. Elastic traction was again substituted for steel bar traction.

The patient had considerable movement in the knee. He wore the splint until the end of December, 1914. The thigh muscles, especially the extensors and the calf muscles, are considerably developed; there is movement up to nearly a right angle, and the boy walks about vigorously. There is no pain in the knee; no heat; the skin over the closed sinuses, which was deeply drawn down in the soft tissues showing deep impressions, has loosened so that the skin surfaces over the joint now present quite a smooth appearance.

The radiograms of this case are extremely interesting:—

FIG. 1 (lateral view) shows the angle at 155 degrees, May, 1911; it also shows the dislocation backwards so commonly met with in diseased joints.

FIG. 2 shows the joint straight, end of July, 1911 (three months after); dislocation improved.

FIG. 3 (ant. post. view) shows the alteration in the bony structure through the disease, the surface of the condyle of the femur indented, while the surface of the condyle of the tibia is raised correspondingly.

FIG. 4 shows the repair to the inner condyle of the tibia, the raised surface being absorbed, and the linear aspect practically normal; the depression in the femur condyle still being noticeable. (Note the amount of extension between the condyles obtained by the appliance as compared with Fig. 3).

FIG. 5 shows the depression in the femur condyle filled in with new bone and cartilage (?) between the joint surfaces. (Some surgeons are of opinion that cartilage does not grow when once destroyed, but what is there in between now?) This radiograph was taken in the hospital without extension of any kind after the patient had been walking without the extension appliance for about two months.

FIG. 6. The angle of flexion now obtainable, which is still improving.

This case clearly shows the difference between the conservative and the Ambulatory Extension treatment. The conservative treatment is to prevent movement in diseased joints, with consequent slowing of the blood supply and atrophy of bones and tissues. The Ambulatory treatment allows of controlled movement in the joint and exercise of the muscles whilst walking, which promotes better circulation of the blood, sustains the general health, and secures anatomical rest in the joint through the extension. The poor circumstances of the mother of the patient, which did not admit of the boy being sent to the seaside or any other place for open-air treatment, shows that even in the most squalid surroundings, with poor food, a most ideal result can be achieved with the Ambulatory Extension treatment.

In this case, owing to partial neglect of the boy at some period of the treatment, the cure has taken a longer time than it should have done. When cases are treated right from the beginning—that is to say, when the joint is in an acute stage—the effect of the extension is to quieten down the inflammation in a very short time. In that case the usual time necessary to cure a tubercular joint, with good movement as the result, is from a year to a year and a half.



FIG. 1.—May, 1911. T.B. knee contracted to 155 degrees, dislocation backwards.



FIG. 2.—July, 1911. Knee straight, dislocation partly reduced.



FIG. 3.—May, 1911. Femur indented. Tibia raised on joint surfaces.



FIG. 4.—April, 1912. Protuberance on tibia condyle absorbed.



FIG. 5.—Feb., 1915. Condyles of femur and tibia; natural shape; cartilage (?) between.



FIG. 6.—Feb., 1915. Range of free movement; still increasing.

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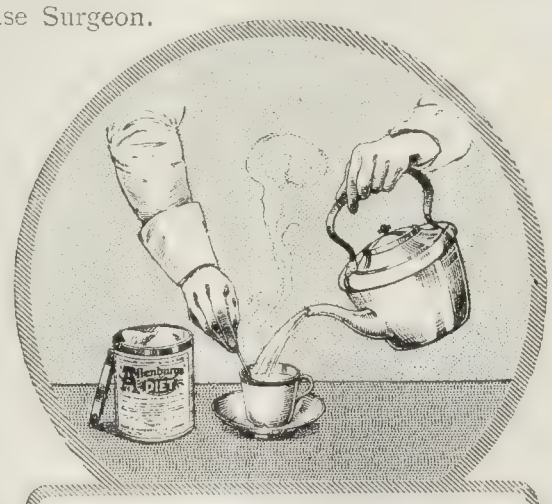
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HOEFFTCKE'S EXTENSION APPLIANCES.

Ambulatory Treatment of Fracture of the Limbs; Tuberculous and Arthritic Disease of Joints.

By C. A. HOEFFTCKE,
21, Woodstock Street, Oxford Street, London, W.

Now that so many men are returning from the fighting-line with un-united or mal-united fractures or bones shattered by shot or shell, I am glad to be able to offer the surgeons a great help in my Extension appliances and Extension table to deal with them.

The usual procedure is to take a plaster cast of the leg and at the same time, if necessary, improve the position of the fragments on the extension table and put the leg in plaster, which ensures complete immobilisation of the fracture and relaxation of the soft tissues while the splint is being made to the plaster cast. The patient is then enabled to walk about while the fracture is uniting in the improved position.

Some of the patients who were conveyed to private and military hospitals, like King Edward VII., St. Thomas's, Guy's, 4th London General, Princess Henry of Battenberg's, &c., &c., have been able to get about almost from the moment the splint was applied, after having been in the recumbent position for weeks and months, with very little prospect of ever getting union.

As soon as the patient is up and about the blood commences to circulate more freely, which acts as a vaccine and furthers the forming of callus. The exercise also leads to a more speedy recovery of the functions of the limb.

Most of the fractures which are now treated in this way are compound and comminuted, with septic wounds, and it is astonishing how soon in most cases the suppuration diminishes and wounds close up when the patients are enabled to be in the open air and walk about instead of having to be confined to bed. The main feature in this treatment is that the weight of the body is transmitted on to the upper part of the splint, the bearing point being the tuber ischii and surrounding gluteal muscles only, the perineum and pubic bone being left free from pressure. In that way no weight is transmitted through the leg. In addition, extension can be applied, which is necessary in cases where the bones are not in good position, by means of the Extension arrangement on the splint.

It is curious to note how in some cases, even when the bones are in good line, union is delayed, especially where there has been great shock. For instance, two men broke their legs in the Yeovil railway smash, August, 1913

The first case was that of Mr. J. C. B.— (æt. 32), who sustained a compound comminuted fracture of tib. and fib., caused by the seat and floor meeting in the railway collision on August 8th, 1913; two hours later he was liberated. The fragments were adjusted, and the leg put up in a wooden splint. One week later, put in plaster. Six weeks after, plaster renewed. Patient walked with the aid of crutches for one month. The X ray taken Nov. 10th showed very little callus and bones in bad position. Doctor advised plating; operation was performed Nov. 13th, 13 weeks after the accident. Three weeks later the leg was again put in plaster. On Dec. 15th another X ray was taken which showed only a very small deposit of callus. Hoefftche's Extension splint was then ordered, and on Christmas Eve the splint was applied, and the patient walked for the first time for 20 weeks without the aid of crutches. On Feb. 16th, 1914, an X ray photo was taken which showed that callus was forming nicely. On May 21st, the last X ray photo was taken and the bones showed then perfect bony union, dense and strong. During the treatment the muscles, which were atrophied, filled out and the leg assumed its natural appearance. The splint was adjusted from time to time to allow for the increase in the size of the leg. The bones were also in a better position. This patient had great confidence in the treatment and helped in every way.

Not so the second case, Mr. F. H. W—— (æt. 50), in the same railway accident, where the patient had both legs broken, he was very sceptical and pessimistic, and for the first few weeks put as many obstacles in the way of the treatment as he possibly could. In this case both legs were also pinned in between the seats, and the wood had to be sawn through to get him free. He also was treated with plaster and splints, but although the bones were in very much better position, no callus forming was observed in the radiograph even after four and a half months. Owing to both legs being broken he could not be on crutches in the upright position like the other patient while in plaster. My splints were put on Dec. 20th, 1913, and the bones were put in a better position in the splints without an anæsthetic. The ankles, which were stiffened up, were made moveable under gas with the splints on. The splints were interfered with for about three weeks by the patient until a consulting surgeon was called in and advised him not to interfere with the treatment. Two days after the consultation the patient walked about with sticks, and soon afterwards improved his walking powers considerably. An X ray was taken on Jan. 29th 1914. (See Fig.)

It showed the fragments in fairly good position and some callus thrown out. This gave great confidence to the patient, who after that time did everything in his power to make his case a success by taking as much exercise as possible. About a month afterwards he was enabled to walk short distances with one stick only. In the middle of September, 1914, both splints were taken off as the bones had united. There was no shortening, and perfect movement in both knees and ankle-joints.



Both legs fractured; bones in fairly good position; some callus showing.

Another case of a compound comminuted fracture where there was a lot of suppuration is described in the *British Medical Journal* of April 26th, 1913, and a very interesting one of a femur (mid. third) where ten pieces of necrosed bone amounting to three and a half inches of the shaft were removed and where the gap filled up with new bone, with the result of one and a quarter inches shortening only, is described in the *British Medical Journal* of Dec. 26th, 1914.

I am also pleased to state that I have made a reduction in my usual fees for officers which the War Office has accepted in cases where the surgeons find it necessary to employ my Extension splint.

I shall be pleased to answer any inquiries, but in no case do I supply my appliance without medical supervision.

As I still receive inquiries regarding my nationality, I am glad to take this opportunity of letting the medical profession know that I was a Dutchman, and that during a period of 90 years my grandfather, father, and, lastly, myself were attached to the University at Leiden, Holland. I returned to this country for the second time some 12 years ago and was naturalised here last February, so that I am now a British subject and always ready to do my duty to King and country and the medical profession.

(*To be continued in the last issue of every month of the present year.*)

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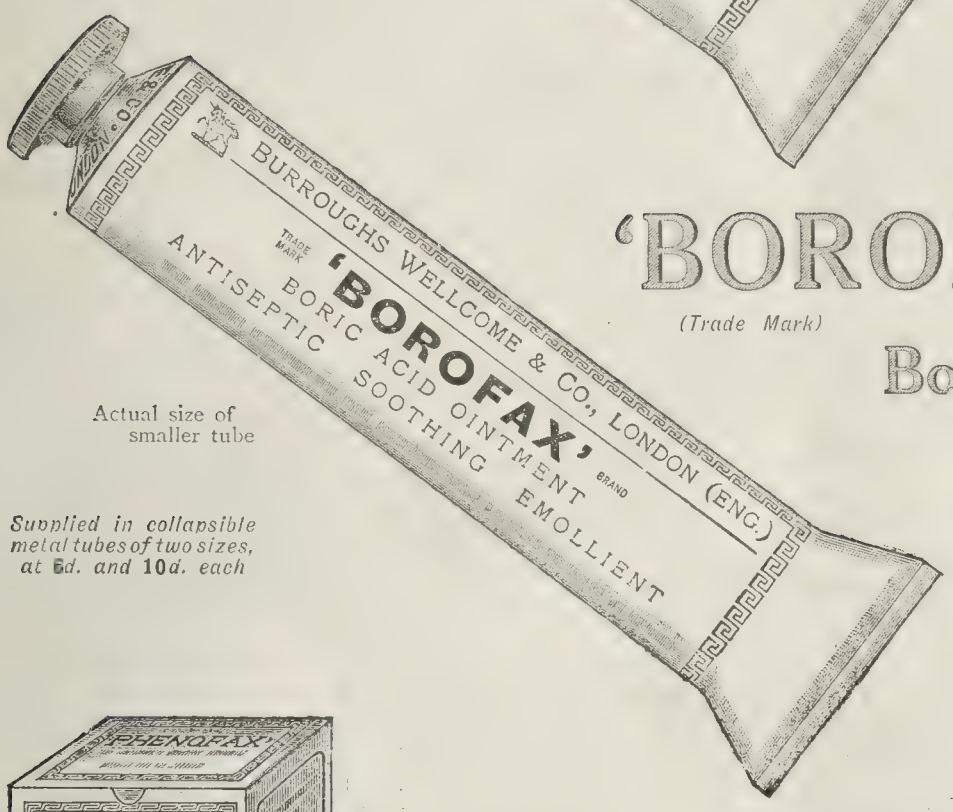
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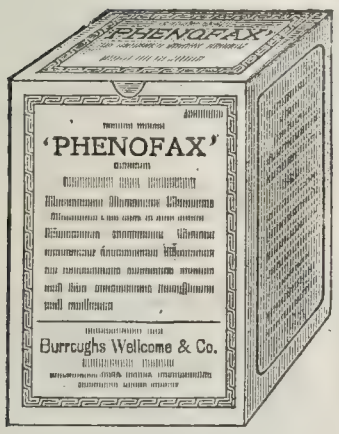
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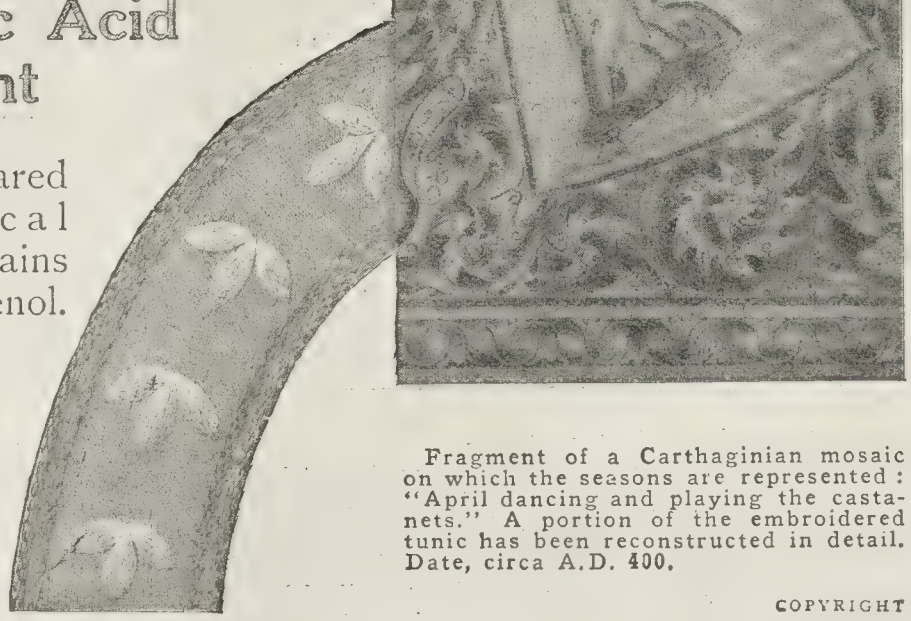
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Fragment of a Carthaginian mosaic on which the seasons are represented: "April dancing and playing the castanets." A portion of the embroidered tunic has been reconstructed in detail. Date, circa A.D. 400.

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HOEFFTCKE'S EXTENSION APPLIANCES.

Ambulatory Treatment of Fracture of the Limbs; Tuberculous and Arthritic Disease of Joints.

By C. A. HOEFFTCKE,
21, Woodstock Street, Oxford Street, London, W.

THAT splendid results can be obtained with my Extension appliance in osteo and rheumatoid arthritic knee cases is shown by those described below.

The appliance is made to a plaster cast of the limb as an exact fit has to be obtained. The weight of the body is transmitted on to the tuber ischii and surrounding gluteal muscles so that there is no pressure whatsoever between the condyles of the joints when the patient walks. Powerful extension can be applied without undue friction on the skin either on the ankle or buttock, the perineum and pubic bone being left quite free.

I must here make it quite clear that the appliance is not only used as a means whereby contracted joints can be made straight, but it is also used in cases of active diseased joints which are not contracted, as the extension between the condyles, and free movement being allowed, absorbs the osteophytes, and the condyles become recovered with fibrous tissue resembling cartilage, if not actual cartilage.

The grating and pain disappear very soon after the application of the extension, and a complete cure can be expected in about eighteen months to two years as the result of this treatment.

The general health of the patient improves very soon through the patient being enabled to walk about again and take exercise, and following this a great improvement can be expected in hands, arms, and shoulder-joints.

The upright position of the body and the walking exercise introduces an improved blood supply and also a certain amount of vaccine. If additional vaccine is introduced by the bacteriologist the amount has to be regulated according to the auto-inoculation produced by exercise of the joint. I am glad to say that this combination has produced very good results, especially in septic infections.

In cases where the joints were cured and the appliances taken off four or five years ago the cure has been maintained, and the joints have resumed the same healthy shape as before the onset of the disease.

A well-known doctor from Harrogate wrote in November, 1913:—

"I have advised a patient of mine who is crippled to try your splints, and propose bringing her to see you at ——, etc.

The patient, a lady, Mrs. R——, 61 years of age, was brought in on a carrying chair on Nov. 6th, 1913. It was a case of rheumatoid arthritis of about 20 years' standing. Both knees were contracted to a right angle; the joints were very painful. The patient had not been able to walk for four or five years. The legs were atrophied, the toes a reddish-blue colour, and the feet very cold for want of circulation. Plaster casts of legs were taken, and my Extension splints put on on Nov. 20th. The legs were straightened out gradually, and the patient was able to walk out of doors by the middle of December, 1913. The legs were straight in February, 1914. Elastic traction put on and movement allowed in the joints.

In June, 1914, the patient wrote:—

"I think the time has arrived to tell you how grateful I am for the help of your wonderful instruments in putting me literally on my feet and legs again. I opened a small Arts and Crafts Exhibition ten days ago. My friends and neighbours thought that I myself was the most wonderful of the exhibits in the Town Hall. It is a great pleasure to —— to see me about again, you may be sure."

In October, 1914 the patient wrote:—

"I believe I am improving well, and walk more than a mile most days."

In March, 1915, the splints were taken off. The legs, which were atrophied when the splints were put on, had developed to their natural size. There was free movement in ankles and knee-joints. The toes, which were previously blue, had resumed their natural colour. The feet, which were formerly stone cold, now retained their natural warmth. Doctor and patient were delighted, and the patient's husband wrote in March, 1915:—

"Many thanks for all your attention to Mrs. R——. I hear from her that the splints have been taken off not to be put on again. I am deeply grateful to you and Dr. ——."

Since then the patient continues to get on well.

In *The Lancet* of July 27th, 1912, I described a case of arthritis in the left leg, arms, and hands, Mrs. G. S. —— (æt. about 50). Leg contracted to an angle of 130 degrees and patella ankylosed. Knee first commenced to contract nine years ago. The appliance was put on in January, 1912. In May of the same year the leg was nearly straight, only 7 degrees of contraction remaining. These 7 degrees of contraction were straightened out under an anæsthetic on my Extension table in order to prevent friction between the condyles during the straightening process. The patella was made movable at the same time. The leg was put in plaster for two weeks, after which time the splint was put on again with elastic traction and movement allowed in knee. Splint taken off a year afterwards (May, 1913). Free movement, extension as well as flexion. I have seen this patient's knee lately. The leg is absolutely cured. No sign of pain since the splint was removed. The leg and knee has resumed its natural shape and appearance.

Another case described in *The Lancet* on July 27th, 1912, of a district nurse, Miss B. L. B. ——, rheumatoid arthritis—where both legs were effected—was again described on May 23rd, 1914.

The patient wrote on April 17th, 19th: "..... You will be delighted to hear that I have left off both splints. My knees feel splendid, not a bit wobbly or painful.

Also in *The Lancet* of January 17th, 1914, and *British Medical Journal* of January 31st, 1914, I described the case of a Mrs. B. ——, a Lancashire mill-hand, a married woman, 36 years of age, who had been bedridden for three years with rheumatoid arthritis, with her legs acutely flexed on her thighs; arms and hands also affected. Three months from the date the splints were put on—viz., in May, 1913—the knees were straight and the woman could walk a mile.

The doctor wrote on May 28th: "I met Mrs. B —— walking up —— on Sunday. She is a grand case, which you ought to publish, and you may use my name."

In February, 1914, the same doctor wrote: "Mrs. B —— is back at work in the mill you will be glad to hear."

The following report refers to a case treated with Hoefftcke's Extension appliance first as an in- and later on as an out-patient of St. Thomas's Hospital.

Reprinted from the Proceedings of the Royal Society of Medicine (Clinical Section, Nov. 8th), December Number, Vol. VI., No. 2, 1912.

A CASE OF RHEUMATOID ARTHRITIS.

This patient, a dressmaker, aged 26, was admitted to St. Thomas's Hospital in May, 1909, three years after the onset of rheumatoid arthritis. She had been bedridden and unable to stand for more than a year; both legs were acutely flexed on the thighs; the left knee-joint was fixed and the right allowed only a few degrees of movement. The left shoulder-joint was firmly ankylosed, and the hands presented the appearances characteristic of advanced rheumatoid arthritis.

Treatment: radiant heat, massage, passive movements, and extensions produced very little improvement, though persevered with for four months. On Sept. 21st, 1909, both knees were moved under an anæsthetic and put up in plaster. On Sept. 30th a double-hinged splint was fitted by Mr. Hoefftcke. On Dec. 3rd she was able to walk with the help of sticks, and on Jan. 1st, 1910, she could walk without assistance. Now (November, 1912) she can run, and her walking gait would not attract attention.

The remarks at the discussion that "Many similar cases drifted into infirmaries or were bedridden for life when this splint might have been applied with as satisfactory a result as in the case shown," was applicable to this case.

Fig. 1 shows the degree of flexion when my splint was applied.

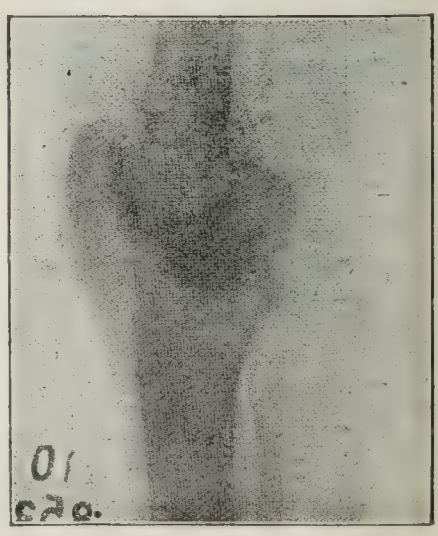
Fig. 2. shows the same knee quite straight six weeks after the instrument had been applied.

FIG. 1.



Degree of flexion when splint was applied, Sept. 30th, 1909.

FIG. 2.



Knee straight, Nov. 12th, 1909.

If references are wanted, the consulting surgeons, doctors, and patients in connexion with these cases will be pleased to give any particulars required.

(*To be continued in the last issue of every month of the present year.*)

British Medical Journal.

JUNE 26TH, 1915.

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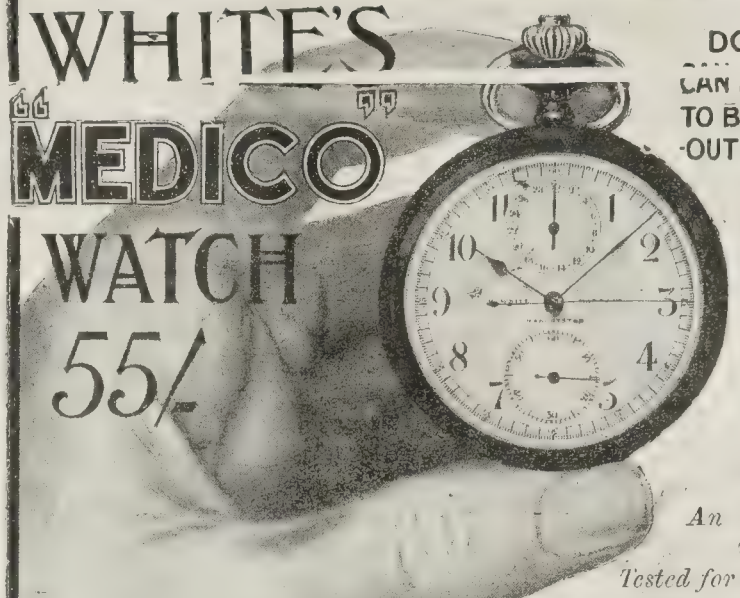
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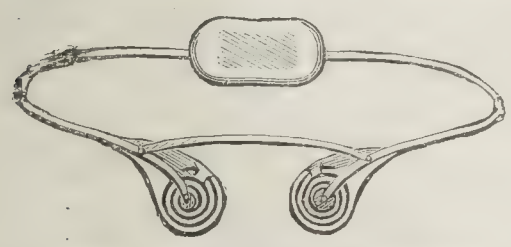
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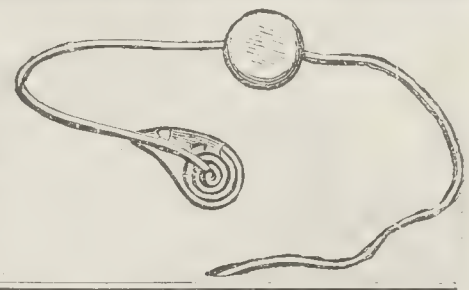
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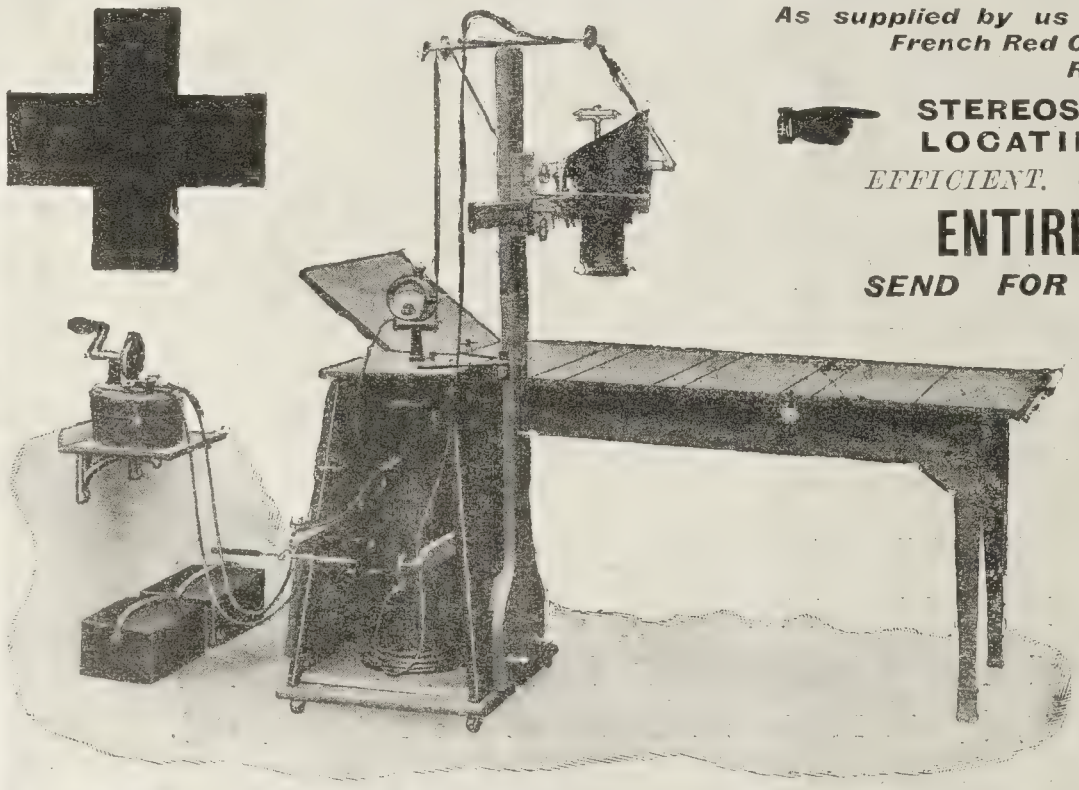
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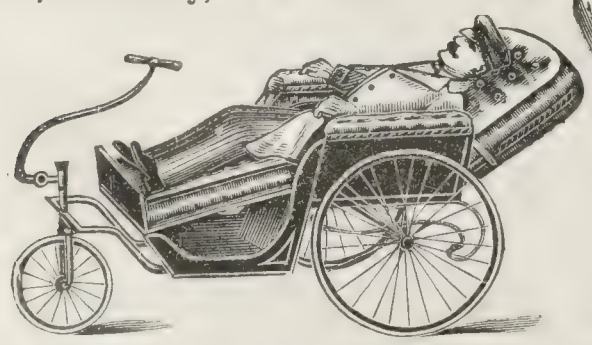
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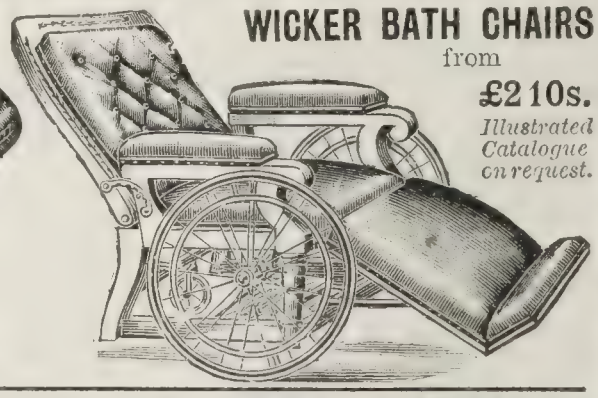
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"EUMENTHOL JUJUBE."
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A Gum pastille containing the active constituents of well-known Antiseptics, Eucalyptus Globules (a well rectified Oil free from aldehydes [especially valeric aldehyde], which make themselves unpleasantly noticeable in crude oils by their tendency to produce coughing), Thymus Vulg., Pinus Sylvestris, Mentha Arv., with Benzo-borate of Sodium, &c., they exhibit the antiseptic properties in a fragrant and efficient form. Non-coagulant antiseptic and prophylactic, reducing sensibility of mucous membrane.

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"In the experiments tried the Jujube proved to be as effective bactericidally as is Creosote."

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Public Analyst of Sydney, after making exhaustive tests, says:—
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"Should prove of great service."

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NEURASTHENIA

of the Traumatic, Sexual or Visceral Types, and whether hereditary or acquired, yields rapidly and permanently to

THE LYMPHOID COMPOUND AND THE LYMPH SERUM

THESE scientifically prepared products provide, in the form of active cellular material, that pabulum which is essential to the normal functioning of Nerve, Brain, and Spinal Cord Cells.

THEY speedily combat the exhaustion due to undue expenditure of nerve force and reinstate a normal balance between waste and repair.

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THEY rapidly combat metabolic disturbance and auto-intoxication (with their consequent adverse effects upon nerve functioning), accelerate metabolic processes, raise leucocytic resistance, relieve the blood plasma and lymph of injurious chemical products, and free the nutrition of nerve cells and tissues from noxious influences.

RAPID and permanent recoveries have been obtained in several thousands of cases of Neurasthenia by this treatment, notwithstanding (in many instances) the previous failure of all other methods.

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(Awarded GOLD MEDAL International Congress of Medicine, 1913)

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PEPTONISED MILK

The process of making peptonised milk is one requiring much skill and experience, and it is practically impossible to prepare it properly in the sick room. In Messrs. Savory & Moore's factory the various operations are carried out by a highly skilled and specially trained staff, with the result that their Peptonised Milk may be absolutely relied upon.

The Peptonised Milk is of the greatest value as a food in all cases of INFANTILE MALNUTRITION, also in cases of FEVER and WASTING DISEASE, whether in children or adults. It is retained even when no other kind of food can be taken, and by its nutrient qualities enables the patient to successfully combat disease. In many cases it has been the means of saving life, especially among infants.

Dilution with hot or cold water, as directed, renders it ready for immediate use.

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MANUFACTURED by a new process which enables large percentages of liquid paraffin to be incorporated in a perfect emulsion. The oil used is the purest *Russian* Liquid Paraffin of high specific gravity. **"Semprolin" Emulsion** —the basis of the compound emulsions—contains *60%* of oil.

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"SEMPROLIN" Laxative Cream (Contains 90% of Russian Liquid Paraffin)
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In 8 oz. and 16 oz. Bottles. Samples free to Medical Men.

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MANUFACTURING CHEMISTS
4, Lambeth Palace Road, London, S.E.
Telephone: "HOP. 3217" *Telegrams:* "SEMPROLIN, LAMB, LONDON"

Glycolactophos

THIS preparation being British, inability to obtain supplies need not be anticipated.

FORMULA.—Casein 95%, Glycerophosphate of Sodium 2½%, Glycerophosphate of Calcium 2½%.

Its use is indicated in the treatment of Neurasthenia, Tabes Dorsalis, Neuralgia, Nervous conditions in which an excess of phosphates are excreted in the urine, Phthisis, Chronic Dyspepsia, Anæmia, Insomnia, and wasting diseases generally.

The presence of the Calcium salt gives it a high therapeutic value in the treatment of Rickets.

SAMPLES AND PARTICULARS SENT FREE TO THE MEDICAL PROFESSION ON REQUEST.

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Telegraphic Address—"Lactose, London." Telephone—Victoria 5043 (2 Lines)

GOLD MEDAL International Congress of Medicine, London, 1913.

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COMPOSITION.—Ext. Cascaræ, Ext. Rhei, Jalapin, Podophyllin, Cocainæ Hydrochlor., 1-12th gr. in each fluid drachm.

THIS excellent compound, first introduced as a general **aperient** and **cholagogue,** has now become a popular remedy, and attention has very recently been called to the value of the mixture, by various authorities, in that class of cases spoken of as Chronic Biliousness, in Catarrhal Jaundice, and in the Jaundice of simple Hepatic Torpor. **In passive or habitual Congestion of the Liver, so frequently met with, it has been used with marked benefit.**

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The Dose is from 10 to 60 minims, according to the age and condition of the patient. One drachm is a direct aperient, and is not accompanied by griping or tenesmus.

Packed for Dispensing only in 10-oz.; 22-oz.; 40-oz.; and 90 oz. Bottles.

Please write: "Mist. Hepatica Conc. (HEWLETTS)" to ensure obtaining this Preparation.

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completely superseded by an All-British Antiseptic certified of higher disinfecting value.

TOXOL

manufactured by Boot's Pure Drug Co., Ltd.,

Responding to the desire of the Medical Profession to discard preparations paying tribute to the enemies of this country, the laboratory staff of BOOTS *the* Chemists, (consisting of some thirty highly-trained analysts) perfected TOXOL, which is identical in all but name with "Lysol," as formerly imported from Herren Schülke & Mayr of Hamburg, a solution of cresols in a saponaceous medium—and superior in strength of disinfecting power.

TOXOL is pronounced by medical men who are using it to have all the qualities of "Lysol," and is certified on high authority to excel *all* samples of "Lysol" in disinfecting co-efficient.

Copy of Report by

Dr. SAMUEL RIDEAL, Joint-Originator of the RIDEAL-WALKER Coefficiency Test.

November 16th, 1914.

"I have purchased at one of your branches samples of Toxol, and my results on examination confirm your labelled strength that it is 2½ times as powerful as Phenol, and it is higher than all samples of 'Lysol' I have examined,

(Signed) SAMUEL RIDEAL."

The following are extracts from the letters of Medical Men who have already used TOXOL to replace "Lysol."

"It seems to be in every way quite satisfactory and an excellent substitute for 'Lysol.'"

"Very glad to test, and prove that English science is as good as that of the Barbarians. It would be a good thing to circularise the profession with a list of Alien Enemies' products."

"I tried it on a septic finger and found it all you stated it to be."

"TOXOL is very satisfactory. The Medical Profession ought to feel grateful to Sir Jessie Boot for replacing a German article in such a prompt and satisfactory manner."

"Am using sample and I am so pleased with it that I shall continue to use TOXOL in future."

"An excellent preparation; I obtained 'Lysol' many times from Hamburg before any English chemist would stock it; so am interested in your venture."

"Dr. —— is pleased to see an English manufacturer superseding a German product and he will give his support to such a company as will do this."

"Many thanks, have used solutions of TOXOL in various strengths, for numerous minor surgical cases with most satisfactory results."

"Will give TOXOL a trial, am much interested in finding that your firm has succeeded in making a preparation in England of a German make like 'Lysol.' It is much more efficient than the German."

"Superior to 'Lysol' as far as I have tried it."

Samples of TOXOL will be delivered free on application to Medical Men who have not yet tested it.

TOXOL is sold in 6½d., 11d., 1s. 7d. and 2s. 9d. Bottles at all Branches or Sent Carriage paid to any Medical man at above prices. Address Boots, M.O., Nottingham.

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BRITISH MADE AND BRITISH OWNED



THE GENUINE PRODUCT.

Medical men are invited to send for samples of genuine LYSOL manufactured after the method that has made LYSOL so justly famous.

LYSOL SOAP SURGICAL (LYSOL 10%)

Non-carbolic. A Bland non-irritating pure soap incorporating 10% Lysol.

Such a soap has been found excellent in the treatment of certain skin affections and it is also useful for its antiseptic and germicidal properties.

For the toilet, **LYSOL TOILET SOAP** can be usefully recommended. It is beautifully fragrant and mild and contains about 5% Lysol.

Samples post free to Surgeons.

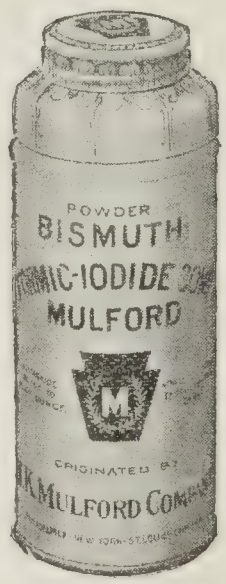
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The Ideal Dry Surgical Dressing

Bismuth-Formic-Iodide Comp. Powder is indicated in all acute or chronic inflammations of the skin and subcutaneous tissues, such as exist in specific or non-specific skin diseases, ulcers, wounds, and suppurating surfaces, burns, scalds, abscesses, etc. It is of particular value in the treatment of chronic indolent leg-ulcers and in local diseases of a markedly inflammatory and rapidly progressive type, such as serpiginous and phagadenic ulcerations, existing independently of or complicating venereal diseases.



Bismuth-Formic-Iodide Comp. is an aseptic and unusually antiseptic astringent alterative, analgesic and stimulating dry dressing for wounds, ulcerations, discharging sores, skin diseases, etc.

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TRADE — ROCHE — MARK

'OMNOPON' Roche, which was originated by Professor Sahli of Berne University in the year 1909, has now won an established place in medicine. It represents the total alkaloids of opium minus its objectionable ingredients. 'Omnopon' is an ideal hypnotic, and possesses the following advantages:

POSITIVE.

'Omnopon' is a light brown powder, soluble in water. Is five times the strength of opium—is perfectly standardised. May be administered conveniently and in exact doses, either internally or as a non-irritating hypodermic solution.

FOR SHOCKLESS SURGERY.

'Omnopon' is largely used as an adjuvant to general inhalation anæthesia. Prevents post-anæsthetic vomiting.

IN PULMONARY TUBERCULOSIS.

"The purposeless, irritating, dry cough rapidly yielded to gr. $\frac{1}{6}$th every 4 hours."

(Report of the Mill Road Infirmary, Liverpool.)

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'Omnopon' does not produce nausea.

Has no depressant action upon the respiratory centre.

Unlike Morphia, does not give rise to the drug habit.

Prescribed in the doses indicated for bronchial symptoms does not constipate.

SUPPLIED IN POWDER, TABLETS, AND AMPOULES BY ALL PHARMACISTS.

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"For a Tired Stomach."

In **Dyspepsia, Catarrh** of the **Stomach** or **Intestines,** or **Gastric Irritability** from any cause, when the **Digestive Organs** reject milk and other foods, **Valentine's Meat-Juice** will be **Retained** and Demonstrate its Power to **Restore** and **Strengthen**



It is in constant use in Hospital and Private Practice and endorsed by eminent medical men.

Physicians are invited to send for Clinical Reports.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,
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SYRUPUS HYPOPHOSPHITUM FELLOWS

One of the most efficient, most complete, and best all-round Tonics in the Materia Medica!

FOR FOUR AND A HALF DECADES ITS REPUTATION HAS BEEN CONSTANTLY INCREASING!

Reject < Cheap and Inefficient Substitutes
Preparations "Just as Good"

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The 'Allenburys' Foods

Infantile Diarrhœa

During summer, Diarrhœa and kindred disorders among Infants are largely due to the use of infected cow's milk.

The "Allenburys" Milk Foods

are absolutely free from all harmful bacteria, and are made ready for use with boiled water.

The foods are easily digested and assimilated, and contain both fat and proteids in similar relative proportions to those found in human milk. They are capable also of further modification, when desired, to suit the most delicate Infants from birth.



The "Allenburys" Milk Food No. 1

FROM BIRTH TO 3 MONTHS.

This closely approximates in composition to human milk. It keeps thoroughly well, is easily prepared, the addition of hot water only being necessary.

The "Allenburys" Milk Food No. 2

FROM 3 TO 6 MONTHS.

Is similar to the Milk Food No. 1, with the addition of a small amount of soluble phosphates and albuminoids.

The "Allenburys" Malted Food No. 3

FROM 6 MONTHS UPWARDS.

Is a partially digested farinaceous food, and requires the addition of boiled cow's milk and water.

The "Allenburys" Rusks (Malted)

A valuable addition to baby's dietary when 10 months old and after.

A full descriptive pamphlet and samples will be sent on request.

ALLEN & HANBURYS LTD

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PARKE, DAVIS & Co.'s PAGE

LETTERS TO MEDICAL MEN.

THE PHYLACOGEN TREATMENT OF GONORRHŒAL COMPLICATIONS.

NOTE.—The medical report quoted in this letter is published by permission. On request we shall be glad to place any *bonâ-fide* enquirer in communication with the author.

GONORRHŒA PHYLACOGEN is a sterile aqueous solution of bacterial derivatives from cultures of the Micrococcus gonorrhœæ (Neisser), and in less proportion of other pathogenic bacteria—viz., Streptococcus rheumaticus (Poynton and Paine), S. pyogenes, S. erysipelatis, Staphylococcus pyogenes, Bacillus pyocyaneus, B. coli communis, B. diphtheriæ, and Diplococcus pneumoniæ, numerous strains of the several organisms from a variety of sources being employed.

This complex constitution is based upon the opinion which Dr. Schafer—the originator of Phylacogen therapy—holds in common with many practitioners of wide repute—viz., that most chronic infections are complicated in character, and though one microbe may predominate, the pathological process which it engenders is intensified by other organisms present in the system, which assume pathological significance when physiological resistance is below par. (See page 6 of our booklet entitled "Phylacogen Therapy.")

Treatment with Gonorrhœa Phylacogen is indicated in any chronic pathological condition due to infection with the Micrococcus gonorrhœæ. Its value in gonorrhœal urethritis, acute or chronic, has not been fully determined, but in gonorrhœal arthritis and other sequelæ of gonorrhœal infection the Phylacogen yields satisfactory results; indeed, clinical experience points to the conclusion that Gonorrhœa Phylacogen will relieve any case of true gonorrhœal arthritis.

Other sequelæ of gonorrhœal infection, such as epididymitis, vesiculitis, and cystitis, in the male, also vaginitis, cervicitis, endometritis, salpingitis, &c., in the female, have generally yielded to Gonorrhœa Phylacogen.

In some chronic cases of gonorrhœal infection persevering treatment with Gonorrhœa Phylacogen, whilst causing marked improvement, has not brought about complete recovery, and on examination it has been found that there is little, if any, gonococcal infection remaining. In such cases a few doses of Mixed Infection Phylacogen have proved to be all that was necessary to effect a cure.

The results of Phylacogen treatment of gonorrhœal urethritis so far reported to our Department of Experimental Medicine are about equally divided between prompt relief of all symptoms and no apparent effect. Cases with complications or sequelæ, treated with Gonorrhœa Phylacogen, have been promptly benefited in the majority of instances, but the urethritis has shown a stubborn resistance to the treatment. However, in such cases the resistant urethritis has usually yielded promptly to treatment with Argentide.

Experience proves that Gonorrhœa Phylacogen will often effect a cure in chronic cases which have failed to respond to any other treatment, and that cases of less stubborn character, when treated with the Phylacogen, are cured in one-half or one-third the time that would be required by any other treatment, so that the patient is saved much suffering and expense.

GONORRHŒAL ARTHRITIS WITH HYPERKERATOSIS.

The following case was reported in December, 1914. Recent inquiry has elicited the information that the condition of the patient is entirely satisfactory.

"Patient (male, aged 35) contracted gonorrhœa upwards of five years ago. From time to time he was laid aside from business with attacks of rheumatism, but always obtained a certain measure of relief from the usual remedies.

"About 18 months ago he developed arthritis in an aggravated form, the fingers and toes being much enlarged and very painful, while the joints of the hands were all stiff and inflamed, the patient being unable to walk or even to move his arms.

"In addition to the arthritic trouble, he developed that rare but remarkable form of hyperkeratosis associated with gonorrhœal rheumatism. This appeared practically all over his body, but the large, conical, wart-like masses, browish-yellow in colour, were specially evident on his hands and feet.

"The ends of his fingers and toes, from the joint to the tip of the nail, including the nail, were covered with a yellowish scale. The patient spent a large sum on medical treatment without avail, and ultimately he was sent to a hospital, where he was treated with various medicaments, both constitutional and local, the latter both dry and wet, without success.

"At the end of six months he was sent home in a hopeless condition. About a year ago he came under my observation, and, having diagnosed the condition as being produced by a gonococcal infection, I decided to employ Phylacogen.

"At first I tried Rheumatism Phylacogen, as I thought it might probably have a speedier effect on the pain and stiffness. This produced no result whatever, and treatment with Gonorrhœa Phylacogen was commenced in January, 1914, with the injection subcutaneously of ½ c.c., followed by daily injections of 1, 2, 3, and 4 c.c., then four of 5 c.c., and gradually working up to 10 c.c.

"From the first dose the patient seemed to improve, and when the 3 c.c. injection was reached the abnormal condition of the skin began to disappear, and gradually the scaly growths began to slip off the fingers and toes in a manner resembling the taking off of a glove, while the limpet-like masses dropped off. The pain and stiffness of the joints rapidly disappeared.

"A curious feature of the case was that the nails, both of the fingers and toes, came off, being replaced by new growth. Throughout the treatment the reactions were so slight as to be scarcely noticed, there was little increase in temperature, no rigor, no perspiration, and no other unpleasant symptoms. The patient has continued for the whole year in perfect health, without pain, swelling, or any other symptom.

"In the treatment of arthritic affections by Phylacogen, care should be taken in the diagnosis, as many cases of arthritis treated with Rheumatism Phylacogen without result, might respond at once, as in the above case, to Gonorrhœa Phylacogen."

Our booklet, "Phylacogen Therapy," gives particulars of a considerable number of cases successfully treated with Gonorrhœa Phylacogen. We shall gladly send you a copy on request.

We remain,

Yours respectfully,

PARKE, DAVIS & CO.

50, Beak Street, London, W.

GLYCO-THYMOLINE



IN WAR SURGERY

MILITARY HOSPITAL,
No. 31 Bis.

Soldier of Line Regiment, 35 years old, wounded by expanding bullet. Treated with Glyco-Thymoline. Pockets syringed with Glyco-Thymoline, full strength and hot, then compresses of 25 % solution Glyco-Thymoline applied. Dressed thus every six hours; where pus was present pockets previously cleaned with Eau Oxygenée.

SAME HOSPITAL

Same soldier after nine weeks' treatment. Wound almost cicatrised and articulation normal.



KRESS & OWEN CO.

361-362, PEARL ST., **NEW YORK.**

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OF ALL COST

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THOS. CHRISTY & CO.

4-12, Old Swan Lane,

LONDON.

SOLE AGENTS FOR GREAT BRITAIN.

Prescribed by the Medical Profession for 35 years.
The LANCET (London, Eng.) describes it as—"Mr. Benger's admirable preparation."

BENGER'S FOOD.

"Cause and Effect" explained.

BENGER'S FOOD is a cereal flour free from indigestible and irritant particles and scientifically combined with natural digestive principles, which cause it to become, after preparation, one of the most easily assimilated and highly nutritive foods extant, and one which leaves very little insoluble or irritant residue.

The digestive process is easily and simply regulated by allowing the food to stand, after the mixing with warm milk, for 5 to 45 minutes.

The effect is that the casein in the milk, which otherwise would form tough indigestible casein curd in the stomach, can only separate into minute flocculae; in addition both the protein and carbohydrate material in the food itself are partially converted, so as to be easily assimilated by weakened digestive systems.

This explains why Benger's is frequently retained when all other foods are rejected—why it can be taken by the most delicate infant, and by persons prostrate with illness.

Benger's Food

for INFANTS, INVALIDS AND THE AGED,
is sold throughout the World by Chemists, &c., in sealed tins.

A physician's sample, with full particulars, will be sent post free on application to any member of the medical profession.

BENGER'S FOOD Ltd.,——————Otter Works, MANCHESTER, Eng.

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NEW YORK (U.S.A.) 92, WILLIAM STREET.——————SYDNEY (N.S.W.) 117, PITT STREET.
Canadian Agents— National Drug & Chemical Co., Ltd., 34, St. Gabriel Street, MONTREAL and depôts throughout Canada.

N.B.—BENGER'S FOOD is the direct outcome of the pioneer work on digestive ferments, by the late Sir William Roberts, M.D., F.R.S., and the late Mr. F. Baden Benger, F.I.C., F.C.S., in 1880, since when it has been the premier dietetic preparation of its kind in the British Empire.

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ARTIFICIAL LEGS AND SPLINTS

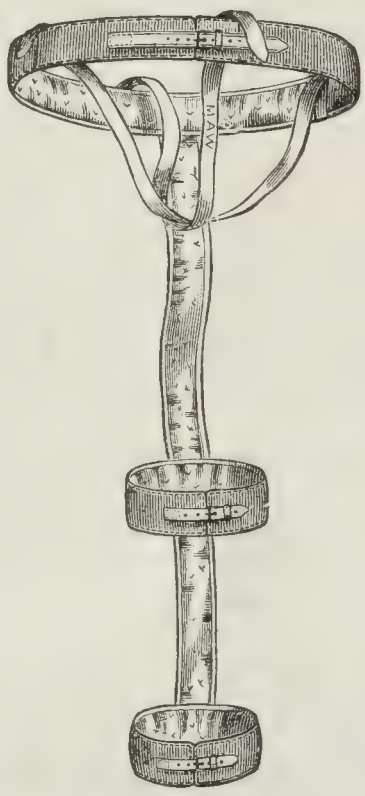


03676

Leg, with wood bucket and high knee joint, for medium short stump, 2 qualities,

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This leg is similar in construction and movements to No. 03674, but is made with a wood bucket, and is specially designed for a medium short stump, the knee joint being carried higher up than in No. 03674, so that a longer tendon can be used, giving greater leverage and more personal control over the lower part of the leg.—Average weight, 4½ lbs.

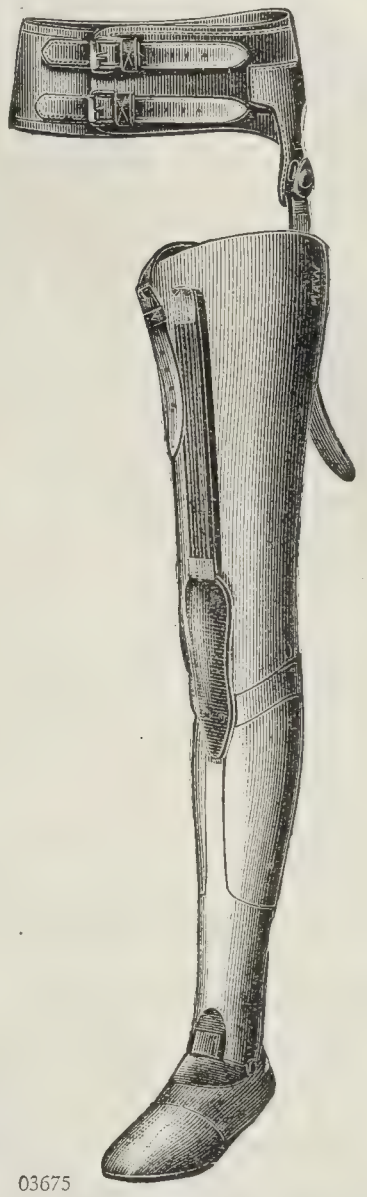


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Sodium sulphate	...	42·16 grains	Calcium sulphate	...	0·85 grains
Potassium sulphate	...	0·10 „	Sodium chloride	...	0·90 „
Magnesium sulphate	...	1·43 „	Silica, alumina, iron, etc.	...	0·02 „

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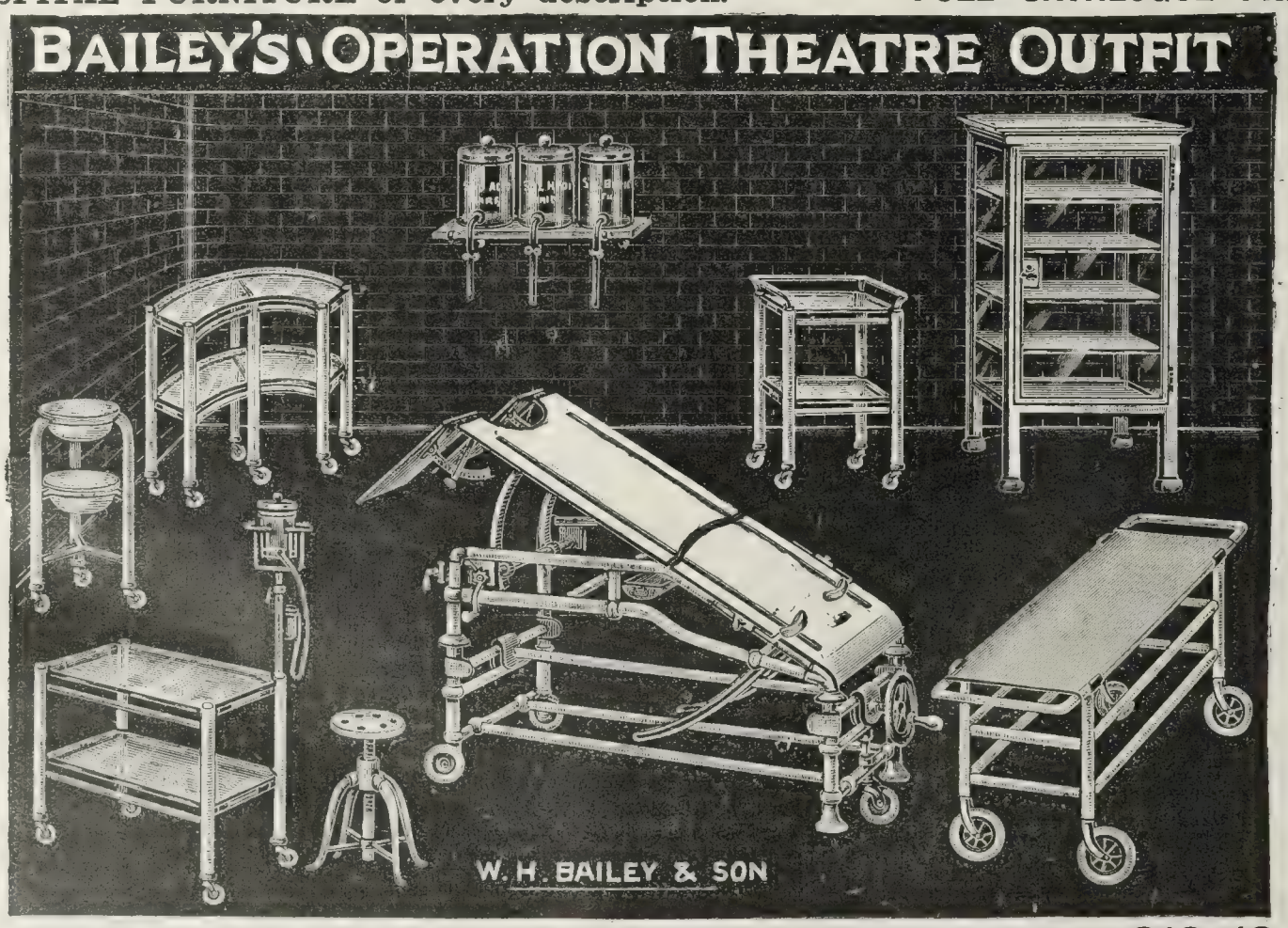
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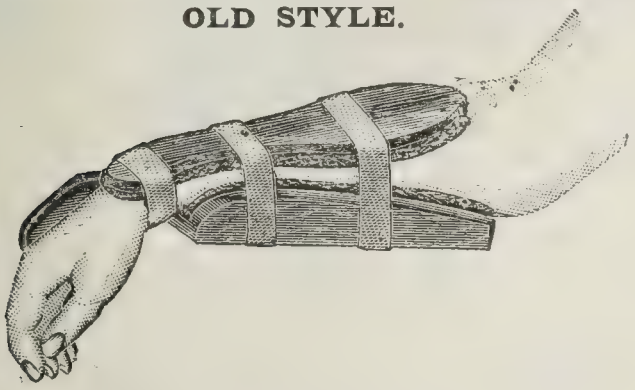
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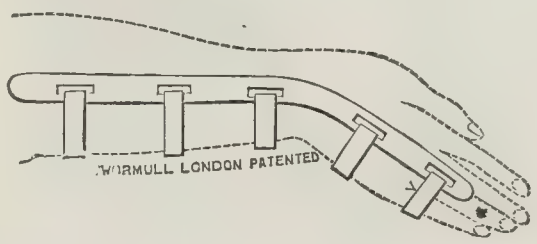
(Referred to by C. MAX PAGE, M.S., F.R.C.S., Capt. R.A.M.C. (S.R.), in his article in the *British Medical Journal* of May 15th, as "Aluminium Skeleton Splints.")

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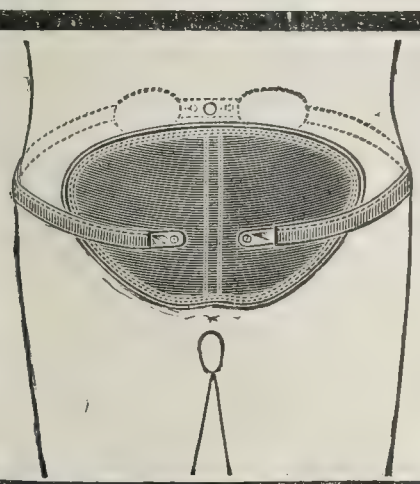
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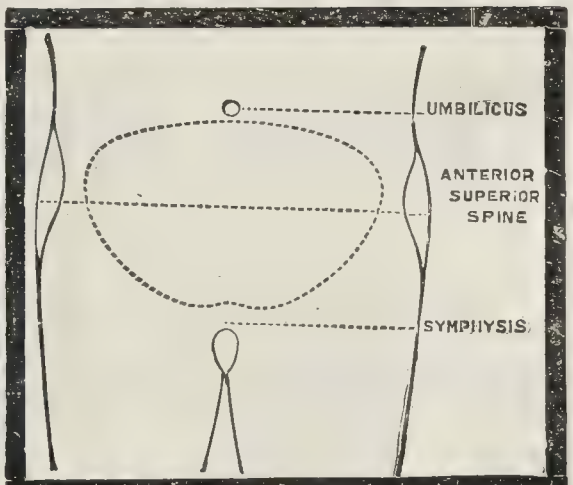
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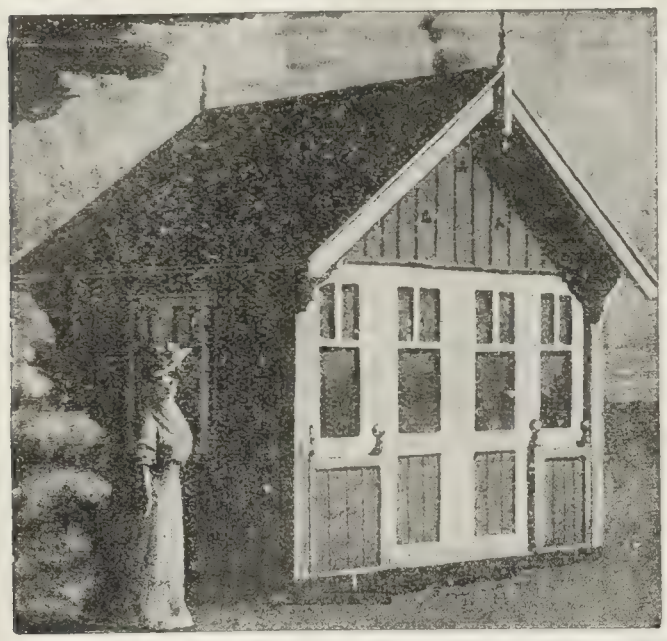
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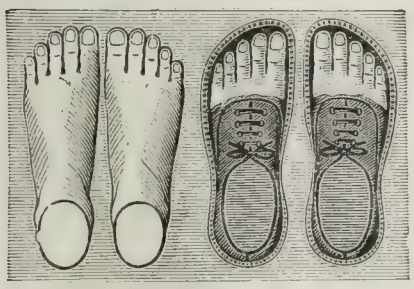
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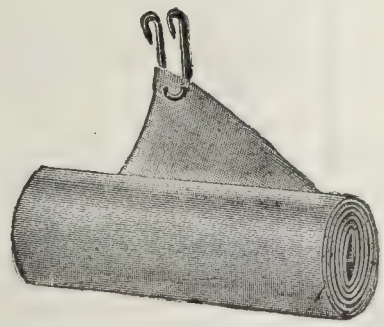
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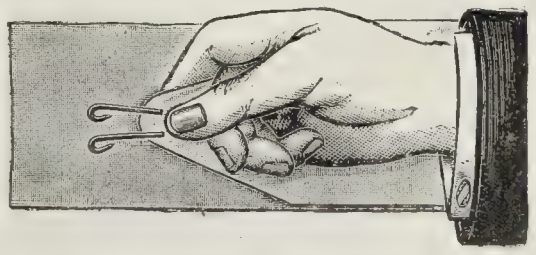
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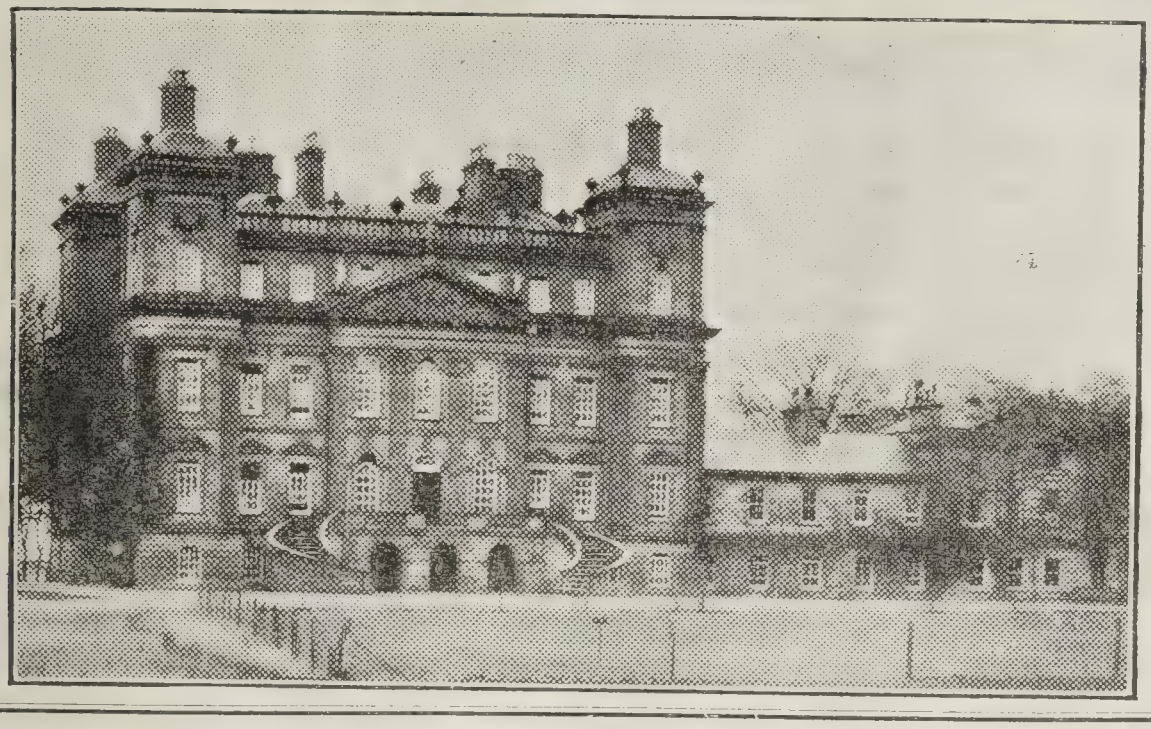
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Canvassing, either directly or indirectly, will disqualify an applicant.

JAMES BIRD,
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Education Offices, Victoria Embankment, W.C.

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SOUTH WARWICKSHIRE GENERAL HOSPITAL, Leamington Spa.
(130 Beds—80 Civilian and 50 Army).

RESIDENT MEDICAL OFFICER (2nd) required at once, fully qualified and registered. Salary £200 per annum, with board, residence, and laundry.

Special Departments for Eye, Ear, Nose, and Throat cases.

Application, stating age and full particulars, accompanied by copies of recent testimonials, to be sent to the undersigned immediately.

N.B.—The appointment is open to women.

FRED. SMITH, House Governor.

June 3rd, 1915.

Tunbridge Wells General

HOSPITAL.

Wanted a HOUSE SURGEON, unmarried, male, fully qualified.

Salary £250 per annum, with board residence, &c., in the Hospital.

The Hospital is being largely used for wounded troops.

Applications, with certificate of registration and copies of testimonials, should be sent to the undersigned without delay. The appointment to be entered upon at an early date.

J. J. WEBB, Secretary.

North Staffordshire Infirmary,

Hartshill, Stoke-on-Trent. (About 280 Beds.)

Wanted immediately at the above Hospital:—

TWO HOUSE SURGEONS.—Male or female, unmarried. Salary in each case £200 per annum, with board, residence and laundry.

ONE HOUSE PHYSICIAN.—Appointment on same terms as above.

Candidates must be legally qualified and registered

Engagements may be terminated by three months notice on either side.

Appointments renewable after one year on recommendation of Medical Board.

Applications, stating age, together with three recent testimonials, to be sent as soon as possible to the undersigned, from whom particulars as to the duties may be obtained.

T. BASIL RHODES, M.B., B.S.,
Secretary and House Governor.

St. Mark's Hospital for

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City of London Hospital for

DISEASES OF THE CHEST, Victoria Park, E.
(Rail and tram Cambridge Heath G.E.R.)

APPOINTMENT OF A TUBERCULOSIS OFFICER.

The Committee of the Hospital are about to appoint a Tuberculosis Officer in connexion with a Tuberculosis Dispensary for the Metropolitan Borough of Hackney. The Dispensary will be under the control of the Hospital with the exception of such administrative control as devolves on the Medical Officer of Health of the Borough of Hackney as chief administrative Tuberculosis Officer of the Hackney Municipal Tuberculosis Scheme.

Applicants must have held a resident appointment in a general hospital, and have had special experience of Diseases of the Chest, and of Public Health work. Age not exceeding forty.

Salary at the rate of £500 per annum, with lunch and dinner provided, according to hours of duty. The Officer will be required to devote his whole time to the duties of the office. The appointment will be annual and determinable by three months' notice on either side.

Candidates are requested to send their applications, accompanied by copies of not more than three recent testimonials, to the undersigned on or before Tuesday, 13th July. Canvassing of the Members of the Committee of Management (except Members of the Medical Staff) is prohibited.

GEORGE WATTS, Secretary.

Cape Hospital Board.

Wanted for SOMERSET HOSPITAL, Capetown, or other hospitals in the Peninsula, an unmarried ASSISTANT MEDICAL OFFICER to act as House Physician. Two years engagement. Salary, first year £200, second year £250, with rations and quarters. Salary to commence from date of taking up duties, August 1st; half salary during voyage. Second class passage money advanced. The officer appointed to register in the Cape Province, for which a fee of £5 is charged. Applications, with copies of testimonials and particulars of past appointments, must be deposited not later than 4 o'clock p.m. on Friday, 2nd July, with DAVIS & SOPER, LTD., Agents of the Cape Hospital Board, 54, St. Mary Axe, London, E.C.

22nd June, 1915.

Northumberland County

COUNCIL.

CLINICAL TUBERCULOSIS MEDICAL OFFICER.
(Temporary appointment during absence of Chief Tuberculosis Officer on Foreign Service.)

Applications are invited from candidates for the appointment of temporary Clinical Tuberculosis Medical Officer. Salary, £500 per annum, with reasonable travelling expenses in addition. The gentleman appointed must have had special experience in the diagnosis and treatment of Tuberculosis in Sanatoria or otherwise. He will be required to devote the whole of his time to his official duties, to reside in such place as may be determined by the Committee, and will be attached to the County Health Department, and act under the administrative direction of the County Medical Officer of Health. The appointment may be determined by one months' notice on either side.

Applications, with copies of not more than three recent testimonials, must be received not later than July 3rd, 1915, by the undersigned, from whom forms of application can be obtained.

The Moothall, Newcastle-on-Tyne. J. W. HEMBROUGH, County Medical Officer.

Hospital for Consumption and

DISEASES of the CHEST, Brompton.—The Committee of Management invite applications for the post of HOUSE PHYSICIAN. The duties include work in the Out-patients' Department as well as in the Wards. Further particulars may be obtained from the undersigned, to whom applications, with testimonials, should be addressed. The appointment is for six months, with an honorarium of 30 guineas.

Applications received from qualified women.

FREDERICK WOOD, Secretary.

Brompton, June, 1915.

Cossham Memorial Hospital,

Kingswood, Bristol.

HOUSE SURGEON required, to commence duties on the 1st August. Salary £150 per annum, with board, residence, and laundry.

The Hospital contains 90 beds, of which 60 are being used for military cases.

Candidates must be duly qualified and registered.

Applications, with testimonials, to be sent to the Secretary, from whom further particulars may be obtained.

Coventry and Warwickshire

HOSPITAL, Coventry (200 Beds).

Lady or Gentleman THIRD HOUSE SURGEON required. Salary six guineas per week with board and residence. Applications stating age, qualifications, &c, to be addressed to the Secretary.

Kent Education Committee.

School Medical Service.

SCHOOL DENTIST.—Applications are invited from fully qualified Dental Surgeons (men or women) for the post of temporary Whole Time Dentist under the Committee during the absence of the permanent Dental Surgeon on Military Service.

The successful candidate will be required to devote his whole time to the duties, and will work under the supervision of the School Medical Officer. He will be required to reside in or near Maidstone.

The salary will be £250 per annum and travelling expenses. Apparatus, premises, and stationery will be provided.

Applications, stating age and full qualifications, and accompanied by copies of three recent testimonials, must be forwarded to Dr. A. GREENWOOD, School Medical Officer, Sessions House, Maidstone, and reach him not later than noon on Saturday, the 3rd July, 1915.

No official form of application will be issued. Canvassing will be considered a disqualification.

By order of the Committee,
Sessions House, Maidstone, 16th June, 1915. FRAS. W. CROOK, Secretary.

Paisley Parish Council.

Wanted, a RESIDENT HOUSE SURGEON for the PAROCHIAL HOSPITAL, LUNATIC WARDS, and POORHOUSE, Craw Road, Paisley.

The person appointed will also require to attend daily at the Parish Office for the purpose of examining and certifying applicants; salary for combined duties £230 per annum, with board and apartments. Applications, with testimonials, to be lodged with the undersigned not later than 5th prox.

J. M. CAMPBELL, Inspector of Poor.

Wanted Temporary Assistant

MEDICAL OFFICER. Salary £6 6s. per week, with apartments, board, attendance, and washing.

Applications and testimonials to be sent as soon as possible to the Medical Superintendent, COUNTY ASYLUM, Rainhill, near Liverpool.

Leeds Education Committee.

Applications are invited from fully qualified and registered Dentists for the appointment of SCHOOL DENTAL OFFICER. The person appointed will be required to devote his whole time to the service of the Education Committee. Salary £250 to £300 per annum according to qualifications and experience.

Applications, stating age, experience, qualifications, etc., should reach the Education Offices not later than 5th July, 1915.

JAMES GRAHAM,
Education Offices, Calverley Street, Leeds. Secretary for Education.

Birmingham and Midland

EYE HOSPITAL.

JUNIOR HOUSE SURGEON.

Applications are invited from duly qualified gentlemen for the post of Junior House Surgeon to this Hospital.

Salary £100 per annum, residence and board, with £5 laundry allowance.

Applications, with testimonials, stating qualifications, &c., should be sent to the undersigned, from whom a copy of the regulations relative to the duties can be obtained.

Number of beds, 110. Daily average attendance of out-patients, 260.

J. W. PEARCE,
General Superintendent and Secretary.

8th June, 1915.

County Borough of

WARRINGTON.

Applications are invited for the appointment of Temporary ASSISTANT MEDICAL OFFICER OF HEALTH (Male or Female), who shall devote his whole time to the duties of the office. The person appointed will be required to carry out under the supervision of the Medical Officer of Health the Inspection of School Children. Bacteriological work and such other Public Health work as may be directed during the continuance of the War.

Commencing salary £300 per annum.

Applications to be received by the undersigned not later than noon on Tuesday, July 6th, 1915.

G. W. N. JOSEPH,
Medical Officer of Health.

78, Sankey Street, Warrington.

West Ham and Eastern

GENERAL HOSPITAL, Stratford. (110 beds)

Wanted at once, RESIDENT MEDICAL OFFICER. Salary £160 per annum. Also HOUSE PHYSICIANS and HOUSE SURGEONS. Salaries £120 and £100 per annum, with board, residence and washing. Applications, with copies of testimonials, should be sent to the undersigned, from whom particulars can be obtained.

A. W. SCRIVENER, Secretary.

Wanted, a qualified outdoor ASSISTANT. Permanency guaranteed with possible Succession or Partnership. Address, stating age, qualifications, and essential particulars. —Further details will be given on application to 3316, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted about the middle of July, in a mixed practice, an outdoor married ASSISTANT. Salary £300 and 7-roomed unfurnished house; if unmarried £260, furnished rooms and attendance. Usual bond. — Apply, enclosing 2 recent testimonials, to Dr. MACKAY, Crook, Darlington.

Wanted in industrial practice ASSISTANCE twice a week, 7 hours each time, 2 guineas a week.—Address, No. 3403, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted immediately an outdoor ASSISTANT for pleasant country practice, very little night work, small panel, furnished rooms and attendance. — Address, stating age, nationality, experience, reference, etc., to Dr. G. B. LEGGE, Shifnal, Shropshire.

Wanted, an indoor Assistant in a South Wales Colliery Practice. A dispenser kept. Usual bond. Salary £300 per annum.—Address, stating age, references, &c., No. 3411, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted by young, married, experienced man ASSISTANTSHIP, with view to Partnership, or would take Charge of Practice. State fullest particulars.—Address, No. 3413 BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Assistant wanted for Colliery Practice near Newcastle. Salary £230 and commission, board and lodgings at branch.—Address, stating age, experience, and giving references, No. 3226, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Assistant wanted in Northumberland. £230, all confinement fees, furnished rooms or partially furnished house.—Address, No. 3402, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Outdoor Assistant wanted, to take charge of a Branch Practice in a colliery district in Glamorgan. A permanency with good prospects to a suitable man. Salary £300, with rooms, fire, and attendance.—Address, No. 3416 BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Medical.—Wanted at once, ASSISTANT in market and manufacturing town in the North of England. Outdoor or indoor according to arrangements. Liberal salary offered. —Apply, Dr. ELLIS, Bishop Auckland.

Wanted a Locum Tenens in a Glamorganshire colliery district.—Address, giving age, experience, and all essential particulars, No. 3412, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

LOCUM TENENS PROVIDED
Apply
ARNOLD & SONS,
Surgical Instrument Manufacturers,
TRANSFER DEPARTMENT,
6, GILTSPUR STREET, LONDON, E.C.
(Opposite St. Bartholomew's Hospital.)
Telegrams: "Instruments, London."
Telephone: 5240 City.

Locum Tenens.—No fee to principals. Mr. PERCIVAL TURNER has a large staff of trustworthy Locum Tenens and will be happy to send one at short notice.—Address, 4, Adam Street, Adelphi, London, W.C. Telegrams, "Epsomian, London." Telephone, Central, 3399.

Locum Tenens wanted immediately.—Mr. PERCIVAL TURNER is in immediate want of several reliable gentlemen with satisfactory credentials to fill vacancies caused by War and otherwise.—Apply, personally, if possible, to PERCIVAL TURNER, 4, Adam Street, Strand, London, W.C. Telephone 3399 Central.

Free for Locum Tenency 26th inst. to July 12th, and after August 4th, for long or short periods. Advertiser, doubly qualified, is very active, reliable and experienced, with good manners and appearance. Recent references, etc. In or near London preferred, but not essentially.—Address, at once, stating dates required for and terms. No. 3119, B.M.J. Office, 429, Strand, W.C.

Wanted, Locum, Colliery practice, to take charge during period of the war. — Apply to Lieut. O'KELLY, R.A.M.C., Woolsington Park, near Newcastle-on-Tyne.

Locum Tenens required.— Messrs. ARNOLD & SONS require several reliable gentlemen to complete their staff.—Apply, personally if possible, Transfer Dept., Giltspur Street, London, E.C. (opposite St. Bartholomew's Hospital). Telephone: 5240 City. Tel.: "Instruments, London."

Locum Tenency required by an experienced man used to good-class practice, highest references given. Just vacating 12 months' engagement. Sea coast practice preferred. — Address, No. 3408, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Locum Tenens, fully qualified and experienced, disengaged about June 29th. Coast or agricultural country. Only short periods. Age 55.—"Traveller," Post Office, Lutterworth, near Rugby.

Locum Tenens, elderly, abstainer, disengaged July 20. Six guineas to seven guineas and travelling expenses.—Address, No. 3409, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Locum Tenens, Charge of Practice or institution. University graduate (1891), excellent recommendation, 7 guineas.—Address, No. 3420, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

War Locum. — Lady or gentleman unfit for active service required in country town (Worcestershire) to release junior partner. Must cycle. Practically no night work or midwifery. Panel 1,000. Terms moderate, indoor. —Address, No. 3410, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

War Locum required near London (one of two). About 6½ hours daily. No midwifery. Salary £300 indoors, or terms to be arranged. Car kept.—Address, No. 3423, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Required by an experienced M.D., a position as LOCUM, War, Temporary, or Permanent. Widower. Terms according to the extent and nature of the practice. Of good appearance and well received.—Address, "Felix," 183, Kennington Road, London, S.E.

Light Holiday Locum work wanted for a week or fortnight in July or August by a general practitioner of an industrial town in Lake District, seaside resort, or North Wales. Hospitality and travelling expenses for family and self. — Address, No. 3404, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Hospitality Locum.—Doctor in Public Health service would TAKE CHARGE of practice. South or south-west coast for three weeks. Hospitality and travelling expenses for self, wife, two children and maid.—Address, No. 3414, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

A middle-aged, well-qualified married practitioner, accustomed to good-class practice, will be very shortly giving up a post of WAR LOCUM, which he has held for 5 months, and will be glad to hear of something similar. Highest refs. No panel. Car. Reasonable terms.—Apply, "Surgeon," c/o W. H. SMITH & SON, Booksellers, Taunton.

Dispenser, Book-keeper, and SURGERY ATTENDANT (male), wanted within 30 miles. Salary commencing 35s. per week. Must have recent references of excellent character. Whole time.—Address, No. 2915, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Lady Dispenser and Book- KEEPER requires post with a doctor or in hospital. Excellent testimonials. Apoth. Hall Certif. — Address, No. 3422, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Post required as Dispenser and BOOK-KEEPER, by doctor's daughter aged 35, in London or Suburbs. Hall degree, and good testimonials. Salary according to requirements. — Address, No. 3417, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Medical man, retired from general practice, would like any LIGHT EMPLOYMENT, locum or otherwise, preferably no night work. Abstainer. Remuneration in accordance. High reference.—Address, No. 3415, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Part-time Work wanted in London (Panel or Private) by experienced man. Total abstainer.—Address, No. 3406, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Young man of experience in good-class practice offers SERVICES every evening of the week.—Address, No. 3418, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

D.P.H.—Colonial Sanitary Officer on leave will be glad to relieve for two months or less an M.O.H. or officer holding allied post to enable him to devote himself to war service or obtain a needed rest.—Address, No. 3407, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Ship's Surgeon.—Messrs. ELDER DEMPSTER AND CO., Limited, have a few vacancies for Surgeons in their West African Service. Steamers call at Madeira, Canary Islands, and West African ports. Pay £15 per month. Fees allowed for attendance on passengers. Length of voyage varies from six to ten weeks, according to particular route.—Apply, Medical Superintendent, Messrs. ELDER, DEMPSTER AND CO., Limited, Colonial House, Liverpool.

Surgeon wanted for steamer (sailing about middle July) for voyage out to Bombay and back. Salary £15 per month with 10 per cent. war bonus.—Write P.232, c/o SHELLEY'S ADVERTISING OFFICES, 38, King William Street, E.C.

House Surgeon wanted for a Military Hospital of 100 beds. Must be a qualified or nearly qualified man. Two-and-a-half guineas per week, rooms, attendance, and board.—Apply to Secretary, Crag Head, Manor Road, Bournemouth.

Two Medical Officers wanted for Imperial Service to complete 2nd Line Unit (Territorial) of 1st South Midland Mounted Brigade Field Ambulance. Vacancies caused by transfer of Officers to 1st Line Unit now on Foreign Service. The Field Ambulance is at present under canvas at Cirencester, Glos., and expect to go on Foreign Service in the immediate future. Those desiring to join should communicate with Major D. M. SPRING, o/c 2/1st South Midland Mounted Brigade Field Ambulance, Cirencester Camp, Glos.

There are now three vacancies in the 2/2nd E.A.F. AMBULANCE on account of officers being sent abroad. Applications for Commissions write addressed to O.C. 2/2nd E.A.F. Ambulance, 17, Park Parade, Cambridge.

Gold Coast Colony, West Africa.—Two immediate vacancies for MEDICAL OFFICERS on Government Railway, fifty miles from Coast, for senior men with Tropical qualifications and experience. Service on the Coast six to eight months. Salary on basis of £720 per annum and quarters. Return passage.—Apply to J. A. REASIDE, Watergate House, Adelphi, W.C.

For disposal, Practice of the late Dr. ALBERT HILTON (Surgeon-Major 1/9 Battalion Manchester Regiment, Territorials), situate in the populous manufacturing district of Ashton-under-Lyne, near Manchester. Private and Panel (Panel about 600), together with house, brougham and trap. Applications to Messrs. Moss & BARKER, Accountants, Market Place, Ashton, who will be pleased to answer enquiries.

For disposal.—A good Prac- TICE is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised.—Full information free on application to 4, Adam Street, Adelphi, Strand, W.C.

For sale.—Partnership half SHARE, worth £890 p.a. in old established mixed family country Practice, small panel, near London. Good house and garden. Rent £80. Premium two years purchase.—Apply by letter to "A," c/o Messrs. WILLOWS & CO., Ltd., 10, Aldersgate Street, E.C. No agents.

Wanted by M.B., aged 38, a PRACTICE in the North of England. Outskirts of a clean town with a hospital. No colliery. Opportunity for eye work desired. Income £700 to £1,000.—Apply, BLUNDELL & RIGBY, Walter House, 418, 422, Strand, London, W.C.

South County.—Over £1,000 a year. Good-class increasing PRACTICE in a small town within 100 miles. Fees 3s. 6d. to 15s. Panel 900. Good house and garden, lawn, &c. Rent £40. Vendor going on active service. Hunting, shooting, &c. Personally known and recommended. —Apply, No. 5779, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

For disposal, Practices or PARTNERSHIPS.—Messrs. ARNOLD & SONS, Surgical Instrument Manufacturers, have been instructed to privately dispose of a large number of really good Practices and Partnerships. Gentlemen are requested to state their requirements and amount of capital available. No charge to purchasers.—Address, ARNOLD & SONS, Transfer Dept., 6, Giltspur Street, London, E.C. (opposite St. Bartholomew's Hospital).

Urgent.—On the Thames. Unusual opportunity offers to secure a very old-established, easily worked good-class PRACTICE of about £500 a year in a very favourite and rapidly growing resort on Upper Thames. No horse required. Charming riverside residence, large garden, tennis lawn, &c. Panel about £250. Vendor going on active service. Moderate premium from prompt buyer.—Apply, No. 5800, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

Wanted by L.R.C.P., aged 30, a middle class PRACTICE in North London not too far out. Hampstead district preferred. No objection to midwifery.—Apply, BLUNDELL & RIGBY, Walter House, 418, 422, Strand, London, W.C.

Scotland.—Unopposed Town and Country PRACTICE for sale. Average cash receipts £700–£800 p.a. Appointments (including panel of about 530) over £260, increasing. Premium, one year's purchase. Introduction given. Address, No. 2205, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted at once by M.B., aged 36, a mixed PRACTICE in a good district near London with dry soil. Income £600 up.—Apply, BLUNDELL & RIGBY, Walter House, 418 422, Strand, London, W.C.

Panel Practice.—Urgent Sale, easy terms. Very old-established PRACTICE in North London, at present returning £400 to £500 a year, for sale owing to illness. Receipts mostly from panel. Corner house, open situation. Premium £400 or offers.—Apply, 5764, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

To Purchasers.—Do not buy without a full investigation by an expert. Thirty-six years experience has given Mr. PERCIVAL TURNER an unique ability to advise in all cases. Terms free on application to 4, Adam Strtee, Strand, W.C. Telephone: 3399 Central. Telegrams: "Epsomian, London."

War Sale.—Over £600 a year unopposed, in beautiful country district in West County. Station within 3 miles. Appointments over £250. Easily worked. Nice house and garden, rent £50. Premium only £450. Personally investigated and recommended.—No. 5761, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

Northumberland. — Old- established and unopposed PRACTICE for Sale. Good house. Rent £17. Receipts nearly £600, increasing. Fees 2s. 6d. to 7s. 6d. Appointments £45. Price £500. Lovely district; hunting, shooting, fishing, &c.—MANCHESTER CLERICAL, MEDICAL AND SCHOLASTIC ASSOCIATION, Ltd., 8, King Street.

Death Vacancy.—Midlands. In small industrial town (pop. 4,000) with no resident opponent, working-class PRACTICE. Receipts £700 a year including about £400 from panel and club. House-rent £21. Premium £250 on easy terms.—Apply, PEACOCK & HADLEY, 19, Craven Street, Strand, W.C.

Death Vacancy, East County. £850 a year. Vendor killed on active service. Pleasant residential country town near sea, station close. No panel. Appointments nearly £200. Excellent introduction by widow and locum. All kinds of sport. Nice roomy house.—Apply, No. 5796, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

North-west Counties.—Owing to illness of Vendor, a good middle-class PRACTICE in charming town is for disposal. Average receipts £825, in 1914 £908. Fees 3s. 6d.–5s. No appointments. Panel of 680. No dispensing. Motor kept. Commodious house. Very moderate premium.—Apply, Mr. J. A. REASIDE, Watergate House, Adelphi, W.C.

West End Practice. — No premium. An easily worked good-class connection worth about £300 a year. No dispensing or panel. Fees from 5s. upwards. Excellent house in good position, rent £75, will be given to purchaser of complete outfit of furniture, etc., as it stands, valued at £500.—Apply, No. 5804, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

M.D., F.R.C.S.E., married, desires PARTNERSHIP to release man for War service. Country town or suburb with surgical hospital appointment preferred.—Address, No. 3405, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Cornwall.—£500 a year in seaside resort. Easily worked, no horse, great scope. Rent £35. Panel about £220. Vendor retiring. Easy terms of purchase.—Apply No. 5798, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.

For sale, small Nursing and NURSES' HOME. Can take 5 Patients. Good connection for outside work. Rent £100.—Apply, Miss REDFERN, S. Winifrede's Nursing Home, Malvern.

To be disposed of, Nursing HOME for Weir Mitchell and general cases, with patients. Fine rooms, large grounds, healthy district, easy distance for London doctors.—Write "Treatment, c/o J. W. VICKERS & Co., LTD., 5, Nicholas Lane, E.C.

Suitable for Nursing Home.— Beaumont Street (Devonshire Street).—To be LET or SOLD a medium-sized HOUSE, containing eight rooms and bath room, kitchen and servants room in basement. Electric light. Rent £95 per annum on lease, or the direct lease of nearly 15 years would be sold.—ELLIOTT, SON & BOYTON, 6, Vere Street, Cavendish Square.

Light Consulting Room on Ground Floor, in a newly built house off Portland Place, close to Harley Street, with use of Waiting Room. Electric Light, attendance, telephone, all modern requirements. Also another available in afternoons.—Address, by letter, No. 3436 BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Consulting Rooms to let, well appointed. Telephone, etc.—Apply, 32, Devonshire Street, Harley Street, W.

Doctors' a/c forms printed in good style on vellum paper—1,000, 10s. 6d.: letter headings; post card headings; calling cards at equally moderate rate.—R. ANDERSON & SON, Printers, 1, Hill Place, Edinburgh.
Telephone No. 6034 Central. Established 1870.

European Crisis.—Service DRESS and COMPLETE EQUIPMENT can be supplied to medical men who have obtained Commissions in the R.A.M.C. and Navy in 24 hours by Messrs. HARRY HALL. Unequalled value, perfect fit, and accuracy in every detail is guaranteed. Innumerable unsolicited appreciations have been received from satisfied officers. Patterns, abridged Price List, and if desired a simple self measurement form, post free on application to Messrs. HARRY HALL, 207, Oxford St., W., or 149, Cheapside, E.C.
IMPORTANT.—Visitors to London can order and be fitted the same day.
'Phones: Museum 820 and City 2086. *Telegrams:* "Hallzone," London, and "Arriarle," London.

Parish of St. Marylebone.

APPOINTMENT OF FIRST TEMPORARY ASSISTANT MEDICAL OFFICER (RESIDENT MALE) to take the place of the Medical Officer called to the Front, at the Infirmary, Rackham Street, Notting Hill, W

Salary at the rate of £225 per annum, rising at the end of six months to £235 per annum, and at the end of twelve months to £250 per annum, with furnished apartments, rations, and washing, also £2 per week extra for doing work of Medical Superintendent in his absence (exclusive of odd days and week-ends).

Candidates must be unmarried. Considerable off duty time allowed. Plenty of time for reading up.

The appointment will be subject to the approval of the Local Government Board, and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications, stating age, qualifications, and experience, accompanied by copies of not less than three recent testimonials, to be forwarded to the undersigned as soon as possible. Personal canvasing will disqualify any candidate.

Candidates are asked to apply in the first instance to the Medical Superintendent of the Infirmary, from whom all information may be obtained.

By order, HENRY T. DUDMAN,
Clerk to the Board of Guardians.
Guardians' Offices, Northumberland Street, W.
22nd June, 1915.

Locum Tenens (male) wanted at the HANTS COUNTY ASYLUM. Asylum experience not essential. Salary five guineas a week, with furnished apartments, board (no beer), washing and attendance.
Apply at once to the Medical Superintendent, Hants County Asylum, Fareham.

County Asylum, Chester.

THIRD ASSISTANT MEDICAL OFFICER wanted (ladies eligible). Must be fully qualified, duly registered, unmarried, and not more than thirty years of age.

Salary £200 per annum, with board (no liquor), lodging and washing.

The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be sent on or before the 12th day of July 1915, to

G. HAMILTON GRILLS, M.D.,
Medical Superintendent.

Bedfordshire County Council.

SCHOOL MEDICAL OFFICER.

Applications are invited for the position of Temporary School Medical Officer.

The person appointed will be required to carry out the work of the Medical Inspection of School Children as directed by Circulars 576 and 582 of the Board of Education.

The salary will be £300 per annum, with approved travelling and other incidental expenses and clerical assistance.

Applications will only be entertained from persons who are not eligible for Military service.

The appointment will be terminable on one month's notice.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be sent to the undersigned not later than Saturday, the 10th July next, and the envelope must be endorsed "School Medical Officer."

Canvassing will be considered a disqualification.

W. W. MARKS.
Clerk of the County Council.
Shire Hall, Bedford. 21st June, 1915.

Croydon Mental Hospital,

Upper Warlingham, Surrey.

SECOND ASSISTANT MEDICAL OFFICER required. Salary £250 per annum, rising by annual increments of £25 to £300, with board, lodging, and laundry. The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909. Applications, with copies of not more than three testimonials, to be made to the Medical Superintendent.

South Devon and East

CORNWALL HOSPITAL, Plymouth (189 Beds).

The Committee invite applications for the appointments of a qualified HOUSE SURGEON to commence duties at once, and HOUSE PHYSICIAN on the 17th July, male or female, no age limit.

Candidates, stating essential particulars (board, residence and washing would be supplied by the Hospital), should send copies of not more than three testimonials to the undersigned.

P. J. LANGDON, Secretary.
Plymouth, 11th June, 1915.

Brooke House Asylum,

Clapton, N.E.

ASSISTANT MEDICAL OFFICER (Male or Female) required in July. Salary £200, and time for reading, or alternatively a LOCUM TENENS at £5 5s. a week.—Address the Medical Superintendent.

Bristol General Hospital.

The House Committee invites applications for the post of HOUSE PHYSICIAN. Salary at the rate of £150 per annum, with board, residence, etc, provided in the house. The appointment will be for six months from August 1st next. Local applicants not necessarily preferred. Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability, and must have had recent experience in the administration of anæsthetics. Applications, stating age, with copies of testimonials, should be forwarded to the undersigned, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

National Hospital for Diseases

OF THE HEART, Westmoreland Street, W.

The Committee of Management invites applications for the post of RESIDENT MEDICAL OFFICER (male or female). The appointment is for a period of six months from the 1st August next, but may be renewed for a further period of six months. Salary at the rate of £80 per annum, with board, residence, and washing. Candidates must be duly registered medical practitioners; they are not required to call upon the Medical Staff but are expected to attend the meeting of the Medical Committee.

Applications, stating age, and accompanied by copies of three recent testimonials, should be addressed to me not later than July 10th next.

ROBERT G. E. WHITNEY, Secretary.

APPOINTMENTS.—Important Notice.

(a)—British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.		
ENGLAND.	**WALES** *(continued)*.	**WALES** *(continued)*.
COVENTRY. *(As regards Dispensary Appointments.)*	CLYDACH-ON-TAWE, YSTALYFERA, YSTRADGYNLAIS, and SWANSEA VALLEY. *(Medical Aid Associations)*	RISCA, YNYSDDU and CWMFELINFACH. *(Colliery Appointments.)*
FOREST OF DEAN. *(Medical Aid Associations.)*	CWMTWRCH AND DISTRICT. *(Medical Aid Society.)*	**POOR LAW.**
READING. *(Amalgamated Friendly Societies' Medical Association.)*	EASTERN VALLEYS, MONMOUTHSHIRE. *(Workmen's Medical Association).*	**ENGLAND.**
WALES.	GARW VALLEY. *(Medical Aid Society.)*	BURNLEY UNION. *(District Medical Officer.)*
ABERCRAVE. *(Medical Aid Association.)*	GORSEINON DISTRICT. *(Medical Aid Society.)*	**SCHOOL APPOINTMENTS.**
ABERTILLERY. *(Colliery Appointment.)*	NEATH AND DISTRICT. *(Medical Aid Society.)*	**ENGLAND.**
BLAINA. *(Blaina and District Medical Aid Association.)*	OAKDALE, MON. *(Medical Officer for Model Village.)*	WORCESTERSHIRE COUNTY COUNCIL. *(Female Temporary Assistant School Medical Officer.)*
BRITON FERRY. *(Workmen's and General Institution for Medical and Surgical Treatment.)*		**SCOTLAND.**
		GREENOCK. *(School Medical Inspector for Burgh School Board District.)*

(b)—Colonial.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NATAL. *(South African Railways Sick Fund.)*	Dr. A. D. McKENZIE (Hon. Sec., Natal Coastal Branch), 226, Musgrave Road, Durban.	QUEENSLAND. *(Brisbane Associated Friendly Societies and Australian Natives Association)*	Dr. G. A. C. DOUGLAS (Hon. Sec., Queensland Branch), B.M.A. Buildings, Adelaide Street, Brisbane.	VICTORIA. *(All Friendly Society Lodge Appointments.)*	Dr. FAY MACLURE, (Hon. Sec., Victorian Branch), 127, Collins Street, Melbourne, Victoria.
NEW SOUTH WALES. *(All Friendly Society Appointments.)* (Also GOULBURN CASINO and BRAIDWOOD.)	Dr. R. H. TODD, (Hon. Sec., Sydney and New South Wales Branch), B.M.A. Building, 30-34, Elizabeth Street, Sydney, N.S.W.	TRANSVAAL. *(Hospital Appointments.)*	Dr. I. W. BREBNER, (Hon Sec., Witwatersrand Branch, P.O. Box 5039, Johannesburg.		

Address: 429, Strand, W.C.
June 24th, 1915.

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary.

Royal Victoria Hospital,
Folkestone.

HOUSE SURGEON required immediately. Beds 50 civilian and 50 to 100 for wounded soldiers. Board, residence, and laundry found. State full particulars, and forwarding 3 recent testimonials, to the Secretary as above.

Staffordshire General
INFIRMARY, Stafford. Established 1766.

Wanted, a HOUSE SURGEON (either sex) for the above-named Institution, to enter upon the duties at an early date. Candidates must possess a diploma from the College of Surgeons in London, Edinburgh, or Dublin, or a degree in Surgery from one of the Universities, and a qualification in Medicine which shall entitle to register. Applications, stating age, accompanied by certificates of registration and copies of testimonials, to be sent at once to the Secretary. Salary £250 per annum, with board, residence, and laundry. The engagement will be for a period not exceeding 2 years, subject to extension at the discretion of the Committee.

Canvassing strictly prohibited.

RICHARD BATTLE, Secretary.

Royal Albert Edward
INFIRMARY AND DISPENSARY, Wigan.

Wanted, a JUNIOR HOUSE SURGEON (either sex). Salary £150 per annum, with board, apartments and washing. Candidates must be doubly qualified and registered, and be prepared to enter into an agreement not to practise in the Wigan Union for a period of three years from the date of appointment.

Applications, stating age, experience, and qualifications, with three recent testimonials, to reach the undersigned at once. Canvassing a disqualification.

L. E. MAPEI, Acting Secretary.

May 10th, 1915.

Walsall & District Hospital.

The Committee invite applications from Ladies or Gentlemen for the post of ASSISTANT HOUSE SURGEON AND ANÆSTHETIST. Salary £150 per annum, with board, residence and laundry.

Candidates, who must possess registered qualifications, should forward applications, stating age, qualifications and experience, together with copies of three recent testimonials, to the undersigned.

FRANK INCH, Secretary.

Wharncliffe War Hospital,
Middlewood Road, Sheffield.

The Committee and Officer in Charge of the Hospital will shortly require the services of RESIDENT MEDICAL OFFICERS.

Applicants must be fully qualified in medicine and surgery, and registered.

Applications, stating age and qualifications, with copies of two recent testimonials, to be sent at once, addressed to the Officer in Charge, from whom the terms of the appointment can be obtained.

The names of selected candidates will be submitted to the War Office.

Bristol Royal Infirmary.

An ASSISTANT is required to the EAR, THROAT AND NOSE DEPARTMENT.

The post, which is non-resident, might be held by a woman with experience in this specialty.

Candidates must possess registered Medical and Surgical qualifications.

For salary and other particulars apply

W. E. BUDGETT,
Secretary and House Governor.

11th June, 1915.

West Bromwich and District HOSPITAL.

(86 Beds; Out-patient attendances 36,000.)

Wanted HOUSE SURGEON and ASSISTANT HOUSE SURGEON for this Institution. Candidates must be doubly qualified, duly registered and unmarried.

Salary: House Surgeon, £150 per annum; Assistant House Surgeon, £120 per annum, with residence, board and laundry.

Applications, endorsed "House Surgeon" or "Assistant House Surgeon," as the case may be, stating age, qualifications and previous experience, and accompanied by copies of three recent testimonials, must be sent to the Hon. Secretary, THOS. FOLEY BACHE, Esq., Churchill House, West Bromwich, immediately.

Applications from ladies will be considered.

By order of the Board,
FRANK I. HANCOCK, Secretary.

The Royal Infirmary, Sheffield (326 Beds).

HOUSE SURGEON AND ASSISTANT HOUSE PHYSICIAN.

Wanted, two Resident Medical Officers (Male or Female) for the above posts. There are 9 Resident appointments. Salary £100 per annum, with board and residence. The Board of Management invite immediate application by duly qualified officers for these two posts. Applications, with copies of testimonials, to be addressed to
JNO. W. BARNES, Secretary.

The Royal National Hospital FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor, Isle of Wight.

A vacancy in the post of ASSISTANT RESIDENT MEDICAL OFFICER has occurred. The appointment is open to ladies. Particulars may be had upon application to the Secretary, 18, Buckingham Street, Strand, London, W.C.

Medical Officer and Public VACCINATOR,

fully qualified, wanted by the PARISH COUNCIL OF UIG, Lewis, to enter on duty as soon as possible. Minimum salary of £300 per annum, guaranteed by the Highlands and Islands (Medical Service) Board.

House provided, rent and rate free, at Garynahine. Travelling expenses incurred in attending patients will be met by repayment of hiring expenses, or by special allowance if motor car or motor bicycle be kept.

Knowledge of Gaelic a recommendation. Applications, stating age and qualifications, with recent copies of testimonials, to be lodged with RANALD MACDONALD, J.P., Carloway, Chairman of the Parish Council of Uig, Isle of Lewis.

Manchester Northern Hospital FOR WOMEN AND CHILDREN, Park Place, Cheetam Hill Road, Manchester.

Wanted at once, a duly qualified HOUSE SURGEON. Salary, with apartments and board, £120 per annum.

The appointment is not restricted to a Male House Surgeon.

Applications, with testimonials, stating age and experience, to be sent to Mr. HUBERT TEAGUE, Secretary, 28, Barton Arcade, Manchester.

Carlisle Non-Provident DISPENSARY.

RESIDENT MEDICAL OFFICER required immediately. Salary £200 per annum, with apartments (not board). Suitable post for applicant who desires to work for a diploma.

Applications, with testimonials, stating age and qualifications, to be sent to the Hon. Secretary, Mr. G. A. LIGHTFOOT, 21, Castle Street, Carlisle,

Royal Surrey County HOSPITAL, Guildford.

Wanted (at once), a HOUSE SURGEON. Salary £150 with board, residence, and laundry.

The Hospital has 110 beds and a Red Cross Annexe of 100 beds for wounded soldiers.

Applications, with copies of testimonials, to be sent to the Secretary at the Hospital.

Warrington Infirmary and DISPENSARY.

This Institution with 104 beds, of which 36 are allotted to military patients, is urgently in need of fully qualified persons to fill the positions of SENIOR and JUNIOR HOUSE SURGEONS, in consequence of the present staff having volunteered for active service. Salary £180 and £120 per annum respectively, with board, apartments, and laundry.

Applications are invited from Ladies, and should be sent at once, with copies of three recent testimonials, to
J. H. J. HAMPSON, Secretary.

St. Mary's Hospital for Women AND CHILDREN, Plaistow, London, E.

(General Hospital, 42 Beds.)

ASSISTANT RESIDENT MEDICAL OFFICER required immediately. Salary at the rate of £90 per annum with board, residence and laundry, and an honorarium of £10 on completion of six months service.

Applications, with copies of testimonials, to be sent to the undersigned, from whom further particulars can be obtained.

A. ERNEST WILKES, Secretary.
1st June, 1915.

The Royal Infirmary CHILDREN'S HOSPITAL, Sunderland.

RESIDENT MEDICAL OFFICER (Lady) wanted. Candidates must possess double qualifications (registered). The appointment is for six months, but may be extended.

Salary £100 per annum, with board, residence, and laundry.

There are 54 beds for patients.

Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

THOMAS ROBINSON, Secretary.
May 22nd, 1915.

Birmingham General DISPENSARY.

RESIDENT MEDICAL OFFICER for one of the seven branches of this Institution required at once. Must be unmarried, registered and possess medical and surgical qualifications. Commencing salary £250 per annum, with furnished apartments, fire, lights and attendance. No midwifery cases. LADIES MAY APPLY.

Applications, together with copies of three recent testimonials and registration certificate, should be forwarded to the undersigned (from whom any further particulars can be obtained) at the earliest possible date.

ERNEST W. FORREST, Secretary.
32, Union Street.

Nottingham General Hospital.

Wanted a SENIOR HOUSE PHYSICIAN. Salary at the rate of £300 per annum, with board, residence and laundry in the Hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary.

By order, E. M. KEELY, Secretary.

Nottingham General Hospital.

Wanted an ASSISTANT HOUSE PHYSCIAN. Salary at the rate of £250 per annum, with board, residence, and laundry in the Hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary.

By order, E. M. KEELY, Secretary.

Edinburgh Parish Council.

MEDICAL OFFICER (Second) wanted for Craiglockhart Poorhouse and Hospital, Edinburgh, to enter on duty 2nd August next. Salary £150 per annum, with board and apartments. The appointment is open to male and female candidates.

Applications, with copies of testimonials, to be lodged with the Subscriber on or before Thursday, 1st July next, at 10 o'clock a.m.

JAMES KYD, Inspector and Clerk.
Parish Council Chamber, Castle Terrace,
Edinburgh, 10th June, 1915.

Ashton-under-Lyne Union.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians invite applications from duly qualified men and women for the appointment of Resident Assistant Medical Officer for their Workhouse, who will be required to devote the whole of his or her time to the duties of the office.

The appointment is for a period of twelve calendar months only, which period, however, may be renewed by the Guardians.

Salary £150 per annum, together with emoluments of rations, laundry and residence, valued at £85 per annum, subject to the provisions of the Poor Law Officers' Superannuation Act, 1896, and to the approval of the Local Government Board.

Applications, stating age and qualifications, to be sent to the undersigned.

By order of the Board,
G. H. PARTINGTON, Clerk to the Guardians.
Poor Law Offices, Ashton-under-Lyne.

Hospital for Women and CHILDREN, Bruntsfield, Edinburgh.

The office of RESIDENT MEDICAL OFFICER (Woman) will be vacant in July 1st. Salary £50 per annum, with board, residence and laundry. Applications, with copies of testimonials, to be sent at once to the Convener of the Medical Committee, Hospital for Women and Children, Bruntsfield, Edinburgh.

Salisbury (General) Infirmary. 120 Beds.

Wanted at once, HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Salary £150 and £100 respectively, with apartments, board, lodging, and washing. Candidates must be unmarried, fully qualified and registered.

Applications from women candidates will be considered.

All applications, with testimonials, to be sent to the undersigned, of whom the rules relative to the duties may be had on application.

The duties will commence from the date of appointment. Canvassing by or on behalf of the candidates will disqualify.

S. BUCHANAN SMITH, Secretary.
Dated 18th May, 1915.

Essex Education Committee.

TEMPORARY APPOINTMENTS OF TWO LADY SCHOOL MEDICAL INSPECTORS.

The Essex Education Committee invite applications from duly qualified women for the above temporary appointments, to carry out the duties of the Medical Inspection of School Children under the direction of the Committee. They will be required to attend Treatment Centres where such are established, to administer anæsthetics when required, and to devote their whole time to the services of the Committee. The appointments will be for a period of twelve months, and are to fill vacancies caused by the absence of members of the permanent staff on military service.

The possession of a Diploma in Public Health is desirable, and preference will be given to candidates having a knowledge of retinoscopy and special experience in diseases of the skin, ear, nose or throat.

The salary offered in each case is £300 per annum, with an allowance for travelling expenses.

Applications, accompanied by three recent testimonials, on forms to be obtained from the undersigned, must be sent in as quickly as possible.

Canvassing will be a disqualification.

J. H. NICHOLAS, Secretary.
County Offices, Chelmsford, 10th June, 1915.

The Royal Sea-Bathing HOSPITAL for SURGICAL TUBERCULOSIS, Margate.

RESIDENT SURGEON required.

Candidates for the post must be legally qualified and registered. The salary is at the rate of £150 per annum for the first six months, and at the rate of £200 per annum for a second period of six months, with board, residence, and laundry. There are 200 beds, 50 of which are reserved for wounded soldiers. Special opportunities are afforded for the study of tuberculous disease. Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 13, Charing Cross, London, S.W.

The South London Hospital FOR WOMEN (Incorporated).

The Board of Management invite applications from qualified medical women for the post of ANÆSTHETIST to the Hospital. Honorarium given. Full particulars may be obtained from the Secretary.

Applications, with copies of testimonials, to reach the Secretary, 88 and 90, Newington Causeway, S.E., not later than July 3rd.

Borough Hospital, Birkenhead.

Wanted HOUSE SURGEON. Male or female. Salary £300 per annum, with board and laundry. Apply, with testimonials, to the Secretary at the Hospital.

Bradford Children's Hospital.

HOUSE SURGEON wanted at once, lady or gentleman, doubly qualified. Salary £120, with board, residence and laundry.

Applications, stating age, with testimonials, to
C. V. WOODCOCK, Secretary.

Swansea General and Eye HOSPITAL (172 Beds).

HOUSE PHYSICIAN (lady or gentleman) wanted who will also act as Ophthalmic House Surgeon. Salary £200, with board, apartments and washing.

Candidates, who must be fully qualified, to send their applications, with three testimonials (typewritten copies preferred) to the undersigned.

W. D. HUGHES,
May 17th, 1915. Secretary.

Stockport Infirmary.

Wanted, a SENIOR HOUSE SURGEON. Must be fully qualified and registered. Salary £200 per annum, with board, washing, and residence.

Applications, stating age and nationality, with testimonials, to be sent to the Secretary.

Bury Infirmary.

Wanted, a SENIOR HOUSE SURGEON, must have both Medical and Surgical qualifications. Salary £175 per annum, with board, residence, and washing. Terms of appointment not exceeding nine months.

Also a JUNIOR HOUSE SURGEON, who must have both Medical and Surgical qualifications. Salary £150 per annum, with board, residence, and washing. Among other duties the person appointed will have charge of the Children's ward, the Ophthalmic Department, Casualty and Out-patients' Departments, and the Administration of Anæsthetics. Terms of appointment not exceeding nine months, then eligible for the Senior House Surgeon's Post if suitable.

Applications, stating age and nationality, to be sent at once to the Honorary Secretary, Infirmary, Bury, Lancs.

Bolton Infirmary and DISPENSARY.

(128 Beds, mostly surgical, including Children's Wards.)

Applications for the appointment of SENIOR HOUSE SURGEON are invited from Ladies or Gentlemen having a registered Medical and Surgical qualification. Salary £230 per annum, with apartments, board, and attendance.

The appointment will be made on the 1st July, 1915, at 4 o'clock in the afternoon, when selected candidates, to whom notice will be sent, and whose third-class railway fares will be paid, are to be in attendance.

Applications, stating age, with copies of not more than three testimonials of recent date, to be addressed to the Secretary, Bolton Infirmary, not later than the 29th June, 1915.

Telephone: Mayfair 7070.
Telegrams: Firths Association, London.

THE LONDON ASSOCIATION OF NURSES.

123, NEW BOND STREET, W.

Hospital Trained Nurses, experienced in Private Nursing, supplied for every kind of illness. Also Mental and Male Nurses.
Apply, LADY SUPERINTENDENT.

Parish of St. Pancras.

GUARDIANS OF THE POOR.

Wanted, a SENIOR ASSISTANT MEDICAL SUPERINTENDENT at the ST. PANCRAS INFIRMARY, Dartmouth Park Hill, N. Ample time can be arranged, if required, for reading for higher examinations.

For full particulars as to salary and other emoluments, duties, etc., apply to Dr. A. E. CHILCOTT, Medical Superintendent, at the Infirmary, as above.

Town Hall, Pancras Road, N.W. (Signed) J. E. P. HALL, Clerk to the Guardians.
23rd June, 1915.

An Assistant Medical Officer

(Locum Tenens) is required at QUEEN MARY'S HOSPITAL for CHILDREN, Carshalton, Surrey. Salary £6 6s. per week, with usual residential allowances.

Apply to the Medical Superintendent.

THE RETREAT, YORK.

TRAINED NURSES' DEPARTMENT,

Staffed by Nurses who have been trained for four years in the Retreat, and conducted upon a profit-sharing basis. Mental and Nervous cases only undertaken. Terms from Two to Three Guineas weekly. Trained Male Nurses also available. Terms £2 10s. weekly. Apply, MATRON, Retreat, York. *Nat. Tel. 112.*

York Road (General Lying-IN HOSPITAL, Lambeth, S.E.

—Established 1765. Patrons, H.M. THE QUEEN and H.M. QUEEN ALEXANDRA. Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Telephone, 794 Central. For rules, fees, etc., apply ROSE E. WHYTE, Secretary.

THE MENTAL NURSES' CO-OPERATION,

49, Norfolk Square, Hyde Park, London, W.

Telephone: ESTAB. 1907. 6533 Paddington. *Telegraphic Address:* Nursental, London.

Fully trained and experienced Nurses for MENTAL, NERVOUS, and MASSAGE CASES supplied immediately. All nurses insured under the Employers' Liability Act of 1906.

Apply to Miss JEAN HASTIE, Superintendent.

MENTAL NURSES (MALE and FEMALE) ASSOCIATION, Ltd.

54, George Street, Manchester Sq., W.

Telephone: MAYFAIR 2287.
Telegrams: "ISOLATION, LONDON."

Superior Mental Nurses (Male and Female) supplied at a moment's notice Day or Night for Nerve and Mental Cases.

NURSES FULLY INSURED AGAINST ACCIDENT. Apply SECRETARY

THE NURSES' CO-OPERATION,

22, Langham Street, Portland Place, W.

FOUNDED 1891. INCORPORATED 1894.

Established to secure to Nurses the full remuneration for their work and to supply

FULLY-TRAINED HOSPITAL

MEDICAL
SURGICAL
MENTAL
MATERNITY
FEVER
CHILDREN'S
MASSAGE
} NURSES.

To work under medical supervision.

The Nurses are fully insured by the Co-operation against the Employers Liability under the Workmen's Compensation Act, 1906.—**Miss HOADLEY, Lady Superintendent.**

Telegraphic Address: "Aprons, London." Telephone 6742 and 6743 Mayfair.

UNDER MEDICAL SUPERVISION.

MALE NURSES TEMPERANCE CO-OPERATION LTD.

LONDON — 10, THAYER STREET, MANCHESTER SQ., W.
BIRMINGHAM — 75, HAGLEY ROAD.
MANCHESTER — 237, BRUNSWICK ST. (FACING OWENS COLLEGE)
EDINBURGH — 7, TORPHICHEN ST.

ALL NURSES ARE FULLY INSURED AGAINST ACCIDENT.

Registered (MALE NURSES (TEMPERANCE) CO-OPERATION LTD. TOTAL ABSTINENCE. THE OLDEST ESTABLISHED) No. 18099.

Trained Male Nurses and Valet Attendants for Mental, Medical, Travelling, and all cases.

TERMS: £1 16 6 TO £3 3 0

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London: 538 PADDINGTON.
Birmingham: 2106 MIDLAND.
Manchester: 4699 CENTRAL.
Edinburgh: 2715 CENTRAL.

PLEASE ADDRESS ALL COMMUNICATIONS—
W. WALSHE, Secretary.

MILDMAY NURSING INSTITUTION,

9 & 10, NEWINGTON GREEN, N.

Fully-trained NURSES for Medical, Surgical, Maternity, and Fever Cases to be had immediately on application to the Superintendent.

Telegraphic Address: "NURSING, LONDON."
Telephone No. 141 Dalston.

GENERAL NURSING ASSOCIATION

5, MANDEVILLE PLACE, Manchester Square, W.

Established 1862, at Henrietta Street, Covent Garden. Thoroughly experienced Hospital-trained NURSES supplied at a moment's notice being Residents in the Home. Also Specially trained NURSES for Mental Cases worked under the system of Co-operation. Apply to the SUPERINTENDENT.

Telephone: Mayfair 115.
Telegraphic Address: "Nutrix Wesdo, London."

TEMPERANCE MALE NURSES CO-OPERATION LTD.

LONDON, 43 NEW CAVENDISH STREET, W.
MANCHESTER, 176, OXFORD ROAD.
GLASGOW, 28 WINDSOR TERRACE.
DUBLIN, 47 MESPIL ROAD.

TELEGRAMS:
Tactear, London.
Tactear, Manchester.
Surgical, Glasgow.
Tactear, Dublin.

TELEPHONES:
London, 1277 Mayfair.
Manchester, 5213 Central.
Glasgow, 477 Central.
Dublin, 531 Ballsbridge.

Superior trained Male Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls, Day or Night. Skilled Masseurs and good Valet Attendants supplied. All Terms from £1 16 6. Nurses insured against accident. M. D. GOLD, Secretary.

London Hospital Private

NURSING STAFF.—TRAINED NURSES for Adults and Children for Medical, Surgical, Maternity, or Massage Cases can be had immediately.

Apply Matron, London Hospital, Whitechapel.

Telephone: No. 5020 Avenue.

The nurses on the private staff return to the wards between their cases after sufficient rest, so that their work and knowledge are kept thoroughly up to date.

ST. JOHN'S HOUSE.

Trained and experienced Medical, Surgical, Maternity, NURSES and MASSEUSES can be obtained by application, personally or by letter, to the Sister Superior, 12, Queen Square, Bloomsbury.

Telephone No. 5099 Central (P.O.).

Telegraphic Address: "Private Nurses, London."

Telephone: 2437 PADDINGTON.
Telegrams: ASSISTIAMO, LONDON."

MALE NURSES' ASSOCIATION

29, YORK ST. *(late 23, York Place),*
BAKER STREET, LONDON, W.
ESTABLISHED 12 YEARS.

Careful and reliable Male Nurses sent out, at moderate fees, for all cases, day or night. Masseurs supplied by the hour or week.

W. GUTTERIDGE, *Superintendent.*
W. J. HICKS, *Secretary.*

THE
NEW MENTAL NURSES CO-OPERATION,
139, Edgware Road, Marble Arch, W.

Specially trained Nurses for Mental and Nerve cases. All Nurses are insured against accident.

Apply the SUPERINTENDENT.

Telegrams: "Psyconurse Edge London." *Telephone:* No. 6105 Paddington

ST. LUKE'S HOSPITAL,
OLD STREET, LONDON.

TRAINED NURSES for Mental and Nervous Cases can be had immediately.

Apply, MATRON. Telegrams: "Envoy, Finsquare, London." Telephone 5608 Central.

THE
MANCHESTER CLERICAL, MEDICAL AND SCHOLASTIC ASSOCIATION, LTD.

The oldest MEDICAL Agency in Manchester.
8, KING STREET.

Telegraphic Address: "STUDENT, MANCHESTER."
TRANSFERS and PARTNERSHIPS arranged, and Investigations, Valuations, &c., undertaken.
ASSISTANTS & LOCUM TENENS SUPPLIED.
PRACTICES for sale. Particulars on application.

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THE BIRMINGHAM MEDICAL AGENCY
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Transfers of Practices and Partnerships arranged
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Remittances must accompany all orders Apply at the office, 429, Strand, W.C.

ARNOLD & SONS,
Surgical Instrument Manufacturers,
GILTSPUR ST., LONDON. E.C.

MEDICAL TRANSFER DEPARTMENT.

PRACTICES AND PARTNERSHIPS FOR SALE.

LONDON, W.C.—An old established PRACTICE situated in a good central position and producing over £1,000. Panel list nearly 1,000. Fees 2s. to 21s., Midwifery 21s. upwards. No Sunday work. Nice flat, suitable for a bachelor. Rent £80 per annum inclusive. Ample scope. Premium 1½ years' purchase or near offer. Quote folio 707.

LONDON, N.—General PRACTICE, situated in a thickly populated district. Receipts about £900. Fees up to 2s. 6d. Panel list 1,240. Nice corner house containing 7 bed rooms, etc. Rent £80 per annum. Premium £900, or near offer. Quote Folio 842.

HANTS.—PARTNER required in an old-established general Practice. Receipts, 1915, £1,500. Panel list over 1,450. Fees 2s. 6d. to 7s. 6d. Plenty of society, good schools, etc. Ample scope. Premium 2 years' purchase with view to succession.

LONDON, S.W.—A general PRACTICE, situated in a central position. Receipts, 1914, £1,680. Panel list 2,740. Fees 1s. to 5s. Midwifery 1 to 1½ guineas. Appts. held value over £100 per annum. Nice house containing 10 rooms, etc. Rent £50 p.a. Quote Folio 843.

CHESHIRE.—A good class country practice producing over £700. Panel worth £250. Union appts. £75 p.a. Fees 2s. 6d. to 42s. Midwifery 1 to 10 gs. Splendid house containing 5 bedrooms, etc., rent £40 p.a. Premium £800, payable £250 down, balance spread over a period of 18 months. Quote Folio 701.

LONDON, E.—An old established working-class PRACTICE situated in a thickly populated district and producing about £1,400 p.a. Panel list 3,000, fees up to 3s. 6d., midwifery 21s. upwards (60–70 cases p.a.). Modern house situated in a central position containing 4 bedrooms, etc. Rent £18 p.a. Premium £1,300. Quote Folio 685.

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Death Vacancy.—Warwickshire.—Old-established PRACTICE, in same hands for 36 years. Receipts over £1,100. Appointments £100. Panel 1,820. Clean, prosperous growing town. Good house and garden, with separate surgery entrance. Rent £70. Exceptional opportunity for active man. Offers invited.

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Eye Work.—Several general PRACTICES in which eye work is done. Particulars on application.

Home County.—Country PRACTICE near a fashionable watering place. Receipts £2,000. Appointments and panel £600. Opposition slight. Nice house. Rent £75. Premium 1 year's purchase. The Practice would suit two friends.

Death Vacancy, Lancs.— Country PRACTICE near the sea. Receipts £650. Appointments £128. Panel £230. Rent £40. Offer considered.

Death Vacancy, London, N.— Receipts nearly £800. Panel 1,600. Midwifery refused. Great scope. House with 5 bedrooms, garden, rent £40. Opposition slight.

Country Practice near London. Receipts £400, and scope. £250 from panel. Little midwifery. Nice old house, large garden, tennis court, paddock. Rent £35.

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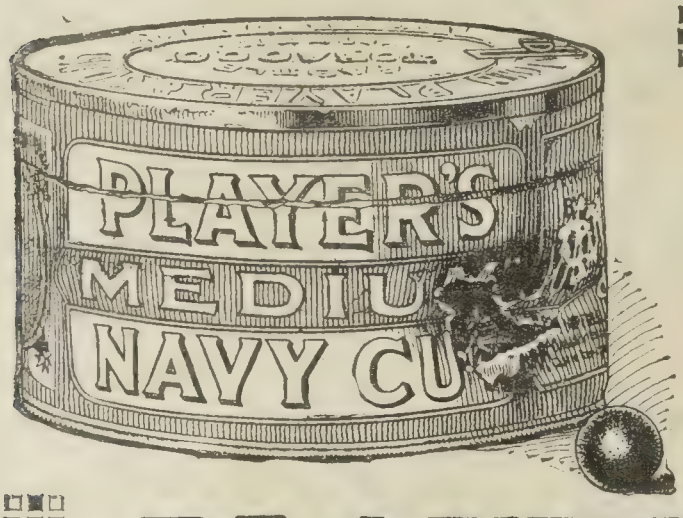
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